October 16, 2014

An early “cold” front the first week of October dropped temperatures into the 50’s and 60’s for the first time since mid-May and seemingly began the transition into our dry season. A second front moved in last night bringing showers and the promise of cooler temps and drier conditions for the next few days.

September finished off wet with most places reporting from 5-8 inches of rain or more. Some areas around Manatee/Hillsborough were slammed with nearly 12 inches for the month which pounded crops and caused a number of issues. Near daily rains towards the end of September disrupted land prep and planting schedules in a number of places and kept growers running their throw-out pumps hard. Some localized flooding affected crops and caused growers to replant some blocks.

<table>
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<tr>
<th>Date</th>
<th>Air Temp °F</th>
<th>Rainfall (Inches)</th>
<th>Ave Relative Humidity (Percent)</th>
<th>ET (Inches/Day) (Average)</th>
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“Remember, when in doubt - scout.”

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Strawberry planting began in Hillsborough County the first week of October and planting of all crops is reaching it seasonal peak around many parts of South Florida. Early fruit set was reportedly light in Manatee/Hillsborough area but plants are beginning to load up with moderating temperatures.

The National Weather Service forecast indicates dry and pleasant conditions are expected through the weekend as high pressure builds eastward across the region in the wake of the cold front. High temperatures are to reach the low 80s each afternoon with overnight lows dipping into the upper 50s across the interior areas to the mid/upper 60s farther south and east toward/along the southeast Florida Coast.

The latest extended forecast calls for mostly dry and pleasant conditions through the remainder of the weekend. Dew points and temperatures will steadily trend back to normal by Monday as the low-level flow shifts east - northeast off the Atlantic. Some models show a large swath of deep layer moisture lifting northward into the local area by Wednesday and above average rainfall chances will become a possibility.

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

Insects

Whiteflies

Growers and scouts in the Manatee/Ruskin area report continued heavy whitefly pressure but note that virus has been mostly low and patchy in occurrence.

Around SW Florida, respondents indicate that whitefly pressure remains steady and continues to be relatively high for this stage of the game in many crops. Fortunately, they do not seem to be viruliferous and little TYLCV has been reported. Scouting reports reveal no egg depositions and/ or nymphal activity yet.

On the East Coast, whiteflies mostly low and TYLCV remains rare in tomato.

Around Homestead, reports indicate growers are experiencing high whitefly activity in beans. Scouts report finding mostly adults but some nymphs are also being encountered.

Management of Whiteflies, Whitefly-Vectored Plant Virus, and Insecticide Resistance for Vegetable Production in Southern Florida

Recommendations

A. Crop Hygiene.

Field hygiene should be a high priority and should be included as an integral part of the overall strategy for managing whitefly populations, TYLCV incidence, and insecticide resistance. These practices will help reduce the onset of the initial infestation of whitefly, regardless of biotype, and lower the initial infestation level during the cropping period.

1. Establish a minimum 2 month crop free period during the summer, preferably from mid-June to mid-August in south and south central Florida.
2. Disrupt the virus-whitefly cycle in winter by creating a break in time and/or space between fall and spring crops, especially tomato.
3. Destroy crops quickly and thoroughly after harvest, 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.

**B. Other Cultural Control Practices.**

Reduce overall whitefly populations, regardless of biotype, and avoid introducing whiteflies and TYLCV into crops by strictly adhering to correct good cultural practices.

1. Use proper pre-planting practices.  
   a. Plant whitefly and virus-free transplants.  
   b. Delay planting new fall crops as long as possible.  
   c. Do not plant new crops near or adjacent to old, infested crops.  
   d. Use determinant varieties of grape tomatoes to avoid extended cropping season.  
   e. Use TYLCV resistant tomato cultivars (see additional information below for list) where possible and appropriate, especially during historically critical periods of high virus pressure. Whitefly control must continue even with use of TYLCV resistant cultivars because these cultivars can still carry host the virus.  
   f. Use TYLCV resistant pepper cultivars (see additional information below for a source of a list) when growing pepper and tomato in close proximity.  
   g. Use UV reflective (aluminumized) mulch on plantings that growers find are historically most commonly infested with whiteflies and infected with TYLCV.

2. Use proper post-planting practices.  
   a. Scout for whitefly adults and apply a short reentry interval insecticide if necessary prior to cultural manipulations such as pruning, tying, etc.  
   b. Rogue tomato plants with symptoms of TYLCV at least until second tie. Plants should be treated for whitefly adults prior to rogueing and, if nymphs are present, should be removed from the field, preferably in plastic bags, and disposed of as far from production fields as possible.  
   c. Manage weeds within crops to minimize interference with spraying.  
   d. Dispose of cull tomatoes as far from production fields as possible. If deposited in pastures, fruit should be spread instead of dumped in a large pile to encourage consumption by cattle. The fields should then be monitored for germination of tomato seedlings, which should be controlled by mowing or with herbicides if present.  
   e. Avoid u-pick or pin-hooking operations unless effective whitefly control measures are continued.  
   f. Destroy old crops within 5 days after harvest, destroy whitefly infested abandoned crops, and control volunteer plants with a desiccant herbicide and oil.  
   g. Plant non-host cover crops such as Sudex during summer fallows or rye grass during winter to discourage weeds and volunteer crop plants from growing and being infested by whiteflies.

