

**Crop: Browallia**  
**Scientific Name: Browallia speciosa (Solanaceae)**

**I. Introduction**

- A. *Browallia speciosa* originated in Columbia.
- B. Browallia or Sapphire flower is versatile in that it can be grown as a bedding plant, potted plant, or hanging basket.

**II. Cultivars, Clones, Breeding, Development**

- A. 'Blue Troll' - Light blue flowers, semi-dwarf, short, bushy, erect and self branching plant. This cultivar was developed at Beltsville. 'White Troll' with pure white flowers has similar growth characteristics as 'Blue Troll'. Both cultivars are rather slow growing and don't perform well under low light conditions.
- B. 'Blue Bells' and 'Blue Bells Improved' have clear blue flowers, intermediate vigor and are self branching.
- C. 'Silver Bells' - Similar growth habit as 'Blue Bells' but with white flowers.
- D. Attempts are made to develop cultivars suitable for year round production in smaller containers.

**III. Flower Induction Requirements**

- A. Flowers will develop under any photoperiod. However, plants will flower about one week earlier under short day conditions and will form more flowers.

**IV. Environmental Requirements**

- A. Light
  - 1. Plants developing during the winter at northern latitudes often have slow development and low quality. Under these conditions, supplemental lighting is beneficial especially during early stages of

development. The production time can be reduced by 1-2 weeks and the quality is much improved with supplemental lighting. High-pressure sodium lamps at 500 foot-candles ( $100 \mu\text{mol s}^{-1}\text{m}^{-2}$ ) for 12 hours a day will give the desired growth response.

2. Stock plants receiving supplemental lighting can produce twice as many cuttings. A light intensity of 500 foot-candles ( $100 \mu\text{mol s}^{-1}\text{m}^{-2}$ ) from high-pressure sodium lamps for 16-18 hours a day has been recommended for stock plants.
3. Shading of the greenhouse should be done during spring and summer to improve temperature control at light intensities above 1,800 foot-candles ( $370 \mu\text{mol s}^{-1}\text{m}^{-2}$ ).

#### B. Temperature

1. Optimum plant growth and flowering occur at temperatures of 20-22°C (68-70°F) day and 18°C (64°F).
2. Temperatures above 24°C (75°F) promote basal branching and reduce flower count.

#### C. Water

1. Plants should be kept moist but not wet.
2. Too much water will result in yellow leaves and possibly leaf drop.
3. Too little water will result in brown, dried spots on the leaves.

#### D. Nutrition

1. Constant liquid feed at 100 ppm N and K for the first 6 weeks and 200 ppm until flower is suggested.

#### E. Gases

1. During supplemental lighting of stock plants and young plants, CO<sub>2</sub> enrichment is beneficial. Recommended concentration is 1,000-1,200 ppm.

## V. Cultivation

### A. Propagation

1. *Browallia* can be propagated by cuttings or seed.
2. New stock plants are often grown from seed each year. Seed germination occurs in 2 weeks at a germination temperature of 22°C (72°F). The seed requires light and should not be covered.
3. The seedlings are transplanted when 3-4 leaves have developed.
4. The stock plants are usually pinched 2 times before cuttings are harvested.
5. The cuttings should have at least 2 well developed leaf pairs. Two or 3 cuttings are planted in a 10 cm (4 inch) pot.

### B. Medium and Planting

1. Best germination temperature is 22 °C (72°F).
2. Plant seedlings in a light, well drained medium with low nutrient content and a pH of 6.0-6.5.

### C. Spacing

1. The plants can be grown pot to pot during the initial 3-4 weeks. Final spacing for 4 inch pots of 3.2-3.6 pots/ft<sup>2</sup> has been used successfully. 'Blue Troll' and 'White Troll' can be produced with a final spacing of 4.5 pots/ft<sup>2</sup>.

### D. Support

1. None

### E. Pinching

1. No pinching is required of seed propagated plants.
2. Cutting propagated plants are given a soft pinch after rooting, leaving 3-4 pairs of leaves. Appropriate time for the pinch is 3-4 weeks after planting.

F. Disbudding

1. None

G. Growth Regulators

1. The plants can be treated after the pinch with B-9 to avoid the development of weak shoots. Suitable application rate is 3,000 ppm. 'Blue Troll' doesn't need growth regulator application. 'Blue Bell' usually requires one application of B-9.

VI. Problems

A. Insects

1. White fly and aphids are the major insect problems during the entire production period.
2. Thrips and mealy bugs can also cause problems.

B. Diseases

1. Seedlings and young plants are easily infected by root and stem rots caused by *Pythium*, *Rhizoctonia* or *Thielaviopsis*.
2. Botrytis blight (*Botrytis cinerea*) can be a severe production problem. Cultural practices ensuring good air circulation, adequate spacing and good sanitation aid in the control of this disease.

C. Physiological

1. Chlorosis can be a problem under low temperatures.

VII. Harvesting, Handling, Marketing

A. A marketable plant should have at least 8 shoots with flowers and buds.

B. The plants are sensitive to low temperatures below 15°C (59°F). Even a brief period of low temperature exposure results in considerably shortened postharvest life.

## VIII. Scheduling

### A. Propagation by Seed

Growing Time for Cultural Segment	Cultural Procedure	Temperature
	Sow Seed	22°C (72°F)
1-2 weeks	↓ Germination	day: 20-22°C (68-72°F) night: 18°C (64°F)
2-3 weeks	↓ Transplant to 10 cm pots	day: 20-22°C (68-72°F) night: 18°C (64°F)
8-9 weeks	↓ Flower	

B. Propagation by Cuttings

Growing Time for Cultural Segment	Cultural Procedure	Temperature
	Plant 2-3 cuttings in 10 cm pots	22°C (72°F)
1 week	↓ V Rooting	day: 20-22°C (68-72°F) night: 18°C (64°F)
2-3 weeks	↓ V Pinch and space	day: 20-22°C (68-72°F) night: 18°C (64°F)
8-9 weeks	↓ V Flower	