

## Isotoma Gemini

(*Isotoma hybrida*)

### Germination

Approximate seed count (pelleted): 280,000-340,000 sds/oz, 10000 – 12000 sds/gr.

#### Media

Use a well-drained, disease-free, media with a pH of 5.5 to 6.2 and an EC of 0.75 mmhos/cm.

#### Sowing

Sow 2 to 4 pellets per cell in 288 or larger plug tray; no cover needed. Spray preventively against damping off.

**Stage 1** – Germination takes about 5-8 days.

**Soil temperature:** 68 to 72°F (20 to 22°C)

**Light:** Not necessary but beneficial

**Moisture:** Keep soil moist (level 4) in Stage 1.

**Humidity:** Maintain 95 to 97% relative humidity (RH) until cotyledons emerge.

### Plug Production

#### Media

Use a well-drained, disease-free, media with a pH of 5.5 to 6.2 and an EC of 0.75 mmhos/cm.

#### Sowing

Sow 2 to 4 pellets per cell in 288 or larger plug tray; no cover needed. Spray preventively against damping off.

**Stage 1** – Germination takes about 5-8 days.

**Soil temperature:** 68 to 72°F (20 to 22°C)

**Light:** Not necessary but beneficial

**Moisture:** Keep soil moist (level 4) in Stage 1.

**Humidity:** Maintain 95 to 97% relative humidity (RH) until cotyledons emerge.

#### Stage 2

**Soil temperature:** 68 to 72°F (20 to 22°C)

**Light:** Can be up to 2,500 f.c. (26,900 Lux).

**Moisture:** Maintain soil moisture moist (level 4), to allow the roots to penetrate into the media, don't let the media dry out.

**Fertilizer:** Apply fertilizer at rate 1 (less than 100 ppm Nitrate/0.2 – 0.5 mmhos/cm EC) from nitrate-form fertilizers.

#### Stage 3

**Soil temperature:** 65 to 68°F (18 to 20°C)

**Light:** Can be up to 2,500 f.c. (26,900 Lux). In low light area, supplemental light of 150 f.c. (1620 lux) is beneficial for reducing seedling stretching and cutting plug crop time. **Moisture:** Maintain the moisture level constantly medium moist to medium wet (level 3-4)

**Fertilizer:** Apply fertilizer at rate 1 (less than 100 ppm Nitrate/less than 0.7 mmhos/cm EC) from nitrate-form fertilizers.

**Growth regulators:** Generally not needed, but if necessary B-Nine/Alar (daminozide) 1,000-1,500 ppm (1.2-1.8 g/l 85% formulation or 1.6-2.3 g/l of 64% formulation) can be used.

#### Stage 4

**Soil temperature:** 65 to 68°F (18 to 20°C)

**Light:** can be up to 5,000 f.c. (53,800 Lux) if temperatures can be maintained.

**Moisture:** Same as Stage 3.

**Fertilizer:** Same as Stage 3.

### Growing On to Finish

#### Media

Use a well-drained, disease-free, soilless media with a pH of 5.5 to 6.2 and an EC of 0.75 mmhos/cm).

#### Temperature

**Nights:** 54 to 57°F (12 to 14°C)  
**Days:** 60 to 65°F (16 to 18°C)

Gemini prefers to grow in cooler conditions. Warmer temperature above 70°F (21°C) could delay or inhibit flowering.

#### **Light**

Maintain light levels as high as possible while maintain moderate temperature

#### **Photoperiod**

Gemini is a facultative long-day plant with long-day enhanced flowering.

#### **Irrigation**

Maintain media constantly moisture (level 2-3). Avoid plants dry to wilt.

#### **Fertilizer**

Gemini Isotoma is a moderate feeder. Apply fertilizer at rate 3 (175 to 225 ppm N/1.2 to 1.5 mS/cm) weekly or as needed with predominantly nitrate-form fertilizer with low phosphorus and high potassium, such as 15-5-15.

#### **Growth Regulators**

Isotoma is responsive to B-Nine/Alar (daminozide) 2500 – 3250 ppm (3.0-3.9 g/l of 85% formulation or 4.0 –5.0 g/l 64% formulation) at 2 weeks after transplant. If necessary, repeat the treatment a week later.

#### **Pinching**

Do not pinch.

#### **Crop Scheduling**

Sow to transplant (288 cell plug): 4 to 5 weeks

#### **Transplant to flower:**

**Container Size:** 4-in. (10.5-cm)

**Plants Per Pot:** 1

**Weeks From Transplant:** 9 to 11

**Total Weeks:** 13 to 16

**Container Size:** 5-in. (13-cm)

**Plants Per Pot:** 1

**Weeks From Transplant:** 10 to 12

**Total Weeks:** 14 to 17

**Container Size:** Gallon (19-cm)

**Plants Per Pot:** 3

**Weeks From Transplant:** 10 to 11

**Total Weeks:** 14 to 16

Under proper day length and temperature ranges

#### **Common Problems**

**Insect:** Aphid, Thrips, Spider mite, Sciara (in young plant stage)

**Disease:** Pythium, Bothrytis

#### **Garden and Landscape Information**

- Plant in full sun to partial shade.
- Space plants at 10-14 in. (25-35 cm) apart in well-drained soil.
- Garden height is 8 in. (20 cm) with a spread of 10-14 in. (25-35 cm).
- Excellent heat tolerance.

#### **Note:**

Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. Chemical and PGR recommendations are only guidelines. It is the responsibility of the applicator to read and follow all the current label directions for the specific chemical being used in accordance with all regulations

