



UNIVERSITY OF
FLORIDA

E X T E N S I O N

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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

November 4, 2013

A cool front which moved into the area over the weekend brought drier air and the coolest temps of the season to much of the area with lows in the lower to mid-50's recorded in many locations.

With the exception of Miami-Dade and Broward County which experienced heavy downpours in early October, most of the area recorded below average rain fall for the month.

October was also warmer than normal with many days seeing highs in the upper 80's to low 90s and night time temps in the 70's. Crops are looking good in most places with the exception of early planting which were hard hit by weather and disease in some places.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
10/14 – 11/4//13	53.67	90.28	0.97	81	0.10
Belle Glade					
10/14 – 11/4//13	54.30	93.61	0.09	83	0.11
Clewiston					
10/14 – 11/4//13	57.34	92.14	0.23	81	0.11
Ft Lauderdale					
10/14 – 11/4//13	63.57	89.29	0.63	76	0.11
Fort Pierce					
10/14 – 11/4//13	64.58	85.26	0.00	86	0.12
Homestead					
10/14 – 11/4//13	61.56	91.51	0.49	84	0.10
Immokalee					
10/14 – 11/4//13	55.96	96.04	0.01	80	0.11

“Remember, when in doubt - scout.”

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The volume of crops coming to market is increasing as the pace of harvest picks up around South Florida. Items being harvested include boniato sweet potatoes, collards, cucumbers, eggplant, herbs, okra, peppers, squash, tomatoes watermelons and a variety of specialty items.

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

The National Weather Service forecast indicates the weather should remain fairly dry through midweek as strong high pressure ridging remains in place across the Florida peninsula and western Atlantic. The pressure gradient and associated strong winds is expected to remain in place through Wednesday. By late Wednesday into Thursday winds are expected to drop. Toward the end of the week, a cold front will approach the area from the north. Moisture levels are expected to increase ahead of the front allowing slightly better chances for showers Friday and into the weekend. Models at this time depict the front stalling across central Florida at the end of the week.

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

Insects

Worms

Worm pressure around SW Florida remains fairly high with growers and scouts finding worm eggs and newly hatched worms every day. While most growers are staying ahead of them it is a constant battle. Scouts report finding mostly southern armyworms, loopers, beet armyworms, melonworms, fall armyworms and hornworms.

A few tomato pinworms have been reported in Hendry County.

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

Around the Glades, worms of all types are very active (BAW, FAW, CW, loopers, fruit worms). Counts at pheromone stations in the EAA over the past month, have averaged 55 to 70 adult male FAW moths per trap per night. CEW counts have been less than 0.01 adults per night on average. Growers and scouts report that worm counts are very high in silking sweet corn even under a daily spray program.

On the East Coast, growers and scouts report the heaviest worm pressure seems to be on eggplant and cucurbits. Looper numbers have been extremely high in some locations with overall worm pressure in the moderate range. A few fall armyworms have been found in pepper fruit and a low numbers of pinworm have been reported on some young eggplant.

In the Manatee Ruskin area, respondents indicate that armyworms still around with moderate to high worm pressure being reported. Respondents report they are getting good control of armyworms but note they are having a hard time killing loopers.

Reports indicate that worms are also active in all Homestead crops. Respondents note that fall armyworm population is increasing on corn and melonworms are common on cucurbits. Diamondback moth abundance remains low.

Dr Dak Seal advises that in his trials, Verimark applied at plant followed by Novaluron/Radiant (28 DAP), indoxicarb (42 DAP) will provide excellent control of DBM, FAW, BAW and melonworms. He notes that *Bacillus thuringiensis* based insecticides can be used in between applications of above treatments to provide excellent worm control. He adds, Intrepid is effective in controlling all worms and Rimon is another effective growth regulator in controlling fall armyworm and other worm pests.

Whiteflies

Reports indicate that silver leaf whitefly numbers are extremely high in all Homestead crops. High whitefly has led to an increase in tomato yellow leaf curl and bean golden mosaic viruses.

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

In Palm Beach County, whitefly pressure is about normal for this time of year with growers having to treat for them in older tomato, eggplant and in some squash as well.

Respondents in SW Florida indicate that whitefly numbers range from low to horrible depending on the location with pupae showing where high counts are being reported.

Reports from the Manatee Ruskin area indicate that whitefly numbers remain mostly low.

