



Culture Tips for *Eustoma russellianum*



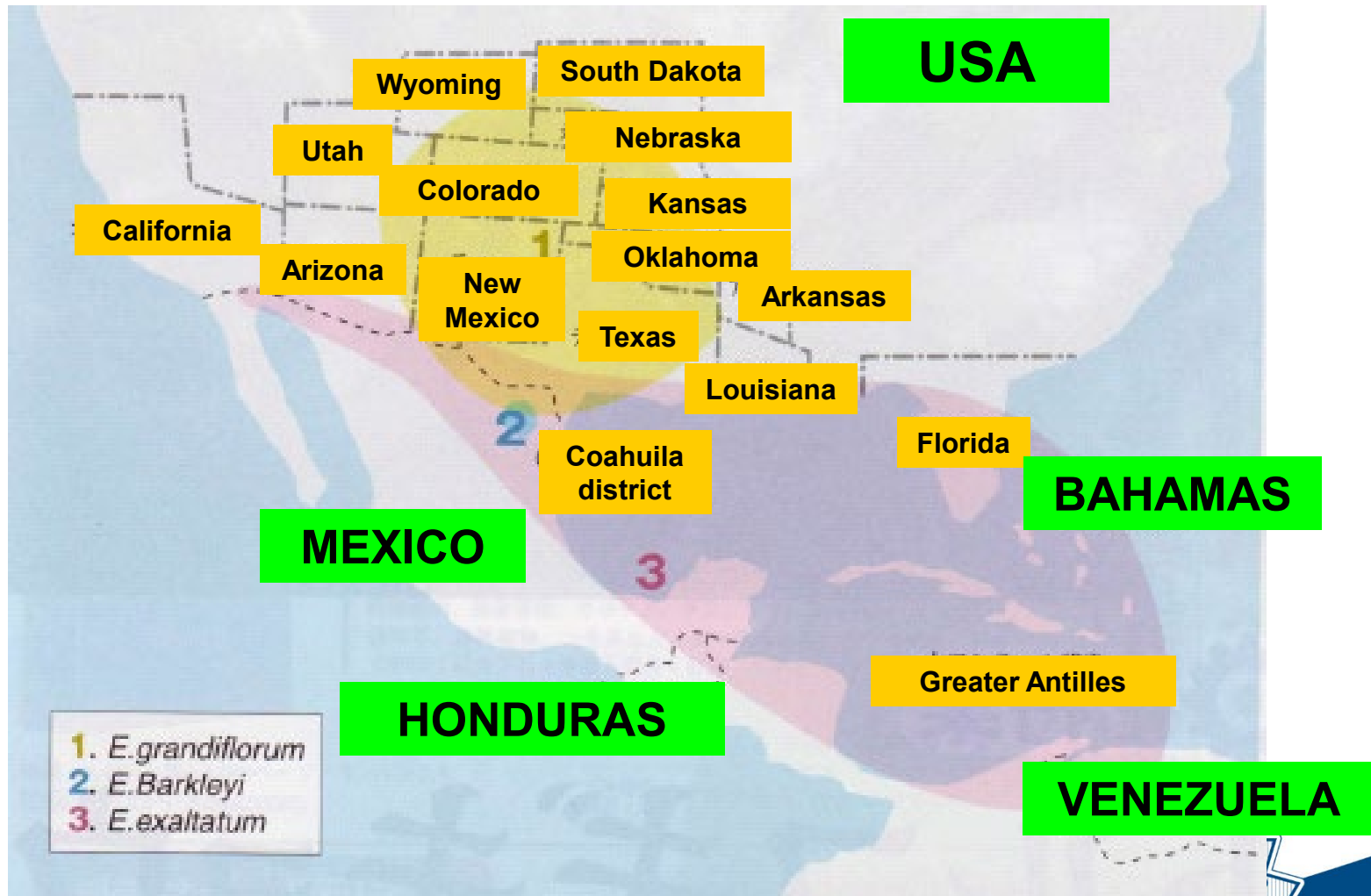
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Lisianthus is native to desert areas but is not a true desert plant because it always had access to fresh water via its long tap root system.



