



UNIVERSITY OF
FLORIDA

E X T E N S I O N

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SOUTH FLORIDA VEGETABLE PEST AND DISEASE HOTLINE

April 25, 2008

A late season cold front last week dropped low temperatures in many areas into the upper 40's and brought cooler drier air to South Florida. For the past week, sunny skies and Chamber of Commerce weather has prevailed across the area.

With the exception of some lower east coast locations most areas report less than an inch of rain for the period. Some growers and scouts report that some crops are beginning to show signs of moisture stress on hot afternoons.

Despite cool night temperatures in the 40's and 50's, daytime highs have been running in the mid to upper 80's with a few 90's in some locations.

FAWN Weather Summary

Date	Air Temp °F		Rainfall (Inches)	Ave Relative Humidity (Percent)	ET (Inches/Day) (Average)
	Min	Max			
Balm					
3/14 – 4/7/08	42.39	87.08	0.23	66	0.15
Belle Glade					
3/14 – 4/7/08	47.84	90.09	0.85	70	0.15
Clewiston					
3/14 – 4/7/08	43.96	90.34	0.29	68	0.16
Ft Lauderdale					
3/14 – 4/7/08	54.45	91.38	1.47	70	0.16
Fort Pierce					
3/14 – 4/7/08	47.12	89.13	0.36	72	0.17
Homestead					
3/14 – 4/7/08	44.20	88.16	2.13	73	0.15
Immokalee					
3/14 – 4/7/08	39.64	90.55	0.31	71	0.15

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Vegetables coming to market include snap beans, cabbage, celery, eggplant, endive, escarole, lettuce, pepper, radishes, squash, strawberries, sweet corn, tomatoes, and various specialty items. Watermelon and cantaloupe harvest has started around Immokalee with light volumes coming to market. Growers report low night temperatures are slowing crop maturity in melons.

The short-term forecast from the National Weather Service in Miami calls for more of the same with cool evenings and warm afternoons through the weekend. A front will push south on Monday bringing an increased chance of showers and thunderstorms on Monday, it should dissipate over the southern peninsula resulting a continuation of the present weather pattern – clear skies with cool nights and warm days. 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 whiteflies are reproducing rapidly and the population has increased dramatically in many fields (tomato, pepper, watermelons, cucumbers, eggplant and more) over the past 2 weeks. Nymphs are also starting to build in many mature fields. Some growers note shifting pressure depending on wind direction.

Around Manatee County whitefly adults and nymphs are beginning to increase with some hotspots reported especially near potato farms.

On the East Coast reports indicate that whitefly pressure continues to be heavy and growers are reporting problems in a variety of crops including tomatoes, squash and cucumber.

Reports from Homestead indicate that whitefly populations are somewhat down due to heavy rains recently.

Pepper Weevils

Growers and scouts in Palm Beach report that pepper weevils are horrible especially in older pepper and are causing problems in pepper and eggplant in a number of locations. Some reports indicate that weevils are attacking and feeding on eggplant fruit in places.

Respondents around Southwest Florida report that pepper weevils are reaching high levels in a number of older pepper fields around and adults can now be found fairly easy most days. Most growers agree this has been one of the worst seasons for weevils in recent memory.

Reports from the Manatee County area indicate that pepper weevils are active in many locations.

Weevils are also causing problems around Homestead where reports indicate they are a constant problem.

Worms

In the Glades, scouts report a pretty good increase of diamond back moth activity in leaf and Chinese cabbage.

Respondents in Manatee County reports that worm (mostly southern armyworm) are active in pepper and tomato and also report some random tomato pinworm in both tomatoes and eggplants over the last ten days.

Around Southwest Florida, worms are starting to show back up, especially in watermelon fields with heavy weeds with some scattered rind damage very low levels. Tomato pinworms are also around at low levels. Scouts report that melon worm and pickle worms are high in squash.

