

Common Problems In Northern Poinsettia Production

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This is just a quick reference for some of the most common poinsettia production problems in the cooler North American climates such as Minnesota. These problems probably constitute about 75% of all the problems that growers experience with poinsettias.

Calcium Deficiency: Many new poinsettia cultivars have difficulty taking up calcium. High temperature and/or high humidity can decrease calcium uptake by limiting transpiration (water loss from the leaves). In addition, high levels of ammonium, magnesium and/or potassium can also reduce calcium uptake by competing with calcium for uptake into the root. Preventative treatments and solutions for calcium deficiency are shown below:

Reduce the Possibility of Calcium deficiency by:

- 1) Using fertilizers that contain calcium.
- 2) Spraying calcium nitrate (or chloride) on foliage till wet (0.8-1.9 pounds calcium nitrate per 100 gallons of water (1.3-2.6 ounces per 10 gallons)) from the 3rd week of September to the 3-4th week of October. Spray on a weekly basis.

Root Rot: Root rot is a common problem in poinsettia production when fungicides are not regularly used. Root rot is an infestation of either or both Pythium and Rhizoctonia fungi. These pathogens are water fungi; i.e. wet conditions promote their proliferation. Heavy soils, soluble salts burn and/or fungus gnat infestation increase the

incidence of root rot by providing an environment conducive to root rot proliferation or by providing a point of entry for root rot fungi. Pythium attacks from the roots tip and moves up the root system into the stem. In contrast, Rhizoctonia attacks at where the stem touches the media and moves both up and down the stem.

Reduce the Possibility of Root Rot by:

- 1) Not keeping media wet.
- 2) Applying fungicides for control of both Pythium and Rhizoctonia every 3-4 weeks.
- 3) Rotating fungicides to limit fungicide resistance.

Pythium Control	Rhizoctonia Control
Subdue (1/2 ounce/ 100 gallons)	Cleary's 3336 (8 oz/ 100 gallons)
Banrot (8 oz/100 gallons)	Banrot (8 oz/100 gallons)
Truban (8oz/100 gallons)	Terraclor (8 oz/100 gallons)

Note: always check the label for recommended rates as these rates are based on WP formulations only.

Bract Expansion: Bracts can often be smaller than desired. Leaves that will become bracts expand during the last 2 weeks of October and early November. Leaf/bract expansion increases as temperature increases to about 74-76°F. Therefore, cool days or nights will reduce bract size.

Get bigger bracts by:

- 1) Some of the best quality bracts are produced when poinsettias are grown at constant 68°F

during the last 2 weeks of October and the first week of November. Growing warmer will increase bract size still further.

Bract Coloring: Bract coloring occurs during the latter half of October and beginning of November. Red pigmentation in bracts increases as light intensity increases and as the average temperature decreases. Therefore, you will have the brightest bracts when temperatures are dropped after bract expansion and light levels are high.

Brighten Bracts by:

- 1) Decreasing temperature the last 2 weeks of production (beginning of November) to 58-62°F.
- 2) Growing plants with as much light as possible during the end of October and early November.

Early Flower Initiation: Lateral shoots that have few leaves <3 leaves, will have reduced leaf and bract size when marketed, i.e. reduced quality. Lateral shoots must have 3-4 leaves (>1" in size) or more when lateral shoots initiate flowers. Most current poinsettia cultivars initiate flowers from September 8th-15th.

Make Sure Plants Do Not Initiate Flower Too Early By:

- 1) Pinch plants no later than three weeks prior to flower initiation (September 8).
- 2) Maintain plant temperatures at 68-74°F to encourage leaf unfolding. This may

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mean that air temperatures have to be increased to 72°F on cloudy days or decreased to 70°F on sunny days to maintain the plant temperature in the desired range.

- 3) If lateral shoots do not have a sufficient leaf number on September 1, then provide night interruption lighting until lateral shoots do have the sufficient leaf number before you allow plants to receive short-days.

Inadequate Nutrition:

Poinsettias are a 'high feed' requiring crop. Poinsettias are commonly underfed early in development and are overfed late in development. This results in insufficient leaf and bract size, poor plant color and reduced postharvest life.

Make Sure Plants Have Adequate Nutrition By:

- 1) Feeding poinsettias with 400-600 ppm nitrogen and potassium the first fertilization (second watering). Reduce levels to 300-400 ppm until recommended media nutrient levels are achieved thereafter. Use primarily ammonium based fertilizers during August (20-10-20), ammonium plus nitrate based nitrogen (15-5-15 Cal Mag) during September, and primarily nitrate based fertilizer (15-0-15) during October.

Lateral Shoot Breakage: Lateral shoots can break off of the mother shoot on the bench or when plants are moved later in the season after lateral shoot and bract weight increases.

Limit Late Shoot Breakage:

- 1) This phenomenon is due to the environment that stock plants are grown under. In particular, the higher the temperature and the lower the light that stock plants are grown under, the more lateral shoot breakage will occur on cuttings produced from the stock plants. Therefore, purchase cuttings from a source where stock plants are grown in a cooler and well-lighted environment.
- 2) Ring plants to support lateral shoots if you suspect you may have late stem breakage.

Insufficient Lateral shoot

Number: Insufficient lateral shoot number typically results from insufficient leaf number below the pinch, and/or excessively high day temperatures during cutting production resulting in few axillary buds in the leaf axils.

Increase Lateral Shoot Number By:

- 1) Making sure that there are 20% more leaves left after the pinch than the final lateral shoot number that is desired.
- 2) Purchase cuttings from a propagator that has good day temperature control. Inspect cuttings when they arrive to insure that they have axillary buds in the leaf axils.
- 3) Try applying a suggested new Florel application procedures which have increased lateral shoot number with some growers. Experiment by applying Florel (300-500 ppm) 3 days prior to pinching, pinch, then reapply Florel (300-500 ppm) 5-7 days later.

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