



SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

October 23, 2017

Vegetable growers across South Florida Rainy are busy planting and are recovering from the effects of Hurricane Irma.

Daytime temperatures remain in the low 90's with nighttime temps in the mid – upper 60's and low 70's. Rainy conditions have abated in many places aiding recovery efforts but rainy conditions have persisted in many east coast locations hampering operations and interfering with spraying.

Growers in Hillsborough County are scheduled to begin harvesting some tomatoes this week. Resets in Immokalee are beginning to set fruit and some squash is coming to market.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
10/9 – 10/22/17	66.15	92.66	0.26	84	0.11
Belle Glade					
10/9 – 10/22/17	68.11	92.10	1.40	85	0.12
Clewiston					
10/9 – 10/22/17	71.11	93.25	0.31	85	0.13
Ft Lauderdale					
10/9 – 10/22/17	72.48	89.17	4.61	82	0.12
Homestead					
10/9 – 10/22/17	69.21	89.56	1.68	87	0.12
Immokalee					
10/9 – 10/22/17	68.45	93.69	0.55	88	0.12
Okeechobee					
10/9 – 10/22/17	66.22	93.43	1.18	90	0.12
Wellington					
10/9 – 10/22/17	69.75	90.25	1.82	86	0.12

When in Doubt – Scout!

The National Weather Service forecast indicates that an approaching frontal boundary will push Eastward towards Florida over the next 24 hours.

Guidance continues to indicate a broken line of showers and storms pushing across a good portion of the peninsula.

As the front exits late Tuesday into Wednesday, drier and cooler air will filter into Florida providing our first break from the sub-tropics in a while and offer up a taste of the dry season for a few days.

For additional information, visit the National Weather Service in Miami website at <http://www.srh.noaa.gov/mfl/newpage/index.html>

Insects

Leafminer

Leafminer are widely present above threshold levels in tomato in the Manatee Ruskin area and growers have treated multiple times and report that they just won't stop.

Respondents on the East Coast indicate they are seeing low levels of leafminer activity in eggplant.

Around Immokalee, growers and scouts are seeing low levels of leafminer activity in eggplant and report finding occasional mines in squash and cucumbers as well mostly on field borders. Numbers remain below treatment thresholds.

Some leafminer activity has also been reported in Homestead as well.

Leafminers are particularly damaging on celery, crucifers, cucurbits, okra, potato and tomato. In south Florida, populations peak between October and March while in central Florida they are a problem in both spring and fall.

The adults are small yellow and black flies about the size of a gnat. The female punctures or "stipples" the leaves with her ovipositor to lay eggs in the leaf tissue or to feed on sap.

Leafminer damage is easily recognized by the irregular serpentine mines in leaves. The tunnel is clear with a trail of black fecal material left behind as the maggot feeds.

Leafminers have a relatively short life cycle. The time required for a complete life cycle in warm environments such as Florida is often 21 to 28 days, so numerous generations can occur annually in tropical climates.

An integrated pest management program that stresses conservation of natural enemies is important for the successful control of leafminer. Chemical control can be difficult due to the feeding habits inside the leaf of the host plant. Insecticides that specifically target the leafminer are recommended as use of broad-spectrum materials may decimate beneficial insects including those that attack leafminer. This often results in a larger leafminer problem if the pesticide reduces numbers of leafminer parasites.

Several parasites for this insect have been recorded in Florida, but parasitic wasps are most common. Up to 90% parasitism in non-sprayed tomatoes has been observed in Florida.

To determine whether leafminer larvae are dead or alive, leaflets can be held up to the sun and examined with a hand lens. Living larvae are a pale yellow and flush with the end of the mine. The back and forth feeding movements are readily visible, although movement may cease when larvae are disturbed or molting. Dead larvae do not show movement and are usually discolored and removed from the ends of mines.

Therefore, it is important that the scouting program include not only an assessment of the number of leafminers present but also the natural enemies.

Cyromazine (Trigard) alternated with abamectin (Agrimek) are effective against leafminer in tomato. Both of these products have limited crop registrations and must not be used on unregistered crops. Spintor (Spinosad) and Radiant (Spintoram) have also given good results and are labeled on a wide range of crops. Some other materials that may be used to conserve beneficials include azadirachtin (Neemix) and insecticidal oils. Both products are approved for use by organic growers as is Conserve (spinosad).

Newer chemistries which have added to the grower's arsenal of control include Coragen (rynaxpyr), Exirel and Verimark (cyazapyr) which have given good results and have greatly reduced leaf miner pressure on many farms.

Consult UF/IFAS recommendations for currently labeled insecticides for leafminer control in Florida.

Field sanitation is another important control tactic. Weeds and abandoned crops can serve as reservoirs for this pest. After harvest crops should be destroyed as soon as possible to avoid having them serve as reservoir for new infestations.

Whiteflies

Whitefly number are beginning to spike upward in the Manatee Ruskin area reaching around 2/plant in some places and scouts are beginning to find some pupae in tomatoes. Growers report seeing a significant amount of TYLCV in the fall crop.

Around SW Florida, whitefly populations remain very low. Respondents continue to report finding low numbers of whitefly adults in cucurbits and occasional whiteflies scattered through eggplants and tomatoes but remark that they are beginning to see a few more adults around.

Growers and scouts on the East Coast indicate that whiteflies remain a non- issue in most locations at present.

