



SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

November 27, 2019

A cold front dropped down over the peninsula dropping temps in South Florida into the 50's for the first time in nearly 8 months. Subsequent fronts brought scattered showers which dropped from just over half inch to more than 3 inches depending on the location. East Coast locations recorded the highest rainfall.

Fall vegetable harvest is hitting full stride across South Florida with increasing volumes of a wide variety produce moving to market. Growers are terminating some early plantings around Duette. Quality is variable with some early stuff hit hard by weather coming off worse for the wear. Prices have been favorable.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
11/4 – 11/27/19	45.41	88.93	1.05	84	0.07
Belle Glade					
11/4 – 11/27/19	46.85	89.31	0.96	87	0.08
Clewiston					
11/4 – 11/27/19	49.19	89.92	0.90	86	0.08
Ft Lauderdale					
11/4 – 11/27/19	54.61	88.14	3.89	80	0.08
Homestead					
11/4 – 11/27/19	50.70	89.15	1.09	82	0.08
Immokalee					
11/4 – 11/27/19	43.46	92.50	0.68	84	0.08
Okeechobee					
11/4 – 11/27/19	40.35	90.93	0.99	86	0.07
Wellington					
11/4 – 11/27/19	50.32	92.23	0.98	84	0.08

“Remember, when in doubt - scout.”

The National Weather Service forecast through next weekend indicates that high pressure will dominate South Florida maintaining dry and stable atmospheric conditions through late this week.

A cold front is forecast to move across South Florida on Thanksgiving Day from the north. This front will be a dry front reinforcing the dry weather over South Florida for the upcoming weekend.

A secondary cold front will be moving southward through South Florida Sunday night allowing for high pressure to build into the region from the north early next week. This secondary front will bring in cooler weather to the region for early next week with highs in the lower to mid-70s except upper 60s to around 70 near the Lake Okeechobee region. Lows early next week will be in the 40s over most of the area, except lower 50s over the southeastern areas and around 40 degrees west of Lake Okeechobee.

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

Insects

Worms

Around SW Florida respondents report that worm pressure has slowed a bit recently but report they are still finding lots of armyworms and a few loopers too.

Reports from Central Florida indicate that fruitworms, armyworms and persistent loopers remain active in peppers and tomatoes.

Growers in the EAA report that fall armyworm pressure remains persistent with mostly beet armyworms in celery and leafy greens and a mixed bag of worms in corn. In a few isolated cases, pressure is high.

On the East Coast, worm pressure has been persistent at moderate levels in most locations.

Around Homestead, growers are battling a variety of leps including fall armyworm on corn, melonworms in cucurbits and southern and beet armyworms in tomato and peppers.

Scouting is extremely important in detecting worms early before they can do significant damage. The Florida Tomato Scouting Guide indicates a pre-bloom threshold of 1 larva/6plants and post-bloom threshold of 1 egg mass or larva/field.

Fortunately, growers have a wide array of excellent worm control materials at their disposal these days.

Consult the UF/IFAS Vegetable Production Handbook for labeled products.

Whiteflies

Growers in the Manatee/Hillsborough area report that whiteflies are up and down in tomato and eggplant and are high in cucurbits.

On the East Coast, whitefly numbers are building in tomato and eggplant with nymphs showing up in older tomato and eggplant.

Around SW Florida, whiteflies are building in tomato and numbers are variable between locations. Whiteflies are also active in eggplant and cucurbits. In squash, the biggest issue is silverleaf.

Respondents in Homestead report that whitefly populations are building rapidly in a variety of crops.

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>

Leafminer

Around Homestead, reports indicate that leafminers numbers are increasing. In some places, leafminer pressure is getting worse, most probably, due to the frequent use of pyrethroids. Growers should reduce use of pyrethroids which suppress natural enemies.

In Hillsborough and Manatee counties, leafminer pressure remains high in tomato and cucurbits and growers are spraying as threshold levels are reached.

Reports from the EAA, indicate that leafminer are causing some problems in celery and leafy vegetables.

On the East Coast, respondents indicate that leafminer pressure is building in a number of crops.

Around Immokalee, growers and scouts report leafminer are becoming more active in tomato and eggplant and growers are spraying regularly for control.

Silk fly

Respondents in the EAA indicate that silk fly pressure is persistent in corn.

Silk fly are also becoming more common around Homestead as the season progresses.

