Warm wet weather blanketed South Florida during the week of November 2nd through 8th. Temperatures for the period ranged from 3 to 12 degrees above normal for much of the past two weeks until the arrival of a mild cold front on Thursday November 13th, which dropped nighttime temps in to the 50’s and 60’s across the area – the lowest of the season. Hopefully this will herald the arrival of more seasonal conditions.

Rainfall totals varied widely across the region from less than an inch recorded at the FAWN Weather Station in Bradenton to more than 9 inches and some flooding reported by a few growers in some locations in the Homestead area. In general, precipitation amounts tended to be heavier on the east coast with many areas across south Florida receiving from 1 to 3 inches or more for the period.

Wet weather last week radically increased disease pressure in many areas and caused some delays in planting, cultural operations and harvesting in many locations. Potato plantings have been negatively affected by above average temperatures and recent rains. Leaf growers in the Glades have also been battling the environment. Bolting and leaf burn has resulted from recent high temperature. Respondents have noted some raincheck on tomato and higher than anticipated levels of postharvest disorders following last weeks rains.

FAWN Weather Summary

<table>
<thead>
<tr>
<th>Date</th>
<th>Air Temp (°F)</th>
<th>Rainfall (Inches)</th>
<th>Hours Below Certain Temperature (hours)</th>
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<tr>
<td></td>
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<td>Max</td>
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Tomato harvest is proceeding in the Palmetto-Ruskin area and is gaining momentum around Immokalee and East Coast production areas. Producers are ramping up harvest as possible to help meet the Thanksgiving Day demand. In addition to tomatoes other crops coming to market include snap beans, cantaloupes, cucumbers, eggplant, okra, peppers, pickles, squash, strawberries, sweet corn, watermelons and specialty crops.

The short-term forecast from the National Weather Service in Miami indicates that high pressure currently over the area will move out allowing a cold front to drop down over the peninsula on Wednesday. Skies will be partly cloudy through Wednesday and become clear behind the front. Daytime highs will reach the low to mid 80’s with nighttime lows in the 60’s through Wednesday. Passage of the front will bring scattered showers into the area on Tuesday and Wednesday and cooler temperatures towards the end of the week.

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

Insects

Growers and scouts continue to report light to moderate insect pressure across the area with some seasonal increase in pressure.

Worms

Worm pressure remains moderate to high in many locations around Immokalee although several scouts have noted some decrease in recent days. Southern armyworms have been the most common with many new hatches reported over the past week. Growers and scouts have also been finding beet armyworms, tomato fruitworms, loopers, and melonworms.

Around the Manatee/Ruskin area, low to moderate worm pressure continues to be reported in pepper and tomato with growers seeing mostly southern and beet armyworms along with a few fruitworms and some loopers. Respondents are also reporting the presence of some beet armyworms in cucurbits along with pickleworms and melonworms.

Reports from the East Coast indicate that worm pressure has dropped off over the past few week. Growers report mostly low numbers of southern armyworms in tomato but loopers have increased in some places. Some fruitworm activity is being reported in pepper. Worm pressure remains moderate to high in corn. Worm pressure is also high in some varieties of leaf lettuce, as well as in some specialty crops such as Swiss chard.

Around Homestead growers and scouts indicate that worm pressure in sweet corn has lessened somewhat over the past two weeks. On beans, worm pressure remains fairly steady with looper, bean leaf roller and southern armyworms still being found. Cucurbit producers report heavy melonworm pressure on the new growth. Reports indicate last weeks heavy rains delayed spraying allowing some large melon worms to develop resulting in low levels of fruit damage in places.

Leafminers

Growers and scouts in Palm Beach report some increase in leafminer activity but most growers report being able to keep things in check.

Reports from Manatee County indicate that leafminer pressure is still increasing rapidly and being treated. Even in fields with good parasitism, high temperatures have really speeded up larval growth. In many places, mines are very evident and increasing in a number of fields.
In the Homestead area, respondents report heavy leafminer pressure in bean, eggplant, and tomato.

Around Southwest Florida, leafminer pressure is increasing with several fields reaching threshold levels over the past week and receiving treatment. In some areas, growers report having made more than one application for leafminer control. Parasites are also common and in several fields they are maintaining control of leafminer larvae.

