Poinsettia Shipping and Postharvest Tips

Poinsettias are popular, colorful plants that appear in retail stores in November through the Christmas holiday. The value and overall quality of these beautiful plants can decrease with mishandling at both the grower and retailer levels. Paying attention to details before, during and after shipping will ensure that customers receive the best plants possible.

BEFORE SHIPPING

Fertilizer levels should be steadily reduced as the plants gradually reach full color and maturity. Relatively high salt levels at the end of production can lead to bract edge burn and root loss, especially if the media gets dry **(Photo 1)**. The goal is to have electrical conductivity (EC) levels below 1.2 mS/cm (in a saturated media extract, SME) when the plants get shipped. Fertilization should not be cut off completely (the nitrogen level in the fertilizer solution should be reduced to about 80 ppm N), as this can cause leaf chlorosis, nutrient deficiencies, and a possible rise in media pH. One or two clear water leaches right before shipping can be done to reduce fertilizer salt levels in the media.

Growers should primarily use calcium nitrate fertilizer types the last 3–4 weeks of finishing. Avoid high ammonium and phosphorus fertilizers as these can lead to overly soft bracts, low media pH and possible molybdenum deficiency. Plants may also experience ammonium toxicity if finished overly cool and with relatively high ammonium levels in the media. Finishing primarily with calcium nitrate (ex. Cal-Mag^{s} Plus) fertilizers has been shown to improve postharvest quality, help reduce bract edge burn and reduce the chances of ammonium toxicity.

Photo 1. Bract edge burn can be prevented by avoiding high media EC by using Cal-Mag® Plus fertilizers to maintain healthy roots.

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Bract edge burn can occur at the end of production and in the retail environment. Bract edge burn is caused by insufficient calcium uptake into the expanding bracts. It may occur when fertilizer salts in the media are reaching high levels and the plants get dry. While some varieties can be worse than others, plants grown very "soft" under warm temperatures, high relative humidity and high ammonium containing fertilizers are especially susceptible. Plants should be grown with optimum media EC and calcium levels; roots should be healthy and the greenhouse environment should be conducive to adequate plant transpiration and calcium uptake to help prevent bract edge burn. Many growers have success spraying solutions of calcium chloride dehydrate at 1 lb/100 gallon at weekly intervals beginning at first bract color. A spray adjuvant, such as CapSil®, is recommended to help reduce spray residue. High-quality calcium chloride dehydrate with low impurities is available at many greenhouse supplies companies.

LIGHT INTENSITY

For many varieties, finishing the last 7–10 days under moderately low light levels will prevent bract fading and possible bract burning. High light and bract fading can be a significant problem for growers in the southern United States. Sometimes pulling shade can be difficult since there may be crops in the same area under different stages of development. If possible, provide light levels around 2,500 f.c. (500 $\mu mol \cdot m^{-2} \cdot s^{-1}$ or 27 klux) or a maximum daily light integral (DLI) of 10 $mols \cdot m^{-2} \cdot d^{-1}$ for those varieties that are reaching maturity. Avoid dropping light levels too early during the crop cycle (during the bract expansion phase) as this will cause small bracts and poor cyathia. The key for great-looking pink and white colors is to reduce light intensity the last couple of weeks if needed.

TEMPERATURE

As the plants begin to mature, growers should drop temperatures to help tone the plants and prepare them for shipping. Sturdy, toned plants hold up much better in shipping and at retail. Know the varieties as some cultivars can be finished very cool, with average daily temperatures (ADT) dropping to 61–62 °F (16–17 °C) as early as late October (ex. Orion™ Early Red, Titan® Red.). Others prefer to be finished only moderately cool with final temperatures in the 65–66 °F (18–19 °C) ADT range (Whitestar™, Maren™, etc.). Cool temperatures at the end of production will enhance bract color on most colored varieties and help to retain cyathia, especially on those plants that need to be held before shipping. Some varieties can be held at as low as 56 °F the last few days; however, the chances of Botrytis and bract spotting caused by cold water increase under these continuous temperatures.

PACKAGING PLANTS

Plants should be watered thoroughly before sleeving and delivery. Make sure the foliage is dry before plants are placed in sleeves. Try to maintain moderate temperatures and low relative humidity. Sleeving in warm, sunny greenhouses with high relative humidity can lead to condensation, especially in plastic sleeves. Using perforated plastic or paper sleeves can help reduce moisture condensation within the sleeve during shipping. Make sure sleeves are large enough to extend a few inches above the top of the plant to fully protect the bracts when placed on carts or in boxes.

PACKAGING PLANTS

Disease prevention is important in delivering a quality product that will withstand the rigors of shipping and maintain appeal at retail. It is critical to clean old, dead leaves from each pot well before plants are ready to be sleeved. This can help prevent Botrytis spores from being disseminated into the air, infecting susceptible plants and germinating on the bracts in the sleeve.

If Botrytis infections are occur late in production, especially under tight finished spacing, spray the plants with a fungicide one to two weeks before shipping. Make sure to choose fungicides that are labeled for bracts in color and those that leave minimal residue. To minimize residue, it is generally a good idea to include a spray adjuvant, such as CapSil®, within the spray solution. Double-check the fungicide product to see if CapSil® is needed. Recommended late-season fungicide sprays for Botrytis control include Mural® and Palladium®. Spray these under the best possible environmental conditions that minimize burning and rapid drying (cloudy, cool conditions are best). Always conduct trials on a small set of plants before spraying the entire crop. Burning and residue will usually show up within 24–48 hours after spray applications.

Inspect roots regularly throughout the entire crop cycle. Growers should be proactive in addressing root issues before plants reach maturity. Apply a preventative fungicide drench if needed.

Botrytis on cyathia.

Botrytis on bracts.

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