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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

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Before this past weekend's cool down, mostly warm dry weather has dominated South Florida weather the last few weeks. Most of South Florida has received less than one inch of rain during the month of March, except for some east Coast locations which received a little over an inch and a half of rain. Daytime highs were in the 70s and 80s while nighttime lows were in the 50s and 60s with some 40's and even some 30's in normally colder areas reported this past weekend.

Most of the rainy season of 2006 and the current dry season of 2006-2007 has been quite dry across South Florida. Dry conditions over an extended period of time have resulted in large rainfall deficits across most of South Florida. Many areas are between 2 – 6 inches below normal rainfall for the year to date. As a result severe drought conditions have developed around Lake Okeechobee and far northern Palm Beach County while moderate drought conditions continue for rest of South Florida. Wells in many areas are 10 -30 percent below normal levels.

Many growers have begun to report widespread problems with blossom end rot in susceptible crops and extended dry weather is starting to hurt some fields. Dry conditions have also lead to an increase in salt

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Hours Below Certain Temperature (hours)							
	Min	Max		40°F	45°F	50°F	55°F	60°F	65°F	70°F	75°F
Balm											
3/19 - 4/8/2007	43.8	83.8	0.00	0.0	0.9	25.1	4.6	64.6	101.8	52.6	17.8
Ft Lauderdale											
3/19 - 4/8/2007	52.8	85.2	1.63	0.0	0.0	0.0	7.0	16.9	10.4	32.2	8.2
Fort Pierce											
3/19 - 4/8/2007	45.2	83.5	1.61	0.0	0.0	15.7	15.0	15.4	7.5	9.6	20.9
Homestead											
3/19 - 4/8/2007	49.6	82.8	1.63	0.0	0.0	1.4	21.9	18.5	7.7	63.6	19.5
Immokalee											
3/19 - 4/8/2007	39.7	87.4	0.10	0.2	7.3	21.4	0.8	6.4	90.1	99.3	29.7

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related problems in some places. Irrigation restrictions are in place in a number of locations in South Florida.

Crops coming to market include cabbage, celery, cucumbers, eggplant, endive, escarole, lettuce, okra, parsley, peppers, potatoes radishes, snap beans, squash, strawberries, sweet corn, tomatoes, and specialty items. A few watermelons are beginning to trickle on to the market.

The short-term forecast from the National Weather Service in Miami calls for a warming trend following this weekend's cool down. Temperatures will return to the mid to upper 80's with a 20 -30% chance of showers through Thursday. 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 around Southwest Florida report that whitefly pressure remains high in all crops. Scouts report that nymphs are developing in older tomatoes, peppers, potatoes and eggplants. Some growers report spraying 3 – 4 times per week and not getting control. Whitefly-induced silverleaf has also been observed in a number of squash fields around SW Florida indicating high whitefly numbers. Whiteflies have also reached high numbers in some pepper plantings where they are causing problems with sooty mold on fruit.

Respondents in Homestead indicate that whitefly pressure is very high in a number of locations. TYLCV and Bean Golden mosaic are widespread with many tomato fields nearly 100% infected with TYLCV.

East Coast growers report that whitefly numbers are steadily increasing in a number of crops including tomato, squash, cucumbers and pepper. Some problems with silverleaf have been noted in squash.

Around Manatee County, respondents note that whitefly numbers are variable. Reports indicate that in general numbers have been higher in the Ruskin area with lower numbers being reported around Myakka.

Low whitefly numbers are being reported around Hillsborough County.

Growers are reminded that pesticide applications alone will not be adequate to control whitefly vectored TYLCV problems. Below are the current whitefly control recommendations from IFAS.

Recommendations for Management of Whiteflies, Begomovirus, and Insecticide Resistance for Florida Vegetable Production

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, **both biotype B and biotype Q (if present)**, and lower the initial infestation level during the cropping period.

- 1. Establish a minimum two-month crop free period during the summer, preferably from at least mid-June to mid-August.**
- 2. Use a correct crop destruction technique, which includes destruction of existing whitefly populations in addition to the physical destruction of the crop.**

- a. Promptly and efficiently destroy all vegetable crops **within 5 days of final harvest** to maximally 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 quickly kill whiteflies.
- 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, **both biotype B and biotype Q (if present)**, by strictly adhering to cultural practices.

1. Use proper pre-planting practices.

- a. Plant whitefly and virus-free transplants.
 - 1) Do not grow vegetable transplants and vegetatively propagated ornamental plants (i.e. hibiscus, poinsettia, etc.) at the same location, especially if bringing in plant materials from other areas of the US or outside the US.
 - 2) Isolate vegetable transplants and ornamental plants if both are produced in the same location.
 - 3) Do not work with or manipulate vegetable transplants and ornamental plants at the same time.
 - 4) Practice worker isolation between vegetable transplants and ornamental crops.
 - 5) Avoid yellow clothing or utensils as these attract whitefly adults.
 - 6) Cover all vents and other openings with whitefly resistant screening. Use double doors with positive pressure. Cover roofs with UV absorbing films.
- 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 crop season.
- e. Use TYLCV resistant tomato cultivars (see additional information below for list) where possible and appropriate, especially during historically critical periods of virus pressure. Whitefly control must continue even with use of TYLCV resistant cultivars because these cultivars are able to carry the virus.
- f. Use TYLCV resistant pepper cultivars (see additional information below for list) when growing pepper and tomato in close proximity.
- g. Use ultraviolet light reflective (aluminum) mulch on plantings that are historically most susceptible to whitefly infestation and TYLCV infection.

2. Use proper post-planting practices.

- a. Apply an effective insecticide to kill whitefly adults 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 roguing 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 and to eliminate alternative whitefly and virus host plants.
- d. Dispose of cull tomatoes as far from production fields as possible. If dumped in pastures for cattle feeding, the 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 and, if present, they should be controlled by mowing or with herbicides.
- 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.

C. Insecticidal Control Practices.

1. Use a proper whitefly insecticide program. *Follow the label!*

- a. On transplants in the production facility, do not use a neonicotinoid insecticide if biotype Q is present. If biotype B is present, 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 neonicotinoids in the field **only during the first six weeks of the crop**, thus leaving a neonicotinoid-free period at the end of the crop.
- c. As control of whitefly nymphs diminishes following soil drenches of the neonicotinoid insecticide or after more than six weeks following transplanting, use rotations of insecticides of other chemical classes including insecticides effective against biotype Q. 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 because this can kill natural enemies, thus interfering with biological control, and because this can select for biotype Q, if present, which is more resistant to many insecticides than biotype B.