For more information on leafminers, visit the UF/IFAS Featured Creatures website at http://creatures.ifas.ufl.edu/veg/leaf/vegetable_leafminer.htm and http://creatures.ifas.ufl.edu/veg/leaf/a_serpentine_leafminer.htm

Whiteflies

Growers and scouts in Homestead report mostly low whitefly numbers in tomato and eggplant.

Around Southwest Florida, whiteflies are starting to build in several older fields and adult pressure has increased in many tomato fields. As more tomato fields mature, spray coverage decreases and often spray intervals are lengthened due to harvesting and whiteflies start building. Whiteflies are also building in some older pepper and cucurbit fields.

Reports from respondents on the East Coast note remain mostly low whitefly pressure except for a few scattered locations where populations are beginning to build. A few growers in Palm Beach and in Southwest Florida report good results in controlling silverleaf whitefly as well as aphids with reflective mulch on cucurbits. They report excellent crops and prolonged harvest periods that they directly relates to the use of reflective mulch

Respondents in the Manatee/Ruskin area indicate that whitefly numbers are increasing exponentially in some older tomato fields. Very high numbers are also present in some melon fields and there does seem to be a connection between this and increased numbers in neighboring tomato fields, but growers should note that these whiteflies should be clean in terms of TYLCV.

Phyllis Gilreath reports while there is some new TYLCV showing up in the tops of older plants, growers are urged to consider the timing of the crop, as virus is less of a concern in older plantings once the crop is made. In older plantings growers should strive to maintain control of adults with oils, soaps and materials OTHER THAN nicotinoids. She also emphasizes the importance of PROMPT destruction, block by block, as harvest is completed, including an oil with herbicide for quick burndown and control of existing SWF in those blocks, thus minimizing movement out to other blocks. Nymph populations are increasing, thus IGRs are going out in some fields.

Phyllis Gilreath, Manatee County Extension Service and Alicia Whidden, Hillsborough County Extension Service offer growers the following reminders about whitefly management as harvest proceeds across South Florida. As crops reach maturity and above normal temperatures seem likely to stick around for the foreseeable future, it’s not surprising that SWF numbers are increasing. Even though nymphal populations are being reported at threshold levels, growers are often reluctant to spend money on Insect Growth Regulators (IGRs). With the lack of efficacy being reported for standard control materials, it is understandably tempting to look at other options and unfortunately one of those being discussed by some are the nicotinoid insecticides. Remember that a big part of an effective resistance management program is not following an application of a nicotinoid with another application (soil or foliar) of the same or different nicotinoid. Please think twice before using these!! While they may work now, then what? What will you use next time? There are NO new adulticides coming down the pipe, at least not in the near future. While you may feel you have no alternatives
right now, the nicotinoids may be the only thing standing between a decent crop and disaster. If we were to lose the nicotinoids to resistance, we likely would not be able to grow tomatoes in South Florida.

**A couple of points to consider:** The crop you are harvesting now or planning on harvesting in the near future has already been made... your primary goal now is not to control virus. Since there is some new virus showing up in the tops of plants, perhaps the more emphasis should be on prompt destruction of the crop, block by block, as soon as you complete final harvest. Adding oil to your herbicide will help destroy resident whiteflies. Irregular ripening is also a concern, but remember, this is caused by immature whitefly feeding, not adults. This is where the IGRs come into play. Another important point to consider is that many of the SWF you are seeing now are likely migrating from other crops currently being harvested, such as cucurbits. Thus, they are probably not carrying TYLCV. While nothing is going to eradicate the population, soaps, oils or other materials may help keep adults to manageable levels for the remainder of the crop.

**Work done by Dr. Dave Schuster, shows that it takes 2-3 generations of SWF to regain susceptibility to nicotinoids once susceptibility is lost.** The unanswerable question is how quickly reduced susceptibility appears again once exposure to nicotinoids resumes; hence, the importance of a crop free period. We may not have that crop free period this winter unless Mother Nature steps in. We have young crops in the ground now and more are being planted. It’s also important to minimize the exposure of the SWF to the nicotinoids; hence, the restriction of only one application of nicotinoid to any one crop. While it’s sometimes hard to think in the long term, especially in this business, this is one time when decisions have to consider both short and long term impacts. For more information on other components of resistance management, see the 2003 Tomato Institute Proceedings. Copies can be obtained from your local vegetable Extension Agent. The proceedings are available online at [http://gerec.ifas.ufl.edu/vegetables.htm](http://gerec.ifas.ufl.edu/vegetables.htm).