Reports indicate that whiteflies are also showing up on some crops around Homestead.

Tomato growers in the Quincy area are having a terrible problem with whiteflies and virus and whitefly numbers have been astronomical in South Georgia as well causing issues in a wide range of crops.

Even though populations of many insect pests such as whiteflies were negatively affected by the hurricane and rainy weather which foollowed and are present in low numbers, they can build up quickly, so growers should scout regularly to avoid being taken unawares later in the season. Preventative soil applications of either imidacloprid, thiamethoxam, dinotefuran, flupyradifurone or cyantraniliprole should be used as normal in tomato and cucurbits.

Consider the use of metalized (UV reflective) mulch as an additional management practice for day-flying pests such as whiteflies, thrips, aphids, pepper weevil and even broad mites, the last of these which use flying insects to move around.

Table 1; Systemic insecticides applied to soil for whitefly control

Common name	Mode of Action	Trade Names	Rates
Imidacloprid	4A	Various	Check Label
Thiamethoxam	4A	Platinum 75 SG	1.66 - 3.67
	4A	Venom 70% Scorpion 35 SL Certador 10%	5 - 7.5 oz/ac 9 - 1 0.5 fl oz/ac 32.5 - 47.5 fl oz/ac
Flurpyradifuron	4D	Sivanto 200 SL	21-28 fl oz/ac
Verimark	28	Verimark 18.7%	5-10 fl oz/ac

Efficacy Ratings for Insecticides and Miticides on Tomato

MOA	Active Ingredient	Whiteflies	Other pests controlled			
		Whiteflies	Southern Armyworm	Spider mites	Stinkbugs	Leafminer
4A	dinotefuran	E**			G	
4A	imidacloprid	E**				
4A	thiamethoxam	E**			G	
4D	flupyradifurone	E**				
23	spiromesifen	E†		E		
23	spirotetramat	E†		G		
7C	pyriproxyfen	E†				
28	cyantraniliprole	E**	E			E
1B	malathion	G*				
3A	beta-cyfluthrin	G*	F		G	
3A	bifenthrin	G*			G	
3A	esfenvalerate	G*	G			
3A	fenpropathrin	G*	F		F	
3A	lambda cyhalothrin	G*	F			
3A	permethrin	G*	G			
3A	zeta-cypermethrin	G*	G		F	
4A	acetamiprid	G				
9	pymetrozine	G†				
16	buprofezin	G†				
21 A	fenpyroximate	G		G		
4A	clothianidin	F**				
Unk.	horticultural oil	F†		G		
Unk.	Azadiractin	F†				
Unk.	Soap, insecticidal	F†				

* OP+Pyrethroids tank mix. † Effective primarily against nymphs ** Most Effective as a drench. Check labels before using any pesticide.

For more whitefly management tips – see:

Management of Whiteflies, Whitefly-Vectored Plant Virus, and Insecticide Resistance for Vegetable Production in Southern Florida - <http://edis.ifas.ufl.edu/in695>

Worms

Growers report finding a few more worms and worm eggs and egg masses around Immokalee in tomato, pepper, eggplant, squash and cukes. Species include a mixed bag of loopers, southern armyworm, beet armyworm, hornworms, melonworms and few fall armyworms.

In the Manatee Ruskin area worms are around and growers and scouts report finding beet armyworm, southern armyworm, loopers, as well as a some yellow-striped armyworms and a few hornworms

Melonworms are also causing problems on some Oriental cucurbits around Homestead.

Around Belle Glade, fall army worms continue to cause problems in sweet corn.

East Coast growers indicate that worm pressure remains light although significant levels of diamondback moth are present in early planted collards, kale, arugula, and broccoli.

Aphids

A few winged aphids are starting to blow around South Florida but remain very low to absent in most fields.

Spider mites

Pepper growers in St Lucie, Martin and Palm Beach counties are seeing occasional spider mite activity at very low levels in pepper.

Broad Mite

Broadmites remain surprising absent in most places perhaps suppressed by the rainy conditions experienced this season.

Thrips

Melon thrips are fairly common on susceptible crops around Homestead.

On the East Coast, growers report very low thrips numbers showing up in some bell pepper blossoms.

Diseases

Bacterial spot

Around Southwest Florida, bacterial spot continues to increase in tomatoes and growers are reporting some bacteria beginning to show up in a few pepper fields.

Respondents in the Manatee Ruskin area report that bacterial spot remains an issue and is present in the tops of some plantings. Fruit remain mostly clean.

Bacteria is widely present in tomatoes on the East Coast and appears to be increasing in incidence and severity.

Bacteria is also present on young tomato in Homestead.

Bacteria is most prevalent in plantings that either went through the hurricane or were grown from transplants that went through the storm in the greenhouse. In most cases, plant growth is keeping up with the pace of the disease, but growers could benefit from some extended cool/dry weather.

Since water movement spreads the bacteria from diseased to healthy plants, workers and farm equipment should be kept out of fields when fields are wet because the disease will spread readily under wet conditions.

It is important to apply sprays before and during rainy periods. Spraying wet plants can actually assist in the spread of bacterial spot. If conditions are favorable, frequent spraying may not be sufficient to maintain bacterial spot below damaging levels.

The traditional recommendation for bacterial spot control consists of copper and maneb or mancozeb. The effectiveness of copper is limited, because of the widespread occurrence of copper tolerance among strains of *Xanthomonas*.