**C. Insecticidal Control Practices.**

1. Delay resistance to neonicotinoid and other insecticides by using a proper whitefly insecticide program. Follow the label!  
   a. On transplants in the production facility, apply a neonicotinoid one time 7-10 days before shipping. Use products in other chemical classes, including Fulfill, soap, etc. before this time.
b. Use a soil application containing a neonicotinoid (group 4A) or cyantraniliprole (group 28) only once during each crop. Do not repeat with a foliar application of either mode of action. If only foliar applications of these insecticides are to be made, then restrict each mode of action to a single 6-week period within any crop cycle.

c. As control of whitefly nymphs diminishes following soil applications, use rotations of insecticides of other chemical classes as needed based on scouting recommendations. Consult the Cooperative Extension Service for the latest recommendations.

d. Use selective rather than broad-spectrum control products where possible to conserve natural enemies and enhance biological control.

e. Do not apply insecticides on weeds on field perimeters. These could kill whitefly natural enemies and, thus, interfere with biological control, as well as select for biotype Q, if present, which is more resistant to many insecticides than biotype B.

After the residual effects of soil-applied nicotinoids abate, growers may turn to a variety of materials to suppress whitefly populations. These include insecticidal soaps and oils, IGR’s such as Knack. In recent trials, pymetrozine – (Fulfill- Syngenta) has been demonstrated to be effective in preventing viral transmission by whiteflies. Movento (spirotetramat – Bayer) and Oberon (spiromesifen – Bayer) have given excellent control of whiteflies in University trials.

It’s important to note that Belt (flubendiamide) and Coragen (chlorantraniliprole) are diamide insecticides used to manage caterpillar pests on tomato and other horticultural crops, and Coragen is also used for leafminer control. Durivo® (Syngenta) contains chlorantraniliprole and thiamethoxam, the same active ingredients as Coragen and Platinum. With the registration of Verimark, diamide insecticides are now available to target pests of tomato at each stage of its development: nursery, at-planting, through vegetative and fruiting stages. The risk is high that sweetpotato whitefly and other pests of tomato will develop resistance to diamide insecticides if they are overused. Growers using Verimark for early season protection against sweetpotato whitefly and TYLCV should not use Group 28 insecticides for management of leafminer and caterpillars in the same crop, or at a minimum should avoid the use of this mode of action for at least five weeks after the application of Verimark.

Organic growers can use biocontrols like Mycotrol- Beauveria bassiana, insecticidal soaps, oils and Neem based materials (note: use of Neem products is provisionally allowed but regulated – check OMRI for status) for whitefly management.

Consult UF/IFAS recommendations for currently labeled insecticides for whitefly control in Florida vegetables.

**Worms**

**Around Immokalee**, worm pressure has increased significantly around the recent full moon. Growers and scouts report finding a mix of species, including southern and beet armyworms, fruitworms, melonworms, loopers, pickleworms, and hornworms depending on the crop.

**On the East Coast**, worms are active and pressure has increased to moderate levels in many crops including corn, beans, tomato, leaf, brassicas, and cucurbits. Leaf growers in the Glades report finding lots of armyworm eggs in recent days but drier weather has allowed growers to stay on top of sprays limiting any significant hatch-outs. Sweet corn producers report worm pressure is generally low compared to past seasons.

**Respondents in Homestead report finding fall and beet armyworms, loopers and leaf rollers in beans.**

**Around the Manatee/ Hillsborough area worm pressure remains high with a mixed bag of species causing problems in a variety of crops.**
**Fall means armyworm time in Florida.** Although these pests are present almost year round in the southern part of the state, the reach peak populations in the early fall when cooler weather to our north pushes migrating moths southward.

**The moths known as armyworms belong to the family Noctuidae of the order Lepidoptera.** The family name refers to the nocturnal nature of the adults. While the adult stage causes no direct damage, the immature worm stage feeds, often voraciously, on plants.

**Hosts include many vegetables, agronomic crops and grasses.** The worms prefer to feed on foliage but may attack the stems, fruit or even tubers of certain host plants. Damage can be extensive. Armyworms are active from spring until fall. The different armyworms are similar in color, size and markings and can be difficult to tell apart.

**The different armyworms especially the younger instars are similar in color, size and markings and can be difficult to tell apart.**

**The fall armyworm, (Spodoptera frugiperda), is probably the most damaging Florida armyworm.** It may be light tan to shades of gray or green. The head capsule is usually shiny black or brown, with a prominent yellow or white inverted Y marking on the front. The body has many black tubercles, or round, mole like structures. When fully grown, the caterpillar reaches 1 1/2”.

**The beet armyworm, (Spodoptera exigui), is about 1 1/4" long when mature.** The body is usually some shade of green but can vary, with prominent dark lateral bands running its full length. There is a single prominent black spot behind the head, about halfway up the side of the body and right above the second pair of true legs. Beet armyworms are often the most difficult to control.

**The southern armyworm, (Spodoptera eridania) is one of the more robust armyworms and is often called a "climbing cutworm."** The mature larva can exceed 1 1/2” in length and can be either gray or pinkish. It strongly resembles the yellowstriped armyworm. The head of the southern armyworm is usually yellow to light orange. The lateral stripe on the side of the body is interrupted by a large dark patch at the beginning of the abdomen.

**The yellowstriped armyworm, (Spodoptera ornithogalli), has a brownish head with a pale yellow inverted V on the upper front.** It has distinct bright yellow lines on the top of the sides of the body. The yellowstriped armyworm occurs with both overall pale and dark colored bodies. It has two rows of black triangle shaped markings running the length of the body. Each row is offset from the center of the back. A thin white line runs lengthwise through each series of dark triangles. The yellowstriped armyworm is more common in north Florida.

Dr. Dak Seal, Entomologist at UF/IFAS TREC advises that Verimark (Cyazypyr) applied at planting followed by Rimon (Novaluron)/Radiant (Spinetoram) (28 DAP), Avaunt (indoxacarb) (42 DAP) will provide excellent control of worms. He notes that Bacillus thuringiensis based insecticides can be used in between applications of above treatments to maintain worm free crops.

