

Cultural Information for:	Pansy Spring Grandio	Annual
Common Name:	Pansy	
Botanical Name:	Pansy wittrockiana	
Seed Count:	19,800/ounce	700/gram
Optimum Germination Temperature:	64-68°F / 18-20°C	
Optimum Growing Temperature:	55-65°F / 13-18°C	
Optimum pH:	5.5 – 6.0	
EC – Plug:	0.4 – 0.8 mmhos/cm (1:2) / 0.9 – 2.0 (SME) / 1.1 - 2.6 (Pour Thru)	
EC – Finishing:	0.9 – 1.3 mmhos/cm (1:2) / 2.1 – 3.5 (SME) / 2.7 - 4.6 (Pour Thru)	

Plug Culture – 30 days (288 / 12 x 24 tray)

Stage One (days 1-6) Sow pansy seed in a 288-plug cell using a well-aerated long fiber peat plug mix. Lightly cover with either medium or coarse vermiculite. After sowing, water the plug flats well and maintain a soil temperature between 64-68°F/18-20°C. The use of primed seed and a germination chamber with a fine mist system to maintain 100% relative humidity is ideal.

Stage Two (days 7-14) If using a germination chamber, be sure to remove pansy plug flats when the seed coat is cracked. When green begins to appear in the flat, lightly fertilize with 75 ppm N 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). If needed, supplement with Solubor or Borax. Maintain temperatures as cool as possible with good airflow. Supply up to 3,000 foot-candles / 32,000 lux of light. After the initial feed, begin fertilizing with 200 ppm N from a well-balanced fertilizer containing trace elements. A calcium nitrate-based fertilizer works well to build strong compact plants.

Stage Three (days 15-25) Reduce fertilizer as plants begin to fill trays. When applying fresh water, (no fertilizer), still apply trace elements; especially boron, and keep water alkalinity at 60-80 HCO₃ 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, pansy plug flats should be given higher light levels to control stretch. Moving plants outdoors under a saran house will reduce temperatures and provide optimal air movement. Maintain light levels up to 7,000-foot candles / 75,000 lux but avoid heat and water stress. If plant height control is needed, B-Nine (daminozide), Cycocel (chlormequat) and A-Rest (ancymidol) are effective. Begin spraying when the leaves are the size of a dime.

Stage Four (days 26-30) Plug flats 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 plugs in a box or truck, treat to control anthracnose. **Do not delay transplanting which delays flowering and reduces quality.**

Transplanting: 6-9 weeks

Media: Transplant plugs into a well aerated soil mix. Avoid planting the plugs too deep to prevent stem rot.

Temperature: Optimum day temperature is 62-68°F/17-20 °C with nights at 50-55°F/10-13°C.

Fertilizer: Fertilize with 200 ppm N from a well-balanced fertilizer to ensure a healthy start. Pansies are sensitive to boron deficiency characterized by deep green foliage, crinkled foliage and tip abortion. It is recommended to supply 0.25 ppm 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 and highly recommended.

Growth regulator: Providing optimum temperatures, high light, good ventilation and low phosphorus promotes compact plants. If needed, B-Nine, Cycocel, and A-Rest are effective. Avoid spraying too early before the plants are filled in as Grandio set buds early; especially during periods of high light, long days and warm temperatures.

Pests: Major pests include caterpillar, cut worm, cabbage looper, fungus gnat, slug, shore fly, spider mite and thrips.

Diseases: Major root diseases include Pythium, Phytophthora and Thielaviopsis. Thielaviopsis or Black Root Rot is often a problem early in the season when temperatures are high. Research has shown that the disease is checked at a pH of 5.5 or lower. Avoid high ammonium levels and the use of the chemical Subdue/Metaxyl which encourage the development of this disease. Anthracnose or leaf spot can be a problem during periods of high heat and humidity. Good sanitation and moisture management works well to prevent most of these diseases.

Crop Time

Container Size	Plants per pot	Total Crop Time
Cell Pack	1 per cell	10-11 weeks
4-inch / 10 cm.	1 per pot	11-12 weeks
6-inch / 15 cm.	3 per pot	12-13 weeks

“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.”