

# Floriculture IPM Notes

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## Current Situation...

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For poinsettias, this has been a fairly quiet year as far as diseases and insects are concerned. There were only a very few cases of out-of-the-ordinary populations of **whitefly**, and there were no known detections of **Q-biotype** whitefly on poinsettia. However, there was a recent detection of Q-biotype on hibiscus in the northeast. It is important to always be suspicious of persistent whitefly populations that are not managed by the previously effective insecticides (e.g., Distance, Marathon, etc.). Keep alert for the Q-biotype on spring crops as well. If a whitefly population is not being controlled, contact your local extension agent for recommendations and consider having the biotype of the population determined. Correctly determining if you are or are not dealing with a Q-biotype population will help you correctly choose your management strategies.

Whitefly eggs and nymphs were also found on *Euphorbia* 'Diamond Frost' plants that were planted in a combination with poinsettia. For those of you growing this lovely combination, keep this in mind next season when scouting and managing whiteflies.

The winter months are good months for **spring cleaning** – cleaning your greenhouse to be ready for spring. Remove all dead plant debris and soil and clear out all weeds and infested or sick leftovers. Also, this quiet time is a good time to tidy your pesticide storage areas; double check for any changes in the registration status of your products. For New



Whitefly eggs and nymphs were found on *Euphorbia* 'Diamond Frost' planted in combination with poinsettia. Photo Dan Gilein

York, all currently registered products can be found on the Cornell PIMS site (<http://pmp.cce.cornell.edu/pims/>), or contact your local extension agent for assistance. New Jersey recommendations can be found at: <http://www.rcrc.rutgers.edu/pubs/publication.asp?pid=E038>

**Fusarium root rot** and **Botrytis cankers** have been seen on geranium stock plants. For *Fusarium* root rot, avoid keeping the plants too wet and avoid overfertilization. To manage *Botrytis*, keep the relative humidity low, promptly remove dead plant debris, and if necessary treat with fungicides such as Decree, Medallion, chlorothalonil (e.g., Daconil), iprodione (e.g., Chipco 26GT, 26019, Sextant), copper (e.g., Kocide, Phyton 27, Camelot), mancozeb (e.g. Protect, Dithane), or strobilurins (e.g., Compass and Heritage).

Skeletonized foliage caused by **fungus gnat larvae** was seen on *Heliopsis* 'Summer Sun'. Typically fungus gnats are only found feeding on roots and crowns, but like in this case, if leaves are close to the growing media and accessible, the larvae will feast on foliage as well.



Skeletonized foliage caused by fungus gnat larvae on *Heliopsis* 'Summer Sun'. Photo Dan Gilrein

**Pseudomonas leaf spot** was found on *Primula*, which caused dark, water-soaked spots on the foliage. Another bacterial leaf spot disease was seen on *Hiemalis begonia*, caused by ***Xanthomonas axonopodis* pv. *begoniae***. The symptoms of this disease were dark brown round spots and wedges with speckled margins on the leaves. To manage these bacterial spots, discard diseased plants and provide conditions that will reduce relative humidity and prolonged periods of leaf wetness. Copper materials can help to slow disease spread.



*Xanthomonas* leaf spot disease on *Hiemalis begonia*. Photo Maria Tobiasz



*Pseudomonas* leaf spot on *Primula*. Photo Maria Tobiasz

Brown cankers on the base of the stem caused by ***Rhizoctonia*** were seen on begonia cuttings. Prevent *Rhizoctonia* infection by using good sanitation practices and treat if a problem exists. Use fungicides such as Terrachlor, Medallion, Chipco 26019, or Heritage. Some suppression will be provided by Cleary's 3336, OHP 6672, or Banrot.

## Winter Pest Roundup

Dan Gilrein, Extension Entomologist, Cornell Cooperative Extension of Suffolk County

In addition to the mild weather, the other good news this fall is that no Q-biotype whiteflies have been detected in several samples sent for analysis. Generally, whitefly populations have been low and the few problems reported are mostly spotty with only low numbers on some varieties. At least in New York, where Judo and Safari are not yet registered, it is a helpful reprieve from the stressful cases seen last year in poinsettias.

We also have another efficacy trial for Q-biotype underway and can report that weekly sprays with 1% M-Pede or the 8 fl oz rate of Avid were fairly effective for controlling our heavy whitefly infestations. We are still seeing some edge burn with the M-Pede, but less than observed at the 2% rate, so we'll be repeating some of the work using 0.5% and 0.25% rates to see if they maintain efficacy while providing an additional margin of safety to the plants. At least early in production, when coverage is likely to be better, it might make

sense to use M-Pede at low rates to control even low numbers that may be present. Since we are seeing some encouraging results from our work with releases of *Eretmocerus* parasites for control of whiteflies, M-Pede would be helpful as a compatible product where biological control is used.

