



UNIVERSITY OF
FLORIDA

E X T E N S I O N

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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

October 17, 2013

With the exception of some rain bands generated by Tropical Storm Karen, October seems to have ushered in an abrupt end to the near daily rain experienced across the area in August and September.

Parts of Miami Dade and Broward Counties were hit by abnormally heavy rains in early October, which dropped from 5 – 10 inches of rain or more in some places. Much of the rest of the area reported around an inch or less for the period.

According to the National Weather Service in Ruskin, the rainy season most likely came to an end on Wednesday October 9 when drier air filtered in over South Florida ending the typical afternoon thunderstorms and showers. With the exception of the possible impacts of a tropical system, our weather from here on will be controlled more by cold fronts than afternoon sea breeze thunderstorm collisions.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
9/25 - 10/17//13	59.54	89.80	0.82	83	0.12
Belle Glade					
9/25 - 10/17//13	61.18	89.92	2.15	85	0.14
Clewiston					
9/25 - 10/17//13	64.00	91.89	1.57	83	0.13
Ft Lauderdale					
9/25 - 10/17//13	66.25	90.21	5.81	80	0.13
Fort Pierce					
9/25 - 10/17//13	62.24	90.88	0.98	84	0.13
Homestead					
9/25 - 10/17//13	65.14	92.10	1.10	85	0.12
Immokalee					
9/25 - 10/17//13	63.68	93.65	0.95	82	0.14

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COOPERATIVE EXTENSION WORK IN AGRICULTURE, FAMILY AND CONSUMER SCIENCES, SEA GRANT AND 4-H YOUTH, STATE OF FLORIDA, IFAS, UNIVERSITY OF FLORIDA, U.S. DEPARTMENT OF AGRICULTURE, AND BOARDS OF COUNTY COMMISSIONERS COOPERATING

Daytime temperatures have been running in the upper 80's to low 90's with most nights in the 70's. The past few days have brought a hint of fall with nighttime lows finally dropping in to the 60's.

Strawberry planting is beginning in the Manatee Ruskin area as vegetable planting swings into high gear around South Florida including the EAA, Homestead and the Palm Beach Ag Preserve.

Crops coming to market include boniato sweet potatoes, eggplant, okra, watermelons and a variety of specialty items.

Most crops look good considering the amount of rainfall we had this fall. Some growers are reporting salt damage on a variety of crops stemming from above leaching rainfall at planting which solubilized hot bands quicker than normal. Many growers report poor stands of green beans seeded during wet weather due to soil borne disease. Growers are grateful for the onset of dry weather which has helped ease disease pressure and is allowing them to get back on schedule.

The National Weather Service forecast indicates that dry weather continues over south Florida through early this week before a slight chance of showers returns late this week into the weekend.

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

Insects

Worms

Dr Gregg Nuessly, Entomologist at the UF/IFAS EREC in Belle Glade reports a peak in fall armyworm larvae in sweet and field corn in the Belle Glade area in early October resulting in over 80% ear infestation in untreated plots at EREC. He notes that very low numbers of corn earworms have also been observed in corn ears this month.

On the East Coast, growers and scouts report that worms are common with loopers being seen on eggplant and fall armyworm on peppers. Some growers report finding some yellow striped armyworms which do not seem to be as susceptible to Bt's as well as fall armyworm are.

Around Immokalee, growers and scouts report that worm pressure is high and that they may have been slow getting started this season but are making up for it now. Scouts are finding all kinds of worms – southern, beet and fall armyworms, fruitworms, loppers, hornworms, and melonworms. They report finding worm eggs in most fields and lots of young worms but note that most growers are managing to stay ahead of them.

A few Costa Rican armyworms or white spotted armyworms (*Spodoptera sunia*) have been reported in peppers, tomatoes and squash around Immokalee. Not uncommon in our area, the white spotted armyworm is often confused with southern armyworm (*S. eridania*). *Spodoptera sunia* can be identified by a white spot at the apex of the dorsal triangles. If the dorsal triangles are reduced, then at least several of the spots will be ringed with black representing remnants of the dorsal triangles.

In the Manatee Ruskin area, respondents indicate that worms won't quit and report finding a mixed bag of armyworms, loopers, and hornworms depending on the crop.

Dr. Dak Seal, Entomologist at UF/IFAS TREC reports that growers in the Homestead area are beginning to see a variety of worm pests including fall armyworm and beet armyworm. He notes that diamondback moth can be a problem throughout the season in the Homestead area.