In Palm Beach County pinworm numbers are variable - high in some locations in eggplant in tomato with just a trace present in other areas. Melonworm pressure is high in cucumber and slightly lower in squash. A few beet armyworms and loopers are all present.

Thrips

Reports from East Coast indicate that growers continue to battle western flower thrips in a variety of crops; including cilantro, eggplant, tomato, pepper, squash, cucumbers and cowpeas. Some Florida flower thrips (*F. bispinosa*) and *Thrips palmi* are also present but western flower thrips remains the main concern.

Respondents note that thrips are causing some dimpling and flecking of tomato fruit, and discoloring the calyx in eggplant fruit.

Around Manatee County reports indicate some growers are spraying for thrips.

Managing Western Flower Thrips

Thrips are tiny insects with fringed wings. There are over 5,000 described species with about 87 species of thrips that are pests of commercial crops due to their feeding on leaves, fruits, and flowers causing discoloration, deformity, and reduced marketability.

The western flower thrips (*Frankliniella occidentalis*) was spread over many parts of the world during the 1980's and 1990's due to the global trade in ornamental plants. Originally from the southwestern US, it is now largely cosmopolitan, and it is the key vector of *Tomato spotted wilt virus*. The insect and the virus have become the key pest problems of tomato, pepper, and other crops in northern Florida, but they were not, until 2006, serious pests in central and southern Florida. In northern Florida, the eastern flower thrips (*Frankliniella tritici*) is more common than the western flower thrips. In central and southern Florida, the Florida flower thrips (*Frankliniella bispinosa*) is the more common. All of the above-mentioned species of thrips have a broad host range that includes many crops, weeds and other plants in and around crop fields.

The pest status of individual species of flower thrips differs in tomato and pepper. The adults of the western flower thrips inhabit the flowers where they feed on pollen and flower tissues. The females lay eggs individually on the small developing fruit in the flower, and the larva hatches in about six days. A small dimple sometimes surrounded by a halo remains on the developing fruit of pepper and tomato. Direct feeding by the western flower thrips larvae also can cause cosmetic fruit damage referred to as 'flecking'. Both types of damage can result in cull-out and lowering of grade of the harvested fruit, with tolerance based on price and demand in the marketplace.

The eastern flower thrips is virtually a non-pest. It does not damage fruit and it is an incapable vector of *Tomato spotted wilt virus*. The Florida flower thrips is not damaging to fruit. Although it is a capable vector of *Tomato spotted wilt virus*, epidemics are rare in central and southern Florida where it is the predominate species. In fact, they compete with the western flower thrips, and in high numbers they out-compete the populations of western flower thrips. The eastern flower thrips and the Florida flower thrips are suppressed by insecticides in many chemical classes with different modes of action. The adults of these species are much more active than the adults of western flower thrips. They are capable of rapidly re-colonizing insecticide treated crops and sometimes there is an apparent lack of control for these species under field conditions.

There is an unusual virus-vector relationship between the thrips and the *Tomato spotted wilt virus*. The virus is acquired only by the larvae, and the adults can transmit to host plants. Primary spread is due to infections caused by incoming viruliferous adults to a crop (such as tomato and pepper) from outside sources that are usually host weed species. Adults persistently transmit, and their control with insecticides does not prevent transmission due to the short time of feeding for infection to occur. Secondary spread is caused by viruliferous adults that acquired the virus as larvae feeding on an already infected plant in the tomato or pepper field. For secondary spread, thrips need to colonize and reproduce on that season's crop. Most viral infections in northern Florida usually are the result of primary spread, although some secondary viral infections occur late in the season.