2. Soil applications of neonicotinoid insecticides for whitefly control.

- a. For best control, use a neonicotinoid as a soil drench at transplanting, preferably in the transplant water.
- b. Soil applications of neonicotinoids through the drip irrigation system are not recommended.
- c. Do not use split applications of soil drenches of neonicotinoid insecticides (i.e. do not apply at transplanting and then again later).

3. Foliar applications of neonicotinoid insecticides for whitefly control.

- a. If foliar applications of a neonicotinoid insecticide are used instead of or in addition to soil drenches at transplanting, **foliar applications should be restricted to the first six weeks after transplanting**. Do not exceed the maximum active ingredient per season according to the label.

b. Follow scouting recommendations when using a foliar neonicotinoid insecticide program. Rotate to non-neonicotinoid insecticide classes after the first six weeks and do not use any neonicotinoid class insecticides for the remaining cropping period.

D. Do unto your neighbor, as you would have them do unto you.

1. Look out for your neighbor's welfare.

This may be a strange or unwelcome concept in the highly competitive vegetable industry but it is in your best interest to do just that. Growers need to remember that should the whiteflies develop full-blown resistance to insecticides, especially the neonicotinoids, it's not just the other guy that will be hurt—everybody will feel the pain!

2. Know what is going on in the neighbor's fields.

Growers should try to keep abreast of operations in upwind fields, especially harvesting and crop destruction, which both disturb the foliage and cause whitefly adults to fly. Now that peppers have been added to the list of TYLCV hosts, tomato growers will need to keep in touch with events in that crop as well.

For additional information:

IRAC (Insecticide Resistance Action Committee) Website – <http://www.ircac-online.org>.

More suggestions for breaking the whitefly/TYLCV cycle and a list of TYLCV resistant pepper cultivars can be found in articles by Dr. Jane Polston in the 2002 and 2003 Proceedings of the Florida Tomato Institute:

http://swfrec.ifas.ufl.edu/veghort/docs/tom_inst_2002_091202.pdf and <http://grec.ifas.ufl.edu/TOMATO%202003.pdf>, respectively.

A listing of TYLCV resistant tomato cultivars can be found in an article by Dr. Jay Scott in the 2004 Florida Tomato Institute Proceedings: <http://grec.ifas.ufl.edu/TomatoOptimized.pdf>

Pepper Weevil

Reports from Homestead indicate that pepper weevils are widely present in large numbers. Some estimates indicate that approximately 50 % of the crop is infected. Dr. Dak Seal, Entomologist at TREC reports Actara is the main tool for control of this pest and advises that addition of Pounce improves efficacy.

Around Immokalee pepper weevils are present in a number of fields. Pressure is mostly low to moderate with highest numbers being found in older fields with a history of weevil problems and in the more susceptible hot pepper varieties.

Pepper weevils are present in a few locations on the East Coast, primarily in older pepper in locations where they are a perennial problem.

Reports from the Ruskin area indicate that weevils are present in pepper.

Worms

Respondents in Homestead indicate that worms have been low but are increasing. Fall armyworms are causing some problems in sweet corn but silk fly and the resulting maggots are causing the grower the most trouble. Some scattered problems with beet armyworm have also been reported.

Dr. Dak Seal reports that diamondback moth numbers range from low to moderate depending on location. He advises that there are a number of effective products for their control and reports that Bt products have regained some efficacy for control of diamondback moth larvae.

Reports from Manatee County indicate steady worm pressure with a variety of southern armyworms, beet armyworms, loopers and tomato fruitworms being found. A few pinworms are also present.

Respondents in Hillsborough report light worm pressure.

East Coast growers and scouts report that worm pressure remains low with a few loopers and beet armyworm showing up here and there. Some problems with pinworm have been reported these appear to be concentrated in one area.

Around Southwest Florida, worm pressure remains low despite the recent full moon possibly due to the number of sprays being applied for whitefly control. Scouts report finding a few eggs along with a few beet and southern armyworms around. Melonworms and pickleworm are also low. Scouts report very low pinworms with almost none being attracted to traps.

Reports from the Glades indicate that worms are building up in sweet corn around the EAA. Silkfly is also widely present and causing problems for growers.

Leafminer

Respondents in Southwest Florida report that leafminer pressure has dropped off in most places and good parasitism is occurring.

Reports from Palm Beach and surrounding counties report that leafminer pressure has eased up in most places over the past few weeks, but growers are still spraying young tomato and pepper in some places.

Growers and scouts in the Manatee/Ruskin area report that leafminers are still heavy in some areas and light in others.

Thrips

Respondents on the East Coast continue to battle western flower thrips (*Frankliniella occidentalis*) in numerous locations from Fort Pierce to Boca Raton. Sources indicate that the thrips species have been positively identified by reputable sources.

Growers and scouts are reporting problems with heavy infestations on beans, pepper, eggplant, tomato, cucurbits and specialty items like basil and cilantro. One scout indicated that watermelon seems to be the only crop they do like. Damage includes etching and russetting of fruit and foliage. Reports indicate that growers are able to beat them back but have had difficulty in obtaining long-term control. Problems are said to be worse in planting close to older existing fields.

Around Immokalee, thrips have increased somewhat but numbers are up and down. Counts remain relatively low with up to 8 per bloom in most places. Reports indicate that these are primarily Florida flower thrips (*Frankliniella bispinosa*).

A few thrips are also showing up around Manatee County.

In Homestead, reports indicate that *Thrips palmi* have reached end of season high levels and are causing significant problems in beans, eggplant, and pepper

Aphids

Around Immokalee, aphids are present on a variety of crops and some colony formation has been noted..

Reports from Palm Beach County indicate that aphids are widely present and are trying to build in a number of crops including eggplant, pepper squash and specialty items including oriental brassicas.

A few aphids have been reported around Manatee County but numbers remain mostly low.

Spider mites

Growers and scout on the East Coast indicate that spider mites continue to cause problems on cucumbers, eggplant and especially in specialty crops including herbs.

Around Southwest Florida, spider mites present in eggplants as well as tomato and watermelon. Occurrence is sporadic

Respondents in Manatee County note some scattered problems with mites.

Diseases

Watermelon Vine Decline

Watermelon vine decline has been diagnosed in two widely separated fields around Immokalee. In the first case a 30 acre block was affected was destroyed as nearly all fruit displayed internal necrosis. In the second nearly 100 acres was affected and plants went down in a 3-4 period and fruit symptoms are widely present.