Dak advises that Verimark (Cyazypyr) applied at planting followed by Rimon (Novaluron)/Radiant (Spinetoram) (28 DAP), Avaunt (indoxacarb) (42 DAP) will provide excellent control of DBM, FAW, BAW and melon worms. He notes that *Bacillus thuringiensis* based insecticides can be used in between applications of above treatments to maintain worm free crops.

He also notes that Intrepid (methoxyfenoxide) is effective in controlling all worms. It is an insect growth regulator. Once young lepidopteran larvae come in contact with Intrepid, they stop feeding. Death may occur immediately or several hours later. He advises that growers should not get disappointed if they see some of the worms still alive or walking around. As a matter of fact, they are looking for some resting place to die. Intrepid is benign to natural enemies and provides a good IPM and Integrated Resistant Management tool. It has a long residual toxicity (about two weeks). It is most effective when applied against freshly emerged larvae.

Dr. Seal also notes that Rimon is another effective growth regulator in controlling fall armyworm and other worm pests.

Richard Royal of DuPont Crop Protection suggests another possible insecticide rotation for sweet corn in order to reserve pyrethroids as much as possible for silk flies. Instead of a Group 28 (Diamides) such as Chlorantraniliprole (Coragen) or Flubendiamide (Belt) or Group 5 (Spinosyns) – Spinetoram (Radiant), Spinosad (Conserve, Entrust) or Group 15 (Benzoylureas) – Novaluron (Rimon) followed by Group 1A (Carbamates) such as Carbaryl (Sevin), Methomyl (Lannate) and Group 3A (Pyrethroids) – multiple products - applications for the rest of the crop, some growers have gone back to following a Group 28 (Diamides) whorl application with a Group 22A (Indoxacarb) Avaunt spray as long as it is before tassel push. Labels for both Group 5 and 15 products have recommendations for tassel push on which Avaunt does not. Using it second in the rotation can leave more options for later.

Over the past few years, chemical manufacturers have produced a variety of new tools in the battle against armyworms so that growers now have a wide array of excellent worm control materials in their arsenal

Growers are reminded to rotate between products of different chemical classes to avoid the buildup of possible pest resistance. The range of materials to choose from and the use of IRAC numbers make this task relatively easy to do.

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

Fall means armyworm time in Florida. Although these pests are present almost year round in the southern part of the state, they reach peak populations in the early fall when cooler weather to our north pushes migrating moths southward.

The moths known as armyworms belong to the family Noctuidae of the order Lepidoptera. The family name refers to the nocturnal nature of the adults. While the adult stage causes no direct damage, the immature worm stage feeds, often voraciously, on plants.

Hosts include many vegetables, agronomic crops and grasses. The worms prefer to feed on foliage but may attack the stems, fruit or even tubers of certain host plants. Damage can be extensive. Armyworms are active from spring until fall. The different armyworms are similar in color, size and markings and can be difficult to tell apart.

The different armyworms especially the younger instars are similar in color, size and markings and can be difficult to tell apart.

The fall armyworm, (*Spodoptera frugiperda*), is probably the most damaging Florida armyworm. It may be light tan to shades of gray or green. The head capsule is usually shiny black or brown, with a prominent yellow or white inverted Y marking on the front. The body has many black tubercles, or round, mole like structures. When fully grown, the caterpillar reaches 1 1/2".

The beet armyworm, (*Spodoptera exigua*), is about 1 1/4" long when mature. The body is usually some shade of green but can vary, with prominent dark lateral bands running its full length. There is a single prominent black spot behind the head, about halfway up the side of the body and right above the second pair of true legs. Beet armyworms are often the most difficult to control.

The southern armyworm, (*Spodoptera eridania*) is one of the more robust armyworms and is often called a "climbing cutworm." The mature larva can exceed 1 1/2" in length and can be either gray or pinkish. It strongly resembles the yellowstriped armyworm. The head of the southern armyworm is usually yellow to light orange. The lateral stripe on the side of the body is interrupted by a large dark patch at the beginning of the abdomen.

The yellowstriped armyworm, (*Spodoptera ornithogalli*), has a brownish head with a pale yellow inverted V on the upper front. It has distinct bright yellow lines on the top of the sides of the body. The yellowstriped armyworm occurs with both overall pale and dark colored bodies. It has two rows of black triangle shaped markings running the length of the body. Each row is offset from the center of the back. A thin white line runs lengthwise through each series of dark triangles. The yellowstriped armyworm is more common in north Florida.