The invading populations of western flower thrips were largely resistant to most organophosphate, carbamate, pyrethroid, and organochlorine insecticides. Further, insecticidal control of the viruliferous adults proved ineffective in preventing spread of *Tomato spotted wilt virus*. Even though ineffective, growers in most parts of the world responded by spraying insecticides on a calendar schedule. This sometimes resulted in an economic and environmental disaster with growers suffering uncontrollable damage due to high thrips populations and epidemics of tomato spotted wilt. Application of broad-spectrum insecticides may suppress western flower thrips initially, but their numbers can increase rapidly a few days after application in numbers that are many-fold greater than untreated pepper. This was the situation in northern Florida and southern Georgia beginning the 1980's. Eventually, integrated pest management programs were developed and once adopted these proved to be effective, economic, and sustainable.

Natural infestations of a predatory bug, the minute pirate bug (*Orius insidiosus*) are very effective predators of thrips in pepper. Their effectiveness is predictable based on the number of the predator relative to the number of thrips prey. Suppression occurs when there is one predator for approximately 180 thrips. Control occurs when there is one minute pirate bug per 50 thrips. A conservation biological control program was implemented in northern Florida and this program has been adapted to local conditions throughout the world. This integrated pest management program employs reduced-risk insecticides, natural infestations of minute pirate bugs, and cultural control tactics including ultraviolet-reflective mulch. SpinTor (Dow AgroSciences, Indianapolis, Indiana) is the most effective insecticide able to suppress populations of western flower thrips, and it is a reduced-risk insecticide that does not suppress populations of minute pirate bugs at labeled rates. In pepper and other fruiting vegetables, this product is being replaced by another spinosyn insecticide, Radiant, with the same mode of action.

Minute pirate bugs do not prefer tomato and numbers remain too low in tomato fields to suppress thrips. Other management tactics are highly beneficial. Ultraviolet-reflective mulch (aluminum layered) is very effective in reducing the colonization of all thrips species onto tomato plants and in reducing the incidence of primary infections of *Tomato spotted wilt virus*. This is the most effective tactic in northern Florida tomatoes. Development of the larvae is about 5 days, and weekly applications of insecticides are sufficient to prevent successful larval development and subsequent secondary spread of *Tomato spotted wilt virus* on tomato.

Monitor (Valent USA Corp., Walnut Creek, California) and Radiant are in different chemical classes with different modes of action. Few other insecticides are efficacious against the western flower thrips.

The predominate thrips in central and southern Florida is the Florida flower thrips. The western flower thrips has been established in very low population levels for over two decades. Recently, populations have increased in a number of crops grown during the winter and spring. Large, damaging populations have occurred in peppers and tomatoes throughout Palm Beach County. Damaging populations have been noted in more isolated occurrences in other locations throughout central and southern Florida. There appear to be several factors responsible for this increase including the unusually dry conditions which favor the western flower thrips over the native species. Calendar sprays of broad-spectrum insecticides in attempts to control pests have caused outbreaks of the western flower thrips. Populations resurge when natural enemies and competing thrips

are killed. Also, some insecticides especially pyrethroids have beneficial effects on the development and reproduction of western flower thrips. Growers need to be aware that the western flower thrips is resistant to most broad-spectrum insecticides and their use can only serve to induce outbreaks. Bioassays of western thrips in central and southern Florida reveal a mix of resistant and susceptible populations to Radiant. There are increased incidences of *Tomato spotted wilt virus* in central and southern Florida, although epidemics have remained localized.

Producers in central and southern Florida will need to begin considering western flower thrips as a key pest. At this time, tomato spotted wilt is not a serious pest.

