



SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

January 4, 2019

With the exception of few cold fronts, December was mostly warm and dry. Over the past few weeks, daytime highs have ranged in the 70's and 80's with nighttime lows in the 50's and 60's.

With the exception of the Manatee Ruskin area, which saw considerable precipitation for period with Balm reporting over 8 inches for the month, conditions have been relatively dry with a few scattered showers accompanying fronts over the past few weeks. Most locations reported between 1 – 2 inches of rain for the period.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
10/28 -11/19/18	35.28	85.10	8.79	83	0.06
Belle Glade					
10/28 -11/19/18	38.36	89.13	1.75	86	0.06
Clewiston					
10/28 -11/19/18	39.89	88.63	1.54	84	0.06
Ft Lauderdale					
10/28 -11/19/18	48.65	90.37	1.84	78	0.07
Homestead					
10/28 -11/19/18	44.34	87.53	1.62	83	0.06
Immokalee					
10/28 -11/19/18	37.55	90.00	1.41	84	0.06
Okeechobee					
10/28 -11/19/18	35.24	89.01	2.75	77	0.06
Wellington					
10/28 -11/19/18	54.81	91.35	1.02	83	0.09

“Remember, when in doubt - scout.”

Growers and scouts are reporting that heavy winds the week before Christmas caused significant wind/sand damage to young plants, broken stems, shredded leaves, blooms knocked off and various degrees of fruit scaring which will result in a higher percentage of culls over the next few weeks.

Manatee Ruskin has pretty much wrapped up the fall season as production transitions south. SW Florida and SE Florida production is in full swing. Growers in Homestead are beginning to harvest some beans, squash and sweet corn.

The National Weather Service reports that a cold front is currently moving across the Florida peninsula and will pass through South Florida early Saturday morning. There will be a chance of showers ahead of the front, which will precede a much drier, and slightly cooler air mass begins to filter in on Saturday afternoon.

Low temperatures early Sunday morning will range from the upper 40s across the northwestern interior sections to the upper 50s across the east coast metro areas. The notable change will be the cooler drier airmass already filtering into the region. Highs today will reach into the mid to upper 70s, or near normal for this time of year. However, this will feel cooler after almost a week of above normal temps.

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 pressure is building and is becoming a significant issue in some older tomato and eggplant.

Around Homestead, whiteflies can be found on various ornamentals and vegetables including okra, eggplants, beans, tomatoes and cucurbits, etc. Whiteflies are increasing and the incidence of whitefly transmitted virus (TYLCV) in tomatoes is also increasing (1-2%).

Around Southwest Florida, whitefly pressure is variable but has increased greatly in a number of places. Scouts indicate that some mature tomato fields are developing high populations that are going to searching for a new home very soon as fall crops are terminated.

Growers should be alert to the potential migration of whiteflies to spring crops.

Studies have shown a strong correlation between weather and whiteflies. Populations plummet following adverse conditions and buildup during periods of mild weather. Given that fact that we have had a relatively mild fall, there has been no check on populations and without a substantial cool-down, there is significant potential for a buildup of whitefly populations and increases in whitefly transmitted viruses this spring.

Preventative soil applications of either imidacloprid, thiamethoxam, dinotefuran, flupyradifurone or cyantraniliprole should be used as a routine practice in tomato and cucurbits.

Growers should also 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.

Scouting is important for early detection of migrating whiteflies and contact insecticides should be used to knockdown incoming whiteflies.

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
Dinotefuran	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		
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

Worms have been an increasing issue around South Florida over the past few weeks, perhaps finally being pushed south by a series of cold fronts.

In the EAA, large hatch outs of fall armyworm were reported around Christmas and number remain moderate to high in sweetcorn. Growers are also seeing a few beet armyworms and cabbage loopers in celery. Leafy greens are relatively clean.

On the East Coast, growers and scouts indicate that worm pressure remains mostly low with a few loopers and beet armyworms showing up in scouting reports.

Respondents indicate that worms have been persistent in the Manatee Ruskin area

Around Immokalee, growers and scouts indicate that worms remain active and report finding a mixed bag of species including armyworms fruitworms and loopers in tomato and pepper as well as melonworms in squash and cukes.