He also notes that Intrepid (methoxyfenoxide) is effective in controlling all worms. It is an insect growth regulator. Once young lepidopteran larvae come in contact with Intrepid, they stop feeding. Death may occur immediately or several hours later. He advises that growers should not get disappointed if they see some of the worms still alive or walking around. As a matter of fact, they are looking for some resting place to die. Intrepid is benign to natural enemies and provides a good IPM and Integrated Resistant Management tool. It has a long residual toxicity (about two weeks). It is most effective when applied against freshly emerged larvae.
Dr. Seal also notes that Rimon is another effective growth regulator in controlling fall armyworm and other worm pests.

Another possible insecticide rotation for sweet corn in order to reserve pyrethroids as much as possible for silk flies. Instead of a Group 28 (Diamides) such as Chlorantraniliprole (Coragen) Flubendiamide (Belt) or Verimark/Exeril (Cyazopyr) or Group 5 (Spinosyns) – Spinetoram (Radiant), Spinosad (Conserve, Entrust) or Group 15 (Benzoylureas) – Novaluron (Rimon) followed by Group 1A (Carbamates) such as Carbaryl (Sevin), Methomyl (Lannate) and Group 3A (Pyrethroids) – multiple products - applications for the rest of the crop, some growers have gone back to following a Group 28 (Diamides) whorl application with a Group 22A (Indoxacarb) Avaunt spray as long as it is before tassel push. Labels for both Group 5 and 15 products have recommendations for tassel push on which Avaunt does not. Using it second in the rotation can leave more options for later.

Over the past few years, chemical manufacturers have produced a variety of new tools in the battle against armyworms so that growers now have a wide array of excellent worm control materials in their arsenal. Growers are reminded to rotate between products of different chemical classes to avoid the buildup of possible pest resistance. The range of materials to choose from and the use of IRAC numbers make this task relatively easy to do.

Consult UF/IFAS recommendations for currently labeled insecticides for armyworm control in Florida vegetables.

Leafminer

On the East Coast, leafminer reached treatable thresholds in some eggplants last week and are starting up in tomato as well.

Growers and scouts in the Manatee/Ruskin area are beginning to spray for leafminer as numbers build in some tomato.

Around SW Florida, growers are seeing low levels of leafminer stippling and a few mines and adults around but numbers remain below treatable thresholds and parasites appear to be keeping them in check.

Cooler drier weather over the next few days may be conducive to increased leafminer pressure over the next week.

Broad Mites

Respondents around Southwest Florida report finding broad mites getting established in some peppers, eggplants and cucurbits.

Patchy broad mites are also present on pepper, eggplants and basil in Palm Beach County.

Malformed terminal buds and stunted growth is often a telltale sign that broad mites are present. Broad mites are extremely tiny and are difficult to see without a 10X or stronger hand lens. The mites may crowd into crevices and buds. Mites prefer the shaded side of fruit and the underside of leaves, which usually faces the plant, so scouts must be diligent and carefully inspect affected plants to detect these tiny creatures.

A number of products including AgriMek and Oberon are labeled for control of this pest. For organic growers, sulfur, insecticidal oils or soaps may be effective. Due to short life cycles, frequent repeated sprays may be necessary to obtain control.
Spidermites

A few spider mites have been reported on eggplants in Palm Beach County.

Cucumber beetles

Reports indicate that six-spotted cucumber beetle adult numbers have also been pretty high on corn and on some early planted leaf crops in the Glades. They are also being found on beans in the EAA.

Stinkbug

Growers and scouts report finding some sporadic stinkbug on a variety of crops. Insecticides applied for other pests typically keep these under control but they can become an issue on organic crops and have become an increasing problem in crops where highly specific controls have been applied.

Aphids

Aphids remain low across the area but growers should remain vigilant as cooler drier weather often helps bring them on.

Diseases

Bacterial Spot

Around SW Florida, respondents report that bacterial spot has increased in both tomato and pepper and note that some older plantings have been hit hard. There are still some relatively clean fields around but not many as before last month’s heavy rains.

In the Manatee/Hillsborough area, bacteria remains the main disease on tomato and some reports indicate that it has skyrocketed in some fields that that have been out since early August.

Bacterial spot remains mostly low on the East Coast but has increased in some tomato.

Dr Gary Vallad, Plant Pathologist at the Gulf Coast Research and Education reports that many forms of copper, which historically has been used to fight bacterial spot in tomatoes, appear to have become ineffective and at times may actually be detrimental.

After conducting four trials over two seasons at CGREC, he says would not recommend using most forms of copper to control the disease in tomatoes.

“My advice would be no (copper) for bacterial spot,” he says. “For other diseases, particularly with speck, we haven’t sorted that out yet because they have resistance issues with speck as well.

He says he based his recommendation against using copper for bacterial spot control on two factors. Copper really only suppressed the disease years ago and never really did provide what could be considered effective control. That was before the numerous strains found in the state became resistant to copper.

During 2011-12, Vallad and colleagues collected 175 samples of bacterial spot in Florida and south Georgia and assayed them for resistance. Of those, 133 came from fields and 43 from greenhouses.

All but one was resistant to copper, and populations had also shifted during the past several seasons to the more aggressive T4 strain from the milder T3 strain.
The concern is the T4 strain may cause aggressive spotting on the fruit, depending on weather conditions.

The results also mirror those obtained in 2006-07, when 377 samples were collected by a group led by Diana Horvath. All of those samples showed resistance to copper.

