



UNIVERSITY OF  
FLORIDA

E X T E N S I O N

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# SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

September 15, 2006

**The passage of Tropical Storm Ernesto on August 30, 2006 left growers across South Florida breathing a collective sigh of relief.** Originally forecast to come ashore as a hurricane, Ernesto proved to be little more than a prolonged rain event that dropped up to five inches of rain in some areas.

**Ernesto also seems to have spelled an end to the relatively dry weather that South Florida had experienced for much of the summer.** Since the storm many areas have seen near daily rainfall and some areas have received in excess of 10 inches during the past few weeks.

**Temperatures have been at or a degree or two below normal with most locations reaching into the 90's on a daily basis.** Nighttime temperatures have been warm mostly in the 70's.

**Field preparation and planting is in full swing across South Florida.** Advanced plantings around Ruskin look good with good fruit set reported. Around Homestead, field preparation for fall and winter plantings is picking up while harvest of okra continues. Fieldwork and planting is continuing between rain showers with most areas on schedule although some disruptions have been reported.

## FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Hours Below Certain Temperature (hours)							
	Min	Max		40°F	45°F	50°F	55°F	60°F	65°F	70°F	75°F
<b>Balm</b>											
8/24 – 9/14//06	<b>66.2</b>	<b>91.4</b>	<b>5.98</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>10.8</b>	<b>93.1</b>
<b>Ft Lauderdale</b>											
8/24 – 9/14//06	<b>71.2</b>	<b>93.5</b>	<b>10.27</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>19.3</b>
<b>Fort Pierce</b>											
8/24 – 9/14//06	<b>69.0</b>	<b>91.2</b>	<b>4.85</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>15.9</b>
<b>Homestead</b>											
8/24 – 9/14//06	<b>71.4</b>	<b>90.3</b>	<b>8.96</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>11.0</b>
<b>Immokalee</b>											
8/24 – 9/14//06	<b>71.0</b>	<b>94.3</b>	<b>6.14</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>11.6</b>

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**The short-term forecast from the National Weather Service in Miami indicates that the week end will feature typical summertime convection that combined with high precipitable moisture will favor the development of numerous showers and thunder showers especially over interior and east coast locations.** Models showing a bit of a drying trend as we move into next week and rainfall should be near normal for this time of year. For additional information, visit the National Weather Service in Miami website at <http://www.srh.noaa.gov/mfl/newpage/index.html>

## **Insects**

### **Whiteflies**

**Growers and scouts around Immokalee are reporting scattered whitefly adults showing up in early plantings.** There are some indications that populations may be higher than normal for this early in the season possibly as a result of the dry conditions that prevailed much of the summer.

**Reports indicate that growers in the Ruskin area are already battling whiteflies in fall plantings.** Respondents note that some TYLCV is already showing up in tomatoes.

Below are the current whitefly control recommendations from IFAS. **Note** these recommendations have been revised since last spring

### **Recommendations for Management of Whiteflies, Begomovirus, and Insecticide Resistance for Florida Vegetable Production**

#### **A. Crop Hygiene.**

Field hygiene should be a high priority and should be included as an integral part of the overall strategy for managing whitefly populations, TYLCV incidence, and insecticide resistance. These practices will help reduce the onset of the initial infestation of whitefly, **both biotype B and biotype Q (if present)**, and lower the initial infestation level during the cropping period.

- 1. Establish a minimum two-month crop free period during the summer, preferably from at least mid-June to mid-August.**
- 2. Use a correct crop destruction technique, which includes destruction of existing whitefly populations in addition to the physical destruction of the crop.**
  - a. Promptly and efficiently destroy all vegetable crops **within 5 days of final harvest** to maximally decrease whitefly numbers and sources of plant begomoviruses like TYLCV.
  - b. Use a contact desiccant (“burn down”) herbicide in conjunction with a heavy application of oil (not less than 3 % emulsion) and a non-ionic adjuvant to destroy crop plants and to quickly kill whiteflies.
  - c. Time burn down sprays to avoid crop destruction during windy periods, especially when prevailing winds are blowing whiteflies toward adjacent plantings.
  - d. Destroy crops block by block as harvest is completed rather than waiting and destroying the entire field at one time.

## **B. Other Cultural Control Practices.**

Reduce overall whitefly populations, **both biotype B and biotype Q (if present)**, by strictly adhering to cultural practices.

### **1. Use proper pre-planting practices.**

a. Plant whitefly and virus-free transplants.

- 1) Do not grow vegetable transplants and vegetatively propagated ornamental plants (i.e. hibiscus, poinsettia, etc.) at the same location, especially if bringing in plant materials from other areas of the US or outside the US.
- 2) Isolate vegetable transplants and ornamental plants if both are produced in the same location.
- 3) Do not work with or manipulate vegetable transplants and ornamental plants at the same time.
- 4) Practice worker isolation between vegetable transplants and ornamental crops.
- 5) Avoid yellow clothing or utensils as these attract whitefly adults.
- 6) Cover all vents and other openings with whitefly resistant screening. Use double doors with positive pressure. Cover roofs with UV absorbing films.

b. Delay planting new fall crops as long as possible.

c. Do not plant new crops near or adjacent to old, infested crops.

d. Use determinant varieties of grape tomatoes to avoid extended crop season.

e. Use TYLCV resistant tomato cultivars (see additional information below for list) where possible and appropriate, especially during historically critical periods of virus pressure. Whitefly control must continue even with use of TYLCV resistant cultivars because these cultivars are able to carry the virus.

f. Use TYLCV resistant pepper cultivars (see additional information below for list) when growing pepper and tomato in close proximity.

g. Use ultraviolet light reflective (aluminum) mulch on plantings that are historically most susceptible to whitefly infestation and TYLCV infection.