Dr Scott Adkins USDA/ARS Fort Pierce advises that squash vein yellowing virus (SqVYV) has been found in watermelons from one of the fields in the Immokalee area. This is the recently identified virus that has been shown to cause watermelon vine decline by scientists with USDA-ARS, University of Florida and FDACS-DPI. Symptoms in the Immokalee current watermelon vines were not exactly as observed in previous instances of vine decline where watermelon vines collapsed shortly before harvest leaving fruit that was often unmarketable due to rind/flesh discoloration. Although discoloration of fruit rind/flesh was observed in this latest outbreak, total and rapid vine collapse was not observed. However, many vines exhibited striking yellow symptoms on leaves.

These yellowing symptoms suggested the presence of a begomovirus and samples were sent to Dr. Jane Polston at Gainesville. Her laboratory has found at least one begomovirus, and it is likely *Cucurbit leaf crumple virus* (CuLCrV), a virus that was first observed in northern Florida last fall in squash. Definitive identification awaits further analysis next week. Eric Natwick at University of California in Holtville writes that CuLCrV reduces fruit production in watermelon when plants are infected early. Watermelon fruit are apparently not distorted or discolored (unlike with SqVYV – vine decline) but size can be reduced. Beans and soybeans are other hosts for CuLCrV.

Samples have also been forwarded to Dr. Bill Wintermantel, USDA-ARS in Salinas, CA, for crinivirus analysis. Criniviruses are another type of whitefly-transmitted virus that infects cucurbits in the western US.

Watermelon vine decline was first observed to be affecting watermelons in the Devils garden Area of Hendry County in March 2003, when growers began to report a rapid and mysterious decline in nearly

mature vines. Since that time it has been widely reported in all major watermelon production areas of South Florida.

Watermelon vine decline is particularly insidious in that it strikes as the crop approaches harvest or soon after first harvest. Disease progress is very rapid. Symptoms may develop and affect more than 80% within a matter of a week to 10 days. Disease incidence (dead plants) is sometimes near 100% and although some of the declined vines produce new healthy-looking shoots, these no longer produce viable fruit.

Symptoms include a slight internal yellowing of stem tissue in the crown area, wilting of the vines, scorched and brown leaves, defoliation, and rapid mature vine collapse. Frequently, fruit are observed with greasy necrosis (brown) on the interior portion of the rind that rendered the fruit non-marketable. Fruit quality was greatly reduced.

Bob Morrissey, executive director of the Plant City, Fla.-based National Watermelon Association, says vine decline has been so devastating that some farmers have bailed out of farming altogether. “It has cost the Florida growers over \$60 million in the last four years,” he says. “If that doesn’t state what the magnitude of the problem, then nothing will. Sixty million to the watermelon industry is absolutely monstrous.”

Although the causal agent eluded researchers for some time a team composed of Scott Adkins, Benny Bruton and Chandrasekar Kousik of the U.S. Department of Agriculture, Carlye Baker of the Florida Department of Agriculture and Consumer Services, UF Nematology and Entomology experts Phil Stansly and Susan Webb, UF Plant Pathologist Pam Roberts, UF researchers Rosa Muchovej and Diann Achor and UF Extension agents Phyllis Gilreath, Gene McAvoy and Alicia Whidden, now believe that watermelon vine decline is caused by a whitefly vectored virus - squash vein yellowing virus. Researchers think that silverleaf whiteflies spread the virus to watermelons by feeding on infected plants and moving on to new healthy ones.

In October of 2003, Alicia Whidden, a Multi-County Vegetable Agent based at the Hillsborough County Cooperative Extension Office, and Susan Webb, an entomologist with UF-IFAS at Gainesville, were collecting samples of virus-infected squash as part of a statewide survey of insect-transmitted viruses in cucurbit crops, a major focus of Webb’s research and extension efforts. One of the 40 samples from one of the fields contained a virus new to Florida squash. Testing for over 20 possible viruses gave negative results. No clues could be found to its identity except that it was not aphid-transmitted and that it seemed to be limited to summer and winter squashes and pumpkin in greenhouse tests. About 18 months later, Webb and Whidden were able to enlist the help of DOACS plant virologist Carlye Baker (DPI, Gainesville, FL) and USDA plant virologist Scott Adkins (Fort Pierce). Purification and partial sequencing of the virus and further host range tests in Adkins’s laboratory, the discovery of unusual viral inclusions by Baker, and results of electron microscopy by Diann Achor at the Citrus Research and Education Center in Lake Alfred have led to the conclusion that this virus might be a new whitefly-transmitted virus. Experiments in Webb’s laboratory confirmed that the virus is transmitted by silverleaf whitefly. It appeared to be related to, but not the same as, cucumber vein yellowing virus (CVYV). CVYV has been a problem in the Middle East for many years and has recently been found in Spain and Portugal. It is not related to the whitefly-transmitted viruses in tomato and snap bean crops in Florida but is more closely related to the aphid-transmitted viruses normally found in squash.

At the same time, Adkins and Baker were also working on a virus that appeared to be involved in watermelon vine decline, a devastating disease of watermelon affecting southwest Florida for the past few years. Adkins’s laboratory discovered that the squash virus from Hillsborough County also caused severe necrosis and death of watermelon seedlings, and Baker found the same unusual viral inclusions in tissue infected with the squash virus as she found in Adkins’s watermelon field decline isolate. Using a PCR-based detection method, Adkins’s laboratory has since found some additional evidence that the virus from squash may be the same as the virus that appears to be involved in watermelon vine decline. Although more work needs to

be done to confirm this finding, the researchers involved suggest that watermelon growers manage whitefly populations much more carefully than has been recommended in the past.

While there is still some confirmation work to be done, there is conclusive evidence that has confirmed the role of the virus. Pam Roberts and co-workers at the Southwest Florida Research and Education Center are conducting field tests to verify the involvement of the new virus in vine decline. Phyllis Gilreath and Gene McAvoy, county extension faculty in Manatee and Hendry counties, continue to be involved in field surveys for the disease. Now that causal organism has been identified, researchers are focusing on ways farmers can control the virus-spreading whiteflies, whether by using things like reflective mulch or different pesticides.

TYLCV

Around Southwest Florida, tomato yellow leaf curl has reached very high levels in many tomato fields with many fields in the 30- 50% infection range. There are several hotspots around Immokalee where incidence has risen to 90 - 100% - including the UF/IFAS SWFREC research station.

Growers are advised to implement the UF/IFAS Recommendations for Management of Whiteflies, Begomovirus, and Insecticide Resistance for Florida Vegetable Production in their attempts to manage TYLCV – see above under whitefly.

Growers and scouts in Manatee County report that TYLCV incidence is variable depending on location. Some fields around Wimauma reportedly have blocks nearing 85 -100% at second tie while in others areas incidence remains relatively low around 5 %.

