Poinsettia postharvest quality

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Poinsettia postharvest quality, i.e. shelf life after production in the greenhouse, is strongly influenced by both preproduction cultural practices and postproduction handling.

Poinsettia are cold sensitive plants which are shipped during a cold, windy time of the year. Sleeving is absolutely necessary to prevent weather-related leaf and bract damage. However, as plants are sleeved, shipped and stored, stress related injuries can be equally damaging.

Common poinsettia production/postproduction related problems include: a) leaf epinasty, b) premature cyathia death, c) leaf drop and d) bract necrosis. Susceptibility to these problems varies among cultivars.

To limit damage after the plants leave the greenhouse, encourage the consumer to: a) limit the time plants spend in the sleeve, b) limit the time spent in the dark, c) check plants for adequate moisture levels immediately after unsleeving and d) avoid extreme temperatures. Long periods in sleeves and/or in the dark increase the likelihood of leaf drop. This condition is not reversible. Plants will recover from epinasty when the sleeves are removed and fresh air becomes available.

Production factors which significantly influence susceptibility to postharvest problems include the light/temperature environment and the fertilizer regiment.

Staby and Kofranek (1979) reported that high light/high temperature grown plants were generally inferior to plants grown under lower light/lower temperatures. Inferior plants suffered higher rates of leaf drop, leaf discoloration, cyathia death and bract abnormalities. After the desired bract size is attained (on about Dec. 1), the night temperature should be gradually lowered to intensify bract color and decrease postharvest problems. (Exact temperatures depend on the cultivars used.)

Fertilization is key to preventing postharvest leaf drop. Halt fertilization 1 to 2 weeks prior to harvest (Prince and Cunningham, 1988). Continued fertilization up to harvest or fertilization discontinued too soon, i.e. 3-4 weeks prior to harvest, was found to increase leaf drop of sleeved plants.

Bract necrosis can be prevented by using a well-balanced nitrogen fertilizer source. Bract necrosis is dramatically increased when 100% ammonium nitrogen is used as the nitrogen source (Nell and Barrett, 1985). Late applications of slow-release fertilizers were also found to increase bract necrosis in this study. Liquid feed programs give the grower more control over crop response and are less problematic. Slow release fertilizers incorporated into the medium at planting are also effective and can be supplemented with liquid fertilizers as needed.

Micronutrient availability is important in preventing postharvest leaf drop (Scott et al, 1982). Slow-release formulations are most desirable if micronutrients are incorporated at potting (i.e. fritted trace elements, FTE or MICROMAX). Soluble formulations (i.e. soluble trace elements, STEM or PERK) tend to leach, especially under acid conditions, resulting in micronutrient depletion later in the cropping cycle.

References:

Nell, Terril A. and James E. Barrett. 1985. *Nitrate-ammonium nitrogen ratio and fertilizer application method influence bract necrosis and growth of poinsettia.* **HortScience** 20(6):1130-1131.

Prince, Timothy A. and Maria S. Cunningham. 1988. *Leaf abscis-*

sion of poinsettias affected by prenarvest fertilization termination and sleeving stress. **HortScience** 23(6):1038-1039.

Scott, Lelia F., Thomas M. Blessington, and James A. Price. 1982. *Postharvest performance of poinsettia as affected by micronutrient source, storage, and cultivar.* **HortScience** 17(6):901-902.

Staby, George L. and A. M. Kofranek. 1979. *Production conditions as they affect harvest and postharvest characteristics of poinsettias.* **J. Amer. Soc. Hort. Sci.** 104(1):88-92.