

# Lisianthus

Crop	Lisianthus
Series	All cut flower Lisianthus
Botanical name	<i>Eustoma grandiflorum</i>
Plant type	Annual & Biennial
Seed type	Pelleted
Seed count	1,400 pellets / gr
Germination	20°C - 10 days light favored
Growing	18-25°C
Optimum pH	6.2-6.5

## Plug Culture: 8 weeks (288 cell tray)

**Pre-Cooling** (21 days) Sow pelleted seed into a 288 plug tray and do not cover the seed. Water the tray well and then place it in a dark cooler at 10°C for 3 weeks to increase germination rate and promote a more uniform emergence. Afterwards, follow the instructions in Stage 1.

**Stage 1** (days 1-14) If pre-cooling is not an option, sow pelleted seed uncovered into a 288 plug tray and never allow it to dry out during germination. Enough moisture must be provided to break the pellet. Maintain a soil temperature of 21°C. Placing the plug trays on capillary mats or plastic helps to keep the media moist and encourages a very uniform emergence.

**Note:** light is needed for germination. Moisten the media well before sowing then water by mist spray after sowing. Pelleted seeds will break (not melt) when water is applied.

**Stage 2** (days 14-21) After the seedlings emerge, remove the plug trays from the germination area and place them in a location with good air circulation. Lower the temperature to 15-20°C and provide a light feed between 100-150 ppm of nitrogen from a well-balanced calcium nitrate based fertilizer. Be careful not to allow the night temperature to exceed 22°C to prevent rosette\* problems, (induced resting stage), which is difficult to cure.

**Stage 3** (days 21-56) The seedlings are very slow in growth and should not be exposed to high night temperatures which induce rosette\*.

Other factors to avoid are low light levels and excessive humidity, which will invite both disease and overgrowth of the seedlings. Calcium-based feeds promote strong and healthy seedlings.

**Stage 4** (days 57-60) The seedlings should have 4 true leaves at this stage and are now ready to transplant into the cut flower bed. Lisianthus has a sensitive root system and must be careful to avoid damaging the seedlings. Timely transplanting will ensure that the root system stays active and takes hold in the cut flower bed. Older seedlings will have twisted root systems and the transition into the cut flower bed will be more difficult. Also, older seedlings will flower earlier on shorter stems; especially under long day conditions.

\*To avoid rosette in warm areas, keep cool temperatures at night 15-17°C and days between 25-27°C until transplant. The key point is to grow cool at night for 12 hours. This cool system helps prevent rosette under warmer non-optimum temperature conditions.

## Transplanting to finish: 14-16 weeks\*\*

**Bed Preparation:** Choose a flower bed with a rich organic soil that is pest and pathogen free. Cultivate it to a depth of 45 cm. Covering the bed with black plastic will increase soil temperature in winter and reduce crop time. For summer production, silver plastic will keep the soil temperature lower by reflecting the hot summer sun. Maintain a minimum soil temperature of 13°C and a maximum of 23°C for optimum results.

\*\*depending on culture / temperature, light level, photoperiod

**Transplanting:** Transplant seedlings when they are young and actively growing (around the fourth true leaf stage). In order to avoid stem rot, take care not to bury the plants too deep. Set the seedlings a little "high" in the flower bed to guard against rhizoctonia.

To ensure a healthy start, maintain high relative humidity for 10 days after transplanting and do not let the soil dry out.

**Spacing:** Spacing will depend on whether one is growing a pinched crop or a single stem crop. In general, space 10 x 15 cm. apart and arrange plants to enhance air movement to minimize disease prevention.

**Irrigation:** Since Lisianthus is native to low humidity areas, botrytis is a major disease problem. The use of drip irrigation is best to reduce free moisture on the plants.

**Fertilization:** Lisianthus does not require high fertilizer levels compared to chrysanthemums. The use of calcium nitrate based fertilizer is recommended to build strong stems and reduce soft growth. Lisianthus requires higher moisture levels in the early stage of development. As the plants begin to mature and show flower buds, watering should be reduced to and the crop prepared for harvest.

**Support:** Support wires are necessary to support the plants as they grow.

**Flowering:** During periods of high light and warm temperatures, a light shade on the greenhouse roof is recommended to avoid flower scorch. Stems are usually harvested when one or more flowers are open. There is a longer period between the opening of the first and second flower than from the opening of the second and third flower. Therefore, some growers remove the first flower and sell it for small bud vases or corsages and then harvest the stems when the second and third flowers open.

**Pests:** fungus gnats (seedling stage), leaf miner and thrips

**Disease:** botrytis, fusarium, pythium and rhizoctonia

**Post-Harvest:** After cutting, place in lukewarm water, around 20°C, and store in a refrigerator at 4°C. The use of floral preservative after cutting is recommended and increases vase life by 40-50%.

**Variety Selection:** Lisianthus is a native of the southeastern U.S. and northern Mexico. Lisianthus flowering is triggered by three factors in order of importance:

- \* Temperature (warmer temperatures accelerate flowering)
- \* Light intensity (high light intensity accelerates flowering)
- \* Day length (long days accelerate flowering)

For the above reasons, various groups of Lisianthus

are available to maintain enough stem length for various climates and growing seasons. Groups are bred to flower after a defined number of nodes have unfolded. For example, under very long day and hot conditions a Group 1 variety will flower on too short of a stem whereas a Group 3 or 4 would produce enough stem length. Some growers may be able to use certain cultivars all year with manipulation of the day length and temperature. It is best to trial each cultivar to see which one works best for your growing environment and climate. In general, one should allow an average of 14–16 weeks from transplant to flowering.

**Culture Watch Points:** Ultraviolet light intensifies flower color. High night temperature (> 23°C), excess fertilizer / nitrogen, or keeping the media too moist will reduce intensity.

Picotee patterned varieties may revert to a solid color, depending on growing conditions. Excess fertilizer (especially nitrogen), excess moisture / irrigation, low light intensity and low temperature increase the percentage of solid colors.

PF (Pollen Free) varieties may produce pollen depending on growing conditions. Excess fertilizer (especially nitrogen), excess moisture / irrigation, low light intensity and low temperature increase the percentage of pollen recovery.

*All information given is intended for general guidance only and may have to be adjusted to meet individual needs. Cultural details are based on Asian conditions such as in Japan and Sakata cannot be held responsible for any crop damage related to the information given herein. Always follow manufacturer's label instructions. Testing a few plants prior to treating the entire crop is best.*