In pepper, reports indicate that in a number of cases, beet armyworms are placing egg masses around the calyx of immature pepper pods and worms are hatching out and burrowing into the fruit rendering it unmarketable. In such cases, growers are advised to include a Bt in every spray tank. Growers are also reminded that there is a 24c Special Local Need label for Lorsban 75 WG in pepper only within Florida to control beet armyworm infesting pepper, which may provide relief in extreme cases. This label can be found at <http://www.cdms.net/LDat/ld6N3002.pdf>

Around Homestead, reports indicate that fall armyworm abundance has been low due to low temperature. Diamondback moth numbers are moderate to high on cabbage.

Many excellent worm materials are present on the market so growers have a number of options available. *Bacillus thuringiensis*, and Spear-T provide effective control of worms. Growers should avoid using broad spectrum insecticides. Rimon is an effective growth regulator in controlling fall armyworm and other worm pests. Rimon also provides excellent control of cucumber beetle. Consult UF/IFAS recommendations for currently labeled insecticides for worm control in Florida vegetables.

Leafminer

Around Southwest Florida, leafminers numbers are variable and respondents indicate that growers are spraying in a number of locations.

In Palm Beach, County, reports indicate that leafminer pressure is building a little but generally not a problem for most growers at this time.

Around the EAA, leafminers have slowed but continue to be a nuisance in celery.

Reports from Homestead indicate that leafminer are present in susceptible crops.

The two major species of leafminer that cause problems in vegetables in Florida are the vegetable leafminer (*Liriomyza sativae*) and the American serpentine leafminer (*L. trifolii*).

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.

An integrated pest management program that stresses conservation of natural enemies is important for the successful control of leafminer.

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. 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.

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. Dow Radiant (Spintoram) has also given good results and is 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).

The newest additions to the grower's arsenal of control are Coragen (chlorantraniprole) and Exirel/Verimark (cyantraniliprole) which have shown good results. Consult UF/IFAS recommendations for currently labeled insecticides for leafminer control in Florida.

Pepper Weevils

On the East Coast, pepper weevils are present at moderate or higher levels in a couple locations but remain absent in most fields.

Around Immokalee, pepper weevils are increasing and populations are high in some places. They are also beginning to disperse and show up in new locations.

Respondents in Homestead, note that they are beginning to find pepper weevils in some specialty peppers.

Aphids

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

On the East Coast, aphids remain mostly low with a few small colonies forming in some older pepper.

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

Stinkbug

Stinkbug are causing problems in pepper, tomato and eggplant in a number of locations around South Florida.

Broad Mite

Respondents on the east coast report that broad mites are common in pepper and eggplant. Pressure ranges from low to moderate depending on location.

Around Southwest Florida, broad mite activity has been sporadic in peppers and eggplants and some fields have been treated for mites.

Respondents in Miami Dade County are reporting major problems with pepper weevils and indicate that serious infestation are present in nearly all plantings irrespective of pepper varieties and planting location. Dr Dak Seal, Entomologist at TREC advises that Actara, Vydate, the diamides and pyrethroids can be used in a program to manage this pest.

Spider Mites

Around Homestead, spider mites are patchy in occurrence and can be found in eggplant, corn and tomato.

Thrips

Growers and scouts in Homestead report that thrips populations are high. Reports indicate that common blossom thrips populations appear to be higher than previous years and TCSV incidence is reaching alarming levels in some fields.

Around Homestead, melon thrips number are high on a wide variety of susceptible crops. In some places, counts of 800 adults and larvae were found on a sample of five (four-week old) eggplant leaves. Dr Dak Seal reports that applications of Radiant, Torac, Exirel, and Novaluron in weekly rotation looks effective in controlling melon thrips.

Respondents indicate that common blossom thrips are also more abundant around Homestead than the previous years. The reason of this increase population is likely due to the present of various alternate hosts. Among the alternate hosts, weeds and ornamental flower bearing plants are the important ones. Some of these hosts were found positive for TCSV. As a result, TCSV incidence in tomato is high. In some tomato fields, infestation level is about 40-60%.

Growers should consider use reflective plastic mulch at least at field margins to repel this virus carrying thrips. Since some ornamental plants are more preferable as flower thrips as hosts than vegetable crops, growers should avoid planting tomato within 1,000 feet of a nursery if possible. Planting non-host crop as a barrier may also help reduce flower thrips infestation on vegetable crops.

Elsewhere around South Florida, thrips numbers remain mostly low but becoming more prevalent in pepper and other crops.