### **2. Use proper post-planting practices.**

a. Apply an effective insecticide to kill whitefly adults prior to cultural manipulations such as pruning, tying, etc.

b. Rogue tomato plants with symptoms of TYLCV at least until second tie. Plants should be treated for whitefly adults prior to roguing and, if nymphs are present, should be removed from the field, preferably in plastic bags, and disposed of as far from production fields as possible.

c. Manage weeds within crops to minimize interference with spraying and to eliminate alternative whitefly and virus host plants.

d. Dispose of cull tomatoes as far from production fields as possible. If dumped in pastures for cattle feeding, the fruit should be spread instead of dumped in a large pile to encourage consumption by cattle. The fields should then be monitored for germination of tomato seedlings and, if present, they should be controlled by mowing or with herbicides.

e. Avoid u-pick or pin-hooking operations unless effective whitefly control measures are continued.

f. Destroy old crops within 5 days after harvest, destroy whitefly infested abandoned crops, and control volunteer plants with a desiccant herbicide and oil.

### **C. Insecticidal Control Practices.**

#### **1. Use a proper whitefly insecticide program. *Follow the label!***

a. On transplants in the production facility, do not use a neonicotinoid insecticide if biotype Q is present. If biotype B is present, apply a neonicotinoid **one time** 7-10 days before shipping. Use products in other chemical classes, including Fulfill, soap, etc. before this time.

b. Use neonicotinoids in the field **only during the first six weeks of the crop**, thus leaving a neonicotinoid-free period at the end of the crop.

c. As control of whitefly nymphs diminishes following soil drenches of the neonicotinoid insecticide or after more than six weeks following transplanting, use rotations of insecticides of other chemical classes including insecticides effective against biotype Q. Consult the Cooperative Extension Service for the latest recommendations.

d. Use selective rather than broad-spectrum control products where possible to conserve natural enemies and enhance biological control.

e. Do not apply insecticides on weeds on field perimeters because this can kill natural enemies, thus interfering with biological control, and because this can select for biotype Q, if present, which is more resistant to many insecticides than biotype B.

#### **2. Soil applications of neonicotinoid insecticides for whitefly control.**

a. For best control, use a neonicotinoid as a soil drench at transplanting, preferably in the transplant water.

b. Soil applications of neonicotinoids through the drip irrigation system are not recommended.

c. Do not use split applications of soil drenches of neonicotinoid insecticides (i.e. do not apply at transplanting and then again later).

#### **3. Foliar applications of neonicotinoid insecticides for whitefly control.**

a. If foliar applications of a neonicotinoid insecticide are used instead of or in addition to soil drenches at transplanting, **foliar applications should be restricted to the first six weeks after transplanting**. Do not exceed the maximum active ingredient per season according to the label.

b. Follow scouting recommendations when using a foliar neonicotinoid insecticide program. Rotate to non-neonicotinoid insecticide classes after the first six weeks and do not use any neonicotinoid class insecticides for the remaining cropping period.

### **D. Do unto your neighbor, as you would have them do unto you.**

#### **1. Look out for your neighbor's welfare.**

This may be a strange or unwelcome concept in the highly competitive vegetable industry but it is in your best interest to do just that. Growers need to remember that should the whiteflies develop full-blown resistance to insecticides, especially the neonicotinoids, it's not just the other guy that will be hurt—everybody will feel the pain! This is why the Resistance Management Working Group has focused on *encouraging region-wide cooperation in this effort*.

## **2. Know what is going on in the neighbor's fields.**

Growers should try to keep abreast of operations in upwind fields, especially harvesting and crop destruction, which both disturb the foliage and cause whitefly adults to fly. Now that peppers have been added to the list of TYLCV hosts, tomato growers will need to keep in touch with events in that crop as well.

### **For additional information:**

IRAC (Insecticide Resistance Action Committee) Website – <http://www.irc-online.org>.

More suggestions for breaking the whitefly/TYLCV cycle and a list of TYLCV resistant pepper cultivars can be found in articles by Dr. Jane Polston in the 2002 and 2003 Proceedings of the Florida Tomato Institute:

[http://swfrec.ifas.ufl.edu/veghort/docs/tom\\_inst\\_2002\\_091202.pdf](http://swfrec.ifas.ufl.edu/veghort/docs/tom_inst_2002_091202.pdf) and

<http://grec.ifas.ufl.edu/TOMATO%202003.pdf>, respectively.

TYLCV resistant tomato cultivars can be found in an article by Dr. Jay Scott in the 2004 Florida Tomato Institute Proceedings: <http://grec.ifas.ufl.edu/TomatoOptimized.pdf>.