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Native Habitat



Plug Tray

- *The deeper the plug cell the better owing to Lisianthus' tap root structure.*



Stage 1: Day 1-14

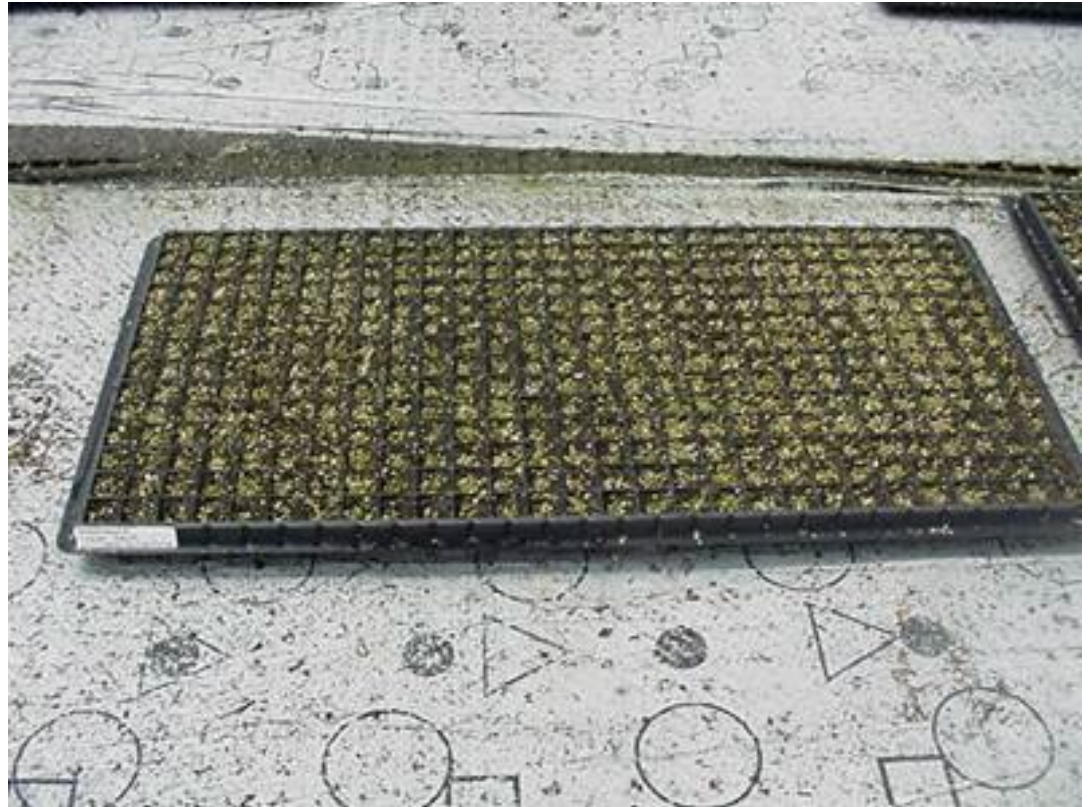
- *Do not cover the seed and supply enough moisture to dissolve the pellet.*
- *If needed, a light cap of medium vermiculite helps maintain moisture.*
- *pH 6.0-6.5*
- *Optimum temperature is 68-70°F/20-21°C.*



