

**Cultural Information for:** Pansy 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

### 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 with a pH between 5.5 and 5.8, and cover lightly 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. If needed, supplement with Solubor or Borax. Maintain temperatures as cool as possible with good air-flow. 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 HCO<sub>3</sub> to maintain soil pH between 5.5 and 5.8. 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. Optimum EC is 1.0 to 1.2 mmhos (2:1 slurry).

**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, apply either Manzate or Zyban to control anthracnose. **Do not delay transplanting which delays flowering and reduces quality.**

### Transplanting: 6-7 weeks

**Media:** Transplant plugs into a well aerated soil mix with a pH between 5.5 and 5.8. 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 ammonium 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 fungus gnat, shore fly, thrip, caterpillar, cut worm, cabbage looper, slug and spider mite.

**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. Foliar applications of Zyban and Manzate will help control this disease. A systemic drench will also supply good control. Good sanitation and moisture management works well to prevent most of these diseases.

### **Crop Time\***

	From Transplanting	Total Crop Time
Cell Pack	5 – 6 weeks	9 – 10 weeks
4 inch / 10 cm.	6 – 7 weeks	10 – 11 weeks

\* for flowering in late summer and early fall, where temperatures and light levels are high, reduce crop time by 1 week.