



Crop	Viola
Series	Rebelina
Botanical name	<i>Viola cornuta</i>
Plant type	Annual
Seed type	Raw
Seed count	1,000 seeds / gr
Germination	20°C - 7-10 days light favored
Growing	13-18°C
Optimum pH	5.5-6.0

Plug Culture: 4 weeks (288 cell tray)

Stage 1 (days 1-7) Sow viola seed into a well-aerated plug mix with a pH between 5.5 and 6.0 and cover lightly with a medium or coarse vermiculite. After sowing, water the plug trays well and maintain a soil temperature between 18-20°C. The use of primed seed and a germination chamber with a fine mist system to maintain moisture levels is ideal.

Stage 2 (days 8-15) If using a germination chamber, be sure to remove viola plug trays when the seed coat is cracked. When green begins to appear in the plug tray, lightly fertilize with 75 ppm of nitrogen from a well-balanced fertilizer. To avoid boron deficiency, target boron at 0.25 ppm in the fertilizer (including any amount in the water source). Maintain temperatures as cool as possible and maintain good airflow. Light levels should be maintained as high as possible, without causing heat or water stress. After the initial feed, begin fertilizing with 200 ppm of nitrogen from a well-balance fertilizer containing trace elements. A calcium nitrate-based fertilizer works well to build strong compact plants.

Stage 3 (days 16-24) Plug trays are beginning to fill in, reduce fertilizer applications. When applying fresh water, (no fertilizer), still apply trace elements;

especially boron, and keep water alkalinity to maintain soil pH between 5.5 and 6.0. Fertilizer concentrations can be reduced to 150 ppm but maintain trace elements at full strength; especially boron at 0.25 ppm. Ideally, viola plug trays should be given higher light levels to control stretch. Moving plants outdoors under a saran house will reduce temperatures and provide optimal air movement. Rebelina is day length neutral and sets buds early; especially under the long days and warm conditions. It is best to transplant earlier rather than apply plant growth regulators.

Stage 4(days 25-28) Plug trays are approaching market size, feed every 2nd or 3rd watering, alternating with acid, if needed, and trace elements to maintain soil pH and trace element supply; especially boron. During periods of hot and humid weather, or before shipping seedlings in a box or truck, apply fungicide to control anthracnose.

Never delay transplanting into pot as root bound seedlings bud prematurely with poor plant canopy; especially under long day and warm temperature conditions.

Transplanting to finish: 5-7 weeks (Blue & Yellow 7-9 weeks)

Media: Transplant seedlings into a well aerated soil mix a low nutrient charge. Avoid planting the seedlings too deep to prevent stem rot.

Temperature: Optimum day temperature is 17-20°C with nights at 10-13°C.

Fertilizer: Fertilize with 200 ppm of nitrogen from a well-balanced fertilizer to ensure a healthy start. Violas are sensitive to boron deficiency characterized by deep green foliage, crinkled foliage and tip abortion. Supply 0.25 of boron at each watering. Be sure to check the boron level in your water supply to avoid oversupplying this microelement. Pansy special

fertilizers are formulated with higher microelements at lower nitrogen rates and highly recommended.

Plant growth regulators: Avoid spraying too early before the plants are filled in as Rebelina sets buds early under warm temperature conditions. Providing optimum temperatures, high light, good ventilation and low phosphorus promotes compact plants. If needed, daminozide, chlormequat, and ancymidol are effective.

Pests: Violas are not usually affected by major pests but occasionally aphids, thrips and whiteflies may infest plants.

Disease: Thielaviopsis root rot can be a problem early in the season when temperatures are high. Research has shown that the disease cannot survive at a pH of 5.5 or lower. Also, high ammonium levels and the use of some systemic fungicide will encourage the development of this disease. Anthracnose or leaf spot can be a problem during periods of high heat and humidity. Foliar applications of fungicide will help control this disease.

Crop Timing:

Container Size Plants per pot Total Crop Time

15 cm: 3 per pot 9-10 weeks *

25 cm: 5 per pot 10-11 weeks *

*add two weeks for Blue & Yellow

Reduce crop time under long days and warm temperatures as plants develop quicker.

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.