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Stage 1: Days 1-14

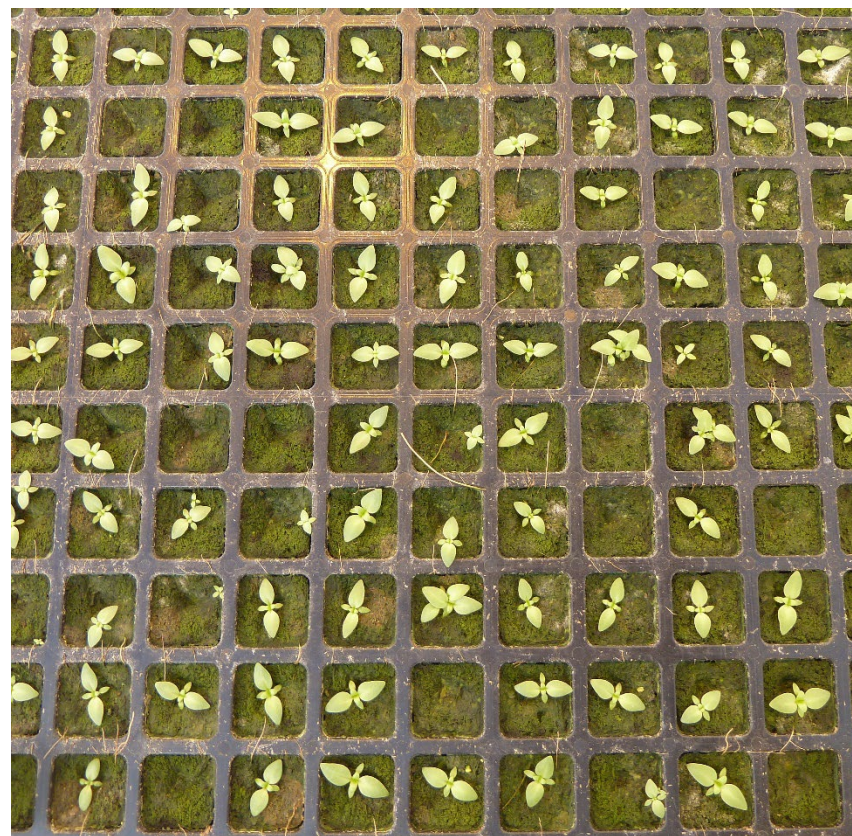
- *Seed requires light to germinate (up to 2,500 f.c./27,000 lux).*
- *Capillary action imitates the native habit and provides uniform moisture and germination.*
- *In its native area Lisianthus germinates in small pools of water.*



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Stage 2: Days 15-21

- *After germination is complete, place in a well lighted greenhouse with 2,500-3,000 f.c./27,000-32,000 lux, with good air circulation and a temperature between 59-68°F/15-20°C.*
- *Fertilize with 100-150 ppm N using a calcium nitrate-based formulation.*



Stage 3: Days 22-56

- *Avoid stressing the plant with:*
 - *Low light levels*
 - *Moisture stress**which promote a rosette or an induced resting stage.*
- *On the other hand, excess moisture invites disease.*
- *Fertilize at 150 ppm nitrogen targeting an EC of 0.4 - 0.8 mmho/cm. (1:2 dilution).*



Stage 4: Days 57-60

- *The plugs have two pairs of leaves and are now ready for transplanting.*
- *Late transplanting results in poor rooting, delayed flowering and shorter flower stems.*



Active Root System

- *It is important to transplant on time to avoid root banding / circling.*
- *Straight roots improve the transition between the plug tray and the flower bed.*



Seedling Study

- *Plants from aged plugs flower later on shorter stems.*



Based on its native habit, keep the soil surface dry to prevent disease and force the roots to go deeper in search of moisture..



Spacing

- *Spacing will depend on whether one is producing a pinched or single stem crop.*
- *In general, space 4 x 5 inches/10 x 12.5 cm. apart for better air movement and disease prevention.*



Spacing

- *Leaving 2 rows empty in the center of the bed improves air movement and reduces disease.*



Flower Bed Design



- *Placing plants in lines of 2 rows with a space between plantings improves air movement and increases light penetration.*
- *Less problem with botrytis which is the main disease of Lisianthus.*



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After transplant advice

- *Keep higher humidity for the first 10 days following transplanting and reduce light levels to minimize stress on the plants.*



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Rosette – resting stage



Temperatures higher than 82°F/28°C during the first 4 weeks after sowing can induce rosetting in susceptible varieties. Maintain moderate temperatures between 63-75°F/17-24°C to prevent rosetting. If the day temperature exceeds 82°F/28°C, one can compensate with a lower night temperature below 59°F/13°C.

Rosette

- *A rosette is a resting stage due to plant stress, (high temperature or moisture stress).*
- *Stress induces a resting stage for the survival of the species with the hope that the following season will be more favorable for growth and reproduction.*



Rosette

- *Rosetted plants sometimes do not appear until after transplanting.*
- *This condition is difficult to cure and requires a strong cold period to break the dormancy.*
- *The use of gibberellic acid is not an effective solution.*



Fusarium avenaceum, is a pathogen found in soil, and is a major challenge. One strategy is to apply Azoxystrobin* to innoculate the plugs or transplants.