In the past few years, a number of products have come on the market that have given good results in research trials when used in rotation or together with traditional controls such as copper. These include Tanos (Dupont) as well as the SAR elicitor Actigard (Syngenta), Leap (Valent), Double Nickel 55 (Certis), Regalia (Maronne Bioinnovations) and Serenade and Sonata (AgraQuest). Leap is unique among the products mentioned above as it contains two active ingredients providing growers with disease management and caterpillar control.

Attention to application techniques is as important as choice of material in achieving adequate control.

Bacterial Soft Rot

Bacterial Soft Rot is causing some issues in pepper on the East Coast aided by frequent daily showers over the past couple of weeks.

Target spot

Growers and scout around Immokalee report that target spot has also started to show up in the inner canopy of some older tomato plantings.

Low levels of target spot are also present in the Manatee Ruskin area with some very low level fruit infection reported.

Phytophthora

Growers in Miami Dade County report that *Phytophthora* blight caused by *P. capsici* is causing problems in some squash fields due to wet conditions. Many areas on the east coast have experienced frequent showers on a daily basis over the past two weeks.

Mostly low levels of *Phytophthora* are also present in some pepper and eggplant around Palm Beach, Martin and St Lucie counties.

Reports indicate that some plants may be coming infected from the greenhouse.

Current options for pre-transplant applications include a Ranman (cyazofamid, 21) drench up to one week before transplanting or as a seedling tray drench at transplanting for Pythium and Phytophthora in tomato, pepper, and eggplant. Previcur Flex (propamocarb HCL, 28) has a label for the suppression of Pythium and Phytophthora in tomatoes and peppers. Phosphite fungicides such as ProPhyt, Rampart, and K-Phite (FRAC code 33) can also be applied as a pre-transplant drench in the greenhouse. Additionally, there are a number of biologicals such as Trichoderma, Streptomyces, and Bacillus products which can also be used in the greenhouse as drenches or incorporated in to the soilless mix to help suppress soil-borne pathogens. Remember, biologicals typically need to be applied without conventional fungicide.

At transplanting applications include Ranman (cyazofamid, 21) in the transplant water or through drip irrigation for Pythium control. There is a section 2ee for the use of Previcur Flex (propamocarb HCL, 28) + Admire Pro (imidacloprid) in transplanting water for fungus and insect control.

Presidio (fluopicolide, 43) has a label for drip application for Phytophthora control when conditions are favorable for disease development. Additionally, phosphite fungicides, Pro-Phyt, Rampart, and K-Phite (FRAC code 33) can also be applied through drip irrigation at transplanting to help suppress Phytophthora blight.

Pythium

Growers and scouts report that Pythium is widely present at low levels in tomato, pepper, squash and other crops planted after Hurricane Irma but surprisingly not as bad as some folks expected.

Pythium has been a major issue on green beans in the wet muck soils of the Glades.

While other fungi such as Fusarium spp. and Rhizoctonia spp. may also cause damping off of seedlings, the majority of damping-off diagnosed at the UF/IFAS SWFREC Plant Disease clinic is due to Pythium spp.

Growers may consider applying a fungicide to help limit damage of damping off caused by Pythium spp.

For Pythium root rot or other diseases of concern, currently labeled fungicides can be found in the Vegetable Production Handbook for Florida,

- **Chapter 7, Eggplant** at <http://edis.ifas.ufl.edu/cv124>
- **Chapter 12, Pepper** at <http://edis.ifas.ufl.edu/cv130>
- **Chapter 17, Tomato** at <http://edis.ifas.ufl.edu/cv137>

As always, it is recommended that a disease diagnostic clinic assist with determining the pathogen associated with the problem in order to make an effective fungicide management recommendation.

Fusarium

Grower and scouts report finding some Fusarium coming into tomato and pepper behind cracked stems on plants that survived the storm.

Southern Blight

Growers also finding some southern blight showing up in tomato around Manatee County and in SW Florida – not at high levels but more than is normally seen in the fall.

Since many growers in SW Florida who lost plastic due to the Hurricane and re-bedded and laid plastic without a fumigant, growers should be alert for the possibility of increased levels of soil borne diseases.

Rhizoctonia

Growers in the Glades are reporting significant challenges with Rhizoctonia on green beans planted in wet soils.

Southern corn leaf blight

Growers and scouts report that southern corn leaf blight is beginning to show up on sweet corn around Belle Glade.

Southern corn leaf blight is caused by the fungus *Bipolaris maydis*. Seedling blights can be caused by *B. maydis*, however, symptoms of Southern corn leaf blight typically occur on leaves. Mature foliar lesions can be rounded on the sides but they tend to be parallel-sided, often restricted by the veins.

Lesions are light tan in the center with a reddish-brown border. A greenish growth near the center of the lesion may be evident if spores are present. Mature lesions range from 1/4 to 1 1/2 inches in length and may be tapered, flat or serrated on the ends. Typically, lower leaves are infected first progressing upward to higher leaves over time.

Spray programs with recommended fungicides should commence at the first sign of disease if favorable weather is likely. Strobilurin and triazole fungicides work well but should be used in a program with the broad-spectrum protectant mancozeb. Several sprays may be required if conditions are conducive to disease development.

Tomato Yellow Leaf Curl Virus

Reports from the Quincy area indicate that growers are facing major challenges with TYLCV in fall tomato.

