

## Begonia Maestro

(*Begonia semperflorens*)

### Germination

Time of radicle emergence (6-7 days)

- Soil temperature 78-80°F (26-27°C).
- Keep media very moist, near saturation. Do not allow media to dry out at all during this stage.
- Do not cover or bury the seed.
- Light at 100-400 foot-candles may be beneficial for germination.
- Soil pH 5.5-5.8 and soluble salts (EC) less than 0.75 mmhos/cm (2:1 extraction).
- Fibrous begonia is very sensitive to high salts, particularly high ammonium, during germination.
- Keep ammonium levels less than 10 ppm.

### Plug Production

**STAGE 1** - Time of radicle emergence (6-7 days)

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**STAGE 2** - Stem and cotyledon emergence (7-14 days)

- Soil temperature 72-78°F (22-26°C).
- Keep moisture levels uniformly moist. Do not allow to dry down or seedlings will stall out.
- Begonia seedlings have a shallow root system at this stage.
- Keep soil pH 5.5-5.8 and EC less than 1.0 mmhos/cm.
- Keep ammonium levels less than 10 ppm.
- Begin fertilizing with 50 75 ppm N from 14 0 14 or a calcium/potassium nitrate feed once cotyledons are fully expanded.
- Alternate feed with clear water.
- Irrigate early in the day so foliage is dry by nightfall to prevent diseases.

**STAGE 3** - Growth and development of true leaves (21-28 days)

- Soil temperature 68-72°F (20-22°C).
- Allow the soil to dry thoroughly between irrigations

after the first true leaf is fully expanded. This promotes root growth and controls shoot growth.

- Maintain soil pH 5.5-5.8 and EC less than 1.5 mmhos/cm.
- Increase feed to 100 150 ppm N from 20 10 20 alternating with 14 0 14 or other calcium/potassium nitrate fertilizer.
- Fertilize every 2 3 irrigations.
- If using 15-0-15 supplement with magnesium 1 2x during this stage, using magnesium sulfate (16 oz/100 gal) or magnesium nitrate. Do not mix magnesium sulfate with calcium nitrate as precipitate will form!
- Use DIF whenever possible, especially the first 2 hours after sunrise, to control plant height.
- B-Nine and Cycocel is effective on begonias. Bonzi is extremely reactive on begonias, do not even get any spray drift on begonias!

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

- Soil temperature 62-68°F (20-22°C).
- Allow soil to dry thoroughly between irrigations.
- Maintain soil pH 5.5-5.8 and EC less than 1.0 mmhos/cm.
- Fertilize with 14 0 14 or calcium/potassium nitrate feed at 100 150 ppm N as needed.
- Begonias can tolerate higher light, greater than 2500 foot-candles, at this stage.

### Growing On to Finish

#### TEMPERATURE

**Night:** 60-65°F (16-18°C)

**Day:** 65-70°F (18-21°C)

#### LIGHT

Maintain light levels as high as possible while maintaining moderate temperatures.

#### MEDIA

Use a well-drained, disease-free soil-less medium with a medium initial nutrient charge and a pH 5.5-6.2.

#### FERTILIZATION

- Fertilize every other irrigation with 15-0-15 alternating with 20-10-20 at 150-200 ppm nitrogen.
- Maintain medium electrical conductivity around 1.0 mmhos/cm (using 1:2 extraction).

## 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 phosphorous and ammonium-form nitrogen.
- Fibrous begonias are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF.
- B-Nine and Cycocel are effective on begonias. Do not get any Bonzi spray drift on begonias!

## Post Production Care

### TEMPERATURE

Optimum temperatures for Fibrous Begonia:

**Night:** 60-65°F (16-18°C)

**Day:** 65-70°F (18-21°C)

- Optimum conditions may be difficult to maintain, especially if plants are displayed outside.
- Using a negative DIF will help keep the plants short and of high quality.
- Begonias are not frost tolerant.

### LIGHT

Begonias will tolerate full sun to part shade. Part shade may be beneficial during retail display.

### COMMON PROBLEMS

INSECTS: Fungus, gnats, Shoreflies

DISEASES: Botrytis, Pythium, Rhizoctonia