Respondents in north Florida indicate that whitefly pressure remains high.

Leafminers

Around Immokalee, scouts report leafminers are still mostly low with some increases noted in a few locations. Occurrence is mainly around the ends and edges of fields with a high level of parasitism being reported.

Leafminers are increasing in the Manatee/Ruskin area with more growers spraying for leafminer.

Respondents in Homestead note that leafminer pressure is increasing on a variety of crops.

November is typically the time of year when leafminers populations increase rapidly in South Florida. 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.

Females can produce 600 to 700 eggs over their life span, although studies suggest that 200 to 300 are more typical. Females may deposit 30 to 40 eggs per day, but egg deposition decreases as flies grow older. Eggs are inserted into plant tissue just beneath the leaf surface and hatch in about three days.

Flies feed on the plant secretions caused by oviposition, and also on natural exudates. Females often make feeding punctures, particularly along the margins or tips of leaves, without depositing eggs.

There are three larval stages. The maggots feed approximately 7 days and then exit the leaf to pupate on the ground or mulch under infested plants. The maggots feed on tissue between upper and lower leaf surface leaving a winding trail or pattern through the leaf.

The mature larva emerges from the mine, drops from the leaf, and burrows into the soil to pupate.

Both leafminers a wide host range including bean, beet, carrot, celery, cucumber, eggplant, lettuce, melon, onion, pea, pepper, potato, squash, and tomato. There are many other hosts and numerous broad-leaved weed species can harbor leafminers in Florida.

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

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

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

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

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

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 products Spintor (Spinosad) and Reliant (Spintoram) have also given good results and are labeled on a wide range of crops. Some other materials that may be used to conserve beneficials include azadirachtin (Neemix) and insecticidal oils. Both products are approved for use by organic growers as is Conserve (spinosad).

The newest addition to the grower's arsenal of control are the diamide insecticides (Coragen, Verimark, Exirel and others) which have given excellent results and has virtually eliminated leaf miner pressure on many farms.

Dr. Dak Seal Entomologist at TREC notes that in his trials, Coragen, Verimark and Exirel provided good control of leafminers on bean. Soil application of Coragen and Verimark provided longer suppression on leafminers than their foliar application. One application at plant as a soil drench or drip provided suppression of leafminers for 5 weeks. For management of leafminers, Verimark can be applied at plant followed by Radiant at 35-45 DAP and other insecticides.

Thrips

Respondents in Homestead report thrips are extremely high in all crops. Scouts report that 10 thrips or more in bean blossoms is not uncommon and is resulting in low severity scarring on the pods.

Dr Dak Seal reminds growers that melon thrips did not disappear over the summer but were carried over in non-cultivated host plants.

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

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

Around Palm Beach, thrips are being seen in pepper blooms at very low to low levels. Most are Florida flower thrips but scouts report seeing a few western flower thrips mixed in with them.

In the EAA, respondents report that leafminers numbers in celery are reaching threshold levels for treatment.

Silkflies

Around Belle Glade, silkfly populations are building in the EAA close to the Lake while numbers remain lower around Homestead.

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

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

Pepper Weevils

Pepper weevils remain mostly low around South Florida, but scouts have found significant populations of pepper weevil in some Immokalee peppers.

Reports indicate that weevil populations in Glades are also on the rise and a few adults are starting to show up around Palm Beach County.

Pepper weevil numbers is low in Miami-Dade County but Dr. Dak Seal reminds growers that population will increase with the progression of the season.

He advises growers to use yellow sticky cards around pepper fields to monitor their movement. Actara, Vydate, Cryolite + Pounce (pyrethroids) and Malathion provide quick knock down of pepper weevil adults. Use these products in rotation. Proper selection of spray nozzles is important in delivering insecticides in fine mist to cover canopy of pepper foliage.

Broad Mites

Broadmite numbers are increasing in peppers and other crops with the advent of drier weather.

Numbers remain low in most areas.

Around Palm Beach County, broad mites are becoming common in older pepper and eggplant generally showing up a little before or at maturity. Some broadmites are also being detected on newly set pepper transplants possibly coming on transplants.

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

Aphids

Respondents report that green peach aphids are beginning to build up in leafy greens in the EAA.

Scout also report finding some red potato aphid showing up in some of the leaf fields in the EAA over the past 10 days. The potato aphid is larger and more elongate than green peach aphid, 1/16 - 1/8 in., and may be green, pink, or yellowish, with red eyes.

