GrowerFacts

Fuchsia Upright

(*Fuchsia species*)

Propagation

ROOTING CULTURE

STAGE 1 Harvesting of cuttings to sticking

- Harvest uniform diameter cuttings to ensure uniform rooting.
- Make multiple passes over the stock to collect uniform diameter cuttings.
- Harvest cuttings at the correct stage of maturity- be certain stem cuttings are not woody. Cuttings should 'snap' when harvested
- Harvest cuttings in the early morning or late afternoon when ambient temperatures are below 90°F (32°C).
- Place cuttings in carriers either base up or base down.
- Avoid crushing the cuttings when harvesting to decrease botrytis problems.
- Cover the carrier with a damp towel to prevent desiccation of the cuttings.
- Store the cuttings for at least 2 hours at 45°F (7°C) to reduce cutting temperature.
- Maintain 75-90% RH in the cooler to prevent desiccation of the cuttings.
- If planting is going to be delayed, store the cuttings at 40-45°F (5-7°C) for 24 hours maximum.

STAGE 2 Callus formation (5-7 days)

- Callus formation occurs in 4 steps:
  1. Swelling of the tissue without any color change.
  2. Swollen area begins to turn white
  3. White areas begin to crack open (epidermis ruptures)
  4. Rough callus areas begin differentiating root initials.
- Soil temperature 68-72°F (20-22°C)
- Air temperature 68-70°F (20-21°C) nights, 75-80°F (24-26°C) days.
- To guarantee uniform rooting, the media should be sufficiently moist so that water is easily squeezed out of rooting media.
- Keep RH 75-90% at the base of the cutting.
- Use tempered water, 70°F (21°C), in the mist lines since cold water will lower the soil temperature during the day.
- Maintain high relative humidity in the air surrounding the cutting, 75-90%, to minimize evapotranspiration.
- Prevent leaf wilting by applying overhead mist or fog.
- The mist frequency should increase and decrease as the light and ambient temperatures change during the course of the day.
- During the first 3-5 days frequent night misting may be required.
- Each wilting episode during stage 2 adds at least one day to the rooting program.
- Light intensity should be 500-1000 foot-candles. High light intensity will promote flowering.
- Use retractable shade to maintain low light intensity.
- Begin foliar feeding with 50-75 ppm of 20-10-20 as soon as there is any loss in foliage color.
- Soil pH should be 5.5-6.0 with an EC < 0.5.
- Maintain pH of media leachate at 6.0-6.2.
- If growth regulators were used during stock plant growth, no growth regulators are used during stage 2.
- If growth regulators were not used during stock plant growth then start applying appropriate growth regulators as soon as cuttings are turgid.
- Florel will promote lateral shoot development and inhibit flowering.
- Once 50% of the cuttings begin differentiating root initials, the cuttings are ready to transfer to stage 3.

STAGE 3 Root development (7-14 days)

- Soil temperature 68-72°F (20-22°C).
- Air temperature 68-70°F (20-21°C) nights, 75-80°F (24-26°C) days.
- Once the cuttings begin to form root initials, it is critical to begin drying out the soil. Wet soil will increase pythium and phytophora disease problems
- Avoid drying out the air since this will increase evapotranspiration which will reduce root zone temperature.
- To reduce soil moisture:
- Reduce the mist application during the dark period.
- Reduce the duration and frequency of the mist.
- Reduce the amount of water applied per day by delaying the start of the mist period until 9:30 to 11:00 AM and end the mist period earlier than 4:00-5:00 PM.
- Begin increasing light intensity to 1000-2000 FTC as the cuttings begin to root out.
- Apply Florel to increase lateral branching and reduce flowering.
- Foliar feed at 100 ppm nitrogen from 15-0-15 alternating with 20-10-20 then increase rapidly to 200 ppm. Increase the frequency and rate at each application to prevent salt problems.
- The majority of fertilizer should be in the ammonia form (20-10-20).

- The soil pH should be 5.5-6.0.
- Soil EC should be below 0.5.
- Monitor the pH and EC of the leachate on a daily basis. The pH should be 6.0 and the EC should stay between .5-1.0.