Vallad’s trials were conducted in 2012-13 at GCREC and involved 20 different treatments and four replicates apiece. One of the treatments was an untreated check.

What the trial revealed was when Actigard, an SAR—or systemic activated response—material was used alone or in combination with non-copper products, it produced the best results.

And when copper was added to any of the treatments, more fruit ended up with lesions than even the untreated check.

“One thing that had copper did worse than anything that had Actigard,” he said. “Whenever you had copper, you had significantly reduced yields compared to when you left copper out.”

Two antibiotics, both of which are not registered for use on field-grown tomatoes, provided good control of the bacterial disease. But Vallad says they may never be approved because of concerns about antibiotic resistance in humans.

Streptomycin is labeled for use in greenhouse production. But resistance already is a concern as 86 percent of bacterial spot samples collected from transplant houses were tolerant to the antibiotic compared with only 14 percent of samples collected from the field.

As part of the trial, Vallad calculated costs for each treatment. The cost of a program that used eight sprays of copper-mancozeb was comparable with one using weekly Actigard treatments, $113 per acre versus $114 per acre, respectively.


Pythium

Around Hillsborough County, respondents have reported serious pythium problems in some cucurbit fields pounded by heavy rains and standing water.

Bean growers in the Glades and down in Homestead have reported problems with pythium in wet areas of fields.

Around SW Florida, growers and scouts report that pythium continues to hurt some young crops in areas impacted by heavy rains.

The combination of abundant soil moisture and elevated temperatures conspire to make the fall planting season a prime time for vegetable growers in Florida to encounter problems with Pythium spp. on a variety of vegetables. Pythium typically attacks roots causing damping off, seedling blights, root rots and wilting of affected crops. In some instances, Pythium may affect the above ground portions of crops.

A number of chemical treatments are available for the control of damping off. Fungicidal drenches such as Previcur Flex (Propamocarb) and Ridomil Gold (mefenoxam) are effective for the suppression of seedling blights and root rots if applied before infection occurs. Growers are reminded that they should actively rotate chemistries as a good resistance management practice.
Several biological control agents, including actinomycetes and other bacteria and fungi, are available to organic and conventional growers for suppression of Pythium and other soil-borne pathogens.

Some soils are naturally suppressive to diseases caused by Pythium or may become suppressive by increasing organic matter or manipulating soil pH. Incorporation of cover crops prior to planting may support competing organisms in the field, but in some cases may result in increased populations of the pathogen. Sunn hemp has been implicated in this regard.

Southern Blight

Southern blight continues to cause some issues around South Florida. Incidence and occurrence is mostly spotty.

Around the Glades, growers report that southern blight has showed early up on some corn.

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

The disease usually appears in "hot spots" in fields in early fall and continues until cooler, dryer weather prevails.

Soil fumigation fumigant combinations containing chloropicrin and or metam can help reduce the incidence of southern blight. As growers transition to other less efficacious fumigants some scientists fear the disease may become more prevalent over time.

Recent trials show that Fontelis - DuPont (penthiopyrad) applied at plant, pre-plant incorporated, as a transplant drench or through the drip has provided good control of southern blight.

Target spot

Respondents in SW Florida report that target spot is showing up on tomatoes in several places usually shortly after 2nd tie.

Target spot is also beginning to be reported in low levels on older tomato around the Manatee Ruskin area.

Growers and scouts are advised to be alert for this disease as nearly every year it takes some growers by surprise. Typically as we transition from the wet to the dry season, bacterial spot declines only to be replaced by target spot as the major foliar tomato pathogen. Tank-mix sprays of copper fungicides and maneb targeted against bacteria do not provide acceptable levels of target spot control and growers should consider rotating into protectant sprays of Bravo and then moving to more efficacious materials once target spot is found in the field.

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. 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

Choanephora

Growers and scouts report finding some Choanephora on beans and pepper following recent heavy rains.

Choanephora blight or wet blight, caused by the fungus Choanephora sp., is an occasional problem on vegetables especially during the early fall in Southwest Florida.

Symptoms are visible on apical growing points, flowers and fruits. Initially, water-soaked areas develop on leaves and leaf margins, leaf tips and apical growing points become blighted. Older lesions appear necrotic and dried out. Later the fungus grows rapidly downward causing dieback. The dark-gray fungal growth is apparent on some lesions. Close inspection under magnification will reveal silvery, spine-like fungal structures and dark spores.

Symptoms may be confused with Phytophthora blight (Phytophthora capsici) when young or spray burn on bean plants with older symptoms.

A black soft rot can develop in fruit. Young squash fruit in particular develop a dark whiskery fungal growth on the blossom end before the fruit softens and rots.
This fungus is a weak parasite; it colonizes dead or dying tissue before it actively invades living tissue. The fungus may invade the old flowers and advance into the fruits. Spores may be dispersed by insects such as bees from flower to flower. Infection can occur with or without wounding of host tissue caused by insects or mechanical means. However, the disease may appear more frequently and with greater severity where such damage provides an entry point for the fungus. Spores of the fungus can survive in the soil and in association with host plant debris.

Extended periods of rain, high humidity and high temperature favor fungal sporulation and disease development. The fungus is spread via wind and splashing water, and on clothing, tools and cultivation equipment.

There are few management techniques available, but fungicidal sprays applied for the control of other diseases will provide some control of this disease also. Good spray coverage where dense foliage occurs is important. Dense plantings can lead to poor air circulation and extended periods of leaf wetness conducive to disease development.

**Gummy stem blight**

Growers and scouts report that gummy stem blight has taken off in several fall watermelon fields and is also causing some problems in squash and cucumbers.

