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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

October 29, 2018

The first significant cold front moved across the area this weekend bringing fall-like temperatures to South Florida. Nighttime lows dipped into the mid 50's to low 60's in many areas for the first time this season. Okeechobee reported a low of 47 degrees. Growers are welcoming cooler conditions as hot dry conditions over the past few weeks has stressed plants and workers alike.

With the exception of some unsettled weather in the wake of Hurricane Michael, which bought some

FAWN Weather Summary

Date	Air Temp °F		Rainfall	Ave Relative Humidity	ET (Inches/Day)
	Min	Max	(Inches)	(Percent)	(Average)
Balm					
10/8 – 10/28/18	51.24	92.03	0.30	80	0.11
Belle Glade					
10/8 – 10/28/18	55.54	93.09	0.74	86	0.12
Clewiston					
10/8 – 10/28/18	54.12	93.31	0.35	81	0.12
Ft Lauderdale					
10/8 – 10/28/18	63.14	91.87	1.13	80	0.13
Homestead					
10/8 – 10/28/18	63.10	90.10	1.84	83	0.11
Immokalee					
10/8 – 10/28/18	52.99	93.45	0.59	84	0.12
Okeechobee					
10/8 – 10/28/18	47.59	94.03	0.40	84	0.12

"Remember, when in doubt - scout."

scattered showers, much of the area has been quite dry with most places reporting less than an inch of rain over the past three weeks. Some East Coast locations reported just over an inch for the period.

Growers reported that hot dry condition through most of October stressed some crops and hindered germination of cool season crops like lettuce. Pest and disease pressure remains mostly low but is starting to increase in some places.

The National Weather Service reports that the first significant cold front of the season moved through the area this weekend dropping lows into the 50s over a good part of the region this morning.

Tuesday through Wednesday: a weak "backdoor" cold front will move through South Florida during the day on Tuesday, but due to the wind trajectory behind the front from the NE, no temperature change will take place. Temperatures will continue to moderate and will be near to a touch above normal each day, but with humidity levels remaining moderately low it will feel seasonable for the end of October. Halloween night should remain dry and mild across South Florida.

Some changes to the weather pattern begin by daybreak Thursday and continue through the upcoming weekend. A broad mid/upper level trough over the Central United States will lead to a deepening S-SW wind flow across South Florida on Thursday, which will help to bring the old frontal boundary from Tuesday northward across the area as a pseudo-warm front. A band of higher moisture with precipitable water values over 1.5 inches is expected to accompany the boundary and lead to scattered showers moving north through our region.

Models have a cold front moving into the eastern Gulf of Mexico and North Florida on Friday, providing a SW flow across South Florida. Moisture return with this front and leave a band of higher moisture over S Florida through the upcoming weekend. Increased chances for rain will continue to be reflected for Saturday and Sunday.

Temperatures will be on an increasing trend as we end the week, along with humidity levels.

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

Insects

Whiteflies

Reports from the East Coast indicate that whitefly are increasing on eggplant in Palm Beach County and are also present in older squash.

Respondents in the Manatee/Hillsborough area report that whitely pressure remains low but is starting to increase in some places.

Around Immokalee, whiteflies pressure continues to be sporadic but is increasing with some eggs and immatures being found on some older squash and tomato plantings.

Around Homestead, whiteflies are present on various ornamental and a range of vegetables. While populations remain low, 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 cyanatraniliprole 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, 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

		Whiteflies	Other pests controlled			
MOA	Active Ingredient	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		
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	fenpyroxiamate	G		G		
4A	clothianidin	F**				

Efficacy Ratings for Insecticides and Miticides on Tomato

		Whiteflies	Other pests controlled			
MOA	**Active Ingredient**	**Whiteflies**	**Southern Armyworm**	**Spider mites**	**Stinkbugs**	**Leafminer**
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 and scouts around the Manatee Ruskin area, report that armyworms pressure remains low but loopers have been wild.

Around SW Florida, armyworms have been very low this fall but scouts report finding an increase in armyworm eggs and fruit worm eggs over the past few weeks. Melonworms have been active especially in cucumbers but they are also showing up in several watermelon fields. Reports indicate that loopers are flaring up in some places. Horn worms have also been showing up in a number of tomato fields.

In the EAA, fall armyworm pressure in corn has steadily increased and growers have increased spray frequency in response. Growers also reporting some issues with beet armyworms in early leaf and lettuce plantings.

