

CULTURAL TIPS

...for Garden Mums

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TRANSPLANTING...

Transplant rooted cuttings as soon as possible after arrival. Any delay in planting or excessive drying will restrict vegetative growth after transplanting and may cause premature budding.

Before you are ready to start planting, have your finished pots completely filled with media. Partially filled pots will wilt sooner and contribute to uneven plants. Make sure media is evenly moist throughout the entire pot, not just the top few inches. Never plant dry cuttings.

Do not bury the crowns of rooted cuttings. Keep soil moist for the first several weeks after transplanting to promote the vegetative growth. You may need to sprinkle your plants hourly for the first few days after moving outside to prevent any leaf burn and excessive wilting. Garden mums require a high light intensity for good quality, ideally in full sun. Maintain at least 6000 foot candles in growing area. Shading will increase plant stretch and the need for plant growth regulators.

FERTILIZATION...

Feed after transplanting with 250-300 ppm fertilizer containing a high percentage of ammonium nitrogen such as constant 20-10-20 or 20-20-20, adding 100 ppmN ammonium nitrate to the 20-10-20. Start alternating with calcium based fertilizer such as 15-0-15 after about 3 weeks, repeating it every 3rd-4th feeding. You should maintain a soil solution pH at 5.7-6.0. After flower buds reach pea size, reduce feed to 200 ppmN once a week, using calcium and potassium based fertilizers only. You may have to reapply 20-10-20 during extended periods of rain.

For garden mums grown with slow-release fertilizer choose one of the newer types on the market that is less likely to release solely on soil temperature. Use a 3-4 month release type at manufacturer's recommended rates. Slow release fertilizer at half rate could be used in combination with liquid feed. Use weekly soil test results to monitor pH and EC of your crop and adjust the feed program accordingly.

SPACING...

Spacing will vary from grower to grower, depending on finished pot size and your target sales market. For the best results we recommend that the foliage not touch. Proper spacing will prevent tall 'stovepipe' growth, yellow foliage, disease and unsaleable plants.

WATERING...

Drip tubes or drip tape is recommended instead of hand watering or overhead irrigation. Drip irrigation helps to keep foliage dry and prevents the spread of bacterial leaf spot.

During the first few weeks of growth, keep the plants evenly moist but not soaked. It is best to irrigate at sunrise or just before. Mums can tolerate some later afternoon wilt, but they should be watered thoroughly early the next morning.

Avoid fluctuations between too wet or too dry. Try to water the plants on a regular basis in order to prevent excessive drying. On the other hand over-watering will only cause root disease and a poor finished plant.

Avoid feeding wilted plants. Instead, use clear water until plants regain turgidity.

PINCHING...

Many garden mum varieties can be treated as no-pinch varieties if grown in a 6" or larger container. Smaller pots do not have sufficient time to develop and branch without a pinch. If a grower is more comfortable with doing a pinch, this is fine and can be done when planting the rooted cutting to save time and labor. When pinching, always do a "soft pinch" removing only 1/2" or less from the cutting tip. Pinching hard or pinching after July 15 may delay flowering.

PREMATURE BUDDING...

Early budding can be caused by extreme conditions such as too dry or too cool. In the North, very cold night temperatures in June could be a common cause of premature budding. Avoid moving plants outside too early. If premature budding occurs, feed plants 2-3 times with an ammonium-based fertilizer at 300 ppm N to bypass the buds with new vegetative growth.

GROWTH REGULATORS...

In most cases, if proper varieties are being used along with the correct schedule, no growth regulators are needed. Smaller finished products, such as market packs or 4", may benefit from the use of growth regulators. B-9 sprayed at 2500 to 5000 ppm will slow the growth and a Bonzi drench at 2-3 ppm will virtually stop all growth. The last PGR application should be no later than 4 weeks before first color. Excessive or late applications of growth regulators will delay flowering. Florel will significantly delay natural day flowering if applied after June 20th.

INSECTS...

Potential insect problems include aphids, caterpillars, mites, thrips leaf miners, and whiteflies. Always take the extra precaution of weekly scouting and prevention. The sooner the infestation is found, the fewer plants will be affected. Rotate insecticides and miticides to avoid resistance and control a wide range of pests and their development stages.

