

2023

SEED PRODUCT INFORMATION GUIDE

Baill Seed®

PanAmerican Seed®

NEW VARIETIES FOR 2023

ANNUALS

Begonia

Dragon Wing® F1 White
Megawatt™ F1 Rose Bronze Leaf Improved
Megawatt™ F1 White Green Leaf

Coleus, Premium Sun

Ruby Heart

Cyclamen

Dreamscape™ F1 Bright Purple
Dreamscape™ F1 Rose Eye

Dianthus

Coronet™ F1 Purple
Coronet™ F1 White Purple Eye

Impatiens

Beacon® F1 Lindau Mixture
Beacon® F1 Portland Mixture
Beacon® F1 Sanibel Mixture

Interspecific Impatiens

Solarscape™ F1 Magenta Bliss
Solarscape™ F1 Neon Purple
Solarscape™ F1 Orange Burst
Solarscape™ F1 White Shimmer
Solarscape™ XL F1 Salmon Glow

Spreading Begonia

Hula™ F1 Bicolor Red White
Hula™ F1 Blush
Hula™ F1 Pink
Hula™ F1 Red

Spreading Pansy

Cool Wave® F1 Blue

Spreading Petunia

E3 Easy Wave™ F1 Formula Mixture

Vinca

Tattoo™ Orange
Titan™ F1 Cranberry

Viola

Sorbet® XP F1 Red

Zinnia

Zesty™ Orange
Zesty™ Yellow

PERENNIALS

Echinacea

Artisan™ Collection F1 Yellow Ombre

Perovskia

Bluesette

Rudbeckia

Goldblitz

CUT FLOWERS

Celosia

Sunday™ Bright Pink Improved
Sunday™ Cherry Improved
Sunday™ Gold Improved
Sunday™ Green

Limonium

QIS Mixture Improved

Lisianthus

Can Can F1 Carmine Rose

Matthiola

Mathilda™ Antique Rose

HANDPICKED VEGETABLES & HERBS

Pepper

Trailblazer F1

Tomato

BlushingStar F1
Sun Dipper F1

SUBSTRATE MOISTURE LEVEL TABLE

	Level 1 Dry	Level 2 Medium Dry	Level 3 Medium	Level 4 Medium Wet	Level 5 Saturated
Substrate colour	Very light brown or gray	Light brown	Brown to dark brown	Dark brown	Brown-black, glistening with water
Substrate feel when squeezed in hand	No moisture is detected in substrate	Substrate squeaks when squeezed	A small drop of water can be squeezed from the substrate	Water can be easily squeezed from the substrate	Water runs freely out of the substrate
Substrate structure	Substrate is dusty and freely scatters when blown	Substrate will barely stick together under pressure	Substrate will clump together but cracks apart under its own weight	Substrate easily clumps together and stays as one clump	Substrate has a semi-liquid consistency

CONTAINER CONVERSION FROM CM TO IN.

European Container	Equivalent U.S. Container
9 cm 5° - H	3.5 in. Standard
10.5 cm 5° - L	4 in. Azalea
10.5 cm 5° - H	4 in. Standard
11 cm 8° - H	4.25 in. Standard
12 cm 8° - H	4.5 in. Geranium
13 cm 8° - L	5 in. Azalea
13 cm 5° - H	5 in. Standard
14 cm 5° - H	6 in. Trade
15 cm 5° - L	6 in. Azalea
15 cm 5° - H	6 in. Standard
17 cm - L	6.5 in. Azalea
15 to 18 cm - H	Trade Gallon
19 cm - L	8 in. Standard
23 cm/5 liter	8 in. /1.5 Gallon
25 cm/7-7.5 liter	10 in. /2 Gallon
30 cm/10 liter	12 in. /2.5 Gallon
25 cm Hanging Basket	10 in. Hanging Basket
30 cm Hanging Basket	12 in. Hanging Basket

USDA PLANT HARDINESS ZONE AND AVERAGE ANNUAL MINIMUM TEMPERATURE RANGE

Zone	Fahrenheit	Celsius
1	Below -50°F	Below -45.6°C
2a	-50 to -45°F	-42.8 to -45.5°C
2b	-45 to -40°F	-40.0 to -42.7°C
3a	-40 to -35°F	-37.3 to -39.9°C
3b	-35 to -30°F	-34.5 to -37.2°C
4a	-30 to -25°F	-31.7 to -34.4°C
4b	-25 to -20°F	-28.9 to -31.6°C
5a	-20 to -15°F	-26.2 to -28.8°C
5b	-15 to -10°F	-23.4 to -26.1°C
6a	-10 to -5°F	-20.6 to -23.3°C
6b	-5 to 0°F	-17.8 to -20.5°C
7a	0 to 5°F	-15.0 to -17.7°C
7b	5 to 10°F	-12.3 to -14.9°C
8a	10 to 15°F	-9.5 to -12.2°C
8b	15 to 20°F	-6.7 to -9.4°C
9a	20 to 25°F	-3.9 to -6.6°C
9b	25 to 30°F	-1.2 to -3.8°C
10a	30 to 35°F	1.6 to 1.1°C
10b	35 to 40°F	4.4 to 1.7°C
11	above 40°F	above 4.5°C

FERTILIZER RATE TABLE

Fertilizer Rate	PPM Nitrogen	Solution EC (mS/cm)
One	Less than 100 ppm	Less than 0.7 EC
Two	100 to 175 ppm	0.7 to 1.2 EC
Three	175 to 225 ppm	1.2 to 1.5 EC
Four	225 to 300 ppm	1.5 to 2.0 EC
Five	More than 300 ppm	More than 2.0 EC

KEY TO SYMBOLS:

AMP - Amplified Seed
 COT - Coated seed
 DTL - De-tailed seed
 MPL - Multi-seed pellet
 PEL - Pelleted seed
 PMPL - Precision™ Multi-Pellet
 PRM - Primed seed
 RAW - Raw seed
 TRT - Treated seed

Additional culture info online at panamseed.com/culture

NOTE: Growers should use the information presented here as guidelines only. PanAmerican Seed recommends that growers conduct a trial of products under their own conditions. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. It is the responsibility of the grower to read and follow all the current label directions relating to the products. Nothing herein shall be deemed a warranty or guaranty by PanAmerican Seed of any products listed herein. PanAmerican Seed's terms and conditions of sale shall apply to all products listed herein. **Visit panamseed.com for current Terms & Conditions of Sale.**

wave®



ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 46
PERENNIALS	PROPAGATION GUIDE P. 80 / FINISHING GUIDE P. 92 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 112 / FINISHING GUIDE P. 118
CUT FLOWERS	PROPAGATION GUIDE P. 124 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	
HANDPICKED	PROPAGATION GUIDE P. 142 / FINISHING GUIDE P. 156
KITCHEN MINIS	PROPAGATION GUIDE P. 168 / FINISHING GUIDE P. 172



These tables will help you to decide when you need to light the different Wave Petunia family varieties and choose the right variety for you.

For example, if you want to produce Wave petunia during week 6 to week 20 in Kalamazoo, MI (N42.5°), you need to light group 4 varieties for 2 weeks, group 5 varieties for 6 weeks, and group 6 varieties for 8 weeks, but you don't need to use Photoperiodic light for group 1 to 3 varieties.

DAYLENGTH REQUIREMENTS FOR FLOWERING WAVE® PETUNIA VARIETIES

GROUP	MIN. DAYLENGTH REQUIREMENT*	VARIETY
0	9 hours (no supplemental light requirement)	E3 Easy Wave™ White, Easy Wave® Rose Fusion
1	9.5 hours	E3 Easy Wave Coral, Red, Pink and Sky Blue; Easy Wave Lavender Sky Blue
2	10 hours	E3 Easy Wave Blue, Pink Cosmo; Easy Wave Berry Velour, Pink Passion, Burgundy Star, Coral Reef, Neon Rose, Rosy Dawn, Silver, Violet, White and Yellow; Shock Wave® Coral Crush, Denim, Pink Shades and Red
3	10.5 hours	Easy Wave Blue, Burgundy Velour; Shock Wave Pink Vein, Deep Purple, Purple Tie Dye, Rose and White
4	11 hours	Easy Wave Pink, Plum Vein, Red and Red Velour
5	12 hours	Wave Lavender, Misty Lilac, Pink, Purple Classic, Purple** and all Tidal Wave® colours
6	13 hours	Wave Carmine Velour

*Speed of flowering increases at longer daylengths.

**Wave Purple requires 11.5 hours daylength or one week less of Photoperiodic lighting compared to Purple Classic.

PRODUCTION WEEKS WHEN LIGHTING IS REQUIRED FOR DIFFERENT WAVE PETUNIAS BASED ON LATITUDE

(N: Natural Daylength, L: Photoperiodic Lighting—daylength extension to 14 hours or night interruption from 10PM to 2AM by using HID or incandescent lights)

Latitude N25° • For cities such as: Miami, FL

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Group 1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 4	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

Latitude N30° • For cities such as: Jacksonville, FL; New Orleans, LA; San Antonio and Houston, TX

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Group 1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 3	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 4	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

Latitude N35° • For cities such as: Atlanta, GA; Charlotte, NC; Little Rock, AR; Los Angeles, CA; Oklahoma City, OK

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 3	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 4	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Latitude N40° • For cities such as: Baltimore, MD; Cincinnati, OH; Columbus, OH; Denver, CO; Indianapolis, IN; Philadelphia, PA; Salt Lake City, UT

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Group 1	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Latitude N42.5° • For cities such as: Boston, MA; Buffalo, NY; Chicago, IL; Cleveland, OH; Kalamazoo, MI; Grand Rapids, MI; Toledo, OH

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Group 1	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 2	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 3	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 4	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Latitude N45° • For cities such as: Minneapolis, MN; Montreal, QC; Ottawa, ON; Portland, OR; Traverse City, MI; Toronto, ON

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 3	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 4	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Latitude N50° • For cities such as: Seattle, WA; Vancouver, BC; Winnipeg, MB

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Group 1	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 2	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 3	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 4	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 5	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Group 6	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

ANNUALS

PanAmerican Seed®



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CUT FLOWERS PROPAGATION GUIDE P. 124 / FINISHING GUIDE P. 132

VEGETABLES & HERBS

HANDPICKED PROPAGATION GUIDE P. 142 / FINISHING GUIDE P. 156

KITCHEN MINIS PROPAGATION GUIDE P. 168 / FINISHING GUIDE P. 172

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
AGERATUM <i>Ageratum houstonianum</i> High Tide™ F₁ Series	PEL	288	4-5	1	No	3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
ALTERNANTHERA <i>Alternanthera dentata</i> Purple Knight	RAW	288	4	1	Light cover	3-4	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Light	
ALTERNANTHERA <i>Alternanthera brasiliana</i> Purple Prince	RAW	288	4	1	Light cover	3-4	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Light	
ALYSSUM <i>Lobularia maritima</i> Clear Crystal® Series	COT, MPL	288	4	5-6 1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C)	
ALYSSUM <i>Lobularia maritima</i> Easter Bonnet Series	COT, RAW	288	4	5-6	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
ALYSSUM <i>Lobularia maritima</i> Snow Crystals	RAW	288	4	5-6	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
ANGELONIA <i>Angelonia angustifolia</i> Serena® F₁ Series	PEL	288 128	5-6 6-7	1 1	No	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
ANGELONIA <i>Angelonia angustifolia</i> Serenita® F₁ Series	PEL	288 128	5-6 6-7	1 1	No	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
BACOPA <i>Sutera cordata</i> Blutopia® F₁	MPL	288 128	3-4 4	1 1	No	4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	
BACOPA <i>Sutera cordata</i> Pinktopia F₁	MPL	288 128	3-4 4	1 1	No	4	55.0-60.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Do not let the seedlings wilt, as ageratum doesn't like moisture stress.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-71°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-71°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	A paclobutrazol sprench at 1 ppm, 1 week before plug finish, can be useful to control growth when this item is used in combination planters.
	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Sow 1 multi-seed pellet or multiple-sow film-coated seed with 5 to 6 seeds per cell for best performance. Note that the multi-seed pellet form requires a thick layer of vermiculite and sufficient water to dissolve the pellet at sowing; this is especially true in low humidity environments. PGRs are not generally required for plug propagation. It is recommended to incorporate a Downy Mildew preventative fungicide program for alyssum plug propagation.
	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-70°F (16-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Multi-sowing is recommended with 5 to 6 seeds per plug cell. PGRs are not generally required for plug propagation. It is recommended to incorporate a Downy Mildew preventative fungicide program for alyssum plug propagation.
	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Multi-sowing is recommended with 5 to 6 seeds per plug cell. PGRs are not generally required for plug propagation. It is recommended to incorporate a Downy Mildew preventative fungicide program for alyssum plug propagation.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 8 mol-m ⁻² -d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 8-12 mol-m ⁻² -d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 8-15 mol-m ⁻² -d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Light is required for germination. Grow on the dry side, but do not allow plants to wilt.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 8 mol-m ⁻² -d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 8-12 mol-m ⁻² -d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 8-15 mol-m ⁻² -d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Light is required for germination. Grow on the dry side, but do not allow plants to wilt.
	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 640-950 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination.
	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 640-950 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
BACOPA <i>Sutera cordata</i> Snowtopia® F₁	MPL	288 128	3-4 4	1 1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Light	
BEGONIA <i>Begonia x hybrida</i> BabyWing® F₁ Series	PEL	288	7-8	1	No	7-10	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA <i>Begonia x hybrida</i> Dragon Wing® F₁ Series	PEL	288	7-8	1	No	7-10	5.4-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA <i>Begonia x hybrida</i> Gryphon	MPL	288	8-9	1	No	10-12	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-78°F (22-26°C) (l) Light	
BEGONIA <i>Begonia interspecific</i> Megawatt™ F₁ Series	PEL	288	7-8	1	No	7-21	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA (SPREADING) <i>Begonia interspecific</i> Hula™ Series	PEL	288	7-8	1	No	7-10	5.8-6.2 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-77°F (22-25°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> AmeriHybrid® Picotee F₁ Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> AmeriHybrid® Ruffled F₁ Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> On Top® F₁ Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Sun Dancer™ F₁ Series	PEL	288	7-8	1	No	7-14	5.5-6.0 pH 0.5 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	

STAGE 2	STAGE 3	STAGE 4	KEY TIPS
(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-75°F (18-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-70°F (16-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 640-950 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination.
(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep moisture high until the first true leaf develops.
(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 400-2,000 f.c. (4,300-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep moisture high until the first true leaf develops.
(m) Level 4-5 (t) 71-76°F (22-24°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	A saturated media and high relative humidity are critical to successful germination.
(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep soil moist until the first true leaf develops.
(m) Level 4-5 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep moisture high until the first true leaf develops.
(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.
(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.
(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.
(m) Level 4-5 (t) 68-72°F (20-22°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 350-600 f.c. (3,800-6,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-68°F (17-20°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Keep moisture high until the first true leaf develops. Once cotyledons are visible, maintain moist but not saturated media to promote root development. Avoid using ammonium nitrate during plug development, as it may inhibit root growth. A minimum 14-hour photoperiod lighting is required to avoid tuber formation and improve quality. Avoid strong sunlight (>2,000 foot candles). Strong sunlight will cause high leaf temperature and result in burned leaf edges.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CELOSIA <i>Celosia cristata</i> Dracula	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	
CELOSIA <i>Celosia plumosa</i> First Flame™ Series	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
CELOSIA <i>Celosia plumosa</i> Ice Cream Series	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Gekko Green	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Lizzard Leaf	PEL	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
COLEUS <i>Solenostemon scutellarioides</i> Black Dragon	RAW	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS <i>Solenostemon scutellarioides</i> Wizard® Series	RAW	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong Jr.™ Series	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong® Series	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Covered Cherry	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Mint	PEL	288	5-6	1	Light cover	4-5	5.5-5.7 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Crimson Gold	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Dracula is a facultative intermediate-day plant. Our best recommendation is to grow the product at daylength between 11 to 14 hours to get the most uniform product. Daylengths shorter than 11 hours or longer than 14 hours will significantly delay flowering. Too short of a daylength (10 hours or shorter) will cause non-uniform and deformed flowers. Too long of a daylength (16 hours or longer) will cause flower fasciate and leaves clustered close to top of the plant.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent premature flowering, keep growing plugs under daylength of 14 hours or longer due to short day flowering response. Don't allow media to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep media constantly moist; do not allow to dry out. To prevent premature flowering, keep growing plugs under daylength of 14 hours or longer due to short-day flowering response.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent premature flowering, keep growing plugs under daylength of 14 hours or longer due to short day flowering response. Don't allow media to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent premature flowering, keep growing plugs under daylength of 14 hours or longer due to short day flowering response. Don't allow media to dry out. Celosia makes a taproot and is sensitive to root damage. Transplant on time and do not allow seedlings to get rootbound.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Dark Chocolate	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Lime Delight	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Mighty Mosaic	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Pineapple Surprise	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Rose to Lime Magic	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Ruby Heart	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Watermelon	PEL	288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
COLORGRASS® ANEMANTHELE <i>Anemanthele lessoniana</i> Sirocco	MPL	288	5-6	1	No	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-76°F (18-24°C) (l) Optional	
COLORGRASS® CAREX <i>Carex comans</i> Amazon Mist	MPL	288	6-7	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-79°F (20-26°C) (l) Optional	
COLORGRASS® CAREX <i>Carex comans</i> Bronco	MPL	288	6-7	1	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 74-79°F (23-26°C) (l) Optional	
COLORGRASS® CAREX <i>Carex comans</i> Phoenix Green	MPL	288	5-7	1	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 74-79°F (23-26°C) (l) Optional	
COLORGRASS® CAREX <i>Carex buchananii</i> Red Rooster	MPL	288	6-7	1	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 74-79°F (23-26°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Coleus is very sensitive to high salts, particularly high ammonium. During germination, keep ammonium levels lower than 10 ppm. PGRs are generally not needed.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Colour is better under cool and high light conditions. If temperature permits, it is best to produce Sirocco in outdoor conditions.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
COLORGRASS® FESTUCA <i>Festuca cinerea</i> (<i>Festuca glauca</i>) Festina	MPL	288	6-7	1	Yes	3-6	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Optional	
COLORGRASS® ISOLEPIS <i>Isolepis cernua</i> Live Wire	MPL	288	5	1	No	6	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Light	
COLORGRASS® JUNCUS <i>Juncus inflexus</i> Blue Arrows	MPL	288	6-7	1	No	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
COLORGRASS® JUNCUS <i>Juncus tenuis</i> Blue Dart	MPL	288	6-7	1	No	7-8	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
COLORGRASS® JUNCUS <i>Juncus pallidus</i> Javelin	MPL	288	5-6	1	No	5-6	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
COLORGRASS® JUNCUS <i>Juncus ensifolius</i> Starhead	MPL	288	6-7	1	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Optional	
COLORGRASS® JUNCUS <i>Juncus effusus spiralis</i> Twister	MPL	288	7-8	1	No	10-13	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional	
COLORGRASS® KOELERIA <i>Koeleria glauca</i> Coolio	MPL	288	6-7	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-74°F (18-23°C) (l) Light	
COLORGRASS® LUZULA <i>Luzula nivea</i> Lucius	MPL	288	4-7	1	Yes	10-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Light	
COLORGRASS® STIPA <i>Stipa tenuissima</i> Pony Tails	MPL	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-75°F (18-24°C) (l) Optional	
COSMOS <i>Cosmos bipinnatus</i> Antiquity	RAW	288	4-5	1	Yes	3-5	5.7-5.9 pH 0.3-0.5 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Sow uncovered at 65°F (18°C) for fastest and most uniform germination; prefers moist soil.
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Excellent substitute for Draecena Spike.
	(m) Level 3-4 (t) 64-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent leaf bending, a Bonzi 30 ppm spray can be used.
	(m) Level 3-4 (t) 64-79°F (18-26°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-64°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 64-66°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Requires light to germinate.
	(m) Level 3-4 (t) 64-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-64°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Requires light to germinate. Make sure plants don't get too wet.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	Can treat the plugs at early Stage 1 with Bonzi at 15 ppm applied as a spray to control early stretch. Daylength extension in the plug stage may be used to prevent premature flowering.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
COSMOS <i>Cosmos sulphureus</i> Mandarin	RAW	288	3-4	1	Yes	3-4	5.7-5.9 pH 0.3-0.5 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
COSMOS <i>Cosmos bipinnatus</i> Sonata™ Series	RAW	288	4-5	1	Yes	3-4	5.7-5.9 pH 0.3-0.5 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
CROSSANDRA <i>Crossandra infundibuliformis</i> Tropic Series	RAW	288	7	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 78-82°F (26-28°C) (l) Optional	
CUPHEA <i>Cuphea ignea</i> Dynamite	RAW	288	5-6	3-4	Light cover	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Light	
CUPHEA <i>Cuphea ramosissima</i> Pink Shimmer	PMPL	288	4		No	4-5	5.4-5.8 pH 1.5 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Light	
DAHLIA <i>Dahlia x hybrida</i> Figaro™ Series	RAW	288	4-5	1	Yes	3-7	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 3 (t) 68-73°F (20-23°C)	
DIANTHUS <i>Dianthus chinensis</i> Coronet™ F₁ Series	PEL	288	4-6	1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-77°F (18-25°C) (l) Optional	
DIANTHUS <i>Dianthus barbatus</i> Dash™ F₁ Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus barbatus interspecific</i> Dynasty F₁ Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Floral Lace™ F₁ Series	PEL, RAW	288	4-6	1	Yes	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Ideal Select™ F₁ Series	PEL, RAW	288	4-6	1	Yes	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 57-60°F (14-16°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 61-65°F (16-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 61-65°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can treat the plugs at early Stage 1 with Bonzi at 15 ppm applied as a spray to control early stretch. Daylength extension in the plug stage may be used to prevent premature flowering.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 70-72°F (21-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No PGRs required.
	(m) Level 3-4 (t) 72-77°F (22-25°C) (l) 10-12 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 72-77°F (22-25°C) (l) 10-15 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 1 ppm Spray	(m) Level 2-4 (t) 72-77°F (22-25°C) (l) 10-20 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	PGR use should only be done at Stage 3. Use a Bonzi 1 ppm spray in warmer conditions. Use a B-Nine 2,500 ppm spray in cooler conditions.
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 1,500-3,000 f.c. (16,100-32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,500-3,000 f.c. (16,100-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	If a germ chamber is used, move trays to the greenhouse at first sign of germination.
	(m) Level 3-4 (t) 65-73°F (18-23°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
DIANTHUS (INTERSPECIFIC) <i>Dianthus barbatus</i> interspecific Jolt™ F₁ Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DICHONDRA <i>Dichondra repens</i> Emerald Falls	MPL	288	5-6	1	Light cover	4-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
DICHONDRA <i>Dichondra argentea</i> Silver Falls	RAW	288	5	1-2	Light cover	4-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
DUSTY MILLER MARITIMA <i>Cineraria maritima</i> / <i>Senecio cineraria</i> Silverdust	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
ERYSIMUM <i>Erysimum species</i> Citrona® Series	RAW	288	4	1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
EUPHORBIA <i>Euphorbia graminea</i> Glamour	RAW	288 128	4-5 4-5	1 2	Optional	3-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
EUPHORBIA <i>Euphorbia graminea</i> Glitz F₁	RAW	288 128	4-5 4-5	1 2	Optional	3-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
FUSEABLES® <i>Sutera cordata</i> Bacopa Series	PMPL	128 288	4-5	1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Light	
FUSEABLES® <i>Solenostemon scutellarioides</i> Coleus Series	PMPL	128 288	5-6	1	Light cover	4-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 5 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	A small percentage (3-5%) of flowering off-types can be observed with Jolt dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant. Jolt Purple is more sensitive to paclobutrazol than others and the rate should be reduced to half of others.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Spray daminozide at 2,500 ppm one week before transplant to promote branches. Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Spray B-Nine at 2,500 ppm one week before transplant to promote branches. Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn.
	(m) Level 4-2 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-2 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 3-2 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Preventative fungicide for Alternaria is recommended. Keep foliage as dry as possible to reduce risk of diseases.
	(m) Level 4 (t) 65-70°F (18-21°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux)	(m) Level 4-3 (t) 60-65°F (16-18°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 10 ppm Spray	(m) Level 4-2 (t) 55-60°F (13-16°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Avoid temperatures below 62°F (16°C), as cooler temperatures cause foliage yellowing. Plug sizes 128 or larger should be sown at 2 seeds per cell. Apply daminozide spray for height control, with the first application at true leaf stage, followed by a second application 7 days later. An alternative to daminozide is an application of paclobutrazol srench at 2.5 ppm or drench at 0.25-0.5 ppm at radical emergence. This has been effective in controlling hypocotyl stretch. Glamour is vigorous, so this is a key tip. Follow either of these treatments with a single daminozide spray of 2,500 to 5,000 ppm in stage 3.
	(m) Level 4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Avoid temperatures below 62°F (16°C), as cooler temperatures cause foliage yellowing. Plug sizes 128 or larger should be sown at 2 seeds per cell. Can apply daminozide spray for height control, with first application at true leaf stage, followed by a second application 7 days later. An alternative to daminozide would be an application of paclobutrazol srench at 2.5 ppm or drench at 0.25 to 0.5 ppm at radical emergence. This has been effective in controlling hypocotyl stretch. This should be followed by a single daminozide spray of 2,500 to 5,000 ppm in Stage 3.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 59-65°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
FUSEABLES® <i>Petunia x hybrida</i> Petunia Series	PMPL	128 288	5-6	1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
FUSEABLES® <i>Petunia hybrida</i> , <i>Sutera cordata</i> Petunia-Bacopa Series	PMPL	128 288	4-5	1	No	4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 5 (t) 72-76°F (22-24°C) (l) Light	
FUSEABLES® <i>Juncus inflexus</i> - <i>Juncus effusus spiralis</i> Twisted Arrows	MPL	128 288	7-9	1	No	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
GAZANIA <i>Gazania rigens</i> New Day® F₁ Series	COT	288	4-5	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
GAZANIA TETRAPLOID <i>Gazania rigens</i> Sunshine Series	RAW	406	4-5	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	COT	406	5-6	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-75°F (20-24°C) (l) Light	
HELENIUM <i>Helenium amarum</i> Dakota Gold	MPL	288	3-4	1	Yes	3-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-75°F (18-24°C) (l) Optional	
HELICHRYSUM <i>Helichrysum microphyllum</i> (<i>Plectostachys serpyllifolia</i>) Silver Mist	MPL	288	6-7	1	No	6-8	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
HIBISCUS <i>Hibiscus acetosella</i> Mahogany Splendor	RAW	288	2-3	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
IMPATIENS <i>Impatiens walleriana</i> Beacon® F₁ Series	COT	288	4-5	1	No	4-6	6.0-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (l) Light	
IMPATIENS <i>Impatiens walleriana</i> Dazzler® F₁ Series	COT	288	4-5	1	No	3-5	6.0-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 4-5 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 5,000 ppm Spray	Use the same PGR regime as that for standard or spreading petunia. NOTE: Pleasantly Blue responds better to a B-Nine spray than it does to a Bonzi spray or drench, so the use of B-Nine is preferred for this variety.
	(m) Level 4-5 (t) 68-76°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 2-5 ppm Spray	(m) Level 2-4 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Do not use B-Nine/Alar or Topflor for height control, as they will stunt bacopa.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	PGRs are generally not required for producing gazania plugs. Avoid excessive salt accumulation/ high EC in the plug media during plug production, as this will cause leaf tip or margin burn.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	PGRs are generally not required for plug production. Avoid excessive salt accumulation in the plug media during plug production, as this will cause leaf tip or margin burn.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	If needed, young plants respond well to daminozide.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Daylength affects plant growing habit and crop time. See GrowerFacts for details.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Do not overwater. Avoid watering plants late in the day, as constant wet foliage may make plants susceptible to Botrytis. Does not require pinching.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/chlormequat chloride tank mix 2,500/300 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Light for germination is optional.
	(m) Level 2-4 (t) 64-73°F (18-23°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Do not cover seed. Beacon White is slightly slower in stages 1 and 2 than other Beacon colours.
	(m) Level 2-4 (t) 64-73°F (18-23°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Do not cover seed.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
IMPATIENS <i>Impatiens walleriana</i> Super Elfin® F₁ Series	RAW	288	4-5	1	No	3-5	6.0-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (l) Light	
IMPATIENS <i>Impatiens walleriana</i> Super Elfin® XP F₁ Series	RAW	288	4-5	1	No	3-5	6.0-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (l) Light	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape™ F₁ Series	RAW	288 128	4-5 5-6	1 1	Light cover	4-5	5.8-6.2 pH 0.05-0.07 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape™ XL F₁ Series	RAW	288 128	4-5 5-6	1 1	Light cover	4-5	5.8-6.2 pH 0.05-0.07 mmhos/cm	(m) Level 4-5 (t) 72-77°F (22-25°C) (l) Light	
IRESENE <i>Iresine herbstii</i> Purple Lady	RAW	288	4-5	1	Yes	3-4	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C)	
LISIANTHUS <i>Eustoma grandiflorum</i> Florida F₁ Series	PEL	288 512	8 6-7	1 1	No	8-12	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Light	
LOBELIA <i>Lobelia erinus</i> Crystal Palace	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
LOBELIA <i>Lobelia erinus</i> Rapid Series	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
LOBELIA <i>Lobelia erinus</i> Regatta Series	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
LOBELIA <i>Lobelia erinus</i> Riviera Series	MPL, RAW	288	4-5	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 2-4 (t) 64-73°F (18-23°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Do not cover seed.
	(m) Level 2-4 (t) 64-73°F (18-23°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Do not cover seed.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray or paclobutrazol 1 ppm Spray	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Moisture levels surrounding the seed are very important in stage 1 and 2. Light is required for optimal germination, so is high relative humidity. A light cover of vermiculite may be beneficial to raise humidity around the seed. White Shimmer may be 2 days slower. Avoid temperatures lower than 62°F/17°C. Temperatures at or above 85°F/29°C result in slower germination speed and lower germination results. In stage 3, repeat daminozide 2,500-5,000 ppm spray if necessary.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray or paclobutrazol 1 ppm Spray	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 65-72°F (18-22°C) (l) 450-700 f.c. (4,800-7,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Moisture levels surrounding the seed are very important in stage 1 and 2. Light is required for optimal germination, so is high relative humidity. A light cover of vermiculite may be beneficial to raise humidity around the seed. Avoid temperatures lower than 62°F/17°C. Temperatures at or above 85°F/29°C result in slower germination speed and lower germination results. In stage 3, repeat daminozide 2,500-5,000 ppm spray if necessary.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Reddish foliage indicates that plants need more feed. High light, especially with low humidity, results in puckered foliage.
	(m) Level 2-3 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 1-3 (t) 65-68°F (18-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-3 (t) 62-65°F (17-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain a 6.5 to 6.8 pH. Do not hold lisianthus plugs until they become rootbound, as basal branching will be inhibited. Rootbound plugs tend to flower shorter and non-uniformly.
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Marvel II™ F₁ Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Taishan® F₁ Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Vanilla F₁	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Bonanza™ Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Durango® Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Fireball	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Flamenco	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Hot Pak™ Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Janie Series	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Strawberry Blonde	COT, DTL	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	
NEMESIA <i>Nemesia foetans</i> Poetry™ F₁ Series	PEL	288	4	4	Yes	4-5	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
NEMESIA <i>Nemesia strumosa</i> Sundrops Mixture	RAW	288	4	1	No	3-5	5.5-6.2 pH 0.75 mmhos/cm	(t) 68-70°F (20-21°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Copper Prince F₁	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. PGRs are not generally required.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. PGRs are not generally required.
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep soil moisture high until radicle emergence; reduce moisture levels after radicle penetrates the medium. Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. PGRs are not generally required.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 68-75°F (20-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Seedlings may be more stretchy if germinating under dark conditions. Do not use a growth regulator before radicle emergence, as this can delay or stop germination.
				Grow cool, with an optimum temperature of 55°F (13°C).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plugs allowed to become rootbound or stressed by drought or nutrient deficiency will not perform well after transplant. Use PGRs only if necessary to tone plugs. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jade Princess F₁	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jester F₁	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Baron F₁	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Majesty	RAW	128	2-3	2-3	Yes	2-3	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-78°F (22-26°C) (l) Optional	
ORNAMENTAL MINT <i>Mentha requienii</i> Mini Mint	MPL	288	4-5	1	Yes	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
ORNAMENTAL OREGANO <i>Origanum x hybrida</i> Kirigami	RAW	288	5-6	4	No	4-5	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	
OSTEOSPERMUM <i>Osteospermum ecklonis</i> Akila® F₁ Series	RAW	288 105	4-5 5	1 1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
PANSY <i>Viola x wittrockiana</i> Frizzle Sizzle F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PANSY <i>Viola x wittrockiana</i> Matrix® F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
PANSY <i>Viola x wittrockiana</i> Panola® XP F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Jade Princess is cold sensitive. Plugs allowed to become rootbound or stressed by drought or nutrient deficiency will not perform well after transplant. Use PGRs only if necessary to tone plugs. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. Keep Jade Princess above 60°F (16°C). See GrowerFacts for details.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well after transplant. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well after transplant. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well after transplant. Seed may also be direct sown to the final container, reducing total crop time by 2 weeks. See GrowerFacts for details.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Maintain constant media moisture, avoiding excessive wet or dry.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-2 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000-1,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 3,500-5,000 f.c. (37,700-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000-1,500 ppm Spray	Do not plant plug too deep, same level as medium. Provide an active growing climate and avoid growing wet. Grow on dry side.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-3,000 ppm Spray	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Using a larger liner such as a 105 at 1 spc will promote more branching and help reduce total crop time. PGRs are generally not needed. If necessary, a daminozide 2,500 ppm spray applied 3 weeks after sowing will tone plugs.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4. Northwestern Europe: Can use 1 to 2 applications of B-Nine/Alar (daminozide) at 1,280 ppm (1.5 g/l of 85% formulation or 2 g/l of 64% formulation).
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PANSY <i>Viola x wittrockiana</i> Spring Matrix™ F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PANSY (SPREADING) <i>Viola x wittrockiana</i> Cool Wave® F₁ Series	PRM	288	4-5	1	Yes	2-3	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
PENTAS <i>Pentas lanceolata</i> Butterfly™ F₁ Series	PEL	288	6-8	1	No	6-9	6.5-6.8 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 75°F (24°C) (l) Light	
PENTAS <i>Pentas lanceolata</i> Glitterati™ F₁ Series	PEL	288	6-7	1	No	6-9	6.5-6.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 75°F (24°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray or daminozide/ chlormequat chloride tank mix 1,500/250-2,500/500 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500-2,500 ppm Spray or daminozide/ chlormequat chloride tank mix 1,500/250-2,500/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4. Cool Wave varieties do not respond uniformly to ancymidol in plug production, so its use is not recommended. Using 105/128 plugs promotes stronger lateral growth and quicker finish. If using a 288, transplant a younger, actively growing plug that is not rootbound.
	(m) Level 4 (t) 75°F (24°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 3,500-5,000 f.c. (37,700-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	Pentas have the ability to naturally lower the media pH. High iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone. Extremely low pH can induce iron and manganese toxicity (brown or tan lesions on the foliage); use a base-forming fertilizer, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution; rinse foliage after application to avoid phytotoxicity. Calcium and Magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. Use fertilizers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels. PGR Note: Rates of up to 5,000 ppm daminozide or 10 ppm paclobutrazol have been found to be effective under warmer growing conditions. Temperature differential (DIF) can also be used to minimize height.
	(m) Level 4 (t) 75°F (24°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 3,500-5,000 f.c. (37,700-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	Pentas have the ability to naturally lower the media pH. High iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone. Extremely low pH can induce iron and manganese toxicity (brown or tan lesions on the foliage); use a base-forming fertilizer, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution; rinse foliage after application to avoid phytotoxicity. Calcium and Magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. Use fertilizers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels. PGR Note: Rates of up to 5,000 ppm daminozide or 10 ppm paclobutrazol have been found to be effective under warmer growing conditions. Temperature differential (DIF) can also be used to minimize height.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PENTAS <i>Pentas lanceolata</i> Lucky Star® F₁ Series	PEL	288	6-7	1	No	6-9	6.4-6.6 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 75°F (24°C) (l) Light	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Black Pearl	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Calico F₁	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Midnight Fire	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Purple Flash	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sangria F₁	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sedona Sun	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA <i>Petunia x hybrida</i> Daddy® F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 75°F (24°C) (l) 4-6 mol·m ⁻² ·d ⁻¹ , 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-75°F (20-24°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 10-12 mol·m ⁻² ·d ⁻¹ , 3,500-5,000 f.c. (37,700-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray or paclobutrazol 5 ppm Spray	Pentas have the ability to naturally lower the media pH. High iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone. Extremely low pH can induce iron and manganese toxicity (brown or tan lesions on the foliage); use a base-forming fertilizer, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution; rinse foliage after application to avoid phytotoxicity. Calcium and Magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. Use fertilizers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels. PGR Note: Rates of up to 5,000 ppm daminozide or 10 ppm paclobutrazol have been found to be effective under warmer growing conditions. Temperature differential (DIF) can also be used to minimize height.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PETUNIA <i>Petunia x hybrida</i> Debonair™ F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Dreams™ F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Ez Rider® F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Lo Rider™ F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Madness® F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Mirage F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Pretty Flora™ F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Pretty Grand™ F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA <i>Petunia x hybrida</i> Sophistica® F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	PGR options include paclobutrazol or flurprimidol.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	Genetically compact petunia needs less to no PGR after transplant.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	PGR options include paclobutrazol or flurprimidol.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PETUNIA <i>Petunia x hybrida</i> Supercascade F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75-1.0 mmhos/cm	(m) Level 4-5 (t) 72-76°F (22-24°C) (l) Light	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Cascade F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Madness™ F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Duo F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Glorious F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Pirouette F₁ Series	PEL, RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> E3 Easy Wave™ F₁ Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Easy Wave® F₁ Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Shock Wave® F₁ Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Germination on some varieties may be improved by a 25 to 50 ppm N application of potassium nitrate after sowing.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Tidal Wave® F₁ Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) Optional	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Wave® F₁ Series	PEL	288 128	4-6 5-7	1 1	No	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 72-75°F (22-24°C) (l) Optional	
PHLOX <i>Phlox drummondii</i> 21st Century F₁ Series	PRM	288	4-5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Dark	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Crest	RAW	288	5-6	1	No	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Light	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Shield	PEL	288	5-6	1	No	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-72°F (18-22°C) (l) Light	
PORTULACA <i>Portulaca grandiflora</i> Happy Hour™ F₁ Series	MPL, RAW	288	4-5	1 4-6	No	2-3	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-79°F (22-26°C) (l) Light	
PORTULACA <i>Portulaca grandiflora</i> Happy Trails™ F₁ Series	MPL, RAW	288	4-5	1 4-6	No	2-3	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-79°F (22-26°C) (l) Light	
PRIMULA <i>Primula acaulis</i> Heritage Crème F₁	RAW	288	5-6	1	Light cover	7-10	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 64-68°F (18-20°C) (l) Optional	
PRIMULA <i>Primula acaulis</i> Primlet® Series	RAW	288	5-6	1	Light cover	7-10	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 64-68°F (18-20°C) (l) Optional	
PURSLANE <i>Portulaca oleracea</i> Toucan Series	RAW	288	4-5	4	No	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional	
RUELLIA <i>Ruellia brittoniana</i> (<i>Ruellia tweediana</i>) Southern Star Series	RAW	288	5-6	1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 8-12 mol·m ⁻² ·d ⁻¹ , 2,500-4,000 f.c. (26,900-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	(m) Level 2-4 (t) 60-65°F (16-18°C) (l) 8-15 mol·m ⁻² ·d ⁻¹ , 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500-5,000 ppm Spray	
	(m) Level 3-4 (t) 65-72°F (18-22°C) (l) 1,000 f.c. (10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,000 f.c. (26,900-32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Cover thoroughly with coarse vermiculite. Darkness is required for germination.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 600-1,200 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Does not need pinching. If needed, a daminozide spray will work to tone the plugs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 65-72°F (18-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Does not need pinching. One to two foliar sprays of daminozide may be needed to tone plugs. Daminozide applications at a rate of 600 to 1,500 ppm are best for Northern European conditions.
	(m) Level 3 (t) 71-73°F (22-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent plants from rosetting, sow seeds when the natural daylength is longer than 10 hours and 30 minutes. If sowing earlier than suggested, provide long day conditions (daylength extension to 12 to 13 hours) during all phases of production until critical natural daylength is achieved.
	(m) Level 3 (t) 71-73°F (22-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	To prevent plants from rosetting, sow seeds when the natural daylength is longer than 10 hours. If sowing earlier than suggested, provide long day conditions (daylength extension to 12 to 13 hours) during all phases of production until critical natural daylength is achieved.
	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 66-72°F (19-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid too high light levels (>3,000 f.c.) to prevent leaf damage.
	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 500-1,500 f.c. (5,400-16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 60-62°F (16-17°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid too high light levels (>3,000 f.c.) to prevent leaf damage.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 64-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 64-68°F (18-20°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SALVIA <i>Salvia canariensis</i> Lancelot	RAW	288	4-5	1	No	3-5	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Lighthouse Series	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Red Hot Sally II	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Scarlet King	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA <i>Salvia splendens</i> Vista™ Series	RAW	288	4-5	1	Yes	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
SALVIA INTERSPECIFIC <i>Salvia longispicata x farinacea</i> Big Blue	RAW	288 128	3-4 4-5	1 1	Optional	4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-25°C) (l) Optional	
SNAPDRAGON <i>Antirrhinum majus</i> Rocket F₁ Series	RAW	288	5-6	1	Light cover	4-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-75°F (18-24°C) (l) Optional	
SNAPDRAGON <i>Antirrhinum majus</i> Snapshot™ F₁ Series	RAW	288	5-6	1	Light cover	4-6	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
STOCK <i>Matthiola incana</i> Hot Cakes Series	RAW	288	4-5	1	Yes	3-4	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
THUNBERGIA <i>Thunbergia alata</i> Susie™ Series	RAW	288	4-5	1	Light cover	6-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 59-68°F (15-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 59-68°F (15-20°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-4 (t) 59-68°F (15-20°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Maintain level 4 moisture during Stage 1. Saturated media (level 5) can reduce germination. Daminozide 2,500 ppm spray or paclobutrazol 5 ppm spray are equally effective on <i>Salvia canariensis</i> plugs. Apply in Stage 3 and repeat if necessary to control stretch.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 72-75°F (22-24°C) (l) 1,500 f.c. (16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	<i>Salvia</i> is very sensitive to high salt during early plug stages.
	(m) Level 3-4 (t) 68-77°F (20-25°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-72°F (20-22°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 3,000 f.c. (32,300 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	<i>Salvia</i> Big Blue is responsive to daminozide 2,500 ppm spray, or ancymidol 5 ppm spray, or paclobutrazol 5 ppm spray. Recommended first application 2 weeks after sow, and repeat in 7-10 days as needed. Rates recommended are for the Midwest, and will need to be adjusted for your location and conditions. Lighting the plug when growing under low DLI and short days (with supplemental and daylength extension) will hasten flower initiation.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 450-1,500 f.c. (4,800-16,100 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 10 ppm Spray	(m) Level 3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 10 ppm Spray	Plant Growth Regulators: Use DIF whenever possible. A-Rest sprayed 3 and 4 weeks after sowing at 10 ppm is effective in controlling height.
	(m) Level 3-4 (t) 60-70°F (16-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Seedlings of double-flowering plants can be selected during plug production based on cotyledon leaf colour (double: pale green; yellow and singles: darker green). Once cotyledons have fully expanded (approximately 11 to 12 days from sowing), seedlings can be moved into a cold chamber/storage set at 40 to 45°F (4 to 7°C) for a period of approximately 3 to 4 days. Hold them in the chamber for a maximum of 4 days, after which they can be grown at cool temperatures (50 to 60°F/10 to 15°C) in a greenhouse until selection. It is possible to differentiate the seedlings starting after they come out of the cold chamber.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Pre-soak seed overnight for faster germination.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
TORENIA <i>Torenia fournieri</i> Kauai™ Series	PEL	288	5-6	1	No	4-6	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Light	
VERBENA <i>Verbena x hybrida</i> Quartz Series	PRM, RAW	288	5-6	1	Yes	4-6	5.8-6.2 pH 0.5-0.7 mmhos/cm	(m) Level 3 (t) 72-75°F (22-24°C) (l) Optional	
VERBENA <i>Verbena x hybrida</i> Quartz XP Series	PRM, RAW	288	4-5	1	Yes	4-6	5.8-6.2 pH 0.5-0.7 mmhos/cm	(m) Level 3 (t) 72-75°F (22-24°C) (l) Optional	
VINCA <i>Catharanthus roseus</i> Mediterranean XP Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Optional	
VINCA <i>Catharanthus roseus</i> Pacifica XP Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Optional	
VINCA <i>Catharanthus roseus</i> Tattoo™ Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Optional	
VINCA <i>Catharanthus roseus</i> Titan™ F₁ Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Optional	
VINCA <i>Catharanthus roseus</i> Valiant™ F₁ Series	RAW	288	5	1	Yes	3-5	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 75-78°F (24-26°C) (l) Optional	
VIOLA <i>Viola cornuta</i> Frizzle Sizzle Mini F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
VIOLA <i>Viola cornuta</i> Quicktime™ F₁ Series	PRM	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-67°F (18-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 4 (t) 70-72°F (21-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture in plug media during germination Stage 1. If needed, 1 to 3 applications of B-Nine/Alar (daminozide) at 1,250 ppm (1.5 g/l 85% formulation or 2 g/l 64% formulation) spray has been tested and shown to be effective. In warmer climates, it is also possible to apply A-rest (ancymidol) at 10 ppm (37.6 ml/l, 0.0264% formulation) as a foliar spray.
	(m) Level 4 (t) 70-72°F (21-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture in plug media during germination Stage 1. If needed, 1 to 3 applications of B-Nine/Alar (daminozide) at 1,250 ppm (1.5 g/l 85% formulation or 2 g/l 64% formulation) spray has been tested and shown to be effective. In warmer climates, it is also possible to apply A-rest (ancymidol) at 10 ppm (37.6 ml/l, 0.0264% formulation) as a foliar spray.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Bottom heat during production can increase yield potential and decrease crop time.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth Regulator information is provided for reference and does not apply to all growing condition/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4, preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth Regulator information is provided for reference and does not apply to all growing condition/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Bottom heat during production can increase yield potential and decrease crop time.
	(m) Level 3-4 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 70-72°F (21-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2-5 ppm Spray	(m) Level 2-4 (t) 70-72°F (21-22°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2-5 ppm Spray	Bottom heat during production can increase yield potential and decrease crop time. At Stage 3 and Stage 4 preventive fungicide applications are recommended for Thielaviopsis, Pythium, Phytophthora and Rhizoctonia. Growth Regulator information is provided for reference and does not apply to all growing condition/locations. Review your crop prior to use.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 60-70°F (16-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
VIOLA <i>Viola cornuta</i> Sorbet® F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
VIOLA <i>Viola cornuta</i> Sorbet® XP F₁ Series	PRM, RAW	288	5	1	Yes	3-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
ZINNIA <i>Zinnia marylandica</i> Double Zahara™ Series	COT, RAW	288	3	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	
ZINNIA <i>Zinnia angustifolia</i> Star Series	RAW	288	4-5	1	Yes	2-5	5.8-6.2 pH 0.75 mmhos/cm	(t) 70-73°F (21-23°C)	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) State Fair Series	RAW	288	4-5	1	Yes	2-5	5.8-6.2 pH 0.75 mmhos/cm	(t) 70-73°F (21-23°C)	
ZINNIA <i>Zinnia marylandica</i> Zahara® Series	COT, RAW	288	3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) Zesty™ Series	COT	288	3-4	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-73°F (20-23°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 60-70°F (16-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	(m) Level 2-4 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 5-10 ppm Spray or daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions in Stages 3 and 4.
	(m) Level 3-4 (t) 68-76°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-76°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,250- 2,500 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,250- 2,500 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-75°F (20-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	Do not hold the plugs too long, as this may cause delay in flowering.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
AGERATUM <i>Ageratum houstonianum</i> High Tide™ F₁ Series	288	(day) 70-80°F (21-27°C) (night) 58-62°F (14-17°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
ALTERNANTHERA <i>Alternanthera dentata</i> Purple Knight	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Short Day	
ALTERNANTHERA <i>Alternanthera brasiliana</i> Purple Prince	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Short Day	
ALYSSUM <i>Lobularia maritima</i> Clear Crystal® Series	288	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ALYSSUM <i>Lobularia maritima</i> Easter Bonnet Series	288	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ALYSSUM <i>Lobularia maritima</i> Snow Crystals	288	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ANGELONIA <i>Angelonia angustifolia</i> Serena® F₁ Series	288 128	(day) 65-76°F (18-24°C) (night) 65-67°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
ANGELONIA <i>Angelonia angustifolia</i> Serenita® F₁ Series	288 128	(day) 65-76°F (18-24°C) (night) 65-67°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Blutopia® F₁	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Pinktopia F₁	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
BACOPA <i>Sutera cordata</i> Snowtopia® F₁	288 128	(day) 60-75°F (16-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
BEGONIA <i>Begonia x hybrida</i> BabyWing® F₁ Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	6.0-6.5 pH 1.0-1.2 mmhos/cm	Day Neutral	
BEGONIA <i>Begonia x hybrida</i> Dragon Wing® F₁ Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.4-6.0 pH 1.0 mmhos/cm	Facultative Short Day Long day will delay the flower initiation up to 3 to 4 weeks.	
BEGONIA <i>Begonia x hybrida</i> Gryphon	288	(day) 65-75°F (18-24°C) (night) 62-67°F (17-19°C)	5.4-6.0 pH 1.0 mmhos/cm	Facultative Short Day Gryphon is a foliage plant, but plant could flower when grown under a daylength of 11 hours or shorter. Under daylength longer than 11 hours, flowering will be significantly delayed or plants will never flower.	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 7-9 (weeks), Late Spring, PGR daminozide 2,500-3,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Late Spring, PGR daminozide 2,500-3,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-9 (weeks), Late Spring, PGR daminozide 2,500-3,500 ppm Spray	
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray	Grow plants with daylength longer than 12 hours to maintain vegetative growth. Growing under high light conditions will result in deeper purple foliage.
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 15-20 ppm Spray	Alternanthera Purple Prince is grown for its burgundy foliage. Grow plants with daylength longer than 12 hours to maintain vegetative growth. Growing under high light conditions will result in deeper purple foliage. Pinching is not needed.
306 Pack/1801 , 1 (ppp), 4-6 (weeks), Late Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7 (weeks), Late Spring	Cool-season crop can be grown with little or no heat. Grow outdoors or at cool night temperatures for best colour development.
Cell Pack , 1 (ppp), 5 (weeks), Late Spring	Drench with a fungicide at transplant. Cool-season crop can be grown with little or no heat. Grow outdoors or at cool night temperatures for best colour development.
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Late Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Late Spring	Cool-season crop can be grown with little or no heat. Grow outdoors or at cool night temperatures for best colour development.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray	Angelonia grows slowly when the temperature is below 64°F (18°C). Recommended DLI range of 12 to 24 mol·m ⁻² ·d ⁻¹ . If growing in warmer climates, a paclobutrazol drench of 5-10 ppm can be applied 2 weeks after transplant instead of the daminozide/chlormequat chloride tank mix. Do not pinch plants. Pinching will result in uneven plant habit and a delay of flowering.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500-2,500/750 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500-2,500/750 ppm Spray	Angelonia grows slowly when the temperature is below 64°F (18°C). Recommended DLI range of 12 to 24 mol·m ⁻² ·d ⁻¹ . Serenita requires less PGRs than Serena, as it is more compact and naturally shorter. It may not need any PGRs, especially under cool conditions. If necessary, use a tank mix of B-Nine/Alar (daminozide) 2,500 ppm mixed with Cycocel (chlormequat) 500 to 750 ppm. If growing in warmer climates, a paclobutrazol drench of 3 to 5 ppm can be applied 2 weeks after transplant instead of the daminozide/chlormequat chloride tank mix. Do not pinch plants. Pinching will result in uneven plant habit and a delay of flowering.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination. Avoid both excessive watering and drought. Do not let plants wilt, as this will result in flower/bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination. Avoid both excessive watering and drought. Do not let plants wilt, as this will result in flower/bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 5-6 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Use of PGRs or growing outdoors will give a much more controlled plant. Be sure to water multi-seed pellets thoroughly and give light for best germination. Avoid both excessive watering and drought. Do not let plants wilt, as this will result in flower/bud drop.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 6-8 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 6-8 (weeks), Spring	After transplant, if necessary, a very light spray of a tank mix of Cycocel 300 ppm and B-Nine 2,500 ppm can be used.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-9 (weeks), Late Spring 8"/2 Gallon/20 cm , 3 (ppp), 8-10 (weeks), Late Spring	Dragon Wing will flower faster under short day conditions. After transplant, use Bonzi 3 to 5 ppm spray for height control when needed.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 5-6 (weeks), Summer 8"/2 Gallon/20 cm , 3 (ppp), 7-8 (weeks), Summer 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 9-11 (weeks), Summer	To avoid flowering as a foliage plant, grow under daylength longer than 11 hours.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
BEGONIA <i>Begonia interspecific</i> Megawatt™ F₁ Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.4-6.0 pH 1.0-1.2 mmhos/cm	Facultative Short Day	
BEGONIA (SPREADING) <i>Begonia interspecific</i> Hula™ Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	6.0-6.5 pH 1.0-1.2 mmhos/cm	Day Neutral	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> AmeriHybrid® Picotee F₁ Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> AmeriHybrid® Ruffled F₁ Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain a minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> On Top® F₁ Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain a minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
BEGONIA (TUBEROUS) <i>Begonia x tuberosa</i> Sun Dancer™ F₁ Series	288	(day) 70-72°F (21-22°C) (night) 62-68°F (17-20°C)	5.5-5.8 pH 1.0-1.5 mmhos/cm	Obligate Long Day Maintain a minimum of 14-hour photoperiod of light for active growth. A photoperiod of less than 12 hours will result in small single flowers and an uneven crop, and plants will form tubers.	
CELOSIA <i>Celosia cristata</i> Dracula	288	(day) 65-72°F (18-22°C) (night) 59-65°F (15-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative intermediate response. It will flower the fastest at daylengths from 12 to 14 hours. Daylengths shorter than 11 hours or longer than 15 hours will significantly delay flowering and can affect flower uniformity and form.	
CELOSIA <i>Celosia plumosa</i> First Flame™ Series	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
CELOSIA <i>Celosia plumosa</i> Ice Cream Series	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Gekko Green	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
CELOSIA FOLIAGE, SOL™ <i>Celosia argentea</i> Lizzard Leaf	288	(day) 65-70°F (18-21°C) (night) 59-61°F (15-16°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
COLEUS <i>Solenostemon scutellarioides</i> Black Dragon	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS <i>Solenostemon scutellarioides</i> Wizard® Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	

