



## SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

**May 23, 2016**

**After a few cool days and some showers in early May, the weather has been mostly hot and dry with daytime temps reaching into the 90's.**

**Heavy rains experienced last week dropped 3-6 inches in most places across South Florida with higher accumulations reported in a number of locations including Moore Haven, Palmdale, St Lucie County and several other inland and East Coast sites.**

### **FAWN Weather Summary**

Date	Air Temp °F		Rainfall	Ave Relative Humidity	ET (Inches/Day)
	Min	Max	(Inches)	(Percent)	(Average)
Balm					
5/3 – 5/20/16	52.02	89.85	6.05	75	0.16
Belle Glade					
5/3 – 5/20/16	50.07	93.58	3.18	71	0.16
Clewiston					
5/3 – 5/20/16	52.12	92.68	7.08	74	0.16
Ft Lauderdale					
5/3 – 5/20/16	58.06	93.72	3.73	71	0.16
Homestead					
5/3 – 5/20/16	54.00	91.45	5.53	74	0.16
Immokalee					
5/3 – 5/20/16	48.81	97.03	3.12	73	0.16
Okeechobee					
5/3 – 5/20/16	51.91	93.11	4.38	77	0.15
Wellington					
5/3 – 5/20/16	55.13	94.57	5.37	74	0.17

**The National Weather Service is forecasting limited isolated rain showers for the beginning of this week and drying out by midweek. For additional information, visit the National Weather Service in Miami website at <http://www.srh.noaa.gov/mfl/newpage/index.html>**

**The 2015-16 season is winding down rapidly around South Florida as production transitions to Central Florida and South Georgia.** Homestead and Immokalee are basically done with some scrapping going on. Growers report that the crown pick is off in the Manatee Ruskin area. Prices for many items are in the dumper and scouts report growers are backing off spraying in response to low prices. Informed sources report there is so much color in tomato that the pinhookers can't keep up. Watermelon harvest is transitioning to central and north central Florida.

## Insects

### Whiteflies

**Around Immokalee, whiteflies are increasing in remaining crops.**

**In the Manatee Ruskin area, whitefly pressure is picking up and numbers are high in many fields.**

**On the East Coast, respondents indicate that whitefly pressure is variable depending on the location.**

**Cindy McKenzie, Ph.D., Research Entomologist, USDA, ARS, US Horticultural Research Laboratory and Lance S. Osborne, Ph.D., University of Florida, IFAS advise that growers should be aware of a developing whitefly issue in Florida.**

**The Q biotype of *Bemisia tabaci* has been detected in a number of landscapes in Palm Beach County.** This is the VERY FIRST TIME it has been found in a landscape or outside a greenhouse or nursery since it was found on an ornamental plant in a greenhouse many years ago (2004-2005). This is troubling since the Q biotype has developed resistance to the neonicotinoids and IGRs in many parts of the world where it is found.

See more below in the News You Can Use section

### Pepper Weevil

**Around SW Florida, pepper weevil pressure remains very high in most remaining pepper.** Some small plantings which did not make any harvestable fruit due to extreme weevil pressure have been abandoned. Weevil adults have starting migrating out of pepper fields into eggplant fields consuming buds and flowers. In some extreme cases, larvae are being found in fruit and are causing the eggplant fruit to be unmarketable.

**On the East Coast, respondents report weevil pressure is high in some older pepper in Martin Co. but remains fairly low but increasing in younger St Lucie pepper.**

**Reports from the Manatee/Ruskin area indicate that peppers have had weevil pressure for the past few weeks.**

### Thrips

**Around Southwest Florida, *Thrips palmi* are showing up in more locations and causing are serious damage in some pepper, eggplant and watermelons.**

**Growers and scouts in Martin and St Lucie Counties indicate thrips are increasing in pepper and are causing problems in cucumber and eggplant in Palm Beach County.**

**Around Miami Dade County melon thrips abundance remains high on a variety of remaining crops including eggplant, squash, cucumber, beans and okra.**

**As the season nears the end in South Florida, thrips are concentrating on the few locations with new crops.** Growers should destroy old fields shortly after final harvest to break reproductive cycles of these pests.

### **Worms**

**Growers and scouts in the EAA report that armyworms remain below normal in late planted fields only showing up as scattered larvae in silks near power lines or other hard-to-reach places.**

**Around SW Florida, worm activity is up and down, and growers are finding mostly loopers and southern armyworms.** Pickle worm is present in some squash and diamondback moths are putting pressure on remaining Cole crops.