Reports indicate that silk fly numbers are increasing with the increase in alternate breeding hosts.

Routine use of pyrethroids may suppress corn silk flies in sweet corn. Cultural practices also play an important role in suppressing corn silk fly population. Growers should avoid dumping culls and destroy rotten fruits and vegetables as these sources are preferred substrates for egg laying.

Thrips

On the East Coast, thrips are increasing in pepper blooms and are primarily Florida flower thrips.

Melon thrips populations remain high around Homestead and number have increased suddenly on beans and squash. Growers are reporting difficulty in bring them under control.

Bean is also infested with bean thrips, *Caliothrips fasciatus*, and numbers are increasing. Common blossom thrips population is high in most bean fields with scouts reporting finding 4-6/flower. The adults cause damage by feeding and ovipositing on foliage.

Cultural practices are effective in reducing thrips. Use reflective plastic mulch on field margins can help repel this virus carrying thrips. Some ornamental plants are hosts to flower thrips. If possible, growers should avoid planting tomato within 1,000 feet of a nursery. Planting non-host crop as a barrier can also help reduce flower thrips infestation on vegetable crops.

Reports from the EAA indicate that thrips are building up in green bean blossoms. Elsewhere thrips remain very low.

Diamondback moth

Growers and scouts are beginning to report finding diamondback moth larvae and pupae in cabbage and other crucifers from central Florida down to Homestead.

This insect has become increasingly difficult to control and in recent years, resistance to insecticides has become widespread, and includes most classes of insecticides including some Bt (*Bacillus thuringiensis*) products.

Protection of crucifer crops from damage often requires application of insecticide to plant foliage, sometimes as frequently as twice per week. Complete coverage especially the undersides of leaves where larvae are most often found.

Since adults may carry over between crops on plant debris, cultural controls such as separation of crops in time and space and sanitation including rapid crop destruction after harvest are important.

Larvae and pupae are often killed by one of several wasp parasitoids. Reduction of insecticide use, in particular pyrethroids and use of soft pesticides can sometimes improve diamondback control by favoring survival of natural enemies.

For insecticide recommendations, check UF/IFAS recommendations for currently labeled insecticides for diamondback larvae control in Florida crucifers.

Dr. Hugh Smith Entomologist at UF/IFAS GCREC indicates that rotations of Coragen, Proclaim, Radiant, Avaunt, have been effective. Hugh indicates that the Bts also have a place especially if you can use them early and often for the small larvae.

Stinkbug

Growers and scouts are reporting increasing problems with stinkbugs in tomato around South Florida. In the past stinkbug have primarily been a problem in organic tomato and were rarely seen in conventional tomato crops but this situation appears to be changing and some growers have reported increasing difficulty in controlling stinkbug when they show up.

Broad Mite

On the East Coast, respondents indicate that broad mites are common in pepper.

Around SW Florida, broad mites remain sporadic in pepper and eggplant.

Reports from Homestead indicate that broad mites are widely present in a variety of crops.

Spider Mites

Unusually dry weather this fall saw some spider mites showing up in cucurbits, eggplant and tomato.

Some problems with spider mites have also been reported in melons in Central Florida.

Pepper weevils

Around SW Florida, pepper weevils are beginning to show up in peppers in multiple locations around South Florida and growers are battling them in some locations.

Around Homestead pepper weevils are a major problem in pepper. Serious infestations can be observed in all plantings irrespective of pepper varieties and planting location. Actara, Vydate, Diamides and pyrethroids can be used in a program to control this pest.

Pepper weevils is present in a few locations around Palm Beach County, but most fields remain clean.

Diseases

Bacterial Spot

Bacterial spot is flaring up in several tomato fields around Immokalee. Bacterial spot has also flared up in non-resistant pepper.

On the East Coast, bacterial spot remains active where it is present.

In the Manatee Ruskin area, bacterial spot incidence and occurrence is high in older tomato fields.

Around Homestead, bacterial spot is present in tomato and pepper.

Bacterial spot is one of the most serious diseases of tomato and pepper in Florida because it can spread rapidly during warm periods with wind driven rains, and because fruit symptoms reduce marketability.

Bacterial spot is caused by several species of *Xanthomonas* spp. Four species have been identified on tomato: *X. euvesicatoria*, *X. vesicatoria*, *X. perforans*, *X. gardneri*. In Florida, the major species encountered is *X. perforans*.

