

<b>Cultural Information for:</b>	Begonia F1 Fortune	Annual
<b>Common Name:</b>	Tuberous Begonia	
<b>Botanical Name:</b>	Begonia x tuberhybrida	
<b>Seed Count:</b>	50,000/gram	1,418,000/oz.
<b>Optimum Germination Temperature:</b>	73-75°F / 23-24°C	
<b>Optimum Growing Temperature:</b>	68°F / 20°C	
<b>Optimum pH:</b>	5.5 – 6.0	

**EC – Plug:** 0.26 – 0.75 mmhos/cm (1:2) / 0.76 – 2.0 (SME)

**EC – Finishing:** 0.76 – 1.25 mmhos/cm (1:2) / 2.1 – 3.5 (SME)

Fortune is the preferred tuberous Begonia for the grower and consumer alike. Uniformity and a well branched, compact plant habit make Fortune a production-friendly crop that is more manageable in shipping than other varieties. This prolific bloomer offers stunning blooms and outstanding color selection for the retailer and consumer.

### Plug Culture – 7 weeks (288 / 12 x 24 tray)

**Stage 1** (days 1-14) Sow pelleted seed into trays filled with a sterile and well-drained media. Optimum pH is 5.5 to 6.0. Do not cover the seed as begonias require light to germinate. Provide 20-100-foot candles (200-1,000 lux) in the germination chamber. Maintain a temperature of 76-77°F/25°C and enough moisture to melt the pellet. The media should be wet to saturated with 100% relative air humidity.

**Stage 2** (days 15-21) The cotyledons are now visible, and roots are beginning to form. Maintain the media moist but not saturated to promote healthy root development and penetration. Reduce air humidity to 70-80% and maintain the air temperature at 72-75°F/22-24°C. Begin feeding at 50-75 ppm nitrogen from a well-balanced calcium nitrate-based formulation. Avoid using ammonium nitrate which may inhibit root growth during germination and plug development. Early sowings require artificial light with a minimum day length of 16 hours to promote active growth. Supplemental lighting at 300-foot candles/3,200 lux, to supply 50 W/m<sup>2</sup> following germination greatly reduces crop time. Strong sunlight (>2,000-foot candles / 21,000 lux) will cause high leaf temperature and leaf edge burn. Highly alkaline water (> 300 HCO<sub>3</sub>) will also have deleterious effect on seedlings by causing burn.

**Stage 3** (days 22-62) The first true leaves are developed, and roots are beginning to penetrate the media. Allow the media to dry slightly between irrigations as begonia roots require high levels of oxygen. Reduce air temperature to 65–68°F/18-20°C. Increase the fertilizer rate to 100-150 nitrogen once or twice per week to maintain strong growth. Begonias are light accumulators and flowering is directly related to the total amount of light received. Increase the light level to 3,500 – 4,500-foot candles / 38,000 – 48,000 lux for bulking. Another important point in growing Begonia is to maintain high air humidity level of 70-80% (relative humidity) to minimize leaf burning during stage 2 and 3.

**Stage 4** (days 63-70) At the end of stage 4 the plugs should have 2-3 sets of true leaves and the roots should hold the plug media together. Optimum air temperature is 62-68°F/17-20°C to help tone the plugs. Avoid temperatures below 59°F/15°C.

### Transplanting to flower – 8 to 12 weeks

**Media:** Select a sterile and well-drained media with a pH between 5.5 - 5.8 and low in salts.

**Temperature:** Optimum growing temperature is 70-72°F/ 21-22°C during the day and 62-68°F/17-20°C at night. Once established the night temperature may be reduced to 59°F/15°C.

**Fertilizer:** Apply 100-150 ppm of nitrogen from a well-balanced calcium nitrate-based formulation. The use of cal/mag formulations like 15-5-15 work well to supply adequate amounts of magnesium. Begonias are sensitive to high salts; EC levels which are too high can cause leaf edge burn. Tall and stretched plants with few flowers indicate too much or too little phosphorous. Stunted, chlorotic plants with marginal leaf burn indicate a lack of calcium and magnesium. To maintain optimum pH, one may alternate with an ammonium-based fertilizer like 20-10-20.

**Note:** Water early in the day if using overhead irrigation to avoid leaf edge burn when leaf temperatures are high.

**Lighting:** Provide 3,500 – 4,500-foot candles / 38,000 – 48,000 lux and a 16-hour photoperiod of light for active growth (to avoid tuber formation). Slight shading may be necessary during spring and summer months to prevent leaf burn. Supplemental lighting, up to 300-foot candles /3,200 lux to 50 W/m<sup>2</sup>, will hasten development and flowering.

**Pests:** Aphids and thrips

**Diseases:** Blight, botrytis, powdery mildew, pythium, rhizoctonia, Tomato s/Spotted Wilt Virus (TSWV).

### Crop Scheduling:

Pot Size	Plants per Pot	Weeks from Sowing
4 inch / 10 cm	1 ppp	15 weeks
6 inch / 15 cm	1 ppp	17 weeks
12 inch / 30 cm	4 ppp	19 weeks

Average Plant Height: 6-9 inches / 15-22 cm.

Average Plant Spread: 6-8 inches / 15-20 cm.

Average Flower Size: 2 ¾ to 3 1/2 in. in diameter / 7 to 9 cm.

*“All information given is intended for general guidance only and may have to be adjusted to meet individual needs. Cultural details are based on North American conditions and Sakata cannot be held responsible for any crop damage related to the information given herein. Application of recommended growth regulators and chemicals are subject to local and state regulations. Always follow manufacturer's label instructions. Testing a few plants prior to treating the entire crop is best.”*