**On the East Coast respondents indicate that worm pressure is moderate with loopers, beet armyworm and a few fall armyworm showing up in pepper.** In cucumber, pressure has been increasing with melonworm, loopers and some armyworm at moderate levels.

**Respondents in the Manatee Ruskin are reporting steady pressure from a variety of worms especially loopers and southern armyworm.**

### **Broad Mites**

**Around Southwest Florida, broad mites continue to cause issues pepper and eggplant**

**On the East Coast, broad mites continue to cause problem in pepper and eggplant.**

**Broad mites are also putting pressure on peppers in the Manatee Ruskin area.**

### **Aphids**

**Aphids are widespread and increasing on corn around the EAA causing some concern in isolated cases.** In general, they are very remaining more on foliage than on ears.

**Around Southwest Florida, aphids are increasing but not a major concern in most crops at this stage of the game.**

**Respondents in Palm Beach County report that aphids are still an issue in pepper and eggplant in some locations.**

### **Spider Mites**

**Reports indicate that spider mites are increasing in tomato, eggplant and melons in a number of locations around South Florida.**

**Growers and scouts in Palm Beach County report growers are battling spider mites in some eggplant and to a lesser extent in corn, where mites are more of a localized problem associated with the driest spots in fields.**

### **Diseases**

#### **Target Spot**

**In the Manatee/Ruskin area, target spot remains active in many tomato fields and incidence and severity has increased with recent rains.**

**Target spot has been the main problem on tomatoes throughout the growing season and has emerged as the number one disease in tomatoes in Florida.** Growers report good results tank mixing newer products like Fontelis, Inspire Super, Scala, Quadris Top, and Switch with mancozeb or chlorothalonil.

### **Bacterial Spot**

**Around Southwest Florida, bacterial spot remains active in tomatoes and peppers.**

**On the East Coast, bacterial spot pressure has been low but will likely increase with recent rains**

**Mostly low levels of bacterial spot continue to be reported on tomato in the Manatee Ruskin area**

### **Phomopsis**

**Low levels of Phomopsis continues cause problems with eggplant producers but pressure was decreasing but heavy rains may bring it back.**

### **Late Blight**

**Scouts in Manatee and Hillsborough Counties report that late blight has pretty much faded from the scene.**

### **Downy mildew**

**Respondents in Palm Beach County report that downy mildew is common at mostly low levels in squash and cucumber.**

**Around Southwest Florida, downy mildew remains a problem on cucumbers and squash and a few watermelons and growers and scouts report they continue to find new infections.**

**Growers in Manatee County report some problems with downy mildew in melons.**

### **Powdery mildew**

**Around Immokalee, powdery mildew is common in squash and cucumbers.**

**On the East Coast and in the Manatee Ruskin area, powdery mildew is increasing in squash.** Growers report Vivando and Torino appears to be providing good control.

**Powdery mildew is also showing up on some pepper in the Manatee Ruskin area.**

**Powdery mildew has recently jumped up in watermelon in several locations around South Florida.**

### **Gummy stem blight**

**Gummy stem blight continues to flare up in a few watermelon fields around South Florida.**

### **Basil Downy Mildew**

**Downy mildew pressure in basil has been relentless and growers have to work hard to keep it in check.**

**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 Ranman, Quadris and Amistar (Azoxystrobin) and the phosphonic acids have shown efficacy in managing the disease.**

**Recently Revus received a label for use in basil and provides excellent control of downy mildew when used early as a soil drench.** These fungicides are most effective when applications are started before or just after initial symptoms are found.

### **Tobacco streak virus**

**Bean Red Node (BRN) is caused by the thrips transmitted tobacco streak virus (TSV).** Thrips populations have been very high this spring and BRN incidence is also high.

**This is also the time of year when Tobacco streak virus usually shows up big time on escarole and endive.** Transmitted by thrips, growers should be aware of this when controlling ditch bank weeds, as thrips typically migrate in from field edges. Delay mowing or spraying weeds until your crop is in if planted near a field border or control thrips in crops and weedy borders with an insecticide spray.