In eastern Palm Beach County, low levels of aphids are showing up in cucurbits and growers are seeing some mosaic virus as a result.

Around SW Florida, aphids are starting to show up and scouts are finding a few winged aphids over the past week or so.

Spider mites

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

Diseases

Bacterial Spot

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

On the east coast, bacteria spot was getting pretty high in older tomato until the weather turned dry. Currently it is creeping in older crops with wet nights but is not too much of an issue. Younger tomato and pepper plantings are generally pretty clean with only low levels of bacteria being reported.

Around Immokalee, bacterial spot is common in tomato fields but most fields have flushed out new growth and are looking good. Some of the early plantings have some fruit damage. There are some pepper fields with hotspots of bacterial spot that look rough but overall most pepper is pretty clean.

In Manatee/Ruskin area, bacterial spot has subsided with the lower humidity but has left growers with pretty slim pickings from their early tomato sets that were hampered by heat, rain, and bacteria. Later plantings have done better but bacterial spot remains present and is creeping around.

Target Spot

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

Around SW Florida, target spot has started in a few fields on the inner foliage and a few fruit infections have been reported.

Low levels of target spot is present in cucumbers around Palm Beach County

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.

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.

In addition to tomato, this fungus has a wide host range and may attack such diverse crops as papaya, passion-vine, pepper, cowpea, cantaloupe, squash, and snap beans as well as a number of common ornamentals.

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

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.

In recent trials, at the University of Florida fungicides were rated for efficacy as follows:

- 1) **Switch, Inspire Super**
- 2) **Revus Top, Scala**
- 3) **Tanos, Endura, Quadris (and other strobilurins), Reason**
- 4) **Bravo (chlorothalonil)**
- 5) **Mancozeb, Copper**

Southern Corn Leaf Blight

Around Belle Glade, scouts are reporting active southern corn leaf blight in sweet corn.

Lesions caused by southern corn leaf blight are much smaller (up to ½ 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*.

Northern Corn Leaf Blight

Northern corn leaf blight caused by *E. turcicum* is also present on corn in the EAA.

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

Pythium

Around the EAA, pythium has been active and is taking down bean plants. Some has gone aerial and is contributing to the problem.

Southern Blight

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

Downy Mildew

Around Immokalee, downy mildew is present in squash, cucumbers and watermelons with overall levels still low but some new activity is being reported.

Around Palm Beach County, downy mildew is beginning to show up in cucumber.

Downy Mildew pressure in basil has been is pretty relentless and growers have to work hard to keep it in check.

Symptoms of downy mildew initially appear as yellowing and cupping of the leaves and are typically concentrated around the mid-vein. Growers may not realize their basil is infected with downy mildew since the yellowing of the foliage is similar to a nutritional deficiency. The discolored area may cover most of the leaf surface.

On the underside of leaves, a gray, fuzzy growth may be apparent by visual inspection. Under high humidity, the chlorotic areas on the leaf turn to dark brown quickly. Sporangia, the reproductive structures of the pathogen, are easily detected under magnification and are diagnostic for this disease.

The dark sporulation of the lower leaf surface renders the product unacceptable for market and may result in severe losses. The disease symptoms can intensify in transit on harvested product and again result in unsalable product on arrival.

Disease development is favored by high humidity and leaf wetness. In field spread is through spores.

Although few fungicides are specifically labeled for this disease, some broadly labeled fungicides which are labeled under the herb crop grouping on current labels, such as Quadris and Amistar (Azoxystrobin) and the phosphonic acids have shown efficacy in managing the disease. Recently Revus received a label for downy mildew and provides excellent control but should be used in rotation. These fungicides are most effective when applications are started before or just after initial symptoms are found.

Powdery Mildew

Powdery mildew is present in some squash and watermelons at low to moderate levels depending on the location.

Tomato Yellow Leaf Curl

Incidence and occurrence of TYLCV is very low across the area with only a few isolated plants being reported in a handful of fields. There are some small local hotspots where symptoms are more common.

Groundnut ringspot virus

A few GRSV infected plants have been reported in Palm Beach and Miami Dade Counties. Growers should monitor thrips populations and rouge infected plants as they are detected.