**Mites**

**Around Southwest Florida, broadmites are scattered in pepper and eggplant mostly at low levels.**

**Growers and scouts on the East Coast also continue to report scattered broad mite activity in eggplant and pepper in a number of locations.**

**Reports from Homestead report the presence broad mites on pepper and eggplant in some locations.** Scouts advise that growers must look closely to distinguish between broad mite and *Thrips palmi* damage on new growth in pepper, as it can look very similar if pests not present at the time. They note that the same is true to a lesser extent on eggplant. A few spider mites are present in eggplant.

**Broad mites are still a problem on peppers in the Manatee/Ruskin area.** A few spider mites are being reported in tomatoes in low numbers but should not be a problem at this point in the season.

**Thrips**

**Thrips remain very low across Southwest and West Central Florida.** Very low levels of *Thrips palmi* have been reported in isolated fields in Southwest Florida.

**Respondents in Homestead report *Thrips palmi* are beginning to buildup in bean, cucurbits, eggplant and peppers.**

**Aphids**

A few winged aphids have been detected in several fields around Southwest Florida but colony formation has been rare to date.
Specialty producers around Palm Beach continue to report finding the presence of winged aphids but no major problems are being reported.

In Homestead, aphids remain low in cucurbits with some virus and silverleaf being reported.

**Pepper Weevils**

Pepper weevil pressure remains low mostly low across Southwest Florida. Scouts report that pheromone traps continue to catch low levels of adults and a few larvae have been detected.

A few pepper weevils are beginning to show up in scattered locations on the East Coast.

Around Homestead, respondents report weevils are beginning to show up particularly in hot varieties.

No weevils have been reported in the Manatee/Ruskin area.

**Silk Fly**

Some reports of serious corn silk fly damage has been noted in Palm Beach County while respondents in Homestead report some decrease in silk fly activity over the past two weeks.

**Diseases**

Growers and scouts are reporting a significant jump in disease pressure following last week’s rainy weather and the warm humid days that have followed. Reports indicate that problems are worse in older crops where some inoculum was already present as well as down on the leaves touching the plastic in some younger plantings.

**Bacterial Spot**

Reports from the Manatee/Ruskin area indicate a jump in bacterial spot on tomato following recent rains. Some increase in bacterial spot incidence has also been noted in pepper but to a lesser extent.

Reports from the Homestead area indicate a huge jump in bacterial spot in tomato particularly on grapes, yellows, and plums as well as some new bacterial spot activity in pepper. Bacterial speck is also being reported in Homestead.

Around Immokalee, bacterial spot has increased with several fields showing new lesions on the upper foliage this past week. Several early fields that had been infected but were "out growing" the bacterial spot now have many new lesions.

Reports from East Coast growers also note an increase bacterial spot on pepper and tomato.

Scattered reports of bacterial on bean have been reported in the Homestead area.

**Target spot**

Scouts around Immokalee indicate that Target spot has fired up in many tomato fields. Several fields with nearly mature fruit have heavy infections on inner foliage. Target spot has engulfed most inner foliage in fields with lush, thick bushes. Fruit lesions are also showing up, mostly on fruit that is starting to break color.
Respondents in Palm Beach report some nasty target spot as well as some less intense early blight in tomatoes following recent rains. Lesions are evident on the leaves, stems, as well as on the fruit. On the fruit, target spot symptoms are first appearing in the concentric cracks that probably came about as the result of the heavy rains we got last week. Ken Pernezny reports that research he performed with Ray Volin shows that the target spot fungus readily invades any wound in the fruit epidermis. He predicts that if we get into cool wet weather that more favorable for the development of target spot, we could be in deep do-do.

Growers around Bradenton and Homestead have also reported a significant increase in target spot following recent rains.

Target spot is frequently misdiagnosed as in its early stages as leaf lesions are difficult to recognize and may be mistaken for bacterial spot.

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.