Respondents on the East Coast report TYLCV is increasing everywhere and is high in some young plantings where it will be a problem.

Reports from Homestead indicate that TYLCV remains a major issue in tomato with most fields nearing 100% infection although the crop is nearly finished. Some have indicated that the situation is as bad as or worse than it has ever been.

Downy Mildew

Around Immokalee downy mildew continues to be a problem in cucurbits and incidence continues to increase. In addition to cantaloupes, cucumbers, and squash, a few growers are reporting problems in watermelons as well. Organic growers in particular are having difficulty in achieving control and disease is a limiting yields.

On the East Coast, downy mildew remains a threat on cucumbers and squash especially around older infected plantings.

Leaf symptoms can be used to diagnose downy mildew in the field in most cases. On cucurbits other than watermelon, small yellowish areas occur on the upper leaf surface. Later, a more brilliant yellow coloration occurs with the internal part of the lesion turning brown.

Usually the spots will be angular as they are somewhat restricted by the small leaf veins. When the leaves are wet, a downy white-gray-light blue fungus growth can be seen on the underside of individual spots (lesions). As the disease develops an exaggerated upward leaf curling will often occur.

Downy mildew is a very destructive disease and progresses rapidly under favorable conditions. Fungicides are much more effective when applied well before symptoms are visible. Initiating a downy mildew control program after symptoms have been detected is much more likely to fail.

The most effective spray programs in trials performed by Dr Gerald Holmes, Plant Pathologist at NCSU included the fungicides Tanos, Previcur Flex, and Gavel, tank mixed or alternated with Curzate, Manzate and/or Bravo.

In designing a fungicide program growers should also observe pre-harvest intervals and practice resistance management by alternating products belonging to different fungicide groups.

Product & Formulation	Pre-harvest Interval (days)	Fungicide Group
Tanos 50WG	3	11+27
Previcur Flex 6F	2	28
Ranman 400SC	0	21
Gavel 75DF	5	22+M
Curzate 60DF	3	27
Manzate 75WG	5	M
Bravo 6SC	0	M

The following is a sample fungicide program for cucumber downy mildew that incorporates field-tested efficacy, observes pre-harvest intervals and practices sound resistance management:

Tanos 50WG, 8 oz + Manzate Pro-Stick* 75DG, 2 lb alternated every 5 to 7 days with Previcur Flex 6F, 1.2 pt + Bravo Weather Stik* 6SC, 2 pt.

*Other labeled formulations of mancozeb include Penncozeb and Dithane; other labeled formulations of chlorothalonil include Echo and Equus.

Some growers around South Florida are reporting good control using high rates of Previcur alternated with Ranman. They stress that it important to begin application early before symptoms are seen, even as early as the first true leave stage.

Beginning near harvest and based on the frequency of harvest, use a product(s) with the appropriate pre-harvest interval.

Late Blight

Although it appeared that late blight was beginning to abate around Southwest Florida several growers and scouts are reporting that it has flared up over the past few weeks and new infections over the past few weeks.

Reports from Hillsborough County indicate moderate to high late blight pressure at this time.

Respondents on the East Coast report that late blight is mostly low in a number of widely scattered locations. Little new activity has been noted.

Respondent in Homestead report that late blight is present in several locations around Homestead.

Very little late blight is present around Manatee County and most is dry and inactive.

Powdery Mildew

Growers and scouts around Southwest Florida are reporting increasing problems with powdery mildew on beans, cucumbers, melons pepper, tomatoes and squash. Incidence and severity is high in some older fields. Powdery mildew is more wide spread and a bigger problem in squash.

Reports indicate that powdery mildew is also widely present on cucurbits on the east Coast. Reports of indicate that powdery mildew is heavy on pepper in several locations.

Powdery mildew is also widely present on squash around Homestead.

Management of Sweet Corn Foliar Diseases

Dr Rick Raid, Pathologist UF/IFAS/EREC reports that common rust, caused by *Puccinia sorghi*, and northern corn leaf blight, caused by *Exserohilum turcicum*, have both been reported in the Glades, though levels have been lower than normal due to the cold snap in February. Climatic conditions favoring infection should be very favorable over the coming weeks, so growers and scouts are urged to be on the lookout for these important diseases. Common rust typically likes to infect young, expanding tissues and plants, while NCLB usually starts with older, fully expanded foliage. For this reason, rust is usually the disease of primary concern during the early part of the season, and NCLB is the disease of primary concern later in the season. Both rust and NCLB can be controlled with timely applications of strobilurin or sterol inhibitor fungicides. These should be tank-mixed with an EBDC fungicide and also alternated as a strategy for slowing the development of fungicide resistant strains of the pathogens. Due to limitations on the number of applications of the sterol inhibitors and strobilurins, a recommended management strategy is to apply EBDC fungicides early in the cropping cycle, and then incorporate the sterol inhibitors and strobilurins into a program as the plant matures and develops significant foliage. In scheduling sprays, keep in mind that the preharvest interval for sterol inhibitors is 14 days, while it is only 7 for the strobilurins.

Powdery Mildew and Rust of Snap Beans

Powdery mildew and rust are both diseases of primary concern on spring snap beans. Both are now being seen routinely in the Glades. While rust can be controlled quite effectively using resistant varieties, powdery mildew can attack a majority of bean varieties currently grown in Florida. Sulfur is a good economical candidate for powdery mildew control unless temperatures get too warm and then phytotoxicity may occur. In that case, there are a number of different fungicides that have been shown to be effective. As a rule, the strobilurins and sterol inhibitors are more effective against powdery than the broad-spectrum protectants. As for rust, sulfur is only marginally effective against it, so the strobilurins and sterol inhibitors would be a first choice in this regard. With an effective scouting program to prevent massive disease buildup, both of these diseases can be controlled with relatively few applications of a sterol inhibitor and/or a strobilurin.

Bean rust, caused by the fungus *Uromyces appendiculatus*, affects most varieties of snap beans and dry beans grown in Florida.

The pustules characteristic of the disease typically appear on leaves and occasionally on pods. Rust symptoms begin as small whitish, raised pustules. Later, the pustules become distinct reddish-brown spots on the under side of leaves. The characteristic color of the pustules is due to the production of great masses of urediospores. Under magnification, the spores are brown and round in shape with short spines.

If not controlled, pustules may cover much of the leaf surface causing premature leaf drop. In some varieties, pustules may be surrounded by yellow haloes.