Anthracnose

Dr Gary Vallad reports there have been some outbreaks of Anthracnose in pepper fields around Manatee and Hillsborough Counties in the past few weeks ...something growers should keep an eye on with the current cold front.

Little Leaf

Low Levels of tomato little leaf has been reported in Southwest Florida as well as around Manatee County.

Tomato little leaf is a non-parasitic disease of tomatoes that causes virus-like symptoms in tomato. A similar disorder affects other crops and has been referred to as frenching in tobacco. Symptoms of this condition are characterized by unusual growth consisting of interveinal chlorosis in young leaves.

Subsequent growth becomes severely distorted with leaflets along the mid-rib failing to expand properly resulting in a “little leaf” appearance. Leaflets are twisted and distorted. In addition, failure of blooms to set fruit and fruit distortion consisting of radial cracks extending from the calyx to the blossom scar is often seen. Overall the appearance is reminiscent of viral or phenoxy herbicide symptoms.

The problem typically occurs on wet soils and is apparently caused by the release of amino acid analogs by soil microorganisms under wet conditions.

The current hypothesis is that one or more amino acid analogs are synthesized by certain soil microorganisms and released into the rhizosphere. These compounds are structurally similar to the amino acid leucine. They are taken up by the plant and can cause morphological changes and stunting in susceptible plants at very low concentrations.

Currently, three soil microorganisms have been implicated as the causal agent. The first organism is the bacterium *Bacillus cereus*. In experiments, symptoms of frenching have been obtained from diffusion of a compound produced by *B. cereus* into small tobacco plants. *B. cereus* is a ubiquitous soil inhabitant and has

been observed in large numbers in the root zone of tobacco plants with frencing symptoms. Another organism that has been implicated is the fungus *Aspergillus wentii*. This organism has been shown to produce a compound, which is a potent antagonist of leucine. In the lab, minute quantities can produce symptoms similar to frencing and can also affect the growth of other crops such as bean, tomato, sunflower and chrysanthemum.

Control consists largely of managing soil moisture to avoid water logging. Maintaining soil pH below 6.3 or less can also reduce development of the problem however changing soil pH should be approached carefully to avoid problems that might accompany reduced lime utilization in tomato. Affected plants generally resume normal growth once soil moisture levels become more favorable.

News You Can Use

October 2013 Weather Summary

Return to Dry Conditions

November 2, 2013: After a wet summer season across most of south Florida, the dry season arrived in full force. At the beginning of October, it appeared as if October was going to be just another in a long string of wet months. A stalled trough over Broward and Miami-Dade counties on October 2nd contributed to locally heavy rainfall during the day and evening hours. As much as 10 inches of rain fell in only a few hours in the Miami-Dade communities of Kendall and Pinecrest, with 4-8 inches over parts of SW Miami-Dade County as well as eastern Broward County. This turned out to be the only significant rain event of the entire month, as the dry season got off to an early start on October 11th.

Virtually all of south Florida ended up with below normal rainfall for the month, with the aforementioned areas of Broward and Miami-Dade counties the only places to record near to above normal precipitation. Two rather weak cold fronts moved through the area, drying out northern and western sections of South Florida while keeping the far southern areas a little wetter. Several locations recorded among their top 10 driest Octobers on record, including West Palm Beach (3rd driest), LaBelle (8th driest), The Redland (10th driest) and Immokalee (5th driest).

Most of the southern peninsula recorded between 1 and 3 inches of rain for the month, with isolated pockets in Broward, Miami-Dade and Mainland Monroe counties receiving between 4 and 7 inches.

October Temperatures across South Florida were generally warmer than normal due to the lack of strong cold fronts moving through the region and the lack of associated precipitation.

Miami International Airport recorded an average October temperature of 80.6 degrees Fahrenheit. This is 0.7 degrees above the 30-year normal for October. The average high temperature was 87F, and average low temperature was 74F. The hottest reading of the month was 91 degrees on the 7th and the 10th and the coolest was 70 degrees on the 27th.

Fort Lauderdale/Hollywood International Airport recorded an average October temperature of 79.8 degrees Fahrenheit. This is 0.8 degrees below the 30-year normal for October. The average high temperature was 86F, and average low temperature was 74F. The hottest reading of the month was 91 degrees on the 7th and the coolest was 67 degrees on the 27th.