The pathogen has several means for survival and spread in the field. It may survive up to 2 years in crop debris. The wide host range of this fungus may also contribute to survival of the fungus in Florida. The primary means spread in the field is by air-borne conidia. Optimum conditions for disease development include temperatures from 68° - 82°F and long periods of free moisture.

On tomato leaves and stems, the disease first appears as small necrotic lesions with light brown centers and dark margins. Some varieties display a pronounced yellow halo around these leaf spots. Individual lesions often coalesce and cause a general blighting of leaves. Target spot is often confused with bacterial spot and/or early blight in initial stages, which underscores the importance of correct diagnosis in implementing a disease control program in tomato.

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.

Thinning of the canopy from the inside out is often an early telltale sign of target spot infection.

Currently, target spot is controlled primarily by applications of protectant fungicides. It should be noted that tank-mix sprays of copper fungicides and maneb provide virtually no control of target spot. Growers often run into problems where they have been relying primarily on copper/manzate sprays for bacterial spot control. Recommended fungicides include various chlorothalonil formulations (Bravo, Echo, Bravo UltraX, Bravo Weather Stik and Ridomil Gold/Bravo). In trials, conducted by Dr Ken Pernezny, Plant Pathologist at the UF/IFAS Everglades Research and Education Center, Actiguard, Quadris and a tank mix of mancozeb and Tanos (DuPont) also provided excellent control.

Tanos was released for sale in Florida this past week and reports indicate that growers are hoping that Tanos will provide an effective fit into current fungicide programs.

Cultural practices can also have a heavy influence on target spot pressure. Growers with thick, lush tomato bushes will often have more target spot, as will growers that prune “lightly.” Nearly all of the current popular tomato varieties tend to make a dense, full bush at maturity, which can allow the target spot to get started on the inner foliage.
**Tomato Yellow Leaf Curl Virus**

In the Manatee Ruskin area, tomato yellow leaf curl virus remains generally low with most fields at 1% or less although reports indicate a few older blocks are approaching 5%.

Some new TYLCV is being reported in Homestead but remains mostly low.

In the Immokalee area, growers and scouts report a slight increase in TYLCV incidence in some older plantings. Incidence is well below 1% and in most cases respondents report finding only a few plants across a several hundred acres.

Growers and scouts on the East Coast report mostly low incidence of TYLCV with a few infected plants showing up here and there. There have been some reports of increased incidence and occurrence in older plantings with secondary infections being observed within fields.

**Botrytis**

Growers and scouts note a significant jump in the incidence of botrytis around southwest Florida over the past two weeks.

Botrytis is still being reported in the Bradenton area.

**Botrytis is most severe on plants grown in acidic, sandy soils with high soil moisture.** Adequate calcium should be available and uniform soil moisture maintained for maximum calcium availability. Calcium to phosphorus ratio of 2 or higher in leaf petiole tissue has been demonstrated to aid in control. Growers are advised to scout for this disease, which is difficult to distinguish from other diseases; thus, emphasizing the need for laboratory confirmation prior to control measures.

In addition to standard fungicides, Topsin (Ceraxagri) is labeled for white mold but also has activity against botrytis. Endura (BASF) has recently been labeled for fruiting vegetables for control of botrytis but reportedly will not be available until sometime this winter due to production limitations. Phyllis Gilreath notes that results from grower trials being conducted indicate Topsin and Endura have good activity after several applications.

**Early Blight**

Scattered reports of early blight (**Alternaria solani**) have been received from all areas. Incidence and occurrence is low in all cases with the exception of Homestead where scouts report a huge jump in early blight activity over the past few weeks. Some have noted that infections often seem to be associated with leafminer activity.

**Alternaria** is also present on eggplant in a number of locations.

**Papaya Mosaic Virus**

Papaya ringspot virus type W Mosaic has been diagnosed on squash in the Manatee Ruskin area. Mosaic virus (type undetermined) is also beginning to show up on squash in southwest Florida as well as in Homestead and East Coast production areas. Note: surveys by Dr. Susan Webb, Entomologist UF/IFAS over the past few years indicate that mosaic in south Florida cucurbits is most often caused by papaya ringspot virus type W Mosaic.
Note in the last hotline I inadvertently referred to papaya ringspot virus type W as papaya mosaic virus. These are actually two different viruses. Papaya mosaic is a potexvirus (PRSV-W is a potyvirus) that affects mainly papaya in nature and is not insect-transmitted. Thanks to Dr Susan Webb for bringing this to my attention.