Specific recommendations for the management of western flower thrips in fruiting vegetables include the following:

- Plant and maintain refugia such as sunflowers. Some weeds such as Spanish needle (*Bidens* species) also are good refugia. These refugia are a source for minute pirate bugs to invade peppers and other suitable crop hosts and a sink for thrips leaving tomato or pepper to be eaten by predators. There are other benefits of refugia as well.
- Identify the thrips in crops as the western flower thrips is a damaging pest and the Florida flower thrips is not damaging. Also, the Florida flower thrips competes with the western flower thrips.
- Scout and use established economic threshold for western flower thrips as appropriate for individual crops. Thresholds should include the impact of the minute pirate bug and the predator's ratio relative to the number of thrips.
- Use reduced-risk insecticides to conserve populations of minute pirate bugs in pepper, eggplant, and strawberries. Minute pirate bugs will not invade tomato in sufficient numbers to suppress thrips.
- Use ultraviolet-reflective mulches when possible (aluminum layered mulches reflect the most)
- Do not use insecticides known to induce western flower thrips.
- Rotate insecticides with different modes of action as a resistance management strategy. Do not rotate Radiant with SpinTor, because they are in the same class of chemistry. Multiple plantings of susceptible crops from fall to spring on the same farm creates many problems. Western flower thrips can move from one planting to another. In some locations especially southeastern Florida, populations of western flower thrips are treated with Radiant on one planting and then move to the adjacent planting and get sprayed again. This results in the same thrips population getting sprayed multiple times. Multiple applications can result in the thrips population developing tolerance to the spinosyn chemistry and thus poor performance. Adjacent fields should be planted and destroyed at the same time, so that they can be managed together. Therefore, there should be communication between growers in an area-wide knowledge-based approach.
- Do not make more than two consecutive applications of Group 5 insecticides (Radiant and SpinTor). If additional treatments are required after two consecutive applications, rotate to another class of effective insecticide for at least one application. Do not apply more than 34 oz or 6 applications of Radiant per calendar year.

In some cases, additional management efforts are needed to manage western flower thrips and other difficult pests in space and time. Management of the pepper weevil (*Anthonomus eugenii*) is proving a challenge to pepper growers trying at the same time to manage western flower thrips. Growers need to emphasize sanitation

and other cultural tactics over broad-spectrum insecticides that kill minute pirate bugs or induce western flower thrips in other ways.

In summary, western flower thrips can not be controlled by the used of insecticides alone. A knowledge-based integrated approach to manage this pest is required.

Contributed by Dr. Joe Funderburk, Entomologist UF/IFAS NFREC, Quincy, FL and Mr. Tony Weiss, Dow AgroSciences, Brandon, Florida

Leafminer

Respondents in Manatee County indicate that a number of fields continue to be sprayed for leafminer.

Reports from Palm Beach County indicate that leafminer pressure is low and many growers have stopped targeting them in a number of places.

Around Immokalee, leafminers are mostly low and though some flare ups have been reported where growers have backed off spraying as season nears the end.

Spider Mites

Respondents from Palm Beach note some scattered problems with spider mites on cucumbers and squash.

Growers and scouts around Southwest Florida report that spider mites are patchy in occurrence with some fields being treated.

Around Homestead spider mites are causing some problems in squash.

Broad Mites

East Coast respondents indicate that broad mites continue to cause some problems in eggplant.

Around Southwest Florida while broad mites are present here and there around the area on pepper and eggplant.

Aphids

Respondents in the Glades report that green peach and some potato aphids are causing problems in leafy vegetables.

Diseases

Watermelon Vine Decline

Watermelon vine decline has been reported from more locations around southwest Florida where it is hitting melons approaching maturity. Watermelon vine decline is widely present at low levels with a few fields reaching moderate levels. This season growers and scouts report seeing only small patches - circles scattered within fields that seem to be slowly expanding. Watermelon vine decline has been reported around Arcadia and Hardee County. Squash vein yellowing virus (SqVYV) is a whitefly transmitted virus that has been identified as the cause of watermelon vine decline.

TYLCV

On the East Coast, reports indicate that TYLCV is bad in places reaching 100% in some scattered older plantings but remains low to moderate in many others.

Around Southwest Florida, tomato yellow leaf curl virus continues to increase in many fields with many older fields reaching a 50% infection rate but most crops are past the point of concern.

Respondents in Homestead indicate that tomato yellow leaf curl virus is widely present and indicate that infection ranges from 30 – 100% depending on the field.