Symptoms of bacterial spot appear as small, water-soaked, greasy spots on infected leaflets. On tomatoes, distinct spots with or without yellowing occur. Individual leaf spots may coalesce with each other, resulting in the browning of entire leaflets. Fruit spots often begin as dark specks with or without a white halo. As spots enlarge, they become raised and scab-like.

Entry into the plant occurs through stomata or wounds made by wind driven soil, insects, or cultural operations. Bacterial spot can be seed transmitted, but most inocula comes from volunteer plants or infected plant debris in the soil. Temperatures of 75-87°F are ideal for bacterial spot but infections can occur at higher or lower temperatures.

***Xanthomonas perforans* is seed-borne, which allows for the movement of strains on a global scale.**

An integrated approach is needed to manage this disease. At the field level, most inocula comes from infected transplants, volunteer plants or infected plant debris in the soil. Entry into the plant occurs through stomata or wounds made by wind driven soil, insects, or cultural operations. Temperatures of 75-87°F are ideal for bacterial spot but infections can occur at higher or lower temperatures.

Exclusion is the best means of managing bacterial spot on tomato. Unfortunately, even the best bactericidal treatment offers only limited protection when environmental conditions are favorable for rapid disease development, especially during periods of heavy, wind-driven rains.

Sanitation is important. Pepper and tomato volunteers and solanaceous weeds should be destroyed between crops. Purchase only certified disease-free transplants and seed.

Infected transplants can provide for long distance transplant of the disease. To reduce the incidence of disease, transplant houses should be located away from tomato or pepper fields. Transplant trays should be inspected daily for signs of disease and trays should be rouged out and destroyed at the first sign of disease. Transplant house workers should wash and sanitize their hands frequently to avoid movement of bacteria from tray to tray and house to house.

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

No resistant tomato varieties are available commercially. In pepper, a number of excellent varieties with resistance to races 1 -10 are available.

It is important to apply sprays before and during rainy periods. If conditions are favorable, frequent spraying may not be enough to maintain bacterial spot below damaging levels.

The traditional recommendation for bacterial spot control consists of copper and maneb or mancozeb. Attention to application techniques is as important as choice of material in achieving adequate control. The effectiveness of copper is limited, because of the widespread occurrence of copper tolerance among strains of *Xanthomonas*.

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

In replicated trials at UF, two products Actigard (acibenzolar-S-methyl) and Cueva (copper octanoate) consistently performed better in the management of bacterial spot over standard applications copper hydroxide in repeated trials alone or when combined with other products.

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

Consult UF/IFAS recommendations for formulations, rates, and intervals of currently labeled materials for bacterial spot in Florida.

Bacterial blight

Low levels of bacterial blight are present on green beans in Homestead and Belle Glade.

Target spot

Growers and scouts around Immokalee report that target spot is showing up low in the bush in mature tomato plantings.

Target spot is widely present in the Manatee Ruskin area and is present in most fields. Incidence and occurrence are worse in older fields.

Target spot is also present in some tomato on the East Coast and in Homestead as well.

As the season progresses, growers and scouts should be look for target spot as canopies develop and remain wet for extended periods in the morning.

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.

Target spot is also causing some scattered problems in cucumber.

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

Choanephora Blight

Growers and scouts report that beans from coast to coast were hit hard with Choanephora wet rot with some fields a complete loss! Quality has also suffered.

Phytophthora

Reports from the east Coast indicate that phytophthora is active in pepper and causing problems in some areas.

Around Immokalee, phytophthora is present at low levels in pepper and squash.

Phytophthora is causing problems in squash around Homestead in low lying areas.

***Phytophthora capsici* may survive in and on seed and host plant debris in the soil by means of thick-walled, sexually produced spores (oospores).** Both mating types of the pathogen necessary for oospore production are present in Florida. The pathogen produces spores of another type called zoospores that are contained within sac-like structures called sporangia.

Zoospores are motile and swim to invade host tissue. Plentiful surface moisture is required for this activity. The sporangia are spread by wind and water through the air and are carried with water movement in soil.

Phytophthora is also moved as hyphae (microscopic fungal strands) in infected transplants and through contaminated soil and equipment.

