

GROWERTALKS

Features

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Garden Mum Production: Preventing 5 Problems

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Producing high-quality garden mums with minimal losses requires a solid plan and follow-through from your entire production team. Unfortunately, mum production tends to occur when many growers are looking to vacation time to recover from spring craziness and the burnout that inevitably occurs, so make sure to have plenty of monitoring programs and team members in place to keep a close eye on mum crops. A lot can go wrong with garden mums quickly and avoiding losses is critical to profitability.

Ball Technical Services experts have created multimedia resources for mum growers to take growers from start to finish with this important seasonal crop. Be sure to snap the QR codes at the end of the article for much more thorough information related to each of these topics.

Nutrition

Remember, garden mums are very heavy feeders and applying enough fertilizer through production so it's available when mums are ready to take off is the key to success. Having a solid nutrition plan also leads to strong, healthy plants that won't be susceptible to pests and diseases like weaker, stressed crops.

It's recommended to push mum crops with feed early in production with an ammonium-based fertilizer that will encourage branching and help mums fill out containers with that mounded habit consumers and landscapers want. Most growers will switch from the ammonium-based product to a nitrate-based feed as crops approach finish to help tone plants and avoid stretch. When using an ammonium-based fertilizer, remember that higher phosphorus can cause stretch, so best to keep it on the low side.

Controlled release fertilizers (CRFs) are often used, because they tend to be easier to apply than liquid, but you shouldn't just apply CRFs and assume they'll work. Be sure to monitor the effects and keep in mind some CRF products are highly sensitive to temperatures, while others are sensitive to moisture, and this impacts the time of release. CRFs can be highly successful if monitored, but if they release too soon, mums will be stunted, and if they release too quickly, salts can skyrocket.



Pythium

This is an annual problem, and you can find a lot of information on the disease and products to reduce your risk of Pythium and control it, but here are the basics. This root rot pathogen tends to arise due to poor sanitation practices, media already containing spores (work with reliable suppliers!) and reusing old media.

This is one where you need to pull plants out of pots and check roots regularly. Symptoms include brown discoloration of roots and the outer layer of the root sliding off, leaving behind a threadlike portion. If untreated, it advances to yellowing lower leaves, stem rot and complete plant collapse. If you see plants wilting during the day and recovering overnight, immediately check your roots.

Prevention is key with Pythium, so apply root-zone protectants about a week after transplanting liners and reapply as labels indicate, especially after rainfall in outdoor production. Damaged roots allow for infection to enter making it especially important to check them for desiccation, damage and discoloration.

Don't dry mums down too much, check soil moisture twice a day and be sure to monitor EC regularly. There are traditional chemistries and biocontrols to help avoid and manage Pythium, but they're all best when used preventatively.

Fusarium

Like Pythium, Fusarium tends to strike when plants are under stress. Unfortunately, this one most often occurs toward the end of production, just about when you're ready to ship. One way to differentiate Fusarium from Pythium in your garden mum crop is that the roots of symptomatic mums will appear to be mostly healthy. In addition, when Fusarium impacts mums, the entire plant canopy doesn't usually collapse, instead the wilting is more localized. You might also see reddish-brown lesions on stems near the soil line and pink or white mycelium coming out of the infection site.

Preventatively avoiding Fusarium is similar to Pythium—source clean growing media from a reputable supplier, use fresh media and sanitized containers. Avoiding crop stress is critical, as is good sanitation before and throughout garden mum production. Fusarium spores can also spread very quickly in splashing irrigation water and rain. Try to use drip or subirrigation instead of overhead watering.

Having a fungicide strategy is encouraged and employing it as soon as the crop canopy tightens and your mums are about half of their desired height is your best bet, but watch for the symptoms above and don't hesitate to apply fungicides at first signs of infection. For outdoor production, fungicides will need to be applied after storms (always follow label instructions) and there are active ingredients available to manage this disease.

Crown budding

Every year, Ball Technical Services receive photos from mum growers dealing with crown budding. Some years are much worse than others and this is primarily due to climate. Crown budding is the premature development of flower buds, and this is a concern because it leads to poor branching, undesirable plant habits and decaying flowers about the time crops are shipping out to wholesale customers. Obviously, this results in poor retail performance and dump (shrink).

Like mentioned above for the other challenges, prevention is critical, as is understanding what triggers crown budding. When temps drop below about 60 to 65F (15 to 18C) at night for a few days, plant response to this cold can lead to crown budding—whether those temperatures occurred in stock plants, liners or your young, finished crop. Spotting crown budding can be challenging, but look for the foliage in impacted plants to change from lobed leaves (like you'd expect in garden mums) to non-lobed or "strap" leaves.

Correcting the problem once it occurs can be challenging, so once again, prevention is the best route to take. Watch weather forecasts and kick the greenhouse heaters on when needed and plan outdoor production based on your climate and consider starting crops a bit later, if necessary, to avoid cold snaps. But, if crown budding happens, here are a couple strategies to employ.

If you know crown budding is in play, push your mums with an ammonia-based fertilizer. Use several consecutive applications of 20-10-20 at 250-plus ppm N (you can even do 20-20-20, but don't use this more than once or twice). This should encourage vegetative growth once again. Be sure to monitor mums closely until they begin growing normally again.

Another "trick" some growers use is to quickly apply ethephon products to stop flowering. This will also encourage additional branching and emergence of new flower nodes, so your crop will hopefully recover and come into color as expected. If trying this approach, be sure to talk to your mum supplier before applying ethephon because some varieties are more sensitive than others. They can also advise you on rates and ideal pH of your irrigation water because it will need to be lowered to at least 4.5 or 5 to enhance effects.

Chrysanthemum White Rust

This tends to be a regional concern, but no matter where you are in the U.S., it's a quarantinable disease according to the USDA, so you'll want to avoid it at all costs. If reported at your greenhouse, expect a visit from plant inspectors and disposal of all infected plants (and in some cases destruction of entire crops).

Chrysanthemum White Rust (CWR) is most common in the Northeast and Pacific Northwest in the U.S. and in Eastern Canada, and although suppliers of garden mum cuttings and liners produce clean stock (certified free of CWR), the disease can overwinter near your facility and impact your garden mum crops. Your best approach to avoid CWR is sourcing clean stock, eliminating alternative hosts in and near your facility (like Montauk daisies and last year's mums), disinfecting all beds that tend to stay wet, and spraying preventatively and consistently after planting using a rotation of active ingredients and FRAC codes, especially if you're in an at-risk area.

Symptoms of CWR are white to tan pustules on the underside of foliage (like most rusts) and it tends to impact young plant tissue and flowers. When you rub the pustules, you'll notice a dusty substance. If you suspect CWR, you must contact a state horticulture inspector immediately. **GT**

Find dozens of Tech On Demand videos, podcasts and documents covering your garden mum crop from start to finish—including detailed documents to help your team manage any crop challenge that might arise.

This Tech On Demand "at-risk crop" video focuses on Chrysanthemum White Rust and Fusarium. Dr. Will Healy details both diseases and offers strategies for prevention and control.