FINISHING PROGRAMS	KEY TIPS
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-9 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Summer 12" Pot or HB/5 Gallon/30 cm , 3 (ppp), 9-11 (weeks), Summer	All Megawatt varieties flower faster under daylength of 12 hours or shorter. Longer daylength could delay flowering 4 to 7 days for all Megawatt varieties. If necessary, it is effective to spray paclobutrazol at 2 to 5 ppm, depending on environmental conditions, plant growing stage, and varieties for Megawatt plant size control. Repeat as needed.
306 Pack/1801 , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 6-8 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 3-4 (ppp), 8-10 (weeks), Spring	Growers can use PGRs on Begonia Hula only when necessary. Hula responds well to a tank mix of daminozide (B-Nine/Alar) and Chlormequat (CCC). Daminozide (B-Nine/Alar) 2,500 ppm. Chlormequat (CCC) 150 ppm and 300 ppm. We do not advise the use of Bonzi, as it could cause stunting in the plants.
5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 14-15 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 14-15 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 12-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 12-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 12-13 (weeks), Spring, PGR chlormequat chloride 300-500 ppm Spray	Do not overwater plants to prevent root issues. Keep humidity low (between 40 to 60%) to avoid problems with powdery mildew. For height control, a negative DIF of 2 to 3 degrees is very effective to prevent stretching of plants. When using a negative DIF, less to no PGRs are needed.
5"/6"/1 Gallon/15 cm , 1 (ppp), 6-9 (weeks), Spring	Flowers fastest between 12 to 14-hour days.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Summer	First Flame varieties do not need PGRs. If necessary, variety is responsive to B-Nine/Alar (daminozide) spray at 2,000 to 3,000 ppm (2.4 to 3.5 g/l, 85% formulation or 3.1 to 4.7 g/l 64% formulation) depending on weather. Keep media constantly moist to prevent premature flowering. First Flame Purple is around one week faster to flower compared to the rest of the series.
306 Pack/1801 , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Spring 306 Pack/1801 , 1 (ppp), 5-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Summer	Keep medium constantly moist and do not allow to dry out. No PGRs are needed. If needed, Celosia Ice Cream is responsive to B-Nine/Alar (daminozide) spray at 2,000 to 3,000 ppm (2.4 to 3.5 g/l, 85% formulation or 3.1 to 4.7 g/l 64% formulation) depending on weather.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Summer	Celosia Foliage do not need PGRs. Keep media constantly moist to prevent premature flowering. Foliage colour tends to be green when kept indoors, but more intense and turning more burgundy when the plant is left outdoors under higher light levels.
5"/6"/1 Gallon/15 cm , 1 (ppp), 7-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Summer	Celosia Foliage do not need PGRs. Keep media constantly moist to prevent premature flowering. Foliage colour tends to be green when kept indoors, but more intense and more burgundy-red when the plant is left outdoors under higher light levels.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring	Ethephon can be applied to increase branching and control height.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Ethephon can be applied to increase branching and control height.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong Jr.™ Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SHADE <i>Solenostemon scutellarioides</i> Kong® Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Covered Cherry	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Chocolate Mint	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Crimson Gold	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Dark Chocolate	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Lime Delight	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Mighty Mosaic	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Pineapple Surprise	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Do not pinch, as it will result in smaller leaves and delay crop time. Ethephon can be applied to increase branching and control height. Growth Regulators: Kong and Kong Jr. are well branched and have short internodes, but because of the large leaves, the plants tend to get too wide and need more space before they get too tall. Growth regulators are generally not needed. But if necessary, B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Ethephon can be applied to increase branching and control height. Do not pinch, as it will result in smaller leaves and delay crop time. Note: Kong Salmon Pink might appear dark bronze under some very low light conditions. Later in the season, and in Summer landscape, colour will appear Salmon Pink. Growth Regulators: Kong and Kong Jr. are well branched and have short internodes, but because of the large leaves, the plants tend to get too wide and need more space before they get too tall. Growth regulators are generally not needed. But if necessary, B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Rose to Lime Magic	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Ruby Heart	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLEUS, PREMIUM SUN <i>Solenostemon scutellarioides</i> Watermelon	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
COLORGRASS® ANEMANTHELE <i>Anemanthele lessoniana</i> Sirocco	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex comans</i> Amazon Mist	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex comans</i> Bronco	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex comans</i> Phoenix Green	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® CAREX <i>Carex buchananii</i> Red Rooster	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® FESTUCA <i>Festuca cinerea (Festuca glauca)</i> Festina	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® ISOLEPIS <i>Isolepis cernua</i> Live Wire	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus inflexus</i> Blue Arrows	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus tenuis</i> Blue Dart	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus pallidus</i> Javelin	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus ensifolius</i> Starhead	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® JUNCUS <i>Juncus effusus spiralis</i> Twister	288	(day) 66-74°F (19-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
COLORGRASS® KOELERIA <i>Koeleria glauca</i> Coolio	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	<p>Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.</p>
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	<p>Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.</p>
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring	<p>Excessive internode elongation under low light or crowding. Florel (ethephon) can be applied for promoting increased branching and height control if necessary. A rate of 300 ppm (7.69 ml/l 3.9% formulation or 0.63 ml/l of 48% formulation) at 2 to 3 weeks after transplanting is effective. Florel also delays flowering. Optional PGR: B-Nine/Alar (daminozide) 2,500 to 5,000 ppm (3.0 to 6.0 g/l 85% formulation or 4.0 to 8.0 g/l of 64% formulation) can be applied for height control at 2 to 3 weeks after transplanting. Repeat if necessary.</p>
306 Pack/1801 , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-10 (weeks), Spring	<p>Colour is better under cool and high light conditions. If temperature permits, it is best to produce Sirocco in outdoor conditions.</p>
306 Pack/1801 , 1 (ppp), 9-10 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 10-11 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-7 (weeks), Spring	<p>Sow uncovered at 65°F (18°C) for fastest and most uniform germination; prefers moist soil.</p>
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring	<p>Excellent substitute for Draecena Spike.</p>
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Spring	<p>To prevent leaf bending, Bonzi 30 ppm spray can be used.</p>
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring	
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring	<p>Do not bury plugs too deeply when transplanting.</p>

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COLORGRASS® LUZULA <i>Luzula nivea</i> Lucius	288	(day) 66-74°F (19-23°C) (night) 64-66°F (18-19°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COLORGRASS® STIPA <i>Stipa tenuissima</i> Pony Tails	288	(day) 62-74°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
COSMOS <i>Cosmos bipinnatus</i> Antiquity	288	(day) 65-75°F (18-24°C) (night) 61-65°F (16-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Cosmos flowers faster under short days. Daylength extension in the plug stage to more than 12 hours daylength may be used to prevent premature flowering.	
COSMOS <i>Cosmos sulphureus</i> Mandarin	288	(day) 60-64°F (16-18°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
COSMOS <i>Cosmos bipinnatus</i> Sonata™ Series	288	(day) 64-68°F (18-20°C) (night) 60-64°F (16-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Cosmos flowers faster under short days. Daylength extension in the plug stage to more than 12 hours daylength may be used to prevent premature flowering.	
CROSSANDRA <i>Crossandra infundibuliformis</i> Tropic Series	288	(day) 75-80°F (24-27°C) (night) 68-75°F (20-24°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Day Neutral	
CUPHEA <i>Cuphea ignea</i> Dynamite	288	(day) 70-75°F (21-24°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
CUPHEA <i>Cuphea ramosissima</i> Pink Shimmer	288	(day) 70-75°F (21-24°C) (night) 65-68°F (18-20°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Day Neutral	
DAHLIA <i>Dahlia x hybrida</i> Figaro™ Series	288	(day) 52-60°F (11-16°C) (night) 52-60°F (11-16°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	Obligate Long Day Figaro dahlias need to grow under 12 to 14 hours daylength; growing for 16 hours or more will delay flower initiation or result in no flower initiation.	
DIANTHUS <i>Dianthus chinensis</i> Coronet™ F₁ Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus barbatus</i> Dash™ F₁ Series	288	(day) 65-75°F (18-24°C) (night) 60°F (16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus barbatus interspecific</i> Dynasty F₁ Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Floral Lace™ F₁ Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus chinensis x barbatus</i> Ideal Select™ F₁ Series	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Spring	Make sure plants don't get too wet.
306 Pack/1801 , 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-7 (weeks), Spring	Grow relative dry and with low to moderate fertilization, to have optimal upright growth.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring	
5"/6"/1 Gallon/15 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-7 (weeks), Summer	Don't grow too wet. This can cause root rot and black foliage. Stretching of plants can be avoided by using damonizide and chlomequat.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Spring	
4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 10-11 (weeks), Spring	Best in tropical and semi-tropical climates. For cooler (Northern) growing areas, add 3 weeks to crop time or grow for Summer sales.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring	No pinching required. Well-suited to solo and mixed containers. Also works in indoor plant programs.
Cell Pack , 1 (ppp), 5-7 (weeks), Spring, PGR paclobutrazol 2 ppm Spray 306 Pack/1801 , 1 (ppp), 5-7 (weeks), Spring, PGR paclobutrazol 2 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-8 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 3-4 (ppp), 9-10 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 4-5 (ppp), 10-11 (weeks), Spring	Drench with a fungicide at transplant. Use growing media with excellent aeration. It does not perform well in dense soils. Do not overwater the plants. Provide high light to avoid stretch. Low light levels will reduce branching.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring	Very responsive to B-Nine/Alar. Also responsive to day/night temperature differential (DIF), and plants are shorter with a negative DIF.
Cell Pack , 1 (ppp), 8-11 (weeks), Late Spring, PGR paclobutrazol 10 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Late Spring, PGR paclobutrazol 10 ppm Spray	Grows best under high light intensity ($DLI \geq 10 \text{ mol} \cdot \text{m}^{-2} \cdot \text{d}^{-1}$) and cool nights. Under low DLI and shorter daylength, crop time will be delayed by 2-3 weeks. Dianthus Coronet timing is also influenced by temperature. An increase in ADT from 60°F to 67°F decreased flowering time by 3 weeks. Strawberry and White Purple Eye are more compact and can use half the rate or no PGR.
4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-10 (weeks), Summer, PGR paclobutrazol 20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Autumn, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Autumn, PGR paclobutrazol 20 ppm Spray	Dash dianthus has a naturally compact plant habit and good basal branching when compared to other barbatus-type dianthus, making it more suitable for container production. Provide 65 to 75°F (18 to 24°C) day temperatures and 60°F (15°C) night temperatures for the first 2 weeks of greenhouse production to establish the plants. Finish at 60 to 70°F (15 to 21°C) days, with nights in the low 50°Fs (11 to 12°C). Lower temperatures can be tolerated as plants mature.
306 Pack/1801 , 1 (ppp), 8-9 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-9 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray	
Cell Pack , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray	Height can be controlled by withholding fertilizer, especially phosphorus and ammonium-form nitrogen. Dianthus are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF.
Cell Pack , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-10 (weeks), Late Spring, PGR paclobutrazol 15-20 ppm Spray	

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
DIANTHUS (INTERSPECIFIC) <i>Dianthus barbatus interspecific</i> Jolt™ F₁ Series	288	(day) 65-75°F (18-24°C) (night) 60°F (16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Will flower under all photoperiods but ~1 week earlier at 15 hours (LD) than 10 hours (SD). At a given photoperiod, plants flower up to 1.5 weeks faster under high daily light integral than low.	
DICHONDRA <i>Dichondra repens</i> Emerald Falls	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.2-1.5 mmhos/cm		
DICHONDRA <i>Dichondra argentea</i> Silver Falls	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.2-1.5 mmhos/cm		
DUSTY MILLER MARITIMA <i>Cineraria maritima/Senecio cineraria</i> Silverdust	288	(day) 60-65°F (16-18°C) (night) 55-58°F (13-14°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm		
ERYSIMUM <i>Erysimum species</i> Citrona® Series	288	(day) 65-70°F (18-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
EUPHORBIA <i>Euphorbia graminea</i> Glamour	288 128	(day) 65-77°F (18-25°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
EUPHORBIA <i>Euphorbia graminea</i> Glitz F₁	288 128	(day) 65-77°F (18-25°C) (night) 65-68°F (18-20°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
FUSEABLES® <i>Sutera cordata</i> Bacopa Series	128 288	(day) 59-76°F (15-24°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
FUSEABLES® <i>Solenostemon scutellarioides</i> Coleus Series	128 288	(day) 65-76°F (18-24°C) (night) 59-64°F (15-18°C)	5.5-6.0 pH 0.7-1.2 mmhos/cm	Facultative Short Day	
FUSEABLES® <i>Petunia x hybrida</i> Petunia Series	128 288	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 14-18 (weeks), Spring, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 14-18 (weeks), Spring, PGR paclobutrazol 20 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Summer, PGR paclobutrazol 20 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-13 (weeks), Summer, PGR paclobutrazol 20 ppm Spray	<p>Temperature and light intensity have greater impact on flowering, especially during Winter and early Spring. Jolt will benefit from being grown under high light levels and is a facultative/quantitative long-day plant. It can flower under different daylengths, but will take slightly longer to flower under short days than long days. A small percentage (up to 3%) of early off-types can be observed with Jolt dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant. Jolt Purple is more sensitive to paclobutrazol than others and the rate should be reduced to half of others.</p>
4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 5 (ppp), 7-9 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray	<p>Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn.</p>
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 7-8 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 5 (ppp), 7-9 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 5,000/1,000 ppm Spray	<p>Grows best in warm and dry conditions. Use light feed. Rinse foliage after feeding to avoid salt burn. Higher light levels result in foliage that is more silver in colour and shorter internodes.</p>
4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring, PGR daminozide 5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-8 (weeks), Spring, PGR daminozide 5,000 ppm Spray	<p>Pinching not recommended. For height control, use daminozide as needed.</p>
4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/1,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5 (weeks), Autumn, PGR paclobutrazol 20 ppm Spray	<p>Erysimum performs well when grown under cooler temperatures.</p>
5"/6"/1 Gallon/15 cm , 1-2 (ppp), 5-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 8"/2 Gallon/20 cm , 2 (ppp), 6-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	<p>Do not grow plants at temperatures below 62°F (16°C). Stretched plugs can be planted deep for better habit management. Pinching is not necessary. Daminozide may delay full flowering, but it is helpful early on in developing good branching. If starting with a daminozide spray for habit management, consider a paclobutrazol spray (10 ppm) or a low rate drench (1-2 ppm) to finish. Warmer temperatures and higher light levels can significantly reduce crop times.</p>
4"/4.5"/Quart/10 cm , 1 (ppp), 5-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 5-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	<p>Do not grow plant at temperature below 62°F (16°C). Stretched plugs can be planted deep for better habit management. Pinching is not necessary. If starting with a daminozide spray for habit control, consider a paclobutrazol spray or low rate drench to finish. Daminozide may delay full flowering, but is helpful early on in developing good branching. Warmer temperatures and higher light will significantly reduce crop times.</p>
5"/6"/1 Gallon/15 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray 8"/2 Gallon/20 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 4 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,000-1,500 ppm Spray	<p>Avoid excessive watering and drought. Do not let plants wilt, as this will result in bud drop.</p>
5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 8"/2 Gallon/20 cm , 1 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 1-3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4-5 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	<p>Coleus are responsive to day/night DIF, and are shorter with a negative DIF. Crowding can result in excessive internode elongation. Ethephon can be applied at 300 ppm 2 to 3 weeks after transplant to promote branching and delay flowering.</p>
5"/6"/1 Gallon/15 cm , 1 (ppp), 9-11 (weeks), Spring, PGR daminozide 5,000 ppm Spray 8"/2 Gallon/20 cm , 1-3 (ppp), 9-11 (weeks), Spring, PGR daminozide 5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 1-3 (ppp), 10-12 (weeks), Spring, PGR daminozide 5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 1-3 (ppp), 9-11 (weeks), Spring, PGR daminozide 5,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 10-12 (weeks), Spring, PGR daminozide 5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-9 (weeks), Summer, PGR daminozide 5,000 ppm Spray 8"/2 Gallon/20 cm , 1-3 (ppp), 7-9 (weeks), Summer, PGR daminozide 5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 1-3 (ppp), 8-10 (weeks), Summer, PGR daminozide 5,000 ppm Spray 12" Pot or HB/5 Gallon/30 cm , 4 (ppp), 8-10 (weeks), Summer, PGR daminozide 5,000 ppm Spray	<p>Can use the same PGR regime as that for standard or spreading petunia. Note that Pleasantly Blue responds better to a B-Nine spray than it does to a Bonzi spray or drench, so for this specific Fuseables, the use of B-Nine is preferred. See GrowerFacts for additional culture information.</p>