Since water is integral to the dispersal and infection of *P. capsici*, maximum disease occurs during wet weather and in low or waterlogged parts of fields. Heavy rainfall coupled with standing water creates ideal conditions for epidemics caused by *P. capsici*. Growth of this pathogen can occur between 46 -99°F, but temperatures between 80-90°F are optimal for producing zoospores and infection. *P. capsici* can rapidly affect entire fields. Under ideal conditions, the disease can progress very rapidly, and symptoms can occur 3-4 days after infection.

Planting sites should be well drained and free of low-lying areas. Optimal water management is essential to prevent the occurrence of flooded field conditions that favor Phytophthora blight. The drainage area of the field should be kept free of weeds and volunteer crop plants, particularly those in the solanaceous and cucurbitaceous groups.

Preplant fumigant may help reduce the incidence of disease but is not particularly effective. Equipment should be decontaminated before moving between infested and noninfested fields.

Infected fruit should be culled to prevent spread in the packinghouse and during shipment.

Effective, labeled fungicides should be used preventively according to label instructions. It is essential that fungicides with different modes of action be rotated to prevent the buildup of fungicide resistance in *P. capsici*.

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

Southern Blight

Growers and scouts around South Florida are reporting scattered problems with southern blight wilting down plants following recent rains.

Southern blight is caused by a soil-born fungus, *Sclerotium rolfsii* is a widespread problem in Florida's fall season. Typical symptoms include a whitish fungal growth develops around the base of plants at the ground line followed by wilting and sudden plant death as the fungus girdles the stem. Small seed-like structures (sclerotia) may be found within fungal mass. They are white at first and later turn dark brown to black.

The disease usually appears in "hot spots" in fields in early fall and continues until cooler, dryer weather prevails. Losses may vary from light and sporadic to almost total destruction of the crop.

Southern blight has a wide host range but is especially destructive on crops such as tomato, pepper, eggplant, beans and melons.

Sclerotia serve as the main survival structures and source of inoculum for disease. If the fungus finds ample organic matter and host plants, a large supply of sclerotia are produced for next year. These structures have a hard thick covering that resists weathering. Sclerotia may exist free in the soil or in association with plant debris. When buried deep in the soil, sclerotia may survive for up to a year, whereas those at the surface remain viable and germinate in response to decomposing plant material.

Since *S. rolfsii* does not produce spores, dissemination depends on movement of infested soil and infected plant material. Use of contaminated equipment and machinery may spread sclerotia to uninfested fields.

The fungus develops rapidly during hot weather when temperatures are over 85° F. *Sclerotium rolfsii* grows on living and non-living organic matter and becomes most severe when dead leaves or other types of organic matter are present around the base of the plant. This decaying organic matter provides the fungus with energy and allows it to grow quickly and rapidly kill the host plant.

High temperatures and moist conditions are associated with germination of sclerotia. Conditions in Florida's early fall favor disease development, a good rule of thumb is that the first moisture event (either rainfall or irrigation) following the first sustained 3-5-day period when temperatures exceed 95 ° F will signal the first severe outbreak of the disease. This stimulates germination of the sclerotia (seed-like structures) and furnishes needed moisture for fungal growth.

High soil moisture, dense planting, and frequent irrigation are all favorable to disease development. Southern blight is difficult to control when conditions favor the disease and when numbers of sclerotia in the soil are high. Crop rotation with a non-susceptible grass crop such as corn is the most effective means of reducing numbers of sclerotia and resulting incidence of southern blight. Southern blight can be controlled with cultural and chemical techniques.

In rotations, growers should avoid planting tomato following highly susceptible crops such as peanut.

Deep incorporation of plant residues serves as a cultural control tactic by burying sclerotia deep in the soil. Residue management options will differ depending on what the previous crop was in a field. If the previous crop was a susceptible one, the previous crop should be well decomposed prior to planting, and this may require disking the field several times during the fallow period.

Soil fumigation with products containing chloropicrin can help reduce the incidence of southern blight.

Fusarium

Growers around the Manatee Ruskin area are reporting increasing incidence of fusarium wilting down and killing mature tomatoes.

Around Immokalee, fusarium is starting to show up in older tomato.

Powdery mildew

Powdery mildew is widely present and increasing in squash and beans in several locations around South Florida from Ruskin down to Homestead.

Symptoms of the disease typically appear on older leaves and stems. The yields of crop are reduced due to pre-mature foliage loss. In melons severe leaf infection can result in lower fruit sugar content and subsequent reduction of fruit quality. In addition to reducing plant vigor from leaf infection, mildew can attack the calyx and reduce the marketability of fruit.