Fall armyworms are showing up in some corn around Homestead. Melonworms have been active in cucurbits.

On the East Coast respondents indicate that worm pressure has increased with moderate beet armyworm and melonworm pressure being reported.

The soybean looper, *Chrysodeixis includens* (Walker) is a light to dark green caterpillar, which takes its name from its preferred host plant and the looping movement it makes while in motion. It is often confused with the cabbage looper, which is similar in appearance and size.

In its larval stage, the soybean looper is predominantly light to dark green and typically has white stripes running down the dorsal and lateral portions of its body. *C. includens* can be differentiated from similar looking species by inspecting the number of abdominal prolegs. Green caterpillars with three or more abdominal prolegs can be easily distinguished from *Chrysodeixis includens*, which has only two abdominal prolegs . The soybean looper may have black or green thoracic legs, while the cabbage looper has green thoracic legs.

The adult moth is small, with a wingspan ranging 1 to 1.5 inches, and is mottled brown to black in color. Moths deposit eggs at night in the lower half of the canopy on the underside of leaves.

After hatching, the insect typically transitions through six instars. Once hatched, the soybean looper feeds in the lower half of the canopy where the egg was laid. The soybean looper has an unusual defoliation pattern, feeding from the lower, inside canopy and then moving up and outwards. Because of this feeding pattern and cryptic coloration, it can be easily overlooked while scouting.

Treatment thresholds vary for this insect based upon the crop and its current production stage. Bt formulations may be used to suppress this foliage feeder and spare beneficial insects in the field.

Due to its wide host range, *Chrysodeixis includens* has developed resistance to many insecticides over time. Resistance has been confirmed for pyrethroid, carbamate, and organophosphate insecticides.

A number of insecticides applied to the foliage are effective for soybean looper control. Many excellent lep materials present on the market so growers have a number of options available. Consult UF/IFAS recommendations of currently labeled insecticides for soybean looper control in Florida vegetables.

Leafminer

Growers and scouts in the Manatee Ruskin area report that leafminer numbers continue to increase and most growers are now applying controls.

Around Southwest Florida, leafminer activity is on the increase and some growers are spraying.

In Palm Beach, County leafminer pressure remains low and is mainly concentrated on eggplant.

Broad Mite

Respondents on the east coast report that broad mites are common in pepper and in eggplant.

Around Southwest Florida, broad mites remain mostly low in peppers and eggplants.

Around Hillsborough County, broad mites are present in pepper.

Pepper Weevils

A few pepper weevils have been found on a couple of pepper farms in St Lucie and Palm Beach Co.

Around Immokalee, a few weevils are starting to show up in pheromone traps.

Aphids

A few aphids are showing up on lettuce in the EAA.

On the East Coast, a few winged aphids are starting to show up in squash.

A few winged aphids are also being reported showing up around SW Florida.

Spotted cucumber beetle

Growers and scouts around Belle Glade are reporting increasing problems with spotted cucumber beetles in corn and lettuce around the EAA. In lettuce they are mostly feeding in the middle of the leaf, in the case of just emerged lettuce they are consuming 3/4 of the young exposed foliage.

Thrips

Around SW Florida, respondents report that both Florida thrips and western flower thrips numbers are increasing in tomato and in peppers in some locations.

On the East Coast, scouts report that low numbers of Florida flower thrips are present in blooms of pepper and other crops.

Corn silkfly

Low numbers of corn silkfly are present on corn in the EAA and around Homestead.

Diseases

Bacterial Spot

Around SW Florida, bacterial spot still active in a number of tomato fields.

Growers and scouts in the Manatee Ruskin area report that bacterial spot is plentiful but remains mostly low on the bush.

East Coast plantings remain mostly clean.

Target spot

Target spot is becoming more common on tomato around Hillsborough County.

Around Immokalee, target spot is increasing in tomatoes nearing maturity.

Target spot is frequently misdiagnosed as in its early stages as symptoms are difficult to recognize and can be confused with bacterial spot and early blight. Scouting is important to detect early signs of the diseases Growers are often taken by surprise as in the beginning of the season while we are still experiencing frequent rains they are targeting bacterial spot and then as the rains subside and canopies develop target spot emerges as a larger concern.

The name derives from the bull's eye appearance that is often displayed in lesions caused by the disease. Since concentric rings are not always visible and not all lesions with concentric rings are target spot, it is recommended that a laboratory diagnosis be obtained to ensure that a correct diagnosis is made.