### **Worms**

#### **Respondents from Manatee County report scattered problems with armyworms.**

**Around Southwest Florida, growers are reporting scattered problems with some early worms.** Reports indicate that these are mainly beet and southern armyworms.

### **Diseases**

#### **Pythium**

**Growers and scouts around Manatee County report scattered problems with both soil borne and air born pythium.**

**In the Immokalee area, growers also report scattered problems with pythium.** Occurrence is patchy and seems to be more problematic on pepper than tomato.

The combination of abundant soil moisture and elevated temperatures conspire to make the fall planting season a prime time for vegetable growers in Florida to encounter problems with *Pythium* spp. on a variety of vegetables. Pythium typically attacks roots causing damping off, seedling blights, root rots and wilting of affected crops. In some instances, Pythium may affect the above ground portions of crops.

*Pythium myriotylum* and *P. aphanidermatum* are generally most abundant in Florida because they are adapted to high soil temperature. The optimum temperatures for their growth and infection of plants range between 86 and 98 °F.

The host range for *Pythium* spp. is extremely wide. Vegetable crops commonly infected include beans cucurbits, peppers, southern peas, strawberries, and tomatoes. A number of broadleaf and grassy weeds may host *Pythium* spp. and serve as important sources of inocula.

Pythium is one of the “water molds.” It thrives in moist soils and multiplies and spreads rapidly under wet conditions. Although Pythium is capable of producing several spore types, zoospores and oospores are most important. Zoospores are mobile. They are produced rapidly and in great numbers and contribute to the

organism's ability to cause disease almost "over night." Zoospores may be detected within half an hour after a site is flooded and can "swim" for up to 30 hours and move three or more inches through soil.

Oospores are extremely durable and can survive in soil and infected crop debris for more than 10 years.

Pythium is often associated with root rots and pre emergent and post emergent damping off. One of the characteristics of tissue infected with *Pythium* spp. is the presence of water-soaked or greasy appearing tissue. This is distinct from the orange to red to dark, sunken lesions caused by *Rhizoctinia solani*.

Infection with *Pythium* spp. also causes wilting of numerous crop species. Plants affected by Pythium root and stem rots commonly exhibit yellowing of the lower leaves.

In small plants planted thickly, such as greenhouse transplants, Pythium can infect and colonize the plants with the result that the entire plant is destroyed. Look for water-soaked tissue in this situation. It is also common to see white mycelial growth in such situations.

Excess fertilizer, flooded soils, insect feeding, and nematode feeding may also contribute to dysfunctional roots. For accurate diagnosis, it is best to submit samples to a reputable diagnostic laboratory.

Resistant cultivars do not exist so control of Pythium depends on a variety of tactics. Crops should be planted on raised beds in well-drained soils.

Pre-plant soil fumigation is effective if applied correctly. Soil solarization has successfully suppressed *Pythium* in some cases. If a solarization or a soil fumigant is used, raised beds are important since fumigated soil has minimal or no beneficial organisms to compete against pathogens.

A number of chemical treatments are available for the control of damping off. Seed treatments containing mefenoxam (Apron) work best. Mefenoxam should be used in combination with a broad-spectrum fungicide to avoid the development of resistance.

Fungicidal drenches such as Ridomil Gold (mefenoxam) are effective for the suppression of seedling blights and root rots if applied before infection occurs. Ranman (FMC) is also labeled for protection against diseases caused by oomycetes, including pythium.

Several biological control agents, including actinomycetes and other bacteria and fungi, are available commercially for suppression of Pythium and other soil borne pathogens. Their success rate has been variable. Some report success using SoilGard (*Gliocladium virens*) to help suppress this disease.

Some soils are naturally suppressive to diseases caused by Pythium or may become suppressive by increasing organic matter or manipulating soil pH. Incorporation of cover crops prior to planting may support competing organisms in the field, but in some cases may result in increased populations of the pathogen. Sunn hemp has been implicated in this regard.

With the anticipated loss of methyl bromide as a soil fumigant, it is likely that crops that are now commonly grown with methyl bromide/chloropicrin fumigation, such as tomatoes, peppers, strawberries, will incur greater incidence of disease problems from *Pythium* spp.

## **Bacterial Spot**

**Around Immokalee, bacterial spot is starting to appear in some early plantings of pepper and tomato.**

**Respondents indicate that bacteria is also present in the Ruskin area but note that incidence is relatively low given until the past few days.** Some reports indicate that bacteria has started to move up into the lower bush with recent rains.

## **TYLCV**

**Growers and scouts from Immokalee to Plant City report low levels of TYLCV in early-planted tomatoes.** In most cases, occurrence is spotty and scattered with a few hot spots with infection incidence as high as 40% but in most areas incidence is ranging from 1 – 5% (higher counts in the older plantings that have been in ground about a month).

**Phyllis Gilreath writes that it appears that some growers are having a difficult time identifying positive TYLCV plants in the field.** With recent heavy rains that are almost daily on some farms, along with high temperatures, it is often very hard to tell on young plants that have only been in the field 2 weeks or so. Some plants look ‘virusy’ one day and look ok the next if just left.