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
FUSEABLES® <i>Petunia hybrida</i> , <i>Sutera cordata</i> Petunia-Bacopa Series	128 288	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
FUSEABLES® <i>Juncus inflexus</i> – <i>Juncus effusus spiralis</i> Twisted Arrows	128 288	(day) 62-73°F (17-23°C) (night) 59-64°F (15-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
GAZANIA <i>Gazania rigens</i> New Day® F₁ Series	288	(day) 65-70°F (18-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
GAZANIA TETRAPLOID <i>Gazania rigens</i> Sunshine Series	406	(day) 65-70°F (18-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	406	(day) 65-75°F (18-24°C) (night) 63-66°F (17-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
HELENium <i>Helenium amarum</i> Dakota Gold	288	(day) 65-70°F (18-21°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm	Facultative Long Day Plants will flower regardless of daylength, but the growing habit is quite related to daylength. Plants grow slowly when grown under daylengths shorter than 12 hours and become very flat or even rosette when grown under daylengths shorter than 10 hours. Growing plants under long days (12 hours or more) is recommended.	
HELICHRYSUM <i>Helichrysum microphyllum</i> (<i>Plectostachys serpyllifolia</i>) Silver Mist	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		
HIBISCUS <i>Hibiscus acetosella</i> Mahogany Splendor	288	(day) 65-70°F (18-21°C) (night) 62-67°F (17-19°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Flower initiation occurs with daylength of 12 hours or shorter.	
IMPATIENS <i>Impatiens walleriana</i> Beacon® F₁ Series	288	(day) 70-75°F (21-24°C) (night) 62-68°F (17-20°C)	6.2-6.5 pH 0.75-1.0 mmhos/cm	Day Neutral	
IMPATIENS <i>Impatiens walleriana</i> Dazzler® F₁ Series	288	(day) 70-75°F (21-24°C) (night) 62-68°F (17-20°C)	6.2-6.5 pH 0.75-1.0 mmhos/cm	Day Neutral	
IMPATIENS <i>Impatiens walleriana</i> Super Elfin® F₁ Series	288	(day) 70-75°F (21-24°C) (night) 62-68°F (17-20°C)	6.2-6.5 pH 0.75-1.0 mmhos/cm	Day Neutral	
IMPATIENS <i>Impatiens walleriana</i> Super Elfin® XP F₁ Series	288	(day) 70-75°F (21-24°C) (night) 62-68°F (17-20°C)	6.2-6.5 pH 0.75-1.0 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
<p>5"/6"/1 Gallon/15 cm, 1 (ppp), 8-11 (weeks), Spring, PGR paclobutrazol 2-4 ppm Drench 8"/2 Gallon/20 cm, 1 (ppp), 8-11 (weeks), Spring, PGR paclobutrazol 2-4 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 1-3 (ppp), 10-12 (weeks), Spring, PGR paclobutrazol 2-4 ppm Drench 12" Pot or HB/5 Gallon/30 cm, 4 (ppp), 10-12 (weeks), Spring, PGR paclobutrazol 2-4 ppm Drench 5"/6"/1 Gallon/15 cm, 1 (ppp), 7-9 (weeks), Summer, PGR paclobutrazol 2-4 ppm Drench 8"/2 Gallon/20 cm, 1 (ppp), 7-9 (weeks), Summer, PGR paclobutrazol 2-4 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 1-3 (ppp), 8-10 (weeks), Summer, PGR paclobutrazol 2-4 ppm Drench 12" Pot or HB/5 Gallon/30 cm, 4 (ppp), 8-10 (weeks), Summer, PGR paclobutrazol 2-4 ppm Drench</p>	<p>Do not use B-Nine/Alar or Topflor for height control, as they will stunt bacopa.</p>
<p>306 Pack/1801, 1 (ppp), 6-7 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-8 (weeks), Spring</p>	
<p>306 Pack/1801, 1 (ppp), 8-9 (weeks), Late Spring, PGR daminozide 3,000 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 8-9 (weeks), Late Spring, PGR daminozide 3,500 ppm Spray 306 Pack/1801, 1 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,000 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,500 ppm Spray</p>	<p>Crop time can be influenced by light levels; i.e., when grown in areas with low light levels or during period of low light intensity, crop time could be approx. 3 weeks longer. Plant Growth Regulators: If needed, use B-Nine/Alar (daminozide) at 3,500 ppm (4.2 g/l of 85% formulation or 5.6 g/l of 64% formulation) to tone the crop. One application at 2 to 3 weeks after transplant will be sufficient.</p>
<p>5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Early Spring, PGR daminozide 3,500 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 8-9 (weeks), Summer, PGR daminozide 3,500 ppm Spray</p>	<p>Crop time can be influenced by light levels; i.e., when grown in areas with low light levels or during period of low light intensity, crop time could be approx. 3 weeks longer. Plant Growth Regulators: If needed, use B-Nine/Alar (daminozide) at 3,500 ppm (4.2 g/l of 85% formulation or 5.6 g/l of 64% formulation) to tone the crop. One application at 2 to 3 weeks after transplant will be sufficient.</p>
<p>5"/6"/1 Gallon/15 cm, 1 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 4-10 ppm Drench 5"/6"/1 Gallon/15 cm, 2-3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 4-10 ppm Drench</p>	<p>May be grown cooler (50°F/10°C minimum) with additional 2 to 3 weeks crop time. High light, spacing and cooler temperatures will reduce stretching. A paclobutrazol drench at 4 to 10 ppm, 2 to 3 weeks after transplant, is commonly effective in controlling stretch. Paclobutrazol sprays may follow the drench to maintain plant structure.</p>
<p>306 Pack/1801, 1 (ppp), 5-7 (weeks), Spring, PGR daminozide 5,000 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-7 (weeks), Spring, PGR daminozide 5,000 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-8 (weeks), Spring, PGR daminozide 5,000 ppm Spray</p>	
<p>306 Pack/1801, 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 8-9 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Spring</p>	<p>Do not overwater and avoid watering plants late in the day, as constant wet foliage may make the plants susceptible to Botrytis. Does not require pinching.</p>
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring, PGR daminozide/ chlormequat chloride tank mix 2,500/300 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 5-10 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-8 (weeks), Spring, PGR daminozide/ chlormequat chloride tank mix 2,500/300 ppm Spray 5"/6"/1 Gallon/15 cm, 1 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-10 ppm Spray 8"/2 Gallon/20 cm, 1 (ppp), 6-8 (weeks), Spring, PGR daminozide/ chlormequat chloride tank mix 2,500/300 ppm Spray 8"/2 Gallon/20 cm, 1 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-10 ppm Spray</p>	
<p>Cell Pack, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 3-5 (ppp), 8-10 (weeks), Spring</p>	<p>Impatiens will respond to daminozide, paclobutrazol and uniconazol. Monitoring of water and fertilization can help with controlling plant growth and vigour.</p>
<p>Cell Pack, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 3-5 (ppp), 8-10 (weeks), Spring</p>	<p>Impatiens will respond to daminozide, paclobutrazol and uniconazol. Monitoring of water and fertilization can help with controlling plant growth and vigour.</p>
<p>Cell Pack, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 3-5 (ppp), 8-10 (weeks), Spring</p>	<p>Impatiens will respond to daminozide, paclobutrazol and uniconazol. Monitoring of water and fertilization can help with controlling plant growth and vigour.</p>
<p>Cell Pack, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 3-5 (ppp), 8-10 (weeks), Spring</p>	<p>Impatiens will respond to daminozide, paclobutrazol and uniconazol. Monitoring of water and fertilization can help with controlling plant growth and vigour.</p>

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape™ F₁ Series	288 128	(day) 68-75°F (20-24°C) (night) 60-68°F (16-20°C)	5.8-6.2 pH 0.5-0.75 mmhos/cm	Day Neutral Light Recommendations: 4,000-8,000 foot candles. Recommended DLI of 10 or greater moles. In areas of low DLI, less than 10 moles, supplemental lighting is beneficial to increase quantity and speed of flowering. In areas of low relative humidity, less than 30%, shading is recommended.	
IMPATIENS (INTERSPECIFIC) <i>Impatiens hybrida</i> Solarscape™ XL F₁ Series	288 128	(day) 68-75°F (20-24°C) (night) 60-68°F (16-20°C)	5.8-6.2 pH 0.5-0.75 mmhos/cm	Day Neutral Light Recommendations: 4,000-8,000 foot candles. Recommended DLI of 10 or greater moles. In areas of low DLI, less than 10 moles, supplemental lighting is beneficial to increase quantity and speed of flowering. In areas of low relative humidity, less than 30%, shading is recommended.	
IRESENE <i>Iresine herbstii</i> Purple Lady	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.5 pH 1.2-1.5 mmhos/cm		
LISIANTHUS <i>Eustoma grandiflorum</i> Florida F₁ Series	288 512	(day) 68-75°F (20-24°C) (night) 60-65°F (16-18°C)	6.5-6.8 pH 0.75 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Crystal Palace	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Rapid Series	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Regatta Series	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
LOBELIA <i>Lobelia erinus</i> Riviera Series	288	(day) 66-72°F (19-22°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Marvel II™ F₁ Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.2-1.5 mmhos/cm	Facultative Short Day Will flower quicker when the daylength is 12 hours or shorter. When grown at daylength longer than 12 hours, it will take an additional 10 to 14 days to flower.	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Taishan® F₁ Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.2-1.5 mmhos/cm	Facultative Short Day Will flower quicker when the daylength is 12 hours or shorter. When grown at daylength longer than 12 hours, it will take an additional 10 to 14 days to flower.	
MARIGOLD (AFRICAN) <i>Tagetes erecta</i> Vanilla F₁	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.8 pH 1.0-1.5 mmhos/cm	Facultative Short Day Will flower quicker when the daylength is 12 hours or shorter. When grown at daylength longer than 12 hours, it will take an additional 10 to 14 days to flower.	

FINISHING PROGRAMS	KEY TIPS
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring 8"/2 Gallon/20 cm , 1-3 (ppp), 9-10 (weeks), Spring	Temperature Recommendations: Minimum: 60°F/16°C Maximum: 85°F/29°C Lowering ADT by 2°F/1°C will delay flowering by 2 to 4 days, with an even longer delay at cooler ADTs. Moisture Recommendations: Plants are well controlled with water and fertilization management; growing dry with less to no PGRs results in plants that are faster to establish in the garden. PGR Recommendations: 10 to 14 days after transplant to finish container, repeating as needed. Avoid over application of PGRs, as this may result in plant stunting or slow growing-on. If growing in dry conditions, the lowest rates of PGRs are recommended. Solarscape Magenta Bliss, Orange Burst and White Shimmer: paclobutrazol 0.25 ppm drench OR paclobutrazol 5-10 ppm spray Solarscape Neon Purple (most compact hybrid): paclobutrazol 0.10 ppm drench OR 5 ppm spray
306 Pack/1801 , 1 (ppp), 7-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring 8"/2 Gallon/20 cm , 1-3 (ppp), 9-10 (weeks), Spring	Temperature Recommendations: Minimum: 60°F/16°C Maximum: 85°F/29°C Lowering ADT by 2°F/1°C will delay flowering by 2 to 4 days, with an even longer delay at cooler ADTs. Moisture Recommendations: Plants are well controlled with water and fertilization management; growing dry with less to no PGRs results in plants that are faster to establish in the garden. PGR Recommendations: 10 to 14 days after transplant to finish container, repeating as needed. Avoid over application of PGRs, as this may result in plant stunting or slow growing-on. If growing in dry conditions, the lowest rates of PGRs are recommended. Salmon Glow recommendations: paclobutrazol 0.5 ppm drench OR paclobutrazol 10 ppm spray.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 4-5 (ppp), 6-7 (weeks), Spring	Reddish foliage indicates plants need more feed. High light, especially with low humidity, results in puckered foliage.
4"/4.5"/Quart/10 cm , 1 (ppp), 14-16 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 14-16 (weeks), Spring	Maintain pH of 6.5 to 6.8. Do not allow plugs to become rootbound.
Cell Pack , 1 (ppp), 8-9 (weeks), Spring	Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 3,000-5,000 ppm Spray	Lobelias flower more freely when daylength is longer than 12 hours. Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
10" Pot or HB/3 Gallon/25 cm , 5-7 (ppp), 8-10 (weeks), Spring, PGR daminozide 3,000-5,000 ppm Spray	Lobelias flower more freely when daylength is longer than 12 hours. Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 3,000-5,000 ppm Spray	Lobelias flower more freely when daylength is longer than 12 hours. Lighting plants when days are shorter than 12 hours speeds flowering. Light shading helps to produce a better crop when plants are growing under hot weather and long days in late Spring.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Plant Growth Regulators: PGRs are not required when grown under short days, since plants will finish naturally shorter. Treat with PGRs when grown under long days. Daminozide at 5,000 ppm applied twice as a foliar spray can control the plant growth. In northwestern Europe, use daminozide at 1,300 to 2,000 ppm.
306 Pack/1801 , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 306 Pack/1801 , 1 (ppp), 7-8 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Plant Growth Regulators: PGRs are not required when grown under short days, since plants will finish naturally shorter. Treat with PGRs when grown under long days. Daminozide at 5,000 ppm applied twice as a foliar spray can control the plant growth. In northwestern Europe, use daminozide at 1,300 to 2,000 ppm.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Plant Growth Regulators: PGRs are not required when grown under short days, since plants will finish naturally shorter. Treat with PGRs when grown under long days. Daminozide at 5,000 ppm applied twice as a foliar spray can control the plant growth. In northwestern Europe, use daminozide at 1,300 to 2,000 ppm.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Bonanza™ Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Durango® Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Fireball	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Flamenco	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Hot Pak™ Series	288	(day) 68-85°F (20-29°C) (night) 64-70°F (18-21°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Janie Series	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
MARIGOLD (FRENCH) <i>Tagetes patula</i> Strawberry Blonde	288	(day) 65-68°F (18-20°C) (night) 60-62°F (16-17°C)	6.2-6.5 pH 1.0-1.5 mmhos/cm	Facultative Short Day	
NEMESIA <i>Nemesia foetans</i> Poetry™ F₁ Series	288	(day) 62-68°F (17-20°C) (night) 55-62°F (13-17°C)	5.8-6.2 pH 0.7-1.0 mmhos/cm	Day Neutral	
NEMESIA <i>Nemesia strumosa</i> Sundrops Mixture	288	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Copper Prince F₁	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jade Princess F₁	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Jester F₁	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Baron F₁	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		

FINISHING PROGRAMS	KEY TIPS
Cell Pack, 1 (ppp), 3-4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
Cell Pack, 1 (ppp), 4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
306 Pack/1801, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 5-6 (ppp), 4-6 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Quarts and multi-planted containers with several flowers open provide maximum contrast as blooms mature from red to orange to bronze.
306 Pack/1801, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 5-6 (ppp), 4-6 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
Cell Pack, 1 (ppp), 3-4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Hot Pak is bred to grow and flower under higher temperatures and humidity than other French Marigolds; thus, a wider range of finishing conditions is possible.
Cell Pack, 1 (ppp), 3-4 (weeks), Spring	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity.
306 Pack/1801, 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm, 5-6 (ppp), 4-6 (weeks), Spring	Maintain soil pH of 6.2 to 6.4 to avoid iron toxicity. Quarts and multi-planted containers with several blooms open provide maximum contrast as blooms mature from rose to orange to straw colour.
306 Pack/1801, 1 (ppp), 5-7 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 6-8 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 6-8 (weeks), Spring	If necessary, use 2 to 3 applications of daminozide 2,500-5,000 ppm Spray.
4"/4.5"/Quart/10 cm, 1 (ppp), 8-9 (weeks), Spring	Grow cool, at an optimum temperature of 55°F (13°C).
5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-14 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1-2 (ppp), 12-14 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. Jade Princess is especially cold sensitive. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
5"/6"/1 Gallon/15 cm, 3 (ppp), 11-13 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
5"/6"/1 Gallon/15 cm, 3 (ppp), 11-13 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 5"/6"/1 Gallon/15 cm, 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
ORNAMENTAL MILLET <i>Pennisetum glaucum</i> Purple Majesty	128	(day) 68-85°F (20-29°C) (night) 64-66°F (18-19°C)	5.5-6.5 pH 1.5-2.0 mmhos/cm		
ORNAMENTAL MINT <i>Mentha requienii</i> Mini Mint	288	(day) 68-75°F (20-24°C) (night) 60-64°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	Day Neutral	
ORNAMENTAL OREGANO <i>Origanum x hybrida</i> Kirigami	288	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long day required, critical daylength 14 hrs.	
OSTEOSPERMUM <i>Osteospermum ecklonis</i> Akila® F₁ Series	288 105	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
PANSY <i>Viola x wittrockiana</i> Frizzle Sizzle F₁ Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY <i>Viola x wittrockiana</i> Matrix® F₁ Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY <i>Viola x wittrockiana</i> Panola® XP F₁ Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PANSY <i>Viola x wittrockiana</i> Spring Matrix™ F₁ Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
5"/6"/1 Gallon/15 cm , 3 (ppp), 11-13 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 5"/6"/1 Gallon/15 cm , 3 (ppp), 9-10 (weeks), Autumn	Plants that are rootbound or stressed due to drought or nutrient deficiency will not perform well. Do not grow below 60°F (16°C). Low temperatures can cause foliage colour to become chlorotic or cause necrosis and flower spike bending. High light results in better basal tillering and stronger stems. When seeds are sown directly to final pot, apply a paclobutrazol drench 6 to 8 ppm at 4 weeks after sow, and repeat if needed 10 days later. When transplanting plugs, use a 3 to 5 ppm paclobutrazol drench at 1 week after transplant. Small pot crop times are based on 68°F (20°C) daily average temperature and saleable foliage plants without flower spikes.
306 Pack/1801 , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-8 (weeks), Spring	Consistently maintain media moisture, avoiding excessive wet or dry. Plants grow faster under warmer temperatures. However, under low light conditions, they may stretch if temperature is warmer than 68°F (20°C).
4"/4.5"/Quart/10 cm , 1 (ppp), 10-12 (weeks), Late Spring, PGR daminozide 1,500-2,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Late Spring, PGR daminozide 1,500-2,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3-5 (ppp), 12-13 (weeks), Late Spring, PGR daminozide 1,500-2,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, PGR daminozide 1,500-2,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 9-11 (weeks), Summer, PGR daminozide 1,500-2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3-5 (ppp), 10-12 (weeks), Summer, PGR daminozide 2,000-2,500 ppm Spray	Needs an active growing climate, grow on dry side, with higher light levels. Best to grow indoors, if you have frequent rain. Apply low to moderate fertilization and moderate irrigation. Let well-drained media dry between watering. Cannot stand wet conditions, will result in stem and root rot. The bracts will develop much deeper purple color when plants are exposed to high light (12 to 15 mol·m ⁻² ·d ⁻¹) and cool night conditions (lower than 50°F/10°C). If you have dry climate, grow outside for deepest purple bract color. Kirigami reacts well to daminozide, and it should be used at lower concentrations with multiple applications to avoid stunting. Avoid using daminozide once color is starting on the bracts, to prevent bleaching. With its versatile use, there is no specific number of PGR applications. It is easy to mold to your desired look or container size.
306 Pack/1801 , 1 (ppp), 10-12 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 10-12 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Spring, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 306 Pack/1801 , 1 (ppp), 7-9 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500 ppm Spray	Supplemental lighting will reduce days to flower. Plants grown under high light and cool conditions may not require PGRs. If needed, apply daminozide/chlormequat chloride 2,500/500 ppm tank mix 2 weeks after transplant. Alternatively, flurprimidol at 10 to 15 ppm spray applied once after transplant will give adequate control.
5"/6"/1 Gallon/15 cm , 3 (ppp), 6-8 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7-9 (ppp), 6-8 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 4-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7-9 (ppp), 4-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant) plan for crop times of 16 to 18 weeks from transplant to finish. For maximum ruffled edge, schedule for late Autumn, Winter and Spring programs. Heat reduces the ruffled edge and colour contrast.
Cell Pack , 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray Cell Pack , 1 (ppp), 4-5 (weeks), Autumn, PGR paclobutrazol 0.125 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn, PGR paclobutrazol 0.125 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 7-9 (ppp), 4-5 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/250-5,000/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions.
Cell Pack , 1 (ppp), 5-6 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/150-2,500/250 ppm Spray Cell Pack , 1 (ppp), 3-4 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500-5,000/500 ppm Spray Cell Pack , 1 (ppp), 3-4 (weeks), Autumn, PGR paclobutrazol 0.1-0.125 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 2,500/500-5,000/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Autumn, PGR paclobutrazol 0.1-0.125 ppm Drench	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant) plan for crop times of 16 to 18 weeks from transplant to finish.
Cell Pack , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 7-9 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 1,500/500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions. If growing frost-free (northern overwinter culture from Autumn transplant) plan for crop times of 17 to 18 weeks from transplant to finish.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PANSY (SPREADING) <i>Viola x wittrockiana</i> Cool Wave® F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-60°F (13-16°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PENTAS <i>Pentas lanceolata</i> Butterfly™ F₁ Series	288	(day) 72-80°F (22-27°C) (night) 65-68°F (18-20°C)	6.5-6.8 pH 1.2-1.5 mmhos/cm	Day Neutral	
PENTAS <i>Pentas lanceolata</i> Glitterati™ F₁ Series	288	(day) 72-80°F (22-27°C) (night) 65-68°F (18-20°C)	6.5-6.8 pH 1.2-1.5 mmhos/cm	Day Neutral	
PENTAS <i>Pentas lanceolata</i> Lucky Star® F₁ Series	288	(day) 72-80°F (22-27°C) (night) 62-65°F (17-18°C)	6.5-6.8 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Black Pearl	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Calico F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Midnight Fire	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Purple Flash	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sangria F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Sedona Sun	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm		
PETUNIA <i>Petunia x hybrida</i> Daddy® F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.3 pH 1.0-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Debonair™ F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day All varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Dreams™ F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Ez Rider® F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day Similar to Dreams petunia, all Ez Rider varieties can flower successfully at 10-hour daylengths.	

FINISHING PROGRAMS	KEY TIPS
<p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/250 ppm Spray</p> <p>10" Pot or HB/3 Gallon/25 cm, 4 (ppp), 9-10 (weeks), Early Spring, PGR daminozide/chlormequat chloride tank mix 2,500/250 ppm Spray</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 5-6 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 5,000/500 ppm Spray</p> <p>10" Pot or HB/3 Gallon/25 cm, 4 (ppp), 7-8 (weeks), Autumn, PGR daminozide/chlormequat chloride tank mix 5,000/500 ppm Spray</p>	<p>In heat of Autumn production, a paclobutrazol drench of 0.1 to 0.125 can be used once foliage is covering soil. Consult Cool Wave Production Handbook for more detailed information on scheduling for Autumn and Spring programs and variety-specific PGR information.</p>
<p>Cell Pack, 1 (ppp), 8-10 (weeks), Spring</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 8-10 (weeks), Spring</p> <p>5"/6"/1 Gallon/15 cm, 2 (ppp), 8-10 (weeks), Spring</p>	<p>High light levels and temperatures will reduce crop time. Pentas will naturally decrease pH levels in the soil and regular monitoring is necessary. Plants that have pH below 6.4 will slow growth, delay flowering, exhibit signs of iron toxicity (foliar necrosis) and calcium/magnesium deficiency (foliar puckering). When needed, a tank mix of daminozide 2,500 to 5,000 ppm and chlormequat 500 to 750 ppm can be used. Paclobutrazol sprays of 5 to 10 ppm are also effective.</p>
<p>Cell Pack, 1 (ppp), 7-8 (weeks), Spring</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 7-8 (weeks), Spring</p> <p>5"/6"/1 Gallon/15 cm, 2 (ppp), 7-8 (weeks), Spring</p>	<p>High light levels and temperatures will reduce crop time. Pentas will naturally decrease pH levels in the soil and regular monitoring is necessary. Plants that have pH below 6.4 will slow growth, delay flowering, exhibit signs of iron toxicity (foliar necrosis) and calcium/magnesium deficiency (foliar puckering). When needed, a tank mix of daminozide 2,500 to 5,000 ppm and chlormequat 500 to 750 ppm can be used. Paclobutrazol sprays of 5 to 10 ppm are also effective.</p>
<p>Cell Pack, 1 (ppp), 7-8 (weeks), Spring</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 7-8 (weeks), Spring</p> <p>5"/6"/1 Gallon/15 cm, 2 (ppp), 7-8 (weeks), Spring</p>	<p>High light levels and temperatures will reduce crop time. Pentas will naturally decrease pH levels in the soil and regular monitoring is necessary. Plants that have pH below 6.4 will slow growth, delay flowering, exhibit signs of iron toxicity (foliar necrosis) and calcium/magnesium deficiency (foliar puckering). Growth Regulators: The Lucky Star series has been bred and selected for natural compactness. When needed, a tank mix of daminozide 2,500 to 5,000 ppm and chlormequat 500 to 750 ppm can be used. Paclobutrazol sprays of 5 to 10 ppm are also effective.</p>
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Summer</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Summer</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Autumn</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Autumn</p>	<p>As Black Pearl is used especially for its foliage, crop times reflect finish for foliage, not fruit. Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.</p>
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Summer</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Summer</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Autumn</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Autumn</p>	<p>As Calico is used especially for its foliage, crop times reflect finish for foliage, not fruit. Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.</p>
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 7-13 (weeks), Summer</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-13 (weeks), Summer</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 7-13 (weeks), Autumn</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-13 (weeks), Autumn</p>	<p>Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.</p>
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Summer</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Summer</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Autumn</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-7 (weeks), Autumn</p>	<p>As Purple Flash is used especially for its foliage, crop times reflect finish for foliage, not fruit. Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.</p>
<p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-13 (weeks), Summer</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-13 (weeks), Autumn</p>	<p>Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.</p>
<p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-13 (weeks), Summer</p> <p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 7-13 (weeks), Autumn</p>	<p>Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.</p>
<p>Cell Pack, 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray</p> <p>10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray</p>	
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench</p> <p>10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench</p> <p>4"/4.5"/Quart/10 cm, 1 (ppp), 3-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench</p>	<p>Avoid using daminozide on Black Cherry, as this may impact flower colour. Options include paclobutrazol or flurprimidol.</p>
<p>Cell Pack, 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray</p> <p>10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray</p>	
<p>Cell Pack, 1 (ppp), 5-6 (weeks), Spring</p> <p>10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray</p>	<p>Genetically compact and needs less to no PGRs after transplant.</p>

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PETUNIA <i>Petunia x hybrida</i> Lo Rider™ F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day All Lo Rider varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Madness™ F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Mirage F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day	
PETUNIA <i>Petunia x hybrida</i> Pretty Flora™ F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day All varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Pretty Grand™ F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day Similar to Dreams petunia, all Pretty Grand varieties can flower successfully at 10-hour daylengths.	
PETUNIA <i>Petunia x hybrida</i> Sophistica® F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day Can flower successfully at 10-hour daylengths. Crop time is 3 to 6 days faster under longer days.	
PETUNIA <i>Petunia x hybrida</i> Supercascade F₁ Series	288	(day) 62-70°F (17-21°C) (night) 55-65°F (13-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Cascade F₁ Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.8-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Double Madness™ F₁ Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Duo F₁ Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Glorious F₁ Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and may need less to no PGRs after transplant.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and needs less to no PGRs after transplant.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	Genetically compact and needs less to no PGRs after transplant.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 5-6 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench	Avoid using daminozide on Lime Bicolor and Blackberry, as this may impact flower colour. Options include paclobutrazol or flurprimidol.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-3,500 ppm Spray	
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 8-9 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 7-8 (weeks), Spring	Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PETUNIA (DOUBLE) <i>Petunia x hybrida</i> Pirouette F₁ Series	288	(day) 65-72°F (18-22°C) (night) 60-62°F (16-17°C)	5.5-6.3 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> E3 Easy Wave™ F₁ Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement By Variety: 9 hours: White 9.5 hours: Coral, Pink, Red, Sky Blue 10 hours: Blue, Pink Cosmo	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Easy Wave® F₁ Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement By Variety: 9 hours: Rose Fusion 9.5 hours: Lavender Sky Blue 10 hours: Berry Velour, Pink Passion, Burgundy Star, Coral Reef, Neon Rose, Rosy Dawn, Silver, Violet, White, Yellow 10.5 hours: Blue, Burgundy Velour 11 hours: Pink, Plum Vein, Red, Red Velour	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Shock Wave® F₁ Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirements By Variety: 10 hours: Coral Crush, Denim, Pink Shades, Red 10.5 hours: Pink Vein, Deep Purple, Purple Tie Dye, Rose, White	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Tidal Wave® F₁ Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement by Variety: 12 hours: Cherry, Hot Pink, Purple, Red Velour, Silver	
PETUNIA (SPREADING) <i>Petunia x hybrida</i> Wave® F₁ Series	288 128	(day) 61-75°F (16-24°C) (night) 57-65°F (14-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Minimum Daylength Requirement by Variety: 11.5 hours: Purple 12 hours: Lavender, Misty Lilac, Pink, Purple Classic 13 hours: Carmine Velour	
PHLOX <i>Phlox drummondii</i> 21st Century F₁ Series	288	(day) 60-70°F (16-21°C) (night) 50-62°F (10-17°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
<p>4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm, 2-3 (ppp), 7-8 (weeks), Spring</p>	<p>Drench with a fungicide at transplant. Maintain light levels as high as possible (4,000 to 7,000 f.c.). Sensitive to overwatering; allow media to dry slightly before watering. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to wilt prior to irrigation to provide some height control. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen. Petunias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF. Florel will promote lateral branching when applied once plants are established. Petunias respond to both B-Nine and Bonzi. A one-time Bonzi drench is effective. Varieties may respond differently to growth regulators.</p>
<p>306 Pack/1801, 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 2-3 ppm Drench 306 Pack/1801, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3 (ppp), 6-7 (weeks), Summer, PGR paclobutrazol 2-3 ppm Drench</p>	<p>Post transplant, E3 Easy Wave varieties (see exceptions) can be controlled with less or half the rate of Easy Wave. North American recommendations: 1. Daminozide spray of 2,500-3,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. Then 2. Paclobutrazol 2-3 ppm drench 7 to 10 days later, additional drenches as needed. Exception: E3 Easy Wave Blue, with paclobutrazol rates similar to Easy Wave at 5 ppm drench. Northern Europe recommendations: Paclobutrazol 3-4 ml/l (12-16 ppm) spray weekly or as needed OR Daminozide 3 g/l (2,000 ppm) spray weekly or as needed Exception: E3 Easy Wave Blue, with paclobutrazol rates similar to Easy Wave at 5 ml/l (20 ppm) spray. All E3 Easy Wave varieties are cold durable. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹.</p>
<p>306 Pack/1801, 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 8-9 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 306 Pack/1801, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 6-7 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench</p>	<p>Daminozide spray of 3,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. As an optional treatment, flurprimidol (Topflor) can be used in place of paclobutrazol at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Burgundy Velour, Plum Vein and Red Velour are more vigorous within the Easy Wave group. They can take higher rates of paclobutrazol, 1 to 2 ppm more. Cold-Durable Varieties: Berry Velour, Blue, Burgundy Star, Burgundy Velour, Coral Reef, Lavender Sky Blue, Neon Rose, Pink Passion, Pink, Plum Vein, Red, Red Velour, Rose Fusion, Silver, Violet, White, Yellow Cold-Sensitive Variety: Rosy Dawn</p>
<p>306 Pack/1801, 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 3-5 ppm Drench 306 Pack/1801, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 5-6 (weeks), Summer, PGR paclobutrazol 3-5 ppm Drench</p>	<p>Daminozide spray of 2,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. As an optional treatment, flurprimidol (Topflor) can be used in place of paclobutrazol at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Cold-Durable Varieties: Denim, Pink Shades, Pink Vein, Purple Tie Dye, White Cold-Sensitive Varieties: Coral Crush, Deep Purple, Red, Rose</p>
<p>5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 8"/2 Gallon/20 cm, 1-3 (ppp), 6-8 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 4-7 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench 8"/2 Gallon/20 cm, 1-3 (ppp), 4-7 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench</p>	<p>Daminozide spray of 3,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. An alternative to paclobutrazol drench, flurprimidol (Topflor) can be used at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Cold-Durable Varieties: Red Velour, Silver</p>
<p>5"/6"/1 Gallon/15 cm, 1 (ppp), 7-9 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 8-10 (weeks), Spring, PGR paclobutrazol 5-8 ppm Drench 5"/6"/1 Gallon/15 cm, 1 (ppp), 5-7 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench 10" Pot or HB/3 Gallon/25 cm, 3-4 (ppp), 6-8 (weeks), Summer, PGR paclobutrazol 5-8 ppm Drench</p>	<p>Daminozide spray of 3,500 to 5,000 ppm 7 to 10 days after transplant promotes branching and controls early stretch. Carmine Velour and Purple Wave are more vigorous than other Wave varieties and can use a paclobutrazol 8 to 10 ppm drench. As an optional treatment, flurprimidol (Topflor) can be used in place of paclobutrazol at 2/3 the rate of paclobutrazol. Can be grown as low as 50°F (10°C). Crop timing is related to average temperature when grown under proper daylength. Plants will take longer to flower when grown in cooler conditions. Recommended DLI range of 12 to 20 mol·m⁻²·d⁻¹. Cold-Durable Varieties: Carmine Velour, Lavender, Pink, Purple, Purple Classic</p>
<p>306 Pack/1801, 1 (ppp), 6 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 6 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 7-8 (weeks), Spring</p>	<p>If necessary, paclobutrazol 7.5 to 20 ppm Spray can be applied. Application rate and frequency of applications depends upon growth rate. Daminozide 2,500 ppm Spray is also effective.</p>

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Crest	288	(day) 64-80°F (18-27°C) (night) 61-68°F (16-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Under short days, plants will initiate flowers.	
PLECTRANTHUS <i>Plectranthus argentatus</i> Silver Shield	288	(day) 64-80°F (18-27°C) (night) 61-68°F (16-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Under short days, plants will initiate flowers.	
PORTULACA <i>Portulaca grandiflora</i> Happy Hour™ F₁ Series	288	(day) 68-76°F (20-24°C) (night) 65-67°F (18-19°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral If transplanting plugs when daylength is shorter than 10 hours and 30 minutes, provide long day conditions.	
PORTULACA <i>Portulaca grandiflora</i> Happy Trails™ F₁ Series	288	(day) 68-76°F (20-24°C) (night) 65-67°F (18-19°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral If transplanting plugs when daylength is shorter than 10 hours, provide long day conditions.	
PRIMULA <i>Primula acaulis</i> Heritage Crème F₁	288	(day) 55-60°F (13-16°C) (night) 50-55°F (10-13°C)	5.5-6.2 pH 1.0-1.2 mmhos/cm	Facultative Long Day	
PRIMULA <i>Primula acaulis</i> Primlet® Series	288	(day) 55-60°F (13-16°C) (night) 50-55°F (10-13°C)	5.5-6.2 pH 1.0-1.2 mmhos/cm	Facultative Long Day	
PURSLANE <i>Portulaca oleracea</i> Toucan Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	6.0-6.5 pH 1.5-2.0 mmhos/cm	Day Neutral	
RUELLIA <i>Ruellia brittoniana</i> (<i>Ruellia tweediana</i>) Southern Star Series	288	(day) 68-75°F (20-24°C) (night) 65-68°F (18-20°C)	6.0-6.5 pH 1.5-2.0 mmhos/cm	Facultative Short Day	
SALVIA <i>Salvia canariensis</i> Lancelot	288	(day) 65-72°F (18-22°C) (night) 62-65°F (17-18°C)	5.5-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day Facultative Long Day with critical daylength 13 hours	
SALVIA <i>Salvia splendens</i> Lighthouse Series	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA <i>Salvia splendens</i> Red Hot Sally II	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA <i>Salvia splendens</i> Scarlet King	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA <i>Salvia splendens</i> Vista™ Series	288	(day) 68-74°F (20-23°C) (night) 64-68°F (18-20°C)	5.5-5.8 pH 1.2-1.5 mmhos/cm	Facultative Long Day	
SALVIA INTERSPECIFIC <i>Salvia longispicata</i> x <i>farinacea</i> Big Blue	288 128	(day) 68-78°F (20-26°C) (night) 64-68°F (18-20°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Facultative intermediate-day flowering response with fastest flowering at 14 and 15 hours. At ≤13 hours, flowering delayed by ~3 weeks than at 14 and 15 hours. At ≥16 hours and night interruption, flowering delayed by ~1 week than at 14 and 15 hours.	