On tomato leaves and stems, foliar symptoms of target spot consist of brown-black lesions with subtle concentric rings giving them a target-like appearance. These can sometimes be confused with early blight. With early blight, the lesions are often associated with a general chlorosis of the leaf.

On tomato fruit, lesions are more distinct. Small, brown, slightly sunken flecks are seen initially and may resemble abiotic injury such as sandblasting. As fruits mature the lesions become larger and coalesce resulting in large pitted areas. Advanced symptoms include large deeply sunken lesions, often with visible dark gray to black fungal growth in the center. A zone of wrinkled looking tissue may surround the margins of lesions on mature fruit. Placing suspect fruit in a moist environment for 24 hours will often induce the growth of dark gray mycelia providing telltale diagnostic evidence of target spot infection.

Optimum conditions for disease development include temperatures from 68° - 82°F and long periods of free moisture.

In trials, wounding was essential for reproduction of the fruit symptoms. Wind-blown sand is probably important in outbreaks of target spot on tomato fruit in the field.

Strategies for the management of this disease require an integrated approach for best results. Growers should rotate fields to avoid carryover on crop residue and avoid rotations among solanaceous crops. Eliminate any volunteers and weed species that can act as a host.

Start with clean, healthy transplants and maintain proper fertility as nitrogen deficiencies favor the development of early blight.

Currently, target spot is controlled primarily by applications of protectant fungicides. It should be noted that tank-mix sprays of copper fungicides and maneb do not provide acceptable levels of target spot control.

Widespread resistance has been documented to Qol fungicides including both strobilurins and non-strobilurin fungicides in FRAC Group 11 and their use is not recommended for target spot control.

In addition, moderate resistance has been documented in the SDHI fungicides FRAC Group 7 which includes boscalid, penthiopyrad, fluopyram and fluxapyroxad. These should be used with caution and attention paid to rotating with alternative modes of action.

In recent efficacy trials, at the University of Florida – Approvia Top, Inspire Super, Luna Tranquility, Revus Top, Rhyme, and Scala are top performers. Contact protectant fungicides like mancozeb and Bravo are effective and should be used early in the crop cycle switching to more efficacious materials once disease is present.

Consult UF/IFAS recommendations for currently labeled fungicides for target spot control in Florida vegetables.

<u>Pythium</u>

Pythium is slowing down in most places around South Florida

Around the EAA, growers and scouts report persistent problems with pythium on green beans possibly due to continued use of overhead irrigation to combat dry conditions.

<u>Chaenophora</u>

Dr Rick Raid reports that growers are finding some Chaenophora on green beans around the EAA. In most cases, it appears to be coming in on wind-damaged tissue.

<u>Phytophthora</u>

On the East Coast, Phytophthora is present in pepper in a few locations in pepper but slowing down with drier weather, it is also working on some eggplants in a couple of locations.

Reports from Immokalee indicate that Phytopthora is causing some problems on squash fruit in a couple of places

<u>Gummy stem blight</u>

Low levels of gummy stem blight continue to be reported on watermelons and is slowly increasing in a few places around South Florida.

Downy Mildew

In the Manatee Ruskin area, downy mildew pressure has picked up in cucurbits as night temps are finally starting to dip down to into the 60s.

Low levels of downy mildew is also beginning to show up in in cucumber and melons around SW Florida.

Leaf symptoms can be used to diagnose downy mildew in the field in some cases. On cucurbits other than watermelon, small yellowish spots occur on the upper leaf surface initially away from the leaf margin. Later, a more brilliant yellow coloration occurs with the internal part of the lesion turning brown. Lesions are usually angular as leaf veins restrict their expansion. When the leaves are moist, a downy grayish fungal growth may be seen on the underside of lesions.

On watermelons, yellow leaf spots may or may not be angular and later turn brown to black in color. On watermelons an exaggerated upward leaf curling occurs that growers sometimes liken to a dead man's hand.

Since nighttime temperatures between 55º and 75ºF and relative humidity above 90%, provide ideal conditions for infection, cucurbits planted in South Florida are always at risk from downy mildew .

Control of downy mildew on cucurbits is achieved primarily by the use of fungicide spray programs. Fungicide sprays are recommended for all cucurbits.

Squash, pumpkin, cantaloupe, and non-resistant cucumber varieties are very susceptible and should be sprayed every five to seven days. If cucurbits are planted close to established fields infected with downy mildew, a spray program should be initiated as soon as the first true leaves are present.

