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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

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Usually dry and sunny, this year South Florida's spring was stormy and wet. Many locations in Florida reported near record rainfall for the month which brought on disease issues in some crops. Some portions of south Florida, especially east coast locations reported heavy rainfall and flooding during the month.

Most of South Florida averaged 2-4 degrees above normal and higher humidity resulted in rainy season like conditions which helped ease the abnormally dry conditions most of the area had been under for the past few months. The SFWMD reported that the area wide rainfall average for April was 4.35 inches, or 1.83 inches above the norm.

The wet and wild weather did not come without consequences with scattered multiple reports of hail damage as well as battering and tearing of leaf reminiscent tropical storm damage normally seen in the fall. In locations, where leaf loss and defoliation from wind rain and subsequent bacterial leaf spot infections

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
4/9 – 5/15/13	50.4	90.9	2.97	78	0.15
Belle Glade					
4/9 – 5/15/13	52.52	92.37	7.13	82	0.17
Clewiston					
4/9 – 5/15/13	55.67	92.86	3.60	80	0.16
Ft Lauderdale					
4/9 – 5/15/13	60.84	90.75	7.16	76	0.16
Fort Pierce					
4/9 – 5/15/13	53.42	91.53	7.03	80	0.16
Homestead					
4/9 – 5/15/13	56.48	91.04	2.69	83	0.15
Immokalee					
4/9 – 5/15/13	51.03	93.87	3.54	79	0.7

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were high, sunscald took a toll on some plantings. Flooding was also reported in some places with crop damage.

Crops coming to market include blueberries, cucumbers, eggplant, green beans, herbs, leafy greens, peppers, sweet corn, squash, tomatoes, and various specialty items. Watermelons are in full swing but growers report disappointing yields resulting from the cool weather in March and rains in April. Leafy greens are about finished.

The Immokalee and South Florida deal is nearing an end as production moves to Manatee/Ruskin and points north. Cooler weather to our north and decent prices may keep things going a little longer than usual.

The National Weather Service forecast indicates that the weak cold front that filtered into south Florida will continue to move south into the Florida Keys allowing cooler drier air to work into the area bringing delightfully cooler weather for the next few days. Forecast lows will be around 60 degrees at night rising to the mid-80s in the day.

This could be the last hurrah for relatively cool temps till October -- if so, enjoy it!

The weak front will continue to move south into Cuba before stalling out. The high will remain nearly stationary over the southeast United States keeping dry air in place over south Florida through Thursday and allow for breezy northeast winds to slowly decrease to 10 mph or less by today.

The high will move slowly east into the western Atlantic waters by this weekend allowing for the stationary front over Cuba to move back north as a trough of low pressure into south Florida. This will allow for the steering flow to become more southeast over south Florida this weekend allowing for some low level moisture to work back into the area bringing a slight chance of showers this weekend.

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

Insects

Pepper Weevils

Growers and scouts in SW Florida report that pepper weevil are running rampant with nearly all remaining pepper fields under attack. Adult weevils are also moving into eggplants where they can destroy growing points, blooms and make punctures in small eggplant fruit.

Reports from the East Coast growing areas indicate that pepper weevil are active and pressure is high.

Dr. Dak Seal, Entomologist at UF/IFAS TREC reports that pepper weevils remain a major problem for growers around Homestead. Growers have been using Actara, Vydate, Diamides and pyrethroids to control this pest.

Weevil numbers are high in pepper around Hillsborough County.

Chemical control is difficult because all stages but the adult are protected within the fruit, so that only the adult weevil is vulnerable to insecticides. Frequent sprays may be necessary starting in the initial stages of infestation in order to avoid unacceptable levels of damage.

Spraying needs to commence at the first sign of weevils or with flowering in fields with a history of problems. Until recently Vydate has been the standard control and has given pretty good results even at 2 pts.

/acre when sprayed weekly in Dr. Phil Stansly's trials at the Southwest Florida Research and Education Center. A total of 24 pts. can be applied for the season.

Many growers have indicated disappointing results in obtaining satisfactory control with Vydate in the field. Some growers have terminated older plantings where weevils had become unmanageable. A number of growers have indicated obtaining good results in controlling weevils with either Capture - bifenthrin or cryolite. Actara – thiomethoxam, has demonstrated good efficacy in trials conducted by Phil Stansly. Unfortunately applications are limited to two per season and growers are still trying to work out the timing of applications to achieve the best results.

Many of the currently labeled materials are difficult to work into an IPM program once plantings begin to be harvested due to the 7 day PHI in force for all of them. This is particularly true for hot peppers which are often harvested multiple times during the course of a week.

In addition to chemical controls, a complete IPM approach is recommended for pepper weevil management. Adjacent or nearby sequential plantings should be avoided. Sanitation is important. Crops should be deep plowed immediately following harvest and after treating with insecticide to reduce adult movement into nearby fields and to reduce survival over the summer. Nightshade in and around fields should be controlled to reduce population survival between crops.

Worms

Fall armyworm pressure is high in the Glades and a few corn ear worms are also being found in the sweet corn. Reports from around Belle Glade indicate that scouts are reporting varying degrees (low-moderate) of worm feeding damage in Bt-field corn.

Around Southwest Florida, melonworms/pickleworms have been causing problems in squash/cantaloupe. Growers and scout report some issues with beet/southern armyworm in peppers.