On the East Coast, growers and scouts report some problems with gummy stem in cucumbers.

Temperatures and moisture conditions are often ideal for development during the fall season in Florida. Gummy stem blight is most severe in wet years since moisture is necessary for spore germination. Pycnidiospores are released in a gummy substance that makes them adaptable for spread by splashing water.

Growers often comment on this disease occurring “overnight.” What they are actually seeing are the results of secondary spread, which is more difficult to control than primary spread simply because of increased spore numbers with increased diseased tissue.

Multiple applications of fungicides are necessary to control gummy stem blight. It is important to begin a fungicide program prior to the first sign of gummy stem blight. In south Florida, the spray program should be initiated soon after emergence. In other areas of the state, fungicide spray programs can be initiated when the vines begin to “run.” When vines are small, band applications of fungicide over the crown area are effective and help reduce application costs. Fungicides like mancozeb or Bravo in rotation will provide good protection before disease is established in the field.

In recent years, strains resistant to the strobilurin fungicides have been detected throughout the Southeast, so it is important that growers practice resistance management and avoid repeated applications of these and all fungicides. Materials such as Folicur (Tebuconozole), Pristine (BASF) a mixture of boscalid and pyraclostrobin, and Topsin (thiophanate methyl) have shown good efficacy against resistant strains of the disease.

Newer materials such as Fontelis (penthiopyrad), Inspire Super (cyprodinil and difenoconazole and Luna Experience (fluopyram) have all shown excellent control in trials.

**Downy Mildew**

A little downy mildew is present in some cucurbits (mainly squash and cucumber with few reports in watermelon) around South Florida.
On cucurbits, downy mildew lesions start out as yellow angular leaf spots typically located away from leaf margins that will later turn brown to black in color. Often leaf curling and water soaking are associated with downy mildew. A white to grayish fungal growth will appear in the undersides of these lesions when the leaves are wet from heavy dews, rainfall and high humidity (> 90%).

Protectant fungicides (chlorothalonil and mancozeb) provide excellent control early in the season, but their effectiveness is limited once the disease becomes established.

Downy mildew has been reported to have resistance to Ridomil Gold and FRAC group 11 (e.g., Cabrio, Quadris) fungicides.

Revus, Ranman, Presidio and Previcur Flex are the recommended fungicides for downy mildew control once it is present. These fungicides should be mixed with a protectant fungicide to provide optimal control of downy mildew.

**Basil Downy Mildew**

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

**Southern Corn Leaf Blight**

Around Belle Glade, scouts are reporting low levels of southern corn leaf blight (*Maydis bipolaris*) in some sweet corn requiring fungicidal treatments.

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 corn leaf blight lesions are also lighter in color (light tan to brown), and have parallel sides rather than the tapering sides of lesions caused by NCLB.

Spray programs with recommended fungicides should commence at the first sign of disease if favorable weather is likely. Fungicides should be applied early, particularly if the forecast is for warm, humid weather. The sterol inhibitors and strobilurin fungicides are most efficacious but these products should be used together with a broad spectrum protectant to minimize development of fungal resistance.

**Bacterial Blight**

Respondents in Homestead continue to report some problems with bacterial blight on some young beans.

Symptoms on leaves first appear as small, water-soaked spots which are usually more evident on the underside of the leaves. These lesions become larger and develop into dry, brown spots with distinct, rather narrow, yellow halos. As infection proceeds, the spots may coalesce, and the yellowing of leaves becomes more general.

Growers should avoid movement through and work in fields when plants are wet. This simple cultural practice can greatly reduce disease development and spread.

Applications of copper may provide some control once disease appears.

**Tomato Yellow Leaf Curl Virus**

Despite early heavy whitefly pressure in some areas, respondents report very low to no TYLCY occurrence in most fields. There are a few fields in Manatee County where up to 3% virus is being reported.
News You Can Use

Changes coming to the Worker Protection Standard

Dale Dubberly of the Florida Department of Agriculture and Consumer Services discussed changes coming to EPA’s Worker Protection Standard for Agricultural Pesticides at the recent FFVA Florida Annual Agriculture Labor Relations Forum in Orlando on Sept. 11-12.

Although the proposed changes are not final, he expects substantive changes because EPA has said the current regulations are not effective. One change he expects is in the pesticide training certification program. “The train-the-trainer program will not be a four-hour course any longer. It will be a two-day course,” he said.

Other major proposed changes in the WPS, Dubberly said, include increased frequency of mandatory training (from once every five years to annually) to inform farmworkers about the protections they are afforded under the law, expanded mandatory posting of no-entry signs for the most hazardous pesticides, and a first-time-ever minimum age requirement with an exemption for family.

Dubberly said the EPA has not announced a definite date for implementation. Public comments were collected until Aug. 18, 2014.

Farm Labor Supervisor Training Program

The Farm Labor Supervisor (FLS) Training Program is a University of Florida/IFAS Extension program. Begun in 2010, the program is coordinated by Fritz Roka and Carlene Thissen at the Southwest Florida Research & Education Center. In the past, attendees were awarded Certificates of Attendance and of Certification if they attended the core classes.

Certificate of Farm Labor Management

In 2014, a new program was introduced that allows participants to earn a Certificate of Farm Labor Management. The objective behind this certificate is to enhance the professional stature of those farm labor supervisors who complete the program and successfully manage farm workers in accordance with all associated rules and regulations. To achieve the Certificate of Farm Labor Management, a total of eight (8) classes are required, and attendees must pass a test administered at the end of each class. Three (3) of those classes must be Wage & Hour, Human Resource Compliance, and one class related to worker safety. The remaining five classes will be the choice of the individual.