**She indicates that she has seen workers recently pulling plants which she would not pull as to her they just looked a little yellow in the top, indicative of very rapid growth and possibly some temporary nutrient deficiency due to the rains leaching the immediate area around the root ball.**

**She cautions growers to be aware that a plant with some yellowing in the top does not necessarily mean it is positive for TYLCV.** We are still seeing fairly low numbers of whitefly in most fields, lower especially in fields which are getting daily showers, so it may pay to be patient and wait until symptoms are more distinct before sending a crew in to rogue.

## **Southern Blight**

**A few reports of southern blight on tomato have been received from across the area.**

**An FDACS Central Florida Ornamental Plant Inspector reports that they have also been finding a lot of Southern Blight in local nurseries.** “This is a little unusual. We hadn’t seen much of this fungus in the last few years but weather conditions must be just right for it to be popping up. We’ve found it in orchids, annuals, perennials, woody ornamentals, foliage and cactus. Nurseries may want to step up their scouting to catch this before it gets out of hand.”

## **News You Can Use**

**Grower's IPM Guide for Florida Tomato and Pepper Production** – The UF/IFAS IPM Florida office has been assembling an IPM decision-making resource for Florida’s pepper and tomato industry. They have compiled information into an interdisciplinary, comprehensive resource that will direct the user through the process of IPM planning. This guide will present the use of IPM tactics as means to reduce the risk of epidemics, conserve chemistries against resistance and reduce overall production costs.

The **Grower's IPM Guide for Florida Tomato and Pepper Production** is a work in progress and can be seen on line at <http://ipm.ifas.ufl.edu/agricultural/vegetables/tomato/T&PGuide.htm> , your suggestions and comments are welcome. When complete the guide will be published and will be available for purchase.

**Wedgworth’s Incorporated**, custom blender of “Big W Brand” dry fertilizer, located in Belle Glade announces the acquisition of Florida Favorite Fertilizer. Assets purchased include the two dry blending plants located in Lakeland and Moore Haven and the fleet of bulk haulers. Jack Frost, T.J. Woodward, Robert Murray, and Paul Howard will join the Wedgworth’s sales team.

## Q- biotype Whitefly Found in Florida.

**Dr. Lance Osborne, Entomologist at the UF/IFAS Mid Florida Research and Education Center in Apopka issued a Pest Update for Growers on August 21, 2006 indicating that Q-whitefly has officially been identified in 5 counties:**

Dade- Wholesale Nursery

Lee- Wholesale Nursery

Hillsborough- Wholesale Nursery

Suwannee- Wholesale Nursery

Orange - Wholesale and Retail Nursery

In most cases the infested plants were hibiscus.

South Carolina has now been identified as a state positive for the Q biotype whitefly. This may be of interest to those of you who also farm in that area. The complete list of states is below.

<b>STATES IN WHICH THE Q-BIOTYPE HAS BEEN FOUND</b>	
<b>September 06, 2006</b>	

- |    |                       |
|----|-----------------------|
| 1  | <b>Alabama</b>        |
| 2  | <b>Arizona</b>        |
| 3  | <b>California</b>     |
| 4  | <b>Connecticut</b>    |
| 5  | <b>Florida</b>        |
| 6  | <b>Georgia</b>        |
| 7  | <b>Illinois</b>       |
| 8  | <b>Indiana</b>        |
| 9  | <b>Kentucky</b>       |
| 10 | <b>Louisiana</b>      |
| 11 | <b>Maine</b>          |
| 12 | <b>Maryland</b>       |
| 13 | <b>Massachusetts</b>  |
| 14 | <b>Michigan</b>       |
| 15 | <b>New Hampshire</b>  |
| 16 | <b>New Jersey</b>     |
| 17 | <b>New York</b>       |
| 18 | <b>North Carolina</b> |
| 19 | <b>Oregon</b>         |
| 20 | <b>Pennsylvania</b>   |
| 21 | <b>South Carolina</b> |
| 22 | <b>Vermont</b>        |

I am also attaching some information about the Q biotype provided by Dr Dave Schuster, Phyllis Gilreath and Alicia Whidden last spring when it was thought that the Q-biotype had been found in Florida

**To review some information about the Q biotype** .....it is visually indistinguishable from the B biotype. While B out-competes Q in the absence of insecticides, Q out-competes B in the presence of many insecticides, and Q can transmit TYLCV at least as efficiently as B. The major problem facing growers is that Q is resistant or tolerant to many of our commonly used insecticides, including the nicotinoids, the pyrethroids and the insect growth regulators Knack and Courier. Thus, if both biotypes are present and growers spray heavily, they are selecting for the Q biotype. This makes spraying as little as possible and following resistance management

recommendations even more critical, including rotation of chemicals and the inclusion of **a crop-free period** into the production cycle.

**What should growers do?** If your current whitefly pesticide program is working, continue using it! If you are having difficulty controlling whitefly, you may want to consider some other options. Oberon is effective on Q; thus, if you are targeting nymphs, this would be an alternative to Knack and Courier. Oberon is also effective on adults, although it is slow to act. Venom (Valent) is a nicotinoid that has been more effective on Q in greenhouse trials than have other nicotinoids. It is labeled on tomatoes as a foliar spray or drench. This should be a “last resort” treatment. It is recommended that this **not** be used on crops where nicotinoids have already been applied this season. Recent work in ornamentals has shown control with a combination of Agri-Mek and a pyrethroid. Another combination that could be trialed is a combination of Agri-Mek and oil. Soaps, oils, Prev-Am and similar materials should still be useful, but remember.....good coverage is critical.