TYLCV is showing up widely around Manatee and Hillsborough Counties with some fields reaching as high as an 8 - 10% infection rate.

Mostly low levels of TYLCV are also being reported around SW Florida and is increasing in some fields.

Cucurbit Leaf Crumple Virus

Low levels of cucurbit leaf crumple virus are showing up in some watermelon around SW Florida. ID has been confirmed in the lab.

Gummy stem blight

Low levels of gummy stem blight continue to be reported in fall watermelon around SW Florida.

Anthracnose

Anthracnose is showing up on some fall watermelons.

This disease is favored by high temperatures and frequent rains and high humidity which promote disease development and spread.

All aboveground plant parts can be infected. Symptoms vary among the species of cucurbits infected. Leaf lesions begin as water soaked and then become yellowish circular spots. On watermelon foliage the spots are irregular and turn dark brown or black. On cucumber and muskmelon, the spots turn brown and can enlarge considerably. Stem lesions on muskmelon can girdle the stem and cause vines to wilt. Stem cankers are less obvious on cucumbers.

The most striking diagnostic symptoms are produced on the fruit, where circular, black, sunken cankers appear. On watermelon the spots may measure 1/4 to 1/2 in. (6 to 13 mm) in diameter and up to 1/4 in. (6 mm) deep. When moisture is present, the black center of the lesion is covered with a gelatinous mass of salmon colored spores. Cankers lined with this characteristic color can never be mistaken for any other disease. Similar lesions are produced on muskmelon and cucumber.

Anthracnose (*Colletotrichum* spp.) is also causing major issues on some herbs such as oregano and rosemary.

Leaf symptoms begin as small, pale yellow or water-soaked lesions that rapidly enlarge and turn tan to dark brown or irregular and black. As lesions merge, large areas of the leaf may appear blighted or entire leaves may die.

Choanephora blight

Scouts report finding some Choanephora on pepper on the East Coast exposed to rainy weather over the past few weeks.

Choanephora blight or wet blight, caused by the fungus *Choanephora* sp., is an occasional problem on beans and pepper plants during wet periods.

Symptoms are visible on apical growing points, flowers and fruits. Initially, water-soaked areas develop on leaves and leaf margins, leaf tips and apical growing points become blighted. Older lesions appear necrotic and dried out. Later the fungus grows rapidly downward causing dieback. The dark-gray fungal growth is apparent on some lesions. Close inspection under magnification will reveal silvery, spine-like fungal structures and dark spores.

Symptoms may be confused with Phytophthora blight (*Phytophthora capsici*) when young or spray burn on bean plants with older symptoms.

Dense plantings can lead to poor air circulation and extended periods of leaf wetness. Fungicidal sprays applied for the control of other diseases will provide some control of this disease also. Good spray coverage where dense foliage occurs is important.

News You Can Use

This week could bring first true cold front of Fall

By Jim Dickey, Meteorologist
Oct 18, 2017

Early this week, it's looking increasingly likely that the first true arctic outbreak of the fall will occur in the middle of the country, as an arctic airmass dives southward out of Canada. By mid-week, it will reinvigorate a sluggish front working across the eastern U.S. and should give it enough of a kick to force that front, and an unseasonably cool and dry airmass, all the way into South Florida.

This could also bring the 2017 Rainy Season to an end.

Early morning temperatures behind the front next Thursday should be in the 50s and after a long, hot, humid and rainy summer, fall is finally on the way!

USDA holding hurricane recovery workshops in Florida

The U.S. Department of Agriculture will be hosting disaster assistance and hurricane recovery workshops in Florida over the next few weeks.

Representatives from the Natural Resources Conservation Service and the Farm Service Agency will present information about the help available for farmers and ranchers affected by Hurricane Irma, according to a news release. Reporting deadline which are typically 30 days after an qualifying event have been extended to 60 days by Executive Order.

Those presenting will address the assistance and programs available and the deadlines for applying for aid. The events are free and open to the public.

Information on dates and times of the various meetings can be found at <https://www.fsa.usda.gov/state-offices/Florida/state-events/index>

Monday, October 23, 2017 - 10:00 AM

Okeechobee Civic Center
1750 US Hwy 98 N.
Okeechobee, FL 34972

Jenny Hoover Jenny.Hoover@fl.usda.gov
863-763-3345 ext#2

Tuesday, October 24, 2017 - 10:00 AM

Martin County Extension Office
2614 SE Railroad Ave
Stuart, FL 34996

Jenny Hoover Jenny.Hoover@fl.usda.gov
772-461-4546 ext#2

Wednesday, October 25, 2017 - 10:00 AM

USDA ARS Building
2001 S. Rock Rd
Ft. Pierce, FL 39495

Jenny Hoover Jenny.Hoover@fl.usda.gov
772-461-4546 ext#2

Wednesday, October 25, 2017 - 2:00 PM

Indian River County Board of County Commissioners
Commission Chambers
1801 27th St Building A
Vero Beach, FL 32960

Jenny Hoover Jenny.Hoover@fl.usda.gov
772-461-4546 ext#2

Thursday, October 26, 2017 - 4:00 PM

University of Florida Citrus Research & Education Center
700 Experiment Station Road
Lake Alfred, FL 33850