The following spray program can be used for mite and thrips control, using chemicals available in the US. Other chemical names would be used in Canada.

- Avid + Pylon tank mix
- Conserve + DuraGuard tank mix
- Citation + Mesurool tank mix
- Pedestal

The above combinations should be applied twice in a row and then should not be reapplied until at least two other insecticides with different modes of action are applied to avoid resistance build up.

Other recommended pesticides include:

- for spider mite control: Floramite, Hexygon, Judo, Ovation, Sammite
- for thrips control: Flagship, Orthene, Safari, Preclude
- for leafminers control: Azatin, Decathlon, Flagship, Safari
- for whitefly control: Distance, Endeavor, Flagship, Marathon II, Preclude, Safari, Tristar

When applying pesticides:

- Always experiment with any new chemical on a few plants before treating your entire crop.
- Always use label rates.
- Make sure these products are available for use and labeled for mums in your state or province.

DISEASES...

The most common disease problems on garden mums include: botrytis, pythium, rhizoctonia, fusarium and bacterial leaf spot.

Thorough monitoring of your crop, implementing an IPM program and prevention are the best defense options against disease problems. It is very important to use drip irrigation, sterilize production areas, remove weeds and use healthy plant material. This will reduce the need for chemical control of disease problems. Inspect roots periodically to determine plant health.

Chemical control could be very effective if quick diagnosis from the lab is performed and correct fungicides or bactericides are selected.

When applying pesticides:

- Always experiment with any new chemical on a few plants before treating your entire crop.
- Always use label rates.
- Make sure these products are available for use and labeled for mums in your state.

For issues concerning chrysanthemum white rust control and prevention go to:

http://www.aphis.usda.gov/plant_health/plant_pest_info.

TIP for ASTERS

Asters are particularly prone to Powdery Mildew and Rust. Preventative fungicides prove very beneficial.

NOTE: The cultural information presented here is drawn from experts in the field. Geographic location, water quality, differing greenhouse environments, mix used, and the desired size of the finished product can dramatically change what we are presenting here. Our intent is to offer suggestions, not "set programs".

... for Poinsettia Cuttings

GENERAL RULES OF THUMB: Poinsettias require enough growing time before short days to allow the green plant to fill out and size up.

Poinsettias require short days for coloring of the bracts. Naturally, the day becomes short enough to produce a finished crop sometime after Thanksgiving (Freedom Series would be earlier). The response time is the breeder's recommended time from beginning of short days to flowering. However, you **MUST** be sure that there is no light pollution, i.e. street lights, lights for workers in the greenhouse, car headlights from nearby highways, etc. Even a very small amount of light pollution can delay your crop. Please plan your cultural program carefully before ordering. **NOTE:** Snowcap, Monet Twilight, Strawberries 'n Cream, and Classic Red require heavier feeding.

POT SIZE	GROW TIME	TEMPERATURE	FERTILIZER	pH of MEDIA
4"	13-15 weeks	Under long days: 72° day 68° night	200-250 ppmN constant feed. Stop all fertilizer 2-3 weeks before shipping.	5.8-6.2
6"	15-17 weeks			
8"	17-20 weeks	Under short days: 68° day 66-68° night		

For more detailed information including pinching, height control, and specific feed formulations, Poinsettia Cultural Manual copies are available at no extra charge. Just give us a call. The Paul Ecke Ranch has a toll-free hotline 800-468-ECKE.

There is technical information available including cold growing of Poinsettias at: www.ecke.com/new1/poinsettias.asp

... for Cyclamen Liners

POT SIZE	GROW TIME	TEMPERATURE	FERTILIZER	pH of MEDIA
4"	14-18 weeks	62-65 °F	Start at 100 ppmN and gradually increase to maximum of 200 ppmN as plants mature. Over-fertilization may result in over-sized or floppy growth.	6.0-7.0
5"	16-20 weeks			
6"	19-23 weeks			

Select a porous media that drains well. It is extremely important that the liner be planted with corm at soil level. Planting too deep is a major cause of crop losses. Shade to provide a maximum of 4000 ft candles. Never let plants completely dry out. Keep media EC levels at about 1.2. Cyclamen are sensitive to elevated soluble salt levels. Allow leaching to occur when fertilizing to avoid root problems due to high salt levels.

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