Whiteflies

Respondents in Homestead report that silver leaf whitefly abundance is increasing in all vegetable crops. Dr. Dak Seal advises that for tomatoes Admire at planting followed by drip application of Verimark (28 DAP) and foliar application of Venom (49 DAP) provided significant control of silver leaf whitefly and the tomato yellow leaf curl virus they transmit. . He notes that this program also significantly reduced Groundnut Ring Spot Virus by reducing the thrips vector.

On the East Coast, reports indicate that whitefly pressure remains mostly low but growers report finding some nymphs on transplants and are now starting to spray the oldest tomato plantings. Some whiteflies are also present on cucurbits and eggplant.

Respondents in SW Florida indicate that whitefly numbers are up and down, and remain fairly low overall although there are some reports of field margins where numbers have flared to higher levels.

Reports from the Manatee Ruskin area indicate that whitefly numbers are beginning to spike upwards in many places.

Respondents in north Florida indicate that whiteflies are coming off peanuts and pressure is high.

Silkflies

Dr Gregg Nuessly, Entomologist at UF/IFAS EREC reports that corn silk flies have been a consistent problem throughout the summer in both sweet and field corns and notes that he expects them to continue to be an issue through the fall and early winter months.

Gregg notes silkworms are becoming even more resistant to pyrethroids and he encourages growers and scouts to consider non-pyrethroid options for fall armyworm control pre-tassel-push to preserve the pyrethroids for silking period and reduce selection pressure against flies that enter the field to feed on fall armyworm frass in whorls before ears are even present to infest.

Cucumber Beetles

Grower and scouts report they continue to find a few cucumber beetles on a variety of crops around south Florida with higher numbers on sweet corn and in green beans around the EAA.

The banded cucumber beetle is omnivorous, attacking numerous plant species and plant parts. While the pest prefers feeding on weeds in the genus *Amaranthus*, it attacks a wide range of vegetables. Vegetables affected include cucumber, squash, bean, pea, sweet potato, okra, corn, lettuce, onion, and cabbages. Damage may occur to foliage, blossoms, crown, and roots. Delayed growth, plant stunting and stand loss can result from heavy feeding damage by adults.

The white, elongate, soft-bodied larvae have three pairs of minute legs and complete their development below ground feeding on roots. Some of the most serious injury results from larval feeding on the roots of sweet potato and other vegetables. In addition to feeding damage, the banded cucumber beetle is known as a vector of several pathogens including such as Stewart's wilt in corn and several viral diseases in beans. Larval feeding may also increase the incidence and severity of Fusarium wilt in cucurbits.

Insecticides are used to prevent damage to roots by larvae. Typically, granular insecticides are applied over the row, either at or just after planting. Numerous pesticides are labeled for treatment of cucumber beetle larvae.

Foliar insecticides are sometimes needed to prevent damage to seedlings and small plants, but adults are rarely abundant enough to warrant control on large plants. Chemical control of adults is through contact or bait insecticides. Baits may be attractive as they selectively treat the beetles as they eat the baits.

In trials at TREC, Rimon provided excellent control of cucumber beetle.

Thrips

Respondents in Homestead report they are beginning to see low levels of melon thrips on a variety of newly planted crops. Dr Dak Seal reminds growers that melon thrips did not disappear over the summer but were carried over in non-cultivated host plants.

Dak recommends growers scout crops regularly to stay on top of any new infestation. During early stages of infestation, feeding damage may not be discernible, but thrips will be seen at the base of mid rib or along the mid rib.

If detected early, Radiant in combination with nonionic surfactant or Radiant in combination with Requiem, or Radiant in combination with Vydate/Lannate is effective to stop population increase.

A few flower thrips are being reported around Homestead and in east coast pepper growing areas where they are pretty common in blooms.

Leafminers

Leafminers are increasing in the Manatee/Ruskin area with more adults being reported and a few growers are beginning to spray for leafminer.

Around Immokalee, scouts report finding a few leafminers but note that parasites are generally keeping them in check.

Broad Mites

A few broad mites are being reported on pepper by growers and scouts on both coasts.

Around Palm Beach County, broadmites are being detected on newly set pepper transplants.

Around Homestead, broad mites are showing up on some newly planted vegetable crops.

Spider mites

A few spider mites are being reported in eggplants and watermelons.

Sweetpotato weevil

Respondents in Homestead report that weevils are abundant on boniato sweet potato.