### **Tomato Chlorotic Spot Virus**

**Around Southwest Florida, scouts are reporting no significant tospovirus recently, with only a few scattered single plant here and there in a few tomato fields.**

**The situation is similar in Palm Beach County with only a few scattered infected tomato and pepper plants being reported.**

### **Tomato Yellow Leaf Curl**

**Incidence and occurrence of TYLCV remains mostly low to moderate and spotty in occurrence on tomatoes around South Florida, but some respondents report it has reached very high levels in some tomato fields.**

**TYLCV remains mostly low in the Manatee Ruskin area.**

**Respondents indicate that TYLCV incidence has reached high levels in a number of fields around Growers are planting more virus resistant cultivars than ever and this has been a major help in keeping TYLCV levels low where employed.**

### **Watermelon mosaic**

**Watermelon mosaic (papaya ringspot virus) is widespread in a number of watermelon fields around South Florida at much higher incidence than has been seen in a number of years despite relatively few aphids.**

### **Cucurbit Yellow Stunting Disorder Virus**

**Cucurbit Yellow Stunting Disorder Virus is widespread in a number of watermelon fields around Southwest Florida and along with watermelon mosaic virus appears to be the predominant viruses present in watermelon this season.**

**Infected cucurbit plants initially show a chlorotic (yellow) spotting, which eventually develops into a striking interveinal chlorosis (yellowing) in which the veins remain more or less green but the rest of the leaf turns bright yellow.** Leaves will often roll upward and become brittle. Older leaves on infected plants may shrivel and die. Fruit on infected plants may appear normal but often have reduced levels of sugars which could affect marketability. Symptoms of Cucurbit yellow stunting disorder virus infection can be confused with nutrient deficiency. In some instances, vines may collapse rapidly as plants approach maturity.

**Cucurbit yellow stunting disorder virus is spread from plant-to-plant exclusively by the silverleaf whitefly, *Bemisia tabaci*.** The virus is not transmitted mechanically (by touch) nor is it seed-transmitted. Consequently, the disorder is almost always associated with whiteflies; it does not take many insects to spread the virus. It can take 3 to 4 weeks for disease symptoms to develop following infection.

### **Squash vein yellowing virus**

**Squash vein yellowing virus (SqVYV) which has been conspicuously absent for the past few years, has recently shown its ugly head and has hit some fields around SW Florida hard.** Squash vein yellowing virus which many growers refer to as "vine decline" is transmitted by whiteflies and in severe cases causes rapid vine collapse of mature plants and 100% plant death.

### **Cucurbit leaf crumple virus**

**Low levels of cucurbit leaf crumple virus are being reported in watermelons around Southwest Florida.**

## **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 over looked 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 and other viruses to subsequent crops and also eliminate inoculum from late blight and other fungal diseases. This is particularly important in the case of TYLCV and other viruses, as sanitation, a crop free period, and whitefly/thrips 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, whitefly and thrips 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. In response to glyphosate resistant weeds, many growers are tank mixing glyphosate with 2, 4-D and other herbicides during the fallow period to pick up escapes.

Cover crops planted prior to the main cash crop can improve soil fertility and provide a valuable source of organic matter. They can also help suppress weeds and some soil pests, such as nematodes in some instances.

Sunn hemp seed is coming down and is about a dollar and a half per pound now; so that the recommended seeding rate at 25-30 lb. per acre costs only about \$40 per acre, which is reasonable alternative when compared to the labor and fuel costs to disk the land.

With 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. Under wet conditions, sunn hemp can increase soil populations of Pythium and Rhizoctonia damping-off fungi. Some varieties of cowpea may host of root-knot nematode. In organic systems, cowpeas and other legumes may support populations of stink bugs which may cause problems in the fall. These factors should all 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.

A number of growers and researchers are looking with interest at anaerobic soil disinfestation (ASD), a non-chemical alternative to fumigants, which can control soilborne pathogens and nematodes in strawberries and vegetables. ASD works by creating anaerobic soil conditions by incorporating readily available carbon-sources into topsoil that is covered with plastic tarp then irrigated to field capacity. The tarp is then left in place to maintain soil moisture above field capacity and to sustain anaerobic conditions. Anaerobic decomposers are then able to respire using the added carbon, which results in the build-up of anaerobic by-products that are toxic to pathogens. These by-products are degraded rapidly once the tarp is removed or holes are made through the tarp for planting.

In Florida, trials using composted broiler litter (to improve water holding capacity of sandy soils) and blackstrap molasses incorporated as substrate, ASD treatments provided good control of nutsedge, and excellent control of grass, broadleaf weeds, *Phytophthora capsici*, and *Fusarium oxysporum* f. sp. *lycopersici*.