The fungus first appears as subtle, small, round, yellowish or whitish spots on leaves and sometimes stems. These spots enlarge and coalesce rapidly. As the white, fluffy mycelium grows over plant surfaces and produces spores, it gives the lesions a powdery appearance resembling talcum powder, which is evident on the upper surface of older leaves or other plant parts. Young leaves are almost immune.

Heavily infected leaves appear dull and chlorotic and eventually become dry and brown. Extensive premature defoliation of the older leaves can occur if the disease is not controlled. Yield reduction from defoliation is proportional to the severity and length of time plants are infected.

Powdery mildew fungi can reproduce under relatively dry conditions. Increased humidity can increase the severity of the disease, and infection is enhanced during periods of heavy dew. Unlike downy mildew, powdery mildew can become severe during periods of low rainfall in the winter and spring months in Florida.

Crop rotation and many other cultural practices have little effect on the incidence and development of powdery mildew. It has been noted however, that healthy, vigorous leaves and stems are less prone to infection. Plants under nutritional stress in most cases will develop powdery mildew much sooner than plants the same age grown under a good nutritional program.

Tolerance or resistance to powdery mildew is available in some vegetable crops. Most commercial cucumber varieties grown in Florida have acceptable levels of resistance.

In addition to resistance, economic control can be achieved with chemicals. Under low disease pressure, some materials applied preventatively for downy mildew may provide satisfactory control of powdery mildew. However, under moderate to heavy mildew disease pressure, micronized sulfur (Thiolux) and the strobilurin fungicides such as Flint, Nova and Quadris are recommended. Newer materials such as Pristine and Quintec have also performed well in University trials.

Growers should be aware that sulfur could injure plants, especially at higher temperatures.

When using strobilurin fungicides growers should be sure to follow manufacturer's recommendations and practice resistance management by avoiding consecutive applications. Some of the bio-fungicides like Regalia, Rhapsody and Sonata may provide good rotation partners.

Options for organic growers include the use of resistant varieties, cultural practices that ensure proper plant nutrition and plant vigor in addition to sulfur and potassium bicarbonate sprays for disease control.

Consult UF/IFAS recommendations for currently labeled insecticides for powdery mildew control on cucurbits in Florida.

Downy Mildew

Reports from Hillsborough County indicate that down mildew is widespread on cucurbits.

Around Southwest Florida, respondent indicate downy mildew has been high in squash, melons and cukes.

Gummy stem blight

Very low levels of gummy stem blight are being reported on fall watermelons around Southwest Florida.

Southern Corn Leaf Blight

Respondents indicate that the incidence of Southern corn leaf blight is widespread on sweet corn around South Florida.

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

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

Lesions caused by southern corn leaf blight are much smaller (up to 1/2 inch wide and 1 inch long) than those caused by northern corn leaf blight. 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*.

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

Spray programs with recommended fungicides should commence at the first sign of disease if favorable weather is likely.

Fungicides should be applied early, particularly if the forecast is for warm, humid weather. As with northern corn leaf blight, 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.

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

Northern corn leaf blight

With cooler weather northern corn leaf blight is becoming more common sweet corn in the EAA. Northern corn leaf blight caused by the fungus *Exserohilum turcicum* was one of the most important sweet corn diseases in southern Florida causing significant losses some years. 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.

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.

Tomato Yellow Leaf Curl Virus

Growers and scouts are reporting a marginal increase in the incidence of TYLCV as the season progress. Disease incidence remains restricted mostly a few plants here and there in a couple of fields - are being reported on tomato around South Florida.

Tomato Chlorotic Spot Virus

Reports from Homestead report that symptoms consistent with tospovirus (believed to be TCSV) are starting to appear in some tomato fields.

A few symptomatic plants are also being reported in Palm Beach County.

TCSV-infected tomatoes develop necrotic lesions of variable size, easily recognized necrotic and chlorotic spots, and ringspots on leaves, stems, petioles, flowers, and fruit. Symptoms are like those of GRSV and, to a lesser extent, some isolates of TSWV. Although apparently less common, chlorotic spots and ringspots may form prior to or at the same time as necrotic lesions. Following the onset of these symptoms, wilting and bronzing of the infected plant may occur. TCSV infections in young tomato plants may result in severe stunting and eventually death. Fruit from infected plants may show necrotic ringspots, necrotic spots, and distortion, rendering them unmarketable.