Times and locations of classes offered in fall, 2014, can be found at www.swfrec.ifas.ufl.edu, along with registration information.

Topics are taught at several locations across Florida and in partnership with county extension faculty. These topics cover laws that keep farm workers safe, fairly paid, and in a working environment free from discrimination and harassment. The program is offered in both English and Spanish.

If there is sufficient interest, individual classes of combinations of classes can be arranged at times and locations convenient for the participants. We also provide training at grower locations that incorporates grower-specific policies and procedures. For more information, contact Carlene Thissen, 239-658-3449, carlene@ufl.edu.
Employer Responsibilities related to Transporting Workers

Last month we talked about regulations that directly apply to drivers of farm labor vehicles. This month, in the final article on transportation, we will discuss regulations that are primarily the responsibility of the employer, including vehicle files; driver qualification files; hours of service; and the administration of DOT-required drug and alcohol testing programs. In many cases, administrative and management office staff are responsible for these files and procedures.

DOT regulations are extensive and complicated, and training by an expert is recommended. The UF/IFAS Farm Labor Supervisor training program will have two classes on this topic. The classes are called “DOT-AUDIT,” meaning: “Would you pass an audit?” and are taught by Tracey McQuilken, retired Sergeant Investigator with FDOT/FHP. The classes will be held October 22, 12:30 to 4:30 in Arcadia; and November 12, 1:00 – 5:00 in Belle Glade. See www.imok.ufl.edu/programs/economics/fls.php for more information and to register.

AGENCIES: Agencies that monitor the administrative files and procedures are the same as those that monitor drivers and their vehicles, and include the Florida Highway Patrol (FHP) that now enforces what was previously covered by the Florida Department of Transportation (FDOT), specifically the regulations issued by the Federal Motor Carrier Safety Administration (FMCSA) and adopted by the State of Florida. Prior to 2011, FDOT and FHP were two separate agencies. After FHP absorbed FDOT, the number of potential officers increased from 200 to more than 2,000.

Two other agencies, the Federal Department of Labor (DOL), and the Florida Division of Business and Professional Regulations (DBPR), require that if a driver is a licensed farm labor contractor, he or she must have Driver Authorized (DA) on the contractor’s license. In addition, the federal DOL and state DBPR officials enforce transportation safety and insurance requirements outlined in The Migrant & Seasonal Agricultural Worker Protection Act (MSPA), plus some of the DOT (FMCSA) regulations have been adopted by both MSPA and in the State of Florida Statutes.

DOT REGULATIONS

Vehicle Maintenance Files

DOT regulations require that you maintain a file for each your company’s commercial vehicles. This file should contain:

- Vehicle identification information: year, make, model, VIN, unit # and tire size.
- Repair receipts
- Vehicle inspections and driver vehicle inspection reports (DVIR). Train your drivers on how to do a proper pre- and post-shift inspection - the vehicle driver is the only person who may do this. The post-shift inspections have to be documented, and a DOT-required form has to be used. Note: During an audit, investigators will compare inspection records with repair records to be sure the driver accurately reported issues in the post-shift inspection. Keep post-trip inspection forms for 3 months.
- Annual inspection forms
- Roadside inspection records should be kept for 1 year.
- Create a preventative maintenance schedule and checklist. Keep records of preventative maintenance performed.

Each vehicle should have a DOT number on EACH side of the truck/bus, toward the front, in a contrasting color with letters and numbers at least 3 inches tall.
Driver Qualification Files

Extensive checking of the driving and prior employment records of all drivers is required for drivers of Commercial Motor Vehicles (CMVs), including large vans and labor buses. Create and maintain a separate file for each driver, which contains the following:

When a driver is newly hired, even if they return to you every year after a season of working for other companies, you need:

1. A completed DOT-required application form

2. Commercial Driver’s License – The required license is a Commercial Driver’s License (CDL). Make a copy and keep it in the driver’s file. Be sure the license is still valid and monitor expiration dates to be sure your drivers renew their CDLs.

3. Previous Employers – Contact all employers where the person drove a CMV over the last three years.

4. Motor Vehicle Records – Check Motor Vehicle Records from all states where the person worked as a driver in the last three years.

5. Make sure the driver has a valid DOT-required Medical Certificate that was filled out by the examining DOT physician. You must keep a copy in the driver file. Note: The examining DOT doctor must be on the National Medical Registry.

For existing drivers.

1. Make an annual review of driving record using a current MVR.

2. Make sure the DOT-required medical certificate is still current.

3. Make sure you have a current copy of the driver’s Commercial Driver’s License.

4. Keep written documentation of any disciplinary actions

DOT Drug & Alcohol Testing for Drivers

Make sure your drivers are given a copy of your company’s drug and alcohol requirements and testing program using the DOT regulations as your guide. Have them sign a receipt of policy that they received it and keep that signed receipt in their file. Note: A DOT-required program is NOT a “drug free workplace.” The DOT-required program is much more stringent.

When hiring a new driver, a pre-employment drug test must be done and come back negative before any “safety-sensitive function” can be done by the driver. This essentially includes having any contact with the vehicle, even washing it! While you wait, assign the driver other tasks or make the hiring conditional on a negative-result drug test.

For existing drivers, 50% of all company drivers have to be tested for drugs and 10% have to be tested for alcohol, on an annual basis, using a scientifically valid method of selection.

If a driver of your vehicle is involved in a crash they may need a DOT post-accident drug and alcohol test, so it is best to consult an expert.
If a driver appears to be under the influence based on the observations of a trained supervisor, a drug and alcohol test should be administered. This is called “reasonable suspicion testing.”