Respondents in Homestead report that worm pests (fall armyworm, beet armyworm and diamondback moth) are active on a variety of crops. Dr. Dak Seal, notes that diamondback moth has been a problem throughout the season and advises that novaluron (Rimon), indoxcarb (Avaunt), diamide (Coragen, Synapse Voliam, Vetica and others) insecticides, and Radiant have all proven were effective against DBM. He also notes that BT based insecticides remain highly effective in controlling DBM and other lepidopteran pests of vegetable crops.

Around Manatee County, worm pressure has been fairly low with the exception of pinworm activity which has spiked up in recent days. Growers and scouts are reporting some concern of the seeming failure of Coragen to adequately control cabbage loopers.

Silk Fly

Around Homestead, silk flies have not slowed down. Scouts report infestation of ears is in the double digits in most places.

Around Belle Glade, silk flies remain high requiring every other day sprays to keep maggots to a minimum.

Whiteflies

Around Southwest Florida, whitefly numbers are high in a variety of crops including cucurbits of all types, eggplant, tomatoes and others. Growers report good control of nymphs with products like Movento, Oberon and Knack.

Reports from Homestead indicate that whiteflies are abundant in a variety of crops.

Respondents in Palm Beach indicate that whiteflies numbers remain high.

Reports from the Hillsborough/Manatee area indicate that whitefly numbers are increasing and scouts report finding pupae in many fields.

In all locations, whitefly activity is highest near old crops...potatoes and old tomatoes.

As crops reach completion growers should strive to disrupt the virus-whitefly connection by destroying the crop quickly and thoroughly, killing whiteflies and preventing re-growth.

- a. Promptly and efficiently destroy all vegetable crops within 5 days of final harvest to decrease whitefly numbers and sources of plant begomoviruses like TYLCV.
- b. Use a contact desiccant (“burn down”) herbicide in conjunction with a heavy application of oil (not less than 3 % emulsion) and a non-ionic adjuvant to destroy crop plants and to kill whiteflies quickly.
- c. Time burn down sprays to avoid crop destruction during windy periods, especially when prevailing winds are blowing whiteflies toward adjacent plantings.
- d. Destroy crops block by block as harvest is completed rather than waiting and destroying the entire field at one time.

For more information on control see Management of Whiteflies, Whitefly-Vectored Plant Virus, and Insecticide Resistance for Vegetable Production in Southern Florida at <http://edis.ifas.ufl.edu/in695>

Thrips

Thrips remain an issue in Palm Beach County. Crops affected include pepper and eggplants and tomatoes. Respondents report problems with pod damage on pepper and etching on tomato fruit. Some cases of thrips vectored Red Node Virus have been reported in beans around Belle Glade.

In Miami Dade County, melon thrips numbers are high in most places and are causing damage on a variety of host crops including bean, squash, cucumber, eggplants and pepper. Growers are reporting that none of the chemical control tools are providing satisfactory control of melon thrips. Growers are reportedly spraying various insecticides in combination.

Flower thrips numbers are also high with counts of 5-10 adults and larvae were recorded per five leaf sample of tomato flowers. GRSV is showing up along with the thrips.

Thrips have been variable in the Manatee Ruskin area with some respondents reporting declines in recent days while in other places they are still “going wild”.

Growers in SW Florida report thrips numbers are falling off. Dr Phil Stansly, Entomologist at UF/IFAS SWFREC reports that this season weird weather pattern which resulted in an extended bloom on citrus; as resulted in a prolonged thrips season (mostly *F. bispinosa*) in many places.

Aphids

Respondents report mostly low aphid pressure in the Homestead area. Dr. Dak Seal reminds growers that in-judicious use of broad spectrum insecticides which adversely affect beneficial insects can flair aphid populations.

Aphid numbers are variable around Southwest with growers reporting some issues in squash.

In the Manatee Ruskin area, aphid pressure is mostly light.

Around Palm Beach County, aphid numbers are mostly low with some problems reported in late season greens.

Hundreds of natural enemies have been recorded and these are value in reducing aphid damage.

Excessive and unnecessary use of insecticides should be avoided. Early in the season, aphid infestations are often spotty, and if such plants or areas are treated in a timely manner, great damage can be prevented later in the season. In some cases, use of insecticides for other, more damaging insects sometimes leads to outbreaks of green peach aphid.

Softer pesticides including insecticidal soaps such as M-Pede), nicotinoids like Admire, Provado, Assail and others including Beleaf, Movento and Fulfill will provide good control and help reduce impact on beneficials.

Resistance to some insecticides has been reported in some aphid populations. Rotating pesticide materials may effectively help slow the development of resistance.

Spider mites

All around South Florida, spidermite pressure is increasing and reaching seasonally high levels on eggplant, tomatoes and a few cucurbits. Flare ups are often due to change in management practices especially use of broad spectrum chemicals, irrigation, etc.

Broad Mites

Growers and scouts report a spike in broad mite activity on remaining peppers and eggplants around SW Florida

On the East Coast, broad mites remain an issue in pepper and to a lesser extent on eggplant.

Broad mites are also present around Homestead and have shown an increase in numbers with drier conditions.