***U. appendiculatus*, unlike most rust fungi, does not require an alternate host for completion of its life cycle.**

Bean rust is primarily found during the cooler months when heavy dews provide the moisture needed for spore germination and infection of host plants. In South Florida, rust usually appears in January and becomes progressively worse as the season progresses. In severe cases losses can approach 100%.

The optimum temperature for spore germination is from 63.5-72.5°F. No germination occurs below 39°F or above 81.5°F. After infection, symptoms are seen in about five days and spores produced in another five to ten days.

Variation in pustule size and other symptom patterns is due to the many races of the bean rust fungus. Each race is pathogenic on specific bean cultivars. If resistant varieties are planted, control of rust can be very good. However, new races appear almost as fast as new varieties are released. As a result, most cultivars are susceptible to one or more races of the rust fungus.

Prompt crop destruction after harvest is very important in the control of rust. If fields are abandoned after picking, rust can continue to develop and serve as a source of inoculum for fields in production.

Early control of this disease is important. Brown clouds made of millions of rust spores can sometimes be seen above fields in severe cases. Such inoculum loads can make it difficult to control rust even with the most intensive spray schedule.

Control centers around the application of protectant fungicides. Labeled fungicides include chlorothaliniil (Bravo, Echo) and Nova. Initiate the spray program prior to the first sign of rust if rust is an annual problem. Where rust is sporadic in occurrence, begin the spray program at first sign of the disease. Subsequent sprays should be applied at 5 to 7 day intervals.

Lettuce Downy Mildew

Downy mildew has been reported in the Glades but has been of minimal impact due to preventative applications of maneb and phosphonic fungicides. IPM specialists recommend that translaminar fungicides, such as Reason, Forum, Previcur, and Tanos be incorporated into a program occasionally to relieve pressure on the phosphonics. These too provide good control. Read labels for potential plant-back restrictions.

Foliar Diseases of Parsley and Dill

It used to be that both parsley and dill were grown in Florida with no or few fungicide applications. However, powdery mildew has been observed on parsley for the third year in a row and for the second on dill. Sulfur or a strobilurin fungicide are the best bets for controlling this disease. *Alternaria leafspot*, caused by *Alternaria radicina*, is another disease of economic potential and growers should be on the lookout for its presence. Now observed on an annual basis, the strobilurins are definitely the compounds of choice for this disease.

Bacterial Spot

Growers and scouts on the East Coast indicate that bacterial spot is still active on pepper and tomato. Younger crops especially tomato are still being affected.

Around Immokalee, bacterial spot is present in mostly low levels in tomato and peppers with little new activity being reported.

Reports from Homestead indicate moderate bacterial spot pressure continues to be present in a number of tomato fields.

Around Manatee County bacterial spot is mostly low and staying low in the bush.

Powdery Mildew

Growers and scouts around Southwest Florida are reporting increasing problems with powdery mildew on beans, cucumbers, melons pepper, tomatoes and squash. Incidence and severity is high in some older fields. Powdery mildew is more wide spread and a bigger problem in squash.

Reports indicate that powdery mildew is also widely present on cucurbits on the east Coast. Reports of indicate that powdery mildew is heavy on pepper in several locations.

Powdery mildew is also widely present on squash around Homestead.

Gummy Stem Blight

Gummy stem blight is increasing on watermelon at number of locations around Southwest Florida.

Watermelon Mosaic

Respondents around SW Florida are beginning to report problems with mosaic in watermelon.

Blossom End Rot

Growers across South Florida are reporting widespread problems with Blossom End Rot (BER).

BER is caused by a lack of calcium in the developing fruit that is often due to stress on the roots that impedes water uptake. Since calcium moves in the transpiration stream, anything that slows or impedes transpiration slows calcium uptake. Some common causes include excess soluble salts in the soil, too wet or too dry soil conditions, or some other stress on the root system, including nematodes or soil borne pathogens. Dry, persistent winds and low humidity can also contribute to water stress and cause problems. BER can also be triggered under conditions of cool, overcast weather, when plants are not transpiring enough to supply sufficient calcium to young, developing fruit.

Before spraying calcium, which are usually too little/too late, growers should look at their water management practices or other factors such as weather events earlier in the season or soil characteristics or previous topography prior to cropping.

Cucurbit leaf crumple virus

The following information on cucurbit crumple leaf is taken from the UF/IFAS EDIS FACT Sheet Whitefly-Transmitted Cucurbit Leaf Crumple Virus in Florida by S. E. Webb, F. Akad, T. Nyoike, O. E. Liburd, and J. E. Polston. See <http://edis.ifas.ufl.edu/IN716> for full document and photos.

In November 2006, *Cucurbit leaf crumple virus* (CuLCrV), a virus new to Florida, was found in squash (*Cucurbita pepo* L.) fields in north central and northeast Florida. Leaves of yellow straightneck squash and zucchini were thickened and distorted, as well as curled and crumpled. The symptoms on infected yellow straightneck squash were slightly different from those on zucchini. The leaves of yellow straightneck squash plants were rounded on the edges while leaves of zucchini plants were not. Zucchini fruit did not show obvious symptoms, but the fruit from infected yellow straightneck squash were streaked with green, making them

unmarketable. Feeding by whitefly nymphs causes silvering of leaves of squash and blanching of yellow-fruited squash and yellow blotchiness of green-fruited squashes. The whitefly induced leaf silvering is distinct from cucurbit leaf crumple disease and should not be confused with it.

The symptoms are "somewhat different on zucchini and yellow summer squash. The virus caused the leaves to be thickened and distorted on both types of squash, however, as well as curled and crumpled. Yellow squash leaves became rounded on the edges. The zucchini fruit did not show obvious symptoms but yellow squash was streaked with green virus." Reports indicate that symptoms look different than other virus symptoms seen in cucurbits in Florida.

***Cucurbit leaf crumple virus* is a begomovirus reported from the western United States (Arizona, Texas and California) and northern Mexico (Brown et al., 2000, Brown et al., 2002)** (*Cucurbit leaf crumple virus* has been known in some locations as *Cucurbit leaf curl virus*). *Cucurbit leaf crumple virus* is able to infect most cucurbits including cucumber, muskmelon, squash, pumpkin, and watermelon, and has been reported to infect bean. Honeydew, Crenshaw, and casaba melons appear to be immune (Natwick, 2003). As with other begomoviruses, this virus is transmitted in a persistent manner by various biotypes of the whitefly, *Bemisia tabaci* (Genn.), including the silverleaf whitefly (*B. tabaci* biotype B = *B. argentifolii* Bellows & Perring). The adult whitefly must feed for a minimum of 30 minutes on the infected plant and can only transmit the virus after a delay of 6-8 hours. Once the whitefly is able to transmit the virus, it can continue to do so for days. The virus cannot be transmitted mechanically and is unlikely to be transmitted through seed.