Symptoms in pepper plants include severe stunting, necrotic spots, necrotic ringspots, and severe leaf deformation. Fruit from infected pepper plants can be deformed and present ringspots and irregular coloring.

TCSV, like other members of the Tospovirus genus, is vectored by certain thrips species. As with other tospoviruses, TCSV is only acquired by the larval (1st and 2nd instar) stages of the thrips vector as they feed on infected plants.

TCSV is known to be transmitted by three species of thrips: common blossom thrips (*Frankliniella schultzei*), western flower thrips (*F. occidentalis*), and flower thrips (*F. intonsa*)

Cucurbit Crumple Leaf Virus

Cucurbit crumple leaf virus is present on squash and melons around South Florida. Incidence and occurrence remain mostly low.

Cucurbit yellow stunting disorder virus

Scouts around Immokalee report finding low levels of cucurbit yellow stunting disorder virus on watermelon around Immokalee. Cucurbit yellow stunting disorder virus has been detected in pigweed in Florida.

Bean red node

Respondents from Homestead report finding beans with symptoms of red node (caused by tobacco streak virus).

News You Can Use

Florida's First Thanksgiving

Hate to upend a beloved Thanksgiving tradition but throw out the turkey and forget the Pilgrims.

Strong evidence exists that America's first formal prayers of gratitude for good fortune, followed by a feast of thanks, took place at St. Augustine in 1565 – 56 years earlier than the traditionally accepted first Thanksgiving at Plymouth Rock and more than 1,000 miles south of it.

The Spanish founded America's first permanent settlement in 1565, and Spanish explorers celebrated the first Thanksgiving of Europeans in America on Sept. 8 of that year.

Archaeologists and historians have been able to locate the approximate site, which visitors can view today at the Mission Nombre de Dios and Shrine of Our Lady of La Leche in St. Augustine. A 208-foot tall stainless-steel cross both celebrates the founding of the city and marks the approximate location of the inaugural feast of thanks.

Instead of Pilgrims in tall black hats and broad white collars, robed Spanish priests and armor-clad explorers held a Catholic Mass, then shared a Thanksgiving meal with Native Americans – the tattooed, seashell-adorned Timucuan of Florida. The Spanish doffed their armor and the Timucuan dropped their stone-tipped spears for the occasion, and each group shared food and fellowship.

What brought about Florida's earlier celebration?

On Sept. 8, 1565, Spanish admiral Pedro Menendez de Aviles landed at the St. Augustine site with about 1,000 soldiers, sailors, farmers, clergy and artisans. He led an expedition to claim the territory for his king, Spain's Philip II. On a makeshift altar, Father Francisco Lopez celebrated a mass of Thanksgiving for the party's safe journey.

A replica of the altar sits next to the shore in the general area where archaeologists believe the Mass was held.

Eminent Florida historian Michael V. Gannon, history professor emeritus at the University of Florida, wrote about the occasion in his heavily researched 1965 book, *The Cross in the Sand*. The Admiral had the Indians fed and then dined himself, Gannon said.

Turkey was not on the menu.

Instead, the first Thanksgiving's main dish was a garlic stew called cocina, made from pork, garbanzo beans and olive oil that the Spanish brought from their ships. They dipped hardtack in the stew and washed it all down with red wine.

The Timucuan likely contributed a variety of wild game and fish –perhaps deer, mullet, catfish, tortoise, oysters and clams. According to historians, side dishes might have included pumpkins, squash, beans and a variety of fruits and nuts. The Indians did not touch wine or rum. They probably drank only water; although, they did imbibe a strong non-intoxicating herbal beverage made from a coastal weed.

Today, more than 200,000 visitors annually come to the mission and the shrine to stroll the grounds, to worship, to reflect and to experience a new window into history. A large part of the attraction is the chapel that houses a replica of the statue of Our Lady of La Leche, the first shrine dedicated to Mary, mother of Jesus, in the United States. The original casket of Pedro Menendez de Aviles is on view at the mission museum, which tells the story of Catholicism in Florida.

And annually, the city's founding on Sept. 8 is celebrated with pageantry, cannon fire, a mayor's proclamation, speeches and a Mass at the replicated altar.

PS – glad we have moved beyond pork and beans.