Leafminers

Leafminers are still active in the Manatee/Ruskin area with several leafminer outbreaks reported across the area. Diamide (Coragen and others) are providing good management of leafminers. Since there are many other good lep materials available growers may want to consider how they employ this chemistry in their Pest

Management program. For more information on this please check out the new UF/IFAS pub by Dr. Hugh Smith - Managing Diamide Resistance in Florida Tomato - <http://edis.ifas.ufl.edu/in978>

Respondents in other areas report that leafminer numbers are mostly low and appear to be declining.

Diseases

Bacterial Spot / Bacterial Speck

Around SW Florida, a wet and wild April brought on widespread bacterial spot and speck infections in many tomato and pepper fields. Some fields have taken on the appearance of a field hit by a fall tropical storm with one side of the plants beat up and the bacteria have turned the whole side of the plant black. Fruit infections are showing up in a number of these fields and the heavy defoliation has exposed the remaining fruit to the sun resulting in significant amounts of sunscalding.

Respondents in Palm Beach County report that bacteria jumped on non-resistant peppers and tomato behind recent rains.

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

In the Manatee Ruskin area, bacteria is now a big issue on many farms following last month's bad weather. Reports indicate that bacterial speck and spot are just about everywhere in varying amounts.

Bacterial speck of tomato, caused by *Pseudomonas syringae* pv. tomato, is favored by cool, moist environmental conditions. The virulent bacteria are spread mechanically and by wind-driven rain. A period of stormy weather such as we saw last month; followed by overcast days with cool temperatures increases risk of outbreaks.

Tentative field diagnosis of bacterial speck is best accomplished by inspection of fruit symptoms. Speck lesions on green fruit are small, sunken, black spots surrounded by darker green haloes. On ripe fruit, spots are dark brown to black, superficial flecks.

Foliage symptoms of bacterial speck are much more difficult to distinguish from other diseases like bacterial spot and target spot. The leafspots are small, black lesions surrounded by prominent chlorotic (yellow) haloes. These haloes are quite large, averaging twice the size of the necrotic tissue they surround. Bacterial speck lesions are very superficial and do not crack or become scaly like spot.

Lesions in the stems are dark brown to black and shaped like elongated ovals.

Target Spot

Target spot has also increased on tomato in a number of locations around South Florida following recent rains and is moving up into lower plant canopies in a number of places.

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.

Bacterial Leaf Spot of Cucurbits

***Pseudomonas* leaf spot and blight (preliminary ID is *Pseudomonas syringae*) has been showing up on watermelons all across the state.** Incidence is reportedly higher in the north central part of the state but is

fairly widespread in all production areas. Infections have also been seen on squash, including some very young plants.

This infection is fast-acting in the field (spots turn to blights quickly) and according to pathologists fast-growing in the lab.

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

Powdery Mildew

Powdery mildew is widespread on squash and cucumbers around SW Florida. Reports indicate that pressure has increased in recent weeks and is high in older squash.

Powdery mildew is also very common in watermelons and in some fields the powdery mildew has infected most of the foliage. Infected leaves turn pale and brittle and in those areas with severe infections which were battered by windblown rain the brittle leaves literally fell apart under the impact of the heavy rains. There are some watermelon fields that almost look like a hail storm hit the foliage but examination reveals no damage to fruit.

In some cases, powdery mildew showing up in fairly high levels on watermelon rinds, in some fields with little infected foliage.

On the East Coast, powdery mildew is widespread in squash and cucumbers. Growers have reported good results with a Torino/Rally rotation on squash.

Respondents report that powdery mildew is also causing problems on cucurbits in Homestead.

With cucurbit powdery mildew is kicking into gear in many locations, a broad spectrum protectant such as chlorothalonil should prove useful along with some of the more effective powdery materials, alternating or tank-mixing these depending on pressures and susceptibilities.

On watermelon, leaves may yellow from powdery mildew growing on the bottom side of the leaf. In Florida, it is often difficult to detect the powdery mycelia without a microscope and often yellowing foliage is the only symptom visible to growers. Cucurbit powdery mildew in some areas has become resistant to strobilurin and DMI fungicides. The recommended fungicides for powdery mildew are Quintec, Pristine, or Switch.

Varying – but mostly low levels of powdery mildew have also been reported on peppers, tomatoes and eggplants on both coasts. Around Immokalee, powdery mildew is starting to build up on the older leaves in a number of older pepper fields.

Detecting powdery mildew on pepper and tomato can be difficult. The white powdery growth characteristic of powdery mildew diseases occurs only on the underside of leaves and will often turn brown rather than remaining white. Diffuse yellow spotting often develops on the upper surface and in pepper affected leaves tend to drop off the plant, as occurs with bacterial leaf spot.

Powdery mildew of pepper and tomato is caused by *Leveillula taurica*, which is a very different powdery mildew fungus from that causing powdery mildew on cucurbits. This powdery mildew pathogen differs from powdery mildew pathogens in other genera in that it primarily occurs inside the leaf rather than on the leaf surface.

Corn Rust

Growers and scouts around Belle Glade report an increase in rust on sweet corn following recent rains. Spray programs should begin at the first sign of rust. Foliar blights and rust may be successfully controlled using fungicides, if host-plant resistance is insufficient. Strobilurin and triazole fungicides work well should be used in a program with the broad-spectrum protectant mancozeb. Several sprays may be required. Use of a spreader-sticker, particularly when the plants are young and have waxy leaves may assist in obtaining good coverage.