Around Manatee County, reports indicate that tomato yellow leaf curl virus is present at mostly low levels. Respondents indicate that infection rates appear to be lower than in past years at this stage of growth.

Downy Mildew

Growers and scouts around Southwest Florida report that downy mildew continues to be a severe problem in cucumbers and bad but not as bad in squash. Some downy mildew is present in watermelons at low to low-moderate levels.

Growers and scouts on the East Coast indicate that downy mildew remains a big concern in cucumber. Downy mildew is also present in some watermelons at low levels.

Respondents around Belle Glade report that lettuce downy mildew has remains present in the EAA but has been fairly light.

Downy mildew is also causing problems on basil in a number of locations. Dr Rick Raid, Plant Pathologist at UF/IFAS EREC reports that phosphonics can provide good economic control but cannot be solely relied upon for total control. Rotate or tank mix with some of the other registered fungicides. Be aware that these can burn foliage as temperatures increase.

Late Blight

Respondents in the Manatee County area report that late blight is still a factor on tomatoes probably encouraged by foggy mornings.

Dr Pam Roberts, Pathologist at SWFREC is interested in obtaining samples in an effort to characterize races occurring in Florida. She can be contacted at 239-658-3400.

Bacterial Spot

Around Southwest Florida, bacterial spot is rampant in pepper and tomato bringing down bushes fast, following the previous three weeks of rain/hail, although it appears to be slowing in recent days. Severity is moderate to high in many places and has caused defoliation of pepper in many places.

Respondents in Homestead report that bacterial spot continues to cause problems in tomato.

Growers and scouts on the East Coast report that bacterial spot is high in some places and low in others. Disease progress is slowing in response to drier weather.

Reports from Manatee County indicate that bacterial spot is increasing in tomato following recent heavy rains and hail.

Dr Ken Pernezny reports that isolates from our UF/IFAS bacterial spot resistant bell pepper trials in Delray yielded mostly Race 4 and 6.

Bacterial leaf spot of lettuce

Dr Rick Raid reports that bacterial leaf spot caused by *Xanthomonas campestris* subsp. *vitians* has been present at several locations growing leaf for spring mix, but absent in most other areas. Bacterial leaf spot of escarole and endive has been a bit more widespread. Copper fungicides are recommended for it.

Powdery Mildew

Around Immokalee, powdery mildew is normally a problem in maturing squash and continues to be a concern. Powdery mildew is also getting bad, especially in cantaloupes and starting to move into some watermelons. **A few tomato and pepper fields also have powdery mildew present at low levels and present little threat.**

On the East Coast, powdery mildew is causing problems squash and cucumbers.

Powdery mildew is wide spread in squash and cucumbers in Homestead. Some problems have also been noted with powdery mildew on tomato.

Tomato Chlorosis Virus

Tomato chlorosis virus (ToCV) is a relatively new disease in Florida that is being seen with increasing frequency in some areas. The leaves of plants infected with tomato chlorosis virus (ToCV) become yellow or red between the veins, stunted, and rolled.. Onset of disease appears to occur during the short day-length period of late December-February. Symptoms are typically most apparent on middle to lower parts of plants, while new growth may appear normal. Lower leaves develop a progressive, interveinal chlorosis, often with necrotic flecking. Symptoms resemble these caused by magnesium deficiency in tomato but are less uniform within a leaflet or among leaflets on a leaf. As the disease progresses, interveinal necrosis can occur and the leaves become characteristically brittle, thick, and crisp. No fruit abnormalities have been observed. Fruit size and number appear reduced by virus infection.

ToCV is common in the southeastern United States and also has been found in Puerto Rico. Outbreaks of this disease are unpredictable from year to year and for various geographic locations. This virus is transmitted by various species of whitefly. Studies indicate that the banded wing whitefly (*Trialeurodes abutilonea*) and silverleaf whitefly (*Bemisia tabaci* biotype B) are highly efficient vectors of ToCV. *B. tabaci* biotype A and *T. vaporariorum* are less efficient vectors.