Operation Clean Sweep

The Florida Department of Environmental Protection and the Florida Department of Agriculture and Consumer Services announces the 2019-2020 Operation Clean Sweep program, a mobile pesticide collection effort that provides a safe way to dispose of cancelled, suspended, and unusable pesticides. The free service is available to farms/groves, greenhouses, nurseries, golf courses, and pest control entities.

For more information, including how to sign up, click here:

<https://floridadep.gov/waste/permitting-compliance-assistance/content/operation-cleansweep-pesticides>.

2019 - 2020 UF/IFAS Vegetable Production Handbooks

Copies are available at the Hendry County Extension Office in LaBelle, the Miami Dade County Extension Office, the Palm Beach County Extension office in West Palm Beach, and at the UF/IFAS SW Florida Research and Education Center in Immokalee.

Up Coming Meetings

Produce Food Safety Workshops: Fall 2019

Produce Safety Alliance Train-the-Trainer This two-day course is for those interested in becoming PSA Trainers
• 12/11/19-12/12/19-Apopka <https://psattt121119.eventbrite.com>

December 16, 2019 Discussion of Local Agricultural Issues with Legislators 1:00 pm—3:00pm

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

1:00 – Welcome, Dr. Kelly Morgan, Center Director

1:10 – Success of the Best Management Practices Program in the Everglades Agricultural Area – Dr. Samira Daroub, Professor, Soil and Water Sciences, Everglades Research and Education Center, Belle Glade
1:30—Payment of Environmental Services in Northern Everglades Associated with Dispersed Water Storage – Dr. Sanjay Shukla, Professor, Agricultural and Biological Engineering, Southwest Florida Research and Education Center, Immokalee
2:00— Next Step in BMP research and Implementation – Mr. Christopher Pettit, Director, Office of Agricultural Water Policy, Florida Department of Agriculture and Consumer Services, Tallahassee
2:20 – Grower Panel Discussion and Questions
2:40 – Discussion Led by Legislators. Expected to attend: Senator Ben Albritton, Representative Bob Rommel and Representative Byron Donalds.
3:00 Adjourn

CEUs will be available. Pre-registration is requested.

To register, call 239-658-3400 or email Jennifer Derleth at jderleth@ufl.edu

March 6, 2020 Bridging the GAPS: Approaches for Treating Irrigation Water On-Farm 8:30am - 4:00pm

UF/IFAS Everglades Research and Education Center
3200Palm Beach Road
Belle Glade, FL 33430

Regional experts will discuss different approaches to treating water on-farm and how to implement pre-harvest water treatment systems, meet the water treatment requirements of the Produce Safety Rule, and how to verify that the system is operating as intended.

Cost to Attend: \$50. Cost includes the training materials, lunch, and refreshments. Seats are limited to 30. For questions, email Sarah McCoy at sarahmccoy@ufl.edu

Agenda

8:30 – Registration
9:00 – Welcome and introductions
9:15 – Agricultural Water Treatment and FSMA
10:15 – Agricultural Water Treatment Tools
12:00 – Lunch
12:45 – Developing On-farm Agricultural Water Treatment Programs
2:30 – Implementing Agricultural Water Treatment on the Farm
4:00 – Adjourn

Please register at: <https://bridgingthegaps030620.eventbrite.com>

Websites

Profiles of Plant Viruses and Viroids – is A project of PLP6223C “Viral Pathogens of Plants” a graduate class taught in the Department of Plant Pathology at the University of Florida, Gainesville, Florida

The following profiles were composed by students in the class from 2011 to the present. Most of the profiles are in the form of a narrated presentation, designed and narrated by the student author.

Each profile is designed to be an overview of a plant virus covering basics of particle and genome structure, replication, transmission, host range, detection and management.

The narrated presentations are 10-15 minutes in length, although they can be viewed without narration. The format of each profile varies with the creative abilities and energies of each student.

See profiles at <http://plantpath.ifas.ufl.edu/plant-virus-profiles/>

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>

Pesticides, chemicals, cancer - the world is a scary place and our dinner plate even more so. Or so it seems. Despite what we hear in the media and find in our Facebook feed, food in the United States has never been safer. Why is it then that American consumers have never been more worried about the safety of the foods they eat? <https://www.youtube.com/watch?v=thiOicCQRWY>

Check out Gene McAvoy on 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>

UF/IFAS Palm Beach County Extension: <http://discover.pbcgov.org/coextension/Pages/default.aspx>

Wishing you all the Best for a Happy and Blessed Thanksgiving.

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

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