Whitefly populations were exceptionally high in fall 2006 in north central and northeast Florida, possibly because of the drought conditions during the summer. Heavy summer rains can reduce populations under normal conditions, but whiteflies may also have become concentrated on irrigated crop plants when weed hosts wilted. These high populations may be responsible for the high incidences of *Cucurbit leaf crumple virus*-infected plants in both locations.

Management of this new virus will not be much different than management of other begomoviruses in vegetable crops such as *Tomato yellow leaf curl virus* in tomato (Schuster and Polston, 1999, Momol et al., 2001). Virus- and whitefly-free transplants should be used, and transplants produced in states where this virus is known to be a problem (Texas, Arizona, California) should not be planted in Florida. Where whiteflies are a problem, a soil-applied neonicotinoid insecticide such as imidacloprid (Admire[®]), thiamethoxam (Platinum[®]), or dinotefuran (Venom[®]) should be used at planting. If a foliar application of dinotefuran is used instead of a soil application, it is best to apply it in the first 30 days of the crop, before flowering. In addition to protecting bees, it also will help limit the exposure of the whitefly population to neonicotinoids during the latter part of the crop cycle. The crop should be monitored regularly for the presence of adult whiteflies. An application of pymetrozine (Fulfill[®]) will reduce the number of adults and nymphs and can help slow virus spread into and within the crop. Other materials that can be used to reduce adult populations include endosulfan or a combination of bifenthrin and endosulfan. A new product, spiromesifen (Oberon[®]), is effective against immature stages of the whitefly as is buprofezin (Courier[®]), an insect growth regulator. Although spiromesifen and buprofezin affect only reproduction and survival of immatures, they can help reduce secondary spread within and between fields by slowing the increase of the whitefly population. Because of concerns about insecticide resistance in whiteflies, it is critically important to observe the restrictions on the number of applications, to rotate insecticide applications among chemicals in different classes, and never follow a soil application of any neonicotinoid with a foliar application of another neonicotinoid.

Further information on management of both begomoviruses and resistance to neonicotinoids can be found on the Whitefly MoA poster at the IRAC (Insecticide Resistance Action Committee) Website - <http://www.irc-online.org>

In addition to starting with virus- and whitefly-free transplants, other effective cultural controls include avoiding planting next to older, whitefly-infested crops (virus and whitefly hosts such as beans and other

cucurbits, but also whitefly hosts such as cabbage, collards, peanuts, tomato, cotton, and soybeans). Use UV-reflective mulches, which repel migrating whiteflies in the first few weeks of the crop (until canopy closure), thus delaying the introduction of virus. These mulches also repel aphids and will give additional benefits by reducing early spread of aphid-transmitted viruses. Remove weeds from fields, as they can be hosts for whiteflies, and can interfere with thorough coverage with insecticides applied for whitefly control.

We do not know if it has established in the state, but UF/IFAS scientist are working on this and hope to find out soon. We also do not know the distribution with in the state but hope to address this soon as well.

News You Can Use

Drought Conditions Worsen Water Managers Report.

Water level conditions continued to decline over the past week throughout the District in response to minimal local rainfall. A cold front is forecast to slowly move through the District Wednesday night, Thursday and Friday morning bringing scattered showers. Dry conditions will spread over the District on Saturday before the next front brings moderate rainfall to the area on Sunday and Monday.

The water in Lake Okeechobee is dropping at twice the previous rate, and the Water Conservation Areas are at their floor elevations so no water is being delivered out of them to the coastal areas. Due to the recent increase in the regional water levels rate of recession - they're now plummeting down - SFWMD called an "emergency" meeting with the 298 Districts on April 3rd. The purpose was to warn them of imminent District actions and to coordinate operations to deliver water to priority areas.

SFWMD has asked the U.S. Army Corps of Engineers for deviations from the WCA regulation schedules so they can make some deliveries from the WCAs (the water delivered has to be replaced by water from the Lake). If the deviations are granted, the amounts of water available will be small. They're negotiating with FDEP to use reuse to recharge the regional canals (it's not looking like DEP will agree); are looking at the rock pits; and would welcome any other ideas people may have.

The priority is first to protect the coastal wellfields - to try to stop or slow down the salt water intrusion, and the second priority is to minimize economic impacts. To protect the coastal wellfields, they're looking into dropping the water table in the western areas, raising it in the east to create a ridge to keep the salt water wedge from moving in. That could affect the growers in the western parts of Palm Beach (PBC), Broward and Dade counties. The PBC 298's thought their growers would be done within 2-3 weeks and want to "borrow" water to get them through the winter vegetable growing season. SFWMD agreed to try - they'd like to coordinate operations so deliveries can be made in a "hypodermic syringe" manner. That still leaves the nursery growers at risk. SFWMD will attempt to minimize impacts with the site-specific delivery techniques as much as possible. They are predicting a lot of canals will be dry before the rainy season is expected to begin. Since some of the nurseries have their intakes in the canals, they'll have to go to or develop alternative sources.

Basically, SFWMD is warning everyone that there is no rain in the forecast, and there is no back-up water supply from the regional system. Things are going to get bad. Potentially as early as later this week, they'll be declaring Phase III restrictions (45% cutbacks) in the Lake Okeechobee Service Area, Phase II in the Lower East Coast and Phase I in the Upper East Coast.

The District Governing Board will consider expanding the current water use restrictions at its April 12 meeting. The board will consider a Phase 1 or moderate water shortage declaration for the Upper East Coast Service area, which comprises residential areas of Martin and St. Lucie counties; a Phase 2 or severe water shortage declaration for the Lower East Coast Service Area, which comprises eastern Palm Beach, Broward, Miami-Dade and Monroe counties; and a Phase 3 or extreme water shortage declaration for the Lake Okeechobee

Service Area, which comprises the Everglades Agricultural Area, and portions of Hendry, Glades, Lee, Okeechobee, Palm Beach and Martin counties.

This week, the District formalized the groundbreaking Regional Water Availability Rule, which prevents water users from tapping Everglades for new or additional supplies of water. Setting aside the water in the Everglades for environmental restoration, permitted users like urban water utilities along Florida's southeast coast will now have to find alternative sources to supply regional growth.

Lake Okeechobee

Lake Okeechobee continues to decline and is at 10.34 feet NGVD 29 (9.04 feet NAVD 88), 0.27 feet lower since this day last week and 0.88 feet lower than one month ago. As lake levels continue to decline, sampling programs are being scaled back or even suspended because either sites are no longer accessible by boat or boat ramps are no longer usable for launching.