Thrips are present in some tomatoes around Homestead especially those planted close to ornamentals.

Corn silkfly

Corn silk fly populations remain low in the EAA and around Homestead. The population will increase this spring as temperatures increase. Growers should manage cull piles as these sources are preferred substrates for egg laying. Use of pyrethroids routinely may provide suppression of corn silk flies in sweet corn.

Diseases

Bacterial Spot

Around SW Florida, growers and scouts report a flare up of bacterial spot on tomato in a number of areas.

Some bacteria is showing up in some East Coast tomatoes, but respondents report that peppers including susceptible varieties remain clean.

Bacterial soft rot

Reports indicate that bacterial soft rot is causing some problems in East Coast pepper. Grower should avoid working in or putting pickers in fields before they dry off completely in the morning to reduce spread of this disease.

Target spot

Around Immokalee, target spot has also flared up in a number of locations. Scouts report that some new infections are starting in exited leaf miner mines in some tomatoes.

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 QoI 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.

Early Blight

Low levels of early blight are starting to show up on tomato in a couple of locations around South Florida.

Phytophthora

On the East Coast, Phytophthora has increased marginally in some pepper and older squash. Incidence is patchy.

Around Immokalee, Phytophthora continues to cause some issues in squash.

Phomopsis

Phomopsis has been reported at moderate levels in some East Coast eggplant.

Phomopsis blight, caused by the fungus *Phomopsis vexans*, is a destructive disease of eggplant worldwide. Young seedlings can be attacked soon after emergence. Dark lesions may form slightly above the soil line, become sunken, and eventually result in cankers that girdle the stem. Seedlings affected in this manner will typically collapse and die.

The fungus will attack leaves throughout crop development; older leaves are most susceptible. Lesions are usually circular, gray to brown, and develop a light center as they mature. Numerous fruiting bodies of the fungus, called pycnidia, can often be seen in the center of the older lesions. They appear as tiny, black pimples embedded in the host tissue. Affected leaves may turn yellow and drop prematurely. Spots and cankers can also form on mature stems and branches.

The most important symptoms are those that occur on the fruit, as these render the fruit unfit for market. Injury begins as pale, sunken, circular to oval areas on the surface. These later enlarge, and become markedly depressed.

Several spots may coalesce, affecting large portions of the fruit. The key to diagnosis of Phomopsis fruit rot is the observation of the pycnidia or fruiting bodies embedded in the flesh of the lesion interiors. These black pimple-like structures are often arranged in a roughly concentric pattern.

The causal fungus survives between crops in plant debris in the soil. Since the non-cropping season in southern Florida is very short, enhancing the survival potential of the pathogen. Spores of the fungus ooze out of the pycnidia in a sticky matrix. The major means of spread of the pathogen is in splashing rain.

Phomopsis blight is favored by hot, wet weather.

Since Phomopsis persists on and in seed, and overwinters in residue from diseased plants prompt destruction of infected plant material after the cropping season is important in reducing initial inoculum. In transplant production use of certified seed and pathogen-free palting media is essential. Growers should ensure that transplants taken to the field are free of disease.

A spray program with a protectant fungicide is necessary to maintain yield and quality. Various copper fungicides are labeled for this purpose.

Gray Mold

With foggy mornings over the past few weeks, botrytis has been showing up at low levels in tomatoes around SW Florida.

Gray mold caused by the fungus *Botrytis cinerea*, is a fairly common problem in tomato and pepper in Florida and can be a major cause of post-harvest rot at harvest and in storage.

Botrytis can cause a variety of problems including damping-off and blights of flowers, fruits, stems, and foliage. The most common symptom is the sudden collapse of succulent tissue such as young leaves and stems. Entry often occurs through damaged tissue.

Stems can become infected through leaf scars, dead leaves, or other form of stem damage. Stem lesions appear as large elliptical, water-soaked lesions. These may partially girdle the stem, but sometimes the entire stem is affected and the plant is killed.

Leaf lesions develop into wedge-shaped grayish-brown lesions. During cool moist weather, a grayish brown fungal growth may be evident on infected tissue.

Fruit are often infected at the stem end or shoulder where they contact other infected plant parts. Water-soaked spots appear with a light brown to tan central region. Decay progresses rapidly. Sclerotia may form in infected tissues.