*Heritage

Light

- *High Light increases flower bud size and number.*



Supplemental Light

- *Applying supplemental light to extend the photoperiod or provide more light calories reduces crop time and improves plant quality.*



Raised Bed

- *A raised bed improves drainage and soil aeration for deeper rooting and a drier soil surface.*



A raised bed made of wooden boards



Black Bags

- *Growing in black bags is an option to increase drainage. It also allows the use of sterilized soil mixed with recommended components.*



Idea for maintaining the metal support wire tense



- *Using the invention in the photo helps keep the metal support wire more tense for a straighter crop.*



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Lack of Calcium

- *Calcium is an immobile element. Therefore, a deficiency shows in the younger foliage.*
- *For optimum uptake do the following:*
 - *pH 6.8 – 7.2*
 - *enough boron*
 - *enough calcium*
 - *a well-formed root system*



Tip burn due to excess nitrogen.

- *Excess nitrogen suppresses calcium uptake, resulting in tip burn.*



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Magnesium deficiency

- *Magnesium is a mobile element, so a deficiency symptom shows first on the lower leaves.*



Culture Technique - 8 weeks after transplanting



- *As the crop progresses, supply water less frequently* to achieve a deep and healthy root system.*
- *Healthy roots are better able to withstand stressful conditions.*
- *Stop fertilizing 4 weeks before flowering begins.*

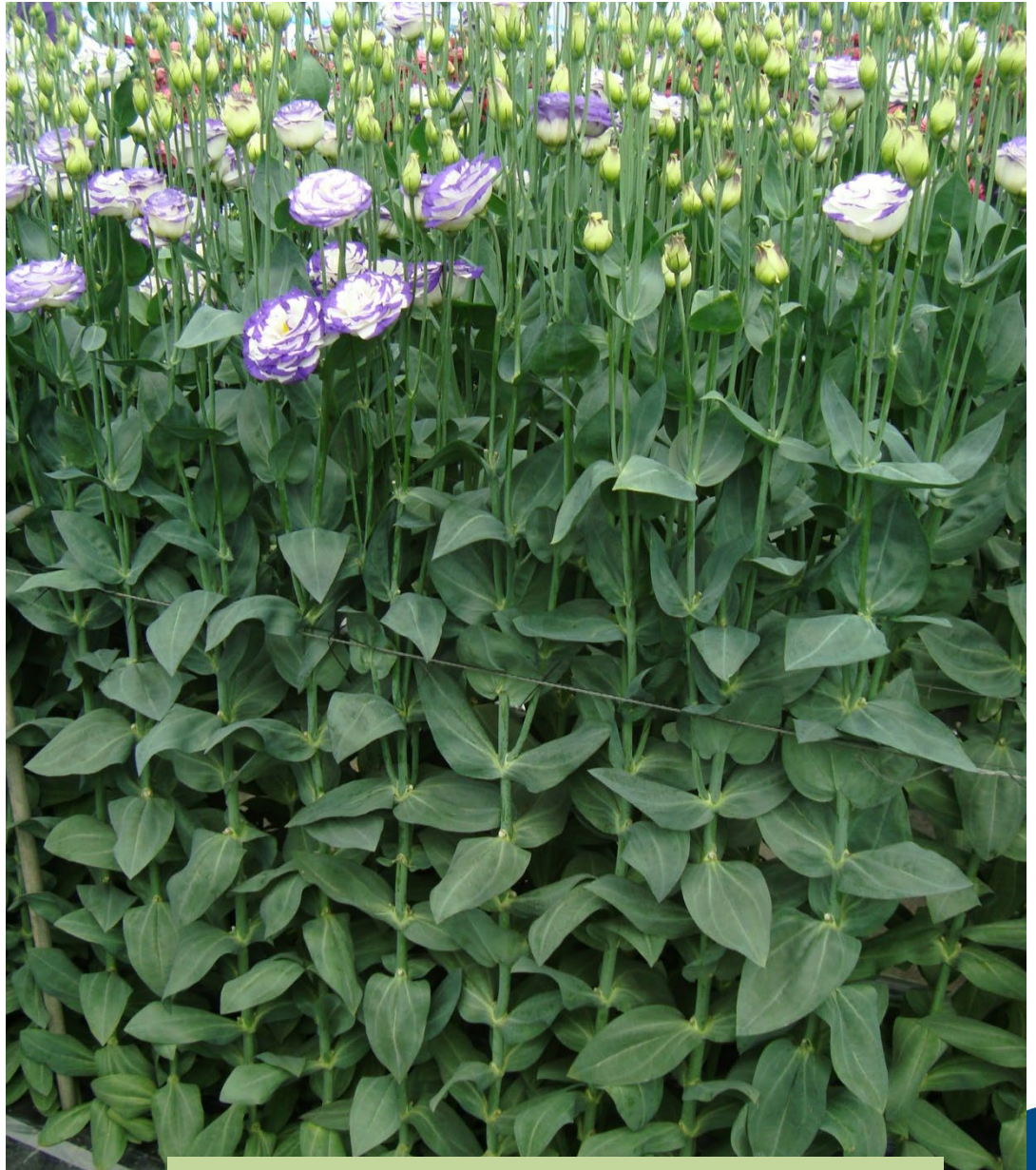
**for the Voyage series maintain steady moisture.*