Consult UF/IFAS recommendations for currently labeled insecticides for sweet potato weevil control in Florida.

Dak Seal advises that lannate, pyrethroids and sulfoxaflor (Closer) provided significant reduction of sweet potato weevil in his laboratory and field studies.

Diseases

Bacterial Spot

Dry weather over the past two weeks has given growers some relief from bacterial spot.

On the east coast, moderate levels of bacterial leaf spot are present on the foliage in some older tomatoes with nothing reported on the fruit. Younger tomato and pepper plantings are generally pretty clean with only low levels of bacteria being reported.

Growers and scouts around Immokalee report that bacterial spot is pretty common in tomato but has only reached moderate to severe levels in a few locations at this point.

In Manatee/Hillsborough area, bacterial spot in tomato ranges from pretty good to pretty bad, depending on location and rainfall. Growers and scouts report many fields suffered under severe pressure in September but the past couple of weeks of good growing weather is helping plants recover. Respondents note some severely affected blocks have no bottoms but only low levels of fruit infection have been reported.

Scouts in the Manatee Ruskin area report find some bacterial speck on tomato in mixed infections with bacterial spot.

In the past few years several new 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), Actinovate (Novozymes), Regalia (Maronne Bioinnovations) and Serenade and Sonata (AgraQuest).

A number of growers and researchers have also experienced success with the bacteriophage (bacterial virus) AgriPhage (Omnilytics) for the control of bacterial spot. Success with AgriPhage requires a high level of management and sampling to detect new strains of bacteria and submit the samples to Omnilytics for reformulation.

Bacterial Leaf Spot of Cucurbits

Pseudomonas leaf spot and blight (preliminary ID is *Pseudomonas syringae*) has been showing up on watermelons all across the state. This appears to be similar to the disease that was fairly widespread on melons in all production areas last spring.

Infections have also been seen on squash, including some very young plants.

The key symptom is circular lesions (black edge) and white to tan centers. Under the microscopic examination a cut section of the lesion indicates heavy bacterial streaming.

Bacterial Wilt

Bacterial wilt is causing some issues in north and central Florida where it is traditionally a problem.

Bacterial Streak

Around Belle Glade, there were some reports of bacterial streak on sweet corn during the wet windy weather. This may have been exacerbated by worm activity.

Fruit Blotch

The UF/IFAS Plant Disease Clinic in Gainesville has reported receiving samples with fruit blotch bacteria on cucurbits (squash and cucumbers) but no details are available.

Southern Corn Leaf Blight

Around Belle Glade, scouts are reporting low disease in corn except where current plantings are near fields previously planted with summer field corn. In these instances, southern corn leaf blight caused by the fungus *Bipolaris maydis* is active on young plants and will likely require several additional sprays above those normally applied.

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.

Fungicides should be applied early, particularly if the forecast is for warm, humid weather. The sterol inhibitors and strobilurin fungicides are most efficacious. These products should be used together with a broad spectrum protectant to minimize development of fungal resistance.

Target Spot

A little target spot is beginning to show up in a few places around South Florida but is mostly low with the exception of a few places around the Manatee Ruskin area where fruit infections have been reported.

Pythium

Pythium has been a problem in some newly transplanted tomato and pepper crops around Southwest Florida. Incidence has been surprisingly low given the heavy rainfall of the past several weeks.

Around Palm Beach County wet soil conditions have resulted in pythium activity on tomato and pepper.

Southern Blight

Mostly low levels of Southern blight is being reported around South Florida and has flared up in some hotspots over the past few weeks.

Around Palm Beach County, a fair amount of southern blight showing up on peppers planted on non-fumigated and or double-cropped plastic.

Downy Mildew

Low levels of downy mildew have been reported on squash and cucumbers in multiple locations around South Florida.

Tomato Yellow Leaf Curl

Incidence and occurrence of TYLCV is very low across the area with only a few isolated plants being reported in a handful of fields.

Choanephora Blight

A little Choanephora wet rot has been reported in pepper and beans around South Florida with the wet weather but drier conditions appeared to have limited its progress.

Cucurbit Leaf Crumple Virus

Dr Matthews Paret, Plant Pathologist at the UF/IFAS NREC in Quincy reports that Cucurbit Leaf Crumple Virus on watermelon is going wild throughout Panhandle. For more info on the disease, see http://nfrec.ifas.ufl.edu/paret/u-scout/Cucurbits/Pages/Cucumbit_Leaf_Crumple_Virus.html

News You Can Use

Rainy Season Comes to an End in SW Florida

This rainy season was the wettest in a decade, and the sixth wettest on record, according to the South Florida Water Management District. The year started off with oddities — record heat in January was followed by record cold spells in March. May, the last full month of the dry season, delivered a foot of rain.