Spray programs for downy mildew are most effective when initiated prior to the first sign of disease since once a planting becomes infected; it becomes more and more difficult for fungicides to control downy mildew.

A range of fungicides is available for the control of downy mildew depending on the crop. Use of Bravo should be avoided on watermelon after fruit set as it may increase the risk of sunburn. Consult UF/IFAS recommendations for currently labeled fungicides for downy mildew control in Florida.

Powdery Mildew

Powdery mildew is beginning to show up widely in squash in the Immokalee area.

Growers and scouts on the East Coast report that they are also beginning to find powdery mildew in older squash.

Fusarium crown rot

Around the Manatee Ruskin area, Fusarium crown rot is starting to show up in some blocks with a history of the disease.

Fusarium crown rot is caused by the fungus *Fusarium oxysporum f. sp. radicis-lycopersici*, a close relative of the Fusarium wilt pathogen.

FCR is becoming more common and widespread in Florida. The disease causes significant yield losses and yield reductions of 15 to 65% have been reported.

Symptoms typically begin to show when plants are nearing the mature-green fruit stage. On more mature plants, the initial symptoms include a yellowing of the oldest leaves. The yellowing gradually progresses up the plant to the younger leaves as the disease develops, and symptoms may be restricted to a single branch of the plant. Affected leaves may wilt during the heat of the day but recover overnight, and in some cases, flowers may wilt and die. These symptoms are similar to those associated with Fusarium wilt.

Prominent lesions develop on the hypocotyl (lower stem) and on the tap- and lateral-roots. These lesions are typically round in shape and chocolate brown in color. A brown discoloration in the cortex can extend beyond the externally visible lesions, up to 10 inches above the soil-line, but the discoloration will not move up into the upper parts of the plant as is seen with Fusarium wilt.

Adventitious roots may proliferate above the affected stem tissues, and sometimes-white mats of fungal growth with pink spore masses will develop on dead tissues. Plants can be killed when the disease is severe.

The pathogen survives in the soil as spores and on the roots of alternate hosts including eggplant, peppers, some legumes and cucurbits, beets, spinach, carrot, cabbage, and several weed species. The pathogen can spread by infected transplants and through the movement of infested soil and equipment.

The FCR pathogen infects tomato root systems through wounds created by emerging lateral roots. The disease develops best in areas with low soil pH levels, high chlorine salt levels, applications of ammonia forms of nitrogen, and waterlogged soils. The pathogen can spread from plant to plant during the season through root contact. The pathogen can also spread through wind-blown spores to re-infest fumigated soils.

Management strategies focus on preventing infection and limiting the spread of the pathogen. Growers should plant only pathogen-free seed and transplants.

In the field, maintain soil pH levels in the 6 to 7 range, and avoid the use of ammonia–based fertilizers. Minimize plant stress throughout the growing season. Incorporate crop debris promptly after harvest to promote rapid decomposition. Long-term rotation to non-host crops, such as corn and other monocots, can help prevent the buildup of inoculum in the soil. Soil fumigation is usually not effective for controlling FCRR because the fungus can quickly recolonize fumigated soil.

A single dominant gene for resistance to FCR (Fr1) has been identified, and it is used in some tomato varieties. However, most commercial tomato varieties are susceptible to this disease.

Tomato Yellow Leaf Curl Virus

Low levels of TYLCV – mostly a few plants here and there in a scattered locations - are being reported on tomato around South Florida – both Manatee Ruskin and SW Florida.

Southern Corn Leaf blight

Low levels of southern corn leaf blight are present on sweet corn in the Glades.

Bacterial Blight

Low levels of bacterial blight is continues to be reported on some young corn in the EAA.

Southern Blight

Southern blight is being seen in some older tomato and watermelon around South Florida especially in fields that have been repeatedly planted to these crops.

Respondents also report finding some southern blight on corn in the EAA.

Cucurbit crumple leaf virus.

Scouts around SW Florida report finding crumple leaf on a few scattered watermelon plants.

News You Can Use

2018 Rainy Season Summary

Very Wet First Two Weeks to Rainy Season, Otherwise Near to Below Normal Wet Season Rainfall

October 19th, 2018: the rainy season got off to a quick and very wet start across South Florida in 2018, as a moist southwest wind flow from a persistent low pressure area in the middle and upper levels of the troposphere over the Gulf of Mexico led to periods of heavy rainfall during the second half of May. Rainfall totals for the last two weeks of May exceeded 10 inches over most of Southeast Florida, and at least 6 inches over interior and Southwest Florida. Estimates of over 20 inches were noted in interior Palm Beach County for the month of May.