Palm Beach International Airport recorded an average October temperature of 80.0 degrees Fahrenheit. This is 1.7 degrees above the 30-year normal for October and represents the 15th warmest October on record. The average high temperature was 87F, and average low temperature was 73F. The hottest reading of the month was 90 degrees on the 8th, 20th and 22nd and the coolest was 64 degrees on the 26th, 27th and 28th.

Naples Municipal Airport had an average October temperature of 79.0 degrees Fahrenheit. This is 0.5 degrees above the 30-year normal for October. The average high temperature was 87F, and average low temperature was 71F. The hottest reading of the month was 90 degrees on the 2nd, 4th and 11th and the coolest was 63 degrees on the 27th.

Outlook for November-January

The latest outlooks by NOAA's Climate Prediction Center (CPC) call for an increased chance of warmer-than-normal temperatures for November, with equal chances of above, below or near-normal temperatures in the November to January time frame. The first 10 days of November are forecast to trend wetter-than-normal, before settling back to equal chance of above, below or near-normal precipitation for the rest of the month. For November-January, increased chances of below-normal precipitation are anticipated.

While overall weather impacts begin to decrease in November as the dry season sets in, South Florida can experience periods of strong east winds during the month. These winds create hazardous marine conditions over all the local waters, as well as dangerous rip currents along the Atlantic beaches.

November also marks the last month of the Atlantic hurricane season. While November tropical cyclones affecting south Florida are uncommon, the area has had some near-misses from tropical storms, most recently in 2007 from TS Noel. In addition, the 1990s had two tropical storm landfalls in South Florida (Gordon in 1994 and Mitch in 1998). Therefore, continue to stay vigilant of any potential tropical cyclone threats.

See full report at <http://www.srh.noaa.gov/images/mfl/news/October2013Summary.pdf>

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.

Strawberry Progress without Fumigation

For decades, California strawberry growers like Rod Koda used methyl bromide to kill nematodes, insects, weeds, and plant diseases before planting strawberries. But with methyl bromide phased out by international treaty and the replacement methyl iodide pulled off the market, chemical use becomes harder with the remaining fumigants due to buffer zones. The restrictions are pushing California's \$2.3 billion strawberry industry toward developing nonchemical alternatives to pesticides.

The industry and state have poured millions of dollars into research, but they say alternatives such as sterilizing soil with steam or growing berries in peat are not ready for full adoption. California supplies nearly 90 percent of the nation's strawberries. "We're so limited in what we can do and the restrictions that are out there, it's getting tighter and tighter," said Koda, who grows strawberries on 28 acres in Watsonville. "Some of the alternatives don't show uniform results - a win one year and next year dead plants all over your field."

Since the 1960s, California strawberry growers have fumigated their fields before each crop is planted to control devastating soil-borne pests, increase yields and produce uniform and disease-free fruit. But expansion of urban development bordering berry fields on the Central Coast and in Southern California has increased unease over the dangers of fumigants to residents and farmworkers.

Growers and state regulators have said the chemicals are safe with precautions such as not using fumigants in buffer zones near schools and residential areas and posting signs that prohibit entry to fields.

Critics say those protections aren't sufficient. Fumigants are among the most dangerous pesticides, since their gaseous state enables them to drift from under the plastic tarps where they are applied, said Sara Knight of Pesticide Action Network, which is asking regulators to end fumigation by 2020.

Methyl iodide was pulled from the U.S. market by its Japanese manufacturer last year after criticism from activists. Currently, a small portion of growers are still allowed to use methyl bromide before it's completely disallowed.

Most growers now have access to two fumigants: 1,3-DCP and chloropicrin. After California state regulators in 2011 designated chloropicrin as an air pollutant that might pose a hazard to human health, they proposed increasing buffer zones and limiting the number of acres that the chemical can be applied to at one location. A state-convened working group formed to discuss alternatives to fumigation called in April for more testing of non-chemical alternatives in the fields - and for grants or crop insurance to help growers mitigate the risk of adopting the new methods.

On part of his land, Koda mixed a carbon source (rice bran) into the soil, placing a tarp over the field and saturating the beds with water to trigger growth of bacteria. The bacteria rid the soil of *Verticillium*, one of the most persistent berry diseases, at similar levels that fumigation does, said University of California, Santa Cruz researcher Carol Shennan.