Southwest Florida is the wettest region in the state: not only did the area report the highest average rainfall numbers, but the lands that drain through the Kissimmee River/Lake Okeechobee system were above average as well.

While Lee, southern Charlotte and coastal Collier counties received an average of 57 inches, according to the South Florida Water Management District, the Punta Rassa community near Sanibel, recorded about 60 inches,

according to the National Weather Service. Just a few miles away, on the south side of the Caloosahatchee River, nearly 90 inches of precipitation fell.

NWS rainfall maps show east Lee and Naples Beach at 16 to 20 inches above average. The hurricane season ends Nov. 30.

The arrival of drier air on Wednesday, October 9th was the likely end to the rainy season. Along with the drier air came the first cold front in months. Temperatures haven't dipped into the 60s since May 19, when a low of 69 was recorded. Lows under 70 were first reported last fall on Oct. 15, 2012.

The Water Management District in West Palm Beach says there's little to no chance of the area entering into drought conditions between now and spring of 2014. Drought conditions prevailed here for years after heavy rainfall in 2005.

Flooding is still a concern as groundwater levels are high, and there's still a chance of a tropical system or wet cold front hitting the area before it dries. October is South Florida's prime flooding month because of standing rain water that is often on the landscape this time of year.

On calendars, the rainy season ends Nov. 1, but the time at which weather patterns shift from summer storms to winter fronts can vary. The median rainy season end date is Oct. 17, according to NWS.

Commissioner Putnam Announces 2014 Florida Agriculture Hall of Fame Honorees

Tallahassee, FL – Commissioner of Agriculture Adam H. Putnam and the Florida Agricultural Hall of Fame Foundation announced today four honorees who will be inducted into the Florida Agriculture Hall of Fame for 2014. These individuals have made outstanding contributions to Florida's agriculture industry and mentored future leaders in this field.

“These individuals have made incredible contributions to agriculture in our state and beyond,” Commissioner Putnam said. “The changes and improvements they have made will help ensure the strength of Florida's \$100 billion agriculture for generations to come. I am pleased to announce the awards for these outstanding gentlemen.”

This year's inductees are:

Scottie Butler, Gainesville, former general counsel, Florida Farm Bureau Federation

Scottie Butler has spent more than 40 years advocating for Florida's farmers and ranchers. He retired as general counsel from the Florida Farm Bureau Federation in September 2013, after more than four decades of service. He understood the importance of developing relationships to bring together associations, coalitions and government agencies to move key issues forward. In addition to his expertise, he strongly believed in helping raise up the next generation of agriculture leaders and has mentored several of today's industry leaders.

Bruce Christmas Sr., Cottondale, former Director of the Poultry Evaluation Center at the University of Florida

Bruce Christmas is a fifth generation farmer from Jackson County and a former Orange County Associate Extension Agent. He has been recognized by many organizations for his leadership and his volunteer service to youth and was previously chosen “National Volunteer of the Year” for the National Agriculture Alumni and Development Association.

Dr. Elver “Doc” Hodges, Wauchula, retired Professor Emeritus at the University of Florida

Dr. Hodges’ contributions to the livestock industry in Florida are enormous. His research as an agronomist identified problems and found solutions to enrich low-quality Florida soils, which revolutionized peninsular Florida beef production. He served with the University of Florida Range Cattle Research and Education Center and with the USAID International Program in Malawi. In addition, he was involved with his local 4-H program for many years.

Dallas Townsend, retired Director of the University of Florida Hendry County Extension Office

Dallas Townsend served 39 years as an extension agent in Southwest Florida and was instrumental in working with IFAS and the agriculture industry to bring more research capacity to the area through the UF/IFAS Southwest Florida Research and Education Center. His involvement with youth and 4-H is legendary, coaching more than a dozen 4-H teams and thousands of 4-H youth.

The award winners will be honored on Feb. 11, 2014 at the Ag Hall of Fame Dinner. For tickets, or more information about the Florida Agricultural Hall of Fame, go to <http://floridaaghalloffame.org/>

FFVA Affordable Care Act Meetings

If you are like many growers and still have a number of questions on how the Affordable Care Act may affect your operation, make plans to attend one of the upcoming FFVA District meetings for important information on the health care reform.