Marcinda Kester marcinda.kester@fl.usda.gov
863-800-9077

Monday, October 30, 2017 - 6:00 PM

Charlotte County Extension
2550 Harbor View Road
Port Charlotte, FL 33980

Mike Nordlund michael.nordlund@fl.usda.gov
239-214-3110

Tuesday, October 31, 2017 - 10:00 AM

Manatee County Extension Service Kendrick Auditorium
1303 17th Street West
Palmetto, FL 34221

Israel Vega-Marrero
Israel.Vega-Marrero@fl.usda.gov
941-444-3143

Thursday, October 26, 2017 - 5:30 PM

Palm Beach County Cooperative Extension Service
559 N. Military Trail
West Palm Beach, FL 33415

Debbie Fletcher debbie.fletcher@fl.usda.gov
561-657-4221

Tuesday, October 31, 2017 - 2:00 PM

Sarasota County Extension Service
6700 Clark Road
Sarasota, Florida 34241

Israel Vega-Marrero
Israel.Vega-Marrero@fl.usda.gov
941-444-3143

Thursday, November 02, 2017 - 5:00 PM

Hendry County Extension Office Dallas B Townsend
Agricultural Center
1085 Pratt Boulevard
LaBelle, FL 33935

Interested in Export?

The Florida Small Business Development Center (FSBDC) has received special funding to assist farmers/value added producers to develop customized Export Marketing Plans.

This is a statewide program with a limited number of scholarships and a November 15th application deadline,

This program will be announced to the Florida Farm Bureau, FDACS Marketing Office, at the Florida Rural Economic Summit, Florida Fruit and Vegetable Association Annual Convention and a meeting of FSBDC certified global business professionals.

The Agriculture Export Marketing Plan Services will position your business for growth. This service helps “new-to-export” and “currently exporting” growers, value added producers identify overseas growth strategies through the development of a customized Export Marketing Plan.

Why Export? Over 95% of the world’s customers are located beyond U.S. borders. Exporters realize higher employment growth than non-exporters.

Most companies that export have an easier time riding out fluctuations in the U.S. economy and are more likely to stay in business.

Export wages are typically 13–18% higher than non-export wages.

The Process - Apply online and once qualified you will meet with a Florida SBDC Professionally Certified Consultant to conduct a confidential, in-depth business assessment. The Specialist will prepare and provide your company with a customized Agriculture Export Marketing Plan.

Qualifications

- Florida Farmers and value-added food producers only – food producers must source 51% of the food product from Florida
- Products must be produced in the state of Florida and must be provided from a Florida location
- New-to-export farmers/producers or current exporters looking to expand into new international markets
- Minimum of three years in business
- \$500,000 minimum in annual sales

Cost to Qualifying Company - The cost for preparation of an Export Marketing Plan is \$5,000. Qualifying companies are eligible for a \$4,750 scholarship, making the cost to your company \$250. This pilot program is only being offered for a limited time.

A robust response from growers may help with ongoing funding for this important program to increase agricultural profitability through market diversification.

See more and find the program application at <http://tinyurl.com/y9fjr9ww>

Syngenta 2ee labels for tomato bug

John B. Taylor, Agronomic Service Representative, Syngenta advises that in response to several commercial inquiries this past season and observations in the research plots at their Vero Beach Research Center, Syngenta has issued new 2ee labels adding control of Tomato Bug (*Cyrtopeltis modesta*) to the labels for Actara, Besiege, Endigo and Warrior.

Please see labels below.

Actara 2ee label - <http://tinyurl.com/y7cevykq>

Besiege 2ee label - <http://tinyurl.com/y99b479u>

Endigo 2ee label - <http://tinyurl.com/y9otd4wx>

Warrior 2ee label - <http://tinyurl.com/y7r9b5z2>

Direct any questions to:

John B. Taylor, Jr. CCA
Agronomic Service Representative
Syngenta

Phone 561-694-8671
mobile 561-718-9492
email john.taylor@syngenta.com

Dr Phil Stansly, Entomologist at UF/IFAS SWFREC writes this is the native tomato bug, presently called *Engytatus modestus* (*Cyrtopeltus* is a synonym).

It can be confused with the introduced species, *Nesidiocoris tenuis* or some other native species like *Macrolophus praeclarus*. All are predators on various pests especially whiteflies but also including eggs of Lepidoptera such as tomato pinworm. All will also damage tomato to varying degrees, especially in the absence of insect prey. *E. modestus* is the most damaging, followed by *N. tenuis* and finally *M. praeclarus*. Nevertheless, *N. tenuis*, alias “Nesibug” is widely used in Europe to control whiteflies and an invasive “tomato leafminer” (*Tuta absoluta*) which is now in Central America and headed north.

Dr Stansly has been working with *N. tenuis* for several years and has found it to be very effective at controlling whiteflies in open field tomato with little damage. The bugs are released on tomato seedlings and allowed to lay eggs for a week before planting. Best results occur when tomato is intercropped with sesame plants which give the bugs an alternative plant host that which keeps them in the crop and minimizes damage to tomato.

Phil suggests that it is probably not necessary to spray unless the bugs get too numerous. How many that is will depend on species which Dr. Stansly would be glad to identify for anyone interested. He might be able to do this by photo although the best would be to send specimens in alcohol.