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Internode length

- *A gradual increase in internode length is a sign of a well-grown crop.*



Rosita Blue Picotee

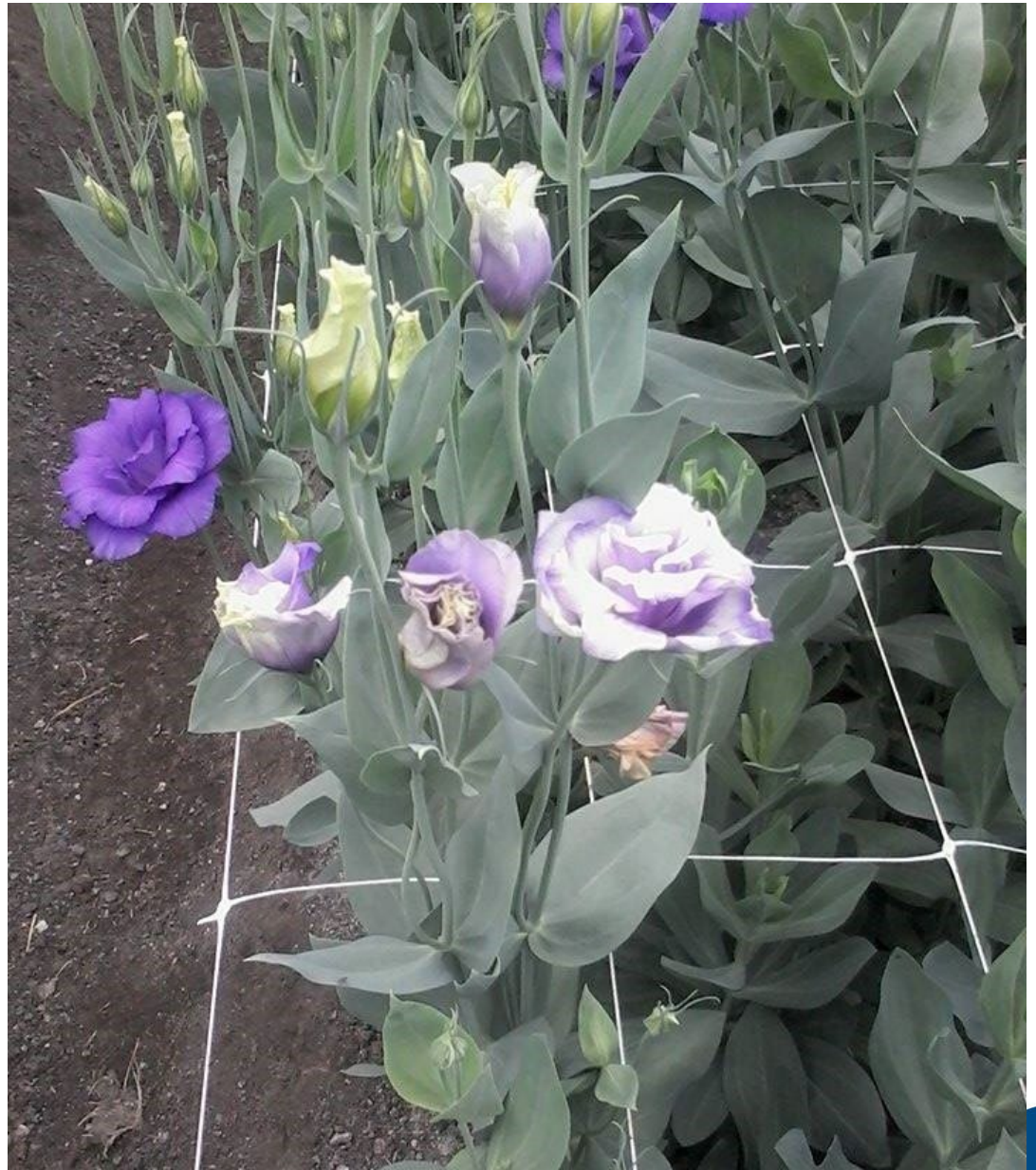
Weak Stems

- *Lisianthus* grown too warm and with too much moisture results in weak flower stems.