The end of the season is also the ideal time to take samples taken to predict the risk of nematode injury to fall crops well in advance of planting to allow for sample analysis and treatment periods if so required. For best results, sample for nematodes at the end of the growing season, before crop destruction, when nematodes are most numerous and easiest to detect.

Collect soil and root samples from 10 to 20 field locations using a cylindrical sampling tube, or, if unavailable, a trowel or shovel. Since most species of nematodes are concentrated in the crop rooting zone, samples should be collected to a soil depth of 6 to 10 inches.

Sample in a regular pattern over the area, emphasizing removal of samples across rows rather than along rows. One sample should represent no more than 10 acres for relatively low-value crops and no more than 5 acres for high value crops.

Fields which have different crops (or varieties) during the past season or which have obvious differences either in soil type or previous history of cropping problems should be sampled separately. Sample only when soil moisture is appropriate for working the field, avoiding extremely dry or wet soil conditions. Plant roots should also be examined visually for the telltale signs of galling caused by root knot nematode.

Recognizing that the root-knot nematode causes the formation of large swollen areas or galls on the root systems of susceptible crops, relative population levels and field distribution of this nematode can be largely

determined by simple examination of the crop root system for root gall severity. Root gall severity is a simple measure of the proportion of the root system that is galled. Immediately after final harvest, a sufficient number of plants should be carefully removed from soil and examined to characterize the nature and extent of the problem within the field. In general, soil population levels increase with root gall severity. This form of sampling can in many cases provide immediate confirmation of a nematode problem and allows mapping of current field infestation.

The detection of any level of root galling usually suggests a nematode problem for subsequent plantings of susceptible crops. Detection of a potential problem well in advance of the next growing season will provide ample time to devise and implement an effective management strategy.

Crop clean up and fallow field management is important and more and more growers are beginning to realize that. Nematode management efforts made during the fallow period are often very obvious when the next crop gets started. Weed management is also reflected in the next crop.

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

### **Whitefly - *Bemisia tabaci* - Q biotype**

Cindy McKenzie, Ph.D., Research Entomologist, USDA, ARS, US Horticultural Research Laboratory and Lance S. Osborne, Ph.D., University of Florida, IFAS report that unfortunately, we have a developing whitefly issue in Florida.

We are having major issues managing 2 biotypes in a number of areas in South Florida. Both biotypes are referred to as *Bemisia tabaci*. The Q biotype has been detected in a number of landscapes in Palm Beach County. This is the VERY FIRST TIME it has been found in a landscape or outside a greenhouse or nursery since it was found on an ornamental plant in a greenhouse many years ago (2004-2005). This is extremely troubling considering the issues we have with many of the tools we use to manage whiteflies.

*Bemisia tabaci* (Gennadius) feeds on more than 900 host plants and vectors over 111 plant virus species and is considered to be a major invasive species worldwide. The taxonomic status of *B. tabaci* remains debated between 36 previously identified biotypes and the newly proposed 24 discrete species and they can only be identified by performing genetic analysis. Losses in agricultural production have increased owing to *B. tabaci* as new, more virulent and less pesticide-sensitive cryptic species have spread to all continents except Antarctica. Very few countries have escaped its cosmopolitan distribution and subsequent establishment of at least one of the *B. tabaci* cryptic species. The two most invasive members of the cryptic species complex posing the greatest threat to growers are Middle East –Asia Minor 1 (MEAM1) and Mediterranean (MED) (commonly known as biotypes B and Q respectively).

After the introduction of MEAM1 into the United States around 1985, unprecedented losses began occurring on poinsettia in the late 1980s in Florida, followed by high infestations in field-grown tomato crops. MEAM1 rapidly spread across the southern United States to Texas, Arizona and California, where extreme field outbreaks occurred during the early 1990s on melons, cotton and vegetable crops. Losses exceeded more than 500 million dollars in one year.

Indistinguishable morphologically from MEAM1, MED is extremely problematic to agricultural production because populations are highly prone to develop resistance to insect growth regulators (IGRs) and neonicotinoid insecticides. Both classes of insecticides are widely used for controlling whiteflies in many cropping systems, including cotton, and ornamentals.

