



Crop	Begonia
Series	Viking, Viking XL
Botanical name	<i>Begonia x hybrida</i>
Plant type	Annual
Seed type	Pellet
Seed count	2,700 pellets / gr
Germination	20°C - 10-14 days light favored
Growing	21-22°C
Optimum pH	5.5-6.0

Plug Culture: 8 weeks (288 cell tray)

Stage 1 (days 1-10) Sow pelleted seed into a plug trays filled with a sterile and well-drained media. Optimum pH is 5.5-6.0. Do not cover the seed as begonias require light to germinate. Maintain a temperature of 22-25°C and enough moisture to break the pellet. The media should be wet to saturated with 100% relative air humidity.

Stage 2 (days 11-21) The cotyledons are now visible, and roots are beginning to form. Supplemental lighting following germination greatly reduces crop time. Strong sunlight will cause high leaf temperature and leaf edge burn. Maintain the media moist but not saturated to promote healthy root development and penetration. For irrigation use water with temperature > 18°C. Reduce air humidity to 70-80%. 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 seedling development. Highly alkaline water damages seedlings by causing burn.

Stage 3 (days 22-48) The first true leaves are developed, and roots are beginning to penetrate the media. Reduce air temperature to 18-20°C. Begonias are light accumulators and flowering is directly related to the quantity and quality of light received. Allow the media to dry slightly between irrigations as begonia roots require high levels of oxygen. Another important point in growing Begonia is to maintain high air humidity (relative humidity) to minimize leaf burning during stages 2 and 3. Increase the fertilizer rate to 100-150 ppm nitrogen once or twice per week.

Stage 4 (days 49-56) At the end of stage 4 the seedlings should have 2-3 sets of true leaves and the roots should hold the plug media together. Optimum air temperature is 18-20°C to help tone the seedlings. Avoid temperatures below 16°C and maintain the EC level at 0.26-0.75 mS/cm.

Transplanting to finish: 9-10 weeks

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

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

Transplanting: Optimum stage is when the seedling roots reach the edge of the plug cell and have 4-6 true leaves.

Temperature: Optimum growing temperature is 21-22°C during the day and 18-20°C at night for the first 14 days after transplant. Once established the night

temperature may be reduced to 17°C. About 4 weeks after transplant the temperature may be lowered to 14-15°C to avoid too large leaves and to keep the plants compact.

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. 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.

Lighting: Supplemental lighting will hasten development and flowering.

Plant growth regulators: None are required if growth is controlled by temperature and feed, but if needed, particularly in warmer climates, lower rates of daminozide or chlormequat can be utilized.

Pests & Diseases: Botrytis

Crop Scheduling:

Seires	Containers	Total crop time
Viking	10 cm	15-16 weeks
Viking	15 cm	16-17 weeks
Viking	20 cm	17-18 weeks
Viking	25 cm baskets	19-20 weeks

Series	Containers	Total crop time
Viking XL	20 cm	17-18 weeks
Viking XL	25 cm baskets	19-20 weeks

Series Specifications:

Series	Garden height	Garden width
Viking	50-60 cm	60-70 cm
Viking XL	70-85 cm	80-90 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 Asian conditions such as in Japan and Sakata cannot be held responsible for any crop damage related to the information given herein. Always follow manufacturer's label instructions. Testing a few plants prior to treating the entire crop is best.