FINISHING PROGRAMS	KEY TIPS
4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 10" Pot or HB/3 Gallon/25 cm , 3 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	Does not require a pinch. Due to directional stem arching, it is advisable to position plugs with growing shoot facing outward, toward the outside of the container. Repeat PGR application if needed. Higher concentrations of PGR used for small pot and/or low light production.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 9-10 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	Does not require a pinch. Repeat PGR application if needed. Higher concentration of PGR is used for small pot and/or low light production.
Cell Pack , 36 (ppp), 5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring	PGRs are generally not needed unless grown under very warm conditions. Height can be controlled by allowing the soil to dry thoroughly between watering. Plants can be allowed to wilt slightly after the roots reach the side of the container. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen.
Cell Pack , 36 (ppp), 5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring	PGRs are generally not needed unless grown under very warm conditions. Height can be controlled by allowing the soil to dry thoroughly between watering. Plants can be allowed to wilt slightly after the roots reach the side of the container. Height can also be controlled by withholding fertilizer, especially phosphorus and ammonium-based nitrogen.
5"/6"/1 Gallon/15 cm , 1 (ppp), 15-17 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Drop temperature after Week 5 (when plant has 10 established leaves) to 45 to 48°F (7 to 9°C) day and 35 to 45°F (2 to 7°C) night for bud initiation. After Week 11, go back up to growing temperatures for flower development and forcing. Plants can be held at 40 to 45°F (5 to 7°C) for later forcing. Growing-on time in weeks depends on how large a plant is required. A large plant requires a longer time at 60 to 65°F (16 to 18°C) nights. From bud visibility to first opening of flower is approximately 4 to 5 weeks, depending on temperature.
5"/6"/1 Gallon/15 cm , 1 (ppp), 15-17 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Drop temperature after Week 5 (when plant has 10 established leaves) to 45 to 48°F (7 to 9°C) day and 35 to 45°F (2 to 7°C) night for bud initiation. After Week 11, go back up to growing temperatures for flower development and forcing. Plants can be held at 40 to 45°F (5 to 7°C) for later forcing. Growing-on time in weeks depends on how large a plant is required. A large plant requires a longer time at 60 to 65°F (16 to 18°C) nights. From bud visibility to first opening of flower is approximately 4 to 5 weeks, depending on temperature.
Cell Pack , 1 (ppp), 8-10 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 8-10 (weeks), Spring	PGR treatment not needed if produced under low feed, dry watering and high-light conditions. If necessary, Topflor (flurprimidol) 30 ppm (7.9 ml/l, 0.38% formulation) spray can be used at 1 week after transplant. Repeat the spray 2 weeks later. Or Bonzi (paclobutrazol) 5 ppm (1.3 ml/l, 0.4% formulation) drench can be used at 1 week after transplant.
Cell Pack , 1 (ppp), 10 (weeks), Late Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 10 (weeks), Late Spring 5"/6"/1 Gallon/15 cm , 3 (ppp), 8 (weeks), Summer	
306 Pack/1801 , 1 (ppp), 4-5 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 2 (ppp), 7-8 (weeks), Spring, PGR daminozide 2,500-5,000 ppm Spray	PGR applications can be made two weeks after transplant and repeated in 7 to 10 days if needed. Paclobutrazol 0.5 to 1.0 ppm drench can be used alternatively to daminozide. Paclobutrazol is not recommended for early applications in gallons, as this can result in stunting. All timing recommendations are for a finished plant with silver foliage, no flower. Add 4 to 5 weeks for flowering under long days. Finish with flowers in gallons only, not small pots.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Salvia is very sensitive to high salt during early plug stages.
5"/6"/1 Gallon/15 cm , 1 (ppp), 13-14 (weeks), Late Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-13 (weeks), Summer, PGR daminozide 2,500 ppm Spray	Production of Salvia Big Blue needs to be pinched at 14-21 days after transplant, leaving 4 nodes. Finishing in gallons preferred for late Spring and Summer for easiest finish in the best daylength for flowering in season. May be finished in smaller pot sizes without flowers in 9 weeks for fast landscape input use. Lighting is still recommended for this finish, to set buds before sale. Repeat PGR treatments in finish as needed. Paclobutrazol may be used instead of daminozide in final stages, starting 3 weeks after transplant, at rates of 3-5 ppm drench (northern U.S.).

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
SNAPDRAGON <i>Antirrhinum majus</i> Rocket F₁ Series	288	(day) 65-80°F (18-27°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
SNAPDRAGON <i>Antirrhinum majus</i> Snapshot™ F₁ Series	288	(day) 55-70°F (13-21°C) (night) 45-55°F (7-13°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
STOCK <i>Matthiola incana</i> Hot Cakes Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
THUNBERGIA <i>Thunbergia alata</i> Susie™ Series	288	(day) 62-68°F (17-20°C) (night) 60-62°F (16-17°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
TORENIA <i>Torenia fournieri</i> Kauai™ Series	288	(day) 65-70°F (18-21°C) (night) 62-64°F (17-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
VERBENA <i>Verbena x hybrida</i> Quartz Series	288	(day) 65-70°F (18-21°C) (night) 60°F (16°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
VERBENA <i>Verbena x hybrida</i> Quartz XP Series	288	(day) 65-70°F (18-21°C) (night) 60°F (16°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	
VINCA <i>Catharanthus roseus</i> Mediterranean XP Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Pacifica XP Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Tattoo™ Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VINCA <i>Catharanthus roseus</i> Titan™ F₁ Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
Field grown, 3 (ppp), 13-16 (weeks), Spring	Drench with a fungicide at transplant. Also see Cut Flower section for more details.
Cell Pack, 1 (ppp), 6 (weeks), Early Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 6 (weeks), Early Spring	Drench with a fungicide at transplant. Controlling Height: Once plants are rooted to the sides of the containers, they can be allowed to dry slightly prior to irrigation. Withhold fertilizer, especially phosphorus and ammonium-based nitrogen. Snapdragons are responsive to day/night temperature differential (DIF) and are shorter with a negative DIF. When grown as recommended under cool temperatures and high light, no growth regulators should be needed. B-Nine, Bonzi and Sumagic are effective in controlling height in snapdragons, but may delay flowering and will lead to less uniform flowering time.
4"/4.5"/Quart/10 cm, 1 (ppp), 5-7 (weeks), Spring 5"/6"/1 Gallon/15 cm, 3 (ppp), 5-7 (weeks), Spring	Best produced under cooler temperatures for uniformity/quality of flowering and plant habit. In general, PGRs are not required, but can apply Daminozide 2,500 to 3,500 ppm foliar spray about 2 weeks after transplant. Note: If unselected plugs are used, expect to see both single and double flowering plants in the crop.
4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 8-10 (weeks), Spring	
Cell Pack, 1 (ppp), 5-6 (weeks), Spring, PGR chlormequat chloride 500-700 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring, PGR chlormequat chloride 500-750 ppm Spray	No pinch needed. Growth Regulators: Cycocel (chlormequat) can be used at rate of 500 to 750 ppm (4.2 to 6.4 ml/l 11.8% formulation or 0.7 to 1.0 g/l of 75% formulation) at two weeks after transplant; repeat as necessary. Bonzi (paclobutrazol) 20 to 30 ppm (5.0 to 7.5 ml/l, 0.4% formulation) spray also works but is slightly less effective than Cycocel. Avoid using B-Nine/Alar or tank mix of B-Nine/Cycocel as B-Nine will bleach flower colour to become less intense. B-Nine will also delay flower timing.
Cell Pack, 1 (ppp), 6-8 (weeks), Spring Cell Pack, 1 (ppp), 5-7 (weeks), Summer	Growth Regulators: For warm climates B-Nine/Alar (daminozide) at 3,500 ppm applied as foliar spray or 2 applications of A-Rest (ancymidol) at 20 ppm as a foliar spray. For Northern European conditions 2 to 3 applications plus 3,200 B-Nine/Alar at 3,200 ppm plus Cycocel (chlormequat) at 375 ppm is recommended.
Cell Pack, 1 (ppp), 6-8 (weeks), Spring Cell Pack, 1 (ppp), 5-7 (weeks), Summer	Growth Regulators: For warm climates B-Nine/Alar (daminozide) at 3,500 ppm applied as foliar spray or 2 applications of A-Rest (ancymidol) at 20 ppm as a foliar spray. For Northern European conditions 2 to 3 applications plus 3,200 B-Nine/Alar at 3,200 ppm plus Cycocel (chlormequat) at 375 ppm is recommended.
4"/4.5"/Quart/10 cm, 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 7 (ppp), 12-14 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 5-6 (weeks), Summer, PGR daminozide 2,500 ppm Spray 10" Pot or HB/3 Gallon/25 cm, 7 (ppp), 8-10 (weeks), Summer, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible (DLI = 12 moles·m ⁻² ·d ⁻¹) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack, 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm, 1-3 (ppp), 5-7 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible (DLI = 12 moles·m ⁻² ·d ⁻¹) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack, 1 (ppp), 5-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm, 1-3 (ppp), 6-8 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible (DLI = 12 moles·m ⁻² ·d ⁻¹) while maintaining optimal production temperatures. Maintain even moisture and avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. The Tattoo series displays the best colour contrast under warm conditions with higher light levels. When grown under cooler conditions and lower light levels, the colours will appear to be darker overall with less contrast; colours will brighten with increases in temperature and light. Daminozide and ancymidol can be used for height control if needed.
Cell Pack, 1 (ppp), 3-4 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm, 1 (ppp), 4-5 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm, 3 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible (DLI = 12 moles·m ⁻² ·d ⁻¹) while maintaining optimal production temperatures. Maintain even moisture, avoid excessive media and foliage wetness, as these conditions are favourable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
VINCA <i>Catharanthus roseus</i> Valiant™ F₁ Series	288	(day) 75°F (24°C) (night) 65-68°F (18-20°C)	5.5-6.0 pH 1.5-2.0 mmhos/cm	Day Neutral	
VIOLA <i>Viola cornuta</i> Frizzle Sizzle Mini F₁ Series	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)		Facultative Long Day	
VIOLA <i>Viola cornuta</i> Quicktime™ F₁ Series	288	(day) 60°F (16°C) (night) 50-55°F (10-13°C)		Facultative Long Day	
VIOLA <i>Viola cornuta</i> Sorbet® F₁ Series	288	(day) 60°F (16°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5 mmhos/cm	Facultative Long Day	
VIOLA <i>Viola cornuta</i> Sorbet® XP F₁ Series	288	(day) 60°F (16°C) (night) 50-55°F (10-13°C)	5.5-5.8 pH 1.5 mmhos/cm	Facultative Long Day	
ZINNIA <i>Zinnia marylandica</i> Double Zahara™ Series	288	(day) 65-70°F (18-21°C) (night) 59-64°F (15-18°C)	5.5-6.0 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
ZINNIA <i>Zinnia angustifolia</i> Star Series	288	(day) 65-70°F (18-21°C) (night) 65-70°F (18-21°C)	5.5-6.0 pH 1.2-1.5 mmhos/cm	Day Neutral	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) State Fair Series	288	(day) 65-70°F (18-21°C) (night) 65-70°F (18-21°C)	5.5-6.0 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
ZINNIA <i>Zinnia marylandica</i> Zahara® Series	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Facultative Short Day	
ZINNIA <i>Zinnia elegans</i> (syn. <i>Zinnia violaceae</i>) Zesty™ Series	288	(day) 70-85°F (21-29°C) (night) 60-68°F (16-20°C)	5.5-6.0 pH 0.75 mmhos/cm	Facultative Short Day	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 3-4 (weeks), Spring, PGR daminozide 2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring, PGR daminozide 2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 4-6 (weeks), Spring, PGR daminozide 2,500 ppm Spray	Drench with a fungicide at transplant. Keep light as high as possible (DLI = 12 moles·m ⁻² ·d ⁻¹) while maintaining optimal production temperatures. Maintain even moisture and avoid excessive media and foliage wetness, as these conditions are favorable for disease incidence. Plant growth regulators may not be necessary for this series. Negative DIF can be used to control height. Daminozide and ancymidol can be used for height control if needed.
Cell Pack , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 6-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions. For maximum ruffled edge, schedule for late Autumn, Winter and Spring programs. Heat reduces the ruffled edge and colour contrast.
Cell Pack , 1 (ppp), 5-6 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-6 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray	Under northern overwinter growing culture, where night temperatures are just above freezing (frost protection), Quicktime varieties will be up to 2 weeks faster to finish in production than Sorbet XP.
Cell Pack , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray Cell Pack , 1 (ppp), 3 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 3-4 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions.
Cell Pack , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-7 (weeks), Early Spring, PGR daminozide 1,500-2,500 ppm Spray Cell Pack , 1 (ppp), 3 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 3-4 (weeks), Autumn, PGR daminozide 2,500-5,000 ppm Spray	Adjust PGR rates and frequency of application depending on local conditions.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Flowers will be more double, with more intense colour, when grown under high light levels. Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Spring	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500 ppm Spray 5"/6"/1 Gallon/15 cm , 3 (ppp), 5-6 (weeks), Summer, PGR daminozide 3,500 ppm Spray	Avoid excessive moisture on plants and flowers. Monitor for Botrytis.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,500-3,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-7 (weeks), Spring, PGR daminozide 1,500-3,500 ppm Spray 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Late Spring, PGR paclobutrazol 5 ppm Drench 5"/6"/1 Gallon/15 cm , 1 (ppp), 6-7 (weeks), Late Spring, PGR paclobutrazol 5 ppm Drench	Growth regulators are recommended for pack and container production. Foliar sprays of daminozide at 1,500-3,500 ppm (rate dependent on temperature) applied 2 to 3 times are beneficial for Zesty zinnia. First application can be done 1 week after transplant, followed by a second application one week later. If necessary, a third application can be done 3 to 4 weeks after transplant. Adjust PGR rates and frequency of application depending on local conditions. Keep light as high as possible. A DLI below 8 mol·m ⁻² ·d ⁻¹ reduces flower doubleness on this crop.

PERENNIALS

*KieftSeed*TM



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 46
POTTED PLANTS	PROPAGATION GUIDE P. 112 / FINISHING GUIDE P. 118
CUT FLOWERS	PROPAGATION GUIDE P. 124 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	
HANDPICKED	PROPAGATION GUIDE P. 142 / FINISHING GUIDE P. 156
KITCHEN MINIS	PROPAGATION GUIDE P. 168 / FINISHING GUIDE P. 172



CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
AQUILEGIA <i>Aquilegia x hybrida</i> Earlybird™ F₁ Series	RAW	288	6-7	1	Optional	7-14	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
AQUILEGIA <i>Aquilegia x hybrida</i> Swan F₁ Series	RAW	288	6-9	1	Yes	10-14	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
AQUILEGIA <i>Aquilegia vulgaris</i> Winky Double Series	RAW	288	7-8	2-3	Light cover	7-12	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
AQUILEGIA <i>Aquilegia vulgaris</i> Winky Single Series	RAW	288	7-8	2-3	Light cover	7-12	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
ARMERIA <i>Armeria pseudarmeria</i> Ballerina Series	RAW	288 128	6-8 13-15	2-4 2-4	No	3-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 60-65°F (16-18°C) (l) Optional	
AURINIA <i>Aurinia saxatile</i> Gold Rush	RAW	288	6-7	4	No	3-5	5.5-6.4 pH 1.1-1.3 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
BELLIS <i>Bellis perennis</i> Bellissima™ Series	PEL	512	5-6	1-2	Yes	3-5	5.5-6.2 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 65-72°F (18-22°C) (l) Optional	
CAMPANULA <i>Campanula carpatica</i> Rapido F₁ Series	PEL	288 128	7-10 12-13	4 4	No	7-9	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-72°F (18-22°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> Double the Sun	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> Early Sunrise	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
COREOPSIS <i>Coreopsis grandiflora</i> Sunfire	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	VERNALIZATION REQUIRED	KEY TIPS
	(m) Level 4 (t) 68-73°F (20-23°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) ancymidol 2 ppm Spray	(m) Level 3 (t) 65-70°F (18-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) ancymidol 2 ppm Spray	Yes-Low vernalization requirement, only 4 weeks at 50-55°F (10-13°C) from 5 to 6 true leaves onwards.	Maintaining moisture above level 3 in Stage 1 and 2 is critical for germination and seedling development. Responsive to weekly ancymidol 2 ppm spray or ancymidol 2 ppm/daminozide 2,500 ppm tank mix beginning 3 weeks from sowing.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Yes-but vernalization temperature can go as high as 55°F (13°C) nights and 60°F (15°C) days; duration of 4 weeks at 41°F (5°C) or 6 weeks at 55°F (13°C); start cool treatment after 12 to 15-leaf stage	
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Yes-duration of 8 to 10 weeks; juvenility min. 10 to 12 true leaves	
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Yes-duration of 8 to 10 weeks; juvenility min. 10 to 12 true leaves	
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500 f.c. (26,900 Lux)	(m) Level 2 (t) 55-60°F (13-16°C) (l) 5,000 f.c. (53,800 Lux)	No	For Mother's Day forcing: See Perennials Forcing Guide
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Yes-6 to 8 weeks ADT 50°F (10°C) starting at 10 true leaves	Aurinia is a rock garden plant. Provide good drainage and an active climate in high light.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Use a medium covering of coarse-grade vermiculite to improve seedling uniformity.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid high EC in early plug stage - maximum 0.5 in Stages 1 and 2. Grow at less than 13 hours to keep vegetative. Spray damp-off fungicide. For forcing info: See Perennials Forcing Guide
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 11 hours for 100% flowering but up to 3 weeks faster flowering at ≥13 hours than shorter photoperiods. For forcing info: See Perennials Forcing Guide. 1 to 2 seeds for 288/3 to 4 for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use B-Nine/Alar (1,500 to 2,500 ppm spray). Short day bulk not needed for Autumn sales.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 14 hours. For forcing info: See Perennials Forcing Guide. 1 to 2 seeds for 288/4 to 6 seeds for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use B-Nine/Alar (1,500 to 2,500 ppm spray). Short day bulk not needed for Autumn sales.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 13 hours. Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. 1 to 2 seeds for 288/3 to 4 seeds for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use B-Nine/Alar (1,500 to 2,500 ppm spray).

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
COREOPSIS <i>Coreopsis grandiflora</i> SunKiss	PRM	288 128	5-7 7-8	1-2 2-4	Light cover	3-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	RAW	288	6-8	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
DELPHINIUM <i>Delphinium elatum</i> Dasante Blue F₁	RAW	288	6-7	1	Yes	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
DELPHINIUM <i>Delphinium grandiflorum</i> Diamonds Blue F₁	RAW	288	6-7	1	Yes	5-7	5.8-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
DELPHINIUM <i>Delphinium elatum</i> Guardian F₁ Series	RAW	288	6-7	1	Yes	7-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional	
DIANTHUS <i>Dianthus x barbatus</i> <i>interspecific</i> Rockin'™ F₁ Series	PEL	288	4-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
DIGITALIS <i>Digitalis purpurea</i> Dalmatian F₁ Series	PEL	288 128	5-6 6-7	1 3	No	5-6	5.8-6.2 pH 0.7-1.0 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
ECHINACEA <i>Echinacea x hybrida</i> Artisan™ Collection F₁ Series	AMP	128 72	5-6 11-13	1 1	Yes	4-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-77°F (22-25°C) (l) Optional	
ECHINACEA <i>Echinacea x hybrida</i> Cheyenne Spirit	RAW	128 72	5-6 11-13	1 1	Yes	4-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	
ECHINACEA <i>Echinacea purpurea</i> PowWow® Series	RAW	128 72	5-6 11-13	1 1	Yes	4-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 71-76°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	VERNALIZATION REQUIRED	KEY TIPS
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Critical Daylength: 12.5 hours. Short day (at 10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. 1 seed for 288/3 to 4 seeds for 84. Plug PGRs: For Spring production, no PGRs needed. For Summer production under long day conditions, can use B-Nine/Alar (1,500 to 2,500 ppm spray). Short day bulk not needed for Autumn sales.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	
	(m) Level 3 (t) 65-70°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Avoid low light conditions.
	(m) Level 3 (t) 65-70°F (18-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Best germinated in germ chamber with 95 to 97% RH in Stage 1. Maximum EC in propagation: 1.0.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 8-10 mol-m ⁻² -d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) paclobutrazol 4-6 ppm Spray	(m) Level 2-3 (t) 55-60°F (13-16°C) (l) 10 mol-m ⁻² -d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	Paclobutrazol spray at 3-5 ppm at sowing will help control hypocotyl stretch.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC) (p) daminozide 2,000 ppm Spray or paclobutrazol 5 ppm Spray or uniconazole 3 ppm Spray	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray or paclobutrazol 5 ppm Spray or uniconazole 3 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray or paclobutrazol 5 ppm Spray or uniconazole 3 ppm Spray	No	Critical Daylength: 14 hours. Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 5-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 10 mol-m ⁻² -d ⁻¹ (f) 150 to 175 ppm N (1.0 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 10-15 mol-m ⁻² -d ⁻¹ (f) 175-225 ppm N (1.2 to 1.5 EC)	No-but beneficial	Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 5-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 10 mol-m ⁻² -d ⁻¹ (f) 150 to 175 ppm N (1.0 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 10-15 mol-m ⁻² -d ⁻¹ (f) 175-225 ppm N (1.2 to 1.5 EC)	No-but beneficial	Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.
	(m) Level 3-4 (t) 71-73°F (22-23°C) (l) 5-8 mol-m ⁻² -d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 10 mol-m ⁻² -d ⁻¹ (f) 150 to 175 ppm N (1.0 to 1.2 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 10-15 mol-m ⁻² -d ⁻¹ (f) 175-225 ppm N (1.2 to 1.5 EC)	No-but beneficial	Forcing Protocol: Produce plug or liner to the 2 fully mature leaf stage. At the 2 fully mature leaf stage, begin short day conditions. Continue short day conditions until plant reaches 7 fully mature leaves. The 128 is the minimum size for SD grown plugs to 7 fully mature leaves. For more forcing info: See Perennials Forcing Guide and GrowerFacts Extra Spring and Fall forcing.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
GAILLARDIA <i>Gaillardia x grandiflora</i> Mesa™ F₁ Series	RAW	128 288	6-7 5-6	1 1	Yes	4-5	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 68-73°F (20-23°C) (l) Optional	
GAURA <i>Gaura lindheimeri</i> Sparkle White	RAW	288	5-6	1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Optional	
GYPSOPHILA <i>Gypsophila cerastoides</i> Pixie Splash	PRM	288	5-6	4	No	3-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 60-65°F (16-18°C) (l) Light	
HEUCHERA <i>Heuchera x hybrida</i> Melting Fire	PEL	288 128	9-11 10-11	4-5 6-8	No	9-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Light	
HEUCHERA <i>Heuchera micrantha</i> Palace Purple	PEL	288 128	6-8 8-9	4 6	No	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 68-72°F (20-22°C) (l) Light	
HIBISCUS <i>Hibiscus moscheutos</i> Luna™ F₁ Series	RAW	288 128	3-4 4	1 1	Yes	3-5	5.5-6.3 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-75°F (20-24°C) (l) Dark	
IBERIS <i>Iberis sempervirens</i> Whiteout F₁	RAW	288	7-8	3-4	Yes	4-7	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 61-65°F (16-18°C) (l) Optional	
LAVANDULA <i>Lavandula angustifolia</i> Avignon Early Blue	PRM	288 128	6-8 8-9	4 6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	VERNALIZATION REQUIRED	KEY TIPS
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-67°F (18-19°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2-4 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	No	For forcing info: See Perennials Forcing Guide.
	(m) Level 3-4 (t) 66-70°F (19-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 65-67°F (18-19°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	For forcing info: See Perennials Forcing Guide. Gaura seed is a nutlet with 2 to 3 seeds, so plug cells may have greater than one seedling.
	(m) Level 3 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹	Yes-duration of 8 weeks; max 40°F (4°C)	Spray damp-off fungicide.
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 4-5 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 4-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-2 (t) 65-68°F (18-20°C) (l) 6-10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No-vernalization not needed when sold for foliage	Keep medium moisture level 4 and RH 80% on stage 1; not too wet!! Upon removal from germination chamber, place in propagation house with bottom heat (70°F/21°C soil temperature). Use very light mist to maintain humidity but allowing media to dry to 3.5. (trays would need mist watered as necessary when they dried to a 3). Trays would stay in propagation under mist up to 3 weeks. Spray damp-off fungicide. This variety is slower to germinate, in 2 to 3 flushes. Regarding Multi-Sow: note that single sow is possible in 510 trays, for example, with transplant into 128 trays. Grading is needed before transplant. Melting Fire is an alternative for Tissue Culture varieties (i.e., Crimson Curls) and is an economical approach already being applied commercially. For forcing info: See Perennials Forcing Guide.
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	No-vernalization not needed when sold for foliage	For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide. NOTE: Palace Purple is quicker to produce as a plug and finished plant than Melting Fire.
	(m) Level 3 (t) 68-71°F (20-22°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 68-71°F (20-22°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) chlormequat chloride 300 ppm Spray	(m) Level 2 (t) 68-71°F (20-22°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) chlormequat chloride 300 ppm Spray	No-damage to plugs results below 41°F (5°C)	For forcing info: See Perennials Forcing Guide. Cover seed with plug media. Grow plants under daily average temperature above 68°F (20°C) and keep media moist to wet. Use PGRs in warmer conditions from true leaf stage onwards: tank mix of Cycocel (chlormequat chloride) 300 ppm and B-Nine (daminozide) 2,500 ppm.
	(m) Level 3 (t) 61-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux)	(m) Level 2 (t) 61-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux)	(m) Level 2 (t) 61-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux)	Yes-minimum 8 to 10 weeks. Plants should be bulked for about 8 to 10 weeks before being receptive to cold treatment.	No pinching needed.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000- 2,000 ppm Spray	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, with watering in early morning, to allow plugs to dry up during the day. If respiration and fertilization are too low, Lavandula angustifolia can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilization.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
LAVANDULA <i>Lavandula stoechas</i> Bandera Series	RAW	288 128	6-7 7-8	1 1	Yes	3-5	5.5-6.2 pH 1.0-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
LAVANDULA <i>Lavandula angustifolia</i> Blue Spear	PRM	288 128	6-8 8-9	3-4 5-6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
LAVANDULA <i>Lavandula angustifolia</i> Ellagance Series	PRM	288 128	6-8 8-9	4 6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
LAVANDULA <i>Lavandula angustifolia</i> Lavance Deep Purple	PRM	288 128	6-8 8-9	4 6	Yes	4-5	5.8-6.5 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C)	
LAVANDULA <i>Lavandula multifida</i> Spanish Eyes	RAW	288	5-6	2-4	Light cover	4-5	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> , <i>Chrysanthemum maximum</i> Madonna F₁	RAW	288 72	6-7 7-8	1 4	Optional	4-10	5.5-6.2 pH 0.2-0.5 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Optional	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> White Lion F₁	RAW	288 72	6-7 7-8	1 4	Optional	4-10	5.5-6.2 pH 0.2-0.5 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	VERNALIZATION REQUIRED	KEY TIPS
	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	At sowing, do not cover the seeds too heavily, as it will significantly decrease germination. At Stage 1 germination, pull from the germination chamber at 10 to 15% visible radicle emergence and grow at 60 to 65°F (16 to 18°C) to avoid stretch. L. stoechas may stretch easily at higher temperatures in the early plug phase. Keep active growing environment. Spray damp-off fungicide. Genetically compact plants should not need PGRs in plug production. If needed, use B-Nine (daminozide) spray 2,500 ppm. High pH (> 6.8) causes chlorosis. For forcing info: See Perennials Forcing Guide. See Lavender Scheduling Tool at panamseed.com for finishing schedules by region.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000-2,000 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000-2,000 ppm Spray	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, watering in the early morning to allow the plugs to dry up during the day. If respiration and fertilization are too low, Lavandula angustifolia can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilization.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000-2,000 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,000-2,000 ppm Spray	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, with watering in early morning, to allow plugs to dry up during the day. If respiration and fertilization are too low, Lavandula angustifolia can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilization.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	For forcing info: see Perennials Forcing Guide. For scheduling info: see Lavender scheduling tool. Spray damp-off fungicide. Provide good ventilation and active respiration in plug production. Grow on the dry side, with watering in early morning, to allow plugs to dry up during the day. If respiration and fertilization are too low, Lavandula angustifolia can show "black spots" on cotyledons due to root pressure damage. This is reversible with improved ventilation and higher fertilization.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (p) daminozide 1,500-2,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (p) daminozide 1,500-2,500 ppm Spray	No	Spray preventive fungicide against damping off. Grow in an active growing climate.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 3,000-5,000 f.c. (32,300-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid high soluble salts. Provide an active climate, including air movement and relatively high light levels. Do not grow too long, as old plugs show irregular growing after transplant.
	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 3,000-5,000 f.c. (32,300-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 5,000-7,000 f.c. (53,800-75,300 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid high soluble salts. Provide an active climate, including air movement and relatively high light levels. Do not grow too long, as old plugs show irregular growing after transplant.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
LOBELIA <i>Lobelia x speciosa</i> Starship™ F₁ Series	PEL	288	8-10	1	Light cover	8-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Light	
MYOSOTIS <i>Myosotis sylvatica</i> Mon Amie Series	RAW	288	4-5	1	No	3-5	5.6-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
PAPAVER <i>Papaver nudicaule</i> Champagne Bubbles F₁ Series	PRM	288	4-5	1	Light cover	7-12	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
PENSTEMON <i>Penstemon heterophyllus</i> Electric Blue	RAW	288	4-5	1	No	8-10	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-74°F (18-23°C) (l) Optional	
PEROVSKIA <i>Perovskia atriplicifolia</i> Blue Steel	RAW	288 72	5-9 7-10	1 3-4	Light cover	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-72°F (18-22°C) (l) Optional	
PEROVSKIA <i>Perovskia atriplicifolia</i> Bluesette	RAW	288 72	5-6 7-8	1 3-4	Light cover	2-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-77°F (20-25°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldblitz	PRM	288 72	6-8 12-14	1 2-3	Light cover	2-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 5-4 (t) 72-77°F (22-25°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldsturm	PRM	288 72	6-8 14	2 3-4	Yes	3-5	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-77°F (22-25°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	VERNALIZATION REQUIRED	KEY TIPS
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500- 2,500 ppm Spray	(m) Level 3-2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500- 2,500 ppm Spray	No	Critical Daylength: 13 hours. Short day (10 hours) bulk needed for forcing. Spring forcing for Week 19 sales: Use 72 plug. Fall forcing for Week 36 sales: Use 288 plug. For more forcing info: See Perennials Forcing Guide. Needs light for germination, but avoid drying out (light vermiculite cover advised). Grow plugs at 10 hours or less for at least the first 8 weeks from sowing to keep vegetative. Keep medium moisture level 4 and RH 80% on Stage 1; not too wet!! Upon removal from Germ chamber, place in prop house with bottom heat (70°F/21°C). Use very light mist to maintain high humidity (70%+), when media reaches level 3, trays need to be mist watered again. Trays would stay in propagation under mist up to 3 weeks. Starship Deep Rose has 7 to 10 days longer plug lead time, due to a slower start.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 3,000-4,000 f.c. (32,300-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Maintain low pH to avoid chlorosis.
	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Spray damp-off fungicide. Avoid high pH (>6.1) that causes chlorosis from iron deficiency.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 3,000-4,000 f.c. (32,300-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No-but beneficial; cooled plants flower more uniformly and faster than non-cooled plants; duration of 10 weeks at 41°F (5°C)	Needs active growing climate.
	(m) Level 4 (t) 65-72°F (18-22°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,500 ppm Spray	(m) Level 3 (t) 64-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,500 ppm Spray	No	Light Accumulator, Daylength Neutral. For forcing info: See Perennials Forcing Guide. 2 to 3 seeds per cell for larger plugs (128 and up): see GrowerFacts. For plug size 180 and larger, pinch* plugs at 3 to 4 node pairs. 288 plugs are difficult to pinch, so pinch at 2 to 3 weeks after transplant. Plug lead time varies with season and plug size: see GrowerFacts. Spray fungicide against damping off, directly after sowing. *For larger (2 gallon and up) containers, plugs do not need to be pinched during plug production or after transplant. Instead, use a stronger PGR, B-Nine at 5,000 ppm 1 or 2 applications at 2 to 3 weeks after transplant.
	(m) Level 4-3 (t) 68-73°F (20-23°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(t) 64-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	For forcing info: See Perennials Forcing Guide. Genetically compact variety requires an active climate. No PGRs needed, except in unfavorable climate conditions, the Alar 1 x spray at 1,500 ppm could be used. Pinching not really needed, optional for smaller containers; pinch at 3 to 4 nodes, approximately 2 to 3 weeks after transplant. Difficult to pinch in plug stage. Spray fungicide directly after sowing to prevent damping off.
	(m) Level 4 (t) 68-74°F (20-23°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-3,500 f.c. (26,900-37,700 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	No	No PGR plug needed. For forcing info: See Perennials Forcing Guide.
	(m) Level 3-4 (t) 68-74°F (20-23°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Annual program for late Summer flowering: provide 10-hour short days. Bulk from 2 true leaves (approximately 4 weeks after sowing) until 10 true leaves for more uniform flowering. Step up 288 plugs into 72 or 50 cell, maintaining 10-hour short days. For forcing info: See Perennials Forcing Guide.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SALVIA <i>Salvia nemorosa</i> New Dimension™ Series	RAW	288 128	5-6 7	2-4 4-6	Light cover	3-4	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SALVIA <i>Salvia nemorosa</i> Salvatore Blue	RAW	288 128	5-6 5-6	1 2-3	Light cover	3-4	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SALVIA <i>Salvia patens</i> Patio Series	RAW	288 128	5-6 7	1 2-3	No	4-7	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Light	
SCABIOSA <i>Scabiosa columbaria</i> Blue Note	RAW	288 128	6-8 8-9	2-3 4-5	Yes	8-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Dark	
SCABIOSA <i>Scabiosa japonica var. alpina</i> Pink Diamonds	RAW	288 128	6-8 8-9	2-3 4-5	Yes	8-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Dark	
SILENE <i>Silene alpestris</i> Starry Dreams	RAW	288	5-6	3-4	No	5-7	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Dark	
VERBASCUM <i>Verbascum x hybrida</i> Southern Charm	RAW	288	4-5	1	Yes	3-7	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-68°F (18-20°C) (l) Dark	
VERBENA <i>Verbena bonariensis</i> Buenos Aires	PRM	288 128	6-7 8	4 4	Yes	7-10	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Dark	
VERBENA <i>Verbena rigida</i> Santos Purple	PRM	288 128	6-7 8	4 4	Yes	7-10	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Dark	

