PEST ALERT: Q BIOTYPE WHITEFLY

Problem
Growers in Oregon should be aware of a potential new pest, the Q biotype whitefly. This whitefly is less susceptible to many of the insecticides currently used to manage the A and B biotypes of whitefly, *Bemesia tabaci* [= *Bemesia argentifolii*]. An ongoing industry-coordinated survey has resulted in identification of *B. tabaci* in several states in the United States with more state pest detections likely. Its presence has so far been confirmed in Arizona, California, Georgia, Michigan, New York, and Oregon. Q biotype was first detected in Arizona in December of 2004 as part of a resistance management monitoring program. Samples were taken from cotton and various crops including poinsettia. This whitefly biotype is thought to have originated in the Mediterranean region and has been associated with whitefly control problems. The strain of whiteflies isolated from poinsettia in Arizona was determined to be resistant to the IGR pyriproxyfen (Distance), having reduced susceptibility to the IGR buprofezin (Talus) and a reduced susceptibility to the neonicotinoid insecticides imidacloprid (Marathon), acetamiprid (TriStar) and thiamethoxam (Flagship).

Strategy
While not all growers with whiteflies may have Q biotype whitefly, during poinsettia production this season it will be important for growers to be aware of their whitefly populations and be ready to modify their management of these pests should they encounter problems. Growers in Europe and infested areas of the U.S. report an ability to manage this pest using a combination of tactics and an emphasis on resistance management based on the current knowledge of resistance of the Q biotype. Growers should emphasize IPM principles including pest monitoring, prevention, and sanitation. They should implement multiple management tactics such as cultural, physical, biological, and chemical controls. A "Management Program for Whiteflies on Propagated Ornamentals with an Emphasis on the Q-biotype" is available online:

Pest Monitoring
Growers should be scouting to determine the status of their whitefly populations. Images of various stages of several whitefly species can be found at this website:
http://www.mrec.ifas.ufl.edu/LSO/Whitelfies.htm
If growers suspect they might have Q biotype whitefly, they can send samples to one of several labs listed at the Technical Advisory Committee (TAC) website (Contact lab before sending samples for protocol and rates): http://www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm

Prevention
Wherever possible exclude introduction of this new biotype by inspecting new plant material in a secure space where whiteflies cannot escape. As these types of whiteflies generally do not overwinter outdoors in the Pacific Northwest, growers may be able to eliminate whitefly problems by thoroughly cleaning out greenhouses and breaking the whitefly life cycle. Empty out all whitefly hosts including poinsettia, hibiscus, ivy, gerbera daisy, lantana, verbena, garden chrysanthemum, salvia and mandevilla. Many common weeds are whitefly hosts including: creeping woodsorrel (*Oxalis corniculata*), bittercress (*Cardamine oligosperma*), northern willowherb (*Epilobium ciliatum*), and spurge (*Chamaesyce maculata*). A host-free period will reduce the likelihood of whitefly carryover from one crop to the next. It is extremely important to reduce the number of whitefly that enter the supply chain including retailers and interiorscapes as these sites have fewer control options and often maintain host plants year round.

Biological control
Biological control provides an additional tool to manage whitefly pests. One of the most useful websites for further information on using this tactic is, *A Grower's Guide to Using Biological Control for Silverleaf Whitefly on Poinsettias in the Northeast United States*: http://www.umass.edu/umext/floriculture/fact_sheets/pest_management/slwf.html

Chemical control
Chemical control should include thorough plant coverage (whiteflies stay on the leaf underside), properly chosen pesticide rotations, and follow-up evaluation. At this time greenhouse trials are underway to determine susceptibility of Q biotype to materials registered for whitefly control in ornamentals. Results from these trials will be posted at the TAC website. Not all Q biotypes will respond the same to insecticides. Although the strain detected in Arizona had reduced susceptibility to the neonicotinoids: imidacloprid, thiamethoxam, and acetamiprid, this has not been confirmed in potted plants. It has been concluded the neonicotinoid insecticide dinotefurans is unaffected by the resistance. The technical advisory committee emphasizes the following principles:

- The greater the number of whiteflies present when an application is made, the greater the chance that at least one individual might possess the ability to survive the treatment
- The more frequently a given pesticide or mode of action is used, the greater the potential for developing a problem
- The longer the residual activity of a given pesticide, the greater the selection pressure
- ". . . the ultimate goal is not zero whiteflies throughout the production cycle but zero whiteflies on the plant material leaving the facility." Your most effective pesticide should be applied to major whitefly host plants as close to the date of shipment as possible.

Resistance and reduced susceptibility may show up as a gradual reduction in the length of residual control or increased numbers of whitefly surviving an insecticide application. If the insecticide is properly applied and is not providing control, change to another material with a different mode of action. Additional information on chemical control and resistance management of Q biotype can be found at the TAC website: http://www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm

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