Although the disease has the potential to cause severe losses to both fresh market and greenhouse-grown tomatoes, it generally causes minor losses. In Italy, no economic losses are reported, however in California, severe yield losses have been reported; losses of more than 2 million dollars were reported in tomato fields of Orange County, in one season.

In addition to tomato, this virus infects a wide array of weeds, crops, and ornamentals, including groundsel, sowthistle, shepherd's-purse, artichoke, lettuce, potato, zinnia, petunia and others.

Currently, the major way to reduce losses from criniviruses in tomato is insecticide-based control. Neonictinoid based products are most frequently used for whitefly control, and can be applied as a foliar spray, a seed treatment or through drip application. While insecticides effectively reduce whitefly populations, such control methods are relatively inefficient for control of viruses, since whiteflies can transmit a virus before being killed by an insecticide. Unfortunately, most whitefly-transmitted criniviruses do not produce symptoms

until 3 to 4 weeks after infection occurs. Therefore infection can be widespread by the time symptoms are observed and control measures are implemented.

Growers can also minimize exposure to this virus by avoiding overlap with other susceptible crops. Avoid using infected transplants. Roguing of infected plants and general whitefly control may help reduce virus spread.

Gummy Stem Blight

Around Southwest Florida, gummy stem blight on watermelons really took off in several watermelon fields following the rains a couple of weeks ago and has not slowed at low levels.

Respondents in Palm Beach County report that gummy stem is present on cucumbers, squash and watermelons in several locations.

Corn Leaf Blight

Dr Rick Raid, Plant Pathologist UF/IFAS EREC reports that northern and southern corn leaf blights have been in rare form this spring, due primarily to warm, moist conditions that existed earlier in the spring allowing for an early build-up of inoculum. He also notes that sweet corn stalks that remain in the field following ear harvesting are being harvested for silage. These stalks, which are no longer being sprayed, may also contribute inoculum to the area. Foliar blights and rust may be successfully controlled using fungicides, if host-plant resistance is insufficient. Strobilurin and triazole fungicides are most efficacious against these diseases and should be used in a program with the broad-spectrum protectant mancozeb.

Rust

Dr. Raid indicates that common rust on corn has been much spottier than the foliar blights this spring, but on some susceptible varieties, has been heavy. Treatment is as above.

Rick notes that bean rust has been light in most areas this year, probably due to successful deployment of host-plant resistance.

Bean red node

Bean red node has been spotted on snap and specialty beans grown in south Florida. Although bean red-node has been detected at several bean growing locations, no major outbreaks have been reported.

Caused by Tobacco Streak Virus, controls for this disease are mostly cultural. Good ditchbank weed management and growing beans in large tracts to minimize border to field area ratio are the most effective means of controlling this disease. Typically, this requires advanced planning. Once beans are in the ground, there is little that can be done, so keep this in mind for next season

Alternaria

Growers and scouts across the area report that Alternaria is widely present and increasing in a number of locations.

Mosaic

Reports from Homestead indicate that mosaic is widespread in squash.

Mosaic is widely present on squash around Southwest Florida. In at least one location, nearly 100% infection has been reported on young seedlings prompting growers to destroy the crop and replant.

Reports indicate that mosaic is slowly increasing in watermelon around SW Florida.

Fusarium crown rot

Reports from SW Florida note some increase in Fusarium crown rot following the recent rains.

Respondents in Manatee County report increasing problems with fusarium crown rot and race 3 fusarium following recent rains.

Cucurbit Leaf Crumple Virus

Cucurbit Leaf Crumple Virus is becoming more widespread around Southwest Florida and is present in watermelon at several locations.