	STAGE 2	STAGE 3	STAGE 4	VERNALIZATION REQUIRED	KEY TIPS
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Critical Daylength: 14 hours. Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000- 1,500 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 1,500- 2,000 ppm Spray	No	Grow in an active climate. Avoid moist and high relative humidity.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,000- 2,000 ppm Spray	(m) Level 1-2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 1,500- 2,000 ppm Spray	No	Short day (10 hours) bulk needed for forcing. For forcing info: See Perennials Forcing Guide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Short day (10 hours) bulk needed for forcing and minimum temperature of 62 to 65°F (17 to 18°C) for 6 weeks. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Short day (10 hours) bulk needed for forcing and minimum temperature of 62 to 65°F (17 to 18°C) for 6 weeks. For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	Avoid growing wet.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	No	
	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 1,500/200- 2,500/300 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 2,500/300- 3,750/500 ppm Spray	No	For forcing info: See Perennials Forcing Guide. Spray damp-off fungicide. Grow relatively dry after Stage 1.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 1,500/200- 2,500/300 ppm Spray	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ chlormequat chloride tank mix 2,500/300- 3,750/500 ppm Spray	No	For forcing info: see Perennials Forcing Guide. Spray damp-off fungicide.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
AQUILEGIA <i>Aquilegia x hybrida</i> Earlybird™ F₁ Series	3-9	288	(day) 65-68°F (18-20°C) (night) 50-54°F (10-12°C)	5.8-6.2 pH 1.3-1.8 mmhos/cm	Day Neutral	
AQUILEGIA <i>Aquilegia x hybrida</i> Swan F₁ Series	3-9	288	(day) 60-68°F (16-20°C) (night) 55-64°F (13-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Day Neutral Aquilegia is a day-neutral plant after vernalization. Long days of 14 hours or longer could stimulate stem elongation and slightly hasten flowering after the vernalization period.	
AQUILEGIA <i>Aquilegia vulgaris</i> Winky Double Series	3-8	288	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Day Neutral Aquilegia is a day-neutral plant after vernalization. Long days of 14 hours or longer could stimulate stem elongation and slightly hasten flowering after the vernalization period.	
AQUILEGIA <i>Aquilegia vulgaris</i> Winky Single Series	3-8	288	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Day Neutral Aquilegia is a day-neutral plant after vernalization. Long days of 14 hours or longer could stimulate stem elongation and slightly hasten flowering after the vernalization period.	
ARMERIA <i>Armeria pseudarmeria</i> Ballerina Series	7-9	288 128*	(day) 60-65°F (16-18°C) (night) 50-58°F (10-14°C)	5.6-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
AURINIA <i>Aurinia saxatile</i> Gold Rush	3-9	288	(day) 60-65°F (16-18°C) (night) 50-54°F (10-12°C)	5.5-6.4 pH 1.2-1.5 mmhos/cm	Day Neutral	
BELLIS <i>Bellis perennis</i> Bellissima™ Series	4-7	512	(day) 60-65°F (16-18°C) (night) 40-45°F (4-7°C)	5.5-6.4 pH 1.1-1.3 mmhos/cm	Day Neutral	
CAMPANULA <i>Campanula carpatica</i> Rapido F₁ Series	3-9	288 128*	(day) 65-68°F (18-20°C) (night) 55-60°F (13-16°C)	5.6-6.2 pH 1.0-1.3 mmhos/cm	Obligate Long Day Long day required (14 hours or 4-hour NI) until buds are visible.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	Yes-Low vernalization requirement, only 4 weeks at 50-55°F (10-13°C) from 5 to 6 true leaves onwards.	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-16 (weeks), Spring, ADT 55°F (13°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 20-30 (weeks), Early Spring, ADT 50°F (10°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 20-30 (weeks), Early Spring, ADT 50°F (10°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 13-16 (weeks), Spring, ADT 55°F (13°C) PGR daminozide/ancymidol tank mix 2,500-10 ppm Spray	Avoid flowering beneath the foliage in very short natural daylength period. When producing under natural daylength shorter than 11 hours, 15 minutes during flower development stage (about 4 weeks from your target sales date), flowers could hide beneath foliage. Supplemental long day lighting (night interruption from 10 pm to 2 am or 16-hour daylength extension) will achieve flower stem elongation.
	Yes-but vernalization temperature can go as high as 55°F (13°C) nights and 60°F (15°C) days; duration of 4 weeks at 41°F (5°C) or 6 weeks at 55°F (13°C); start cool treatment after 12 to 15-leaf stage	Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 22-28 (weeks), Spring PGR daminozide/ancymidol tank mix 2,500/10 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 32-38 (weeks), Autumn PGR daminozide/ancymidol tank mix 2,500/10 ppm Spray	Requires night temperatures below 55°F (13°C) to initiate flower buds.
	Yes-duration of 8 to 10 weeks; juvenility min. 10 to 12 true leaves	Overwinter, 4"/4.5"/Quart/10 cm , 1-2 (ppp), 32-40 (weeks), Spring PGR daminozide 1,250-2,500 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 2-4 (ppp), 32-40 (weeks), Spring PGR daminozide 1,250-2,500 ppm Spray	Keep RH at optimum 65%. Outside crops can be forced indoors at 54 to 59°F (12 to 15°C).
	Yes-duration of 8 to 10 weeks; juvenility min. 10 to 12 true leaves	Overwinter, 4"/4.5"/Quart/10 cm , 1-2 (ppp), 32-40 (weeks), Spring PGR daminozide 1,250-2,500 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 2-4 (ppp), 32-40 (weeks), Spring PGR daminozide 1,250-2,500 ppm Spray	Keep RH at optimum 65%. Outside crops can be forced indoors at 54 to 59°F (12 to 15°C).
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-15 (weeks), Spring PGR paclobutrazol 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 12-15 (weeks), Spring PGR paclobutrazol 5 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 26-34 (weeks), Spring PGR paclobutrazol 5 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 26-34 (weeks), Spring PGR paclobutrazol 5 ppm Spray	Prevent Mg and Fe deficiency. Avoid planting plugs too deep (crown below soil surface) and growing wet in plug and finished stages.
	Yes-6 to 8 weeks ADT 50°F (10°C) starting at 10 true leaves	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-32 (weeks), Early Spring, ADT 60°F (16°C)	Requires well-drained soil; avoid Winter wet. Avoid planting plugs too deep (crown must be equal with the media surface).
	No	Annual, 306 Pack/1801 , 1 (ppp), 6-8 (weeks), Autumn PGR daminozide 1,000-2,000 ppm Spray Annual, 306 Pack/1801 , 1 (ppp), 6-8 (weeks), Winter PGR daminozide 1,000-2,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 16-24 (weeks), Early Spring PGR daminozide 1,000-2,000 ppm Spray	Grow as cool as possible but avoid freezing temperatures. For forcing the crop when grown at these temperatures, grow at 55 to 58°F (10 to 12°C) for 4 weeks before sale. PGR for EU is Tilt (propiconazole) at 200 to 300 ppm.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring PGR chlormequat chloride 750 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Summer PGR chlormequat chloride 750 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Summer PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 12-14 (weeks), Late Spring PGR chlormequat chloride 750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 12-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 9-12 (weeks), Summer PGR chlormequat chloride 750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-5 (ppp), 9-12 (weeks), Summer PGR daminozide 2,000-2,500 ppm Spray	Moist, well-drained medium. Growing too cool delays both plug and finished plant. Long day Summer decreases plant bulk. Use more plugs per container compared to Spring.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
COREOPSIS <i>Coreopsis grandiflora</i> Double the Sun	4-9	288 128*	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long Day required; minimum 11 hours for 100% flowering but up to 3 weeks faster flowering at ≥13 hours.	
COREOPSIS <i>Coreopsis grandiflora</i> Early Sunrise	4-9	288 128*	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long day required - minimum 14 hours.	
COREOPSIS <i>Coreopsis grandiflora</i> Sunfire	4-9	288 128*	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Obligate Long Day Long day required - minimum 13 hours.	
COREOPSIS <i>Coreopsis grandiflora</i> SunKiss	4-9	288 128*	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.8-6.2 pH 1.2-1.5 mmhos/cm	Obligate Long Day Long day required - minimum 12.5 hours.	
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	5-9	288	(day) 65-70°F (18-21°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.3-1.6 mmhos/cm	Day Neutral	
DELPHINIUM <i>Delphinium elatum</i> Dasante Blue F.	4-7	288	(day) 65-70°F (18-21°C) (night) 55-63°F (13-17°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Day Neutral	
DELPHINIUM <i>Delphinium grandiflorum</i> Diamonds Blue F.	4-9	288	(day) 65-70°F (18-21°C) (night) 55-63°F (13-17°C)	5.6-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-3,000 ppm Spray	Apply PGRs when buds are visible
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Summer PGR daminozide 5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-13 (weeks), Summer PGR daminozide 5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray	Apply PGRs when buds are visible.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer PGR daminozide 5,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 11 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-12 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Summer PGR daminozide 5,000 ppm Spray	Apply PGRs when buds are visible.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 5,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Summer, ADT 72°F (22°C) PGR daminozide 5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Autumn, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Late Spring, ADT 72°F (22°C) PGR daminozide 2,500-5,000 ppm Spray	Apply PGRs when buds are visible.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 11-13 (weeks), Spring PGR paclobutrazol 20 ppm Spray	See Cut Flower section for cut flower production for both field and greenhouse. Monitor for Powdery Mildew.
	No	Overwinter, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 20-24 (weeks), Early Spring, ADT 55°F (13°C) PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-16 (weeks), Spring, ADT 60°F (16°C) PGR paclobutrazol 20 ppm Spray Overwinter, 8"/2 Gallon/20 cm , 3 (ppp), 20-24 (weeks), Early Spring, ADT 55°F (13°C) PGR paclobutrazol 20 ppm Spray Annual, 8"/2 Gallon/20 cm , 3 (ppp), 12-16 (weeks), Spring, ADT 60°F (16°C) PGR paclobutrazol 20 ppm Spray	Keep light levels as high as possible. No pinching needed. Do not allow plants to wilt. Ship this crop when one-third of the florets are open to reduce the risk of flower shattering during shipping.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Spring PGR paclobutrazol 20 ppm Spray Annual, 8"/2 Gallon/20 cm , 3 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 8"/2 Gallon/20 cm , 3 (ppp), 12-14 (weeks), Spring PGR paclobutrazol 20 ppm Spray	Avoid planting plugs too deep. Maintain good fertilization, especially at flower initiation. Monitor for Aphids, Botrytis, Powdery Mildew.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
DELPHINIUM <i>Delphinium elatum</i> Guardian F₁ Series	4-7	288	(day) 65-70°F (18-21°C) (night) 60°F (16°C)	5.8-6.2 pH 1.4-1.5 mmhos/cm	Facultative Long Day	
DIANTHUS <i>Dianthus x barbatus interspecific</i> Rockin'™ F₁ Series	5-8	288	(day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Long day beneficial	
DIGITALIS <i>Digitalis purpurea</i> Dalmatian F₁ Series	5-9	288 128*	(day) 60-68°F (16-20°C) (night) 50-65°F (10-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Long Day Daylength: 14 hours.	
ECHINACEA <i>Echinacea x hybrida</i> Artisan™ Collection F₁ Series	4-10	128 72	(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	Short Day-Long Day Grow plugs under SD (≤12 hours) until 7 mature leaves. Thereafter, 100% plants flower at ≥10 hours when grown under high daily light integral (DLI; ~15 moles/m ² /d) and at ≥12 hours under low DLI (~5 moles/m ² /d). Plants flowered ~5 weeks faster at ≥13 hours than at 10 under higher DLI and ~2 weeks faster at ≥13 hours than at 12 under low DLI. Therefore, fastest flowering at ≥13 hours.	
ECHINACEA <i>Echinacea x hybrida</i> Cheyenne Spirit	4-10	128 72*	(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	Short Day-Long Day Grow plugs under SD (≤12 hours) until 7 mature leaves. Thereafter, 100% plants flower at ≥10 hours when grown under high daily light integral (DLI; ~15 moles/m ² /d) and at ≥12 hours under low DLI (~5 moles/m ² /d). Plants flowered ~5 weeks faster at ≥13 hours than at 10 under higher DLI and ~2 weeks faster at ≥13 hours than at 12 under low DLI. Therefore, fastest flowering at ≥13 hours.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-13 (weeks), Summer PGR paclobutrazol 20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-16 (weeks), Spring PGR paclobutrazol 20 ppm Spray	PGRs: 2 Bonzi sprays, the first approximately 3 weeks after transplant and the second approximately 2 weeks later. Possible third application may be necessary, subject to conditions. Delphinium are especially sensitive to Powdery Mildew; spray preventively if necessary. Ship and sell latest with flower spike one third open to decrease risk of petal shattering. See Cut Flower section for more details on cut flower production. Container production: PGR Bonzi (paclobutrazol) 1 or 2 applications 20 ppm spray.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Spring PGR paclobutrazol 15-20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-10 (weeks), Spring PGR paclobutrazol 15-20 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3 (ppp), 8-9 (weeks), Autumn PGR paclobutrazol 15-20 ppm Spray Annual, 10" Pot or HB/3 Gallon/25 cm , 4 (ppp), 8-9 (weeks), Autumn PGR paclobutrazol 15-20 ppm Spray	3-4 applications of PGRs are needed to produce in quart or gallon containers.
	No	Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR paclobutrazol 2-3 ppm Drench Annual, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR uniconazole 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR paclobutrazol 5-10 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR uniconazole 1 ppm Drench Annual, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR paclobutrazol 5-10 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) PGR paclobutrazol 2-3 ppm Drench Forcing, 8"/2 Gallon/20 cm , 3-4 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR uniconazole 5 ppm Spray Forcing, 8"/2 Gallon/20 cm , 3-4 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,500 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-4 (ppp), 10-12 (weeks), Summer PGR paclobutrazol 5-10 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-4 (ppp), 10-12 (weeks), Summer PGR uniconazole 5 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-4 (ppp), 10-12 (weeks), Summer PGR daminozide 2,500-3,000 ppm Spray Forcing, 8"/2 Gallon/20 cm , 3-4 (ppp), 12-13 (weeks), Late Spring, ADT 68°F (20°C) PGR paclobutrazol 5-10 ppm Spray	Digitalis can be grown under high light, provided there is enough moisture. Monitor media EC when generative and maintain levels. Avoid drying out, as this could cause flower abortion.
	No	Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 30-34 (weeks), Late Spring, ADT 72°F (22°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 13-17 (weeks), Late Spring, ADT 72°F (22°C) Forcing, 5"/6"/1 Gallon/15 cm , 1 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C)	Multiple sprays of B-Nine 2,500 ppm/CCC 500-750 ppm are our recommendation. Multiple sprays of Bonzi 30 ppm also good and can be an optional treatment. When growing and offering all 3 varieties, PGR advice as indicated is required to grow in optimal uniformity for 3 combined colours (as Yellow Ombre is a little taller and more slender without PGRs).
	No	Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 30-34 (weeks), Late Spring, ADT 72°F (22°C) Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 13-17 (weeks), Late Spring, ADT 72°F (22°C) Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C)	

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
ECHINACEA <i>Echinacea purpurea</i> PowWow® Series	4-10	128 72*	(day) 65-75°F (18-24°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.5-2.0 mmhos/cm	Short Day-Long Day Grow plugs under SD (≤12 hours) until 7 mature leaves. Thereafter, 100% plants flower at ≥10 hours when grown under high daily light integral (DLI; ~15 moles/m²/d) and at ≥12 hours under low DLI (~5 moles/m²/d). Plants flowered ~5 weeks faster at ≥13 hours than at 10 under higher DLI and ~2 weeks faster at ≥13 hours than at 12 under low DLI. Therefore, fastest flowering at ≥13 hours.	
GAILLARDIA <i>Gaillardia x grandiflora</i> Mesa™ F₁ Series	5-10	128 288*	(day) 60-70°F (16-21°C) (night) 50-60°F (10-16°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Facultative Long Day Critical daylength: 13 hours	
GAURA <i>Gaura lindheimeri</i> Sparkle White	5-9	288	(day) 59-70°F (15-21°C) (night) 50-64°F (10-18°C)	5.5-6.2 pH 1.5-2.0 mmhos/cm	Quantitative long day plant with critical daylength of 13 hours.	
GYPSOPHILA <i>Gypsophila cerastoides</i> Pixie Splash	4-7	288	(day) 60-65°F (16-18°C) (night) 50-58°F (10-14°C)	5.8-6.5 pH 1.0-1.2 mmhos/cm	Day Neutral	
HEUCHERA <i>Heuchera x hybrida</i> Melting Fire	4-8	288 128*	(day) 60-68°F (16-20°C) (night) 58-60°F (14-16°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
HEUCHERA <i>Heuchera micrantha</i> Palace Purple	4-8	288 128*	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
HIBISCUS <i>Hibiscus moscheutos</i> Luna™ F₁ Series	5-9	288 128*	(day) 70-85°F (21-29°C) (night) 65-70°F (18-21°C)	6.0-6.5 pH 1.5-2.0 mmhos/cm	Facultative Long Day Long day min. 12 hours; optimum 14 hours or longer.	
IBERIS <i>Iberis sempervirens</i> Whiteout F₁	3-8	288	(day) 60-72°F (16-22°C) (night) 41-50°F (5-10°C)	5.5-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral	
LAVANDULA <i>Lavandula angustifolia</i> Avignon Early Blue	6-8	288 128*	(day) 60-72°F (16-22°C) (night) 46-54°F (8-12°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Day Neutral See Lavender Scheduling Tool at panamseed.com for finishing schedules per region.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 30-34 (weeks), Late Spring, ADT 72°F (22°C) Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C) Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 13-17 (weeks), Late Spring, ADT 72°F (22°C)	
	No	Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Late Summer, ADT 72°F (22°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-14 (weeks), Late Spring, ADT 68°F (20°C)	PGRs are generally not necessary if grown cooler. If necessary, apply daminozide 2,500 to 5,000 ppm spray.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-9 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 2,500/750-2,500/1,000 ppm Spray	Well-drained soil. Dislikes wet Winter soils. Monitor for Aphids. Cold growing at 55°F (13°C); add 4 to 5 weeks crop time. See GrowerFacts for more details on overwintered production.
	Yes-duration of 8 weeks; max 40°F (4°C)	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-40 (weeks), Spring	Well-drained soil. Dislikes wet Winter soils. Moderate fertilization. Monitor for Botrytis, Aphids, Spider Mites and Whiteflies. Nice for perennial combo and edging. Foliage turns purple with cold, partly reversible.
	No-vernalization not needed when sold for foliage	Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Late Spring, ADT 68°F (20°C) Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Autumn, ADT 68°F (20°C) Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 28-36 (weeks), Spring Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 30-36 (weeks), Spring Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 13-14 (weeks), Late Spring, ADT 68°F (20°C) Forcing, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-13 (weeks), Autumn, ADT 68°F (20°C)	Do not plant plugs too deep. Keep plug surface at the same level as the media surface. Avoid wet and overly dry. Needs well-drained medium.
	No-vernalization not needed when sold for foliage	Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Late Spring, ADT 68°F (20°C) Forcing, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Autumn, ADT 68°F (20°C) Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 10-11 (weeks), Autumn, ADT 68°F (20°C) Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 26-32 (weeks), Spring Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 28-32 (weeks), Spring Forcing, 5"/6"/1 Gallon/15 cm , 1-2 (ppp), 11-12 (weeks), Late Spring, ADT 68°F (20°C)	Do not plant plugs too deep. Keep plug surface at the same level as the media surface. Grow relatively dry. Needs well-drained medium.
	No-damage to plugs results below 41°F (5°C)	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-13 (weeks), Summer PGR daminozide/chlormequat chloride tank mix 750-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-13 (weeks), Summer PGR daminozide/chlormequat chloride tank mix 750-2,500 ppm Spray	Does not need pinching. Maintain media in high moisture. Growing plant too dry will result in flower bud abortion. Monitor for Thrips, Aphids and Spider Mites. Growth stops and lower leaves turn yellow when grown below 68°F (20°C). In Southern climates, stronger PGRs may be needed; option is Bonzi 0.5 ppm drench. High light will promote branching and reduce plant height. Spacing when plants touch each other is highly recommended.
	Yes-minimum 8 to 10 weeks. Plants should be bulked for about 8 to 10 weeks before being receptive to cold treatment.	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-36 (weeks), Early Spring	No pinch needed. Allow enough bulk time; grow in active climate. Monitor for Downy and Powdery Mildew; spray preventively.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-10 (weeks), Summer, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plug too deep. Keep plug surface same as medium surface. Grow low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry, as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry. Use Avignon Early Blue for annual early Southwest and Northwest season and Ellagance Purple for annual early Southeast season. Lavance is best for Summer production, has best bulk. Do not plan this variety for early season. Growth is delayed in cool conditions. See the Lavender Scheduling Tool at panamseed.com for finishing schedules by region. For overwintered production, cut back just below top foliage; do this mid-Autumn, approximately 4 weeks before dormant period, or in Spring just before regrowth.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
LAVANDULA <i>Lavandula stoechas</i> Bandera Series	7-10	288 128*	(day) 65-68°F (18-20°C) (night) 55-64°F (13-18°C)	5.5-6.0 pH 1.0-1.2 mmhos/cm	Facultative Long Day See Lavender Scheduling Tool at panamseed.com for finishing schedules by region. Long day beneficial, but will flower in short days.	
LAVANDULA <i>Lavandula angustifolia</i> Blue Spear	6-8	288 128*	(day) 60-72°F (16-22°C) (night) 54-60°F (12-16°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Facultative Long Day Critical Daylength: 11 hours in High DLI (15Mol/day/m2); 12 hours in Low DLI (5Mol/day/m2) See Lavender Scheduling Tool at panamseed.com for finishing schedules per region.	
LAVANDULA <i>Lavandula angustifolia</i> Ellagance Series	5-8	288 128*	(day) 60-72°F (16-22°C) (night) 54-60°F (12-16°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Facultative Long Day Critical Daylength for Ellagance Purple is 10 hours; Ice and Snow are Obligate Long Day with critical daylength of about 13-14 hours. See Lavender Scheduling Tool at panamseed.com for finishing schedules by region.	
LAVANDULA <i>Lavandula angustifolia</i> Lavance Deep Purple	5-8	288 128*	(day) 60-72°F (16-22°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.1-1.4 mmhos/cm	Obligate Long Day Critical Daylength: 14 hours See Lavender Scheduling Tool at panamseed.com for finishing schedules per region.	
LAVANDULA <i>Lavandula multifida</i> Spanish Eyes	7-10	288	(day) 65-70°F (18-21°C) (night) 57-59°F (14-15°C)	5.8-6.2 pH 1.1-1.3 mmhos/cm	Facultative Long Day	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> , <i>Chrysanthemum maximum</i> Madonna F1	3-9	288 72	(day) 65-72°F (18-22°C) (night) 57-60°F (14-16°C)	5.5-6.2 pH 0.9-1.1 mmhos/cm	Obligate Long Day Plant needs a minimum of 14.5 hrs. daylength to initiate flowering. Responds very well to night interruption (4 hrs. between 10 pm and 2 am) for Spring Forcing. Juvenility ends at 10 leaves.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Spring Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 24-32 (weeks), Early Spring Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Spring	Don't plant too deep since Bandera has low and deep branching, and Botrytis could more easily affect plants. Need cool production to reach sufficient flag size, see Scheduling tool. High pH (above 6.8) can cause leaf chlorosis.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-11 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plugs deep. Keep plug surface same as medium surface. Grow with low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry, as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry.
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 28-36 (weeks), Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 9-12 (weeks), Late Spring, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plugs deep. Keep plug surface same as medium surface. Grow low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry. Scheduling is different between colours: Purple is the fastest (as indicated lead time); Ice adds 3 weeks, and Snow adds 4 to 5 weeks. See Scheduling Tool for regional lead times. For overwintering production, cut back just below top foliage; do this mid-Autumn, approximately 4 weeks before dormant period, or in Spring just before regrowth.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-11 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Autumn, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Overwinter, 4"/4.5"/Quart/10 cm , 1-3 (ppp), 30-38 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-12 (weeks), Autumn, ADT 65°F (18°C) PGR daminozide 2,000-3,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 30-38 (weeks), Late Spring, ADT 60°F (16°C) PGR daminozide 2,000-3,000 ppm Spray	Avoid planting plug too deep. Keep plug surface same as medium surface. Grow low RH and high light. Let top soil dry in between waterings, but do not allow medium to dry, as high EC could cause root damage. Monitor for Botrytis, Root Rot, Leafspot, Aphids and Mites. For shipping, keep soil moist and plant dry. Lavance is best for Summer production, has best bulk. Do not plant early season. Growth is delayed in cool conditions. Use Ellagance Purple for annual early Southeast season and Avignon Early Blue for annual early South and Northwest season. See Lavender Scheduling Tool at panamseed.com for finishing schedules by region. For overwintered production, cut back just below top foliage; do this mid-Autumn, approximately 4 weeks before dormant period, or in Spring just before regrowth.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Summer PGR daminozide 2,000-3,000 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 12-15 (weeks), Summer PGR daminozide 2,000-3,000 ppm Spray	Grow relatively dry and provide active climate. Vigorous Lavandula needs more PGRs than L. angustifolia and L. stoechas, and is a long-flowering annual.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) PGR paclobutrazol 20-25 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) PGR uniconazole 5 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 78°F (26°C) PGR daminozide 5,000-6,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 74°F (23°C) PGR uniconazole 5-10 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 78°F (26°C) PGR paclobutrazol 20-30 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-11 (weeks), Summer, ADT 78°F (26°C) PGR uniconazole 10 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring, ADT 65°F (18°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, ADT 68°F (20°C) PGR paclobutrazol 20-30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-15 (weeks), Late Spring, ADT 65°F (18°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-12 (weeks), Summer, ADT 68°F (20°C)	For 2 Gallon, use 3-4 plugs per pot.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
LEUCANTHEMUM <i>Leucanthemum x superbum</i> White Lion F₁	3-9	288 72	(day) 65-72°F (18-22°C) (night) 57-60°F (14-16°C)	5.5-6.2 pH 0.9-1.1 mmhos/cm	Facultative Long Day Facultative Long Day Plant but very low sensitivity to daylength, with critical daylength at 10 hours.	
LOBELIA <i>Lobelia x speciosa</i> Starship™ F₁ Series	6-10	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.6 pH 1.1-1.3 mmhos/cm	Long Day Plants. Scarlet is a Facultative Long Day plant that flowers faster at 13 hours or longer. See Perennials Forcing Guide for more info on scheduling and plug size and treatments. Forcing for Summer and Autumn sales target Weeks 35 or later. Sow Week 15 to 17, using 288 trays. Grow plugs under 10-hour short-day conditions using black cloth until ready to transplant. Allow about 8 to 9 weeks during Summer production. After short-day treatment, transplant to final container and grow under natural long days. Outdoor production is recommended. Total crop time is approximately 19 to 20 weeks.	
MYOSOTIS <i>Myosotis sylvatica</i> Mon Amie Series	6-8	288	(day) 60-70°F (16-21°C) (night) 50-55°F (10-13°C)	5.6-5.8 pH 1.3-1.5 mmhos/cm	Day Neutral	
PAPAVER <i>Papaver nudicaule</i> Champagne Bubbles F₁ Series	4-8	288	(day) 50-55°F (10-13°C) (night) 40-45°F (4-7°C)	5.5-6.0 pH 1.2-1.4 mmhos/cm	Day Neutral	
PENSTEMON <i>Penstemon heterophyllus</i> Electric Blue	6-8	288	(day) 66-70°F (19-21°C) (night) 62-66°F (17-19°C)	5.8-6.5 pH 1.0-1.5 mmhos/cm	Day Neutral Needs high light intensity for complete, rapid and uniform flowering.	
PEROVSKIA <i>Perovskia atriplicifolia</i> Blue Steel	4-9	288 128*	(day) 65-68°F (18-20°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Day Neutral Light accumulator – higher light levels increase development and finish.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 18-19 (weeks), Early Spring, ADT 65°F (18°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Spring, ADT 68°F (20°C) PGR daminozide 2,500 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 18-19 (weeks), Early Spring, ADT 65°F (18°C) Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Spring, ADT 68°F (20°C) PGR daminozide 2,500 ppm Spray	For 2 Gallon, use 3-4 plugs per pot.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 13-17 (weeks), Summer PGR paclobutrazol 30 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 13-17 (weeks), Summer PGR uniconazole 5 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 13-17 (weeks), Summer PGR paclobutrazol 30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 13-17 (weeks), Summer PGR uniconazole 5 ppm Spray Forcing, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 11-13 (weeks), Spring, ADT 68°F (20°C) Forcing, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 9-10 (weeks), Autumn, ADT 68°F (20°C) Forcing, 8"/2 Gallon/20 cm , 4-6 (ppp), 9-10 (weeks), Autumn, ADT 68°F (20°C) Forcing, 8"/2 Gallon/20 cm , 4-6 (ppp), 11-13 (weeks), Spring, ADT 68°F (20°C)	Avoid drought stress. Grow evenly moist but not wet. Monitor for Snails, Slugs, Root and Crown Rot, Pythium, Phytophthora (if too wet). Control Thrips, as Lobelia is very susceptible to INSV damage.
	No	Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 16-22 (weeks), Early Spring PGR daminozide/chlormequat chloride tank mix 3,500-750 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Spring PGR daminozide/chlormequat chloride tank mix 3,500-750 ppm Spray	Maintain low pH. Myosotis suffer from chlorosis at high pH. Grow like Primula acaulis. See GrowerFacts for details on how to mitigate chlorosis caused by high pH.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 5-10 (weeks), Late Spring Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 6-11 (weeks), Late Spring	Suffers from chlorosis at high pH (above 6.1), due to iron deficiency. Moderate fertilization, well-drained soil.
	No-but beneficial; cooled plants flower more uniformly and faster than non-cooled plants; duration of 10 weeks at 41°F (5°C)	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Summer Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 11-13 (weeks), Summer Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 12-14 (weeks), Late Spring	Bulking prior to vernalization ensures pot-fill and improves flowering uniformity. Monitor for Whiteflies.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 14-16 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 14-16 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 12-14 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 13-15 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 3,000-5,000 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 13-15 (weeks), Summer, ADT 68°F (20°C) PGR daminozide 3,000-5,000 ppm Spray Annual, 8"/2 Gallon/20 cm , 3-5 (ppp), 14-16 (weeks), Late Spring, ADT 68°F (20°C) PGR daminozide 2,500-3,000 ppm Spray	Needs an active growing climate with the highest possible light levels. Optimum is more than 15 Mol per m ² per day. Can grow in lower light levels, but increases crop time (see lead time per season). Do not start crop too early in cold nights and lower light levels, which will cause a delay. Best grown outside. Finish lead times for Northwest Europe: add 2 to 3 weeks to indicated lead times. Allow media to dry in between waterings. Avoid growing wet. Monitor EC in pot during active growth to avoid leaf yellowing (chlorosis). Gallon is the main size; recommend 3 ppp, planted in a triangle, for superior finished quality (compared to vegetative with 1 plant per pot). If plugs are not pinched, pinch 2 to 3 weeks after transplant, above 4 to 5 leaf node pairs. NOTE: Pinch not needed for larger (2 gallon and up) containers. Instead, use higher B-Nine concentration of 5,000 ppm for 1 to 2 applications in the first 2 to 3 weeks after transplant.