Based on recent reports, we may be in for a challenging year for whitefly management. We are receiving reports from the keys to Palm Beach County that whitefly populations in landscapes are reaching unprecedented levels and they don't seem to be responding to pesticide applications.

At this point in time, the Q-biotype has been found in three areas: Boca Raton, Palm Beach and Palm Beach Gardens. Samples from all the other difficult to manage populations are the B-biotype. If you hear of whitefly problems please contact either Cindy McKenzie or Lance Osborne.

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For more info see: <http://ipm.ifas.ufl.edu/pdfs/Q-biotype.pdf>

<http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Pest-Alerts/Pest-Alerts-Bemisia-Tabaci-Gennadius-biotype-Q>

### **Tips to Avoid Heat Related Illness**

It is hot out there - remember to take care of yourself and your workers in hot weather and avoid heat related illness.

Summer in Florida can be overwhelmingly hot, even for long-time residents. Heat stress, heat exhaustion, and heat stroke are illnesses that can overcome you when your body is unable to cool itself.

Heat stress hits quickly, and it may be deadly.

The most serious forms of heat related illness include heat cramps, heat exhaustion and heat stroke.

As many as 600 people die of heat-related causes a year across the United States.

Never leave children or pets in a parked car. The temperature inside cars can rise to 135°F in less than ten minutes, which can kill children or pets. If you see a child or pet left unattended in a parked car, you should call 911.

Slow down. Strenuous activities should be reduced, eliminated, or rescheduled to the coolest time of the day. At-risk Individuals should stay in the coolest available place, not necessarily indoors.

Clothing is important. Dress for summer. Use common sense and wear light colors, a loose weave, long sleeves and a hat. Lightweight, light-colored clothing reflects heat and sunlight and helps your body maintain normal temperatures.

Put less fuel on your inner fires. Foods that increase metabolic heat production--such as proteins--also increase water loss.

Drink plenty of water and other nonalcoholic fluids. Your body needs water to keep cool.

Drink plenty of fluids even if you don't feel thirsty.

People who may be at most risk:

- (1) have epilepsy or heart, kidney, or liver disease;
- (2) are on fluid-restrictive diets; or
- (3) have a problem with fluid retention, should consult a physician before increasing their consumption of fluids.

Do not drink alcoholic beverages. Alcohol dehydrates you.

Do not take salt tablets unless specified by a physician. People on salt-restrictive diets should consult a physician before increasing their salt intake.

Spend more time in air-conditioned places. Air conditioning in homes and other buildings markedly reduces danger from the heat. If you cannot afford an air conditioner, spending some time each day in an air-conditioned environment (during hot weather) can offer some protection.

Don't get too much sun. Sunburn makes it harder for you to cool off.

### **REMEMBER TO DRINK BEFORE YOU FEEL THIRSTY!**

#### **Factors Leading to Heat Stress:**

- High temperature and humidity
- Direct sun or heat
- Limited air movement
- Physical exertion
- Poor physical condition
- Some medicines
- Inadequate tolerance for hot workplaces

#### **Symptoms of Heat-related Illnesses**

**Heat Cramps** - Rest in a cool place, drink sports drink, and stretch the cramped muscle.

**Heat Exhaustion** - Hot and sweaty.

Headaches, dizziness, lightheadedness, or fainting

Weakness and moist skin

Mood changes such as irritability or confusion

Upset stomach or vomiting

Move the victim to a cool place, give the person sports drinks, lay them down and elevate their legs, remove excess clothing, sponge with cool water and fan the person. If there's no improvement within half an hour, call 911.

**Heat Stroke** - Clammy and dry.

Dry, hot skin with no sweating

Mental confusion or loss of consciousness

Seizures or fits

This is The Big One! This one can, and does, kill. CALL 911 IMMEDIATELY even if the victim seems to be improving; move the victim to a cool place, remove excess clothing, keep the head and shoulders slightly elevated, fan the victim and spray with water, place ice packs under the arms, by the groin and sides of the neck where the big veins are. Ice will help cool the blood.

## **Preventing Heat Stress**

- Know the signs and symptoms of heat-related illnesses, and monitor yourself and your coworkers.
- Block out direct sun or other heat sources.
- Use cooling fans and air-conditioning; rest regularly.
- Drink lots of water--about one cup every fifteen minutes.
- Wear lightweight, light-colored, loose-fitting clothes.
- Avoid alcohol, caffeinated drinks, and heavy meals.

