

**WHITEFLIES:**

**'B' or 'Q'**

**Does it Make a Difference**

**OFA**

**Conference**

**L.S. Osborne & Scott Ludwig**

**July 9, 2006**

# **Status of Q-biotype Whitefly in Ornamentals**

# **Imminent Threat or Tempest in a Tea Pot?**

# IMMINENT

- Some say this is simply **HYPE** to obtain research funds...
- At this point in time the Q has been reported to be more tolerant of many pesticides that we commonly use.
- The Q and the B biotypes **ARE** major but **MANAGEBLE** threats.
- We are talking about the **SAME** species.

**IMMINENT**

**We Should Be Concerned About**

**PESITICIDE RESISTANCE**

**Irrespective of Biotype!**

# Whitefly History

- Whiteflies from the genus *Bemisia*:
  - have caused problems for more than a decade.
  - form a complex of species and/or biotypes .
- The most common whitefly is *Bemisia argentifolii* (silverleaf whitefly).
- *Bemisia argentifolii* = *Bemisia tabaci* (biotype B)

# B-biotype



# B-biotype





# B-biotype



Mandevilla

# Q-biotype



**Only way to tell the difference is with time consuming biochemical methods.**

# Whitefly History

- Prior to the 1980s the most common whitefly was Greenhouse whitefly.
- The reason B-biotype became established was a combination of its natural reproductive ability and its ability to develop resistance to insecticides.
- The implementation of IPM systems that combined new more targeted chemistries allowed for the successful control of B-biotype (i.e. Marathon and Distance).

# Whitefly History

- The Q-biotype was originally found in the Iberian peninsula (Spain & Mediterranean), but has since spread.
- Potential US impact on:
  - Cotton – sticky fiber and virus
  - Specialty Food Crops - virus
  - Ornamentals – aesthetic damage and trade.

# What are the real Q issues?

- **Resistance development (all biotypes)**
- Regulation of pests already widely distributed – at the subspecies level (biotypes or strains).
- Movement of pests on plant material and the REACTION by other commodities.

# Resistance

- Q-biotype has demonstrated resistance to over 30 active ingredients world wide.

# Pesticides

**% Reliance = Resistance**

**This doesn't mean you have to  
use less effective methods  
instead of pesticides.**

**Use them in conjunction with  
pesticides!**



**We don't want resistant  
whiteflies no matter  
what biotype!**

**In fact, a resistant strain of the B-biotype  
could be more dangerous than the Q-  
biotype**

# B-biotype

- Lays many more eggs than Q.
- Causes noticeable damage to plants at very low densities which the Q doesn't.
- Evidence that B can out-compete Q when insecticides aren't used (or when 'unresisted' insecticides used?).

# Organic vs. conventional crops

- In the Arava Valley (Israel);  
biotype survey was conducted  
during 2004 – 2005.
- Greenhouse organic peppers,  
cucumbers and melons – **B.**
- Conventional greenhouses –  
Mostly **Q**

# What Can Growers Do?

- Pay attention to information distributed by the propagators, media, pesticide companies and/or University scientists.
- Implement **I**NSECTICIDE **R**ESISTANCE **M**ANAGEMENT PROGRAMS

# IRM

# **WARNING!!!**

- **Spinosad (Conserve) pulled from market (cole crop transplants) in Georgia by Dow because of misuse and resistance development in Diamond Back Moths-detected in another state.**
- **Dupont stopped Section 18 registration of a compound for similar reasons.**

# What are the real issues?

- Resistance development (all biotypes)
- Regulation of pests already widely distributed – at the subspecies level (biotypes or strains).
- Movement of pests on plant material and the REACTION by other commodities.

# Zero Tolerance

Attempts to eradicate almost never work and have consequences.

# RESISTANCE

# Bemisia tabaci Q-biotype – Current Status

- APHIS will not regulate.
- No states have **currently** indicated they will quarantine if Q is found especially if identification is achieved anonymously.

**This allows us to manage RESISTANCE!**



# What are the real issues?

- **Resistance development (all biotypes)**
- **Regulation of pests already widely distributed – at the subspecies level (biotypes or strains).**
- **Movement of pests on plant material and the REACTION by other commodities.**

# STATES IN WHICH THE Q-BIOTYPE HAS BEEN FOUND

- Alabama
- Arizona
- California
- Connecticut
- Florida
- Georgia
- Illinois
- Indiana
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- New Hampshire
- New Jersey
- New York
- North Carolina
- Oregon
- Pennsylvania
- South Carolina
- Vermont

# Movement of Plant Material

- This will continue at or above current levels no matter what other commodities say.
- This is not without risk and everyone is looking at us to see how we manage this risk and the Q-biotype.
- We need to work to prevent excessive and unrealistic regulation.

**Whitefly Problems?**

**GET HELP!**

**Identification and Management  
See the Handouts and Survey**

# **SURVEY**

**A link will be  
available soon!**

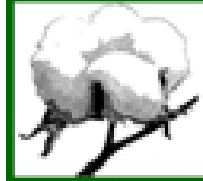
[MREC.IFAS.UFL.EDU/LSO](http://MREC.IFAS.UFL.EDU/LSO)

Or search GOOGLE  
IPM Foliage Plants



UNIVERSITY OF  
**FLORIDA**

IFAS EXTENSION



**SPDN**

**Southern Plant Diagnostic Network**

**IPM** Integrated Pest Management  
**Florida**



Fresh  
Florida

*Division of*  
**PLANT INDUSTRY**

*Protection through Detection*  
Florida Department of Agriculture & Consumer Services





**Thank you!**