GrowerFacts PanAmerican Seed®

Flare F_1 Series Cut Flower Lisianthus

Eustoma grandiflorum
Approximate seed count (Pelleted): 28,500 S./oz. (1,000 S./g)

Plug Production

Plug Tray Size

Lisianthus can be produced in a 392, 406, or similar cell size plug tray.

Media

Use a well-drained, disease-free plug media with a pH of 6.2 to 6.5 and EC about 0.75 mS/cm (1:2 extraction).
Note: Lisianthus are very sensitive to high salts.

Stage 1

Germination takes approximately 10 to 12 days. Do not cover the seed.
Soil temperature: 68 to 72˚F (20 to 22˚C).
Light: Light levels of 10 f.c. (100 Lux) or more is required/beneficial for germination.
Moisture: Keep the media moisture saturated (level 5) during stage 1 for optimal germination.
Humidity: Maintain 100% relative humidity (RH) until radicle emergence.

Stage 2

Soil temperature: 68 to 72°F (20 to 22°C).
Light: Up to 2,500 f.c. (26,900 Lux)
Moisture: Start to slightly reduce media moisture to medium wet (level 4) to allow roots to penetrate into the media. Some growers apply a thin layer of coarse grade vermiculite to the surface of the plug flat after they come out of the germination chamber for controlling algae growth,
Fertilizer: Apply fertilizer at rate 1 (less than 100 ppm N/less than 0.7 mS/cm EC) from nitrate-form fertilizers with low phosphorous.

Stage 3

Soil temperature: 65 to 68°F (18 to 20°C).
Light: Can be up to 2,500 f.c. (26,900 Lux).
Media moisture: Keep the media at medium (level 3) moisture level. Allow media to dry between irrigations. Avoid extreme wilting, as it can induce rosetting.
Fertilizer: Increase the fertilizer rate to 2 (100 to 175 ppm N/0.7 to 1.2 mS/cm EC). Maintain a media pH of 6.2 to 6.5 and EC about 1.0 mS/cm (1:2 extraction).
Note: Do not apply plant growth regulators to cut flower lisianthus plugs.

Stage 4

Soil temperature: 62 to 65°F (17 to 18°C).
Light: Up to 5,000 f.c. (53,800 Lux) if optimal temperatures can be maintained.
Moisture: Same as Stage 3.
Fertilizer: Same as Stage 3
Note: Do not hold lisianthus plugs until rootbound as this induces rosetting.

Growing On to Finish

Production Location

Optimal-quality lisianthus are produced in temperate climates in greenhouses for Autumn through Spring. Successful Summer production can be achieved in shadehouse structures.

Media

Lisianthus should be produced in disease-free soils with a medium initial nutrient charge and a pH of 6.5 to 7.2. Lisianthus prefers a high pH media.

Planting Density

Summer: 8 plants per net sq. ft. (84 plants per net sq. m)
Winter: 6 plants per net sq. ft. (64 plants per net sq. m)

Netting

One to two layers of support netting (4 x 6 in./15 x 20 cm) are recommended.

Temperature

Night: 60 to 65°F/16 to 18°C
Day: 68 to 75°F/20 to 24°C
Cooler growing temperature will add to stem strength and caliper, but will increase production time. In regions that require supplemental heating, both space and soil-surface heating is recommended. Higher temperatures (above 82°F/28°C) during the first 4 weeks after transplant can induce rosetting in susceptible varieties.

Light and Shading

Optimal light levels are 4,000 to 6,000 f.c. (40,000 to 60,000 Lux) if appropriate temperatures can be maintained. Higher light promotes high bud count and good flower development. However, excessive

light (over 7,000 f.c./70,000 Lux) could reduce stem length. Shading may be needed to increase stem length.

During Winter when daylength is shorter than 12 hours, supplemental light (incandescent or HID) can be used. Long day (greater than 14 hours) or night interruption from 10 p.m. to 2 a.m. will accelerate flowering. HID light is preferred as it increases flower quality and decreases crop time.

Irrigation
Begin production with overhead irrigation, then switch to drip irrigation 2 to 3 weeks following transplant. Keep the media moist but not wet; allow drying slightly between waterings. Lisianthus grow slowly at the beginning, and therefore require little water. Do not allow the soil to dry out when plants are in flower.

Fertilization
Fertilize every other irrigation with calcium nitrate-based fertilizer with low phosphorus at rate 3 (175 to 225 ppm N/1.2 to 1.5 mS/cm EC).

Crop Scheduling
Sow to transplant: 8 to 10 weeks approximately.
Weeks for plug to finish:

- **Winter:** 14 to18
- **Spring/Autumn:** 12 to 14
- **Summer:** 10 to12

Flare series is speed group 2 (mid/medium speed) for flowering.
Note: Crop time is dependant on time of year, temperature, day length and light intensity and also on supplemental lighting and greenhouse conditions.

In far northern latitudes where daylength has great variation across the year, the use of HID lighting is common. These regions may experience an even greater degree of variation in crop times.

Post-harvest handling
Harvest lisianthus stems when one or more flowers are open. Harvest in the mornings when flower and plant tissues are cool. Remove field heat from the stems by transferring harvested bunches to coolers to optimize post-harvest life. Always use clean buckets with fresh cool water for harvested lisianthus. Do not ship flowers that have not had field heat removed. Pulsing with 3% sucrose for 24 hours after harvest increases vase life.

In Japan and Holland, cut flower lisianthus are brought to market in 10-stem bunches. In the United States, the market accepts “grower” bunches that are bunched according to stem caliper; 4 to 14 stems may comprise a bunch. Some wholesalers are encouraging growers to market a standard 10-stem bunch in the U.S.

Common Problems
Insects: Aphids, leaf miners, thrips, whitefly.
Diseases*:* *Botrytis, Fusarium, Pythium, Rhizoctonia, Tospo Viruses.*
Other: Algae over plug tray surfaces, resetting.

Note: Growers should use the information presented here as a starting point. Crop times will vary depending on the climate, location, time of the year and greenhouse environmental conditions.

630 231-1400
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