Agricultural employers must prepare now for how the Affordable Care Act will affect their operations in 2014. Join FFVA at a district meeting near you that will cover the details of compliance with the new law and how it will affect employers and their workforce. These meetings were originally scheduled for earlier this year, but were postponed due to delays in implementation of certain aspects of the law.

Meetings will be held in seven locations for your convenience. Click on the appropriate meeting link below to register online. A complimentary meal will be provided. Advance registration is required for an accurate meal count.

- Balm, Oct. 29, noon - <http://www.eventbrite.com/event/7072713677>
- Lake Alfred, Oct. 29, 5 p.m. - <http://www.eventbrite.com/event/7072663527>
- Homestead, Nov. 4, 5 p.m. - <http://www.eventbrite.com/event/7072378675>
- Belle Glade, Nov. 5, noon - <http://www.eventbrite.com/event/7072543167>
- Immokalee, Nov. 5, 5 p.m. - <http://www.eventbrite.com/event/7072476969>
- Fort Pierce, Nov. 7, noon - <http://www.eventbrite.com/event/7072741761>
- Sebring, Nov. 18, noon - <http://www.eventbrite.com/event/7072791911>

Representatives from J. Rolfe Davis Insurance will discuss the requirements and implications of the law. Topics will include:

- Who will be required to provide health insurance
- Which employees must be covered
- Penalties associated with the law
- How H-2A employees are affected

Also, sponsorship opportunities are still available. FFVA trade associate members are encouraged to take advantage of the opportunity to reach a cross-section of agricultural employers by sponsoring a luncheon at the meeting of their choice. Please contact Sonia Tighe at 813-975-8377 or via email.

Join Florida's Leading Growers & Researchers at the Florida Ag Expo

What's working best now that methyl bromide is gone? Which new varieties show the greatest promise? Could you be operating more efficiently, productively, profitably?

The 2013 Florida Ag Expo has answers to all of your questions, opportunities for you to see the latest field trials and an easy way to earn CEUs.

Here are just a few reasons you can't afford to miss this important event:

- Forward-thinking industry experts will share and analyze the latest production and market information.
- Exciting hands-on exhibits will showcase new products, equipment and services.
- You can earn CEUs simply by attending the afternoon sessions on crop protection.
- UF/IFAS experts will lead you on field tours to get you up-to-date on the latest R&D efforts.
- It's FREE! Admission into the Florida Ag Expo is FREE to growers, researchers, students and association personnel.* (Others may sign up for a reasonable registration fee.)

You can also get a signed copy of my NEW Pest and Disease ID Book!

See the full Agenda or register at <http://tinyurl.com/ph2wbnm>

Pesticide Potpourri

Managing Diamide Resistance in Florida Tomato

Diamides belong to a recently developed class of insecticides that disrupt ryanodine receptors, intracellular calcium channels that play a central role in muscle and nerve function. Diamide insecticides are systemic—they can be taken up by the plant's vascular system either through the roots or foliage. There are presently three diamide insecticides available for use on tomatoes in Florida: chlorantraniliprole, cyantraniliprole, and flubendiamide. Chlorantraniliprole and cyantraniliprole are also referred to as rynaxypyr and cyazypyr, respectively. Chlorantraniliprole, the active ingredient in Coragen, became available in 2008, and flubendiamide, the active ingredient in Belt and Synapse, became available in 2009. Cyazypyr became available in 2013, sold as Verimark for soil application and Exirel for foliar application. Diamide insecticides have been assigned the mode of action classification number 28 by the Insecticide Resistance Action Committee (www.irac-online.org).

Flubendiamide is primarily active against caterpillar pests. Key caterpillar pests of Florida tomato that can be managed with flubendiamide include cutworms, tomato fruitworm (*Helicoverpa zea*), tomato pinworm (*Keiferia lycopersicella*), southern armyworm (*Spodoptera eridania*), beet armyworm (*Spodoptera exigua*), and yellowstriped armyworm (*Spodoptera ornithogalli*). Other caterpillar pests attacking tomato that can be managed with flubendiamide include tobacco hornworm (*Manduca sexta*), cabbage looper (*Trichoplusia ni*), and soybean looper (*Pseudopludia includens*).

