

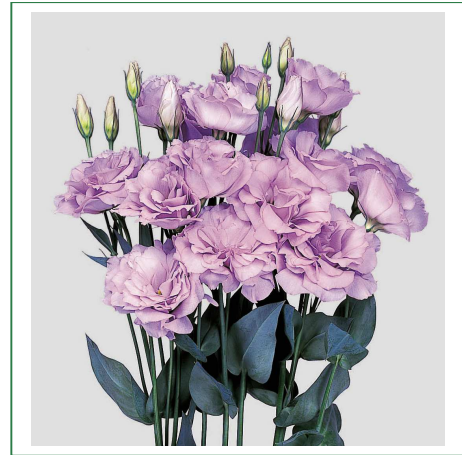
# Eustoma grandiflorum F1

## Echo



# SAKATA®

The original! Echo was the world's first all-double Lisianthus for cut flower production. With large flowers on strong stems, it is ideal for late Spring/Summer harvesting, and in some regions for late planting in September.



- \* Group I/Standard double flower
- \* Flower stems are strong and easily support the large flowers
- \* The world's first 100% all double, large-flowered Lisianthus for cut flower production
- \* A top-quality, popular double-flowering series
- \* Plant height approximately 80 cm in Summer



Indoor

**GROUP**

1



80-90 cm



Cut Flower



700/gram; pellet



Cool, dry, airtight 8-10°C

## Culture Guide

### Plug Culture

#### Stage 1

(days 1-21) Single sow pelleted seeds carefully in deep plug trays filled with a well-drained media. A pH between 6.5-7.2 is recommended to provide sufficient calcium levels. Do not cover the seed with vermiculite and never allow it to dry out during germination. To promote uniform germination and avoid rosetting, place the trays in a cool cell at 5-8°C for approx. 3 weeks.

#### Stage 2

(days 21-35) Move the trays into the greenhouse and cover with clear plastic or acryl, depending on the time of year (high temperatures under plastic increase risk of rosetting). Sufficient moisture must be provided to melt the pellet. Maintain soil temperature at 21°C and keep the media moist throughout the entire germination period by using a mist system. After seedlings emerge, remove the seedling tray from the germination area and place them in a location with good air circulation. Be careful not to allow the night temperature to exceed 22°C to prevent rosette problems, (induced resting stage), which are difficult to cure.

#### Stage 3

(days 35-70) Lower the temperature to 17-20°C and provide a light feed. Factors to avoid are low light and excess humidity, which invite both disease and overgrowth of the seedlings. Lisianthus is native to the southern western U.S. This area, (West Texas, Arizona, and Southern Colorado), has alkaline soils so using a calcium based fertilizer promotes strong and healthy seedlings. Fertilize the seedlings with 150 ppm of nitrogen as needed and maintain the media EC level between 0.7 - 1.0 mmhos (1:2 slurry).

#### Stage 4

(days 70-77) 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. Delaying transplanting can "set back" the root system. Timely transplanting will ensure that the root system stays active and takes hold in the cut flower bed. Older plugs have a twisted root system and the transition into the cut flower bed is more difficult. Also, older plugs flower earlier on shorter stems; especially under long day conditions.

### Plant Culture

#### In general

Culture watch points: Ultra violet light intensifies flower colour. High night temperature (>23°C), excess fertilizer/nitrogen or keeping the media too moist will reduce intensity.

#### Media

Bed preparation: Cultivate the flower bed to a depth of 45cm with a rich organic soil that is pest and pathogen free. A soil pH of 6.0-6.8 is recommended. Maintain a soil temperature of 15-23°C for optimum results.

#### Transplanting

Transplant seedlings when they are young and actively growing, (around the fourth true leaf stage). Transplant the plants 12.5 cm by 12.5 cm, using nets to support the plants as they grow. In order to

<b>Watering</b>	avoid stem rot, take care not to plant the young plants too deep. To ensure a healthy start, maintain high relative humidity for 10 days after transplanting and do not let the soil dry out. Since Lisianthus is native to low humidity areas, Botrytis, is a major disease problem. The use of drip irrigation is recommended to reduce free moisture on the plants. Two drippings per bed gives even coverage. 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 tone the crop and prepare it for harvest.
<b>Fertilizer</b>	Lisianthus does not require such high fertiliser levels as Chrysanthemums. Maintain a soil EC level around 1.2 to 1.4 mmhos, (1:2 slurry). The use of calcium nitrate based fertiliser is recommended to build strong stems and reduce soft growth.
<b>Lighting</b>	Since Lisianthus is a long day response plant, gradually extend the day length over a period of 8 weeks from 15-20 hours with supplemental lighting if required under shorter days or lower light conditions. Forcing culture requires much higher lighting.
<b>Pests &amp; diseases</b>	Botrytis, Phytophthora, Downy Mildew, Rhizoctonia, Fusarium, White Fly.
<b>Growing</b>	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 two or three flowers are open.
<b>Group selection</b>	Therefore, Lisianthus varieties are grouped according to ability to achieve sufficient stem length and volume depending on growing environment and climate conditions. The flowering months listed below are an indication. Group 1: Winter/Spring (November-April) Group 2: Summer (May-June) * (in some regions also suitable for late planting in September) Group 3: Late Summer (July-August).
<b>Crop schedule</b>	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)
<b>Post harvest handling</b>	The use of flower food is highly recommended.

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*All information given is intended for general guidance only and is believed to be accurate. Cultural details are based on Northern Hemisphere conditions and Sakata cannot be held responsible for any crop damage related to the information given herein. Application of recommended growth regulators and chemicals are subject to local legislations and manufacturer's label instructions.*