We would caution growers **NOT** to immediately begin changing their pesticide program if they feel their current one is working. We would also recommend that if you feel you are having problems controlling whitefly, you might want to submit samples for Q testing. A minimum of 20 adults should be sampled from different plants. It would probably be easiest to try and carefully collect leaflets with whitefly adults and put them into a baggie. You can then put them in the freezer to slow them down and then transfer them to vials of 95% ethanol with a q-tip or artist’s paintbrush. Do not crush the whitefly. Be sure to label the vial, but use a code so that you will know where the sample came from but the identity of the farm will not be known. You can also request them from Dr. McKenzie. Vials should be kept out of heat and carefully packaged and sent via priority mail or overnight to the following address:

Dr. Cindy L. McKenzie  
Subtropical Insects Research  
2001 South Rock Road  
Ft. Pierce, FL 34945  
Phone: 772-462-5917  
Fax: 772-462-5986  
Email: [cmckenzie@ushrl.ars.usda.gov](mailto:cmckenzie@ushrl.ars.usda.gov)

If you are unable to sample, please give us a call and we will try to help.

For additional information on biology and control information, a good source is Dr. Lance Osborne’s website at <http://www.mrec.ifas.ufl.edu/LSO/bemisia/bemisia.htm>. It includes a number of documents that you can click on for information from Florida and other states.

## **Tomato Burn Down Rule**

### CHAPTER 5B-59 PLANT PEST CONTROL

5B-59.001 Plant Pest Control.

5B-59.002 Standards for Determining when to Cease Use of a Pesticide During an Emergency Response to a Plant Pest Infestation Which Involves the Aerial Application of a Pesticide to an Urbanized Area.

5B-59.003 Tomato Plant Destruction.

(1) Definitions. For the purpose of this rule, the definitions in Sections 1.01, 500.03, 570.02, 677.102, and 581.011, Florida Statutes, and the following definitions shall apply:

(a) Commercial Tomato Producer. A person who is engaged in and has an economic risk in the business of producing, or causing to be produced, tomatoes for market.

(b) Final harvest. When an active pest management system is no longer maintained in the field following tomato harvest or if harvest has not occurred or not intended and no pest management system is being maintained.

(2) Tomato Plant Destruction. Within five days following the final harvest of a tomato crop, commercial tomato producers shall destroy remaining tomato plants on the production site using a chemical burn-down with a contact desiccant type herbicide that is EPA labeled and approved for this use such as paraquat or diquat that also contains a minimum three percent oil and a non-ionic adjuvant to destroy crop vegetation. This must be followed by immediate complete destruction by crop removal unless double cropping is planned.

(3) The commercial tomato producer failing to destroy tomato plants within five days following final harvest as described in (2) shall be issued an immediate final order. An immediate final order issued by the department pursuant to this section shall notify the property owner that the tomato plants that are the subject of the immediate final order must be removed and destroyed unless the commercial tomato producer, no later than 10 days after delivery of the immediate final order requests and obtains a stay of the immediate final order from the district court of appeal with jurisdiction to review such requests. The commercial tomato producer shall not be required to seek a stay of the immediate final order by the department prior to seeking the stay from the district court of appeal. If the commercial tomato producer refuses or neglects to comply with the terms of the notice within 10 days after receiving it, the director or her or his authorized representative may, under authority of the department, proceed to destroy the tomato plants. The expense of the destruction shall be assessed, collected, and enforced against the commercial tomato producer by the department.

### **Bio-Pesticide Grant Proposals Requested**

The IR-4 Biopesticide Research Program announces a request for grant proposals for funding of efficacy research in 2007. IR-4 is especially interested in proposals containing biopesticides as resistance management tools, rotated with conventional products. While resistance management is an important interest, the proposal must still have a majority focus on biopesticides. Project proposals will be accepted in Early, Advanced and Demonstration stage categories. The total amount of funding available will be around \$ 400,000. Most successful grants have generally ranged from \$5,000 to \$10,000 with the largest grants generally around \$20,000. The primary objective of the IR-4 Biopesticide Research Program is to further the development and registration of biopesticides for use in pest management systems for specialty crops or for minor uses on major crops.

NOTE: If you are submitting a proposal for the Early or Advanced stage project, please use the forms starting on page 14. If you are submitting a proposal for a Demonstration project, please use the forms starting on pages 27. You can download the Grant Procedure and Application in Word format at:

<http://ir4.rutgers.edu/Biopesticides/EarlyAdvDemoGuidelinesForms-2007.doc>

Proposals will be due November 14, 2006

#### **For questions about proposal format and content contact:**

Michael Braverman, PhD

Biopesticide Program Manager

IR-4 Project, Rutgers University

Tel (732)932-9575 ext 4610

FAX (609)514-2612

[braverman@aesop.rutgers.edu](mailto:braverman@aesop.rutgers.edu)

website: <http://ir4.rutgers.edu/biopesticides.html>

### **Pesticide Registrations and Actions**

## **Midas Soil Fumigant Granted Experimental Use Permit By EPA**

Arysta LifeScience announced that the U.S. Environmental Protection Agency has granted an Experimental Use Permit (EUP) for MIDAS®, a next-generation soil fumigant developed as an alternative to methyl bromide. The permit is for limited use on 1,000 total acres in Florida, Georgia, Michigan, North Carolina, South Carolina, Tennessee and Virginia.