The weather pattern changed in June as subtropical Atlantic high pressure began to take control, leading to an increase in east winds and drier, more stable conditions. After a brief period of more unstable and wetter conditions due to low pressure in the Gulf of Mexico in July, the Atlantic subtropical high returned and became predominant for the remainder of the wet season.

The prevailing high pressure and resulting east wind flow for most of the rainy season resulted in a precipitation pattern that favored more rainfall over areas away from both the Atlantic and Gulf coasts, and less rainfall along and near the coasts. Aside from the heavy rainfall to begin the rainy season, there were few significant large-scale rainfall events.

Tropical Storm Gordon on Labor Day (September 3rd) produced an average of 4 to 6 inches of rain over most of Miami-Dade County and western/southern Collier County, and about 2-4 inches over Broward County and southern Palm Beach County.

All other high daily rainfall amounts were very localized and caused primarily by sea breeze interactions typical of the wet season. The lack of large-scale rainfall events contributed to a larger than usual variation in rainfall amounts over parts of South Florida, mainly between the coast and areas just a few miles inland. For example, Miami Beach recorded only 27.54 inches, while Miami International Airport 11 miles west recorded 47.71 inches of rain.

Similarly, Pompano Beach Airpark near the coast recorded 27.56 inches, while Fort Lauderdale Executive Airport 5 miles SW measured 38.13 inches. Along the Gulf coast, Marco Island only measured 25.58 inches, while East Naples 16 miles north and a few miles farther inland-recorded 53.46 inches.

Here are rainfall totals for the 2018 Rainy Season (May 15th – October 15th) and departure from normal for select South Florida sites:

Rainfall totals for the 2018 Rainy Season		
Location / Record	**May 15-Oct 15 Rainfall (inches)**	**Departure from Normal**
Brighton Reservation	28.56 *	-4.13
Canal Point (1941)	35.34	+1.37
Cape Florida	37.68	+0.09
Ft Lauderdale Hollywood Int'l Airport (1913)	35.90	-3.07
Fort Lauderdale Beach	39.15 *	-1.03
Fort Lauderdale Dixie Water Plant	41.85 *	+0.68
Fort Lauderdale Executive Airport	38.13	+3.23
Hialeah (1940)	50.56 *	+4.5
Homestead General Airport (1990)	43.48*	+1.18
Immokalee (1970)	38.23	+3.91
Juno Beach (2002)	45.09	+8.07
LaBelle (1929)	35.17 *	-1.21
Marco Island (2002)	25.58	-12.03
Miami Beach (1927)	27.54 *	-4.22
Miami International Airport (1911)	47.71	+5.43
Moore Haven (1918)	27.95 *	-3.11
Muse	35.07 *	-3.89
Naples East/Golden Gate	53.46 *	+14.06
Naples Municipal Airport (1942)	42.48	+6.37
North Miami Beach (2000)	46.66 *	+4.85
NWS Miami – FIU/University Par k	55.22	+10.36
Oasis Ranger Station (1978)	38.03	-2.88
Opa-Locka Airport	44.51	+5.70
Palm Beach Gardens (2003)	45.21 *	+8.98
Palm Beach Int'l Airport (1888)	33.44	-2.78
Pembroke Pines – North Perry Airport	39.27	-0.98
Pompano Beach Airpark	27.56	-8.53
The Redland (1942)	42.08	+0.35

West Kendall	38.74	-2.06
* At least one day of missing data		

SEVERE/TROPICAL WEATHER

Fewer than normal severe thunderstorms were noted across South Florida this past wet season due to the stabilizing influence of the prevailing subtropical high pressure. A total of 9 damaging wind events were observed across the area, 4 large hail (1 inch or greater in diameter) events, and 5 small, short-lived tornadoes of EF-0 intensity which causing little to no notable impacts.

Lightning strikes caused 2 deaths and 4 injuries, and rip currents caused 1 death and 6 injuries.

Subtropical Storm Alberto during Memorial Day weekend caused periods of heavy rain and gusty winds, but overall impacts were very minor.

Tropical Storm Gordon on Labor Day did cause tropical storm wind gusts over Miami-Dade, Broward and coastal sections of Collier County.