News You Can Use

Pesticide Actions

Based on a request by Valent U.S.A. Corporation and IR-4, the EPA has approved tolerances for the herbicide flumioxazin (Valor®). Tolerances of importance in Florida include blueberry (subgroup 13B), melons (subgroup 9A), okra, and fruiting vegetables (group 8). (Federal Register, 3/5/08).

Based on a request by IR-4, the EPA has approved tolerances for the miticide bifenazate (Acramite®). Tolerances of importance in Florida include acerola, black sapote, canistel, feijoa, guava, jaboticaba, longan, lychee, mango, papaya, passionfruit, succulent pea and bean (subgroup 6B), sapodilla, mamey sapote, star apple, starfruit, edible podded legume vegetables (subgroup 6A). (Federal Register, 3/5/08).

Based on a request by IR-4, the EPA has approved tolerances for the fungicide myclobutanil (Rally®/Nova®). Tolerances of importance in Florida include black sapote, canistel, cilantro, leafy greens (except spinach) (subgroup 4A), mango, mamey sapote, okra, papaya, sapodilla, star apple, and fruiting vegetables except tomato. (Federal Register, 3/26/08).

Based on a request by IR-4, the EPA has approved tolerances for the herbicide dicamba. Tolerances of importance in Florida include sweet corn. (Federal Register, 4/2/08).

Based on a request by IR-4, the EPA has approved tolerances for the insecticide flonicamid (Beleaf®). Tolerances of importance in Florida include leafy green brassicas (subgroup 5B), okra, radish tops, turnip greens, root vegetables (subgroup 1B), tuberous and corm vegetables (subgroup 1C), as well as animal meat/fat/byproducts. (Federal Register, 4/2/08).

Based on a request by IR-4, the EPA has approved tolerances for the insecticide spiromesifen (Oberon®). Tolerances of importance in Florida include bean (succulent and edible-podded), and cowpea as well as animal meat/fat/byproducts. (Federal Register, 3/12/08).

Valent U.S.A. Corporation's fungicide fluopicolide (Presidio®) was registered by the EPA in February to control oomycetes and downy mildew in leafy vegetables, cucurbits, fruiting vegetables, and grapes. Fluopicolide is a member of the acylpicolides, and it has translaminar and systemic properties. (Citrus & Vegetable Magazine, March 2008).

Bio-control

Nancy Roe at Green Cay Farms in Delray reported that the coyotes have been destroying corn and colored peppers and chewing through the drip tape, where it crosses the ditches. She was fearful that when the watermelons were ready, they would be eating them, too.

A few weeks ago, at the Green Cay Wetlands adjoining the farm, an alligator was observed-and photographed-eating a coyote.

Now that the alligator ate the coyote, she reports they actually got to harvest this crop of corn! Isn't that a good example of biological control on a macro scale?

Opportunity

Plant Breeding Research Assistant I, Immokalee, Florida

Join the winning team at Harris Moran Seed Company, a global leader in vegetable seed. As part of the world's largest independently owned seed company, we offer exciting careers full of challenge, diversity, and growth.

The primary responsibilities for this position include, but are not limited to:

- Assisting the Harris Moran sweet pepper breeding program in field trial design, planting, evaluation, seed harvest, data collection, disease screening, and sampling for molecular marker analysis
- Will supervise greenhouse plantings, including managing plant culture and crossing blocks and crews in the field and greenhouse
- Responsible for data entry and maintenance of breeding program database

Additionally, this person will be expected to interact with other employees including plant pathologists, molecular biologists, product managers, product development representatives, and sales representatives

Qualifications:

Position requires a minimum BS in plant science, horticulture, or related discipline
2-3 years seed industry experience

This position requires a non-smoker based on job responsibilities related to greenhouses and the potential for Tobacco Mosaic Virus (TMV) contamination

Skills required:

- Requires excellent written and oral communication skills
- Working knowledge of Microsoft Word, Excel, and Access
- Ability to travel domestically and internationally.