Contact info:
Dr. Phil Stansly

University of Florida/IFAS/SWFREC
2685 SR 29 N, Immokalee FL 34142 USA
239-658-3400
pstansly@ufl.edu

The virtues of Agriculture by Thomas Jefferson

- “Agriculture... is our wisest pursuit, because it will in the end contribute most to real wealth, good morals and happiness.” --Thomas Jefferson to George Washington, 1787.

- "Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds. As long, therefore, as they can find employment in this line, I would not convert them into mariners, artisans, or anything else." --Thomas Jefferson to John Jay, 1785.

- "The pursuits of agriculture [are] the surest road to affluence and best preservative of morals." --Thomas Jefferson to John Blair, 1787.

- "Those who labor in the earth are the chosen people of God, if ever He had a chosen people, whose breasts He has made his peculiar deposit for substantial and genuine virtue. It is the focus in which he keeps alive that sacred fire which otherwise might escape from the face of the earth. Corruption of morals in the mass of cultivators is a phenomenon of which no age nor nation has furnished an example." --Thomas Jefferson: Notes on Virginia 1782.

- "An industrious farmer occupies a more dignified place in the scale of beings, whether moral or political, than a lazy loungeur, valuing himself on his family, too proud to work, and drawing out a miserable existence by eating on that surplus of other men's labor which is the sacred fund of the helpless poor." --Thomas Jefferson: Answers to de Meusnier Questions, 1786.

- "Agriculture... is the first in utility, and ought to be the first in respect." --Thomas Jefferson to David Williams, 1803.

Equivalent Testing Methodologies for Agricultural Water

For growers that fall under the Produce Safety Rule, there is big news from FDA related to Ag water testing (the EPA method 1603). The link below lists several methods FDA has determined are “equivalent”. While this may not address all issues related to water testing in the rule, it does provide sorely-needed options pertaining to the method of analysis.

FDA has determined that the following methods are “scientifically valid” and “at least equivalent to the method of analysis in § 112.151(a) in accuracy, precision, and sensitivity:

1. Method 1103.1 disclaimer icon - Escherichia coli (E. coli) in Water by Membrane Filtration Using membrane-Thermotolerant Escherichia coli Agar (mTEC) (March 2010). U.S. Environmental Protection Agency. EPA-821-R-10-002.
2. Method 1604 disclaimer icon – Total Coliforms and Escherichia coli in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium) (September 2002). U.S. Environmental Protection Agency. EPA-821-R-02-024.
3. 9213 D – Natural Bathing Beaches (2007). In: Standard Methods for the Examination of Water and Wastewater, 22nd Edition (Rice E.W., et al., Ed.), 9-46 – 9-48. Washington, DC: American Public Health Association. (2012).
4. 9222 B – Standard Total Coliform Membrane Filter Procedure (1997), followed by 9222 G – MF Partition Procedures (1997) using NA-MUG media. In: Standard Methods for the Examination of Water and Wastewater, 21st Edition (Eaton A.D., et al., Ed.), 9-60 – 9-65, and 9-70 – 9-71, respectively. Washington, DC: American Public Health Association. (2005).
5. D 5392-93 – Standard Test Method for Isolation and Enumeration of Escherichia coli in Water by the Two-Step Membrane Filter Procedure. In: Annual Book of ASTM Standards, Volume 11.02. ASTM International. (1996, 1999, 2000).
6. Hach Method 10029 for Coliforms – Total and E. coli disclaimer icon, using m-ColiBlue24® Broth PourRite Ampules.
7. IDEXX Colilert® Test Kit disclaimer icon, but only if using IDEXX Quanti-Tray/2000 for quantification.
8. IDEXX Colilert-18® Test Kit disclaimer icon, but only if using IDEXX Quanti-Tray/2000 for quantification.

See <https://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm575251.htm>

In addition:

The FDA has pushed back its timeline for water testing compliance for the largest farms until 2022.

The FSMA Produce Safety Rule Inspections will now begin in 2019 (and not 2018).

Operation Cleansweep

Operation Cleansweep has been funded for 2016-2017.

Operation Cleansweep provides farmers, nursery operators, golf course operators, and pest control services a one-time safe and economical way to dispose of their cancelled, suspended, and unusable pesticides. Some of these materials are very old and in containers that are deteriorating.

Some, such as chlordane and DDT, are so toxic to humans and hazardous to the environment that they are no longer allowed to be used. Proper disposal can be costly and a regulatory burden for small farmers and other pesticide users.

Operation Cleansweep offers an opportunity to avoid these formidable barriers and to promote safe and environmentally sound pesticide use, handling and disposal. Operation Cleansweep began in 1995 with a statewide collection of more than 70,000 pounds of lead arsenate, a widely used pesticide for citrus operations which was banned from use by the EPA. Through July 2016, Operation Cleansweep collected and disposed of more than 1,660,000 pounds (830 tons) of cancelled, suspended and unusable pesticides from almost 2400 participants in all 67 counties.

Pesticide collection will be done at the participant's site by a hazardous waste contractor according to a pick-up plan that will be developed as approved participants' locations are mapped.

For more information, contact Shannon Turner with Operation Cleansweep by phone at 877.851.5285.

Up-coming Produce Food Safety Classes

Produce Safety Alliance Grower Training Course

This one-day course is for fruit and vegetable growers and packers. The course will provide a foundation of GAPs and co-management information, FSMA Produce Safety Rule requirements, and details on how to develop a farm food safety plan.