Northern Corn Leaf Blight (NCLB)

Northern corn leaf blight (NCLB) caused by the fungus *Exserohilum turcicum* also increased on sweet corn in the Glades following last month's heavy rains.

Triazoles and strobilurins both give control, with some of the pre-mixtures of these two classes giving superior control.

NCLB produces a long, elliptical lesion, while those of southern corn leaf spot tend to be shorter, oblong, and sometimes target like in appearance.

Southern Corn Leaf Blight

Growers and scouts also report that southern corn leaf blight (SCLB) caused by the fungus *Bipolaris maydis* is present in the Glades and but is causing more issues on field corn. Incidence of both diseases remains at moderate levels.

Late Blight

Some recurring late blight is still kicking around South Florida but is drying up in most places and with approaching warmer weather should not be a major concern.

Tomato Yellow Leaf Curl Virus

Around Immokalee, TYLCV is widely present and continues to increase in a number of locations.

Growers and scouts in Manatee/Hillsborough are also facing TYLCV issues and reports indicate that some farms in Wimauma and the Myakka area are experiencing very high infection levels resulting from crops held over from the fall season.

Reports indicate that TYLCV remains at mostly low levels around Palm Beach County.

Respondents indicate that TYLCV is increasing in Homestead.

Downy Mildew of cucurbits

Around Homestead, respondent indicate that downy mildew has been severe on some cucurbits.

Growers and scouts in SW Florida report that downy mildew has increased in watermelons following last month's rain as well as some squash and cucumbers.

Growers and scouts in Manatee/Ruskin area report low to moderate downy mildew is present in cokes, squash and watermelon.

Early symptoms include angular chlorotic lesions on the upper surface of the leaf; these often appear water soaked when observed from below early in the morning.

Dr. Vallad advises that downy mildew is showing resistance to a number of chemicals including the strobilurins (Quadris, Cabrio, and Flint), fluopicolide (Presidio), mandipropamid (Revus), dimethomorph (Acrobat, Forum) and mfenoxam (Ridomil).

Cyazafamid (Ranman), cymoxanil (Curzate), propmacarb (Previcur Flex) and zoaxamide+maneb (Gavel) remain good choices to rotate with protectant fungicides such as chlorothalonil and mancozeb.

Gummy Stem Blight

Growers and scouts around South Florida report that gummy stem which had been fairly low across area watermelons until the past few weeks. New lesions are now common and several fields have reached significant levels of disease.

Reports indicate that some growers in north/central Florida are experiencing major issues with gummy stem blight.

Fusarium

Growers and scouts in the Manatee area and other places in central Florida report that Fusarium wilt in watermelon has jumped in incidence and occurrence following last month's rain. Carrie Harmon at the UF Plant Disease Clinic reports that Fusarium is popping up in fields that have been in long-term rotation, and even plants that were supposed to have some Fusarium resistance. She notes the Fusarium is hard to see in the field, aside from the wilt, and it's a slow-grower in the lab. The usual Fusarium vascular discoloration and one-sided wilt is not happening with this one; the discoloration is very slight (hard to see in the field) and the wilt is the whole plant, from young plants to plants setting and pushing fruit.

Groundnut Ringspot Virus

Growers and scouts are reporting finding low levels of mostly scattered single plants infected with GRSV around South Florida. Respondents on the East Coast note that GRSV has become more common over the past few weeks corresponding with high thrips populations.

Dr Gary Vallad reports that around Hillsborough County growers are seeing more Tospovirus activity than TYLCV. He reports that at the GCREC research farm they have seen little whitefly activity, but lots of thrips activity...and the Tospoviruses have been running rampant. Samples have been sent for identification.

Tomato Chlorotic Spot Virus

Very low levels of tomato chlorotic spot virus (TCSV) continue to be found around South Florida.

Tomato chlorotic spot virus is similar but distinct from other tospoviruses, such as Tomato spotted wilt virus (TSWV) and Groundnut ringspot virus (GRSV), viruses with which some Florida tomato growers may be familiar. The genus of Tospoviruses takes its name from the discovery of the Tomato spotted wilt virus (TSWV) in Australia in 1915.

Early symptoms of infection are difficult to diagnose. In young infected plants the characteristic symptoms consist of inward cupping of leaves and leaves that develop a bronze cast followed by dark necrotic spots.

Tomato chlorotic spot virus causes necrosis in tomato leaves and stems, and causes ringspots and other deformations of the fruit. The symptoms are nearly identical to those of groundnut ringspot virus and laboratory diagnosis is necessary to distinguish on from the other.

Cucurbit leaf crumple virus

Cucurbit leaf crumple virus is becoming fairly common and widespread in watermelons around South Florida. Incidence is mostly low and occurrence is spotty.

Basil Downy Mildew

Basil downy mildew remains very active around South Florida. Growers must be on a preventative program, protecting the crop soon after emergence and regularly thereafter. Quadris, Ranman, and the phosphites are the best labeled products, and an effective program will likely need all three, as sprays must be at least weekly, perhaps more often with heavy pressure.

Growers should be aware of a new foliar disease (*Alternaria* blight) which has been reported on basil in South Florida. See below.