The company will be evaluating efficacy, market yields and economic comparisons across several crops during this program.

MIDAS® effectively controls a broad range of soil-borne diseases, nematodes, weed seeds and insects that threaten high-value crops such as ornamentals, strawberries, fresh market tomatoes, peppers and turf. The fumigant is applied using conventional techniques and equipment.

Arysta LifeScience is committed to significant training procedures and education to ensure the proper application and handling of the product. The conditions of the MIDAS® EUP will allow usage only by selected growers in the seven-state area who have completed the Arysta LifeScience certified applicators program.

All growers participating in the program will receive certification specific to the proper use and handling of MIDAS®.

Source: Arysta LifeScience North America Corporation news release Sep. 6, 2006

## **FMC introduces new insecticide and fungicide for Vegetables**

### **New Beleaf™ insecticide for control of aphids and plant bugs in many crops.**

Beleaf™ controls a variety of aphids and plant bugs effectively in leafy and fruiting vegetables, brassicas, cucurbits, potatoes, pome and stone fruit crops. Beleaf has a new mode of action with no known cross-resistance to other chemical classes. The product also provides long residual control of aphids and plant bugs, yet is soft on beneficial insects and predator mites.

Beleaf causes rapid and irreversible feeding cessation in aphids resulting in starvation and ultimate control, while protecting the crop from damage. Once insects are exposed to Beleaf, they begin to stop feeding in as little as 30 minutes. When the insects stop feeding, you stop damage and disease transmission to the crop resulting in higher quality produce. Beleaf provides translaminar activity, penetrating leaf tissues and forming a reservoir of active ingredient within the leaf.

The combination of benefits and novel mode of action sets Beleaf apart. Beleaf, gives excellent control of sucking pests, such as aphids and plant bugs. As well as a new mode of action, active on the A-Type Potassium Channel of the insect nervous system, which makes it a much-needed resistance management tool.

In addition, the chemistry behind Beleaf is soft on beneficial insects, making it a good fit with Integrated Pest Management (IPM) systems.”

Beleaf recently received U.S. Environmental Protection Agency registration and is registered in Florida and Arizona.

**Ranman® fungicide, marketed by FMC, is an excellent fungicide for protecting yields in cucurbits, tomatoes and potatoes.** It has a unique mode of action that provides highly effective prevention of downy mildew in cucurbits when applied as a foliar treatment. Unlike most fungicides that only control some stages of the life cycle of oomycetes pathogens, Ranman is active against all and is the only fungicide in FRAC Group 21.

Ranman provides excellent protection against diseases caused by oomycetes, especially infection by pathogens of the genera of:

- *Phytophthora* -Late blight, Pink rot, Phytophthora blight
- *Pythium*- Damping off, Root rot
- *Plasmopara*- Downy mildew
- *Pseudoperonospora*- Downy mildew

Ranman, a contact fungicide, is classified as a protectant with anti-sporulation activity and has limited systemic activity. It can be applied by ground, chemigation or aerial application. Ranman is formulated as a suspension concentrate (SC) with 3.33 lb/gal or 34.5% of the active ingredient cyazofamid.

The biochemical mode of action of the active ingredient inhibits all stages of oomycetes fungal development. Its mode of action is new and unique, inhibiting the Qi site of the cytochrome bc 1 site in complex III of the fungal mitochondrial membrane. Ranman provides growers with a much-needed novel mode of action for resistance management as an alternative to existing fungicides with its new C4 respiration target site. There is no documented cross-resistance of Ranman with existing fungicides.

Ranman should be part of a disease management program including alternate sprays of fungicides with a different mode of action. Ranman can be tank-mixed with many fungicides to broaden the spectrum of activity and promote a strong resistance management program.

Its affinity for waxy surfaces of crops ensures superior rainfastness and long residual activity. Residual foliar activity of five days or more can be anticipated depending on disease pressure.

Ranman is considered reduced-risk chemistry. Short pre-harvest intervals of zero days in tomatoes and cucurbits and seven days in potatoes fit common cultural practices. Re-entry interval is 12 hours. Crops not on the label can be planted 30 days after the last application. Ranman is not recommended for use in greenhouses.

### **Labor Squeeze Forcing Western Growers To Abandon Crops**

Growers from California to Washington state have been leaving fields of strawberries and vegetables unharvested as they simply can't find enough workers to harvest crops. Growers have been plowing under acre upon acre of beans, squash, cucumbers, lettuce and strawberries because of unprecedented shortages. One large farm labor contractor in California's southern San Joaquin Valley told an American Vegetable Grower editor that he was short a whopping 300 workers this year, the first time he has ever faced a shortage in his long career. AVG-Veg-Wire, 9/14/06

### **Up Coming Meetings**

#### **Palm Beach County**

**September 20, 2006    Pesticide Applicator Testing    (8 am - 4 pm any category exam)**

Belle Glade, Florida

8:00 am - 10:00 am    General Standards/Core Test Review (2 CEUs)

1:00 pm - 3:00 pm    Private Applicator Test Review (2 CEUs)

**September 21, 2006    Agro-Terrorism and Crime Prevention for Farms and Ag Businesses**

UF/IFAS EREC

8:30 am – 1:00 pm

Belle Glade.