The PSA Grower Training Course is one way to satisfy the FSMA Produce Safety Rule training requirement

11/08/17 – West Palm Beach, FL - <http://psa110817.eventbrite.com>

11/13/17 – Wimauma, FL - <http://psa111317.eventbrite.com>

11/14/17 – Tavares, FL - <http://psa111417.eventbrite.com>

PSA Train-the-Trainer

09/6-7/17 – Lake Alfred, FL - <https://psattt090617.eventbrite.com>

FSPCA Training -Preventive Controls for Human Food-Preventive Controls Qualified Individual (PCQI)

This three-day course was designed by the Food Safety Preventive Controls Alliance (FSPCA) to cover the requirements of the Preventive Controls for Human Food Rule and meet the requirements of a PCQI. This hands-on course will teach participants how to develop and document a Food Safety Plan based on the requirements of FSMA's Preventive Controls for Human Foods Rule for their specific operations.

FSPCA Training - PCQI

09/19-21/17 – Fort Pierce, FL - <http://fspca091917.eventbrite.com>

11/15-17/17 – Immokalee, FL - <http://fspca111517.eventbrite.com>

HACCP for Florida Fresh Fruit and Vegetable Packinghouses

This hands-on course will teach participants how to develop and document a food safety management program based on the principles HACCP for their specific operations.

This course does not fulfill any regulatory training requirement but is required by some third-party audits schemes.

11/20-21/17 – Belle Glade , FL - <https://haccp112017.eventbrite.com>

Up Coming Meetings

October 26, 2017 **Vegetable Growers Meeting – Fertilizers and fertilizer sources** **6:00 PM**

UF/IFAS SW Florida Research and Education Center
SR 29
Immokalee Florida

November 1, 2017 **WPS Train the Trainer Program** **8:30 AM - 3:30 PM**

Clayton Hutcheson Ag. Center
Exhibit Hall A
Palm Beach County Cooperative Extension Service
559 N. Military Trail
West Palm Beach, FL 33415

Call for details at 561.233.1725 or email at EEScott@pbcgov.org

November 8, 2017 **Florida Ag Expo** **7:30 AM – 4:00 PM**

UF/IFAS Gulf Coast Research and Education Center
14625 CR 672
Wimauma, FL 33598

To register: <https://www.eiseverywhere.com/ereg/index.php?eventid=248385&>

Websites

WPS Compliance Suite — Training Materials

Under the newly-revised Worker Protection Standard (WPS), training materials must be EPA-approved when officially training workers, handlers, and trainers.

- Expanded training concepts will be required starting January 2, 2018.

- Training must be delivered in a manner that can be understood, in a location relatively free from distractions.
- When training workers or handlers, the trainer must remain present at all times to be available to answer questions, even when showing a video.
- Trainers must be qualified, most often by holding a pesticide applicator's license or by completing an EPA-approved Train-the-Trainer course.

Training Materials for Workers and Handlers - <http://pesticideresources.org/wps/temp/training/index.html>

Need CORE CEU's? – here is an easy way to obtain CORE CEU's on-line by reading an article and answering questions regarding the online. A passing score obtains one Core CEU.

CEU Series: Mix and Load Pesticides Safely

CEU Series: Protect Crops and the Environment

CEU Series: Make Sure to Stow Your Pesticides Before You Go

CEU Series: Avoid Mishaps When Handling Pesticides

CEU Series: Be Aware of Bees When Applying Pesticides

CEU Series: Place Priority on Preventing Pesticide Poisoning

CEU Series: Learning About Pesticide Resistance Is Anything but Futile

Go to <http://www.growingproduce.com/?s=CORE+CEUs>

Check out Southwest Florida Vegetable Grower on Facebook

<https://www.facebook.com/pages/South-Florida-Vegetable-Grower/149291468443385> or follow **Gene McAvoy on Twitter @SWFLVegMan** - <https://twitter.com/SWFLVegMan>

Find UF/IFAS Palm Beach County Fruits and Vegetables on Facebook:

<https://www.facebook.com/vegetableandtropicalfruituf.ifas.extpbcc/>

Contributors include: Joel Allingham/AgriCare, Inc, Javier Soto/West Coast Tomato Growers, Gordon DeCou/Agri Tech Services of Bradenton, Dr Nick Dufault/ UF/IFAS, Carrie Harmon/UF/IFAS Plant Disease Clinic, Sarah Hornsby/AgCropCon, , Bruce Johnson/General Crop Management, Barry Kostyk/SWFREC, Leon Lucas/Glades Crop Care, Chris Miller/Palm Beach County Extension, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Dr.Gregg Nuessly/EREC Chuck Obern/C&B Farm, Dr. Monica Ozores-Hampton/SWFREC, Dr. Rick Raid/ EREC, Ryan Richards/The Andersons, Dr Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Dr. Dak Seal/ TREC, Kevin Seitzinger/Gargiulo, Crystal Snodgrass/Manatee County Extension, Dr. Phil Stansly/SWFREC, Dr. Josh Temple, DuPont Crop Protection, Dr Gary Vallad/GCREC , Mark Verbeck/GulfCoast Ag, Dr. Qingren Wang/Miami-Dade County Extension, Alicia Whidden/Hillsborough County Extension, Dr Henry Yonce/KAC Ag Research and Dr. Shouan Zhang/TREC.

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.