**Fusarium crown rot**

Scattered reports of fusarium crown rot on tomato have been received from respondents across the area

**Southern Blight**

Isolated cases of southern blight on tomato and eggplant continue to be reported from widely locations on both coasts with some increase in incidence over the past few weeks.

**Powdery mildew**

Respondents in Palm Beach County and Immokalee indicate that powdery mildew has begun to show up on squash in a number of locations. Incidence is low to moderate.

**Gummy stem blight**

Growers and scouts report that gummy stem blight continues to spread slowly in cucurbits in several locations in southwest and west central Florida. Scouts in the Immokalee area indicate that they are finding new gummy stem blight lesions in melons and squash.

**Phytophthora**

*Phytophthora capsici* has been confirmed on watermelon fruit samples from the Bradenton area. According to IFAS publication SP-159 (http://plantpath.ifas.ufl.edu/takeytpub/FactSheets/sp159.pdf), all stages of watermelon fruit are highly susceptible. Early symptoms of fruit rot include rapidly expanding, irregular, brown lesions that become round to oval. Concentric rings within a lesion may occur. The centers of rotted areas are covered with a grayish mold, while outer margins appear brown and water-soaked. The entire fruit eventually decays. Initial symptoms of bacterial fruit blotch are similar.

After lesions expand, the two diseases can be easily separated because of the presence of extensive rind cracking and absence of fungal growth with blotch, while Phytophthora rot is characterized by abundant fungal growth accompanied by little or not cracking.

**Growers and scouts on the east Coast note a significant increase in Phytophthora on pepper, tomato and squash.** Both Phytophthora crown and root rots as well as Phytophthora blight on aerial portions of affected crops have been reported.

**Pythium**

Growers and scouts are reporting scattered problems with pythium in young tomato and pepper plantings as well as seeded cucurbits around in number of locations across South Florida. Incidence and occurrence showed some increase following recent rains.

**Downy Mildew**

Downy mildew has been reported in squash and melons from several locations across South Florida.
Recommended control consists of the following:

1. Use a resistant variety if possible.
2. Select planting sites with good drainage and use wide spacing between plants to increase air circulation, which promotes leaf drying.
3. Apply Bravo*, Ridomil/Bravo, chlorothalonil or mancozeb containing compounds, Aliette, Cabrio, Quadris or certain copper compounds, preventatively in areas with mild winters and a history of downy mildew. *Spraying mature watermelons with Bravo may result in sunburn of the upper surface of the fruit. DO NOT apply BRAVO to watermelons when any of the following conditions are present:
   a. Intense heat and sunlight
   b. Drought conditions
   c. Poor vine canopy
   d. Other crop and environmental conditions which may be conducive to increase natural sunburn.
   DO NOT combine BRAVO with anything except water for application for watermelons unless your prior use has shown the combination to be noninjurious to watermelons for your conditions of use.

Tomato Little Leaf

Tomato little leaf has been reported in scattered locations around Immokalee and in Palm Beach tomato fields over the past few weeks. Incidence and occurrence ranges from mostly low to moderate in most places to severe with at least one 40-acre field in the Immokalee area 60 – 70 percent affected.

Tomato little leaf first presented itself in the fall of 1986 when growers in the Quincy area of Florida encountered plants in their fields with unusual growth characteristics. Since that time, the condition has shown up repeatedly in widely scattered tomato producing areas of Florida including Southwest Florida, East Coast production areas from St Lucie County to Palm Beach County, Manatee County and other areas.

Tomato little leaf is a non-parasitic disease of tomatoes that causes virus-like symptoms in tomato. A similar disorder affects other crops and has been referred to as frenching in tobacco. Symptoms of this condition are characterized by unusual growth consisting of interveinal chlorosis in young leaves. Subsequent growth becomes severely distorted with leaflets along the mid-rib failing to expand properly resulting in a “little leaf” appearance. Leaflets are twisted and distorted. In addition, failure of blooms to set fruit and fruit distortion consisting of radial cracks extending from the calyx to the blossom scar is often seen. Overall the appearance is reminiscent of viral or phenoxy herbicide symptoms.