Location (beginning of period of historical record)	Average Temp (F)	Departure From Normal (F)
Miami (1911)	82.7	-0.3
Fort Lauderdale (1912)	82.9	-0.5
West Palm Beach (1888)	81.9	+0.2
Naples (1942)	83.1	+1.1

Mainly near normal temperatures were noted at the main climate sites across South Florida, with the above normal temperatures at Naples primarily related to the predominant east wind flow, which delayed the daily onset of the Gulf sea breeze and led to higher maximum temperatures.

- Miami International Airport: The highest temperature recorded was 94 degrees set on 6 individual days, last on October 10th, and the lowest temperature recorded was 69 degrees on May 15th. The maximum temperature reached or exceeded 90 degrees on 86 days, and the low temperature did not drop below 80 degrees on 12 days.

- Palm Beach International Airport: The highest temperature recorded was 94 degrees on July 20th, 21st and 22nd, and the lowest temperature recorded was 68 degrees on June 11th. The maximum temperature reached or exceeded 90 degrees on 59 days, and the low temperature did not drop below 80 degrees on 14 days.

- Fort Lauderdale/Hollywood International Airport: The highest temperature recorded was 95 degrees on July 21st, and the lowest temperature recorded was 70 degrees on May 15th. The maximum temperature reached or exceeded 90 degrees on 54 days, and the low temperature did not drop below 80 degrees on 32 days.

- Naples Municipal Airport: The highest temperature recorded was 95 degrees on July 21st, and the lowest temperature recorded was 70 degrees on May 15th. The maximum temperature reached or exceeded 90 degrees on 118 days, and the low temperature did not drop below 80 degrees on 16 days.

Winter Outlook 2018-2019

The 2018-2019 winter outlook by the NOAA Climate Prediction Center for South Florida calls for an increased likelihood of above normal precipitation and equal chances of above, below or near normal temperatures. Additional information and details for South Florida will be provided with the release of the local dry season outlook on October 25th.

For the latest south Florida weather information, including the latest watches, advisories and warnings, please visit the National Weather Service Miami Forecast Office's web site at weather.gov/southflorida.

BPIA Names Certis USA Member of the Year

COLUMBIA, Maryland, October 16, 2018 — The biopesticide company Certis USA was named Member of the Year by the Biological Products Industry Alliance (BPIA) today. Certis USA is charter member of the 15-year-old organization. The company was cited as a member company that has made many contributions to the association that promotes the responsible development of safe and effective biopesticides and biostimulants used in agriculture, public health, PCO, turf and ornamentals and home gardening.

Certis USA is a leading manufacturer and distributor of a broad line of biopesticide products and encourages its staff members at every level to participate in BPIA. Certis USA representatives serve on the BPIA Board of Directors and the Regulatory, Communications, Specialty Markets, Meeting Planning and Government Affairs committees. Certis USA frequently sponsors BPIA meetings, presents at and participates in multiple trade shows nationally to educate people about biopesticides and to identify new members and sponsors on the organization's behalf.

Longtime volunteer Tim Damico, Certis USA Executive Vice President-North America, accepted the award at the BPIA fall meeting in Rochester, New York. "Certis USA is fully committed to BPIA and the biological products industry. On behalf of the many Certis USA employees who contribute to BPIA, we are proud to have received this award," Damico said.

Keith Jones, BPIA Executive Director, said, "Certis USA is an excellent example of a company that has encouraged its employees to contribute to an industry association that directly adds value to their business." Headquartered in Columbia, Maryland, Certis USA is a leading manufacturer and distributor of a broad line of biopesticide products for specialty agricultural and horticultural markets and the home and garden market. Certis USA products provide valuable solutions by meeting the challenges faced by today's growers who are seeking sustainable alternatives, resistant pest management and harvest solutions, as well as low pesticide residues for market flexibility and export accessibility. For more information about Certis USA or its products, please visit www.certisusa.com.

Florida's Minimum Wage - (Updated October 15, 2018)

The 2019 Florida minimum wage is $8.46 per hour, effective January 1, 2019.

Florida law requires the Florida Department of Economic Opportunity to calculate a minimum wage rate each year. The annual calculation is based on the percentage increase in the federal Consumer Price Index for Urban Wage Earners and Clerical Workers in the South Region for the 12-month period prior to September 1, 2018.

On November 2, 2004, Florida voters approved a constitutional amendment which created Florida's minimum wage. The minimum wage applies to all employees in the state who are covered by the federal minimum wage.