But the method - called anaerobic soil disinfestation - is more time consuming, does not yet control other strawberry diseases, and there isn't enough rice bran for all the growers. "I'm optimistic this is going to be a tool that farmers can use," Shennan said. "Is it going to be a complete answer? Probably not."

Another option is growing strawberries in non-soil substances, filling the beds with coconut husk fiber or pine bark. However, these soil-less media are low in nutrients and require use of extra fertilizer. Soil pathogens can also be killed off with heat generated by a steam machine, for which a prototype has been built. However, this method might, in turn, require more use of herbicides to control unwanted weeds not killed off by the steam.

"People said for years that growing strawberries without fumigation couldn't be done," said Steven Fennimore, a researcher with the University of California, Davis. "But to a limited extent it can be done, the technology is there." (AP, 9/22/13).

FFVA Affordable Care Act Meetings

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

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

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

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

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

Pesticide Potpourri

- Based on a request by IR-4, tolerances have been granted for residues of the herbicide prometryn in snap bean and dill. (Federal Register, 9/11/13).
- Based on a request by Syngenta, tolerances have been granted for residues of the fungicide sedaxane (Vibrance®) in potato and potato wet peel. (Federal Register, 10/2/13).
- Based on a request by IR-4, tolerances have been granted for residues of the fungicide quinoxyfen (Quintec®). Tolerances of interest to the region include grape, strawberry, maypop, and fruiting vegetables (group 8-10). (Federal Register, 9/18/13).
- Based on a request by IR-4, tolerances have been granted for residues of the insecticide methoxyfenozide (Intrepid®). Tolerances of interest to the region include atemoya, biriba, cherimoya, custard, apple, grape, ilama, soursop, sugar apple, and herb subgroup 19A, except chive. (Federal Register, 10/2/13).
- Based on a request by IR-4 and BASF, a tolerance has been granted for residues of the fungicide pyraclostrobin (Cabrio®/Headline®). Tolerances of interest to the region include persimmon, endive, and sugarcane. (Federal Register, 8/28/13).

Up Coming Meetings

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

UF/IFAS SWFREC
Hwy 29 N
Immokalee, Florida

To register go to: <http://www.eventbrite.com/event/7072476969>
For other locations and dates of area meetings see above.

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

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

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

November 12, 2013 **Vegetable BMP Meeting** **Noon – 3 PM**

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

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

November 14, 2012 **WPS Handler Training** **1 PM - 2:30 PM**

UF/IFAS Everglades Research and Education Center

3200 Palm Beach Rd
Belle Glade, FL

Cost: \$10.00 per person per class. Please make checks payable to: PBC Board of County Commissioners

To register contact Christian Miller at cmiller@pbcgov.org

November 14, 2012 **OSHA GHS Class** **2:30 PM - 4 PM**

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

Cost: \$10.00 per person per class. Please make checks payable to: PBC Board of County Commissioners

To register contact Christian Miller at cmiller@pbcgov.org

November 21, 2013 **SWFREC Fall Vegetable Field Day**

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

Contact Debra at 863-674-4092 or email dcabrera@ufl.edu to register.

Opportunities

Farm Land for Lease

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

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

Websites

Integrated Pest Management in Protected Structures I: Basic Principles and Scouting - The fundamentals of managing pests in protected structures are very similar in many respects to managing pests in field crops. But conditions within a protected structure can be modified to a certain degree to prevent, delay, or even mitigate pest issues. <http://edis.ifas.ufl.edu/in994>

“Seeds of Change” - looks at how scientists and farmers worked together to breed new crops adapted to Florida’s climate, and how today’s breeding programs continue to improve specialty crops like blueberries, strawberries, tomatoes and more. <http://thefloridachannel.org/video/seeds-of-change/>

2013 Tomato Institute Presentations and Proceedings -
http://www.imok.ufl.edu/vegetable_hort/tomato_institute/

2013 Vegetable Production Guide for Florida -
http://www.imok.ufl.edu/docs/pdf/vegetable_hort/2013-14VegProdGuide.pdf

Webinars

December 4, 2013 – UF/IFAS PIE Webinar: Floridians' opinions of GMOs, food safety & food security: What happens when people don't believe the facts? - 2-3 p.m. Eastern

For more information and to register please visit: <http://www.centerpie.com/easy-as-pie/>

Quotable Quotes

The only true wisdom is in knowing you know nothing. – Socrates

Difficulties mastered are opportunities won. – Winston Churchill

Everyone has his day and some days last longer than others. – Winston Churchill

Set your course by the stars, not by the lights of every passing ship. – Gen. Omar Bradley

Leadership ... the ability to see what no one else sees, to listen when others talk and the ability to be optimistic when others are pessimistic. - George W. Cummings

Forgive your enemies, but never forget their names. - John F. Kennedy

On the Lighter Side

History Lesson

Here are some facts about the 1500's

Most people got married in June because they took their yearly bath in May,

And they still smelled pretty good by June. However, since they were starting to smell, brides carried a bouquet of flowers to hide the body odor.

