Pentas lanceolata F_1

Northern Lights®

Hummingbirds and Butterflies Love Northern Lights®

The Northern Pentas Star

- Cultivation and flowering under cooler temperatures
- Large, open flower clusters in a harmonious color
- Less pH sensitive

Crop Time	Spring: 14 - 17 weeks
Height ⌀	21 " / 53 cm
Width ⌀	11 " / 28 cm
Exposure	Sun
Seed Form	Pelleted Seed
Product Use	Pots, Mixed Containers, Landscape
Minimum Germ. Rate	90 %

TECHNICAL GUIDE

Pentas lanceolata F_1 Northern Lights®

Flowering

Flowering Type: Day neutral plant, will flower regardless of day length. Very responsive to irradiance and additional lighting. Providing a 14-16 hrs. day length, especially in the seedling stages, will shorten the crop significantly. In addition, growing at warmer temperatures will shorten the crop time.

Flowering Mechanism: Maturity of the plant, reaching the 3-5 leaf stage is the primary mechanism. Supplemental lighting during germination will benefit but is not necessary

Plug Culture

Germination: Maintain optimal conditions for seedling development beginning on the day of sowing until radical emergence. Expect radical emergence in 7-10 days.

Cover: No cover is necessary.

Sowing method: 1 pellet per plug

Media: pH 6.2-6.5 Starting with the proper pH of the media will improve the performance of the seedlings. Pentas can exhibit iron toxicity at lower pH levels, below 5.5. Pentas require close attention to the proper media pH. If the pH is too high, a micro nutrient deficiency may occur and if too low, an iron toxicity can occur. EC < 0.5.

Temperature: 23-26 °C (74-78 °F). Once germination is completed with fully expanded cotyledons, on day 14 the temperature can be lowered slightly to 22 °C (72 °F). Water trays using tempered water with a minimum temperature of 18 °C (64 °F). Media temperatures below 16 °C (60 °F) will inhibit the germination and growth.

Moisture: Begin with a saturated (5) for the first 10 days. On day 11 begin to lower the moisture slightly going to a medium (4). Maintain a consistent moisture level without over saturating the media. Wide fluctuations in the media moisture levels can decrease seedling development and losses can occur.

Humidity: 95-100% until day 10; then reduce to 40-60%. Provide proper ventilation and horizontal airflow to improve oxygen levels in the media.

Light: Light is not crucial for germination but providing supplemental lighting will increase the quality of the seedlings and uniformity of germination. If using a chamber provide a light source of 10-25 ft. candles (100-250 lx). When moved into stage two the light levels can be increased to 6-8 mol/m2 /day (2,000-2,500 ft. candles or 20,000-25,000 lx). On approximately day 21 the light levels can be increased to 10-12 mol/m2 /day (3,000-3,500 ft. candles or 30,000-35,000 lx).

Fertilizer: Maintain an EC < 0.75. At this stage fertilized water should not exceed an EC of 0.5 Begin feeding on day 10 with 50 ppm 14-2-14, 14-4-14 or 17-5-17. Keep phosphorous levels < 8 ppm, iron levels at 2-3 ppm.

Plug Bulking and Flower Initiation: Optimum conditions during the vegetative stage from cotyledon expansion to flower initiation. This stage is when the seedlings root to the edge of the plug and can reach the 3-5 true leaf stage where flower initiation occurs. If transplanted early flower initiation can occur after transplant.

Media: pH 6.2-6.5 When media has a higher pH, iron is not as available to seedlings so a slight increase in iron to the fertilizer can be beneficial. 2-3 ppm iron is optimal. If needed, iron levels can be adjusted to 0.5 ppm. At pH levels of 5.0-5.5 iron toxicity can occur. Flowable lime can be used to adjust the pH. EC 0.75–1.0.

Light: 12-16 mol/m2 /day (3,500-4,500 ft. candles or 35,000-40,000 lx). High light levels and supplying supplemental lighting, especially in the winter can greatly shorten the crop time by as much as 2-3 weeks.

Temperature: 20-21 °C (68-70 °F). As plants become more mature the temperature can be lowered to 18-20 °C (64-68 °F) nights and 22-23 °C (72-73 °F) days. Warmer temperatures will benefit and shorten the finish time.