If a driver tests positive for drugs and/or alcohol, they have to complete a Substance Abuse Professional Program (SAP) and pass a return to duty test before they can perform any safety-sensitive functions, as well as meeting other criteria prior to being released from the SAP program.

**Hours of Service**

The company should have an “hours of service” policy, based on DOT regulations. Generally speaking, drivers of Commercial Vehicles that carry passengers, including farm labor buses and large vans, may drive 10 hours within a maximum 15-hour shift, after 8 consecutive hours off duty. Weekly restrictions of on-duty and driving time are based on a “rolling” period of 6 or 7 days and are more complicated than we can address in this article. Again, we suggest consulting an expert or taking a class.

For short haul distance (less than 150 air miles AND less than 12 hours a day) drivers may be able to keep a written time record. For distances beyond 150 air miles, drivers may need to maintain a log book. The log books look intimidating, but are not difficult to fill out, with proper training.

Driver logs have to be current to the last “change of duty” status and include the previous 7 days. They have to be submitted to your company every 13 days and should be reviewed and audited. The company is required to maintain ALL time records for 6 months.

**Federal Department of Labor (DOL) and Florida Department of Business And Professional Regulations (DBPR) Regulations**

Drivers of farm labor buses must have “DA” (Driving Authorized) on their Farm Labor Contractor licenses. In addition, if the vehicle is under the control of an FLC, that person’s DOL registration must be authorized the “TA” (Transportation Authorized). A Farm Labor Vehicle is required by the DBPR.

Farm labor transport drivers who are not subject to DOT requirements (such as small van drivers) still must comply with all the DOL and DBPR regulations pertaining to drivers of vehicles transporting farm workers. This includes being at least 21 years old, having a current doctor's certificate (and carrying it with them while driving), possessing a current and proper driver's license, maintaining a record of the hours they work, being able to speak and understand English, and, if they are not a direct employee of an Agricultural Employer such as a farmer, possessing a federal and state Farm Labor Contractor certificate with Driving Authorization. (DA)

Authors: Thissen, C.; T. McQuilken; M. Bayer; and F. Roka.

Carlene Thissen and Fritz Roka work for the University of Florida at the Southwest Research and Education Center, Immokalee, FL, 239-658-3400. carlene@ufl.edu, fmroka@ufl.edu.

Tracey McQuilken is a retired Sergeant Investigator with FDOT/FHP. She is now a DOT Consultant and owner of Ion Drug & Alcohol Testing, Brandon, FL, 813-244-7087, tracey@iondat.com

Mike Bayer is a former DOL-WHD Investigator, now with Curran, Bayer & Associates, West Palm Beach, 561-371-0126 mtbayer@curranbayer.com

**USDA Natural Resources Conservation Service Farm Bill Program Funding Deadline**

The primary program we administer that offers assistance to growers is the Environmental Quality Incentives Program (EQIP). Through the EQIP program incentive payments are being offered for vegetable crop growers
with resource concerns. A few examples are provided here. If you have irrigated a minimum of two of the last five years, you irrigate for a minimum of 9 out of 12 months, and you are willing to install soil moisture monitoring devices and keep records then you could earn up to $8 per acre per year. Installing a micro-irrigation system that uses a well water source can earn up to $1,863 per acre. Applying precision nutrient management will earn cost share of $32/acre. (Based on 2014 cost-share rates, subject to 2015 revisions)

The Conservation Stewardship Program (CSP) is a program that encourages agricultural producers to maintain existing best management conservation activities and adopt additional enhancements on their operations. If you are accepted into the nationally competitive program you may receive base payments of up to $15 per acre for 5 years, subject to 2015 revisions.

For more information visit: www.fl.nrcs.usda.gov/programs http://www.nrcs.usda.gov/programs/ or call your local USDA-NRCS office.

Deadline: To be considered for 2015 funding, an application must be on file in the NRCS office by close of business on November 21, 2014.

**OPERATION CLEANSWEEP 2014**

Statewide Pesticide Pick-up

Operation Cleansweep is a mobile pesticide collection program that provides a safe way to dispose of cancelled, suspended, and unusable pesticides at NO COST for the first 500 lbs. for: Farms/Groves, Nurseries, Pest Control Services, Greenhouses, Forestry, Golf Courses

Pesticide manufacturers/distributors can participate at the contracted rate.

For more information Contact:

Shannon Turner
Florida Department of Agriculture and Consumer Services
Toll-Free Number: (877) 851-5285
Email: Cleansweep@freshfromflorida.com

CLEANSWEEP WEBSITE: http://www.dep.state.fl.us/waste/categories/cleansweep-pesticides/

**Up Coming Meetings**

**October 30 & 31, 2014**

**HACCP for Florida Fresh Fruit and Vegetable Packinghouses**

**Everglades Research and Education Center**
**3200 East Palm Beach Road**
**Belle Glade, FL 33430**

**ABOUT THE PROGRAM**

Food Safety is critical to the fresh produce industry. In addition to being a major public health issue, food safety issues have had an adverse economic impact on growers, packers, processors and shippers of fresh produce.

In addition to a discussion of current and proposed legislation, the latest research on produce safety and Good Manufacturing Practice (GMPs), the workshop will cover the elements of putting together a comprehensive food safety program.
The hands on course will teach participants how to develop and document a food safety management program based on the principles of Hazard Analysis and Critical Control Point (HACCP) for their specific operations.

Breakout sessions are structured to teach participants how to identify and prevent food safety hazards, monitor hazard reduction procedures, develop control measures and methods to document and verify the results of their efforts.

The workshop, accredited by the International HACCP Alliance, is targeted to produce packers, to assist in the development and customization of food safety programs for their facilities, using a HACCP-based approach.