Judo note. While it may be too late for this poinsettia season, I have been working with OHP and NYDEC on a 24(c) registration for Judo in New York State. The NY registration has been delayed pending addition of a bee warning statement on the label, but we have requested a greenhouse-use only approval until the label change comes through. We'll let you know as soon as the 24(c) is approved. Judo has also been an effective miticide for spider, cyclamen and broad mites and it has translaminar activity, so will be a helpful addition to our growing list of miticides (most of which are not effective on the tarsonemids, i.e. cyclamen and broad mites). Please note that Judo applications sometimes cause injury (phytotoxicity) to certain plants; the label recommends avoiding use on florist geranium (*Pelargonium* spp.), ferns, English ivy (*Hedera helix*), alstroemeria or impatiens. Always test new products on a small scale first before applying to a new crop.

Easter lilies. Soon it will be time to start Easter lilies. Every year I have questions concerning bulb mite control and sometimes managing fungus gnats on this crop. The two may be related; in our own simple benchtop tests we found that the bulb mites did not attack healthy portions of bulb scales, but readily attacked cut, bruised or otherwise damaged parts where they had the option. This suggests that keeping fungus gnat larvae under control may also help prevent establishment of bulb mites, or at least it may be less likely for the two to work together to destroy your crop. The time to think about fungus gnat control is NOW: it takes about 2 ½ weeks for a generation to develop – drench plants not being sold with an IGR such as Citation, Adept (not on poinsettia, hibiscus or Rieger begonia), Azatin/Ornazin, or Distance. Drench with Marathon or Pylon (note plant cautions on the Pylon label) or a sprench

with TriStar can also be used. If your yellow sticky cards indicate the presence of fungus gnats when lilies are being planted, it may be a good idea to drench the crop preventively. If using Marathon, I suggest waiting until there is good root growth to take advantage of the systemic action in case aphids are around or came in with the bulbs (crescentmarked lily aphid is one possible hitchhiker). DuraGuard drench is the only option I know of for control of bulb mites; Kelthane has been discontinued and while it may still be available for a short time it is not labeled for bulb mite or for use as a drench or dip treatment.

Sprenching. A sort of spray + drench hybrid, some of the products listed above are mainly to be applied to the upper layer of media (e.g. Citation, Distance, Adept, TriStar) and not a thorough drench as though watering the plant. Make sure the media is moderately moist and not saturated, then spray the surface with a calibrated amount per pot ('one Mississippi, two Mississippi, ....') that just wets the upper layer. I like to use one low-pressure (20 psi) single-fan nozzle that directs the material right to the media surface. If sprenching closely spaced pots, use a wide (80 – 120 degrees) even-flow nozzle (output at the ends of the fan is the same as in the middle; some nozzles discharge a higher volume in the center of the fan). If fungus gnat populations are well-established deep in the pot and lower root zone, a more thorough drench with Marathon, Pylon or Azatin/Ornazin might be in order.

Shore flies. Most of the treatments for fungus gnats are probably not working equally well against shore flies. If their numbers start to build, first address wet areas and algae buildup. We are hoping to establish hunter flies (a predator) in some ranges to help keep shore flies under control.

Clean-up time. This is our usual time to call for general clean-up in the greenhouse. Whiteflies, if present at all, should only be a memory along with the poinsettias. Check for weeds and get rid of them before late winter or spring crops are started. Some growers keep stock over, which is a common source of aphids, thrips and other pests. Remove and bag unneeded blooms that might attract or harbor thrips, put up a few sticky cards to

detect flying pests and have a near-zero tolerance for insects and mites likely to become troublesome later on. Very low numbers now can easily multiply to problems by March and April when it is much more difficult to manage them. As new plants arrive, especially vegetatively propagated material, watch carefully for early signs of infestation or damage.

## Greenhouse Research Summary

Steven K. Rettke, Rutgers Cooperative Extension

The following article contains a review of a research summary presented at the OFA Short Course Conference in Columbus, Ohio during July 2006.

### Evaluation of Fascination™ on Poinsettia

Matthew G. Blanchard, Graduate Student and Erik S. Runkle, Assistant Professor, Department of Horticulture, Michigan State University, East Lansing, MI.

#### Overview

During poinsettia production various plant growth regulators (PGR's) are typically used to control stem elongation. A potential negative side effect of PGR usage is the reduction of bract size. This is especially possible when PGR's are applied late in the season or when an overdose occurs.

