GrowerFacts

Pentas Lucky Star®

(*Pentas lanceolata*)

Germination

Approximate pelleted seed count: 31,900/oz. (1,125/g)

Media
Use a well-drained, disease-free seeding medium with a pH of 6.4 to 6.6 and EC of about 0.75 mmhos/cm (1:2 extraction). Below a pH of 6.5, plants will stop growing and exhibit iron toxicity as foliar necrosis and calcium/magnesium deficiency as foliar puckering.

Sowing
Recommended plug tray is 288-cell or larger. Do not cover the seed. Light improves germination and uniformity. Non-acidified water is recommended to maintain high media pH.

Stage 1 – Germination takes about 6 to 9 days.

Soil temperature: 75°F (24°C)

Light: Light during germination (10 f.c./110 Lux) will improve germination uniformity and seedling quality.

Moisture: Maintain moisture at Level 4 to 5 during Stage 1. Non-acidified water is beneficial throughout plug production.

Humidity: Maintain at 100%.

Plug Production

Stage 2

Temperature: Maintain 75°F (24°C).

Light: Pentas have high light requirements. Seedlings must receive higher light levels immediately after germination to avoid elongation and promote rapid growth. After germination, maintain light levels between 1,500 and 2,000 f.c. (4 to 6 moles/m^2/day or 16,150 to 21,530 Lux).

Moisture: Level 3 to 4; avoid extreme shifts in moisture. Non-acidified water recommended.

Humidity: Reduce to 70%.

Fertilizer: Apply 14-4-14 or 13-2-13 at 50 ppm N once radicles fully emerge. Adjust upward to 75 ppm through end of Stage 2. Maintain EC of 0.8 to 1.2 mmhos/cm.

Stage 3

Temperature: Gradually reduce to 68 to 75°F (20 to 24°C).

Light: Up to 2,500 f.c. (6 to 8 moles/m^2/day or 26,900 Lux)

Moisture: Level 2 to 4, avoid extreme shifts in moisture. Non-acidified water is recommended.

Fertilizer: Increase fertilizer to 75 to 100 ppm with 14-4-14 or 13-2-13. Use 20-10-20 if needed to promote leaf expansion.

Growth Regulators
Generally not required. Control plug growth through the environment, nutrition and irrigation management. Minimize phosphorus fertilizer to avoid elongation of seedlings. Temperature differential (DIF) can also be used to minimize height. If necessary, B-Nine/Alar (daminozide) spray at 2,500 ppm (3.0 g/l 85% formulation or 4.0 g/l of 64% formulation) can be used. Keep plants on the dry side.

Stage 4

Temperature: Can be reduced to 65 to 70°F (18 to 21°C) from maturity until transplant.

Light: 3,500 to 5000 f.c. (10 to 12 moles/m^2/day or 37,800 to 54,000 Lux)

Moisture: Same as Stage 3

Fertilizer: Same as Stage 3

Growing On to Finish

Container Size
306 pack: 1 plug per cell

4-in. (10-cm) pot: 1 plug per pot

6-in. (15-cm) pot: 2 plugs per pot

1 gallon pot: 2 to 3 plugs per pot

Media
Use a well-drained, disease-free soilless medium with a medium initial nutrient charge and a pH of 6.5 to 6.8. When pH is below 6.5, growth will be slowed. Plants will exhibit iron toxicity as foliar necrosis and calcium/ magnesium deficiency as foliar puckering.

Temperature
Lucky Star Pentas benefit from warm temperatures and high light conditions. Maintain minimum day temperatures of 68 to 75°F (20 to 24°C) and minimum night temperatures of 62 to 65°F (17 to 18°C). Low temperatures will prevent uniform flower development, delay flowering and extend crop time.

Light
Provide 12 to 20 moles/m^2/day. Keep light levels as high as possible to promote compact growth. Provide supplemental lighting when grown under low light conditions.

Humidity
Maintain low relative humidity during production to reduce foliar diseases.

Water
Pentas benefit from non-acidified water during production, which can decrease crop times by as much as 2 weeks versus acidified water. Avoid both excess watering and underwatering, as both will stress the plants and cause severe yellowing and necrosis.

Fertilization
Apply constant liquid fertilizer at 75 to 125 ppm N, depending on frequency, with 14-4-14 or 17-5-17. Use 20-10-20 if needed to promote leaf expansion. Maintain medium EC around 1.2 to 1.5 mmhos/cm (using 1:2 extraction).

Growth Regulators
The Lucky Star series has been bred and selected for natural compactness. If PGRs are desired after transplant, a tank mix of B-Nine (daminozide) 2,500 ppm (3.0 g/l 85% formulation or 4.0 g/l of 64% formulation) and Cycocel (chlormequat) 500 to 750 ppm (4.2 to 6.4 ml/l 11.8% formulation or 0.7 to 1.0 ml/l 75% formulation) can be used.

Always follow current manufacturer label instructions. In-house trials are recommended to determine the best rate for your location.

Crop Scheduling

Sow to transplant: 6 to 7 weeks in a 288-cell plug tray.

Transplant to finish (flower first umbel): 7 to 8 weeks depending on container size and growing conditions. Crop times can be reduced with higher light and warmer temperatures.

Common Problems

Insects: Aphids, thrips, whitefly

Diseases

Pythium root rot: Soft, brown, mushy roots. Drench with Subdue, Banrot, Truban or similar compound.

Rhizoctonia: Tan, brown or black lesions on the stem at the soil line in conjunction with good root development. Drench the soil with Chipco 26019, Cleary's 3336, Banrot or Terraclor.

Botrytis blight: Will appear at wound sites on the plant, especially where the air is stagnant. If undetected, this blight will form a canker that will girdle the stem, thus wilting and killing that part of the plant. Treatments include increased air circulation and Daconil fungicide spray applications. Refer to the Daconil label for specifics.

Nutritional Problems
Pentas have the ability to naturally lower the media pH.

Iron toxicity: Excessive iron levels or pH below 6.0 can cause marginal burn and yellowing on older or lower leaves. Raise pH by adding limestone.

Iron/Manganese toxicity: Extremely low pH can induce iron and manganese toxicity, indicated by brown or tan lesions on the foliage. Switch to a base-forming fertilizer, such as 15-0-15. If symptoms do not improve, or if the pH is below 6.0, irrigate the crop with a hydrated lime solution. Be sure to rinse foliage after application to avoid phytotoxicity.

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Calcium and Magnesium deficiency: If pH falls below recommended target values, lower leaf interveinal chlorosis and foliar puckering can develop. This can happen especially during flowering, when pH can fall as much as 1 unit in 24 hours due to plant roots actively acidifying the media. Use fertilizers that contain magnesium during early crop development. Supplement with calcium nitrate to adjust pH. Avoid wide fluctuations in media moisture levels.

NOTE: To increase soil pH, apply 12 oz. hydrated lime per 100 gal. water (90 g per 100 l) as a soil drench. Follow up with 1 tablespoon of limestone (dolomite or calcium carbonate) per pot. Do not apply hydrated lime if the medium ammonium level is above 10 ppm (1:2 extraction).

NOTE: Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of year, and greenhouse environmental conditions. Chemical and PGR recommendations are only guidelines. It is the responsibility of the applicator to read and follow all the current label directions for the specific chemical being used in accordance with all regulations.

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