Employers must pay their employees the hourly state minimum wage for all hours worked in Florida. The definitions of employer, employee, and wage for state purposes are the same as those established under the federal Fair Labor Standards Act (FLSA) and its implementing regulations. Employers of tipped employees, who meet eligibility requirements for the tip credit under the FLSA, may credit towards satisfaction of the

minimum wage tips up to the amount of the allowable FLSA tip credit in 2003. However, the employer must pay tipped employees a direct wage.

The direct wage is calculated as equal to the minimum wage ($8.46) minus the 2003 tip credit ($3.02), or a direct hourly wage of $5.44 as of January 1, 2019.

Employees who are not paid the minimum wage may bring a civil action against the employer or any person violating Florida's minimum wage law. The state attorney general may also bring an enforcement action to enforce the minimum wage. FLSA information and compliance assistance can be found at: www.dol.gov/whd/flsa/.

Florida Statutes require employers who must pay their employees the Florida minimum wage to post a minimum wage notice in a conspicuous and accessible place in each establishment where these employees work. This poster requirement is in addition to the federal requirement to post a notice of the federal minimum wage. Florida's minimum wage poster is available for downloading in English, Spanish, and Creole from the Florida Department of Economic Opportunity's website at: www.floridajobs.org.

The federal poster can be downloaded from the U.S. Department of Labor's website at: www.dol.gov/whd/regs/compliance/posters/flsa.htm.

Up Coming Meetings

Produce Food Safety Workshops: Fall 2018

Produce Safety Alliance Grower Training

This is the one-day course for fruit and vegetable growers and packers who fall under FSMAs Produce Safety Rule. FDA and PSA are very sensitive about how this course is advertised and promoted as the standardized curriculum. Even though there are currently no other recognized alternative courses to satisfy the training requirements of the Produce Safety Rule, they do not want us to say the course is required or mandated or anything like that…even though, by default, it kind of is. This is the "approved" advertising language from PSA:

WHO SHOULD ATTEND
Fruit and vegetable growers and others interested in learning about produce safety, the Food Safety Modernization Act (FSMA) Produce Safety Rule, Good Agricultural Practices (GAPs), and co-management of natural resources and food safety are encouraged to attend. The PSA Grower Training Course is one way to satisfy the FSMA Produce Safety Rule requirement.

WHAT TO EXPECT
The trainers will spend approximately seven hours of instruction time covering content contained in these seven modules:

- Introduction to Produce Safety
- Worker Health, Hygiene, and Training
- Soil Amendments
- Wildlife, Domesticated Animals, and Land Use
- Agricultural Water (Part I: Production Water; Part II: Postharvest Water)
- Postharvest Handling and Sanitation
- How to Develop a Farm Food Safety Plan

In addition to learning about produce safety best practices, key parts of the FSMA Produce Safety Rule requirements are outlined within each module. There will be time for questions and discussion, so participants should come prepared to share their experiences and produce safety questions.

BENEFITS OF ATTENDING
The course will provide a foundation of Good Agricultural Practices (GAPs) and co-management information, FSMA Produce Safety Rule requirements, and details on how to develop a farm food safety plan.
After attending the entire course, participants will be eligible to receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies they have completed the training course.

Here's the list of upcoming PSA courses.

- 11/7/18 – Tavares - https://psa110718.eventbrite.com
- 11/27/18 – Homestead - https://psa112718.eventbrite.com
- 12/13/18 – Immokalee - https://psa121318.eventbrite.com
- 12/17/18 – St Augustine - https://psa121718.eventbrite.com

Fall 2018 - Farm Labor Supervisor Training Schedule

November 27 – 28, 2018 - Immokalee

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

Register: https://fls2018immokalee.eventbrite.com

For more information, contact: Barbara Hyman 239-658-3461 or hymanb@ufl.edu

November 4–6, 2018 **The 24th International Pepper Conference**

Sanibel Harbour Marriott
Fort Myers, Florida, USA

Learn more at http://conference.ifas.ufl.edu/pepper2018/

November 7, 2018 **2018 Florida Ag Expo**

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

Register online at http://www.floridaagexpo.com/

November 26, 2018 **Pesticide Applicators Core Examination Class. 7:45 am**

This examination is required for any and all categories of Pesticide Applicators licenses.