Alternaria on Basil

Dr Richard Raid, Pathologist at UF/IFAS EREC reports finding new very aggressive *Alternaria* blight on basil around South Florida. He reports that this disease is possibly seed-borne.

Reports in the literature indicate that in the summer-autumn 2010, basil plants belonging to the cv Genovese grown soilless and in open field in Piedmont (Northern-Italy) showed symptoms of a new leaf spot. Affected plants showed black-brown leaf spot normally circular, usually 1 to 50 mm in diameter surrounded by a yellow halo, frequently located on the tips and margins of leaves. At later stages leaves may turn brown and die. *Alternaria* sp. was consistently isolated from leaf tissues of symptomatic plants. The ITS region of rDNA of the isolate was amplified using the primers ITS1/ITS4 and sequenced. The 523 bp segment obtained showed that the pathogen belongs to *Alternaria alternata*.

This is the first report of *Alternaria alternata* on basil in Italy and in Europe. Recently the same pathogen has been described on basil in Japan. It is not yet known if this is the same disease.

News You Can Use

Sanitation, Sanitation, Sanitation...

Once again as we near the end of the deal, growers are reminded of the importance of sanitation in an integrated pest management program. Disease and insects do not magically materialize to plague growers. Many require a living host to carry them from one season to another.

Field sanitation is one of the most important tactics in vegetable pest and disease management. One of the best things that growers can do for themselves and their neighbors is to clean up crop residues promptly after harvest. Sanitation is an important IPM technique that should not be overlooked as an effective, preventative tool against many vegetable pest and disease problems. Sanitation includes any practice that eradicates or reduces the amount of pathogen inoculum, pests, or weed seeds present and thus helps reduce or eliminate subsequent pest and disease problems.

Prompt crop destruction at the end of the season will immediately end the production of disease inoculum and insects and eliminate the spread of diseases and pests to any other host plants in the vicinity. Downy and powdery mildew on melons can spread via wind from older, diseased plants to plants in surrounding fields that are still maturing. These diseases are obligate parasites. This means that they can only grow and multiply on living host tissue. Some plant pathogens, such as the bacterium that causes bacterial spot of tomato and pepper, are unable to survive for extended periods of time outside of the host tissue. Plowing or disking under infected plant debris helps not only by covering up the inoculum but also speeds up the disintegration of plant tissue and kills the pathogen. Good sanitation will help control a number of important vegetable pathogens.

Cull piles should not be neglected as several scouts over the past few years have reported that they have found both insects and diseases such as TYLCV, late blight, whiteflies and others in volunteer plants springing up around cull piles.

Soil tillage can destroy insects and expose them to birds and other predators. It can also speed the breakdown of plant residues that harbor insects and plant pathogens. By either allowing the organic matter in a field to decompose completely before you plant the next crop and /or allowing a fallow period between crops, you can enhance the control of a number of insects and diseases.

Destruction of tomato vines will kill off white fly populations and eliminate transmission of the tomato yellow leaf curl virus to subsequent crops and also eliminate inoculum from late blight and other fungal diseases. This is particularly important in the case of TYLCV, as sanitation, a crop free period, and whitefly control are the only tools currently available for the management of this disease. A crop-free period is also considered a necessity for the control of a number of other important vegetable pests such as pepper weevil, tomato pinworm, and *Thrips palmi* and is recommended for management of all vegetable pests.

A little extra effort spent in cleaning up old fields at the end of the season may well prevent or reduce a number of potential problems next fall!

Summer weed management can be a challenge and will become increasingly important in the post- methyl bromide era. Growers should check field margins to make sure that pest species are not building up there and migrating out into cropping areas. Many insects over summer on weeds, so efforts to control them can be profitable by reducing their movement into the crops next growing season.

Weeds are also known reservoirs of nematodes as well as a number of viral, fungal and bacterial pathogens. Weeds and volunteers should be removed to prevent the survival and over-summering of pathogens that could serve as inoculum reservoirs for the next crop. Techniques such as mowing off pepper should not be relied upon as this often results in re-sprouts, which can harbor pests and disease problems over summer.

The use of cover crops and summer fallowing of fields are also effective tools in reducing weed populations that can cause problems in the subsequent crop. The role of summer fallow in weed management is often overlooked and again promises to become more important in the absence of methyl bromide as a component of a comprehensive methyl bromide alternative strategy. Summer fallow keeps new weed seeds from being added to the soil seed-bank. It also reduces the increases in asexual propagated plants such as nutsedge. Yellow nutsedge can put out 70 new tubers (nuts) every two months. Keeping the weeds from propagating will reduce the weed problems encountered during the next cropping season and help reduce insects and diseases that may over summer in weedy fields.

Chemical fallowing is a twist on the traditional method of fallowing that depends on disking fields throughout the summer period to reduce weed pressure in subsequent crops. One approach uses glyphosate to kill weeds during the crop free period. Note with some combinations of high use rates, heavy weed infestation, soil fumigation, short plant back times and other factors growers have experienced carryover resulting in phytotoxicity and plant damage in subsequent crops on sandy soils.

Cover crops planted prior to the main cash crop can also improve soil fertility and provide a valuable source of organic matter.