Gene McAvoy

Gene McAvoy

County Extension Director / Extension Agent IV

Regional Specialized Agent - Vegetables/Ornamental Horticulture

Hendry County Extension Office
PO Box 68
LaBelle, Florida 33975
Web: <http://hendry.ifas.ufl.edu/>

863-674-4092 phone
863-673-5939 mobile
863-674-4637 fax
GMcAvoy@ifas.ufl.edu

Chris Miller

Christian Miller
Extension Agent II – Vegetable Production & Tropical Fruits
Palm Beach County Extension
559 North Military Trail, West Palm Beach, FL 33415

Phone: 561-233-1718

Email: cfmiller@ufl.edu

Web:

<http://discover.pbcgov.org/coextension/Pages/default.aspx>

Special Thanks to the **generous support** of our **sponsors**; who make this publication possible.

Thomas Produce Company

Of South Florida
Grower and Shippers of Quality Vegetables
9905 Clint Moore Road
Boca Raton, Florida 33496

Shawn Barley

Wedgworth's Inc.
Big W Brand Fertilizer
(863) 441-9255 cell

Carol Howard

Mobley Plant World
1351 W Cowboy Way
LaBelle, Florida 33935
Phone 863-675 -2020

Ryan Richards

Wedgworth's Inc.
710 Broward Street
Immokalee, FL 34142
Phone 239-657-8254 Fax 239-657-2005

Gargiulo

Growers Shippers Importers Exporters
David Pensabene: Production Manager
Naples Operations
Phone 239-353-0300 Fax 239-353-3407

Nichino America

Makers of Courier, Portal & Vetica
Technical Sales Representatives
Todd Villars: West Florida - 863-532-0937
Sam Monroe: East Florida - 772-473-0873

Dr. Nancy Roe

Farming Systems Research
5609 Lakeview Mews Drive
Boynton Beach, Florida 33437
Phone 561-638-2755

Ed Early

DuPont Crop Protection
Fort Myers, Florida 33911
Mobile 239-994-8594

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Glades Crop Care, Inc.
**Leaders in Crop Health
Management**

Charlie Mellinger, Ph.D.
Phone 561-746-3740 Fax 561-746-3775

Stacey Howell
Bayer CropScience

3481 3rd Ave NW
Naples, FL 34120
Phone (239) 353-6491 Cell (239) 272-8575

Justin Powell
Southeast Business Leader

Adama

229 881 9757 cell
justin.powell@adama.com

Bart Hoopingarner
Gowan Company

3605 162nd Ave East
Parrish, FL 34219
Phone 941-776-1105 Cell 941-737-7444

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Cell 336-337-2085

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Dave Cole - 561-261-1545
Tony Swensen - 801-808-2132

Dave Owens
Marrone Bio Innovations

Cell 239-233-9073 or
dowens@marronebio.com

Brent Beer
**Beer Leveling &
Land Development**

Office 863-675-1663 863-673-3173 cell
158*17*43857 Nextel

Certis USA
Bio-Pesticides for Crop Production

Joe Craig - 863-291-9203
Chuck Goodowns - 352-538-4471

Scott Houk
Dow AgroSciences LLC

Phone 239-948-3999
Email sehok@dow.com

FMC
FMC Corporation

Eric Johnson
Cell 352-281-2325

EJ.Johnson@fmc.com www.fmccrop.com

Steve Mike Dave
Jamerson Farms

Growers, Packers and Shippers of
Florida's Finest Vegetables
Phone 239-229-5734 Fax 239-368-0969

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Sarah Hornsby, CCA
Agricultural Crop Consulting, Inc
Scouting: Manatee, Hillsborough, Collier
Office/Fax 941-776-1122
Cell 941-713-6116
Email: AgCropCon@aol.com

Donald Allen
AGLIME SALES INC
PO Box 60
Babson Park, Florida 33827-0060
Office 863-638-1481 Fax 863-638-2312
Mobil 863-287-2925

BioSafe Systems LLC

OxiDate® TerraClean® StorOx®	Jarod Huck 352-789-9363 Luis Hansen 305.793.9206
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info@biosafesystems.com

PUT YOUR NAME HERE

BASF Corporation

Adrian Jahna
863-443-2404
Adrian.jahna@basf.com

 

Certified for use in Organic Production
Jack Kilgore 239-707-7677
g8trmanjek@comcast.net

Valent USA

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Sarah Markle 863-673-8699

ORO AGRI
Pesticides and Spreader Oils
OROCIT/ PREV-AM/WETCIT
Brent Sapp 229-392-2325
bsapp@oroagri.com
CPS/Howards/Triangle

Chuck Obern
C & B Farm
CR 835
Clewiston, FL 33440
Office 863-983-8269 Fax 863-983-8030
Cell 239-250-0551

Scott Allison
Diamond R Fertilizer
PO Box 1898
LaBelle, FL 33975
(863) 675-3700
sagator@aol.com

Arysta Life Science

Richard Royal 352 434-8774
Shaun Yule 386 561 0493

Richard Roles
Roles Marketing International
Distributors of Agrigro and Super
Cal 10% Calcium
richard@rmiint.com www.rmiint.com
Cell 561-644-3511

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Dr. Henry Yonce
KAC Agricultural Research
Scouting, Consulting
Research
386-736-0098 work 386-527-1124 cell
HDYONCE@msn.com

Grower's Management, Inc
P.O. Box 130
Belle Glade, FL 33430
Phone: 561-996-6469
www.growersmanagement.com

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