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

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

Currently, three soil microorganisms have been implicated as the causal agent. The first organism implicated was the bacterium Bacillus cereus. In controlled experiments, symptoms of frenching have been obtained from diffusion of a compound produce by B. cereus into small tobacco plants. B. cereus is a ubiquitous soil inhabitant and has been observed in large numbers in the root zone of tobacco plants with frenching symptoms. Another organism that has been implicated is the fungus Aspergillus wentii. This organism has been shown to produce a compound, which is a potent antagonist of leucine. In the lab minute quantities can produce symptoms on tobacco similar to frenching and can similarly affect the growth of other crops such as bean, tomato, sunflower and chrysanthemum.
Control consists largely of managing soil moisture to avoid water logging. Maintaining soil pH below 6.3 or less can also reduce development of the problem however changing soil pH should be approached carefully to avoid problems that might accompany reduced lime utilization in tomato. Affected plants generally resume normal growth once soil moisture levels become more favorable. Go to http://edis.ifas.ufl.edu/CV278 for photos and more information on little leaf

Up Coming Meetings

Hillsborough County

**November 18, 2003**  
**Strawberry School 2003**  
9:00 AM

GulfCoast Research and Education Center -Dover.  
13138 Lewis Gallagher Road  
Dover, Florida

Contact 813-659-2801

Manatee County

**November 13-22, 2003.**  
**Manatee County Farm City Week.**

**November 21-22, 2003**  
**Manatee County Tomato Festival and Rodeo**  
Fairgrounds/IMC Arena  
Palmetto, Florida

Gates open at 4 PM. Rodeo at 7 PM. Advance tickets $10 adults/ $5 kids. ($12 & $7 at the door). Educational displays, fresh produce (including fried green tomatoes!) and more. Sponsorships still available. For information or tickets call 941-722-1639.

**December 9, 2003**  
**CORE (General Standards)/Private Applicator Ag Pesticide License Exam Review.**  
9 AM - 11 AM. 2 CORE CEUs available.

Tests will be administered immediately after the training or can be scheduled for a later date. Registration requested. Please call 941-22-4524 for additional information.

Palm Beach County

**December 8, 2003**  
**General Standards/Core Test Review**  
8 AM - 10 AM  
Aquatic Weed Control Test Review  
1 PM – 3 PM

Clayton E Hutchinson Agricultural Center  
559 North Military Trail  
West Palm Beach, Florida

Contact Laura Powell at 561-996-1655.
Recognizing and Managing Target Spot
12:00 PM
and DuPont Crop Protection Product Update, including new Tanos label

Richard's Steak House
6545 Boynton Beach Blvd.
Boynton Beach, Florida

Contact Darrin Parmenter at 561-233-1725

Southwest Florida

Fall Vegetable Field Day
10:00 AM – Noon

UF/IFAS - SW Florida Research and Education Center
Hwy 29 N, Immokalee, FL

Contact 863-674-4092

St Lucie County

Grower/Industry Field Day
10:30 AM

Field day will focus on crop production systems and long-term crop rotational practices on soil quality, pest populations and marketable yield of tomato.

USDA, ARS Header Canal Farm Site
SW corner of State Road 70 and Header Canal Road
Fort Pierce, Florida

Contact Dan Chellemi at 561-462-5888

Other Meetings

December 3-4, 2003
Third International Agricultural Trade and Policy Conference

Naples Beach Hotel and Golf Club
Naples, Florida

For information, contact Sharon Borneman at 352-392-5930

March 23-27, 2004
ISHS International Symposium on Protected Culture in a Mild-Winter Climate
Orlando, Florida, USA.

Contact Dr. Daniel J. Cantliffe at 352-392-1928 ext. 203

June 21-24, 2004
1st International Symposium on Tomato Diseases and 19th Annual Tomato Disease Workshop
Grosvenor Resort at Walt Disney World
Orlando, Florida

For more information, visit http://plantdoctor.ifas.ufl.edu/istd.html
Websites

**Need information?** The EDIS (Extension Data Information Source) system is a web-based publication management system providing a comprehensive, single-source repository of all current UF/IFAS peer-reviewed documents. Go to [http://edis.ifas.ufl.edu/](http://edis.ifas.ufl.edu/) to access all UF/IFAS Extension Publications.