Harris Moran is an "at will" employer. Equal Opportunity Employer. Drug Free Workplace.

Please send application and resume to:

Harris Moran
PO Box 4938
Modesto CA 95352
USA

or by e-mail to: hr@harrismoran.com

Farm Land for Lease

Farm Land for lease in LaBelle area – contact Greg Jones at 863-675-0545

Up Coming Meetings

Palm Beach County

May 5, 2008 **General Standards/Core Test Review** (4 CEUs) 8:00 AM – 12:00 PM

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

Call 561-233-1725 for more information.

May 12, 2008 **Corn and Corn Silage Field Day**

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

Contact at 561-993-1500 for more information

Southwest Florida

May 1, 2008 **Spring Vegetable Field Day** 10:00 pm – 1:30 pm.

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

Contact Gene McAvoy at 863-674-4092 for details

Other Meetings

June 1-3, 2008 **Florida State Horticulture Society Annual Meeting**

Fort Lauderdale Marriott North
Fort Lauderdale, Florida

Go to <http://www.fshs.org/> for information and registration

September 7 – 10, 2008 **19th International Pepper Conference**

Atlantic City, New Jersey

Go to <http://njveg.rutgers.edu/NJpepperconference/> for more information.

Websites

Costs of Production - This UF/IFAS Center for AgriBusiness website provides links presents estimated costs of production major vegetable crops produced in one or more of 8 producing areas in Florida. Go to Costs of Production. Go to <http://www.agbuscenter.ifas.ufl.edu/cost.php>

After Humans – interesting video on Glumberts – which boasts the most watched videos on the web. Check it out at <http://www.glumbert.com/media/afterhumans>

Quotable Quotes

The optimist proclaims that we live in the best of all possible worlds; and the pessimist fears this is true. - James Branch Cabell

Education: that which reveals to the wise, and conceals from the stupid, the vast limits of their knowledge. - Mark Twain

If you pick up a starving dog and make him prosperous, he will not bite you. This is the principal difference between a dog and a man. - Mark Twain

A lie can travel halfway around the world while the truth is putting on its shoes. - Mark Twain

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

On the Lighter Side

Talkin' Dawg

A guy was driving around the back woods of Tennessee and he saw a sign in front of a broken down shanty-style house: 'Talkin' Dawg fer Sale '.

He rings the bell and the owner appears and tells him the dog is in the backyard. The guy goes into the backyard and sees a nice looking Beagle sitting there.

'You talk?' he asks.

'Yep,' the Beagle replies.

After the guy recovers from the shock of hearing a dog talk, he says 'So, what's your story?'

The Beagle looks up and says, 'Well, I discovered that I could talk when I was pretty young. I wanted to help the government, so I told the CIA and they had me sworn into the toughest branch of the armed services...the United States Marines. You know one of their nicknames is 'The Devil Dogs.'

'In no time at all they had me jetting from country to country, sitting in rooms with spies and world leaders; because no one figured a dog would be eavesdropping. I was one of their most valuable spies for eight years running, but the jetting around really tired me out, and I knew I wasn't getting any younger. So, I decided to settle down.'

'I retired from the Corps (8 dog years is 56 Corps years) and signed up for a job at the airport to do some

undercover security, wandering near suspicious characters and listening in. I uncovered some incredible dealings and was awarded a batch of medals. I got married, had a mess of puppies, and now I'm just retired.'

The guy is amazed. He goes back in and asks the owner what he wants for the dog.

'Ten dollars,' the guy says.

'Ten dollars? This dog is amazing! Why on earth are you selling him so cheap?'

'Because he's such a bullshitter ...He never did any of that stuff. He was in the Navy!'

Note: The hotline is now available by subscribing to the South Florida Vegetables LISTSERV. Get the latest pest and disease updates and news in a timely fashion -the e-version is automatically sent to you as soon as it is published.

If you want to switch over just drop me an email and help save a tree.

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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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