

Biennials



Pansy – *Viola wittrockiana* F₁

Cats™, Inspire DeluXXe®, Inspire® Plus

Family: Violaceae

Product Use: Packs, pots, mixed containers and landscape/mass plantings

Minimum Germination Rate: 90%

Seed Form: Raw & primed. Cats™ only raw.

FLOWERING

Flowering Type: Day length neutral plant will flower regardless of day length.

Flowering Mechanism: Irradiance is the primary mechanism that initiates flowering. High light intensity (12-18 mols/day), 3,500-5,000 ft. candles (35,500-50,000 lx) will initiate flowering once plants reach 3-5 true leaves (approximately day 15). Temperature is also critical to the number of days that flowering will occur. Long days will also enhance flowering.

PLUG CULTURE

Germination: Maintain optimal conditions for seedling development, should begin on the day of sowing until root emergence. Expect root emergence in 2-4 days.

Cover: Cover lightly with a thin layer of coarse vermiculite.

Sowing method: 1 seed per plug.

Media: pH 5.5-5.8; EC 0.5

Temperature: Maintain 65-68 °F (18-20 °F) until root emergence, then lower the temperature gradually to 62-65 °F (17-18 °C).

Moisture: Begin with saturated (5) for days 1-5 and then reduce to a moist (3) on day 6. As the seedlings become fully developed with expanded cotyledons the moisture level can be decreased further to a medium (2) on day 9. At this point alternate between a wet (4) and a medium (2) between watering.

Humidity: 95-100% until day 5; then reduce to 40-60% to prevent hypocotyl stretch. Provide proper ventilation and horizontal airflow to improve oxygen levels in the media.

Light: Light is not necessary for germination to occur. If using a germination chamber providing a light source of 10-100 ft. candles (100-1,000 lx) will improve germination and overall quality. Going into the second stage of germination, on approximately day 6-7 the light levels can be increased to 6-8 mols/day, 2,000-2,500 ft. candles (20,000-25,000 lx). This is after germination is finished.

Fertilizer: Begin feeding early using a calcium-based fertilizer at lower rates to keep an adequate amount of calcium and nitrogen supplied to the seedlings. On days 5-7 begin feeding with a calcium-based fertilizer (14-2-14; 13-2-13; 15-5-15 or 17-5-17) at 50-60 ppm. Maintain the EC between 0.5 and 0.75. Keep phosphorous levels between 6-8 ppm and boron supplied at 0.5 ppm.

Plug Bulking and Flower Initiation:

Maintain optimal conditions during the vegetative stage from cotyledon expansion to flower initiation. When the seedlings root to the edge of the plug and reach the 4-6 true leaf stage flower initiation will occur.

Media: pH 5.5-5.8 Maintain pH levels in the lower range to avoid outbreaks of thielaviopsis

and boron deficiencies which may cause tip abortion. EC 0.75-1.0. Keeping the EC less than 1.5 can help control outbreaks of thielaviopsis and other root problems.

Light: The light levels need to be at 12-18 mols/day, 3,500-5,000 ft. candles (35,000-50,000 lx). If high temperatures are experienced lowering the light level slightly to 8-10 mols/day, 2,500-3,000 ft. candles (25,000-30,000 lx) can help to further bulk the plug before flower initiation occurs.

Temperature: Maintain 65 °F (18 °C) nights, 65-70 °F (18-21 °C) days. When seedlings are well established the night temperature can be lowered to 59 °F (15 °C) to tone the plants as flower initiation occurs. An ADT (average daily temperature) of 67 °F (19.5 °C) will give the fastest finish.

Moisture: Alternate between a wet (4) and a medium (2) between watering. Let plants reach a medium before re-saturating to a wet (4). Avoid reaching a dry (1) since this can promote root problems.

Fertilizer: Continue feeding with calcium-based fertilizers (14-4-14, 15-5-15 and 17-5-17) at 100-150 ppm. Keep phosphorous levels between 8-10 ppm and boron levels at 0.5 ppm in the irrigation water.

Growth Regulators: Several growth regulators can be used successfully to prevent hypocotyl stretch and control plants from getting too soft. Some commonly used growth regulators are: B-Nine (daminozide) used as a spray at 2,500-5,000 ppm; A-Rest (ancymidol) used as a spray at 3-4 ppm. At times tank mixes are used combining B-Nine and A-Rest and B-Nine with Cycocel. These combinations tend to give longer lasting effects. For specifics please contact a Benary representative.

Fungicides: Preventative drenches can be made with fungicides for the control of Thielaviopsis and other soil-borne diseases.

GROWING ON

Media: pH 5.5-5.8; keep the pH in the lower range; EC 1.25-1.5

Light: Provide 14-22 mols/day, 4,000-6,000 ft. candles (35,000-50,000 lx).

Temperature: Maintain 68-70 °F (20-21 °C) nights, 64-67 °F (18-19 °C) days for the first 14 days or until the roots reach the bottom of the container. Thereafter temperatures may be lowered to 62-65 °F (16-18 °C) day and night. An ADT (average daily temperature) of 67 °F (19 °C) will give the fastest finished crop.

Moisture: Alternate between moisture levels wet (4) and medium (2). Let plants reach a medium (2) before re-saturating to a wet (4).

Humidity: 40-60% humidity is ideal.

Fertilizer: Fertilize with a calcium-based feed-14-4-14, 15-5-15 or 17-5-15 at 100-150 ppm as needed. Phosphorus levels should be between 8-12 ppm and boron between 0.5-0.75. Keeping the EC below 1.5 will help prevent root problems.

Growth Regulators: B-Nine (daminozide) used as a spray at 2,500-5,000 ppm, A-Rest (ancymidol) used as a spray at 3-4 ppm. At times tank mixes are used combining B-Nine and A-Rest and B-Nine with Cycocel (chloromequat chloride). These combinations tend to give longer lasting effects. For specifics on these and other growth regulators please contact a Benary representative.

Fungicide: Apply fungicides as needed to control root and leaf diseases. Follow the labels recommended rates.

Common Diseases: Botrytis, alternaria leaf spot, downy mildew, thielaviopsis root rot and cercospora leaf spot.

Pests: Primarily aphids and thrips.

Post Harvest: Fertilize with potassium nitrate at 150 ppm 1-2 weeks.

Plug Crop Time

288 tray 4-5 wks

Finished Crop Time (from 288 tray)

	Cats™, Inspire DeluXXe®	Inspire® Plus
Fall: Packs	5-6 wks	4-5 wks
Fall: 4" / 10 cm pots	6-7 wks	5-6 wks
Spring: Packs	7-8 wks	6-7 wks
Spring: 4" / 10 cm pots	8-9 wks	7-8 wks



6-8"
10-20 cm



6-8"
15-20 cm



Sun – Partial shade

EU Timing Inspire DeluXXe®

Days from sowing 50% Flower



Timing Inspire® Plus

Days from sowing 50% Flower

