e-GRO Alert



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Preventing Late Season Poinsettia Problems

Poinsettias are a high-value fall crop that can often run into problems during the last few weeks of the production cycle. There are a variety of environmental, nutritional, pest, and disease production challenges that can occur. Part of Best Management Practices is being able to recognize the primary problems that can occur in order to prevent them.

Figure 1. Leaf scorch can occur if the plants dry down too far. (© Brian Whipker)

Water Management

Water management is an important balance required to promote optimal growth, and as a result, it is important not to overwater or underwater plants. Underwatering can result in leaf scorch (Fig. 1), lower leaf loss, and marginal necrosis (Fig. 2). In contrast, overwatering can result in a variety of other problems, including *Pythium* root rot. Symptoms of *Pythium* root rot include wilting caused by a lack of water uptake, due to desiccated roots (Fig. 3). A simple way to diagnose *Pythium* is to remove the root ball

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from the pot and evaluate the roots for brown/desiccated roots (Fig. 4). It is always a good idea to submit a sample for ID to a lab to confirm your diagnosis.

It is important to target proper water management in poinsettia production to avoid either overwatering or underwatering. Poinsettias should be adequately irrigated up to level 4 but also allowed to dry down to a moisture level of 2 on the 1-5 moisture scale. Training staff to lift pots to assess irrigation needs is especially important late in the season. This is especially important with wood fiber-based substrates due to the top layer drying out to the point of visually indicating the need to irrigate, while the rest of the pot is still saturated. Picking up the pot is the best method for determining the irrigation status of the crop. During the second half of production, plant biomass accumulation slows, temperatures drop, and day length shortens, creating conditions that often lead to oversaturated root zones.

Proper Spacing

Plant spacing is a critical cultural practice that directly influences plant shape and profitability. While it is important to maximize plants per area, if plants are overcrowded, it may result in lower foliage leaf loss due to limited light reaching the lower foliage (Fig. 5). Additionally, plants will stretch to compete for light, which can lead to more brittle stems compared to properly spaced plants. Maintaining proper plant spacing is essential to promoting visually appealing plants, which can also reduce pest and disease pressure that can be associated with overcrowded canopies when the plants are in color.

Whiteflies

Whiteflies can be a problematic pest of poinsettias. The initial sign of a problem is the movement of adults when the leaf canopy is disturbed. Adult whiteflies can be observed congregating on the undersides of leaves or as chlorotic speckling from feeding damage (Fig. 6). Whiteflies can rapidly reproduce under warm, humid greenhouse conditions. Whiteflies feed by piercing plant tissue and

Figure 2. Lower leaf loss or desiccation is commonly observed after a dry-down event.(© Brian Whipker)

Figure 3. Plants impacted by *Pythium* will often exhibit wilting whenever the pot is saturated due to a lack of roots for proper water uptake. (© Brian Whipker)

extracting phloem sap, which weakens the plant and promotes the development of sooty mold on honeydew deposits. Management begins with early detection; yellow sticky cards and routine scouting are essential.

Magnesium Deficiency

One common nutritional issue that can develop is a magnesium (Mg) deficiency. It can easily develop with the use of 20-10-20 in areas that lack Mg in their water source, especially when the Mg contribution from any dolomitic limestone leaches out of the pot over time. With the recent shift to more wood fiber-based substrates, these blends have a naturally higher pH, so less dolomitic lime may be blended into the mix. This may result in observing Mg deficiency earlier in the season due to an even lower initial Mg contribution from the lime.

Magnesium deficiency symptoms begin as interveinal chlorosis on the lower foliage. Over time, necrotic spotting may develop (Fig. 7). Magnesium can be supplied through a variety of ways, including irrigation water with Mg carbonate, water-soluble fertilizer, or dolomitic limestone. It is important to conduct irrigation water analysis to determine how much Mg is being supplied through the irrigation water and to supplement the remaining required Mg with supplemental Mg by either Mg sulfate or a Cal-Mag fertilizer. For growers utilizing fertilizers that do not include Mg (such as 20-10-20) and do not have adequate Mg in their water supply, a monthly application of Epsom salts at 1 pound per 100 gallons can be used to green up plants and avoid deficiencies.