If there is a rapid weather change (not favorable to the fungus), fruit infections may abort. White circular (halo) spots appear on the fruit and are called "ghost spots." These spots persist on green, and mature fruit.

Development is favored by cool, wet, humid weather. Airborne spores landing on tomato plants germinate and can produce an infection when free water from rain, dew, fog, or irrigation is present for prolonged periods.

The fungus does not easily infect healthy intact tissue but generally infects plants through wounded tissue. Senescent flower parts that have fallen onto leaves are a common starting point for leaflet colonization. Leaf lesions often start on senescent tissue or areas of physical or chemical damage.

Fungicide sprays, applied before dense canopies are formed with senescing foliage, help to control the disease. New specific fungicides for Botrytis are available but they should be rotated with general protectant fungicides to prevent the development of resistance in the fungus to the new chemical controls.

Consult UF/IFAS recommendations for currently labeled fungicides for botrytis control in Florida pepper and tomato.

Fusarium crown rot

Some fusarium is also starting to show up around Immokalee on tomato especially on wet ends of fields as crops mature.

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.

Sclerotinia

Growers and scouts report finding a low incidence of white mold in snap beans (close to harvest) in the Clewiston area.

A few bell pepper plants displaying symptoms of sclerotinia have also been reported in Palm Beach County.

Since cooler temperatures and high humidity favor this disease, growers should remain vigilante for the disease on beans, lettuce, peppers and other susceptible crops if temperatures start to dip.

Downy Mildew

With recent foggy mornings, respondents indicate that downy mildew remains active in cucurbits like squash and cucumber.

Respondents in the Belle Glade area report that crucifer downy mildew has picked up dramatically, hitting kale, cabbage and some of the spring mix crops, like mizuna and tatsoi. Dr Rick Raid, Pathologist at ERC recommends that growers should be on a preventative program, hitting the crop soon after emergence if downy has been spotted in the immediate area.

Tomato Yellow Leaf Curl Virus

Around SW Florida, respondents indicate that TYLCV is starting to increase in a number of tomato fields, both in older planting as well as in some younger fields. Incidence is approaching 10% in some locations.

Around Homestead, reports indicate that TYLCV in tomatoes is increasing but remains fairly low at 1-2% incidence in most fields.

Tomato Chlorotic Spot Virus

Around Homestead, respondents report Tomato Chlorotic Spot Virus is reaching alarming levels (>40%) in some fields.

Southern Corn Leaf blight

Dr Rick Raid, Pathologist at EREC reports that SCLB on sweet corn has slowed a bit over the past few weeks but notes that with cooler night temperatures some NCLB lesions have begun to show up in the Glades.

Northern corn leaf blight caused by the fungus *Exserohilum turcicum* was one of the most important sweet corn disease in southern Florida causing significant losses some years. It is still a potential threat, occurring every spring and occasionally late fall. Resistant varieties have helped reduce the impact of northern corn leaf blight in recent years.

Initial symptoms of the disease include yellow spots that develop on the foliage. These enlarge to form tan or straw-colored dead areas about 4 to 6 inches long and one half inch wide.

NCLB produces a long, elliptical lesion, while those of southern corn leaf spot tend to be oblong and much smaller than those produced by NCLB. Southern blight lesions are also lighter in color (light tan to brown), and have parallel sides rather than the tapering sides of lesions caused by *E. turcicum*.

Northern corn leaf blight, like southern corn leaf blight, moves from the lower canopy to the upper canopy. Fungal sporulation may be observed with a hand lens on foliar lesions following periods of high humidity. When severe, lesions may become so numerous that they coalesce and turn the entire leaf necrotic.

Resistant varieties are available and should be considered, particularly for spring plantings.

Fungicide application can effectively control Turcicum when applied at the right time. Fungicide should be applied when lesions first become visible on the lower leaves or when disease is reported to be in the area. Threat is highest from mid Feb into April but it may be seen during the fall as well.

Triazoles and strobilurins both provide control, with some pre-mixes giving superior control. These products should be used with a broad-spectrum protectant to minimize development of fungal resistance.

Use EDBC fungicides such as mancozeb as a protectant before disease is present. Apply 4- 6 sprays on a 5 – 7 day basis. Use a surfactant/sticker as corn leavers are waxy and spray tends to run off. Rotate with a

stobulurin such as Headline etc. As corn matures or disease becomes present, rotate between triazoles such as Folicur, Monsoon, Propimax etc and strobilurins or premixes of the two.

