



# Q-BIOTYPE

## What Does It Mean?

**A** NEW study shows growers may be keeping a watchful eye on the Q-biotype situation, but many have treatment practices in place that may inadvertently encourage resistance, not fight it.

The Q-2006 study was a collaboration of key industry organizations: OFA – an Association of Floriculture Professionals, Society of America Florists (SAF), American Nursery and Landscape Association (ANLA), Florida Nursery Growers and Landscape Association (FNGLA), USDA's IR-4 and Valent Professional Products.

"There's a lot of talk, and frankly, some fear-driven confusion in the industry about Q-biotype," says Dr. Joe Chamberlin, field market development specialist with Valent. "Some growers are worrying too much; some may not be taking it seriously enough. The study collaborators saw this survey as a great opportunity to understand what is going on in growers' minds, and help get the smartest

scouting, testing and treatment practices in place to address Q-biotype and overall resistance."

Dr. Lance Osborne, University of Florida and co-leader of the industry's Q-biotype Task Force, and Jim Bethke, University of California-Riverside, reviewed the study results and offered recommendations to growers at an OFA Short Course meeting in July.

"Many results were as we expected," Osborne says. "Overall, growers are doing a good job in managing their operation against resistance. But several trends emerged that showed us there are still everyday practices that could be improved."

### Manage Q, Manage Resistance

According to the Q-2006 study, more than 85 percent of respondents claimed they were "somewhat" or "very" concerned about Q-biotype. Though researchers want growers to pay attention to the Q-biotype issue, many see its emergence as an exam-

**New study reveals growers' concerns. Leading researchers provide rational and reassuring advice.**

### Online Q-Biotype Resources:

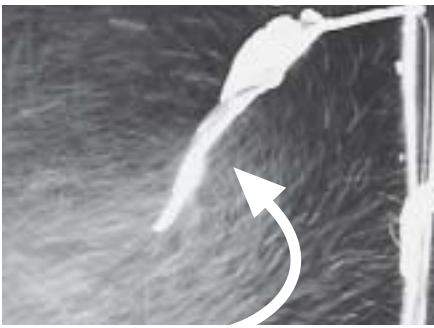
Researchers urge growers not to overreact on Q-biotype, but to keep up-to-date on new developments on the pest. Several informational sites have been created to keep growers informed on this important issue:

[www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm#Documents](http://www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm#Documents):

The multi-university Q-biotype Whitefly Task Force lists all Q-biotype-related research and recommendations on how growers can fight the pest. Growers can review university trials on efficacy, speed of knockdown and translaminar activity as well as monitor evolving recommendations.

[www.Q-biotypewhiteflies.com](http://www.Q-biotypewhiteflies.com):

This central, online clearinghouse features links to key information for Q-biotype news, events and research. Site will include a regular "Ask the Expert" question/answer column with recommendations from the industry's leading experts. The full Q-2006 Grower Perception study and researcher recommendations are also posted on the site.



**Is your sprayer getting the job done?  
Under the leaves?  
ESS HAS YOU COVERED.**

- 4.5 x greater coverage, including under leaf coverage with 8.5 x less overspray
- Optimal insect & disease control
- Save up to 60% on chemicals and up to 50% in labor time

For Details Circle No. 28 on Postcard or at [www.greenhousegrower.com](http://www.greenhousegrower.com)

Call Today for a Free Copy of "What Growers Should Know About Air-Assisted Electrostatic Spraying"

**MAXCHARGE™**  
with ceramic

[www.maxcharge.com](http://www.maxcharge.com)

For more information call  
Electrostatic Spraying Systems today:  
800-213-0518 or 706-769-0025



ple of the greater resistance management issue facing the industry.

"Today we have a Q that is manageable, but if growers don't put resistance management at the center of their treatment program, we could be dealing with a more resistant Q tomorrow, or even a different and more resistant biotype," Bethke says. "Growers shouldn't panic or be overly concerned. Just pay close attention to unusual outbreaks and know where to go for information and which resources are best equipped to help your operation."

Researchers encourage growers to stay up-to-date on any news about the Q-biotype through trade journals and Web sites dedicated to the issue.

**Scout And Test Today To Keep Problems Away**

Scouting for unusual outbreaks can help growers improve their resistance management practices without significant change to their operation or costs.

More than 80 percent of respondents said they scout for whiteflies at least weekly (54 percent weekly, 28 percent daily) – a practice applauded by both researchers.

"A good weekly scouting should be manageable within most operations," Osborne says. "Most whitefly populations do not develop significantly over the course of seven days, which allows you to keep a good handle on emerging pests."