Upper Chain of Lakes/Kissimmee Basin

The upper Kissimmee Basin received 0.02 inches of rainfall over the last seven days, but the lower basin received no rain. Lake stages have remained fairly stable over the last week. Only slight increases in stage (0.09 feet) occurred within the area of Phase I of the Kissimmee River Restoration Project.

St. Lucie and Caloosahatchee Estuaries

In the St. Lucie Estuary, salinity conditions are good. No releases occurred at S-80 or S-308 over the past week. Salinity conditions are poor in the upper Caloosahatchee Estuary and good in the Lower Estuary and San Carlos Bay. No discharge occurred at S-79 over the past week.

Water Conservation Areas (WCAs)

Rainfall in the WCAs was very low, from 0-0.1 inches. Recession rates were fair, ranging from -0.26 feet to 0.03 feet. Water depths are good to fair for wading bird foraging in much of the Everglades except for northern WCA-3, which is dry, increasing the risk of peat fires. Mean water depths declined up to 0.53 foot throughout the conservation areas but rose in northern Shark River Slough by 0.35 feet. Northern WCA-3A is dry, with the water table up to almost 1 foot below the surface, indicating higher risk of peat fires.

Everglades National Park

Water levels were down in all areas of Park last week in response to dry conditions. Water levels declined between 1.5 - 2.5 inches.

Area Water Restrictions

With below-average rainfall and drought conditions continuing throughout the region, mandatory water use restrictions went into effect throughout South Florida on March 22.

Eastern Palm Beach, Broward, Miami-Dade and Monroe Counties and Martin and St. Lucie County Residential "C" Canal Users - Phase I Restrictions

Phase I mandatory water use restrictions went into effect March 22 in eastern Palm Beach, Broward, Miami-Dade and Monroe counties, as well as for St. Lucie and Martin County residents using C-23, C-24 and C-25 canals for irrigation.

Phase I water restrictions limit outdoor water use. Phase I restrictions allow lawn watering and car washing three days a week: Mondays, Wednesdays and Saturdays from 4 a.m. to 8 a.m. for addresses that end in an odd number; Tuesdays, Thursdays and Sundays from 4 a.m. to 8 a.m. for even-number addresses.

These and other actions are intended to produce a 15 percent reduction in overall demand on our water resources by all uses, including agricultural, industrial, commercial, golf course, landscaping and residential water users. The Phase I restrictions in eastern Palm Beach, Broward, Miami-Dade, Monroe and parts of Martin and St. Lucie counties apply to users who get their water from ALL sources including public utilities, private wells, canals, ponds and lakes, with a few exceptions such as firefighting and public health and safety.

A mandatory cease withdrawal restriction also went into effect on March 22 in the St. Lucie County Agricultural Area, impacting, primarily, permitted agricultural users who draw water directly from the C-23, C-24 and C-25 canals when canal levels drop below 14 feet.

Lake Okeechobee Service Area - Phase II Restrictions

Phase II mandatory water use restrictions went into effect March 22 in areas surrounding Lake Okeechobee, which impacts predominantly agricultural, industrial, commercial water users in the Everglades Agricultural Area, and parts of Hendry, Glades, Okeechobee, Palm Beach and Martin counties; withdrawals from the Caloosahatchee River; and a relatively small number of residential users whose water source is Lake Okeechobee or any of the surface water canals recharged by the lake.

Agricultural water users in these areas are required to reduce their consumption of surface water by 30 percent. These users have been notified of the specific nature of restrictions pertaining to this order and are encouraged to voluntarily exercise additional water conservation measures when possible.

Residential users in the Lake Okeechobee Service Area are required to limit outdoor irrigation times to two days per week. Residents with odd home addresses will be allowed to water between 4 a.m. and 8 a.m. on Wednesdays and Saturdays, while residents with even home addresses will be allowed to water between 4 a.m. and 8 a.m. on Thursdays and Sundays. Car and boat washing are allowed only during the designated watering days and times. The Phase II restrictions in the Lake Okeechobee Service Area apply to users who get their water from Lake Okeechobee, public utilities, canals, ponds and lakes. Groundwater sources (wells) are not restricted in the Lake Okeechobee Service Area because this source is not connected to Lake Okeechobee and is not threatened by the water shortage in this area. The use of water for firefighting, safety, sanitation, health, medical and other essential purposes is not restricted. Residential water use restrictions are mandatory and will be enforced by local government through its law enforcement or zoning and code enforcement agencies. The District enforces the restrictions for consumptive water use permit holders.

In addition to the mandatory water use restrictions where applicable, residents in all areas of the District are encouraged to voluntarily save water both inside and outside the home.

For additional information, residents can call the District's tollfree Water Conservation Hotline at (800) 662-8876 or contact their regional South Florida Water Management District Service Center.

Water restriction information and other helpful water conservation tips are also available at www.sfwmd.gov/conserve.

Sulfur in the EAA

Sulfur coming out of the EAA into the Everglades Protection Area via the canals is likely to become a big issue soon is (per a USGS/FDEP study and report). FDEP has insisted that an unedited report on this issue be

included in the South Florida Environmental Report (SFER) that goes to the Legislature. It's posted on SFWMD's website (Chapter 3B). Go to https://my.sfwmd.gov/pls/portal/docs/PAGE/PG_GRP_SFWMD_SFER/PORTLET_SFER/TAB2236041/2007_VOLUME1/chapters/v1_ch_3b.pdf

Worker Protection Standard (WPS) Inspection Form. This form is very useful as a checklist to make sure that you have addressed all the topics that would be covered in a WPS inspection. If you can go through this list and answer yes to most of these questions, or at least know what they are talking about, you will likely be in pretty good shape. Phyllis Gilreath has posted the WPS Inspection Form in pdf format at <http://manatee.ifas.ufl.edu/Vegetables/WPSInspectionForm.pdf> or you can give Phyllis or myself a call and we would be happy to fax or mail you a copy.

Pesticide Actions

The FDACS has requested the use of the fungicide Topsin M® (thiophanate) for control of white mold on fruiting vegetables (tomato, pepper, eggplant) under section 18 of FIFRA. (FDACS letter to EPA dated 2/14/06).

Based on a request by BASF Corporation and IR-4, tolerances are approved for use of the fungicide boscalid (Endura®/Pristine®). Tolerances of importance to Florida include celery, spinach, and leafy vegetables (group 4) except lettuce. (Federal Register, 2/8/06).