## **How to Treat Victims of Heat-related Illness**

Call 911 (or local emergency number) at once.  
Move the affected person to a cool, shaded area.  
Loosen or remove heavy clothing on victim.  
Provide cool drinking water to victim.  
Fan and mist the person with water.

## **When Thunder Roars, Go Indoors**

The rainy season also brings with it an elevated risk of lightning strikes and several people are killed each year in Florida, (1 so far in 2015) many of them employed in outdoor jobs. Lightning strikes the United States about 25 million times a year. Although most lightning occurs in the summer, people can be struck at any time of year. Lightning kills an average of 49 people in the United States each year, and hundreds more are severely injured.

Be safe and go indoors when you hear thunder. Lightning can travel 10-15 miles away from the main storm in some instances.

There is little you can do to substantially reduce your risk if you are outside in a thunderstorm. The only completely safe action is to get inside a safe building or vehicle.

### **Lightning Risk Reduction When a Safe Location is nearby**

You are not safe anywhere outside. Run to a safe building or vehicle when you first hear thunder, see lightning or observe dark threatening clouds developing overhead. Stay inside until 30 minutes after you hear the last clap of thunder. Do not shelter under trees.

### **Plan Ahead!**

Your best source of up-to-date weather information is a NOAA Weather Radio (NWR). Portable weather radios are handy for outdoor activities. If you don't have NWR, stay up to date via internet, smart phone, radio or TV. If you're in a group, make sure the group has a lightning safety plan and are ready to use it. If you're in a large group, you'll need extra time to get everyone to a safe place. NWS recommends having proven professional lightning detection equipment that will alert your group when lightning is nearing the event site.

## When a Safe Location is not nearby

Remember, there is NO safe place outside in a thunderstorm. If you absolutely can't get to safety, this section may help you slightly lessen the threat of being struck by lightning while outside. Don't kid yourself--you are NOT safe outside.

Know the weather patterns of the area you plan to visit. For example, in mountainous areas, thunderstorms typically develop in the early afternoon, so plan to hike early in the day and be down the mountain by noon. Listen to the weather forecast for the outdoor area you plan to visit. The forecast may be very different from the one near your home. If there is a high chance of thunderstorms, stay inside.

These actions may slightly reduce your risk of being struck by lightning:

- Avoid open fields, the top of a hill or a ridge top.
- Stay away from tall, isolated trees or other tall objects. If you are in a forest, stay near a lower stand of trees.
- If you are camping in an open area, set up camp in a valley, ravine or other low area. Remember, a tent offers NO protection from lightning.
- Stay away from water, wet items (such as ropes) and metal objects (such as fences and poles). Water and metal are excellent conductors of electricity. The current from a lightning flash will easily travel for long distances.

For more information please see the following statistics on a map with details of what the unfortunate individuals were doing when struck by lightning. <http://www.lightningsafety.noaa.gov/fatalities.shtml>

For more information on lightning safety, see <http://www.lightningsafety.noaa.gov/>

## Up Coming Meetings

**May 25, 2016              Localecopia Meet & Greet              1:00 PM – 3:00 PM**

The Breakers Palm Beach  
1 S County Rd  
Palm Beach, FL 33480

This event is free of charge with RSVP to [info@localecopia.org](mailto:info@localecopia.org).

**June 2, 2016              WPS Train the Trainer class              8:30 AM - Noon**

Hendry County Extension Office  
1085 Pratt Boulevard  
LaBelle, Florida

Cost is \$10 – contact Debra at 863-674-4092 or [dcabrera@ufl.edu](mailto:dcabrera@ufl.edu) to reserve a place.

**June 8, 2016              Florida Seed Association/UF IFAS Seed Seminar**

UF/IFAS Gulf Coast Research Center|  
14625 CR 672

Wimauma, FL 33598

Cost is \$75 industry - \$35 UF -/ no charge for students. All proceeds go to provide scholarships  
CEUs and CCA credit will be provided.