STAGE 4 Plants ready for transplanting or shipping (7 days)

- Air temperatures 62-68°F (16-20°C) nights, 70-75° F (21-24°C) days.
- Move the liners from the mist area into an area of lower RH, lower temperatures, short days and moderate light intensity.
- A zero DIF is desired.
- Use growth regulators if DIF is positive.
- Increase the light intensity to 1000 FTC.
- Provide shade during the mid point of the day to reduce temperature stress on the crop.
- Maintain soil pH 5.0-5.5 and EC less than 1.0 mmhos/cm.
- Fertilize at 150-200 ppm nitrogen from 15-0-15 alternating with 20-10-20 twice per week.

Growing On to Finish

TEMPERATURE

Night - 60-65°F (15-18°C)

Day - 65-75°F (18-24°C)

65°F promotes the most rapid vegetative growth. Higher temperatures will promote flowering

LIGHT

- Keep light intensities at 1000-2000 FTC to promote vegetative growth then increase light intensity to 4000-7000 FTC once plants reach desired size to promote flower initiation.
- Excessively high light and low relative humidity can cause leaf scorch.
- Fuchsia are long day plants at 72-75 F. Flowering will occur 40-45 days after the start of long days. For every degree (F) below 73 F that the crop is grown at flowering is delayed roughly 1 day.

WATER

- Keep soil moist to avoid soluble salt problems and prevent wilting.
- Fuchsia dry out rapidly when in full flower.
- Water with clear water every third watering if high soluble salts problems occur.
- Plants are susceptible to Botrytis and Rust if humidity is too high- avoid wet foliage

MEDIA

- Use a well-drained, disease-free medium with a high initial nutrient charge and a pH 5.0-5.5.
- Combinations of peat, bark, or perlite are best.

FERTILIZATION

- Fuchsia has a heavy fertilizer requirement.
- Constant fertilization 15-0-15 alternating with 20-10-20 is best.
- As the plants mature the rate can be increased to 200-300 ppm.
- Avoid fertilizers high in phosphorus.
- Time release fertilizer can be used.
- Maintain medium electrical conductivity around 1.0 mmhos/cm (using 1:2 extraction).

PINCHING

- Pinch at planting to final container and again three weeks later.
- If necessary pinch again to adjust shape.

CONTROLLING HEIGHT

- Height can be controlled by withholding fertilizer, especially phosphorous and ammonium-form nitrogen.
- Arest and Bonzi are effective at controlling height. Application of Arest has been shown to increase flowering when applied prior to the start of long days.

POST PRODUCTION CARE

TEMPERATURE

Night - 60-65°F (15-18°C)

Day - 65-72°F (18-22°C)

Can survive temperatures from 28-90°F.

LIGHT

- Fuchsia does best in full sun.
- Optimum light levels are 3000-5000 FTC.

WATER

Keep soil moist to prevent wilting and soluble salt problems.

COMMON DISEASES and INSECTS

Insects: Aphids, Thrips, Whitefly, Fungus gnats

Diseases: Botrytis, Rust, Pythium, Phytophora, Fusarium

Ball Horticultural Company
622 Town Road, West Chicago, Illinois, USA, 60185-2698
630 879-BALL www.ballseed.com

™ denotes a trademark of and ® denotes a registered trademark of Ball Horticultural Company in the US. It may also be registered in other countries.
©2024 Ball Horticultural Company

COMMON PROBLEMS and CAUSES

Problem: Plants collapse

Cause: Wet media for an extended period, Pythium or Phytophora wilt

Problem: Excessive vegetative growth

Cause: High nitrogen concentration in the soil, Over fertilization under low light, Low light and over watering, wet media

Problem: Poor branching

Cause: Low fertilization, lack of nitrogen

Problem: Stretched plants

Cause: Low light conditions

Problem: Excess flowering

Cause: Too high of light intensity, Long days, High production temperatures

Problem: Small plants

Cause: Incorrect light intensity, Root rots, High salts, Too cool production temperatures

Ball Horticultural Company
622 Town Road, West Chicago, Illinois, USA, 60185-2698
630 879-BALL www.ballseed.com

™ denotes a trademark of and ® denotes a registered trademark of Ball Horticultural Company in the US. It may also be registered in other countries.
©2024 Ball Horticultural Company