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PEROVSKIA <i>Perovskia atriplicifolia</i> Bluesette	4-9	288 72*	(day) 65-68°F (18-20°C) (night) 57-60°F (14-16°C)	5.8-6.2 pH 1.2-1.4 mmhos/cm	Facultative Long Day Light accumulator – higher light levels increase development and finish.	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldblitz	3-9	288 72	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)		Obligate Long Day Critical daylength of 14.5 hours.	
RUDBECKIA <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> Goldsturm	3-9	288 72*	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.2-1.5 mmhos/cm	Short Day-Long Day Best plant structure comes under Short Day conditions (12 hours or less) until 10-leaf stage, then Long Day (15 hours or longer). For forcing info: see Perennials Forcing Guide.	
SALVIA <i>Salvia nemorosa</i> New Dimension™ Series	3-8	288 128*	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.5-6.2 pH 0.9-1.3 mmhos/cm	Facultative Long Day For forcing info: See Perennials Forcing Guide.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring, ADT 65°F (18°C) Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-14 (weeks), Late Spring, ADT 65°F (18°C) Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-12 (weeks), Summer, ADT 68°F (20°C)	<p>Needs an active growing climate with the highest possible light levels. Optimum is more than 15 mol per m² per day. Can grow in lower light levels, but that will increase crop time. Do not start too early in cold nights and lower light levels, which will cause delay. Allow media to dry between watering; avoid growing wet. Monitor EC in pot during active growth to avoid leaf yellowing. One gallon is the perfect size; use 1 multi-seed plug (3 to 4 seeds), and no pinch or PGRs needed. For quarts, use a smaller plug size (288) and 1 seed/cell; pinching is optional (leave 3 to 4 leaf nodes), same for PGR spray (1,500 ppm B-Nine-daminozide). Pinching will delay 1 to 2 weeks.</p>
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 14-22 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 5,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 14-23 (weeks), Summer, ADT 65°F (18°C) PGR daminozide 5,000 ppm Spray	<p>Will finish reliably as a first-year-flowering perennial if not sown later than Week 16. No need for short day treatment of plugs (like Goldsturm does). For PGRs, use B-Nine 3x 5,000 ppm spray as an option for more controlled growth. B-Nine/CCC tank mix (3x B-Nine 2,500 ppm/CCC 750 ppm spray) could be an optional treatment. Using Sumagic or Bonzi spray is not recommended, as they made the foliage smaller and the plants looked spindly. This is a relatively high feeder, so prevent Mg, Ca and Fe deficiencies. High light and good ventilation are beneficial. Possible foliage issues can occur on new growth leaves (puckering, cup up, tip marginal burning) during flower induction period because of more difficult mineral transport during this developmental stage. There is no good fertilisation correction possible, only maintain as low an RH as possible with optimal ventilation to have optimal plant transport of elements. The foliage issue will mostly have disappeared at flowering sales stage. For Spring and Autumn forcing: See Perennial Forcing Guide.</p>
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 16-23 (weeks), Summer PGR paclobutrazol 20-30 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 16-23 (weeks), Summer PGR uniconazole 5-10 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 16-24 (weeks), Summer PGR paclobutrazol 20-30 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 2-3 (ppp), 16-24 (weeks), Summer PGR uniconazole 5-10 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 32-34 (weeks), Summer PGR uniconazole 5-10 ppm Spray Overwinter, 8"/2 Gallon/20 cm , 3-5 (ppp), 32-34 (weeks), Summer PGR paclobutrazol 20-30 ppm Spray	<p>Relatively high feeder. Use long day (15 hours or longer) or night interruption to finish early pottings or use vernalised plugs. Prevent Mg and Fe deficiency. Monitor for Botrytis and downy mildew. High light and good ventilation are beneficial. PGR advice as follows: best effect with Sumagic 2x 15 ppm spray; another PGR option is a tank mix of B-Nine 2,500 ppm/CCC 750 ppm 3x spray. Possible foliage issues can occur on new growth leaves (puckering, cup up, tip marginal burning) during flower induction period because of more difficult mineral transport during this developmental stage. There is no good fertilisation correction possible, only maintain as low an RH as possible with optimal ventilation to have optimal plant transport of elements. The foliage issue will mostly have disappeared at flowering sales stage. For Autumn forcing info: See Perennials Forcing Guide.</p>
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-9 (weeks), Summer PGR daminozide 1,500-2,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 8-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1 (ppp), 24-28 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 7-9 (weeks), Summer PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 8-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray Overwinter, 8"/2 Gallon/20 cm , 3-5 (ppp), 24-28 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray	<p>Grow relatively dry. Avoid leaf yellowing caused by high pH (Fe) and/or low N when generative. Spray weekly with Bittersalt MGSO₄ 1g/liter. Monitor for Spider Mites, Rhizoctonia, Leafspot and Root Rot. Wet after transplant with preventive spray.</p>

CLASS/SERIES	HARDINESS ZONE	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
SALVIA <i>Salvia nemorosa</i> Salvatore Blue	4-8	288 128	(day) 60-72°F (16-22°C) (night) 50-59°F (10-15°C)	5.5-6.2 pH 1.1-1.4 mmhos/cm	Facultative Long Day Salvatore Blue is a facultative long day plant, but it is much less daylength sensitivity than Salvia New Dimension, and is able to flower under 10-hour short day conditions. Because of the 10-hr. critical daylength, Salvatore Blue can be grown for annual programs, but also for long-cycle production through the Winter for Spring sales. Salvatore can finish in the southern U.S. for April sales if critical daylength at transplant is a minimum of 10 hrs., comparative to vegetative choices for early Spring.	
SALVIA <i>Salvia patens</i> Patio Series	8-10	288 128*	(day) 60-65°F (16-18°C) (night) 57-60°F (14-16°C)	5.8-6.5 pH 1.0-1.2 mmhos/cm	Facultative Long Day Long day beneficial. For more info: See Perennials Forcing Guide.	
SCABIOSA <i>Scabiosa columbaria</i> Blue Note	5-9	288 128*	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.1-1.3 mmhos/cm	Day Neutral	
SCABIOSA <i>Scabiosa japonica var. alpina</i> Pink Diamonds	5-9	288 128*	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.1-1.3 mmhos/cm	Day Neutral	
SILENE <i>Silene alpestris</i> Starry Dreams	5-8	288	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.8-6.5 pH 1.0-1.2 mmhos/cm	Long day required.	
VERBASCUM <i>Verbascum x hybrida</i> Southern Charm	5-8	288	(day) 64-67°F (18-19°C) (night) 62-65°F (17-18°C)	5.8-6.5 pH 1.1-1.3 mmhos/cm	Day Neutral	
VERBENA <i>Verbena bonariensis</i> Buenos Aires	7-9	288 128	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.3-1.5 mmhos/cm	Facultative Long Day For forcing info: See Perennials Forcing Guide.	
VERBENA <i>Verbena rigida</i> Santos Purple	7-11	288 128*	(day) 65-68°F (18-20°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.3-1.5 mmhos/cm	Facultative Long Day For forcing info: See Perennials Forcing Guide.	

	VERNALIZATION REQUIRED	FINISHING PROGRAMS FOR ANNUAL AND OVERWINTER PRODUCTION	KEY TIPS
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-8 (weeks), Summer, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 14-18 (weeks), Early Spring, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Overwinter, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 14-18 (weeks), Early Spring, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Summer, ADT 62°F (17°C) PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-10 (weeks), Spring PGR daminozide 1,500-2,000 ppm Spray	Salvatore Blue needs a little higher fertilization level than New Dimension Blue, per the Target Media EC. With Salvia nemorosa, leaf yellowing can occur, especially once turning generative. Keep up fertilization and use iron leaf fertilization, avoiding too high of a pH. Grow relatively dry and provide an active climate. Salvatore Blue can show black spots on the leaves; this is not disease, nor does it indicate damage. Due to the dark color of Salvatore Blue, these spots are accumulations of the color compound that will be dissimilated in better growing conditions.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 7-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 7-11 (weeks), Late Spring PGR daminozide 1,500-2,000 ppm Spray	Grow relatively dry. Use well-drained medium. Prevent Mg and Fe deficiency. Monitor for Botrytis, Downy Mildew, Aphids and Spider Mites. High light and good ventilation are beneficial.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-34 (weeks), Spring Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 12-14 (weeks), Late Spring	Needs high light, low RH. Grow relatively dry. Prevent Mg and Fe deficiency. Early-Spring forcing needs increased temperature during 6 weeks at 62 to 65°F (17 to 18°C), no long days. For forcing info for Mother's Day: See Perennials Forcing Guide.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Late Spring Overwinter, 4"/4.5"/Quart/10 cm , 1 (ppp), 26-34 (weeks), Spring Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 12-14 (weeks), Late Spring	Needs high light, low RH. Grow relatively dry. Prevent Mg and Fe deficiency. Early Spring forcing needs increased temperature during 6 weeks at 62-65, no long days. For forcing info for Mother's Day: See Perennials Forcing Guide.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 10-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 10-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray	Low to moderate fertilization. Grow uniformly moist. Prevent Mg and Fe deficiency. Monitor for Aphids, Spider Mites, Slugs and Snails.
	No	Annual, 5"/6"/1 Gallon/15 cm , 1 (ppp), 12-14 (weeks), Summer	Flowering more uniform under high light conditions.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-13 (weeks), Late Spring Annual, 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 10-11 (weeks), Autumn, ADT 68°F (20°C) PGR daminozide 2,500-5,000 ppm Spray	Primarily sold green. Grow dry and light. Relatively high fertilization. Avoid high N. Prevent Mg and Fe deficiency.
	No	Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-14 (weeks), Late Spring PGR daminozide/chlormequat chloride tank mix 2,000-2,500 ppm Spray Annual, 4"/4.5"/Quart/10 cm , 1 (ppp), 11-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 10-13 (weeks), Summer PGR daminozide/chlormequat chloride tank mix 2,000-750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 10-13 (weeks), Summer PGR daminozide 2,000-2,500 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 11-14 (weeks), Late Spring PGR daminozide/chlormequat chloride tank mix 2,000-750 ppm Spray Annual, 5"/6"/1 Gallon/15 cm , 3-4 (ppp), 11-14 (weeks), Late Spring PGR daminozide 2,000-2,500 ppm Spray	Grow dry and light. Relatively high fertilization. Avoid high N. Prevent Mg and Fe deficiency.

FORCING GUIDE FOR FIRST YEAR FLOWERING PERENNIALS FOR 2 MAJOR DATES IN NORTH AMERICA* (QUICK ANNUAL CYCLE)

GENUS	SPECIES	SERIES/VARIETY	USDA HARDINESS ZONE	FORCING FOR SPRING (WEEK 19)				
				IDEAL SOWING WEEK	PLUG SIZE*	PLUG BULKED UNDER NATURAL SD OR <=12 HR GROW WEEKS	SUPPLEMENTAL LD (14 HR OR NI) REQUIRED AFTER TRANSPLANT**	
ARMERIA	<i>pseudarmeria</i>	Ballerina	7-9	49	288	7	No	
CAMPANULA	<i>carpatica</i>	Rapido	3-9	48-49	288	10	Yes	
COREOPSIS	<i>grandiflora</i>	Double the Sun	4-9	51-52	128	8	Yes	
COREOPSIS	<i>grandiflora</i>	Early Sunrise	4-9	49-50	128	8	Yes	
COREOPSIS	<i>grandiflora</i>	Sunfire	4-9	51-52	128	8	Yes	
COREOPSIS	<i>grandiflora</i>	SunKiss	4-9	51-52	128	8	Yes	
DELPHINIUM	<i>elatum</i>	Dasante Blue	4-7	51-52	288	6-7	No	
DELPHINIUM	<i>elatum</i>	Guardian	4-7	51-52	288	6-7	No	
DELPHINIUM	<i>belladonna</i>	Blue Donna	5-9	51-52	288	6-8	No	
DELPHINIUM	<i>grandiflorum</i>	Diamonds Blue	4-9	51-52	288	7	No	
DIANTHUS	<i>barbatus interspecific</i>	Rockin'	5-8	1-2	288	5	No	
DIGITALIS	<i>purpurea</i>	Dalmatian	5-9	52-1	128	7	Yes	
ECHINACEA	<i>hybrida</i>	Artisan	4-10	45-46	128+	13-15 weeks; SD from 2 to 7 true leaves	Yes	
ECHINACEA	<i>hybrida</i>	Cheyenne Spirit	4-10	45-46	128+	13-15 weeks; SD from 2 to 7 true leaves	Yes	
ECHINACEA	<i>purpurea</i>	PowWow	4-10	45-46	128+	13-15 weeks; SD from 2 to 7 true leaves	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Bright Bicolor	5-10	52-1	128	7	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Yellow	5-10	52-1	128	7	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Peach	5-10	52-1	128	7	Yes	
GAILLARDIA	<i>grandiflora</i>	Mesa Red	5-10	52-1	128	7	Yes	
GAURA	<i>lindheimeri</i>	Sparkle White	5b-9	2-3	128	8	Yes	
HEUCHERA	<i>micrantha</i>	Palace Purple	4-8	47-48	288	10-11	No	
HEUCHERA	<i>hybrida</i>	Melting Fire	4-8	46-47	288	10-11	No	
HIBISCUS	<i>moscheutos</i>	Luna	5-9	-	-	-	-	
LAVANDULA	<i>angustifolia</i>	Avignon Early Blue	6-8	46-47	288	7	No	
LAVANDULA	<i>angustifolia</i>	Blue Spear	6-8	-	-	-	-	
LAVANDULA	<i>angustifolia</i>	Ellagance Purple	5b-8a	46-47	288	7	No	
LAVANDULA	<i>angustifolia</i>	Lavance Deep Purple	5-8	-	-	-	-	
LAVANDULA	<i>stoechas</i>	Bandera	7-10	46-47	288	7	No	
LEUCANTHEMUM	<i>x superbum</i>	Madonna	3b-9a	-	-	-	-	
LEUCANTHEMUM	<i>x superbum</i>	White Lion	3b-9a	47-48	288	6	No	
LOBELIA	<i>speciosa</i>	Starship	6-10	45-46	288 to 72+	13-15 weeks; 10-hour SD bulk to 10 leaves	Yes	
LOBELIA	<i>speciosa</i>	Starship Scarlet Bronze Leaf	6-10	44-45	288 to 72+	14-16 weeks; 10-hour SD bulk to 10 leaves	Yes	
ORIGANUM	<i>hybrida</i>	Kirigami	5b-8a	52-1	128	6-7	Yes	
PEROVSKIA	<i>atriplicifolia</i>	Bluesette	4-9	50-51	288+	6-8	No (if DLI > 10 mol/day)	
PEROVSKIA	<i>atriplicifolia</i>	Blue Steel	4-9	48-49	128	6-8	No	
RUDBECKIA	<i>fulgida</i>	GoldBlitz	3-9	40-42	288 to 50+	15-16 weeks; SD from 2 to 10 true leaves	Yes	
RUDBECKIA	<i>fulgida</i>	Goldsturm	3-9	40-42	288 to 50+	15-16 weeks; SD from 2 to 10 true leaves	Yes	
SALVIA	<i>nemorosa</i>	New Dimension	4-8	1-2	128	7	Yes	
SALVIA	<i>nemorosa</i>	Salvatore Blue	4-8	1-2	128	7	No	
SALVIA	<i>patens</i>	Patio	8-10	1-2	128	7	Yes	
SCABIOSA	<i>columbaria</i>	Blue Note	5-7	49-51	128	8-9	No	
SCABIOSA	<i>japonica</i>	Pink Diamonds	5-7	49-51	128	8-9	No	
VERBENA	<i>bonariensis</i>	Buenos Aires	7-9	-	-	-	-	
VERBENA	<i>rigida</i>	Santos Purple	7-11	49-50	128	8	No	

SD = Short Day (12 hours or shorter, except Lobelia is 10 hours)

LD = Long Day

ADT = Average Daily Temperature

			FORCING FOR FALL (WEEK 36)					PLUGS PER POT			
	FINISH UNDER PROPER DAYLENGTH (H) AND ADT (J) GROW WEEKS	FINISH ADT (°F/°C)	IDEAL SOWING WEEK	PLUG SIZE	PLUG SD BULKING REQUIRED	PLUG GROW WEEKS	FINISH UNDER NATURAL LD AND ADT 72-75°F/22-24°C GROW WEEKS	1 QT	1 GAL	2 GAL	3 GAL (FALL)
	15	60/16	-	-	-	-	-	1	3	-	-
	12-13	65/18	-	-	-	-	-	1	3-5	-	-
	11-12	68/20	22	128	No	6-7	7	1	1-3	3-5	4-6
	12-13	68/20	-	-	-	-	-	1	1-3	3-5	-
	10-12	68/20	22	128	No	6-7	7	1	1-3	3-5	4-6
	10-11	68/20	22	128	No	6-7	7	1	1-3	3-5	4-6
	14	65/18	-	-	-	-	-	1	1	3	-
	14	65/18	-	-	-	-	-	1	1	3	-
	13	65/18	-	-	-	-	-	1	1	3	-
	14	65/18	-	-	-	-	-	1	1-3	3	-
	13	60/16	22	288	No	5	8	1	3	3	4
	12-13	60/16	-	-	-	-	-	-	1	2-3	-
	12	68/20	14-16	128+	Yes	11 weeks; SD from 2 to 7 true leaves	8-9	1	1	3	4
	12	68/20	14-16	128+	Yes	11 weeks; SD from 2 to 7 true leaves	8-9	1	1	3	4
	12	68/20	14-16	128+	Yes	11 weeks; SD from 2 to 7 true leaves	8-9	1	1	3	4
	12	68/20	21	288	No	5	8-9	1	1	2	3
	12	68/20	19	288	No	5	10-11	1	1	2	3
	12	68/20	-	-	-	-	-	1	1	2	3
	12	68/20	21	288	No	5	8-9	1	1	2	3
	8	68/20	22	288	No	4	7-8	1	1	3	4
	11-12	60/16	15-16	128	No	8	10-11	1	3	4	5
	13-14	60/16	12-14	128	No	9-11	12-13	1	3	4	5
	-	-	21	128	No	4	9-10	1	1	1	1
	12-14	55/10	20	128	No	6	9-10	1	3	4	5
	-	-	18	128	No	6	11-12	1	3	4	5
	12-14	60/16-Needs high light in South regions	-	-	-	-	-	1	3	-	-
	-	-	20	128	No	6	8-9	1	3	4	5
	12-14	60/16	-	-	-	-	-	1	2	-	-
	-	-	19-20	288	No	5	10-11	1	1	3	4
	17-18	66-68	-	-	-	-	-	1	1	3-4	5
	11-12	68/20	14-16	288	Yes	9-10 weeks; 10-hour SD to 6 true leaves	10-11	1	1	3	4
	12-13	68/20	13-15	288	Yes	9-10 weeks; 10-hour SD to 6 true leaves	11-12	1	1	3	4
	11-13	68/20	19-20	128	No	5	10-11	1	1	3	-
	12-13	68	19-20	180 to 128	No	6-7	10-11	1	1-3	3-4	5
	10-14	65/18-Needs low RH and high light in South regions	18-19	128	No	6-7	11-12	1	3	4	5
	14-15	68	11-12	288 to 128	No	5-6	17-18	-	1	1	3
	14-15	68/20	8-9	288 to 50+	Yes	14 weeks; SD from 2 to 10 true leaves	12-13	-	1	1	3
	10-11	65/18	24-25	288	No	4	7-8	1	3	5	-
	10-11	65/18	24-25	288	No	4	7-8	1	3	5	-
	10-11	65/18	-	-	-	-	-	1	3	5	-
	12-14	60/16	-	-	-	-	-	1	3	-	-
	12-14	60/16	-	-	-	-	-	1	3	-	-
	-	-	18-19	128	No	8	10-11	-	1	2	3
	13-14	65/18-Needs high light in South regions	19-20	128	No	8	9-11	1	1	2	3

* Schedule indicated is based on Midwest Region of the United States trial data and may change based on your local/regional climate.

Please trial to re-confirm finish crop times before beginning commercial production.

** If yes, supplemental long day lighting should start after transplanting until visible bud or visible knot stage.

POTTED PLANTS



WAVEPHOTOPERIODIC LIGHTING CHART P. 4

ANNUALSPROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 46

PERENNIALS PROPAGATION GUIDE P. 80 / FINISHING GUIDE P. 92 / FORCING GUIDE P. 108

CUT FLOWERS PROPAGATION GUIDE P. 124 / FINISHING GUIDE P. 132

VEGETABLES & HERBS

HANDPICKED PROPAGATION GUIDE P. 142 / FINISHING GUIDE P. 156

KITCHEN MINIS PROPAGATION GUIDE P. 168 / FINISHING GUIDE P. 172



CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CAMPANULA <i>Campanula medium</i> Campanella™ F₁ Series	PEL	288	6-7	1	No	5-10	5.8-6.2 pH 0.7-1.0 mmhos/cm	(m) Level 4-5 (t) 68-77°F (20-25°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia cristata</i> Concertina™ Series	COT	288	3-4	1	Light cover	2-4	5.8-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia spicata</i> Kosmo Series	COT	288	3-4	1	Light cover	2-4	5.5-6.2 pH 0.7-1.2 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light	
EXACUM <i>Exacum affine</i> Princess Series	PEL	288	5-6	1	No	4-5	5.2-5.6 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
EXACUM <i>Exacum affine</i> Royal Dane Series	PEL	288	5-6	1	No	4-5	5.2-5.6 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 72-75°F (22-24°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
GERBERA <i>Gerbera jamesonii</i> ColorBloom™ F₁ Series	COT	128	6-7	1	Light cover	4-7	5.5-5.8 pH 0.5-0.7 mmhos/cm	(m) Level 5 (t) 70-74°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
GERBERA <i>Gerbera jamesonii</i> Mega Revolution™ F₁ Series	COT	128	6-7	1	Light cover	4-7	5.5-5.8 pH 0.5-0.7 mmhos/cm	(m) Level 5 (t) 70-74°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
GERBERA <i>Gerbera jamesonii</i> Revolution™ F₁ Series	COT	128	6-7	1	Light cover	4-7	5.5-5.8 pH 0.5-0.7 mmhos/cm	(m) Level 5 (t) 70-74°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HYPOESTES <i>Hypoestes phylllostachya</i> Splash Select™ Series	RAW	288	4-5	1	Yes	2-3	5.5-6.0 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional	
LISIANTHUS <i>Eustoma grandiflorum</i> Sapphire F₁ Series	PEL	406	8-10	1	No	8-12	6.2-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-75°F (18-24°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-64°F (16-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Prevent damping off due to use of fungicides. Critical to the culture of Campanella is the short day treatment in the plug stage. Start short day treatment of < 11 hours day length 2 weeks after sowing. This prevents initiate flowers in the plug stage and results in the right plant habit for filling pots nicely after transplant. Keep short days for the rest of the plug time (4 weeks of short day treatment). After transplant, long days > 14 hours are needed to initiate flowering. Campanella is responsive to B-Nine/ Alar 2,500 ppm or tank mix of B-Nine/ Alar 2,500 ppm and Cycocel 500 ppm.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep media constantly moist; do not allow to dry out.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Keep media constantly moist; do not allow to dry out. Celosia makes a taproot and is sensitive to root damage.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Water adequately to dissolve the pellet. To bench germ: Make sure trays are watered. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 7 to 8 days. Keep reemay wet. Remove reemay after another 1 to 2 days. PGRs are not necessary. Sticky traps for pests are recommended.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Water adequately to dissolve the pellet. To bench germ: Make sure trays are watered. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 7 to 8 days. Keep reemay wet. Remove reemay after another 1 to 2 days. PGRs are not necessary. Sticky traps for pests are recommended.
	(m) Level 4 (t) 68-70°F (20-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-70°F (20-21°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't water with cold water. Use water with a minimum temperature of 60°F/16°C. Watering with cold water results in deformed leaves and disturbs plant growth.
	(m) Level 4 (t) 68-70°F (20-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-70°F (20-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't water with cold water. Use water with a temperature at least 60°F/16°C or higher. Watering with cold water will result in deformed leaves and will disturb plant growth. Do not pot too deeply when transplanting, as this may result in Crown Rot. Space plants when the leaves of the plants are touching each other, generally 5 to 6 weeks after transplanting.
	(m) Level 4 (t) 68-70°F (20-21°C) (l) 6 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-70°F (20-21°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Don't water with cold water. Use water with a temperature at least 60°F/16°C or higher. Watering with cold water will result in deformed leaves and will disturb plant growth. Do not pot too deeply when transplanting, as this may result in Crown Rot. Space plants when the leaves of the plants are touching each other, generally 5 to 6 weeks after transplanting.
	(m) Level 3-4 (t) 66-68°F (19-20°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 66-68°F (19-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Too much light can cause leaves to curl.
	(m) Level 2-3 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 1-3 (t) 65-68°F (18-20°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-3 (t) 62-65°F (17-18°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain pH above 6.5. Do not allow plugs to become rootbound. Lisianthus are tender seedlings and are recommended as a plug-purchased item.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Acapulco™ Series	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Blaze	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Chilly Chili F.	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Cupala	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Harlequin	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Hot Pops Series	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Joker	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Masquerade	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Medusa	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 25 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. Hot Pops Ornamental Peppers are naturally compact and should not need PGRs. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. Medusa is naturally compact and should not need PGRs. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Red Missile	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Salsa XP Series	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Samba Series	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Santos Series	RAW	288	4-5	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Wicked	RAW	288	4-5	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 72-76°F (22-24°C) (l) Optional	
SUNFLOWER <i>Helianthus annuus</i> Ballad F₁	TRT	288	2-3	1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SUNFLOWER <i>Helianthus annuus</i> Choco Sun	TRT	288	2-3	1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SUNFLOWER <i>Helianthus annuus</i> Miss Sunshine F₁	TRT	288	2-3	1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional	
SUNFLOWER <i>Helianthus annuus</i> SunBuzz F₁	TRT	288		1	Yes	3-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide/ancymidol tank mix 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) daminozide 2,000 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Apply daminozide 2,000 ppm spray 10 days after sowing, when cotyledons are fully expanded. Repeat 7 to 10 days later as needed. Alternatively for more vigorous varieties, use uniconazole 2.5 ppm spray 14 days after sowing, repeated 14 days later as needed. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-73°F (20-23°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC) (p) uniconazole 25 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Performs best under high light and warm temperatures. Wicked is naturally compact and should not need PGRs. If necessary, uniconazole (Sumagic) at rate of 2.5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be propagated by direct sowing when grown in smaller pots (4-in./10 cm, 4.5-in./11-cm, 5-in./13-cm).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be propagated by direct sowing when grown in smaller pots (4-in./10 cm, 4.5-in./11-cm, 5-in./13-cm).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be propagated by direct sowing when grown in smaller pots (4-in./10 cm, 4.5-in./11-cm, 5-in./13-cm).
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2 (t) 64-72°F (18-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 61-72°F (16-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can also be grown by direct sowing in smaller pots (quart, 5 in./13 cm).

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
CAMPANULA <i>Campanula medium</i> Campanella™ F₁ Series	288	(day) 62-64°F (17-18°C) (night) 58-60°F (14-16°C)	5.8-6.2 pH 1.0 mmhos/cm	Obligate Long Day Maintain long days after transplant >14 hours of day light for flower initiation. If more vigorous plants are needed, two weeks of short day treatment <11 hours daylength before long day treatment >14 hours daylength will result in more vigorous plants.	
CELOSIA <i>Celosia cristata</i> Concertina™ Series	288	(day) 65-72°F (18-22°C) (night) 59-65°F (15-18°C)	5.8-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Crop can be finished in long day, but finishing in short days after transplant increases uniform flowering and habit across the series.	
CELOSIA <i>Celosia spicata</i> Kosmo Series	288	(day) 65-68°F (18-20°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0-1.5 mmhos/cm	Facultative Short Day Will flower faster and uniformly under daylength of 13 hours or shorter.	
EXACUM <i>Exacum affine</i> Princess Series	288	(day) 70-75°F (21-24°C) (night) 66-70°F (19-21°C)	5.4-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day When light levels are low, use supplemental lighting.	
EXACUM <i>Exacum affine</i> Royal Dane Series	288	(day) 70-75°F (21-24°C) (night) 66-70°F (19-21°C)	5.4-5.8 pH 1.5-2.0 mmhos/cm	Facultative Long Day When light levels are low, use supplemental lighting.	
GERBERA <i>Gerbera jamesonii</i> ColorBloom™ F₁ Series	128	(day) 66-68°F (19-20°C) (night) 62-66°F (17-19°C)	5.5-6.0 pH 0.5-1.0 mmhos/cm	Facultative Short Day	
GERBERA <i>Gerbera jamesonii</i> Mega Revolution™ F₁ Series	128	(day) 66-68°F (19-20°C) (night) 62-66°F (17-19°C)	5.5-6.0 pH 0.5-1.0 mmhos/cm	Facultative Short Day	
GERBERA <i>Gerbera jamesonii</i> Revolution™ F₁ Series	128	(day) 66-68°F (19-20°C) (night) 62-66°F (17-19°C)	5.5-6.0 pH 0.5-1.0 mmhos/cm	Facultative Short Day	
HYPOESTES <i>Hypoestes phyllostachya</i> Splash Select™ Series	288	(day) 65-75°F (18-24°C) (night) 62-65°F (17-18°C)	5.5-6.0 pH 1.0-1.5 mmhos/cm		
LISIANTHUS <i>Eustoma grandiflorum</i> Sapphire F₁ Series	406	(day) 68-75°F (20-24°C) (night) 55-60°F (13-16°C)	6.5-7.2 pH 0.75 mmhos/cm	Facultative Long Day	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Acapulco™ Series	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Blaze	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Chilly Chili F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	

FINISHING PROGRAMS	KEY TIPS
5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Summer	Recommended pot size is 5 in./13 cm. Long day treatment is essential in finishing products. Pinching is not needed. When using bigger pots (6-in./15-cm or bigger), a soft pinch can result in fuller and bigger plants.
4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 5-6 (weeks), Autumn	Don't pinch the plants. Recommended pot sizes: quart, 5 in./13 cm.
4"/4.5"/Quart/10 cm , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 5-7 (weeks), Summer	Keep medium constantly moist and do not allow to dry out. Does not need PGR. But if necessary, Alar/B-Nine, 2,000 to 2,500 ppm (2.4-3.0 g/l 85% formulation or 3.1 to 4.0 g/l 64% formulation) with 2 to 3 applications can be used. Do not treat when flower buds become visible.
4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer	Irrigation from below is recommended. Space when plants begin to touch. Grow on the "dry side" for better compact habit. Humidity must not exceed 80%, to reduce risk of fungal disease. PGR is recommended during the finish. Sprays must begin 3 weeks after potting (small pots, one week after potting). The subsequent treatments are dependent upon growing conditions and the desired size of the plant. Paclobutrazol and flurprimidol have been found to be effective on Exacum.
4"/4.5"/Quart/10 cm , 1 (ppp), 12 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 10 (weeks), Summer	Irrigation from below is recommended. Space when plants begin to touch. Grow on the "dry side" for better compact habit. Humidity must not exceed 80%, to reduce risk of fungal disease. PGR is recommended during the finish. Sprays must begin 3 weeks after potting (small pots, one week after potting). The subsequent treatments are dependent upon growing conditions and the desired size of the plant. Paclobutrazol and flurprimidol have been found to be effective on Exacum.
4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 6-7 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 8-9 (weeks), Autumn 4"/4.5"/Quart/10 cm , 1 (ppp), 9-10 (weeks), Winter	ColorBloom needs no or less PGR compared to Revolution. Be careful with the use of PGR; if necessary, use daminozide 1,000 to 2,500 spray. Stop use after seeing the first flower buds. Use quart/4 to 4.5-in./11 to 12-cm pots. Fill pots all the way to a uniform soil level. When transplanting, do not plant too deep, as this may result in Crown Rot. Space plants when leaves are touching, generally around 5 weeks after transplanting.
5"/6"/1 Gallon/15 cm , 1 (ppp), 10-11 (weeks), Spring, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Summer, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-11 (weeks), Autumn, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 11-12 (weeks), Autumn, PGR daminozide 1,000-2,500 ppm Spray	Use 6-in. (15 cm) pots or larger. Fill pots all the way to a uniform soil level. When transplanting, do not plant too deep, as this may result in Crown Rot. Space plants when leaves are touching, generally 5 to 6 weeks after transplanting. To reduce stretching, use B-Nine/Alar (daminozide) at 1,000 to 2,500 ppm 1 to 2 times with an interval of 9 to 10 days. Stop use after seeing the first flower buds.
5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Spring, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Summer, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 9-10 (weeks), Autumn, PGR daminozide 1,000-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 10-11 (weeks), Winter, PGR daminozide 1,000-2,500 ppm Spray	Use 4.5 to 5.5-in. (11 to 14-cm) pots for standard Revolution. Fill pots all the way to a uniform soil level. When transplanting, do not plant too deep, as this may result in Crown Rot. Space plants when leaves are touching, generally 5 to 6 weeks after transplanting. To reduce stretching, use B-Nine/Alar (daminozide) at 1,000 to 2,500 ppm 1 to 2 times with an interval of 9 to 10 days. Stop use after seeing the first flower buds.
Cell Pack , 1 (ppp), 5-6 (weeks), Spring, PGR daminozide/ chlormequat chloride tank mix 1,000/500 ppm Spray 4"/4.5"/Quart/10 cm , 3-4 (ppp), 5-6 (weeks), Spring, PGR daminozide/ chlormequat chloride tank mix 1,000/500 ppm Spray	Too much light can cause leaves to curl. Grow under low light conditions (400 to 500 f.c./4,000 to 5,000 Lux).
4"/4.5"/Quart/10 cm , 1 (ppp), 12-14 (weeks), Spring	Maintain pH above 6.5. Do not allow plugs to become rootbound. Lisianthus are tender seedlings and are recommended as a plug-purchased item.
4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deeply. Water from below to keep surface of media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times. Growing plants on the dry side, allowing plants to wilt slightly prior to watering, helps provide height control.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	DAYLENGTH	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Cupala	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Harlequin	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Hot Pops Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Joker	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Masquerade	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Medusa	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Red Missile	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Salsa XP Series	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Samba Series	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Santos Series	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	Day Neutral	
PEPPER (ORNAMENTAL) <i>Capsicum annuum</i> Wicked	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.2-1.5 mmhos/cm	Day Neutral	
SUNFLOWER <i>Helianthus annuus</i> Ballad F₁	288	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Can flower under different daylengths, but will flower slightly quicker under short days.	
SUNFLOWER <i>Helianthus annuus</i> Choco Sun	288	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Can flower under different daylengths, but will flower slightly quicker under short days.	
SUNFLOWER <i>Helianthus annuus</i> Miss Sunshine F₁	288	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Can flower under different daylengths, but will flower slightly quicker under short days.	
SUNFLOWER <i>Helianthus annuus</i> SunBuzz F₁	288	(day) 64-72°F (18-22°C) (night) 61-64°F (16-18°C)	5.8-6.2 pH 1.5-2.0 mmhos/cm	Facultative Short Day Plant flowers faster under short day conditions. Growing in daylength of 14 hours or more delays flowering significantly.	