Flores descoloridas

- *Reduce light intensity and temperature before flowering to avoid flower discoloration.*



Burned flower petals

- *High temperature combined with high light intensity causes flower petal burn.*
- *Maintain enough soil moisture and apply shade cloth to reduce the temperature and light intensity.*



Flower Peduncle

- *Uneven flower peduncle length was common in earlier genetics.*



Top Flowering

- *Newer genetics are bred so that all of the flowers form at the same height for a better presentation.*



Mariachi Grande White

Flower Petal Burn

- *Flower petal burn due to high light and high temperature following a chemical spray application.*
- *It is best to apply chemicals in the morning when temperatures are cooler and the light intensity is lower.*





Thrips

Thrips are an important greenhouse pest and also a vector of disease.



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Virus

- *Lisianthus* is affected by various viruses, among which is INSV (*Impatiens Necrotic Spot Virus*). Destroy plants infected with a virus to avoid contaminating the entire crop.



Lisianthus Classification

- Flower Petal; Single / Double
- Flower Size; Large / Small
- Flower Form; Rose / Camelia etc.
- Flower Color; Rose, Blue, White etc.
- Type of Branching; Standard / Spray
- Earliness; Groups 1 - 3

❖ ; Let's review the classification table!



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Lisianthus Characteristics

Flowering Period	Group 1	Group 2	Group 3
Summer	Good	Better	Good
Autumn	No	Maybe*	Better
Winter	Better	Maybe*	No
Spring	Better	Maybe*	No

**depending on the weather, somewhat risky*

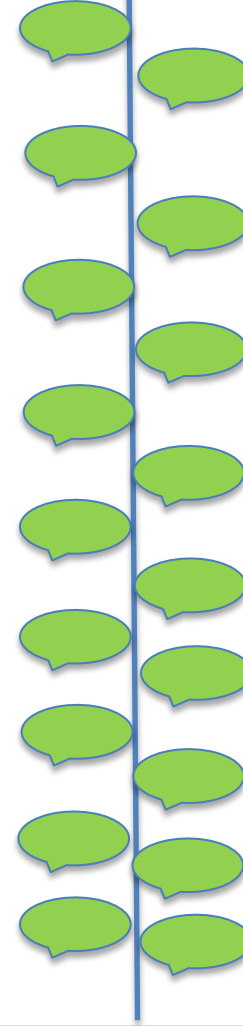
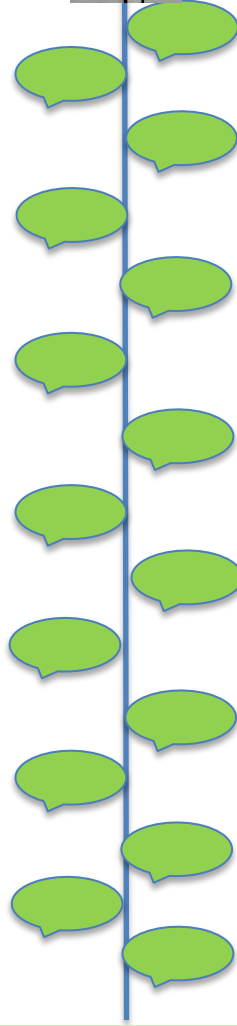
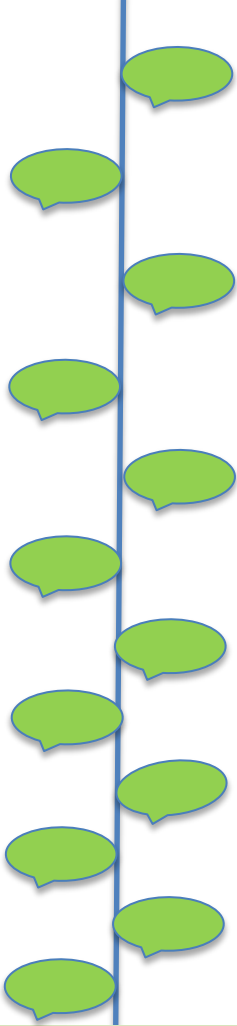
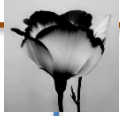