**UF/IFAS Featured Creatures provides in-depth profiles of insects, mites, nematodes, and other organisms that are of interest to Florida's residents.** An associated purpose is to support professionals in agriculture, horticulture, and urban pest control. To find detailed information on a variety of pest insects, go to [http://creatures.ifas.ufl.edu/](http://creatures.ifas.ufl.edu/)

**News You Can Use**

**Packinghouse Sanitation Reminders**

There are numerous microorganisms that can cause postharvest tomato decay and these are nearly ubiquitous in nature. With recent wet, foggy weather and increased pressure from bacterial leaf spot, botrytis and other diseases, packinghouses should redouble their efforts at sanitation. The following are brief reminders of areas that should receive special attention. This information was taken from the UF publication “Guide to Identifying and Controlling Postharvest Tomato Diseases in Florida” by Michael Mahovic, Steve Sargent and Jerry Bartz as well as personal communications with Drs. Sargent and Bartz. The report can be accessed online, complete with color pictures and detailed information about various postharvest diseases and additional information on sanitation procedures at [http://edis.ifas.ufl.edu/HS131](http://edis.ifas.ufl.edu/HS131).

**To maintain effective dump-tank sanitation, the water must have the following conditions constantly:**

- Maintain water temperature at 5°C (about 10° F) above tomato pulp temperature.
- Keep tomatoes immersed for no longer than 1-2 minutes to maximize pathogen kill while minimizing water uptake. Tomatoes should be removed from the dump tank in less than 2 minutes to minimize infiltration of the dump tank water.
- Avoid allowing fruit to float in stagnant water during crew breaks or for longer periods of time; this includes elimination of “dead spots” in the flume system.
- Fruit immersion should be no greater than two layers deep, ideally only a single layer, to minimize infiltration.
- Use an automated system for chlorine and pH control, with manual measurements recorded each 30 minutes to an hour.
- Drain dump tank, sanitize, rinse and refill with potable water daily water.
- Follow local regulations on disposal of treated water, and comply with all chemical labels (for chlorine, acidifier, etc.); the *container label is the law*!

**It is never known when a large pathogen population will be introduced into the dump tank.** Postharvest decays are invariably associated with wet field conditions. With the number of tomato fields and their greater variability in daily environmental conditions, an accurate system for forecasting pathogen populations is not yet feasible.

**Other recommendations include:**

- Tomatoes should be gassed no longer than 5 days; 3 days is the preferred maximum for best quality. Tomatoes that required 5 days or more of gassing to reach breaker stage were considered "inedible" by trained
taste panelists. Tomatoes gassed in bulk should be washed and pre-sorted prior to placement in the gassing room to minimize decay.

**✓ Plastic bins are more easily sanitized than unpainted wooden bins.** Surfaces that directly or indirectly contact tomatoes should be regularly cleaned and sanitized (picking buckets, bins, gondolas, packing line components [rollers, brushes, etc.], pallets); gassing and holding room walls, floors and refrigeration coils should also be regularly cleaned. Bacterial pathogens can form biofilms on surfaces that come in contact with fruit. These films are slimy and become sticky with age. Fresh films normally disperse readily in water, whereas older formed films resist wash efforts and become harder to remove. While there is no established timing for a packing line sanitation program, a prudent manager would spray an approved sanitizer on the line at the end of each work-day (if the line is especially dirty or grimy, then pressure wash before sanitizing), let sit overnight, then wash off before starting the next work day.

One very important precaution: If the sanitizer is a quaternary ammonia compound, make sure it does not rinse into the tank or flume!! If it does, the first chlorinated water to mix with the rinse will generate some nasty fumes. Also, the sponge bed may require some special attention since the sponges may absorb some of the sanitizer. One way around having contaminated sponges and biofilm formation is to have some chlorine in the final rinse water - just enough to prevent bacterial growth - 10 to 20 ppm should do it. There’s been a reluctance to chlorinate the final rinse of fruit because of chlorine’s corrosiveness, but under certain situations it may help avoid the biofilm development and 10-20 ppm should not be that corrosive.