Consult UF/IFAS recommendations for currently labeled fungicides for northern corn leaf blight control in Florida.

News You Can Use

On Farm Readiness Review

The Florida Department of Agriculture and Consumer Services (FDACS) is working with the FDA to provide outreach and education to Florida fruit and vegetable growers who will be impacted by the “Standards for the Growing, Harvesting, Packing and Holding of Produce for Human Consumption” (commonly referred to as the Produce Safety Rule).

The Produce Safety Rule requires one representative from a farm to attend the Produce Safety Alliance Grower Training (or other FDA-recognized curriculum). The Produce Safety Alliance Grower Training helps growers to understand each part of the regulation and how to comply.

FDACS is collaborating with the University of Florida Institute of Food and Agricultural Sciences Extension Service to deliver Produce Safety Alliance Grower Trainings and On-Farm Readiness Reviews.

FDACS is offering growers/packers/harvesters an opportunity to participate in a free On-Farm Readiness Review to determine what they might encounter in a FSMA inspection.

An On-Farm Readiness Review is an educational opportunity intended to walk producers through what an actual inspection on their farm may look like, before a real inspection is conducted.

To sign up or learn more about the free, educational On-Farm Readiness Review program, complete and submit the form below.

<https://www.freshfromflorida.com/Business-Services/Fruit-and-Vegetables/Food-Safety-Modernization-Act-Produce-Safety-Rule/On-Farm-Readiness-Review>

Someone from FDACS as well as UF/IFAS will conduct the OFRR to help prepare you for future inspections which will begin in 2019.

For more information on the program, contact:

Sydney S. Armstrong
FSMA Coordinator
Division of Fruit and Vegetables
Florida Department of Agriculture and Consumer Services

(863) 578-1944 OFFICE

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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

The UF/IFAS Southwest Florida Research and Education Center is pleased to invite you to meet the vegetable horticulturist candidates and to attend each of their seminar presentations. Four candidates have been selected for interview. A summary of each of the candidate's education and experience is attached for your review.

The dates of the candidate interviews follow. On each date, you are invited to meet the candidate from 9:00 am to 9:30 am. Following your meeting, each candidate will present a seminar at 10:00 a.m. to which we encourage you to attend.

- Monday, January 7th – Dr. Francesco Di Gioia. Seminar title is “Past research and experience in vegetable production and extension to SWFREC clientele. An integrated approach to face current and future challenges of the Florida vegetable industry”.
- Friday, January 11th –Dr. Muhammad Shahid. Seminar title is “Expanding the SW Florida vegetable industry: Lessons from the past and vision for the future”.

- Thursday, January 17th – Dr. Amjad Ahmad. Seminar title is “ Developing an extension and research program in vegetable production to support SWFREC clientele”.
- Wednesday, January 23rd – Dr. Jose Franco. Seminar title is “Integrated approaches for sustainable vegetable production”.

February 6, 2019 Certified pile burner class

Pre-registration is required to attend, and class size is limited to the first 50 people.

The class is already half full. Send your registration form and check as soon as possible. This class usually gets full 3 weeks before the event.

PRE-REGISTRATION WILL NOT BE ACCEPTED WITHOUT PAYMENT OF THE REGISTRATION FEE.

Registration fee: \$50

The \$50 fee covers the training sessions, a booklet with all the presentations in color, other handouts, refreshments, and lunch.

Location: UF/IFAS SWFREC
 Immokalee

The Florida Division of Forestry and University of Florida Cooperative Extension Service will be conducting a Certified Pile Burners Course that will show you how to burn piles legally, safely and efficiently.

Most importantly, it could save a life. If you burn piles regularly, do not put off registering for this training. When the weather is dry, certified pile burners will receive priority for authorization to burn. In addition, certified pile burners are allowed to burn up to two hours longer per day and get multiple day authorizations. Do not wait. The number of trainings offered and attendance at each training is LIMITED. This training will be held from 8:00 am until 4:30 pm at the Southwest Florida Research and Education Center in Immokalee.

Contact Dr Mongi Zekri for more information or to register. Email: maz@ufl.edu

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>

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Wishing you and your families all the best for a Happy and Healthy New Year.

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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