Late Season Pest Management on Poinsettias

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Late in the season, growers need to be on the alert for potential outbreaks of *Botrytis*, powdery mildew, root rots and isolated "hot spots" of whiteflies.

Botrytis

Growers are familiar with the gray sporulation of *Botrytis* on weakened and dead plant tissues. *Botrytis cinerea* or Gray Mold, may damage the stems, leave, and bracts of poinsettia and is of concern when bracts are in full color.

Infection may begin as tan or brown water-soaked lesions. Infected bracts may develop a purplish color and symptoms of *Botrytis* may be confused with bract necrosis. Under humid conditions, gray sporulation is usually seen on infected tissues.

Leaves and bracts are more susceptible to *Botrytis* infection when they have been weakened or stressed. Stresses may include injury from pesticides, growth regulators, air pollutants or even mechanical bruising.

Infection by *Botrytis* is favored by free moisture, high humidity and temperatures between 55° to 65°F. During warmer than "average" fall seasons, growers are less likely to heat and ventilate their greenhouses in the evening. Growers will be particularly vulnerable to *Botrytis* outbreaks as excessive condensation forms and drips onto the sensitive bracts. Proper use of heat and ventilation is needed to reduce humidity levels and prevent condensation. Using horizontal air flow helps reduce cold spots where condensation is more likely to occur.

Adequate plant spacing will improve air circulation in the plant canopy and make it easier to detect any isolated infec-

tions. Practice good sanitation to reduce inoculum levels. Remove any infected leaves or bracts and all dead plant material, including debris and weeds, from the greenhouse.

Apply fungicides before the bracts are showing color. Spraying mature bracts may result in the presence of an objectionable residue or injury to the bracts. The *New England Floricultural Crop Pest Management...Guide* recommends the following fungicides: Chipco 26019 50 WP, Cleary's 3336-F, Exotherm-Termil, Ornalin FL and Zyban 75 WP. **Note**: Some cultivars may be sensitive to certain fungicides. See label information for details.

Powdery Mildew

Powdery Mildew may occur when poinsettia bracts are in color. White patches up to one-half inch in diameter may be seen on the bracts or the upper or lower leaf surface. Materials labeled for powdery mildew control on poinsettias include thiophanate-methyl containing materials such as Cleary's 3336F or WP, Domain F, and Fungo Flo. Thiophanate materials in combination with mancozeb (Zyban) are also available. For more information, consult the previous CGNL issue (#175) for the article *Watch for Powdery Mildew on Poinsettia*.

Root rots

Root rot caused by *Pythium* may be more common on poinsettias as they mature. Avoiding root stresses late in the production cycle will discourage *Pythium*. High soluble salt levels (above 2.5 mmhos/cm, saturated paste extract) and water stress encourages the development of *Pythium*. Letting the plants get "too dry" and then watering will wound young roots so they are more vulnerable to attack by *Pythium*. Mortality of poinsettias inoculated with *Pythium* increases as soluble salt levels increase. Poinsettias that do survive low levels of *Pythium* root rot are stunted and difficult to market.

Growers need to keep populations of fungus gnats and shore flies, both vectors of *Pythium* spores, below "tolerance levels". Monitor by placing yellow sticky cards horizontally, instead of vertically, to more effectively track population trends. A "tolerance level" of more than 10 to 15 fungus gnats per week per card should be of concern and signal that treatment may be needed.

Root rots caused by *Thielaviopsis* may still be of concern for growers, especially if they are using soil-based growing media. Low temperatures (60°F) and high pH (6.4 or above), favor the development of *Thielaviopsis*. Banrot, a broad spectrum fungicide, will manage both *Pythium* and *Thielaviopsis*.

Whiteflies

Good whitefly management is dependent upon monitoring for whiteflies early in the production cycle. Heavy populations of whiteflies late in the season are much more difficult to manage than early in the season. Whitefly populations late in the season will depend upon a number of factors including how whitefly-free the cuttings were when they were eceived, the effectiveness of monitoring and treatments. In addition, early frosts will tend to drive down populations of whiteflies outside and reduce whitefly entry into the greenhouse.

Late in the season, growers may still discover an isolated "hot spot" of whitefly activity. Smokes and aerosols are the safest choice for treatment at this time. However, smokes and aerosols are most effective against **adult** whiteflies. Treat before the adults have begun to lay eggs.

Note: To evaluate the effectiveness of your treatment program, follow these steps:

1. Inspect yellow sticky cards (YSC) to determine adult population trends and hot spots of activity.

2. Treat "hot spots".

3. Replace YSC and inspect cards after three to four days to evaluate your treatments against adult WF.

4. After spraying, inspect the leaves of a few "indicators" to look for the nearly mature red-eyed nymphs. Depending upon the temperature, adults will emerge from this stage in five to 10 days and additional spot treatments may then be needed.

Continue your pest management monitoring efforts and spot treatments to ensure a healthy and marketable poinsettia crop. Pest management is best done early in the production cycle, so keep notes of when and where you discovered particular problems to better plan your strategies for next season.

References

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