✓ Sanitizers such as quaternary ammonia compounds work well on equipment but are not approved for direct contact with foods. Bin and packing line surfaces treated with these compounds can cause chemical injury to tomatoes and should be thoroughly rinsed with water prior to contact. Again, dump tanks cleaned with ammonia compounds should be thoroughly rinsed with water prior to filling. **Ammonia compounds react quickly with chlorine to form noxious gases.**

✓ Hand washing facilities should be available at all handling points, beginning in the field. Employees should wash their hands thoroughly with soap after each restroom use. Commercial hand sanitizers are good supplements to such washing, but are not effective sanitizers when used alone.

Sanitation must be effective at each step from harvest through handling - the adoption of only one recommendation from the above list is not sufficient for adequate control of decay pathogens. Each step adds a small amount of preventative control, which in conjunction with the other steps, act together to build to an effective platform for packinghouse sanitation.

Information provided courtesy of Phyllis Gilreath, Manatee County Extension Service and Alicia Whidden, Hillsborough County Extension Service.

**Update on Problems from Herbicide Row-middle Applications in Tomatoes**

This fall there have been at least four instances of tomato damage linked to applications of herbicide or herbicide combinations in row middles. The first thoughts were that it was due to a combination of Dual Magnum and Aim applied to the row middles. Aim has been exonerated and the use of Dual Magnum is being looked at.

The damage is similar to damage caused by other chloroacetamides herbicides sprayed over the top of tomatoes. The problem is that this type of damage has not been seen when Dual Magnum has been applied over the top of tomatoes, nor is it similar to the phyto from pre or PPI applications of Dual Magnum applied at extremely high rates. The tomatoes do outgrow the initial injury.
One thought is that the damage is caused by volitalization of the herbicide in the row middles. Neither Stall nor Syngenta research can duplicate the injury. Stall has placed tomato plants in pots surrounding pans of Dual Magnum mixes in greenhouses. The solutions have evaporated, but no damage was noted on any tomato plant. Field applications also have not duplicated the injury. The injury also has not been seen on a large number of commercial applications using Dual Magnum.

One common factor of all the areas where injury has been seen is that the fields have been very wet. In one instance, a part of the field that was wet had injury symptoms, but another area of the field that was not as wet (better drained) did not show the injury symptoms. The rows ran from wet to dry areas so the injury was seen down the row, eliminating application changes.

Syngenta is aware of the problems, and have been trying to establish the cause of the problem. They are not pulling the label for row middle application, but also are not pushing this type application until the cause of the problem can be identified. Everyone should be aware of the wet field conditions being linked to the problems and that applications should not be made to wet row middles.

Stall – UF/IFAS Vegetarian 03-11

Quotable Quotes

Some people try to turn back their "age odometers". Not me; I want people to know why I look this way. I've traveled a long way and some of the roads weren't paved. – Anon

Just because you do not take an interest in politics doesn't mean politics won't take an interest in you. -- Pericles

No man's life, liberty, or property is safe while the legislature is in session. -- Mark Twain

Women and cats will do as they please, and men and dogs should relax and get used to the idea. -- Robert A. Heinlein

Being a hero is about the shortest-lived profession on earth. -- Will Rogers

Opportunity knocks but once - temptation leans on the doorbell. - Anon

On the Lighter Side

Gravestone Inscriptions

Harry Edsel Smith of Albany, New York:
Born 1903 - Died 1942
Looked up the elevator shaft to see if the car was on the way down.
It was.

In a Thurmont, Maryland cemetery:
Here lies an Atheist
All dressed up and no place to go.

In a London, England cemetery:
Here lies Ann Mann,
Who lived an old maid
But died an old Mann.
In a Uniontown, Pennsylvania cemetery:
Here lies the body of Jonathan Blake.
Stepped on the gas
Instead of the brake.

In a Silver City, Nevada cemetery:
Here lays The Kid.
We planted him raw.
He was quick on the trigger
But slow on the draw.

In a cemetery in England:
Remember man, as you walk by,
As you are now, so once was I.
As I am now, you soon will be.
Prepare yourself and follow me.

To which someone replied by writing on the tombstone:
To follow you I'll not consent
Until I know which way you went

Last, from Boot Hill, in Tombstone, Arizona:
Here lies Lester Moore
One slug from a 44
No Les
No More

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