	FINISHING PROGRAMS	KEY TIPS
	4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deeply. Water from below to keep surface of media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
	4"/4.5"/Quart/10 cm , 1 (ppp), 13-14 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deeply. Water from below to keep surface of media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
	4"/4.5"/Quart/10 cm , 1 (ppp), 11-12 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deeply. Water from below to keep surface of media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-12 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-12 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-10 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-11 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-10 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-11 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deep. Water from below to keep the surface of the media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
	4"/4.5"/Quart/10 cm , 1 (ppp), 14-15 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deeply. Water from below to keep surface of media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
	4"/4.5"/Quart/10 cm , 1 (ppp), 12-13 (weeks), Autumn, PGR chlormequat chloride 1,000 ppm Spray	Plant plugs deeply. Water from below to keep surface of media dry. Grow plants dry until flowering, allowing slight wilt between watering. This will reduce stretch. PGR has negative side-effects on fruit-setting. A minimum of 2,000 Lux is recommended when supplemental lighting is being used.
	4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Summer 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Summer 4"/4.5"/Quart/10 cm , 1 (ppp), 7-13 (weeks), Autumn 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-13 (weeks), Autumn	Performs best under high light and warm temperatures. Add 4 to 5 weeks for Spring production crop times.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Plants grow shorter under short days. Plants will grow taller under longer days when no PGRs are applied. We recommend 1 ppp in 5-in. (13-cm) pots and 1 to 3 ppp in gallon pots.
	5"/6"/1 Gallon/15 cm , 1 (ppp), 8-9 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1 (ppp), 7-8 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Plants grow shorter under short days. Plants will grow taller under longer days when no PGRs are applied.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring, PGR daminozide 1,250-2,500 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer, PGR daminozide 1,250-2,500 ppm Spray	Plants grow shorter under short days. Plants will grow taller under longer days when no PGRs are applied. We recommend 1 ppp in 5-in. (13-cm) pots and 1 to 3 ppp in gallon pots.
	5"/6"/1 Gallon/15 cm , 1-3 (ppp), 7-8 (weeks), Spring, PGR daminozide 3,500-5,000 ppm Spray 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 6-7 (weeks), Summer, PGR daminozide 3,500-5,000 ppm Spray	Plants will stay shorter under short day conditions and grow taller under long day conditions. Take this in consideration when using PGRs. 1 plant per 5-in./13-cm pot and 3 plants per gallon pot are recommended.

CUT FLOWERS



BloomStudiosSM



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 46
PERENNIALS	PROPAGATION GUIDE P. 80 / FINISHING GUIDE P. 92 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 112 / FINISHING GUIDE P. 118
VEGETABLES & HERBS	
HANDPICKED	PROPAGATION GUIDE P. 142 / FINISHING GUIDE P. 156
KITCHEN MINIS	PROPAGATION GUIDE P. 168 / FINISHING GUIDE P. 172



CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
ANEMONE <i>Anemone coronaria</i> Mona Lisa® F₁ Series	RAW	288	7-8	1	Yes	10-14	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-70°F (18-21°C)	
ASCLEPIAS <i>Asclepias curassavica</i> Silky Series	RAW	288	5-6	1	Light cover	5-11	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CAMPANULA <i>Campanula medium</i> Campana F₁ Series	PEL	288	7-8	1	No	4-5	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CARTHAMUS <i>Carthamus tinctorius</i> Grenade Series	COT	Direct sow	N/A					(t) 54-60°F (12-16°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia spicata</i> Celway™ Series	PEL	288	2-3	1	Light cover	3-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia cristata</i> Neo™ Series	PEL	288	2-3	1	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia cristata</i> Spring Green	PEL	288	2-3	1	Light cover	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
CELOSIA <i>Celosia plumosa</i> Sunday™ Series	PEL	288	2-3	1	Light cover	3-4	5.8-6.5 pH 0.75 mmhos/cm	(m) Level 4 (t) 77°F (25°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	RAW	288	6-8	1	Yes	7-10	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 4-5 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Because anemone is slow-growing, maintain appropriate conditions such as moisture, temperature, fertilization and insect disease control to produce a healthy plug.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 3,000-4,000 f.c. (32,300-43,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 370-2,500 f.c. (4,000-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 370-2,500 f.c. (4,000-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 370-5,000 f.c. (4,000-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Qualitative long-day plant. To ensure sufficient vegetative growth and stem length, provide short-day conditions in plug stage (<11 hours) from approximately 1.5 to 2 weeks after sowing.
				Direct seeding is recommended. Plan for rows to be spaced 12 in. (30 cm) apart; thin seedlings to 2.5 in. (6 cm) within the row. Carthamus forms a taproot, so if attempting to grow from plugs, plan to transplant seedlings 5 to 7 days after sowing.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. The optimum daylength for Celway to reach the appropriate stem length lies between 12 to 13 hours. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting to prevent premature flowering.
	(m) Level 4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. The optimum daylength for Spring Green to reach the appropriate stem length lies between 12 to 13 hours. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering.
	(m) Level 4 (t) 72-77°F (22-25°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Quantitative short-day plant. Flowers will initiate under short days. The optimum daylength for Sunday to reach the appropriate stem length lies between 12 to 13 hours. Celosia makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering.
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 6-8 mol·m ⁻² ·d ⁻¹ , 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
DELPHINIUM <i>Delphinium elatum</i> Guardian F₁ Series	RAW	288	5-6	1	Yes	5-6	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
DIANTHUS <i>Dianthus barbatus</i> <i>interspecific</i> Amazon™ F₁ Series	PEL	288	4-5	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Light	
DIANTHUS <i>Dianthus barbatus</i> Sweet™ F₁ Series	PEL	288	5-6	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 64-68°F (18-20°C) (l) Optional	
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	COT	288	5-6	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-75°F (20-24°C) (l) Light	
GOMPHRENA <i>Gomphrena haageana</i> QIS Series	RAW	288	5-6	1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C)	
GRASS PANICUM CAPILLARE <i>Panicum capillare</i> Frosted Explosion	MPL	288	4-5	1	Light cover	3-8	5.8-6.4 pH 0.75 mmhos/cm	(m) Level 5-4 (t) 65-68°F (18-20°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
LIMONIUM <i>Limonium sinuatum</i> QIS Series	RAW	288	4-5	1	Yes	3-8	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
LISIANTHUS <i>Eustoma grandiflorum</i> ABC™ F₁ Series	PEL	406	8-10	1	Light cover	8-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
LISIANTHUS <i>Eustoma grandiflorum</i> Can Can F₁ Series	PEL	406	8-10	1	Light cover	8-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
LISIANTHUS <i>Eustoma grandiflorum</i> Flare F₁ Series	PEL	406	8-10	1	Light cover	8-12	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
MARIGOLD <i>Tagetes erecta</i> Xochi™ F₁ Series	COT	288	3-4	1	Yes	2-3	6.2-6.5 pH 0.08 mmhos/cm	(m) Level 4 (t) 70-72°F (21-22°C) (l) Optional	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3 (t) 65-68°F (18-20°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 2,000-2,500 f.c. (21,500-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 4,000-5,000 f.c. (43,100-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC) (p) paclobutrazol 4-6 ppm Spray	(m) Level 3 (t) 60-65°F (16-18°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 100 to 175 ppm N (0.7 to 1.2 EC)	A small percentage (3 to 5%) of early off-types can be observed with Amazon dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 5-8 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 8-10 mol·m ⁻² ·d ⁻¹ (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 10 mol·m ⁻² ·d ⁻¹ (f) 175 to 225 ppm N (1.2 to 1.5 EC)	
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	If needed, young plants respond well to daminozide.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 4-3 (t) 65-68°F (18-20°C) (l) 2,500 f.c. (26,900 Lux)	(m) Level 3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux)	(m) Level 2 (t) 60-65°F (16-18°C) (l) 5,000 f.c. (53,800 Lux)	Panicum Frosted Explosion has a facultative short day flowering response. Plugs should be grown under 14+ hours of light. MPL sown trays need sufficient tray watering (guideline is approximately 500 ml per 30 seconds, average belt speed); then trays needs quick transfer to a high-moisture germ chamber to avoid dry back of the clay pellet material.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Plants flower more rapidly and uniformly if subjected to a cold treatment of 50 to 55°F (10 to 13°C) for 3 to 5 weeks following germination.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Avoid high media temperature (>72°F/22°C) beginning in Stage 2, as it can induce rosetting in the seedling, which will cause stunting after the plugs are transplanted. Also, it is very important to establish a preventative disease and insect control practice for lisianthus production.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Avoid high media temperature (>72°F/22°C) beginning in Stage 2, as it can induce rosetting in the seedling, which will cause stunting after the plugs are transplanted. Also, it is very important to establish a preventative disease and insect control practice for lisianthus production.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3-4 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Avoid high media temperature (>72°F/22°C) beginning in Stage 2, as it can induce rosetting in the seedling, which will cause stunting after the plugs are transplanted. Also, it is very important to establish a preventative disease and insect control practice for lisianthus production.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3 (t) 68-72°F (20-22°C) (l) 2,500 f.c. (26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 65-70°F (18-21°C) (l) 5,000 f.c. (53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Maintain soil pH of 6.2 to 6.5 to avoid iron toxicity. Higher temperatures inhibit germination, shorten crop time and cause stretching. Plant growth regulators are not generally required.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
MATRICARIA <i>Tanacetum parthenium</i> Vegmo Series	PEL	288	4-5	1	No	3-5	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 5 (t) 64-68°F (18-20°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
MATTHIOLA <i>Matthiola incana</i> Aida Series	RAW	288	5-6	1	Yes	2-4	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 4 (t) 59-64°F (15-18°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
MATTHIOLA <i>Matthiola incana</i> Column Stock Series	RAW	Direct sow	N/A		Yes	14-21	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
MATTHIOLA <i>Matthiola incana</i> Figaro Series	RAW	288	5-6	1	Yes	2-4	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 4 (t) 59-64°F (15-18°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
MATTHIOLA <i>Matthiola incana</i> Katz Hi Double Series	RAW	512	4	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C)	
MATTHIOLA <i>Matthiola incana</i> Katz Series	RAW	512	4	1	Yes	3-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C)	
MATTHIOLA <i>Matthiola incana</i> Mathilda™ Series	RAW	288	5-6	1	Yes	2-4	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 4 (t) 59-64°F (15-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
MATTHIOLA <i>Matthiola incana</i> Opera Series	RAW	288	5-6	1	Yes	2-4	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 4 (t) 59-64°F (15-18°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 64-68°F (18-20°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 64-68°F (18-20°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-65°F (16-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	
	(m) Level 3-4 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	In field grown-type stocks, typically the seed is directly sown into the field, so it's important to maintain the optimal field conditions, especially the moisture conditions, for the seed to germinate and establish.
	(m) Level 3-4 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Katz Hi Double produces a minimum of 90% double-flowering plants. Katz Hi Double is not recommended for seedling selection of double-flowering plants. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 55-60°F (13-16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Katz is not recommended for seedling selection of double-flowering matthiola. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
	(m) Level 3-4 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
MATTHIOLA <i>Matthiola incana</i> Tosca Series	RAW	288	5-6	1	Yes	2-4	5.6-5.9 pH 0.5 mmhos/cm	(m) Level 4 (t) 59-64°F (15-18°C) (f) Less than 100 ppm N (Less than 0.7 EC)	
SNAPDRAGON <i>Antirrhinum majus</i> Cool F₁ Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Early Potomac™ F₁ Series	RAW	406	4-5	1	Light cover	4-6	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Maryland F₁ Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Monaco F₁ Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Potomac™ F₁ Series	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
SNAPDRAGON <i>Antirrhinum majus</i> Purple Twist F₁	RAW	406	4-5	1	Light cover	4-5	5.5-6.0 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-70°F (18-21°C)	
TRACHELIUM <i>Trachelium caeruleum</i> Lake Series	PEL	288	7-9	1	No	5-7	6.0 pH 0.5-0.9 mmhos/cm	(m) Level 4 (t) 62-70°F (17-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 59-64°F (15-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 1-2 (t) 59-64°F (15-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Double-flowering Matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable Matthiola plugs.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 3-4 (t) 60-65°F (16-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 3 (t) 60°F (16°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Avoid high media pH (>6.5), as this can cause iron and boron deficiency. Tip abortion of the seedlings can be caused by boron deficiency, high EC and excessive moisture accumulation on the growing tip, followed by poor air circulation. Incorporate a preventative fungicide program for downy mildew control.
	(m) Level 3-4 (t) 62-70°F (17-21°C) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-70°F (17-21°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-70°F (17-21°C) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Trachelium is very sensitive to high salts during germination, particularly high ammonium.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS	
ANEMONE <i>Anemone coronaria</i> Mona Lisa® F₁ Series	Day Neutral	Greenhouse , Support: Not needed (day) 60-65°F (16-18°C) (night) 55°F (13°C) 2-4 plants/ft² (22-43 plants/m²), 12-14 weeks	
ASCLEPIAS <i>Asclepias curassavica</i> Silky Series	Day Neutral	Field grown , Support: Not needed 3-4 plants/ft² (32-43 plants/m²), 8-12 weeks Greenhouse , Support: Not needed (day) 70-75°F (21-24°C) (night) 60-65°F (16-18°C) 2-3 plants/ft² (22-32 plants/m²), 10-14 weeks Tunnel , Support: Not needed 3-4 plants/ft² (32-43 plants/m²), 8-12 weeks	
CAMPANULA <i>Campanula medium</i> Campana F₁ Series	Facultative Long Day Plants need long day (> 14 hours daylength) for flower initiation.	Greenhouse , Support: Recommended (day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks	
CARTHAMUS <i>Carthamus tinctorius</i> Grenade Series		Field grown , Support: Recommended 6 plants/ft² (65 plants/m²), 8-12 weeks Tunnel , Support: Recommended 4-6 plants/ft² (43-65 plants/m²), 8-12 weeks	
CELOSIA <i>Celosia spicata</i> Celway™ Series	Facultative Short Day Facultative short-day plant. Flowers will initiate faster under short days. The optimum daylength for Celway to reach the maximum stem length lies between 12 to 13 hours, but will perform well under longer daylengths.	Field grown , Support: Recommended (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 8-10 weeks Tunnel , Support: Recommended (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks	
CELOSIA <i>Celosia cristata</i> Neo™ Series	Facultative Short Day Facultative short-day plant. Flowers will initiate faster under short days.	Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 60°F (16°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks Tunnel , Support: Required (day) 60-75°F (16-24°C) (night) 59-65°F (15-18°C) 6-8 plants/ft² (65-86 plants/m²), 6-10 weeks	
CELOSIA <i>Celosia cristata</i> Spring Green	Facultative Short Day The optimum daylength to reach the maximum stem length lies between 12 to 13 hours.	Field grown , Support: Recommended (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 6-8 weeks Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 60°F (16°C) 6-8 plants/ft² (65-86 plants/m²), 8-14 weeks	
CELOSIA <i>Celosia plumosa</i> Sunday™ Series	Facultative Short Day The optimum daylength for Celosia Sunday to reach the maximum stem length is between 12 to 13 hours. Under greenhouse short-day conditions, provide daylength extension up to 13 hours to allow plants to elongate and to prevent early flowering. When daylength is over 13 hours, short-day treatments may be applied. Provide a dark period for a minimum of 12 hours for 5 to 6 weeks. Do not start short days until one week after planting. Under field conditions, crop will initiate flowers faster under short days. Schedule your crop to receive long days after transplant to achieve stem length desired.	Field grown , Support: Required (day) 65-80°F (18-27°C) (night) 60-70°F (16-21°C) 6-8 plants/ft² (65-86 plants/m²), 8-12 weeks Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 60°F (16°C) 6-8 plants/ft² (65-86 plants/m²), 12-16 weeks	

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
288	18 in. (46 cm)	Optimal stem length can be achieved with cool growing conditions (53 to 58°F/12 to 14°C). If flowering too short while maintaining optimal temperatures, reduce light intensity.
288	22-28 in. (56-71 cm)	
288	30-34 in. (76-86 cm)	To ensure sufficient vegetative growth and stem length, use short day grown plugs. Best practices for producing cut flower <i>Campanula Campana</i> must be followed to assure best stem length and strength, and to control the timing of bud set. When transplanting under long or increasing daylength, make sure plants have short days (<13 hours) for 4 to 5 weeks, using black cloth where needed. Follow that with natural long days (>14 hours) for production finish. When transplanting under short days, give plants natural short days (13 hours) for 4 to 5 weeks, followed by daylength extension to long days (>14 hours) for production finish. Mum lighting from 10 p.m. to 2 a.m. can be used. Maintain a medium moisture level. To reach sufficient stem length, <i>Campanula medium</i> needs adequate moisture and fertilization. Dry growing conditions will cause early flowering and reduced stem length. However, over-watering will cause weaker stems and root systems, which will cause plants to fall over.
Direct sow	32-40 in. (81-102 cm)	Harvest timing is affected by heat and light quality, and reflects direct sow method. If desired, apical bud can be removed to ensure more buds opening at the same time.
288	30-48 in. (76-122 cm)	<i>Celosia</i> makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering.
288	28-40 in. (71-102 cm)	We recommend to give the plants a short-day treatment for 3 to 4 weeks after transplant for the best uniformity and quality crop. After the short-day treatment, plants can be grown in long days. <i>Celosia</i> makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering. Before flower development, temperatures 65-75°F (day) 63-65°F (night) are recommended. Better flower quality is achieved if greenhouse temperatures are lowered as flowers develop. Not recommended for pinch.
288	24-40 in. (61-102 cm)	<i>Celosia</i> makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering. Before flower development, temperatures 65-75°F (day) 63-65°F (night) are recommended. Better flower quality is achieved if greenhouse temperatures are lowered as flowers develop. Do not pinch Spring Green.
288	28-40 in. (71-102 cm)	<i>Celosia</i> makes a taproot and is sensitive to root damage, which will result in early bud formation, deformed flowers and less uniformity. Therefore, plant before the plugs get rootbound. Maintain a constantly moist media, especially for the first 2 weeks after transplanting, to prevent premature flowering. Before flower development, temperatures 65-75°F (day) 63-65°F (night) are recommended. Better flower quality is achieved if greenhouse temperatures are lowered as flowers develop.

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS
DELPHINIUM <i>Delphinium x belladonna</i> Blue Donna	Facultative Long Day	Field grown , Support: Recommended (day) 63-68°F (17-20°C) (night) 53-58°F (12-14°C) 1-2 plants/ft² (11-22 plants/m²), 12-15 weeks Greenhouse , Support: Recommended (day) 63-68°F (17-20°C) (night) 53-58°F (12-14°C) 1-2 plants/ft² (11-22 plants/m²), 12-15 weeks
DELPHINIUM <i>Delphinium elatum</i> Guardian F₁ Series	Facultative Long Day	Field grown , Support: Recommended (day) 68-71°F (20-22°C) (night) 60-65°F (16-18°C) 4 plants/ft² (43 plants/m²), 13-16 weeks Greenhouse , Support: Recommended (day) 68-71°F (20-22°C) (night) 60-65°F (16-18°C) 4 plants/ft² (43 plants/m²), 11-13 weeks
DIANTHUS <i>Dianthus barbatus interspecific</i> Amazon™ F₁ Series	Facultative Long Day Best results are achieved when plants are grown in full sun or in a high-light greenhouse. The combination of high light with high heat will result in shorter stems.	Tunnel , Support: Required (day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C) 3-4 plants/ft² (32-43 plants/m²), 14-18 weeks
DIANTHUS <i>Dianthus barbatus</i> Sweet™ F₁ Series	Facultative Long Day Best results are achieved when plants are grown in full sun or in a high-light greenhouse. The combination of high light with high heat will result in shorter stems.	Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 11-13 weeks Tunnel , Support: Required (day) 60-72°F (16-22°C) (night) 50-60°F (10-16°C) 6-8 plants/ft² (65-86 plants/m²), 11-15 weeks
GOMPHRENA <i>Gomphrena pulchella</i> Fireworks	Day Neutral	Field grown , Support: Recommended 1 plants/ft² (11 plants/m²), 10-12 weeks
GOMPHRENA <i>Gomphrena haageana</i> QIS Series		Field grown , Support: Not needed (day) 65-75°F (18-24°C) (night) 63-66°F (17-19°C) 1-2 plants/ft² (11-22 plants/m²), 10-12 weeks
GRASS PANICUM CAPILLARE <i>Panicum capillare</i> Frosted Explosion	Facultative Short Day Facultative short day. Daylength extension will ensure good stem length when days are shorter than 14 hours.	Field grown , Support: Required (day) 65-75°F (18-24°C) (night) 58-65°F (14-18°C) 2-3 plants/ft² (22-32 plants/m²), 7-9 weeks Greenhouse , Support: Required (day) 60-65°F (16-18°C) (night) 58-60°F (14-16°C) 2-3 plants/ft² (22-32 plants/m²), 8-11 weeks
LIMONIUM <i>Limonium sinuatum</i> QIS Series	Facultative Long Day	Field grown , Support: Not needed 1-2 plants/ft² (11-22 plants/m²), 7-10 weeks Tunnel , Support: Not needed 1-2 plants/ft² (11-22 plants/m²), 8-12 weeks
LISIANTHUS <i>Eustoma grandiflorum</i> ABC™ F₁ Series	Facultative Long Day During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long-day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred, as it increases flower quality and decreases crop time.	Greenhouse , Support: Recommended (day) 65-80°F (18-27°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 13-16 weeks Tunnel , Support: Recommended (day) 65-80°F (18-27°C) (night) 55-60°F (13-16°C) 6-8 plants/ft² (65-86 plants/m²), 13-16 weeks
LISIANTHUS <i>Eustoma grandiflorum</i> Can Can F₁ Series	Facultative Long Day During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long-day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred, as it increases flower quality and decreases crop time.	Greenhouse , Support: Recommended (day) 65-85°F (18-29°C) (night) 55-65°F (13-18°C) 6-8 plants/ft² (65-86 plants/m²), 12-16 weeks Tunnel , Support: Recommended (day) 65-85°F (18-29°C) (night) 55-65°F (13-18°C) 6-8 plants/ft² (65-86 plants/m²), 12-16 weeks

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
288	20-35 in. (51-89 cm)	Planting density: Annual greenhouse production = 12 to 16 plants/m ² . Annual field production = 16 to 18 plants/m ² . Perennial field production = 9 plants/m ² . Do not pinch. Fertilize frequently with well-balanced fertilizer. Avoid ratio N:K larger than 2. Irrigation: overhead only first 4 to 6 weeks, then use drip. Needs medium to high irrigation, but keep plants dry and low RH. Prefers high light conditions. Cut stems 6 in. (15 cm) above ground to prevent Root Rot. Harvest when 25 to 30% of flowers are open. For annual cycle: from early transplant (January/February); first harvest after 12 to 15 weeks; then next 1 or 2 harvests 5 to 6 weeks later. Second and third harvests give best quality stems.
288	30-39 in. (76-99 cm)	Autumn: greenhouse 13 weeks, field 16 weeks. Spring: greenhouse 11 weeks, field 13 weeks. Treat cut stems with an ethylene-inhibiting agent. In temperate areas such as coastal California, plugs are generally transplanted into the field August through October, and February to early May. Autumn transplants will flower the following Spring (February onward); Spring transplants flower late Spring.
288	20-36 in. (51-91 cm)	Transplant directly into ground beds approximately 5 weeks after sowing, spacing 30 to 40 plants per sq. m. (approximately 3 to 4 plants per sq. ft.). If main stem is pinched on Amazon dianthus, then space at 1.5 plants per net sq. ft. (approximately 15 plants per net sq. m). A single layer of support netting is recommended. A small percentage (3 to 5%) of early off-types can be observed with Amazon dianthus at 4 to 5 weeks from sowing. These plants should be removed/discarded at transplant.
288	18-36 in. (46-91 cm)	Sweet dianthus can be transplanted year-round in coastal California or similar climates, where mid-August to February 1 transplants will develop the best stem length. Stem length for the Sweet series from transplants April to July may not be of sufficient length for commercial production depending on the environment. Greenhouse-grown plants generally produce taller stems than plants that are field-grown. Harvest stems with at least 3 open flowers. Plants can be harvested continuously for approximately 2 to 3 weeks. If cut back, a second flush of flowers will be ready to harvest in 8 to 10 weeks. Note: A second crop is only advisable from an Autumn harvest, so the second flush develops under the cooler conditions of late Autumn and Winter and builds stronger plants. A single layer of support netting is recommended.
288	36-48 in. (91-122 cm)	
288	24-26 in. (61-66 cm)	To increase productivity, the first blooms of the plants can be removed so that the secondaries will develop strongly.
288	20-28 in. (51-71 cm)	Needs sufficient light intensity at a minimum of 150W/m ² . Insufficient light may lead to yellow leaf edges and reduced stem length. Avoid too low RH, as this can also cause yellow leaf edges. Two layers of support netting is advised.
288	30-35 in. (76-89 cm)	Popular series for both fresh and preserved cut flower production. Stiff stems do not require netting. Start plants cool, 55-60°F (day) 50-55°F (night), before flower development. Remove early buds and let plants bulk up to improve uniformity and yield.
406	29-45 in. (74-114 cm)	As a general guide, the time from transplant to harvest for the ABC series will be 16 weeks for Seasonality Number 1 varieties grown under short days, to 13 weeks for Seasonality Number 3 varieties grown under long days. Crop time is dependent on time of year, temperature, daylength and light intensity, and also on supplemental lighting and greenhouse conditions.
406	29-45 in. (74-114 cm)	Full-sun plantings of cut flower lisianthus produce shorter stems than greenhouse-grown lisianthus. Can Can is a series of F1 spray-type double-flowering lisianthus. They have a top-flowering habit, producing more flowers on top of each stem within a short flowering window, giving a bouquet effect. Can Can series is Speed Group 3 (Mid/medium speed) for flowering speed. Crop time is dependent on time of year, temperature, daylength and light intensity, and also on supplemental lighting and greenhouse conditions.

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS	
LISIANTHUS <i>Eustoma grandiflorum</i> Flare F₁ Series	Facultative Long Day During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long-day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred, as it increases flower quality and decreases crop time.	Greenhouse , Support: Recommended (day) 65-80°F (18-27°C) (night) 55-65°F (13-18°C) 6-8 plants/ft ² (65-86 plants/m ²), 13-16 weeks Tunnel , Support: Required (day) 65-80°F (18-27°C) (night) 55-65°F (13-18°C) 6-8 plants/ft ² (65-86 plants/m ²), 13-16 weeks	
MARIGOLD <i>Tagetes erecta</i> Xochi™ F₁ Series	Facultative Short Day Will flower quicker with shorter stem length when the daylength is 12 hours or less.	Field grown , Support: Not needed (day) 75-90°F (24-32°C) (night) 65-70°F (18-21°C) 8-10 plants/ft ² (86-108 plants/m ²), 7-9 weeks Tunnel , Support: Not needed 8-10 plants/ft ² (86-108 plants/m ²), 7-9 weeks	
MATRICARIA <i>Tanacetum parthenium</i> Vegmo Series	Obligate Long Day Matricaria has an obligate long day flowering response. Critical daylength is 14 hours. When extending daylength night interruption for 2-4 hours begun at 12:00 am, or early AM extension before dawn are effective. Cyclic lighting for 7.5 minutes every half hour can also be used.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 7-8 plants/ft ² (75-86 plants/m ²), 10-12 weeks (day) 55-58°F (13-14°C) (night) 50-51°F (10-11°C) 7 plants/ft ² (75 plants/m ²), 14-16 weeks (day) 72-76°F (22-24°C) (night) 60-74°F (16-23°C) 8 plants/ft ² (86 plants/m ²), 7-10 weeks	
MATTHIOLA <i>Matthiola incana</i> Aida Series	Bred for specific seasonal performance, the PanAmerican Northern Greenhouse Selectable Matthiola assortment is an outstanding lineup for year-round production. Transplanting for seasons earlier than listed will result in later flowering. Aida series is Spring Flowering, Group 2.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-7 plants/ft ² (65-75 plants/m ²), 9-11 weeks	
MATTHIOLA <i>Matthiola incana</i> Column Stock Series		Field grown , Support: Not needed (day) 55-65°F (13-18°C) (night) 50-60°F (10-16°C) 20-22 weeks	
MATTHIOLA <i>Matthiola incana</i> Figaro Series	Bred for specific seasonal performance, the PanAmerican Northern Greenhouse Selectable Matthiola assortment is an outstanding lineup for year-round production. Transplanting for seasons earlier than listed will result in later flowering. Figaro series is Winter Flowering, Group 1.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-7 plants/ft ² (65-75 plants/m ²), 9-11 weeks	
MATTHIOLA <i>Matthiola incana</i> Katz Hi Double Series		Field grown , Support: Not needed (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 10-12 plants/ft ² (108-129 plants/m ²), 8-13 weeks Tunnel , Support: Recommended (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 8-10 plants/ft ² (86-108 plants/m ²), 8-13 weeks	
MATTHIOLA <i>Matthiola incana</i> Katz Series		Field grown , Support: Not needed (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 10-12 plants/ft ² (108-129 plants/m ²), 8-13 weeks Tunnel , Support: Recommended (day) 60-75°F (16-24°C) (night) 45-55°F (7-13°C) 8-10 plants/ft ² (86-108 plants/m ²), 8-13 weeks	
MATTHIOLA <i>Matthiola incana</i> Mathilda™ Series	Bred for specific seasonal performance, the PanAmerican Northern Greenhouse Selectable Matthiola assortment is an outstanding lineup for year-round production. Transplanting for seasons earlier than listed will result in later flowering. Mathilda series is Spring Flowering, Group 2.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-7 plants/ft ² (65-75 plants/m ²), 9-11 weeks	

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
406	29-45 in. (74-114 cm)	Full-sun plantings of cut flower lisianthus produce shorter stems than greenhouse-grown lisianthus. Flare is a series of F1 spray-type double-flowering lisianthus. They have a top-flowering habit, producing more flowers on top of each stem within a short flowering window, giving a bouquet effect. Flare series is Speed Group 2 (Mid/medium speed) for flowering speed. Crop time is dependent on time of year, temperature, daylength and light intensity, and also on supplemental lighting and greenhouse conditions.
288	30-36 in. (76-91 cm)	Take care when handling flowers to avoid snapping flower heads off of stems. Marigolds can be stored either wet or dry at 2-5°C (35-38°F). If storing wet, use a commercial floral holding solution.
288	28-36 in. (71-91 cm)	Stem length is affected by daylength, temperature and fertility. High temperatures during induction will result in shorter stems. Matricaria is not sensitive to ethylene.
288	30-34 in. (76-86 cm)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
Direct sow	24-30 in. (61-76 cm)	Column stocks are non-selectable for doubleness. Direct sow seed at 2.2 lbs./acre (1 kg/4,000 m²). Optimum stem length will be achieved during cool growing periods. High heat can stunt plants or prevent flower spikes from developing.
288	30-34 in. (76-86 cm)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
512	32 in. (81 cm)	Crop time is dependent on daylength and light intensity. As a general guide, with daylength of 13 hours or more, the crop time will be 8 weeks from planting. Shorter days will slow the crop time, depending on the temperature, up to 13 weeks from planting. Best performance when grown in tunnels.
512	32 in. (81 cm)	Crop time is dependent on daylength and light intensity. As a general guide, with daylength of 13 hours or more, the crop time will be 8 weeks from planting. Shorter days will slow the crop time, depending on the temperature, up to 13 weeks from planting. Best performance when grown in tunnels. Not recommended for selecting double-flowering plants at cotyledon stage.
288	30-34 in. (76-86 cm)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.