With pending new regulations for fumigants, building soil organic matter content with summer cover crops can help provide credit which will allow reductions in the proposed required buffer zones which will come into effect in 2012. For example by raising soil organic content to the 1 - 2 % level in the fumigated block you can reduce buffer zones by 20%, increase soil organic content to 2 - 3 % and you get a 30% buffer zone reduction.

When devising a crop rotation strategy, a grower should also be aware of which crops and cover crops might increase disease problems. Sunn hemp can increase soil populations of Pythium and Rhizoctonia damping-off fungi. Some varieties of cowpea may host of root-knot nematode. These factors should be considered before selecting a cover crop.

Soil solarization is the use of plastic tarps placed on the soil surface to increase soil temperatures to a level that kills soilborne pathogens, weeds, and other crop pests. Soil solarization works best when summer temperatures are uniformly high. These conditions don't always occur in Florida. Soil solarization will not eradicate a pathogen from a field, but it may lower pathogen populations.

Soil flooding is a related means of creating conditions—in this case, saturated soil over an extended period - that might result in a decline of soil-borne pathogens.

Integrated pest and disease management is a year round commitment that should incorporate a combination of cultural, biological and chemical pest management techniques.

Wet and Wild April in South Florida

The jet stream, a powerful river of air in the upper atmosphere, radically altered South Florida's weather in April. Usually warm and sunny, it turned out wet and wild.

Blame the jet stream for injecting instability into the atmosphere and persistent southeasterly winds for pushing warm humid air over the region, said meteorologist Robert Molleda of the National Weather Service in Miami.

April was also unusually soggy, with most of the area receiving 2 to 3 inches more rain than normal. Miami Beach had its wettest April ever: more than 11 inches, almost 8 inches more than usual.

"This led to not only temperatures about 2 degrees above normal, but also higher moisture, which led to rainy-season-like conditions," Molleda said. "The above normal rainfall wiped out the moderate drought conditions early in the month."

There were a few precipitation records broken during April and portions of south Florida saw heavy rainfall and flooding in some of the metropolitan areas during the month.

Most of the counties south of Lake Okeechobee had normal to above normal rainfall, and the lake itself has a level of 13.40 feet, which is down from the high of 16 feet due to some regulatory releases. The 3-month outlooks are forecasting normal rainfall through July, but there is still concern about the lingering drought in the central part of the peninsula.

The long wet stretch continued what so far has been an oddball pattern of weather, with the winter being unusually mild and March being abnormally chilly. The weather service said there's no single reason for the unusual conditions, other than the way that high and low pressure systems have set up in the atmosphere.

Fort Lauderdale recorded 5.92 inches of rain, or 3.03 more than normal, its 21st wettest April on record. West Palm Beach registered 5.12 inches, 1.46 inches more than normal, its 30th wettest April on record. Miami saw 5.14 inches, 2 inches more than normal, its 22nd wettest.

For the South Florida Water Management District, which oversees 16 counties in the southern third of the state, it was the second wettest April since 1997. The district wide rainfall average was 4.35 inches, or 1.83 inches above the norm.

"April's showers helped stabilize the regional system during the driest time of the year," said Susan Sylvester, the district's chief of water control operations. "The challenge in May is preparing for the wet season ahead, while also balancing the needs of Everglades wildlife and the environment."

In the upcoming rainy season, water managers plan to lower the levels of canals and other bodies of water to avoid flooding, particularly if a tropical storm system swamps the region. However, the water levels must be carefully managed because rapid fluctuations in levels can disturb nesting wading birds and other wildlife, Sylvester said.

The 3-month outlooks are forecasting normal rainfall through July, but there is still concern about the lingering drought in the central part of the peninsula.

Beat the Heat

Exposure to heat and sun can result in serious health problems for anyone; agricultural workers, by the very nature of their jobs, are especially vulnerable. Compensation claims related to heat exhaustion and skin cancer in the agricultural sector are among the highest of any occupation. As the long days of summer field work approach, managers and supervisors can help themselves and their employees reduce their risks by reinforcing best practices for heat and sun safety.

"People should take special caution when suddenly going from mild to very hot temperatures, gradually increasing time spent outdoors and workloads," said Judy Garrett, Health Services Manager for Syngenta. She added, "Don't expect to accomplish the same amount of work on those first 'scorching' days of summer."

The first step is raising awareness. "The subject of heat and sun-related ailments should be part of every safety training program, with regular reminders given throughout the spring and summer," said Garrett. To reduce the risk of overexposure to heat and/or sun, Garrett outlined these preventive measures:

- Wear clothing that is light-colored, moisture wicking, and comfortable. Top off with a ventilated, wide-brimmed, sun-safe hat. Both clothing and hat should be made of tightly woven fabric.
- Stay hydrated. Water and sports drinks taken in small amounts all day long are more effective than large amounts of liquid at one time. Avoid excessive caffeine and avoid carbonated drinks.
- Protect exposed skin with sunscreen that provides at least 30 SPF and offers both UVA and UVB protection.

Reapply frequently.

"It's also important to use lip balm with SPF," said Garrett. "And don't forget the eyes. In the past, we didn't think much about eye protection; but in recent years, we have learned that it is just as important to protect the eyes from the sun as it is to protect the skin." Sunglasses or tinted safety glasses worn outside should offer both UVA and UVB protection.