In mid-February, OmniLytics, Inc., announced final EPA registration for its AgriPhage bacteria control product line. The material can be used in the greenhouse or field, and can be used as a preventative as well as curative treatment. At a current price of \$12/pint, a recommended treatment (two pints) equates to a treatment cost of \$24/acre. It is approved for use in tomato and pepper. (OmniLytics Press Release, 2/15/06).

Arysta LifeSciences recently received EPA registration for Evito® (fluoaxastrobin), a strobilurin fungicide. It is labeled for potatoes and tuber vegetables, leafy vegetables (petiole subgroup only), and fruiting vegetables. It should be managed similarly to other Group 11 fungicides such as azoxystrobin, trifloxystrobin, and pyraclostrobin.

For Sale

Small FMC Speed Sprayer 3 pt hitch with row crop adapter, good for greenhouse or small acreage. Contact Jim McVey at 863-673-0363

Up Coming Meetings

Manatee County

June 12, 2007

Private Pesticide Applicator Training and Testing.

9:00 AM.

Manatee County Extension Service
Palmetto, Florida

2 CORE CEUs offered for those who have a current license.

Note: Testing for all categories is by appointment.
Please call Linda Means at 941-722-4524 to schedule an exam.

Miami Dade County

April 10, 2007

Train the Trainer Workshop

1:30 – 4:30 PM

John D Campbell Agricultural Center
18710 SW 288th Street
Homestead, FL 32030

Cost is \$5.00. Contact Mary Lamberts for details at 305-248-3311

Palm Beach County

May 7, 2007

General Standards/Core Training and Test Review 8:00 AM - Noon
Ornamental and Turf Test Review (2 CEUs) 1:00 – 3:00 PM

Clayton Hutchinson Ag Center
559 N Military Trail
West Palm Beach, Florida

Contact 561-233-1700 – select option, 1 then option 3

April 17, 2007

WPS Overview and Train the Trainer Workshop 9:00 am - 3:30 pm

Clayton Hutchinson Ag Center
559 N Military Trail
West Palm Beach, Florida

Contact Darrin Parmenter at 561-233-1712

Southwest Florida

April 12, 2007

Vegetable Growers Meeting – Late Blight and Dow Product Update

UF/IFAS SW Florida Research and Education Center
SR 29 N
Immokalee, Florida

Contact Gene McAvoy at 863-674-4092 for details

May 1, 2006

UF/IFAS SWFREC Spring Vegetable Field 10:00 AM - Noon

UF/IFAS SW Florida Research and Education Center
SR 29 N
Immokalee, Florida

Contact Gene McAvoy at 863-674-4092 for details

June 2, 2007

Annual Farm Safety Day

8:00 AM – 2:00 PM

UF/IFAS SW Florida Research and Education Center
SR 29 N
Immokalee, Florida

Contact Mongi Zekri at 863-674-4092 for details

Other Meetings

June 3 –5, 2007

Florida State Horticultural Society Annual Meeting

PGA National Resort & Spa
Palm Beach Gardens, FL.

Go to <http://www.fshs.org/default.htm> for details and registration

Websites

USDA Risk Management Agency – Buying crop insurance is one risk management strategy – go to <http://www.rma.usda.gov/policies/> for information about crop policies available in specific counties and states.

Quotable Quotes

Don't accept your dog's admiration as conclusive evidence that you are wonderful. - Ann Landers

Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education. - Mark Twain

No race can prosper till it learns that there is as much dignity in tilling a field as in writing a poem. - Booker T. Washington

It's not enough that we do our best; sometimes we have to do what's required. - Sir Winston Churchill

A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, die gallantly. Specialization is for insects. - Robert A. Heinlein

On the Lighter Side

Whiskey and Comfort

The 98-year-old Mother Superior from Ireland was dying. The nuns gathered around her bed trying to make her last journey comfortable.

They gave her some warm milk to drink but she refused. Then one of the nuns took the glass back to the kitchen.

Remembering a bottle of Irish whiskey received as a gift the previous Christmas, she opened and poured a generous amount into the warm milk.

Back at Mother Superior's bed, she held the glass to her lips. Mother drank a little, then a little more and before they knew it, she had drunk the whole glass down to the last drop.

"Mother Superior", the nuns asked with earnest, "please give us some wisdom before you die."

She raised herself up in bed and with a pious look on her face said,

"Don't sell that cow."

Ole, the Artist

Ole, while not a brilliant scholar, was a gifted portrait artist. His fame grew and soon people from all over the country were coming to him for paintings.

One day, a beautiful young woman pulled up to his house in a stretch limo. She asked Ole if he would paint her in the nude. This was the first time anyone had made this request. The beautiful lady said money was no object; she was willing to pay \$50,000.

Not wanting to get into trouble with his wife, Ole asked the lady to wait while he went in the house and conferred with Lena, his missus.

In a few minutes he returned and said to the lady, "Ya shoor, you betcha. I'll paint ya in da nude, but I'll haff ta leave my socks on so I'll have a place to wipe my brushes."

Contributors include: Joel Allingham/AgriCare, Inc, Karen Armbruster/SWFREC, Bruce Corbitt/West Coast Tomato Growers, Dr. Phyllis Gilreath/Manatee County Extension, Michael Hare/Drip Tape Solutions, Fred Heald/Farmers Supply, Sarah Hornsby/AgCropCon, Cecil Howell/Taylor &Fulton, Loren Horsman/Glades Crop Care, Keith Jackson/SWFREC, Bruce Johnson/General Crop Management, Dr. Mary Lamberts/Miami-Dade County Extension, Leon Lucas/Glades Crop Care, Bob Mathews, Glades Crop Care, Mark Mossler/UF/IFAS Pesticide Information Office, Gene McAvoy/Hendry County Extension, Alice McGhee/Thomas Produce, Jimmy Morales/Pro Source One, Chuck Obern/C&B Farm, Teresa Olczyk/ Miami-Dade County Extension, Dr. Aaron Palmateer/TREC, Darrin Parmenter/Palm Beach County Extension, Dr. Ken Pernezn/EREC, Dr. Pam Roberts/SWFREC, Dr. Nancy Roe/Farming Systems Research, Wes Roan/6 L's, Dr. Dak Seal/ TREC, Kevin Seitzinger/Gargiulo, Jay Shivler/ C&B Farm, Ken Shuler/Stephen's Produce, Ed Skvarch/St Lucie County Extension, John Stanford/Thomas Produce, Mike Stanford/MED Farms, Dr. Phil Stansly/SWFREC, Eugene Tolar/Bright Star Farms, Mark Verbeck/GulfCoast Ag, and Alicia Whidden/Hillsborough County Extension.

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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