*Fascination* (Valent USA) is the brand name of a product that has been available for many years and is composed of the naturally occurring plant hormones, gibberellins and cytokinin. A couple of years ago this material received an EPA label registration for use on poinsettia crops. It has proven to be an effective material for increasing poinsettia stem elongation and bract size, especially after an overdose of a PGR. It also provides a counteracting option for those growers who have the tendency to produce consistently short and compact poinsettia crops each year.

The objectives of the Michigan State University experiments were to determine the effects of *Fascination* rates and timing on poinsettia stem elongation and bract area size. In addition, a study was performed comparing the affects of *Fascination* applications to poinsettia plants provided with and without a Bonzi (growth retardant) drench.

#### Experimental Parameters

All of the *Fascination* applications were single treatments on the poinsettia variety 'Freedom Red', grown in 6-inch containers at 68 F. and at a 9-hour photoperiod using black cloth. All spray treatments contained a wetting agent (Capsil).

The first experiment used two different foliar spray rates (3 or 6ppm of *Fascination*) applied at five different times during crop production (10 days before bract color, at first bract color, and 10, 20, and 30 days after bract color). The effects on stem elongation (final plant height) were compared to the untreated control and the different spray rates and timing.

The second experiment used three different foliar spray rates (3, 5, or 10 ppm of *Fascination*) applied at three different times after a 2-ppm Bonzi drench rate (applied at first bract color). The effects of both poinsettia stem elongation (final plant height) and bract area size were compared to untreated controls (with and without Bonzi) and the different spray rates and timing.

#### Experimental Results

The first experiment clearly indicated that maximum stem elongation (final plant height) occurred with spray treatments applied at 10 days after first bract color with both 3 and 6-ppm rates. The final plant height of the untreated control was 14.5 inches compared to 16.4 inches for the *Fascination* (3-ppm) treated plants applied 10-days after first bract color.

The second experiment also clearly indicated that maximum stem elongation (final plant height) occurred with *Fascination* spray treatments applied 10-days after a Bonzi drench (2-ppm). The final plant heights of the untreated controls were 12.7 inches (Bonzi treated) and 14.6 inches (without Bonzi). The *Fascination* (5-ppm) spray

treated plants achieved a final height of 14.5 inches and essentially cancelled the effect of the Bonzi growth retardant.

The second experiment also showed poinsettia bract area size effects on plants with different *Fascination* rates and timings after receiving a Bonzi drench (2-ppm). The results indicated that plants achieving the greatest bract area size were those receiving *Fascination* sprays 30-days after a Bonzi drench. The average bract area sizes of the untreated controls were 145 inches<sup>2</sup> (Bonzi treated) and 215 inches<sup>2</sup> (without Bonzi). The *Fascination* (5-ppm) spray treated plants achieved an average bract area size of 195 inches<sup>2</sup> and hence, increased bract area by nearly 75% compared to the control plants with the Bonzi drench.

#### Experimental Conclusions

Poinsettia growers can increase plant height by 1 to 2 inches by spraying a single application of *Fascination* at the 3 to 5-ppm rate. Maximum plant height increases are achieved when sprays are timed 7 to 10 days after initial bract color is observed. This spray timing will also promote some increase in bract area. To achieve the greatest increase in bract area size, spray *Fascination* 20 to 30 days after initial bract color. This later spray timing results in limited stem elongation.

#### Important Precautions to Consider

The optimum *Fascination* rates and timing depends on desired expectations and specific physical and environmental factors. Various cultural practices including temperature, light conditions, potting media, fertilization and watering will all affect the final impact from different *Fascination* spray rates. Dissimilarities in response can also occur with different poinsettia varieties. To determine optimum use rates, conduct trials on a small number of plants under actual use conditions using the lowest indicated rate.

The application of *Fascination* to poinsettia during the period of time between start of short days to two weeks after first bract color can promote delayed coloration. Therefore, increased bench time can postpone proposed shipping dates. Furthermore, when *Fascination*

increases bract expansion the dilution of leaf pigmentation causes the color of bracts to appear lighter. As bract maturity continues to develop with time the color will also improve. However, often times the treated bracts will never reach the same dark coloration as non-sprayed plants. Multiple applications will exacerbate the lightening of bract color.

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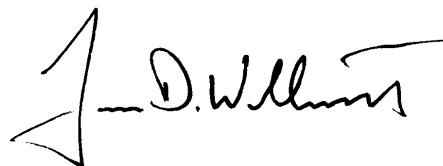
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