Moisture: Alternate between a wet (4) and a medium (2). Allow the moisture level to approach a medium before re-saturating to a wet (4).

Fertilizer: Maintain the EC levels below 1.2. Under lower light conditions fertilize with a calcium based fertilizer, 14-4-14 at 100 ppm. Under higher light use a 17-5-17 feed at 100 ppm.

Growth Regulators: B-Nine (diminozide) sprays at 2,500-5,000 ppm work well at controlling growth.

Fungicides: Under conditions of low light and high humidity fungicide applications may be necessary. Follow the recommended labeled rates.

Growing On

Transplant Ready: 6-7 weeks from sowing using a “288” plug tray. Add one week if less than optimal temperatures are experienced.

Media: pH 6.2-6.5 continue to monitor the pH to make sure that it stays above 6.0. EC 1.0-1.2 Keep the EC level < 1.5.

Light: Provide high light levels of 12-16 mol/m2 /day (3,500-4,500 ft. candles or 35,000- 45,000 lx). Long day treatment of 14-16 hrs. will shorten the total crop time significantly.

Temperature: 20-21 °C (68-70 °F) nights, 22-23 °C (72-73 °F) days for the first 14 days or until the roots reach the bottom of the container. Thereafter temperatures may be lowered to 16-18 °C (60-64 °F) nights and 20-23 °C (68-74 °F) days. Higher temperatures are beneficial and will shorten the crop time. Pentas do not seem to have a maximum temperature that will inhibit growth and flowering.

Moisture: Alternate between moisture levels wet (4) and medium (2).

Humidity: 40-60 % humidity is ideal. Providing good ventilation and horizontal airflow will help lower the humidity and dry back the media, providing oxygen to the roots.

Fertilizer: Under low light conditions fertilize with a 14-4-14 fertilizer at 100-150 ppm and under high light conditions use a 17-5-17 fertilizer at 100-150 ppm. Watch for calcium and magnesium deficiencies which can cause stunted plants.

Growth Regulators: B-Nine (daminozide) sprays at 2,500-5,000 ppm are very effective in height control. Light applications of Bonzi (paclobutrazol) as a spray at 2-3 ppm can also be used. An A-Rest spray at 2-4 ppm is also effective in growth regulation.

Fungicide: Apply fungicides during long periods of low light and high humidity.

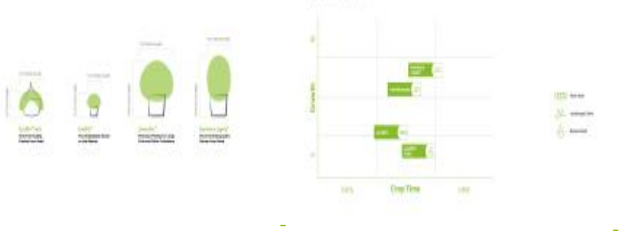
Common Diseases: Botrytis, Rhizoctonia and Pythium. Keep plants from becoming too wet for any period of time. Preventative fungicide drenches can be applied at the labeled rates.

Pests: Primarily aphids, thrips and whitefly.

Post Harvest: Fertilize with Potassium nitrate at 150 ppm 1-2 weeks prior to shipping.

Timing & Positioning Charts

288 tray	6-7 wks	
Finished Crop Time (from 288 tray)		
	Graffiti®	Kaleidoscope, Northern Lights®
12 cm (5") pots	7-8 wks	8-9 wks
15 cm (6") pots	8-9 wks	9-10 wks



Expert Tip

Pay attention to maintain a higher pH at or above pH 6.4. This will help with good seedling development and finished product.

– Taylor, Product Specialist

Moisture Codes

Saturated (5)	Water is easily observed when finger is pressed on cell. Water moves freely from the top of the plug to the bottom.
Wet (4)	Media looks black and is not glistening. The media feels wet to the touch but there is very little water movement.
Moist (3)	Water is not easily visible. When finger is pressed on the cell there is very little movement from top to bottom.
Medium (2)	Media is not black, but now looks medium brown. There is no water movement when pressed with finger.
Dry (1)	Media has changed color to a very light brown and is dry to the touch.

COLORS OF THE SERIES

Pentas lanceolata F_1 Northern Lights®

Lavender
PL0501P