**See agenda and registration form below**

**32nd Annual Florida Seed Association/ UF-IFAS Seedsmen Seminar**

Wednesday June 8th, 2016

University of Florida Gulf Coast Research & Education Center  
14625 CR 672  
Wimauma, Florida 33598

**Agenda**

7:30 AM - Registration Open

8:25 AM - Welcome – Florida Seed Association President, Paul Hoover

Moderator: Gene McAvoy, Regional Vegetable Extension Agent IV

8:30 AM – Mr. Jerry Hayes, Monsanto – Honey Bee Health

9:00 AM – Mr. Craig Campbell, Valent – Valent Mycoapply

9:30 AM – Mr. Ben Hinson, Tri-Hishtil LTD - Overview of Grafted plants in the USA

10:00 AM – Break

10:30 AM – Dr. Sam Hutton, UF/IFAS GCREC – Update on UF/IFAS Tomato Breeding Program

11:00 AM – Dr. James Olmstead, UF/IFAS Horticulture Department - Marker-Assisted Selection in Breeding

11:30– Dr. Francesco Di Gioia, UF/IFAS SWFREC - Microgreens and the power of seeds

12:00 – Lunch

1:00 – Dr. Gary Vallad, UF/IFAS GCREC - From seed to fork: Advancing integrated practices for managing bacterial spot in tomato.

1:30 – Dr. Bala Rathinasabapathi, UF/IFAS Horticulture Department - Building Better Peppers: Novel fruit variations for breeding specialty peppers for Florida

2:00 – Dr. Kevin Folta, UF/IFAS Horticulture Department – Introducing Crispr Cas 9 –the Revolutionary Gene Editing Technique

2:30 – Break

3:00 – Mr. Wade Carter, Highland Precision Ag – Introducing Highland Precision Ag

3:30 – Dr. Shinsuke Agehara, UF/IFAS GCREC – Use of Bio-stimulants as Biological Seed and Transplant Treatments

4:00 – Mr. Todd Zehr, SoilBiotics, Carbon balancing with the influence of microbiology

4:30 – FDACs – TBA – update on the activities and role of the FDACS Seed Laboratory.

Registration form go to <https://www.scribd.com/doc/313285910/32nd-Florida-Seed-Association-Seed-Seminar-2016-Registration-Form>

**June 12-14, 2016      Florida State Horticulture Society Annual Meeting**

Hutchinson Island Marriott Beach Resort & Marina  
555 NE Ocean Blvd  
Stuart, FL 34996

<http://fshs.org/meetings/>

**June 15 – 17, 2016      23<sup>rd</sup> International Pepper Conference**

Trujillo  
La Libertad  
Peru

<https://pepper2016.capsicum.com.pe/about>

**Websites**

**Operation Cleansweep** provides farmers, nursery operators, golf course operators, and pest control services a safe and economical way to dispose of their cancelled, suspended, and unusable pesticides. For more info, go to <http://www.dep.state.fl.us/waste/categories/cleansweep-pesticides/>

**FDACs Office of Ag Water Policy - BMP Manuals** – In addition to the newly revised Ag Row Crop BMP manual you will also find link to enroll in a BMP program. **Note most growers will be required to renew their Notice of Intent.** Go to <http://www.freshfromflorida.com/Divisions-Offices/Agricultural-Water-Policy/Enroll-in-BMPs/BMP-Rules-Manuals-and-Other-Documents>

**Food Safety Modernization Act Final Rule on Produce Safety** at  
<http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm334114.htm>

**Tomato MD** phone app from the American Phytopathological Society at  
<http://www.apsnet.org/apsstore/shopapspress/Pages/apps.aspx>

**Check out Southwest Florida Vegetable Grower on Facebook**  
<https://www.facebook.com/pages/South-Florida-Vegetable-Grower/149291468443385> or follow Gene on Twitter @SWFLVegMan - <https://twitter.com/SWFLVegMan>

**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 Gene or me an email. It is much quicker and you will get the hotline within minutes of us completing it and help conserve dwindling resources at the same time. Thanks to those that have already made the switch.

# **Wishing you all the best for a safe and restful summer season!**

This will be the last hotline for the 2015-2016 growing season. I would like to extend a heartfelt thanks and acknowledge all the many fine contributors and generous sponsors who make the hotline possible, I am simply the scribe and it simply would not be possible without their support.

**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 Heald/The Andersons, Sarah Hornsby/AgCropCon, Cecil Howell/H & R Farms, Bruce Johnson/General Crop Management, Barry Kostyk/SWFREC, Leon Lucas/Glades Crop Care, Dr. Chris Miller/Palm Beach County Extension, Dr. 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. Qingren Wang/Miami-Dade 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.

*Gene McAvoy*

Gene McAvoy

County Extension Director / Extension Agent IV

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