Deliver Poinsettias the Consumer will Enjoy

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Postproduction performance of poinsettias depends on proper production practices and the careful handling of plants during transport, retail and consumer display. In addition, coordination between growers, retailers and consumers can improve the quality and enjoyment the consumer will receive from their holiday poinsettias.

Postproduction problems of poinsettias may include premature leaf, bract and cyathia (flower bud) drop, drooping of leaves and bracts (epinasty), leaf yellowing, browning of bract margins (bract edge burn) or mechanical injury to plants during handling.

Several factors that will help eliminate potential postproduction problems are outlined below.

I. Production Practices

Poinsettias require 5,000–6,000 foot-candles of light for best growth, proper bract color development and to prevent the premature loss of cyathia. The effect of production light intensity on cyathia drop in the postproduction environment is demonstrated in Figure 1.

Spacing plants too close together will reduce the light plants receive, thus promoting premature cyathia drop and early leaf yellowing. Proper spacing between plants should be 12 to 14 inches on center.

The nutritional regime for poinsettias is another major factor that not only affects plant quality at marketing but may influence leaf quality, leaf retention and bract edge burn during the postproduction phase. Plants should receive 200–300 ppm nitrogen from a complete soluble fertilizer at every watering.

Slow-release fertilizers are an option, but limited to a single application at planting using only materials with a 90–to 110–day release period. It is suggested that when using slow-release fertilizers, select a formulation containing minor elements or use supplemental liquid fertilizer containing minor elements on a regular basis. Most slow-release fertilizers contain 25% or more ammoniacal nitrogen.

The ratio of ammoniacal to nitrate nitrogen sources used on poinsettias can be a critical factor in producing high quality poinsettias. In early stages, fertilization should contain some ammoniacal nitrogen to promote growth. Poinsettias should be finished with 25–40% of the nitrogen in ammoniacal form. Excess ammoniacal nitrogen promotes leaf yellowing and bract edge burn.

Testing soil pH and soil soluble salt concentrations on a routine basis is highly recommended to monitor any potential problems. Generally, a pH of 5.8–6.3 is best for poinsettias.

It is acceptable for pH to go up during bract formation, as the increase in pH promotes calcium uptake. The lack of calcium is suspected in causing bract edge burn, however, further studies are needed to investigate this correlation.

Maintaining high fertilizer levels to the end of crop production have been associated with premature leaf abscission and bract edge burn. Therefore, terminating or reducing fertilizer during the final 2 week phase of the crop cycle to reduce soluble salts levels is recommended. Terminating fertilizer more than 2 weeks prior to shipping may cause leaves to yellow prematurely.

Plants should never be allowed to wilt as this may reduce bract size.

Maintaining the proper greenhouse and/or shadehouse environment will help eliminate potential problems. Providing adequate ventilation and low humidity conditions will minimize bract edge burn and help control disease problems.

II. Transport Conditions

Bracts need to be fully expanded and fully colored and cyathia just beginning to mature (show pollen) at time of shipping. Undeveloped bracts will not develop proper color once they are moved indoors.

Bract fading has been a significant problem on plants sold for early sales prior to proper bract development. Conversely, if plants are marketed too late after cyathia are fully mature, cyathia drop will increase and disease problems are more likely.

Proper preparation of plants for transport and handling is an important step that will influence how well plants acclimatize to the postproduction environment.

To prepare plants for transport, plants should be well watered and allowed to drain sufficiently to avoid moisture build up that may cause an
environment for potential disease problems during transport. Plants should then be sleeved and placed in boxes to protect the leaves and bracts from mechanical injury. Boxes should be placed as soon as possible into transport temperatures and not allowed to sit for long periods of time in the sun or greenhouse/shadehouse environment.

Transport temperature should be between 55 to 65°F degrees, and the shipping period should be short, preferably 3 days or less. Improper temperatures and long transport periods increase leaf and cyathia drop after plants are placed indoors, as illustrated in Figure 2.

Long shipping and high temperatures also promote bract edge burn, diseases and epinasty.

III. Proper Handling at the Retail Level

Remove plants from boxes and sleeves immediately upon arrival. Mechanical bending of leaf and bract petioles during sleeking causes a downward bending, causing some cultivars to have a 'droopy' appearance, referred to as epinasty.

Epinasty has not been a problem on 'Guthrie V-14 Glory' or 'Gross Supibibi,' but has been a severe problem on the Hegg types and can be a problem with 'Freedom.'

For sensitive cultivars, symptoms are worse when sleeved for long periods of time or stored in boxes or sleeves at temperatures above 65°F.

Inspect plants for mechanical injury, insect and disease problems. The growing medium moisture level should be checked and watered only if needed.

Plants should be stored in a lighted area at a temperature maintained at 65 to 70°F. Do not display plants in direct sunlight or in areas with drafts from heaters, air conditioners and open doors as these conditions can lead to premature leaf loss.

Most poinsettia cultivars look better under incandescent lights compared to fluorescent lights. Provide adequate spacing between plants during display to allow room for recovery from epinasty, to avoid any further mechanical injury and to allow adequate light to leaves. Care tags should be included with all plants.

It is of the utmost importance that growers work with buyers and inform them about proper handling procedures. Many excellent quality plants have been destroyed at retail outlets due to improper handling.

FIGURE 2: The effect of extended shipping periods on 'Freedom' poinsettia leaf drop after 30 days and cyathia drop after 15 days indoors.

FIGURE 3: Percent leaf drop after 30 days indoors for several poinsettia varieties maintained at 3 interior light levels.

IV. Proper Handling at the Consumer Level

Check soil moisture level and water only if needed. Poinsettias are sensitive to overwatering, so only water throughout the home display when the soil is beginning to dry.

As with retail conditions, do not place plants in direct sunlight or in areas with drafts. Poinsettias perform best at cool indoor temperatures ranging between 65 to 70°F.

Interior light levels should be as high as possible, preferably at least 100 foot-candles. High indoor light levels will reduce leaf drop as Figure 3 depicts.

Delivering poinsettias the consumer will enjoy is certainly an attainable goal as long as plants are cared for properly throughout the entire production and postproduction phases. Continued consumer satisfaction will ensure a strong market for poinsettias, adding beauty to many a Christmas celebration.