November 26, 2018 Private Agricultural Pest Control Category Class 1:00 pm

November 27, 2018 Aquatic Weed Control Category class 8:00 am

November 27, 2018 Natural Areas Weed Control Category class 1:00 pm

November 28, 2018 Right of Way Weed Control Category class 8:00 am

Each of these programs will be held at the Dallas B. Townsend Agricultural Center in LaBelle, Florida.

A Registration Fee of $20.00 will be charged to all participants for each class. Lunch will be provided on Monday. As a result, it is essential that we have an accurate count of the program participants. Call (863) 674-4092 or e-mail drourks@ufl.edu to register.

November 29th, 2018 Vegetable Field Day / "Risks in Technology Adoption" 9 a.m. – 3 pm

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

Please call Barbara Hyman at 239-658-3461 or send an email to hymanb@ufl.edu to register

Websites

Food Safety Modernization Act – draft guidance issued. FDA will call for comments.

Draft Guidance for Industry: Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption
https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ucm606284.htm

Guide To Minimize Food Safety Hazards of Fresh-Cut Produce: Draft Guidance for Industry
https://www.federalregister.gov/documents/2018/10/22/2018-23005/guide-to-minimize-food-safety-hazards-of-fresh-cut-produce-draft-guidance-for-industry-availability

PERC is the **Pesticide Educational Resources Collaborative** – the website provides a wealth of resources to help you understand and comply with the 2015 Revised WPS including training materials, the "new" WPS poster, handouts and WPS respiratory guide. http://pesticideresources.org//index.html

PERC - 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. At present, the only EPA approved materials available can be found at the PERC website

- 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 me on Twitter @SWFLVegMan** - https://twitter.com/SWFLVegMan

Quotable Quotes

You will continue to suffer if you have an emotional reaction to everything that is said to you. True power is sitting back and observing things with logic. True power is restraint. If words control you that means everyone else can control you. Breathe and allow things to pass. - Warren Buffett

The trouble is that we think we have time. We don't. We only have today. And before you know it, a few "todays" become a week, a month, a year, a decade, and before you know it, your life passes you by.

We don't have time; we just have today.

Take action on your dreams. Take action on showing others how much you love them. They will not be around forever. Today could be their last day. Today could be your last day.

New beginnings are often disguised as painful endings. - Lao Tzu

"When you talk, you are only repeating what you already know. But if you listen, you may learn something new." – The Dalai Lama

On the Lighter Side

60th High School Reunion

He was a widower and she a widow.

They had known each other for a number of years being high school classmates and having attended class reunions in the past without fail.

This 60th anniversary of their class, the widower and the widow made a foursome with two other singles.

They had a wonderful evening, their spirits high.

The widower throwing admiring glances across the table. The widow smiling coyly back at him.

Finally, he picked up courage to ask her, "Will you marry me?"

After about six seconds of careful consideration, she answered, "Yes, yes, I will!"

The evening ended on a happy note for the widower. But the next morning he was troubled.

Did she say “Yes” or did she say “No?”

He couldn't remember. Try as he would, he just could not recall. He went over the conversation of the previous evening, but his mind was blank.

He remembered asking the question but for the life of him could not recall her response. With fear and trepidation, he picked up the phone and called her.

First, he explained that he couldn't remember as well as he used to. Then, he reviewed the past evening.

As he gained a little more courage he then inquired of her. "When I asked if you would marry me, did you say “Yes” or did you say “No”?

"Why you silly man, I said ‘Yes. Yes I will.’ And I meant it with all my heart."

The widower was delighted. He felt his heart skip a beat.

Then she continued. "And I am so glad you called because I couldn't remember who asked me!”

Not Working

Man to his buddy, “When I came home from the golf course today. The wife had left a note on the refrigerator: ‘It’s not working, I can’t take it anymore! Gone to stay with my mother.’ I opened the fridge, the light came on, and the beer was cold. What was she talking about?”

A Grasshopper Walks Into A Bar...

A grasshopper walks into a bar, and the bartender says, "Hey, we have a drink named after you!"

The grasshopper looks surprised and asks, "You have a drink named Steve?"

Complementary

"Hey, Nice Tie!"

A man walks into a bar and orders a drink.

Suddenly he hears someone say, "Hey, nice tie!" The man looks up to try to find out who said it, but no one was around.

"Hey! Nice shirt!" The man looks up again, but there's nobody there.

"Hey! Nice suit!" The man then calls the bartender over and asks him if he keeps talking to him.

The bartender replies, "It's not me; it's the complimentary peanuts."

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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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