Once a person becomes overheated, it takes at least 30 minutes to slowly restore normal temperature. "It's important that body temperature be reduced gradually," said Garrett. "Get in the shade. Cool down with a fan or minimal air conditioning. You can also cool down by applying cool water to pressure points around the neck, the wrist or groin area."

For more information, visit these websites:

- EPA's Guide to Heat Stress in Agriculture <http://www.epa.gov/pesticides/safety/workers/heatstre.htm>
- Ohio State University Extension Fact Sheet: Sun Exposure and Protection <http://ohioline.osu.edu/hyg-fact/5000/5550.html>
- U.S. Department of Labor's OSHA (Occupational Safety & Health Administration) Standards for Heat Stress www.osha.gov/SLTC/heatstress

Up Coming Meetings

May 21, 2013 Vegetable Crop Health Management Workshop 8:00 AM – 3:00 PM

UF/IFAS GCREC
Wimauma, Florida

Max of 6 CEUs, 3 CEUs in Core, Private, O&T, Ag Row or Ag Tree and CCA credits available. Agenda and free registration is available online at <http://2013vegetablecropworkshop.eventbrite.com>
For information, contact Christine Cooley at ccooley@ufl.edu.

May 23, 2013 Corn Growers Workshop 9:00 AM – 2:00 PM

UF/IFAS EREC Conference Center
3200 E Palm Beach Road
Belle Glade, Florida

Please RSVP to Chris Miller at 561-233-1718 or cmiller@pbcgov.org

May 28, 2013 Immigration Reform Webinar 2:00 PM -3:00 PM

Presented by Mike Carlton, Director of Labor Relations with FFVA.

Registration and more information: <http://piecenter.eventbrite.com/>

May 30, 2013 Fumigant Training and Exam Program 8:00 AM -5:00 PM

UF/IFAS SWFREC
SR 29 N
Immokalee, Florida

All Day Exam training and testing for growers using these active ingredients only: 1,3-Dichloropropene/chloropicrin (Telone formulations with pic, Pic-Clor 60), metam sodium (Vapam) and potassium (KPam) products.

Please RSVP to Debra Cabrera at dcabrera@ufl.edu no later than Monday May 27 at 5pm.

June 11-12, 2013

Core and Private Applicator Training and Exams

Manatee County Extension Service
Palmetto, Florida

Two separate exam prep classes (Core 10am-12pm June 11, Private 10 am-12pm June 12) will be held to help you prepare for the Core and Private Applicator RUP license exams. Exams will be offered immediately following the classes. However, you do not have to take the exams the same day. You may schedule a time to take the exams at your convenience. You may take one class without the other, if needed.

If you are already a license holder, 2 CEUs in Core and 2 in Private are offered for both classes, respectively.

For details and registration visit:

CORE: <http://061113core.eventbrite.com>

Private: <http://061213private.eventbrite.com>

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

FarmPolicy.com is a daily summary of news relating to U.S. farm policy. Updates highlight news items dealing with the U.S. and global agricultural economy, including the Farm Bill, production agriculture, trade, biofuels and crop insurance. Go to <http://farmpolicy.com/>

Bing Translator is a user interfacing translation portal provided by Microsoft as part of its Bing services to translate texts or entire web pages into different languages. 41 supported languages. Check it out at <http://www.bing.com/translator>

CropScape - Cropland Data Layer (CDL) created by the USDA, National Agricultural Statistics Service, Research and Development Division, Geospatial Information Branch, Spatial Analysis Research Section. The most current data is available free for download along with extensive metadata. Provides extensive land use data. – Go to <http://nassgeodata.gmu.edu/CropScape/>

National Commodity-Specific Food Safety Guidelines for Cantaloupes and Netted Melons

<http://www.cantaloupe-guidance.org/sites/default/files/docs/Natl%20Cantaloupe%20Guidance.pdf>

EPA-approved Fumigant training program for certified applicators using methyl bromide, chloropicrin, chloropicrin and 1,3-dichloropropene, dazomet and metam sodium and potassium -

<http://www.fumiganttraining.com/>

EPA-approved training program for certified applicators using dimethyl disulfide (DMDS) -

<http://paladin.trainingmine.com/>

Quotable Quotes

Most of the important things in the world have been accomplished by people who have kept on trying when there seemed to be no hope at all. - Dale Carnegie

I keep six honest serving-men
(They taught me all I knew);
Their names are What and Why and When and How and Where and Who” - Rudyard Kipling

Courage is what it takes to stand up and speak; courage is also what it takes to sit down and listen. - Winston Churchill

You get the best out of others when you get the best out of yourself. - Harvey S. Firestone

Flaming enthusiasm, backed up by horse sense and persistence, is the quality that most frequently makes for success. - Dale Carnegie

Don't cry because it's over. Smile because it happened. - Dr. Seuss

On the Lighter Side

Planting Tips for Farmers

- If you plant honesty, you will reap trust.
- If you plant goodness, you will reap friends.
- If you plant humility, you will reap greatness.
- If you plant perseverance, you will reap contentment.
- If you plant consideration, you will reap perspective.
- If you plant hard work, you will reap success.
- If you plant forgiveness, you will reap reconciliation.

Dialogue between a Lady Interviewer and a Male Beer Drinker:

Lady Interviewer: Do you drink every day?