Lunch provided. Please R.S.V.P. to [Agunit@pbso.org](mailto:Agunit@pbso.org) or contact the PBC Sheriff's Office at 561-996-1680.

**September 27, 2006**    **Vegetable Growers Meeting – Bacteriophage-based bacteria control (AgriPhage) for Tomatoes and Peppers**    12:00 pm – 1:30 pm  
Duffy's Sports Grill  
9919 Boynton Beach Blvd  
Boynton Beach, Florida

Lunch is provided. Contact Darrin Parmenter at (561) 233-1725.

**October 2, 2006**    **Pesticide Applicator Testing (8 am - 4 pm any category exam)**  
West Palm Beach, Florida

8:00 am - 10:00 am	General Standards/Core Test Review (2 CEUs)
10:00 am - noon	Private Applicator Test Review (2 CEUs)
1:00 pm - 3:00 pm	Ornamental and Turf Test Review (2 CEUs)

**October 4, 2006**    **Pesticide Applicator Testing (8 am - 4 pm any category exam)**  
Belle Glade, Florida

8:00 am - 10:00 am	General Standards/Core Test Review (2 CEUs)
1:00 pm - 3:00 pm	Agricultural Row Crop Test Review (2 CEUs)

**October 4, 2006**    **Lettuce Advisory Committee**    10:30 am – 12:30 pm  
UF/IFAS EREC  
Belle Glade, Florida

Lunch provided. Contact Darrin Parmenter, 561-233-1725.

**October 4, 2006**    **The Immigration Debate and its Impact on Florida Agriculture** 1:00 – 3:00 pm  
UF/IFAS EREC  
Belle Glade., Florida

Contact Darrin Parmenter at (561) 233-1725.

**October 18, 2006**    **WPS How to Comply Update and Train-the-Trainer**    9:00 am - 1:30 pm  
UF/IFAS EREC  
Belle Glade, Florida

Lunch provided. Contact Darrin Parmenter at (561) 233-1725.

Southwest Florida

**September 19, 2006**    **UF/IFAS C-139 Basin Phosphorous Project Update**    6:00 PM

UF/IFAS SWFREC  
Hwy 29 N  
Immokalee, Florida

Contact Gene McAvoy at 863-674-4092 for details

**September 27, 2006**

**WPS- Handler/Worker Training** 9:00 AM - Spanish  
1 PM - English

UF/IFAS Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida

Contact Gene McAvoy at 863-674-4092 for details

**September 28, 2006**

**Agriphage – Bacteria Control in Pepper and Tomato** 6:00 PM

UF/IFAS SWFREC  
Hwy 29 N  
Immokalee, Florida

Contact Gene McAvoy at 863-674-4092 for details

**October 9-10, 2006**

**Restricted Pesticide Applicator Classes** **Oct. 9 – Core, Private**  
**Oct. 10 – Row, Tree Aquatic**

Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida

Contact Gene McAvoy at 863-674-4092 for details

**October 11 -12, 2006**

**Spanish Pesticide Applicator Prep Classes** 9:00 AM

Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida

Contact Gene McAvoy at 863-674-4092 for details

**Note:** Testing will be conducted in English

Other Meetings

**September 20, 2006**

**Organic Production Field Day & Workshop** 8:30 AM - 4:00 PM.

UF/IFAS Plant Science Research and Education Unit (PSREU)

Citra Florida

For registration information, contact: Dr Jennifer Taylor, FAMU Statewide Small Farms Program at [Jennifer.Taylor@fam.u.edu](mailto:Jennifer.Taylor@fam.u.edu) , (850) 412-5260 or visit the UF-IFAS Small Farms website: <http://smallfarms.ifas.ufl.edu/>

**September 17- 21 2006**

**Cucurbitaceae 2006**

Asheville, North Carolina

For more information visit <http://www.ncsu.edu/cucurbit2006>

**November 14 - 15, 2006**

**Watermelon Growers Symposium**

Scottish Rite Auditorium  
San Antonio, Texas

For more information contact Champion Seed Co at 956- 618-5574

**December 3-6, 2006**

**4<sup>th</sup> International Bemisia Workshop**

**December 6-8, 2006**

**International Whitefly Genomic Workshop**

Hawk's Cay Resort  
Duck Key, Florida

For more information, go to <http://conference.ifas.ufl.edu/bemisia>

## Websites

**Crop Life International** – Crop Life International is a global federation representing the plant science industry and a network of regional and national associations in 91 countries working together for sustainable agriculture. Company members include BASF, Bayer CropScience, Dow Agrosiences, Dupont, FMC, Monsanto, Sumitomo and Syngenta. These companies are committed to sustainable agriculture through innovative research and technology in the areas of **crop protection**, non-agricultural pest control, seeds and **plant biotechnology**. Go to <http://www.croplife.org/>

**Powers of Ten** – This website allows you to view the Milky Way at 10 million light years from the Earth. Then move through space towards the Earth in successive orders of magnitude until you reach a tall oak tree just outside the buildings of the National High Magnetic Field Laboratory in Tallahassee, Florida. After that, begin to move from the actual size of a leaf into a microscopic world that reveals leaf cell walls, the cell nucleus, chromatin, DNA and finally, into the subatomic universe of electrons and protons. The site also features many other interesting areas including some fascinating photo microscopy. Go to <http://micro.magnet.fsu.edu/primer/java/scienceopticsu/powersof10/index.html>

## Quotable Quotes

Government regulation is a lot like ketchup - you either get none or more than you want.