The researchers were concerned, however, with the nearly 20 percent of growers who stretch their scouting efforts beyond the one-week mark. He encourages scouts to stay dedicated to their tasks and to check at least weekly for whitefly activity.

And both researchers agree: the best scout is well trained – often by university Extension programs – and in contact with the plants daily. When scouting for whiteflies, trainers encourage scouts to disturb the plant to encourage flight and be sure to check the underside of the leaves where both the adult and nymph whiteflies reside.

Since it is impossible to visually differentiate among whitefly biotypes, researchers agree that proper testing is a

**Knock Out Powdery Mildew**



Gerbera daisies treated with Actinovate® SP



Gerbera Daisies untreated & infected with powdery mildew

Widely known as a powerful weapon as a drench against root diseases such as *Pythium*, *Fusarium*, *Rhizoctonia* and *Phytophthora*, **Actinovate® SP** is also a highly effective biological fungicide for suppression and control of powdery mildew. It can be used alone or in rotation with chemical fungicides. Actinovate® SP is a 100% soluble powder and will not clog injectors, mist sprayers or other machinery. It is also labeled for other leaf damaging fungi such as downy mildew and *Botrytis*.

- Contains the patented microorganism *Streptomyces lydicus* WYEC 108
- Safe to use
- 1 hour REI as a spray
- 10 years of research
- OMRI listed

**Now Labeled In California!**



For more information or to inquire about availability contact your local supplier or call (888) 261-4731. Or, visit our web site at [www.naturalindustries.com](http://www.naturalindustries.com)



For Details Circle No. 47 on Postcard or at [www.greenhousegrower.com](http://www.greenhousegrower.com)

## PEST MANAGEMENT

### Q-BIOTYPE

valuable tool to help growers determine whether the Q-biotype is the root cause of a whitefly control problem. Fewer than 10 percent of respondents said they would test for Q-biotype at the first signs of resistance; many (35 percent) would simply increase their insecticide use.

"Without proper testing, I can't tell the difference between Q and other strains," Osborne says. "I'm confident scouts can tell apart the major whitefly

species, but it's almost at the point we want growers to assume they have a resistant strain of the whitefly, get it tested for Q-biotype immediately and treat it appropriately."

### Use Proven Products In Rotation

As the seasons begin for such highly susceptible crops like poinsettia, what are the best treatment options for the grower hoping to prevent or fight Q-biotype? Both researchers recommend growers work closely with a trusted source to choose a rotation of treatments and chemistries that may be used throughout the entire crop cycle.

Many growers seem to be embracing the idea of rotation. Nearly two-thirds (64 percent) of respondents claim they used the same chemistry no more than three times within a given crop cycle. Bethke recommends a maximum of 21 consecutive days with the same chemistry. He says sometimes resistance is further encouraged by growers who mistakenly think they are changing modes of action when they rotate products.

"Just because you are rotating products, don't assume you are rotating chemistries," Bethke says. "Work with an Extension agent to ensure you are incorporating a full range of chemistries and maintaining good management practices."

Most respondents in the study ranked "overall efficacy" (77 percent) and "length of residual" (66 percent) as their top attributes when selecting a treatment for whiteflies. Bethke says a

# Water. Food. Light. Space...



## ...one BOOM that DELIVERS it all.

With an ITS boom, watering is just the beginning. Savvy owners like yourself have increased the value of their ITS systems by using them for spraying, lighting, transport and more.

**Monorail Trolley Carts:** When space is tight, you'll save time and money by hanging a cart to the ITS overhead rails. The lightweight trolley is easy to assemble and connect, but tough enough to move a dozen flats between bays or connected greenhouses with little vibration.

**Chemical Spraying:** Whether you're looking for broad coverage or small, specialized applications, you'll get easy, consistent and dependable results by attaching a chemical injector to your ITS Boom System.

**Targeted Lighting:** The ITS boom is ideal for increasing light to photoperiod-sensitive crops. Lights can be attached to the irrigator to run at night, triggering or delaying blooms as needed. When bench time to market is critical, ITS has it under control.

**ITS**  
IRRIGATION SYSTEMS  
(866) 868-1238

**Solaris**  
SOLUTIONS & APPLIANCE GROUP  
A Division of McKinley Company

### Q-2006: Study White Paper

The group developed a white paper on the study results, complete with recommendations from Osborne and Bethke on how growers can improve their operations in fighting Q-biotype. The full paper is available for download at [www.Q-biotypewhiteflies.com](http://www.Q-biotypewhiteflies.com).

thorough and complete kill is critical in whitefly treatment, but growers should also consider translaminar activity – an important attribute when treating whiteflies that dwell on the underside of leaves.