Chlorantraniliprole is effective against the same complex of caterpillar pests of tomato as flubendiamide. In addition, chlorantraniliprole suppresses nymphs of the silverleaf whitefly, *Bemisia tabaci* biotype B, and can be used to manage the larvae of serpentine and vegetable leafminers (*Liriomyza sativae* and *L. trifolii*).

Cyantraniliprole is effective against both adults and nymphs of the silverleaf whitefly, in addition to killing leafminer and caterpillar pests. The silverleaf whitefly vectors Tomato yellow leaf curl virus (TYLCV), which can cause devastating losses in tomato in Florida and other regions of the world.

As with any insecticide, repeated use of diamide insecticides on successive generations of the same pest may lead to the development of insecticide resistance. In order to avoid the development of resistance to diamides by

targeted pests of tomato, group 28 insecticides must be rotated with insecticides possessing different modes of action.

In order to conserve the efficacy of diamide and other insecticides, a “treatment window” approach can be employed. A treatment window is a period of time that is defined by the crop stage, the biology of the pest complex attacking the crop, or a combination of both. Tomato crops are most vulnerable to TYLCV during the first five or six weeks after transplanting, which makes that period the treatment window: the most important time to treat to protect the plants. Planting resistant varieties, destroying crop residues that serve as a reservoir for TYLCV, and using reflective mulches are key strategies for reducing early infection of the tomato crop. At-plant applications of neonicotinoid insecticides (Group 4A) or cyantraniliprole may also provide important early-season protection from viruliferous whiteflies. Because of the importance associated with insecticides that can help suppress transmission of TYLCV, the early season may be considered a priority “treatment window” for use of cyantraniliprole.

If a diamide is used during the first 35–42 days after transplanting, alternate modes of action should be used instead of diamides for a period of roughly thirty days following the final application of the diamide insecticide. Under this scenario, insecticides that do not include active ingredients with a group 28 mode of action would be used for suppression of whitefly, leafminers, and caterpillars during this second treatment window. For example, group 6 and 17 materials could be used for leafminer, and group 11, 18, and 22 materials could be used for caterpillar management. “Softer” materials, including materials that have not been assigned an IRAC MOA number, can be included in these insecticide rotations when appropriate.

Spinosyns, group 5 insecticides, are effective against leafminers and caterpillars but should be reserved for thrips management whenever possible. This is because the spinosyns are among the most effective insecticides for managing thrips, and excessive use of spinosyns can lead to the development of resistance among thrips populations.)

Up Coming Meetings

October 23, 2013 **OSHA GHS Harmonization Meeting** **8:30 AM**

UF/IFAS SWFREC
Hwy 29 N
Immokalee, Florida

Contact Debra or Marlene at 863-674-4092 to register.

October 24, 2013 **WPS Train-The-Trainer Class** **10 AM - 12 PM**

Manatee County Extension Office
1303 17 St W
Palmetto, Florida

CEUs offered. For details and registration visit: <https://wps102413.eventbrite.com/>

November 5, 2013 **FFVA Health Care Reform Meeting** **5 PM**

UF/IFAS SWFREC
Hwy 29 N
Immokalee, Florida

To register go to: <http://www.eventbrite.com/event/7072476969>

For other locations and dates of area meetings see above.

November 6, 2013 Florida Ag Expo 7:30 AM - 4:00 PM

UF/IFAS Gulf Coast Research & Education Center
14625 County Road 672
Balm, FL 33598

For more info and to register - <http://tinyurl.com/ou5yhnk>

November 12, 2013 Vegetable BMP Meeting Noon – 3 PM

UF/IFAS Southwest Florida Research and Education Center
2685 SR 29 N
Immokalee, Florida 34142

Contact Debra or Marlene at 863-674-4092 to register.

Opportunities

Farm Land for Lease

Farm Land for lease in LaBelle area – contact Clyde Lavender at 863-673-2338

Farm Land for lease on Babcock Ranch, Hwy 31, Charlotte County. Rotational fields or permanent locations, phone 941-639-3958

Websites

The University of Nebraska –Lincoln Heuermann Lectures focus on providing security – and here security means enough to sustain the world – in the areas of food, natural resources, and renewable energy for people, as well as on securing the sustainability of rural communities where the vital work of producing food and renewable energy occurs. These are well worth listening to and can be found at <http://heuermannlectures.unl.edu/2012-2013>

EPA-approved Fumigant training program for certified applicators using methyl bromide, chloropicrin, chloropicrin and 1,3-dichloropropene, dazomet and metam sodium and potassium - <http://www.fumiganttraining.com/>

EPA-approved training program for certified applicators using dimethyl disulfide (DMDS) - <http://paladin.trainingmine.com/>

My Florida Farm Weather - This program, developed by the Florida Department of Agriculture and Consumer Services (FDACS) in partnership with University of Florida's Automated Weather Network (FAWN), provides up-to-the-minute information on key weather variables, including rainfall, temperature, humidity, dew point, wind speed and wind direction. **Visit <http://fawn.ifas.ufl.edu/mffw>**

Quotable Quotes

It's not what you gather, but what you scatter that tells what kind of life you have lived!