Hence the custom today of carrying a bouquet when getting married.

Baths consisted of a big tub filled with hot water. The man of the house had the privilege of the nice clean water, then all the other sons and men, then the women and finally the children.

Last of all the babies. By then the water was so dirty you could actually lose someone in it.

Hence the saying, "Don't throw the baby out with the bath water!"

Houses had thatched roofs-thick straw-piled high, with no wood underneath. It was the only place for animals to get warm, so all the cats and other small animals (mice, bugs) lived in the roof.

When it rained it became slippery and sometimes the animals would slip and fall off the roof.

Hence the saying, "It's raining cats and dogs."

There was nothing to stop things from falling into the house. This posed a real problem in the bedroom where bugs and other droppings could mess up your nice clean bed.

Hence, a bed with big posts and a sheet hung over the top afforded some protection.

That's how canopy beds came into existence.

The floor was dirt. Only the wealthy had something other than dirt.

Hence the saying, "Dirt poor."

The wealthy had slate floors that would get slippery. In the winter when wet, so they spread thresh (straw) on the floor to help keep their footing. As the winter wore on, they added more thresh until, when you opened the door, it would all start slipping outside. A piece of wood was placed in the entrance-way.

Hence: a thresh hold.

In those old days, they cooked in the kitchen with a big kettle that always hung over the fire.

Every day they lit the fire and added things to the pot. They ate mostly vegetables and did not get much meat. They would eat the stew for dinner, leaving leftovers in the pot to get cold overnight and then start over the next day.

Sometimes stew had food in it that had been there for quite a while.

Hence the rhyme: "Peas porridge hot, peas porridge cold, peas porridge in the pot nine days old."

Sometimes they could obtain pork, which made them feel quite special. When visitors came over, they would hang up their bacon to show off.

It was a sign of wealth that a man could, "bring home the bacon."

They would cut off a little to share with guests and would all sit around and chew the fat.

Those with money had plates made of pewter.

Food with high acid content caused some of the lead to leach onto the food, causing lead poisoning death.

This happened most often with tomatoes, so for the next 400 years or so, tomatoes were considered poisonous.

Bread was divided according to status.

Workers got the burnt bottom of the loaf, the family got the middle, and guests got the top, or the upper crust. Lead cups were used to drink ale or whisky. The combination would sometimes knock the imbibers out for a couple of days. Someone walking along the road would take them for dead and prepare them for burial.

They were laid out on the kitchen table for a couple of days and the family would gather around and eat and drink and wait and see if they would wake up.

Hence the custom; "holding a wake."

England is old and small and the local folks started running out of places to bury people. So they would dig up coffins and would take the bones to a bone-house, and reuse the grave.

When reopening these coffins, 1 out of 25 coffins were found to have scratch marks on the inside and they realized they had been burying people alive. So they would tie a string on the wrist of the corpse, lead it through the coffin and up through the ground and tie it to a bell.

Someone would have to sit out in the graveyard all night (the graveyard shift) to listen for the bell; thus, someone could be, "saved by the bell" or was "considered a dead ringer."

Be the Best Whatever You Are

If you can't be a pine on the top of the hill
Be a scrub in the valley--but be
The best little scrub by the side of the rill;
Be a bush if you can't be a tree.
If you can't be a bush be a bit of the grass,
And some highway some happier make;
If you can't be a muskie then just be a bass--
But the liveliest bass in the lake!
We can't all be captains, we've got to be crew,
There's something for all of us here.
There's big work to do and there's lesser to do,
And the task we must do is the near.
If you can't be a highway then just be a trail,
If you can't be the sun be a star;
It isn't by size that you win or you fail--
Be the best of whatever you are!
Douglas Malloch

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

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

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