"A translaminar product or a good systemic should be one of the first products they should look for to effectively address whiteflies," Bethke says.

Chamberlin says university trial data should serve as the cornerstone to developing a sound IPM program. He encourages growers to look to products that have consistently performed well in university trials.

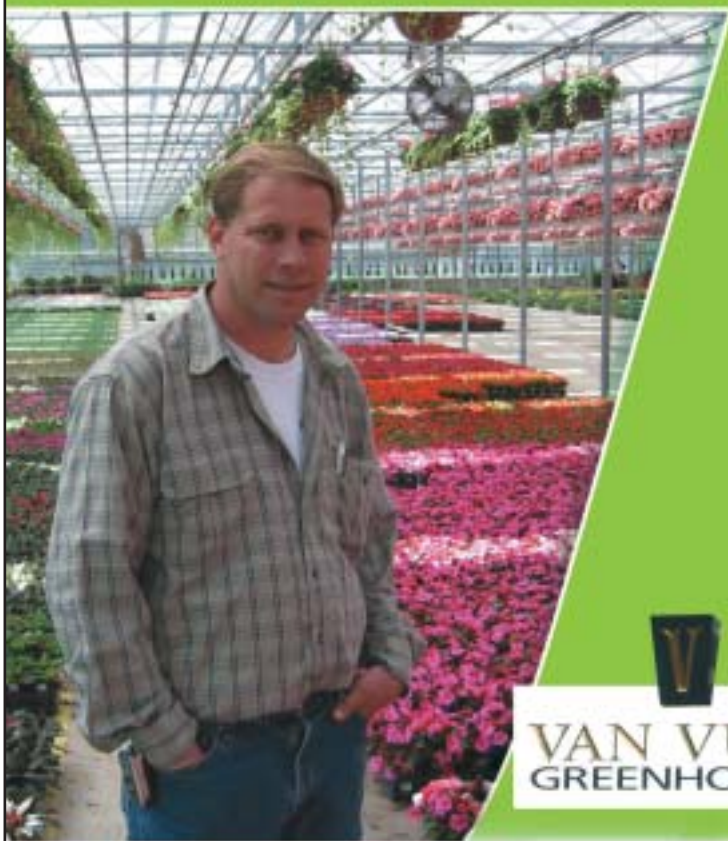
"Several products have worked very well against the Q in university trials," says Chamberlin. "Safari has been highly effective as a soil drench when tested against Q on poinsettia, and a number of products have been consistent performers when applied as foliar

For Details Circle No. 42 on Postcard or at [www.greenhousegrower.com](http://www.greenhousegrower.com)

# Jiffy®

Let's grow together

## Expand Your Success with CAREFREE PLUG



"Liners in CareFree rooted in 1 week less time while the finished plants were 2 weeks earlier, compact with more breaks and better color. CareFree plugs are easy to use with automatic transplanters."

- Van Vugt Greenhouses

  
[www.jiffypot.com](http://www.jiffypot.com)

1 800 323-1047  
Tel: 1-419-660-1177  
Fax: 1-419-660-1188

## PEST MANAGEMENT

### Q-BIOTYPE

sprays, including Avid, Judo, Safari, Sanmite and TriStar. As always, coverage is key with foliar sprays, and products with translaminar activity should be considered in dense crop canopies.

"The most important thing is to not rely on that one best product for control of Q, but to instead rotate products with differing modes of action. Fortunately, the products I have mentioned are drawn from four different IRAC mode of action classes. This

### Mode Of Action Classifications

The Insecticide Resistance Action Committee (IRAC) is providing an online tool to help growers, Extension staff and crop protection professionals choose modes of action for crops.

Located at [www.irac-online.org/resources/moa.asp](http://www.irac-online.org/resources/moa.asp), the IRAC



eClassification: An Interactive Mode Of Action (MOA) Tool explores the IRAC Mode Of Action Scheme.

The tool allows users to search by pesticide group, chemical class or active ingredient. Active ingredients are listed under the chemical class they belong to and by subgroup.

There are also links to MOA classification documents, including a whitefly MOA classification poster.

means that at the present time, growers are in a good position to put together an effective resistance management program for Q."

Growers can see the full university trials of Q-biotype treatments at

<http://www.mrec.ifas.ufl.edu/LSO/bemisialbemisia.htm>

GG