It is health that is real wealth and not pieces of gold and silver.

Wine does not make you FAT.... it makes you LEAN.... (against tables, chairs, floors, walls and ugly people.)

In my many years I have come to a conclusion that one useless man is a shame, two is a law firm, and three or more is a congress. - John Adams

I don't make jokes. I just watch the government and report the facts. - Will Rogers

On the Lighter Side

Vet Bill

A woman brought a very limp duck into a veterinary surgeon. As she laid her pet on the table, the vet pulled out his stethoscope and listened to the bird's chest. After a moment or two, the vet shook his head and sadly said, "I'm sorry, your duck, Cuddles, has passed away."

The distressed woman wailed, "Are you sure?" "Yes, I am sure. Your duck is dead," replied the vet. "How can you be so sure?" she protested. "I mean you haven't done any testing on him or anything. He might just be in a coma or something."

The vet rolled his eyes, turned around and left the room. He returned a few minutes later with a black Labrador Retriever. As the duck's owner looked on in amazement, the dog stood on his hind legs, put his front paws on the examination table and sniffed the duck from top to bottom. He then looked up at the vet with sad eyes and shook his head. The vet patted the dog on the head and took it out of the room.

A few minutes later he returned with a cat. The cat jumped on the table and also delicately sniffed the bird from head to foot. The cat sat back on its haunches, shook its head, meowed softly and strolled out of the room. The vet looked at the woman and said, "I'm sorry, but as I said, this is most definitely, 100% certifiably, a dead duck."

The vet turned to his computer terminal, hit a few keys and produced a bill, which he handed to the woman. The duck's owner, still in shock, took the bill. "\$150!" she cried, "\$150 just to tell me my duck is dead!" The vet shrugged, "I'm sorry. If you had just taken my word for it, the bill would have been \$20, but with the Lab Report and the Cat Scan, it's now \$150."

And Then It Is Winter

You know. . . time has a way of moving quickly and catching you unaware of the passing years. It seems just yesterday that I was young, just married and embarking on my new life with my mate. Yet in a way, it seems like eons ago, and I wonder where all the years went. I know that I lived them all.

I have glimpses of how it was back then and of all my hopes and dreams. But, here it is... The winter of my life and it catches me by surprise...How did I get here so fast? Where did the years go and where did my youth go? I remember well seeing older people through the years and thinking that those older people were years away from me and that winter was so far off that I could not fathom it or imagine fully what it would be like. But, here it is...my friends are retiring and getting grey...they move slower and I see an older person now.

Some are in better and some worse shape than me...but, I see the great change...Not like the ones that I remember who were young and vibrant...but, like me, their age is beginning to show and we are now those older folks that we used to see and never thought we'd be.

You have no promise that you will see all the seasons of your life...so, live for today and say all the things that you want your loved ones to remember...and hope that they appreciate and love you for all the things that you

have done for them in all the years past!! Life is a gift to you. The way you live your life is your gift to those who come after. Make it a fantastic one!

LIVE IT WELL!
ENJOY TODAY!
DO SOMETHING FUN!
BE HAPPY!
HAVE A GREAT DAY!

LASTLY, CONSIDER THE FOLLOWING:
TODAY IS THE OLDEST YOU'VE EVER BEEN,
YET THE YOUNGEST YOU'LL EVER BE
SO - ENJOY THIS DAY WHILE IT LASTS.

Old is good in some things: Old Songs, Old movies, and best of all, OLD FRIENDS!!

Stay well, "OLD FRIEND! "Share this with other "Old Friends" and let them laugh in AGREEMENT!!!

Note: State and local budgets cuts are threatening to further reduce our funding – if you are receiving currently receiving the hotline by mail and would like to switch over to electronic delivery – just drop me an email. It is much quicker and you will get the hotline within minutes of my completing it and help conserve dwindling resources at the same time. Thanks to those that have already made the switch.

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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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