

## TECH TIP: CUT LISIANTHUS PRODUCTION

*One of the challenges Midwest growers face is that lisianthus successions, which are planted four to six weeks apart, tend to overlap. Here are some thoughts from Dr. Will Healy on why growers experience shorter stems. From the **Bloom Beat** e-newsletter for fresh-cut flower growers (July 2025).*



First off, it's important to note why the stems are shorter. Does the stem have fewer nodes or shorter internodes? You must separate what is happening (fewer nodes or shorter internodes) to understand why stems are shorter (or longer).

### Possible reasons for shorter internodes:

**What is the fertilizer program as a preplant and after planting?** Stem length is governed by the amount of phosphorus (P) and ammonia/urea (NH<sub>4</sub>) that is applied pre- and post-planting. Internode stretch is controlled by the NH<sub>4</sub>+P amount, with more NH<sub>4</sub>+P resulting in longer the stems.

**Old-time growers would incorporate treble superphosphate into the soil as a preplant to ensure adequate P in the soil after planting to promote stem stretch.** They would then fertilize with a balanced fertilizer with NH<sub>4</sub> early in the crop and switch to higher nitrate late in the crop to promote stem strength. Remember that lisianthus is a calcium-loving crop, so you need to make sure there is enough Ca in the feed late in the crop. I have talked to cut flower growers who have added 4+ in. to the stem length by just making sure that they have enough NH<sub>4</sub>+P in the early feed application.

**How much NH<sub>4</sub>+P?** If you use 20-10-20 at 200 ppm, you are applying at least 80 ppm NH<sub>4</sub> and 40 ppm P with every irrigation, while 20-20-20 provides 140+ ppm NH<sub>4</sub> and 80+ ppm P just due to the extra P and urea that may be in the fertilizer. Conversely, if you are using a 17-5-17 formulation at 200 ppm, then you are only adding 50 ppm NH<sub>4</sub> and 25 ppm P with every irrigation. If you apply lower ppm N (i.e. 100 vs 200 ppm N) you are applying proportionally less NH<sub>4</sub>+P compared to 200 ppm N. During early season you may be applying MORE fertilizer during the life of the crop due to longer crop times and cool weather allowing more fertilizer uptake, while later in the summer the warm temperatures promote rapid growth and the plants don't take up as much NH<sub>4</sub>+P due to the rapid growth—which equals shorter stems. Always check the fertilizer label to understand the amount of NH<sub>4</sub> and P you are adding to maximize EARLY stem elongation. Application of high amounts of NH<sub>4</sub>+P late in the crop cycle creates weak stems!

### **Are you seeing fewer nodes?**

**Lisianthus are long-day plants.** To determine if there is a difference in node number, take 10-20 stems and count the number of leaf pairs below the first flower branch. Compare the same variety from early and late plantings to see if there is a difference in node number. There is usually a variability of 1-2 nodes within a planting date due to the variability in plant development. A difference of 3 or more nodes between planting dates can create that many more internodes, which will contribute 4+ in. difference in final stem length. Figure that each node (internode) provides about 1-2 additional inches of height depending on fertilizer program (see above).

**Plantings in June and early July experience the longest days of the year.** Depending on where you live this can be 15+ hours. When the daylengths are <13 hours, flowering is delayed and node count increases. When the plants are exposed to 14+ hours of daylength, flower initiation is promoted, and the number of nodes is reduced. If the young plant producer grows the plugs under >16 hours or uses night interruption lighting, then initiation is very rapid, resulting in a significantly reduced node count (very short stems).

Unfortunately, with sequential plantings in the late spring and early summer there is nothing you can do to minimize early induction (fewer nodes), since the daylength is what it is! Some growers may use 50% shade cloth for June and early July plants to reduce heat during early establishment, which can provide a “shorter” photoperiod, since the early morning and late afternoon light may be below the critical daylength to induce flowering.

Another strategy that some growers use is to *plant the different flowering groups*. The varieties in the different groups have different critical photoperiod when they are induced. The challenge is if you plant a “summer” variety too early in the season, flowering is very delayed, while planting a “spring” variety in the summer results in short stems. Unfortunately, the market is a wicked taskmaster and the most desired varieties may not be always available for the season you need to plant for harvest!

There is another interesting reason for short stems that may be involved in some limited cases. Most professional lisianthus plug producers have special techniques they use to prevent rosetting. These treatments also have the interesting side benefit of promoting longer stems. Always ask your plug producer if they are treating their plugs to prevent rosetting.