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Lisianthus Classification

Optimum Height 24 – 30 inches

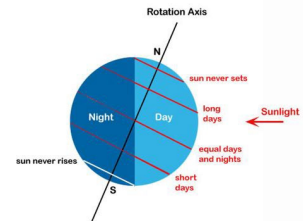
Factors that affect development in order of impact.



Temperature #1



Light Intensity #2



Photoperiod #3

Group 1
12 nodes

Group 2
15 nodes

Group 3
18 nodes



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Lisianthus Echo – Group 1



- *Group 1 / Standard Double Flower*
- *8 vibrant colors*
- *The first series with 100% double large Flowers.*
- *Strong plants that support the large flowers.*



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Rosanne – Groups 1 - 2



- *Excellent vase life with strong petals that resist botrytis problems during transport.*
- *The flower stigmas do not develop yielding a longer vase life.*



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Mariachi[®] – Group 2



- *Quadruple petals that is ideal for sowing in winter and harvesting in spring.*
- *Thick petals for improved shelf life and easier transportation.*



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Voyage[®] – Group 2



Alissa Champagne

- *Large fringed flowers that are beautiful!*
- *Strong petals that ship well under stressful conditions.*
- *Excellent top flowering habit.*
- *Highly sought-after flowers available in 9 unique colors*



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Rosita[®] – Groups 1 - 3



- *Strong petals and top flowering with strong stems making transportation easy with less botrytis problems.*
- *Rose-shaped medium-sized flowers.*
- *Excellent vase life with more usable buds.*

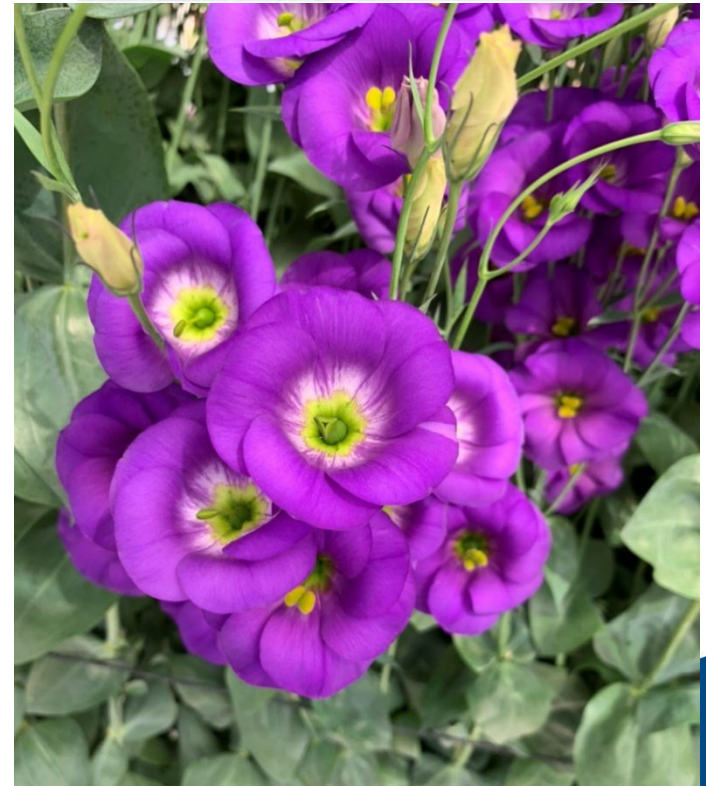


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NUEVO

Lisianthus Serie Solo® - Group 2

- *Solo® is the first pollen free series in the world, and the next generation in single flowered Lisianthus.*
- *Solo flowers do not produce pollen, which means that there is no mess, no stained flowers and an even longer vase life.*
- *The delicate but strong flowers ship well with less risk of damage and disease.*
- *Initially available in 4 colors.*



Rosita 2 Green / Voyage 2 Green



Many thanks for your attention!



- Thank you for your support and confidence in our genetics.
- Sakata Seed America



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