CLASS/SERIES	DAYLENGTH	FINISHING PROGRAMS
MATTHIOLA <i>Matthiola incana</i> Opera Series	Bred for specific seasonal performance, the PanAmerican Northern Greenhouse Selectable Matthiola assortment is an outstanding lineup for year-round production. Transplanting for seasons earlier than listed will result in later flowering. Opera series is Spring Flowering, Group 2.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-7 plants/ft² (65-75 plants/m²), 9-11 weeks
MATTHIOLA <i>Matthiola incana</i> Tosca Series	Bred for specific seasonal performance, the PanAmerican Northern Greenhouse Selectable Matthiola assortment is an outstanding lineup for year-round production. Transplanting for seasons earlier than listed will result in later flowering. Tosca series is Late Spring/Summer flowering, Group 3.	Greenhouse , Support: Recommended (day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C) 6-7 plants/ft² (65-75 plants/m²), 9-11 weeks
SNAPDRAGON <i>Antirrhinum majus</i> Cool F. Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Cool Series is Winter/Early Spring Flowering, Group 1.	Greenhouse , Support: Required (day) 50-55°F (10-13°C) (night) 45-50°F (7-10°C) 8-10 plants/ft² (86-108 plants/m²), 15-18 weeks Tunnel , Support: Required (day) 50-55°F (10-13°C) (night) 45-50°F (7-10°C) 8-10 plants/ft² (86-108 plants/m²), 15-18 weeks
SNAPDRAGON <i>Antirrhinum majus</i> Early Potomac™ F. Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Early Potomac Series is Group 3,4: Ideal for production during periods of high light, long days and warm temperatures. Can be grown year-round with supplemental high-intensity lighting.	Greenhouse , Support: Required (day) 70-85°F (21-29°C) (night) 55-60°F (13-16°C) 10-12 plants/ft² (108-129 plants/m²), 10-14 weeks Tunnel , Support: Required (day) 70-85°F (21-29°C) (night) 55-60°F (13-16°C) 10-12 plants/ft² (108-129 plants/m²), 10-14 weeks
SNAPDRAGON <i>Antirrhinum majus</i> Maryland F. Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Maryland Series is Winter/Early Spring Flowering, Group 2.	Greenhouse , Support: Required (day) 55-70°F (13-21°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 12-18 weeks Tunnel , Support: Required (day) 55-70°F (13-21°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 12-18 weeks
SNAPDRAGON <i>Antirrhinum majus</i> Monaco F. Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Monaco Series is Group 2,3 and well-suited to difficult transition periods, between group 3,4 (Summer) to Group 1,2 (Autumn/Winter). Monaco tolerates warm Autumn conditions without flowering too quickly, and produces high-quality flower spikes when Autumn weather is unusually cool and dark. Performs well all year in areas with moderate temperatures and little daylength fluctuation.	Greenhouse , Support: Required (day) 60-75°F (16-24°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 14-18 weeks Tunnel , Support: Required (day) 60-75°F (16-24°C) (night) 50-55°F (10-13°C) 8-10 plants/ft² (86-108 plants/m²), 14-18 weeks
SNAPDRAGON <i>Antirrhinum majus</i> Potomac™ F. Series	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Potomac is Group 3,4: Ideal for production during periods of high light, long days and warm temperatures. Can be grown year-round with supplemental high-intensity lighting.	Greenhouse , Support: Required (day) 75-85°F (24-29°C) (night) 60°F (16°C) 10-12 plants/ft² (108-129 plants/m²), 8-12 weeks Tunnel , Support: Required (day) 75-85°F (24-29°C) (night) 60°F (16°C) 10-12 plants/ft² (108-129 plants/m²), 8-12 weeks
SNAPDRAGON <i>Antirrhinum majus</i> Purple Twist F.	Bred for specific seasonal performance, the PanAmerican Snapdragon assortment provides market-leading varieties for year-round production. Transplanting outside of recommended seasons is not recommended. Purple Twist is Winter/Early Spring Flowering, Group 1,2.	Greenhouse , Support: Required (day) 50-55°F (10-13°C) (night) 45-50°F (7-10°C) 8-10 plants/ft² (86-108 plants/m²), 15-18 weeks Tunnel , Support: Required (day) 50-55°F (10-13°C) (night) 45-50°F (7-10°C) 8-10 plants/ft² (86-108 plants/m²), 15-18 weeks
TRACHELIUM <i>Trachelium caeruleum</i> Lake Series	Obligate Long Day Trachelium needs 16-hour daylength.	Greenhouse , Support: Recommended (day) 60-78°F (16-26°C) (night) 52-68°F (11-20°C) 1 plants/ft² (11 plants/m²), 10-14 weeks

RECOMMENDED PLUG SIZE	STEM LENGTH	KEY TIPS
288	30-34 in. (76-86 cm)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
288	24-32 in. (61-81 cm)	Double-flowering matthiola may be selected from single-flowering types by exposing seedlings with fully expanded cotyledons to 41°F (5°C) for approximately 3 to 5 days. At this point, seedlings of double-flowering plants will appear a pale green, while singles remain dark green. After removal from cold treatment, double-flowering seedlings will appear yellow and chlorotic within 1 to 2 days, while single-flowering seedlings remain robust and green. This cold treatment may only be done once to selectable matthiola plugs.
406	39-60 in. (99-152 cm)	Group 1: Night: 45 to 50°F (7 to 10°C), Day: 50 to 55°F (10 to 13°C). 1,000 to 1,500 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 3: Night: 55 to 60°F (13 to 16°C), Day: 60 to 65°F (16 to 18°C). 2,500 to 4,500 foot-candles. Group 4: Night: >60°F (>16°C), Day: >65°F (>18°C). 3,000 to 5,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 2: Night: 50 to 55°F (10 to 13°C), Day: 55 to 60°F (13 to 16°C). 1,500 to 3,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 2: Night: 50 to 55°F (10 to 13°C), Day: 55 to 60°F (13 to 16°C). 1,500 to 3,000 foot-candles. Group 3: Night: 55 to 60°F (13 to 16°C), Day: 60 to 65°F (16 to 18°C). 2,500 to 4,500 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 4: Night: >60°F (>16°C), Day: >65°F (>18°C). 3,000 to 5,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen.
406	39-60 in. (99-152 cm)	Group 1: Night: 45 to 50°F (7 to 10°C), Day: 50 to 55°F (10 to 13°C). 1,000 to 1,500 foot-candles. Group 2: Night: 50 to 55°F (10 to 13°C), Day: 55 to 60°F (13 to 16°C). 1,500 to 3,000 foot-candles. Two support nets are the minimum, but three are preferred. Mesh sizes of 4 x 4 in. (10 x 10 cm) to 6 x 6 in. (15 x 15 cm) are most commonly used. Place the first level at 4 to 6 in. (10 to 15 cm) above the soil level. Place the second level at 6 in. (15 cm) above the first level. Raise the upper level of the support nets as the stems lengthen. Unique purple and white-striped colour pattern varies depending on growing environment. When grown in warmer greenhouse conditions, white stripes are more prominent; under cool outside/tunnel conditions, purple is more prominent. This unique novelty standalone Group 1,2 variety can be produced along with the Maryland series.
288	30-42 in. (76-107 cm)	The greatest potential for year-round production in mild climates. Midseason flowering (transitional Group 3) series for mid-Winter to early-Spring transplants to yield late-Spring to early-Summer flowers. May also be transplanted late Summer to early Autumn for Autumn to early-Winter flowering.

VEGETABLES & HERBS



WAVE	PHOTOPERIODIC LIGHTING CHART P. 4
ANNUALS	PROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 46
PERENNIALS	PROPAGATION GUIDE P. 80 / FINISHING GUIDE P. 92 / FORCING GUIDE P. 108
POTTED PLANTS	PROPAGATION GUIDE P. 112 / FINISHING GUIDE P. 118
CUT FLOWERS	PROPAGATION GUIDE P. 124 / FINISHING GUIDE P. 132
VEGETABLES & HERBS	
KITCHEN MINIS	PROPAGATION GUIDE P. 168 / FINISHING GUIDE P. 172



CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
CUCUMBER <i>Cucumis sativus</i> Gherking F₁	RAW	Direct sow 128	3-4 2-3	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
CUCUMBER <i>Cucumis sativus</i> Martini F₁	RAW	Direct sow 128	3-4 2-3	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
CUCUMBER <i>Cucumis sativus</i> Patio Snacker F₁	RAW	Direct sow 128	3-4 2-3	1-2 1	Yes	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Asian Delite F₁	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Fairy Tale F₁	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Gretel F₁	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Hansel F₁	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
EGGPLANT <i>Solanum melongena</i> Patio Baby F₁	RAW	288	5-6	1	Light cover	5-8	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Dolce Fresca	RAW	288	3-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Emerald Towers	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Genovese	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Thai Towers	RAW	288	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 70-75°F (21-24°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
HERB (BASIL) <i>Ocimum basilicum</i> Newton	RAW	288	3-5	6-10	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (BASIL) <i>Ocimum basilicum</i> Purple Ruffles	RAW	406	4-5	1-3	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (DILL) <i>Anethum graveolens</i> Fernleaf	RAW	288	4-5	1-3	No	4-7	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Ocimum basilicum</i> Basil	PMPL	288	3-4	1	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Petroselinum crispum</i> Curled Parsley	PMPL	288	4-5	1	Yes	5-8	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Anethum graveolens</i> Dill	PMPL	288	3-4	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Petroselinum crispum</i> Large-Leaf Italian Flat Leaf Parsley	PMPL	288	4-5	1	Yes	5-8	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Origanum vulgare</i> Oregano	MPL	288	4-5	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Rosmarinus officinalis</i> Rosemary	PMPL	288	4-5	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-72°F (20-22°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Salvia officinalis</i> Sage	PMPL	288	3-4	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Thymus vulgaris</i> Thyme	MPL	288	4-5	1	Yes	5-8	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-70°F (20-21°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
HERB (SIMPLYHERBS™) <i>Ocimum basilicum</i> Try Basil	PMPL	288	3-4	1	Yes	2-4	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum baccatum</i> Aji Rico F1	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,500-2,000 f.c. (16,100-21,500 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 500-1,000 f.c. (5,400-10,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-1,500 f.c. (10,800-16,100 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,500-2,500 f.c. (16,100-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Can be directly sown into final container.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER <i>Capsicum annuum</i> Cajun Belle	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Candy Cane Chocolate Cherry F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Candy Cane Red F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Golden Cayenne	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> La Bomba II F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum baccatum</i> Mad Hatter F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Peppi Cornissimo F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Peppi F₁ Series	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> PeppiGrande Red F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Pot-a-peño F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum chinense</i> Primero Red F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

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CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER <i>Capsicum annuum</i> Snackabelle Red F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Sweet Heat F₁	RAW	288	5-6	1	Light cover	5-7	5.5-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER <i>Capsicum annuum</i> Trailblazer F₁	RAW	288	5-6	1	Light cover	5-7	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-78°F (21-26°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Alfredo Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® <i>Eruca sativa</i> Arugula	PMPL	128	2-3	1	Yes	1-2	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 4 (t) 68-74°F (20-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® City Garden Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Global Gourmet Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® <i>Brassica oleracea</i> Kale Storm Mixture	PMPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® <i>Brassica sp.</i> Pro San Mixture	PMPL	128	2-3	1	Optional	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® <i>Brassica sp.</i> Pro Tatu Mixture	PMPL	128	2-3	1	Optional	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4-5 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Summer Picnic Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SIMPLYSALAD® Wonder Wok Mixture	MPL	128	2-3	1	Light cover	2-3	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 65-73°F (18-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. Sweet Heat is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 62-67°F (17-19°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at the rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. SimplySalad Kale Storm will develop darker colours in cool temperatures.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. SimplySalad® Pro San will develop darker colours in cool temperatures and higher light.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-65°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container. SimplySalad® Pro Tatu will develop darker colours in cool temperatures and higher light.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-3 (t) 62-64°F (17-18°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	Total crop time can be reduced by 1 week by directly sowing into the final container.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
SQUASH <i>Cucurbita moschata</i> Autumn Frost F₁	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita moschata</i> Butterbaby	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita pepo</i> Easy Pick F₁ Series	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita moschata</i> Honeynut	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
SQUASH <i>Cucurbita pepo</i> Lemon Sun F₁	RAW	Direct sow 72	3-4 2-3	1-2 1	Yes	2-4	5.8-6.2 pH 0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
STRAWBERRY <i>Fragaria x ananassa</i> Fresca	RAW	288	4-5	1-2	Light cover	7-14	5.5-5.8 pH 0.75 mmhos/cm	(m) Level 3 (t) 68-70°F (20-21°C) (l) Light (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Artemis F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Bellatrix F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> BlushingStar F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Candyland Red	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Chocolate Sprinkles F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> DarkStar F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 3-4 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-70°F (18-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Best performance when directly sown into final container. Height can be controlled by withholding fertilizer, avoiding overwatering, using DIF when possible and growing under high light conditions.
	(m) Level 2-3 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 60-62°F (16-17°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Strawberry is susceptible to mildew. Use DIF whenever possible, especially the first 2 hours after sunrise, to control plant height.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. If necessary, uniconazole (Sumagic) at a rate of 2.5 to 5 ppm can be applied at 2 weeks after sowing for height control. Repeat 2 weeks later if needed.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Big Brandy F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Cherokee Carbon F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Genuwine F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Marziner F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Perfect Flame F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Helix F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Homeslice F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Little Bing F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Little Napoli F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Little Sicily F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Loki F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

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PanAmerican Seed®

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
TOMATO <i>Solanum lycopersicum</i> Marzito F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Midnight Snack F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Orange Zinger F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Stellar F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Sugar Rush F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Sun Dipper F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Sunrise Sauce F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Tidy Treats F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Topsy Tom F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO <i>Solanum lycopersicum</i> Tumbler F₁	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

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(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
CUCUMBER <i>Cucumis sativus</i> Gherking F₁	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
CUCUMBER <i>Cucumis sativus</i> Martini F₁	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
CUCUMBER <i>Cucumis sativus</i> Patio Snacker F₁	Direct sow 128	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Asian Delite F₁	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Fairy Tale F₁	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Gretel F₁	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Hansel F₁	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
EGGPLANT <i>Solanum melongena</i> Patio Baby F₁	288	(day) 60-70°F (16-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Dolce Fresca	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Emerald Towers	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Genovese	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Everleaf Thai Towers	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Newton	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (BASIL) <i>Ocimum basilicum</i> Purple Ruffles	406	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (DILL) <i>Anethum graveolens</i> Fernleaf	288	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Ocimum basilicum</i> Basil	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Petroselinum crispum</i> Curled Parsley	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Anethum graveolens</i> Dill	288	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Petroselinum crispum</i> Large-Leaf Italian Flat Leaf Parsley	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.0 mmhos/cm	

	FINISHING PROGRAMS	KEY TIPS
	Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
	Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
	Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring	Direct-sow into final container. Performs well in-ground and in containers. Vining plants can be trained up a trellis to save garden space.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers, with or without support.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers, with or without support.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers, with or without support.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground and in containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1-3 (ppp), 4-5 (weeks), Spring	Seed can be directly sown into finish containers.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
HERB (SIMPLYHERBS™) <i>Origanum vulgare</i> Oregano	288	(day) 60-65°F (16-18°C) (night) 50-55°F (10-13°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Rosmarinus officinalis</i> Rosemary	288	(day) 60-65°F (16-18°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Salvia officinalis</i> Sage	288	(day) 65-70°F (18-21°C) (night) 60-65°F (16-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Thymus vulgaris</i> Thyme	288	(day) 65-70°F (18-21°C) (night) 55-60°F (13-16°C)	5.5-6.2 pH 1.0 mmhos/cm	
HERB (SIMPLYHERBS™) <i>Ocimum basilicum</i> Try Basil	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum baccatum</i> Aji Rico F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Cajun Belle	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Candy Cane Chocolate Cherry F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Candy Cane Red F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Golden Cayenne	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> La Bomba II F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum baccatum</i> Mad Hatter F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Peppi Cornissimo F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Peppi F₁ Series	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> PeppiGrande Red F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Pot-a-peño F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum chinense</i> Primero Red F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Snackabelle Red F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
PEPPER <i>Capsicum annuum</i> Sweet Heat F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	

	FINISHING PROGRAMS	KEY TIPS
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 4-5 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-5 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 3-4 (weeks), Spring	Can be directly sown into final container.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Large plant habit. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a small container, with or without support.
	Cell Pack , 0-1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 0-1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 0-1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a container, with or without support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
	4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring Field grown , 1 (ppp), 12-13 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
	4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring Field grown , 1 (ppp), 11-12 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
	4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring Field grown , 1 (ppp), 12-13 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 1-3 (ppp), 8-10 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Large habit. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a medium container, with or without support.
	Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs very well in containers.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
PEPPER <i>Capsicum annuum</i> Trailblazer F₁	288	(day) 68-80°F (20-27°C) (night) 65-70°F (18-21°C)	5.5-6.2 pH 1.0 mmhos/cm	
SIMPLYSALAD® Alfresco Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® <i>Eruca sativa</i> Arugula	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® City Garden Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® Global Gourmet Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® <i>Brassica oleracea</i> Kale Storm Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® <i>Brassica sp.</i> Pro San Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SIMPLYSALAD® <i>Brassica sp.</i> Pro Tatu Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SIMPLYSALAD® Summer Picnic Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SIMPLYSALAD® Wonder Wok Mixture	128	(day) 62-70°F (17-21°C) (night) 56-61°F (13-16°C)	5.8-6.2 pH 0.75 mmhos/cm	
SQUASH <i>Cucurbita moschata</i> Autumn Frost F₁	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita moschata</i> Butterbaby	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita pepo</i> Easy Pick F₁ Series	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita moschata</i> Honeynut	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
SQUASH <i>Cucurbita pepo</i> Lemon Sun F₁	Direct sow 72	(day) 68-72°F (20-22°C) (night) 60-65°F (16-18°C)	5.8-6.2 pH 0.75-1.0 mmhos/cm	
STRAWBERRY <i>Fragaria x ananassa</i> Fresca	288	(day) 60-65°F (16-18°C) (night) 60-62°F (16-17°C)	6.5-7.5 pH 1.0 mmhos/cm	

FINISHING PROGRAMS	KEY TIPS
Cell Pack , 1 (ppp), 4-6 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 4-6 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 5-7 (weeks), Spring	Performs well in-ground or in a large container, with support.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-3 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. 30 to 45 days from transplant to harvest.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures. Can be grown in-ground after transplant stage.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-3 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 3-4 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 1-2 (weeks), Summer 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 2-3 (weeks), Summer 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 2-3 (weeks), Summer	Can be directly sown into final container and will reduce crop time by approximately 1 week. Coloured varieties develop pigment very quickly at cooler temperatures and under higher light. Can be grown in-ground after transplant stage.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-3 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 3-4 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 3-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 1-2 (weeks), Summer 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 2-3 (weeks), Summer 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 2-3 (weeks), Summer	Can be directly sown into final container and will reduce crop time by approximately 1 week. Coloured varieties develop pigment very quickly at cooler temperatures and under higher light. Can be grown in-ground after transplant stage.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 2-4 (weeks), Spring 10" Pot or HB/3 Gallon/25 cm , 4-5 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 5-6 (ppp), 4-6 (weeks), Spring	Can be directly sown into final container. To achieve faster production with good foliage colour, SimplySalad can be grown at moderate to warm temperatures (55 to 70°F/13 to 21°C), and then finished at 45 to 55°F (7 to 13°C) for 3 to 5 days. Coloured varieties develop pigment very quickly at cooler temperatures.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1-2 (ppp), 14-15 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 14-15 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 7-8 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 15-16 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground. Vining plants can be trained up a trellis to save garden space.
Cell Pack , 1-2 (ppp), 2-3 (weeks), Spring 4"/4.5"/Quart/10 cm , 1-2 (ppp), 2-3 (weeks), Spring Field grown , 1 (ppp), 6-7 (weeks), Spring	Direct-sow into final container. Performs best when grown in-ground.
Cell Pack , 1 (ppp), 6-8 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 8-10 (weeks), Spring 8"/2 Gallon/20 cm , 3-4 (ppp), 10-12 (weeks), Spring	Susceptible to mildew.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
TOMATO <i>Solanum lycopersicum</i> Artemis F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Bellatrix F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> BlushingStar F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Candyland Red	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Chocolate Sprinkles F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> DarkStar F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Big Brandy F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Cherokee Carbon F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Genuwine F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Marziner F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Heirloom Marriage™ Perfect Flame F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Helix F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Homeslice F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Little Bing F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Little Napoli F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Little Sicily F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Loki F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	

	FINISHING PROGRAMS	KEY TIPS
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring Field grown , 1 (ppp), 7-8 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring Field grown , 1 (ppp), 7-8 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs well in a patio planter or in-ground. Best grown with support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, determinate variety. Excellent performance in a patio planter, with or without support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, determinate variety. Excellent performance in a patio planter, with or without support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm , 1 (ppp), 6-8 (weeks), Late Spring	Compact, determinate variety. Excellent performance in a patio planter, with or without support.
	Cell Pack , 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm , 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm , 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
TOMATO <i>Solanum lycopersicum</i> Marzito F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Midnight Snack F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Orange Zinger F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Stellar F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Sugar Rush F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Sun Dipper F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Sunrise Sauce F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Tidy Treats F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Topsy Tom F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO <i>Solanum lycopersicum</i> Tumbler F₁	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	

	FINISHING PROGRAMS	KEY TIPS
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Indeterminate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring	Determinate variety. Performs best when grown in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring 14" Pot or HB/7 Gallon/36 cm, 1 (ppp), 6-8 (weeks), Late Spring	Compact, indeterminate variety. Performs well in a patio planter or in-ground and with support.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm, 1 (ppp), 6-8 (weeks), Late Spring	Superior variety for hanging baskets and patio planters. Performs well when grown upside-down.
	Cell Pack, 1 (ppp), 2-4 (weeks), Spring 4"/4.5"/Quart/10 cm, 1 (ppp), 2-4 (weeks), Spring 5"/6"/1 Gallon/15 cm, 1 (ppp), 4-6 (weeks), Spring 12" Pot or HB/5 Gallon/30 cm, 1 (ppp), 6-8 (weeks), Late Spring	Superior variety for hanging baskets and patio planters. Cascading habit. Performs well when grown without support.

VEGETABLES & HERBS



NO GARDEN?
NO PROBLEM.



WAVEPHOTOPERIODIC LIGHTING CHART P. 4

ANNUALSPROPAGATION GUIDE P. 8 / FINISHING GUIDE P. 46

PERENNIALS PROPAGATION GUIDE P. 80 / FINISHING GUIDE P. 92 / FORCING GUIDE P. 108

POTTED PLANTS PROPAGATION GUIDE P. 112 / FINISHING GUIDE P. 118

CUT FLOWERS PROPAGATION GUIDE P. 124 / FINISHING GUIDE P. 132

VEGETABLES & HERBS

HANDPICKED PROPAGATION GUIDE P. 142 / FINISHING GUIDE P. 156



CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Adobo	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Cosmo	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Fresh Bites Series	RAW	288	3-4	1	No	4-5	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Burrito	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Fajita	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Joker	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist 10 to 12 days after sowing. An application of uniconazole 2.5 ppm will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	SEED FORM	RECOMMENDED PLUG SIZE	PLUG CROP WEEKS	SEEDS/ CELL	COVER SEED	DAYS FROM 50% TO MAXIMUM GERMINATION	INITIAL MEDIA PH/EC (1:2)	STAGE 1	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Lemon Zest	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Piñata	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Tamale	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Taquito	RAW	288	3-4	1	No	5-6	5.4-5.8 pH 0.8-1.2 mmhos/cm	(m) Level 4 (t) 70-73°F (21-23°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Micro Tom	RAW	288	3-4	1	Light cover	2-3	5.5-5.8 pH 0.5 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Cocoa F₁	RAW	288	2-3	1	Light cover	2-3	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Red Velvet F₁	RAW	288	2-3	1	Light cover	2-3	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Siam F₁	RAW	288	2-3	1	Light cover	2-3	5.5-5.8 pH 0.5-0.75 mmhos/cm	(m) Level 4 (t) 70-75°F (21-24°C) (l) Optional (f) Less than 100 ppm N (Less than 0.7 EC)	

	STAGE 2	STAGE 3	STAGE 4	KEY TIPS
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist 10 to 12 days after sowing. An application of uniconazole 2.5 ppm will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	To ensure a uniform crop, growth regulator should be applied with a fine mist. For more vigorous varieties, an application of uniconazole 2.5 ppm at 10 to 12 days after sowing, repeated 2 weeks later if needed, will help control plant size. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 100 to 175 ppm N (0.7 to 1.2 EC)	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC) (p) uniconazole 2.5 ppm Spray	(m) Level 2-4 (t) 68-70°F (20-21°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) 175 to 225 ppm N (1.2 to 1.5 EC)	Although Taquito is a naturally compact variety, plugs will be stronger if growth regulator is used. To bench germ: Make sure trays are watered before covering. Flat covering: first place one layer of reemay, then one layer of white plastic on top of that. Remove plastic after 8 to 10 days. Keep reemay wet. Remove reemay after another 2 to 3 days.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 65-68°F (18-20°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by withholding fertilizer, avoiding overwatering, growing under high light conditions and using DIF when possible. Micro Tom is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by avoiding overwatering, growing under high light conditions and using DIF when possible. Cocoa is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by avoiding overwatering, growing under high light conditions and using DIF when possible. Red Velvet is naturally compact and should not need PGRs.
	(m) Level 3-4 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 1,000-2,500 f.c. (10,800-26,900 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	(m) Level 2-3 (t) 68-72°F (20-22°C) (l) 2,500-5,000 f.c. (26,900-53,800 Lux) (f) Less than 100 ppm N (Less than 0.7 EC)	Height can be controlled by avoiding overwatering, growing under high light conditions and using DIF when possible. Siam is naturally compact and should not need PGRs.

(m) moisture (t) temperature (l) light (f) fertilizer (p) plant growth regulators

CLASS/SERIES	RECOMMENDED PLUG SIZE	GROWING ON TEMPERATURE (DAYS/NIGHTS)	TARGET MEDIA PH/EC (1:2)	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Adobo	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Cosmo	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Fresh Bites Series	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Burrito	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Fajita	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Hot Joker	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Lemon Zest	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Piñata	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Tamale	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
PEPPER (EDIBLE POTTED) <i>Capsicum annuum</i> Taquito	288	(day) 68-80°F (20-27°C) (night) 66-70°F (19-21°C)	5.5-5.9 pH 1.8-2.5 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Micro Tom	288	(day) 65-70°F (18-21°C) (night) 62-65°F (17-18°C)	5.5-6.2 pH 0.75-1.0 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Cocoa F₁	288	(day) 68-80°F (20-27°C) (night) 68-70°F (20-21°C)	5.5-5.9 pH 1.8-2.25 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Red Velvet F₁	288	(day) 68-80°F (20-27°C) (night) 68-70°F (20-21°C)	5.5-5.9 pH 1.8-2.25 mmhos/cm	
TOMATO (EDIBLE POTTED) <i>Solanum lycopersicum</i> Siam F₁	288	(day) 68-80°F (20-27°C) (night) 68-70°F (20-21°C)	5.5-5.9 pH 1.8-2.25 mmhos/cm	

PanAmerican Seed®

U.S. UTILITY PATENTS

US 10,212,908

Vinca Titan™ Cranberry
Vinca Titan™ Dark Red
Vinca Titan™ Really Red

US 10,285,362

Impatiens Beacon® Bright Red
Impatiens Beacon® Coral
Impatiens Beacon® Orange
Impatiens Beacon® Rose
Impatiens Beacon® Salmon
Impatiens Beacon® Violet Shades
Impatiens Beacon® White
Impatiens Beacon® Formula Mixture
Impatiens Beacon® Lindau Mixture
Impatiens Beacon® Portland Mixture
Impatiens Beacon® Red White Mixture
Impatiens Beacon® Sanibel Mixture

US 10,631,515

Pentas Glitterati™ Purple Star
Pentas Glitterati™ Red Star

US 10,750,692

French Marigold Fireball
French Marigold Strawberry Blonde

US 11,166,424

Impatiens Beacon® Bright Red
Impatiens Beacon® Coral
Impatiens Beacon® Orange
Impatiens Beacon® Rose
Impatiens Beacon® Salmon
Impatiens Beacon® Violet Shades
Impatiens Beacon® White
Impatiens Beacon® Formula Mixture
Impatiens Beacon® Lindau Mixture
Impatiens Beacon® Portland Mixture
Impatiens Beacon® Red White Mixture
Impatiens Beacon® Sanibel Mixture

US 7,642,436

Fuseables® Petunia Blueberry Lime Jam
Petunia Debonair™ Black Cherry
Petunia Debonair™ Dusty Rose
Petunia Debonair™ Lime Green
Petunia Sophistica® Antique Shades
Petunia Sophistica® Blackberry
Petunia Sophistica® Lime Bicolor
Petunia Sophistica® Lime Green
Petunia Sophistica® Twilight
Spreading Petunia Easy Wave® Berry Velour
Spreading Petunia Easy Wave® Burgundy Velour
Spreading Petunia Easy Wave® Red Velour
Spreading Petunia Tidal Wave® Red Velour
Spreading Petunia Wave® Carmine Velour

US 7,915,504

Alyssum Clear Crystal® Lavender Shades
Alyssum Clear Crystal® Purple Shades
Alyssum Clear Crystal® White
Alyssum Clear Crystal® Mixture

US 7,982,110

Echinacea Artisan™ Collection Red Ombre
Echinacea Artisan™ Collection Soft Orange
Echinacea Artisan™ Collection Yellow Ombre
Echinacea Cheyenne Spirit
Echinacea PowWow® Wild Berry

US 9,301,465

Ornamental Pepper Hot Pops Purple

US 9,307,712

Ornamental Pepper Hot Pops Yellow

US 9,320,212

French Marigold Hot Pak™ Gold
French Marigold Hot Pak™ Mixture

US 9,326,464

French Marigold Hot Pak™ Harmony
French Marigold Hot Pak™ Mixture

US 9,326,465

French Marigold Hot Pak™ Yellow
French Marigold Hot Pak™ Mixture

US 9,326,466

French Marigold Hot Pak™ Spry
French Marigold Hot Pak™ Mixture

US 9,326,467

French Marigold Hot Pak™ Orange
French Marigold Hot Pak™ Mixture

US 9,326,468

French Marigold Hot Pak™ Flame
French Marigold Hot Pak™ Mixture

US 9,451,748

Vinca Valiant™ Burgundy
Vinca Valiant™ Mixture

US 9,451,749

Vinca Valiant™ Mixture

US 9,451,750

Vinca Valiant™ Orchid

US 9,451,751

Vinca Valiant™ Punch
Vinca Valiant™ Mixture

US 9,451,752

Vinca Valiant™ Lilac
Vinca Valiant™ Mixture

U.S. UTILITY PATENTS APPLIED FOR

Vinca Valiant™ Apricot
Vinca Valiant™ Magenta

U.S. PLANT VARIETY PROTECTIONS

Celosia Kosmo Pink - 200400022
Coleus, Premium Shade Kong® Red - 200500015
Coleus, Premium Shade Kong® Rose - 200500017
Coleus, Premium Shade Kong®
Salmon Pink - 200900035
Coreopsis SunKiss - 201700014
Cuphea Pink Shimmer - 201800290
Erysimum Citrona® Orange - 200600167
Erysimum Citrona® Yellow - 200600168
French Marigold Bonanza™ Bolero - 201800074
French Marigold Bonanza™
Deep Orange - 201800517
French Marigold Flamenco - 202000034
Helenium Dakota Gold - 200600009
Matthiola Katz Ruby - 201200438
Myosotis Mon Amie Blue - 200800070
Ornamental Oregano Kirigami - 201800057
Ornamental Pepper Black Pearl - 200500020
Salvia interspecific Big Blue - 201700218
Vinca Mediterranean XP Dark Red - 200900043
Vinca Mediterranean XP Hot Rose - 200900084
Vinca Mediterranean XP Peach - 200900080
Vinca Mediterranean XP Red - 200900081
Vinca Mediterranean XP Strawberry - 200900083
Vinca Mediterranean XP White - 200900053
Vinca Pacifica XP Burgundy Halo - 200700272
Vinca Pacifica XP Dark Red - 200600189
Vinca Pacifica XP Magenta Halo - 200500216
Vinca Pacifica XP Really Red - 200600190
Vinca Pacifica XP Rose Halo - 200500218
Vinca Tattoo™ Black Cherry - 201800427
Vinca Tattoo™ Blueberry - 202100168
Vinca Tattoo™ Papaya - 201800424
Vinca Tattoo™ Raspberry - 201800426
Vinca Tattoo™ Tangerine - 201800425
Vinca Tattoo™ American Pie Mixture -
202100168, 200600190
Zinnia Double Zahara™ Cherry - 201600027

Zinnia Double Zahara™ Fire - 201600032
Zinnia Double Zahara™
Raspberry Ripple - 201800173
Zinnia Double Zahara™ Salmon - 201900097
Zinnia Double Zahara™ Yellow - 202000360
Zinnia Zahara® Cherry - 201600029
Zinnia Zahara® Fire - 201000090
Zinnia Zahara® Raspberry - 201500215
Zinnia Zahara® Red - 201600030
Zinnia Zahara® White - 201400297
Zinnia Zahara® Yellow - 201500214

U.S. PLANT VARIETY PROTECTIONS APPLIED FOR

Vinca Tattoo™ Orange

EUROPEAN COMMUNITY PLANT BREEDER'S RIGHTS

Celosia Neo™ Gold - 46508
Celosia Neo™ Orange - 44055
Celosia Neo™ Pink - 43694
Celosia Neo™ Red - 46509
Celosia Neo™ Rose - 43693
Coreopsis SunKiss - 46544
Echinacea PowWow® Wild Berry - 35233
Heuchera Melting Fire - 20557
Lavandula Avignon Early Blue - 57924
Lavandula Blue Spear - 57923
Lavandula Lavance Deep Purple - 48822

EUROPEAN COMMUNITY UTILITY PATENTS APPLIED FOR

French Marigold Fireball
French Marigold Strawberry Blonde
Fuseables® Petunia Blueberry Lime Jam
Impatiens Beacon® Bright Red
Impatiens Beacon® Coral
Impatiens Beacon® Orange
Impatiens Beacon® Rose
Impatiens Beacon® Salmon
Impatiens Beacon® Violet Shades
Impatiens Beacon® White
Impatiens Beacon® Formula Mixture
Impatiens Beacon® Lindau Mixture
Impatiens Beacon® Portland Mixture
Impatiens Beacon® Red White Mixture
Impatiens Beacon® Sanibel Mixture
Petunia Debonair™ Black Cherry
Petunia Debonair™ Dusty Rose
Petunia Debonair™ Lime Green
Petunia Sophistica® Antique Shades
Petunia Sophistica® Blackberry
Petunia Sophistica® Lime Bicolor
Petunia Sophistica® Lime Green
Petunia Sophistica® Twilight
Spreading Petunia Easy Wave® Berry Velour
Spreading Petunia Easy Wave® Burgundy Velour
Spreading Petunia Easy Wave® Red Velour
Spreading Petunia Tidal Wave® Red Velour
Spreading Petunia Wave® Carmine Velour

CANADA UTILITY PATENTS APPLIED FOR

Impatiens Beacon® Bright Red
Impatiens Beacon® Coral
Impatiens Beacon® Orange
Impatiens Beacon® Rose
Impatiens Beacon® Salmon
Impatiens Beacon® Violet Shades
Impatiens Beacon® White
Impatiens Beacon® Formula Mixture
Impatiens Beacon® Lindau Mixture
Impatiens Beacon® Portland Mixture
Impatiens Beacon® Red White Mixture
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[illegible]

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