

## TECH TIP 2: GARDEN MUM CROWN BUDDING



*Growers who produce fall garden mums know that short days (well ... long nights, really ...) are the key to initiating flowering. For anyone growing in the northern US, mid to late September is usually when “natural short days” are achieved—when daylength is less than 12 hours.*

*However, daylength isn’t the only thing that can cause mums to initiate flowering. Cold night temperatures for a few days can cause premature flowering (a.k.a. crown budding) to occur. Preventing this from happening can be the difference between a high-quality mum crop and a small, finished plant that’s in color WAY too early and won’t make it to the fall when consumers want it.*

Whether you’re growing in a greenhouse or outside on a “mum pad,” two to three or more consecutive nights (depending on your varieties’ sensitivity) where temperatures dip into the mid to low 60s F or lower can trigger crown budding. Here are a few strategies that you can use to prevent crown budding or—if the worst should come to pass and crown budding occur—get your mums back on track.

**Avoid low-temperature stress.** First and foremost, avoid low-temperature stress. Keep an eye on the weather and change your greenhouse controller’s setpoints if a cold snap is coming through. Though we’re in summer and mums can *easily* withstand late-May and early June night temps without additional heat, you might need to kick the heaters back on for a couple of nights to curb crown budding.

**Avoid other stress factors.** Drought stress and withholding fertilizer can predispose mums to crown budding. The greater the stress your crops are under, the more likely they will be to prematurely initiate flowering. Think of it this way: if the variety you are growing could normally stay vegetative after four to five cold nights under ideal conditions, a hungry and/or thirsty mum will likely only be able to withstand one to two cold nights before crown budding.

**Corrective action.** If crown budding occurs despite your best efforts to prevent it using good culture and environment management, there are a couple of strategies you can use to get your crop back on track.

1. If you can catch them early, push them hard with an ammonia-based fertilizer. Give them several thorough, consecutive applications of 20-10-20 at 250+ ppm N (you can even do 20-20-

20, but do not use this more than once or twice). This should kick them back into vegetative growth, but plants should be monitored closely until normal growth resumes.

2. If the fertilizer strategy makes you a little nervous or your crop is well on its way to visible buds, an application of ethephon (Florel/Collate) will be the quickest way to stop flowering. This will also encourage additional branching and emergence of new flowering nodes, so your crop will recover with plenty of color to spare! Rates between 500–750 ppm are generally what's recommended, but ideal rates will vary across varieties. Check the culture info from your supplier, as some varieties are more sensitive to ethephon than others. Also, be sure to check your water quality before mixing and applying ethephon, as the pH of your spray water needs to be lowered to at least 4.5 to 5.0 in order to have any effect.