Late-season Mg deficiencies can appear in the upper foliage just below the bracts. It is difficult to visually distinguish between a late-season Mg deficiency and an Fe deficiency. A pH test will help determine if a high substrate pH condition is inducing an Fe problem, or one can take a leaf tissue sample to help confirm the problem.

Figure 4. When diagnosing *Pythium*, examining the roots for root desiccation and the outer layer will often separate from the inner layer when pulled. (© Brian Whipker)

Figure 5. When plants are held too tightly together, light cannot penetrate the lower canopy, often resulting in lower leaf loss. (© Brian Whipker)

Bract Edge Burn

Over the last 20 years, poinsettia breeding companies have successfully screened new cultivars for susceptibility to bract edge burn (BEB). This has dramatically diminished the incidence of BEB for growers.

Bract edge burn is a common symptom of calcium (Ca) deficiency, typically appearing as necrotic margins on poinsettia bracts (Fig. 8). Calcium plays a critical role in cell wall formation, and insufficient levels can compromise tissue integrity. Ca deficiency may result from inadequate fertility, environmental limitations, or nutrient antagonism. A primary corrective strategy is to increase Ca availability, either through Cal-Mag fertilizers or by verifying sufficient Ca concentrations in irrigation water. Calcium is immobile in plant tissue and transported via mass flow. Calcium uptake depends on active transpiration conditions, such as high relative humidity or poor air circulation, which can significantly reduce Ca delivery to developing bracts. A preventive spray rate of 200-400 ppm Ca of calcium chloride ($CaCl_2$) can be applied weekly from the first color to the week of shipment. It is essential to use laboratory-grade or reagent-grade calcium chloride, as fertilizer-grade salts may contain impurities that can lead to phytotoxicity.

Conclusion

Producing high-quality poinsettias requires balancing many factors, including fertility, environmental conditions, and pest and disease pressures. However, taking an active approach can prevent many problems before they occur. Consistent monitoring and scouting are important to changing growing practices to ensure high-quality plants in time for the holiday season.

Figure 6. Whiteflies can be observed on the leaf undersides. (© Brian Whipker)

Figure 7. Magnesium deficiency is initially observed as lower leaf interveinal chlorosis. (© Brian Whipker)

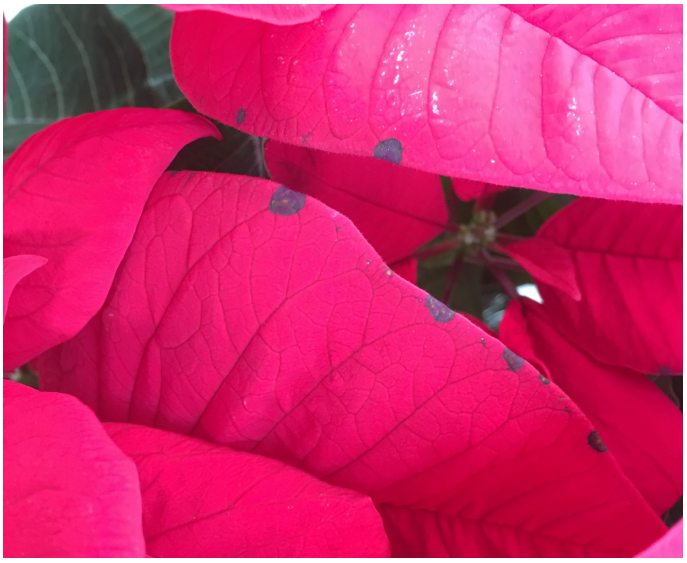

Figure 8. Calcium is an important element for cell wall development. When deficient, marginal necrosis is commonly observed. (© Brian Whipker)

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