Foreign aid might be defined as a transfer of money from poor people in rich countries to rich people in poor countries. -- Douglas Casey

Sometimes I lie awake at night, and I ask, "Where have I gone wrong?" Then a voice says to me, "This is going to take more than one night." -- Charlie Brown

People think it must be fun to be a super genius, but they don't realize how hard it is to put up with all the idiots in the world. – Calvin

The early bird may get the worm, but the second mouse gets the cheese.

## **On the Lighter Side**

### **Burns and Allen**

George: Gracie, before our trip to Europe, there are some things you should know, like the national sports of the countries we will visit. In Spain, the national sport is bullfighting, but in England it is cricket."

Gracie: "Well, I'd rather live in England because it's easier to fight a cricket."

### **Married Life**

Having been married 25 years, a man took a look at my wife one day and said, "Honey, 25 years ago, We had a cheap apartment, a cheap car, slept on a sofa bed and watched a 10 inch black and white TV, but I got to sleep every night with a hot 25 year old blond.

Now, we have a nice house, nice car, big bed and plasma screen TV, but I'm sleeping with a 50-year-old woman. It seems to me that you are not holding up your side of things."

The wife, being a very reasonable woman, told the husband ...“go out and find a hot 25 year old blond. I’ll make sure that you will once again be living in a cheap apartment, driving a cheap car, sleeping on a sofa bed”.

### **Things you will never hear from a Southern Boy**

- I'll take Shakespeare for 1000, Alex.
- Duct tape won't fix that.
- Come to think of it, I'll have a Heineken.
- We don't keep firearms in this house.
- You can't feed that to the dog.
- No kids in the back of the pickup, it's just not safe.
- Wrestling is fake.
- We're vegetarians.
- Do you think my gut is too big?
- I'll have grapefruit and grapes instead of biscuits and gravy.
- Honey, we don't need another dog.
- Who gives a damn who won the Civil War?
- Give me the small bag of pork rinds.
- Too many deer heads detract from the décor.
- I just couldn't find a thing at Wal-Mart today.
- Trim the fat off that steak.

- Cappuccino tastes better than espresso.
- The tires on that truck are too big.
- Unsweetened tea tastes better.
- My fiancé Bobbie Jo, is registered at Tiffany's.
- I've got two cases of Zima for the Super Bowl.
- Checkmate.
- Hey, here's an episode of "Hee Haw" that we haven't seen.
- I don't have a favorite college team.
- You Guys.

AND NUMBER ONE THING THAT YOU WILL NEVER HEAR A SOUTHERN BOY SAY:

Nope, no more for me. I'm driving!

**Contributors** include: Joel Allingham/AgriCare, Inc, Karen Armbruster/SWFREC, Kathy Smith/Agricultural Pest Management, Bruce Corbitt/West Coast Tomato Growers, Dr. Kent Cushman/SWFREC, Dr. Phyllis Gilreath/Manatee County Extension, Michael Hare/Drip Tape Solutions, Fred Heald/Farmers Supply, Sarah Hornsby/AgCropCon, Cecil Howell/Taylor & Fulton, Loren Horsman/Glades Crop Care, Keith Jackson/SWFREC, Bruce Johnson/General Crop Management, Dr. Mary Lamberts/Miami-Dade County Extension, Leon Lucas/Glades Crop Care, Bob Mathews, Glades Crop Care, Mark Mossler/UF/IFAS Pesticide Information Office, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Jimmy Morales/Pro Source One, Chuck Obern/C&B Farm, Teresa Olczyk/ Miami-Dade County Extension, Dr. Aaron Palmateer/TREC, Darrin Parmenter/Palm Beach County Extension, Dr. Ken Pernezny/EREC, Dr. Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Kevin Seitzinger/Gargiulo, Jay Shivler/ C&B Farm, Ken Shuler/Stephen's Produce, Ed Skvarch/St Lucie County Extension, John Stanford/Thomas Produce, Mike Stanford/MED Farms, Dr. Phil Stansly/SWFREC, Eugene Tolar/Bright Star Farms, Mark Verbeck/GulfCoast Ag, and Alicia Whidden/Hillsborough County Extension.

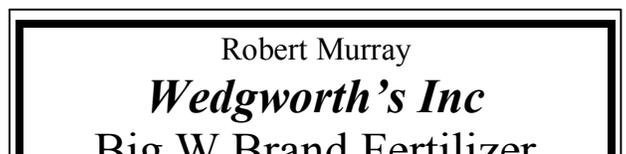
The **South Florida Pest and Disease Hotline** is compiled by **Gene McAvoy** and is issued on a biweekly basis by the **Hendry County Cooperative Extension Office** as a service to the vegetable industry.

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