

Lisianthus: A Profitable Cut Flower Crop with Modern Cultivation Practices

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Introduction

Lisianthus (*Eustoma grandiflorum*), also called *prairie gentian* or *Texas bluebell*, is a high-value cut flower crop.

- Native to North America (prairies of Texas, Mexico).
- Popular due to its rose-like blooms, wide color range (white, pink, blue, purple, bicolor), and long vase life (10–15 days).
- Cultivated mainly for cut flowers, potted plants, and bedding decoration.



Climatic Requirements

- **Temperature:** Optimal 20–25 °C (day), 15–18 °C (night). Sensitive to high temperatures (>30 °C).
- **Light:** Long-day plant; requires 14–16 hrs light for flower initiation. Supplemental lighting may be needed in winter.
- **Humidity:** 60–70% RH is ideal.
- Sensitive to sudden temperature fluctuations.

Soil / Growing Media

- Well-drained sandy loam or peat-based substrates.
- **pH:** 6.0–6.8 (slightly acidic).

- EC: 1.2–1.8 mS/cm.
- Raised beds (1–1.2 m wide) with good drainage recommended.
- **Common Potting Mixture:** Cocopeat + perlite + vermiculite (3:1:1).

Propagation

- Seed propagation (main method).
 - Tiny seeds (≈20,000 seeds/g), often pelleted for easy sowing.
 - Germination takes 10–15 days at 22–25 °C.
 - Seeds need light for germination (do not cover deeply).
 - Seedling stage: 8–10 weeks in plug trays before transplanting.
 - Vegetative propagation is rarely used due to poor rooting.
- ### Planting
- Transplant seedlings (6–8 true leaves) to main field or greenhouse.
 - Spacing: 15 × 15 cm (intensive cut flower culture) or 20 × 20 cm (open field).

- Support netting required for tall cultivars.
- Crop duration: 5–6 months from sowing to harvesting.

Nutrient Management

- **Basal Application:** Well-decomposed FYM (20 t/ha) + NPK (12:12:12) before transplanting.
- **Fertigation (Per Crop Cycle)**
N: 180–200 kg/ha
P: 60–80 kg/ha
K: 180–200 kg/ha
- Micronutrients: Foliar sprays of Ca, Mg, Fe, and B improve flower quality.
- Balanced nutrition prevents physiological disorders (e.g., bud drop).

Irrigation

- Requires frequent light irrigation; avoid waterlogging.
- Drip irrigation + fertigation is recommended.
- Mulching conserves soil moisture and reduces weeds.

Growth Regulation

- Pinching usually not practiced (single stem crop).
- GA₃ sprays (50–100 ppm) enhance stem elongation.
- CCC (chlormequat chloride, 500–1000 ppm) controls excessive height in pot plants.

Pest and Disease Management

Pests: Aphids, thrips, whiteflies, leaf miners.

Management: Yellow sticky traps, neem oil, biological control (predatory mites), systemic insecticides if needed.

Diseases

- *Botrytis cinerea* (grey mold) – avoid high humidity, fungicide sprays.

- Fusarium wilt – soil sterilization, crop rotation.
- Pythium root rot – good drainage, fungicide drenching.
- Viral diseases (TSWV, INSV) spread by thrips – strict vector control.

Harvesting

- Flowers harvested at 1–2 open buds stage for long vase life.
- Harvesting time: Early morning or late evening.
- Stems should be cut with sharp knives and immediately placed in clean water.
- Yield: 150,000–200,000 stems/ha under good management.

Postharvest Handling

- Remove lower leaves before bunching.
- Use floral preservatives (sucrose + germicides) to extend vase life.
- Storage at 2–4 °C with 90% RH possible for 2–3 weeks.
- Grading based on stem length, bud size, and color.

Commercial Uses

- Cut flowers for bouquets and floral arrangements.
- Potted plants (dwarf cultivars).
- Landscaping and garden displays.

Conclusion

Lisianthus (*Eustoma grandiflorum*) has emerged as a premium cut flower in global floriculture due to its rose-like beauty, wide color range, and long vase life. Successful commercial cultivation requires precise management of climate, light, and nutrient supply, as the crop is highly sensitive to environmental fluctuations. The adoption of advanced production technologies such as protected cultivation, fertigation,

photoperiod manipulation, and tissue culture propagation ensures uniform growth, higher yields, and year-round availability. Integrated pest and disease management further enhances quality and reduces postharvest losses. With increasing demand in domestic and international markets, lisianthus cultivation holds great potential as a profitable venture, especially under controlled conditions. Continuous research on improved varieties and sustainable production practices will strengthen its role as a key flower in the cut flower industry.

References

1. Dole, J. M., & Wilkins, H. F. (2005). *Floriculture: Principles and Species*. 2nd Edition. Pearson Prentice Hall, Upper Saddle River, NJ. – Detailed crop production technology of lisianthus.
2. Halevy, A. H., & Kofranek, A. M. (1984). *Evaluation of lisianthus as a new flower crop*. Journal of the American Society for Horticultural Science, 109(4), 593–596. – Early studies on lisianthus production and flower quality.