PACKINGHOUSE HACCP PROGRAM AGENDA

Thursday October 30th

8:00 Registration
8:30 Welcome
Introduction to Food Safety and the HACCP System Hazards
Prerequisites to HACCP – GAPs, GMPs, SOPs, SSOPs
Hazard Analysis (Principle 1)
Identification of Critical Control Points (Principle 2)
Establishment of Critical Limits (Principle 3)
Critical Control Point Monitoring (Principle 4)
5:00 Adjourn

Friday October 31st
8:00 Coffee
8:30 Review
Corrective Actions (Principle 5)
Verification (Principle 6)
Recordkeeping (Principle 7)
Regulations – Food Safety Modernization Act
HACCP Review
HACCP Exam
5:00 Adjourn

The fee for the course is $400 for industry participants; additional participants from one facility/farm who do not require course materials may register for a fee of $100. A reduced fee of $250 is available for government/academic employees that make prior arrangements.

Register online - https://www.eventbrite.com/e/haccp-for-florida-fresh-fruit-and-vegetable-packinghouses-tickets-12332582085

Note this class is full and a second session has been scheduled for November 17 - 18, 2014 in Lake Alfred. See below.

November 4-6th, 2014 29th Annual Tomato Disease Workshop

Waterfront Hotel
Windsor, ON

For more information, go to https://sites.google.com/site/tomatodiseaseworkshop2014/
November 17 - 18, 2014  HACCP training for Florida Fresh Fruit and Vegetable Packinghouses

UF/IFAS- Citrus Research and Education Center
Lake Alfred, FL.

Agenda as above.

Registration is available online at: http://haccpforfreshfruitandvegetablepackinghouses.eventbrite.com

November 17-20, 2014  22nd International Pepper Conference

Viña del Mar
Chile

For more details, go to http://www.pepper2014.cl/en/

December 2, 2014  2014 Suwannee Valley Watermelon Institute  10 AM - 7 PM

Straughn IFAS Extension Professional Development Center
2142 Shealy Drive
Gainesville, FL 32611

To register, call 386-362-1725, ext. 101

December 5th, 2014  UF/IFAS SWFREC Open House  10 AM - 3 PM

Lunch – 11 AM – 1 PM

UF/ IFAS SWFREC
2685 SR 29 North
Immokalee, FL 34142
http://swfrec.ifas.ufl.edu

Come and learn more about the Southwest Florida Research and Education Center

RSVP:  call: (239) 658–3400 or email: rdecker54@ufl.edu

Websites

The FDA Food Safety Modernization Act (FSMA) represents the most sweeping reform of our food safety laws in more than 70 years and aims to ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it. Keep in touch with the latest developments as the regulation unfolds: http://www.fda.gov/Food/GuidanceRegulation/FSMA/default.htm

FDACs Office of Ag Water Policy - BMP Manuals – you will also find link to enroll in a BMP program. Go to http://www.freshfromflorida.com/Divisions-Offices/Agricultural-Water-Policy/Enroll-in-BMPs/BMP-Rules-Manuals-and-Other-Documents

Quotable Quotes

The difference between genius and stupidity is that genius has its limits. - Albert Einstein

Management is doing things right; leadership is doing the right things. - Peter Drucker
Yesterday is history.
Tomorrow is a mystery.
Today is a gift.

What this country needs is dirtier fingernails and cleaner minds. – Will Rogers

Elections are a good deal like marriages. There's no accounting for anyone's taste. Every time we see a bridegroom we wonder why she ever picked him, and it's the same with public officials. – Will Rogers

The United States investigates everything-usually after its dead. – Will Rogers

The secret of getting ahead is getting started. - Mark Twain

Leadership is a two-way street, loyalty up and loyalty down. Respect for one's superiors; care for one's crew.

**On the Lighter Side**

**You Might Be an EXTREME Redneck if...**

1. You let your 14-year-old daughter smoke at the dinner table in front of her kids.
2. The Blue Book value of your truck goes up and down depending on how much gas is in it.
3. You've been married three times and still have the same in-laws.
4. You think a woman who is out of your league bowls on a different night.
5. You wonder how service stations keep their rest-rooms so clean.
6. Someone in your family died right after saying, 'Hey, guys, watch this.'
7. You think Dom Perignon is a Mafia leader.
8. Your wife's hairdo was once ruined by a ceiling fan.
9. Your junior prom offered day care.
10. You think the last words of the Star-Spangled Banner are 'Gentlemen, start your engines.'
11. You lit a match in the bathroom and your house exploded right off its wheels.
12. The Halloween pumpkin on your porch has more teeth than your spouse.
13. You have to go outside to get something from the fridge.
14. One of your kids was born on a pool table.
15. You need one more hole punched in your card to get a freebie at the House of Tattoos.
16. You can't get married to your sweetheart because there's a law against it.
17. You think loading the dishwasher means getting your wife drunk.

**Memories… An Irishman's First Drink with His Son**

I was reading an article last night about fathers and sons, and memories came flooding back of the time I took my son out for his first drink. Off we went to our local pub, which is only two blocks from the house.

I got him a Miller Genuine. He didn't like it so I drank it.

Then I got him an Old Style, he didn't like it either, so I drank it.

It was the same with the Coors and the Bud.

By the time we got down to the Irish whiskey.

I could hardly push the stroller back home.
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.

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

Contributors include: Joel Allingham/AgriCare, Inc, 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/Grades 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, Dr. Qingren Wang/Miami-Dade County Extension, 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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<td>Phone: 561-996-6469</td>
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<td>www growersmanagement.com</td>
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