Man: Yes.

Lady Interviewer: How much a day?

Man: Around 3 six-packs starting at noon.

Lady Interviewer: How much does a 6-pack cost?

Man: Roughly \$10.00 at a deli.

Lady Interviewer: And how long have you been drinking like that?

Man: 15 years.

Lady Interviewer: So with a six-pack costing \$10.00, and you consuming 3 six-packs a day, you are spending roughly \$900 each month. In one year, you would then be spending \$10,800, correct?

Man: Correct.

Lady Interviewer: If in 1 year you spend \$10,800 on beer, not accounting for inflation, 15 years puts your spending roughly \$162,000; correct?

Man: Correct.

Lady Interviewer: Did it ever occur to you that if you did not drink for the last 15 years, you could have bought a Ferrari?

Man: Do you drink?

Lady Interviewer: No.

Man: So where's your Ferrari?

Going Green

Checking out at the store, the young cashier suggested to the older woman, that she should bring her own grocery bags because plastic bags weren't good for the environment.

The woman apologized and explained, "We didn't have this green thing back in my earlier days." The young clerk responded, "That's our problem today. Your generation did not care enough to save our environment for future generations."

She was right -- our generation didn't have the green thing in its day.

Back then, we returned milk bottles, soda bottles and beer bottles to the store. The store sent them back to the plant to be washed and sterilized and refilled, so it could use the same bottles over and over. So they really were truly recycled. But we didn't have the green thing back in our day.

Grocery stores bagged our groceries in brown paper bags that we reused for numerous things, most memorable besides household garbage bags, was the use of brown paper bags as book covers for our schoolbooks. This was to ensure that public property, (the books provided for our use by the school) was not defaced by our scribbling's. Then we were able to personalize our books on the brown paper bags. But too bad we didn't do the green thing back then.

We walked up stairs, because we didn't have an escalator in every store and office building. We walked to the grocery store and didn't climb into a 300-horsepower machine every time we had to go two blocks. But she was right. We didn't have the green thing in our day.

Back then, we washed the baby's diapers because we didn't have the throwaway kind. We dried clothes on a line, not in an energy-gobbling machine burning up 220 volts -- wind and solar power really did dry our clothes back in our early days. Kids got hand-me-down clothes from their brothers or sisters, not always brand-new clothing. But that young lady is right; we didn't have the green thing back in our day.

Back then, we had one TV, or radio, in the house -- not a TV in every room. And the TV had a small screen the size of a handkerchief (remember them?), not a screen the size of the state of Montana.

In the kitchen, we blended and stirred by hand because we didn't have electric machines to do everything for us. When we packaged a fragile item to send in the mail, we used wadded up old newspapers to cushion it, not Styrofoam or plastic bubble wrap.

Back then, we didn't fire up an engine and burn gasoline just to cut the lawn. We used a push mower that ran on human power. We exercised by working so we didn't need to go to a health club to run on treadmills that operate on electricity. But she's right; we didn't have the green thing back then.

We drank from a fountain when we were thirsty instead of using a cup or a plastic bottle every time we had a drink of water. We refilled writing pens with ink instead of buying a new pen, and we replaced the razor blades in a razor instead of throwing away the whole razor just because the blade got dull. But we didn't have the green thing back then.

Back then, people took the streetcar or a bus and kids rode their bikes to school or walked instead of turning their moms into a 24-hour taxi service. We had one electrical outlet in a room, not an entire bank of sockets to power a dozen appliances. And we didn't need a computerized gadget to receive a signal beamed from satellites 23,000 miles out in space in order to find the nearest burger joint.

But isn't it sad the current generation laments how wasteful we old folks were just because we didn't have the green thing back then?

Please forward this on to another selfish old person who needs a lesson in conservation from a smart-ass young person.

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.

This will be the last hotline for the season – have a safe and restful summer season!

Contributors include: Joel Allingham/AgriCare, Inc, Jeff Bechtel/Syngenta Flowers, Bruce Corbitt/West Coast Tomato Growers, Gordon DeCou/Agri Tech Services of Bradenton, Dr Nick Dufault/ UF/IFAS, Carrie Harmon/UF/IFAS Plant Disease Clinic, Fred Heal/The Andersons, Sarah Hornsby/AgCropCon, Cecil Howell/H & R Farms, Bruce Johnson/General Crop Management, Barry Kostyk/SWFREC, Dr. Mary Lamberts/Miami-Dade County Extension, Leon Lucas/Glades Crop Care, Chris Miller/Palm Beach County Extension, Mark Mossler/UF/IFAS Pesticide Information Office, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Dr. Gregg Nuessly/EREC Chuck Obern/C&B Farm, Dr. Monica Ozores-Hampton/SWFREC, Dr. Rick Raid/ EREC, Dr Ron Rice/Palm Beach County Extension, Dr Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Dr. Dak Seal/ TREC, Kevin Seitzinger/Gargiulo, Ken Shuler/Stephen's Produce, Crystal Snodgrass/Manatee County Extension, Dr. Phil Stansly/SWFREC, Dr Gary Vallad/GCREC , Mark Verbeck/GulfCoast Ag, Alicia Whidden/Hillsborough County Extension, Dr Henry Yonce/KAC Ag Research and Dr. Shouan Zhang/TREC.

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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