

# Manatee Vegetable Newsletter

## November/December 2006

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- December 6,**      **Labor/ Migrant and Seasonal Workers Protection Act Seminar**  
Manatee Convention Center (Civic Center)    5:30 PM  
Palmetto, Florida. For registration and additional information please contact  
- Mike Rios US DOL at 813-288-1400 ext.28 or 813-245-9055
- December 8-9**    **Florida Ag Expo.**    GCREC - Balm. See additional information inside.
- December 12**    **Private Pesticide Applicator Training and Testing.**    9 AM. Manatee County  
Extension Service, Palmetto. 2 CORE CEUs offered for those who have a  
current license.

Due to the climate of political correctness now pervading America -- Kentuckians, Tennesseans, North Carolinians, Virginians, West Virginians and some from South Carolina, Georgia, and Alabama, will no longer be referred to as "HILLBILLIES."

You must now refer to us as APPALACHIAN-AMERICANS

### Publications and Websites of Interest

U The **Ethnic and Specialty Vegetables Handbook**, First Edition produced by the University of Maryland provides valuable production guidelines to farmers and anyone interested in growing ethnic and specialty vegetables. Go to

[http://www.marylandethnicvegetable.com/Ethnic\\_Specialty\\_Vegetables\\_Handbook2.html](http://www.marylandethnicvegetable.com/Ethnic_Specialty_Vegetables_Handbook2.html)

U FDACS **Pesticide Licensing and Compliance** information can be found at:

<http://flaes.org/complimonitoring/index.html> This site also contains information about the WPS under Worker Safety.

U [Powdery Mildew of Cucurbits in Florida](#) HS-1067, a 9-page illustrated fact sheet by Hector G. Nunez-Palenius, Donald Hopkins and Daniel J. Cantliffe, describes this serious disease of cucurbit crops in Florida, the symptoms and disease development, environmental factors, management, the use of plants with genetic resistance, management using fungicides for susceptible cultivars, the use of biorational and non-harmful chemicals, and biological fungicides. Includes references and tables of powdery mildew resistant or tolerant cultivars of cucumber, melon, and squash.



U [Florida Fungicide Pricing and Expectations](#) PI-134, a 2-page fact sheet by M.A. Mossler, provides a table of costs per acre for fungicide active ingredients. Published by the UF/IFAS Pesticide Information Office, September 2006.

U [Florida Insecticide, Miticide, and Nematicide Pricing and Expectations](#) PI-135, a 3 page fact sheet by M.A. Mossler, provides a table of costs per acre for pesticide active ingredients. Published by the UF/IFAS Pesticide Information Office, September 2006.

U **SWFREC BMP Website** - go to <http://www.imok.ufl.edu/bmp/vegetable/> for information on the new BMP manual, implementation procedures, presentations on research and demonstration projects and other information about the BMP program. Also, for those growers who would like a copy of the BMP manual, please give me a call. We have a new BMP implementation team member in this area. Jemy Hinton was recently hired to assist in getting vegetable growers signed up for the new BMP program. We are currently in the process of setting up appointments with farms now to begin doing this. If you would like to schedule a time for us to come out and talk to you about this process and help you sign up, please give me a call or email me or email Jemy at [jwh@ufl.edu](mailto:jwh@ufl.edu) In the meantime, it's a good idea to go to the website above and copy and complete the BMP checklist. This will give you a good idea of where you stand. Most growers will find they can check yes on most of the criteria. Give me a call if you have questions or want to schedule a time to go through the process.



## New Pesticide Testing Procedures



As many of you know, Betty Glassburn handled many of the pesticide license questions, tests and CEUs before her retirement. We are currently training someone to take over those responsibilities and assist the agents in this program; however, while we're in this transitional phase, we ask for your patience and cooperation. The biggest change is that we will no longer be able to do pesticide testing on a "walk-in" basis. We have not really been set

up for this, but we continue to get "walk-ins" and while we sometimes can accommodate you.....sometimes it's a wasted trip. In the interest of conserving your time and gas, we want to make sure this does not happen. We can generally schedule an exam fairly quickly, but you do need to call and make an appointment. We try to schedule the tests between 8:30 AM and 3 PM. We prefer not to start a test after 3 as the office closes at 5 PM and no one is here to proctor the exam. If you need to find out about how many CEUs you have earned, you can also go to the website [www.flaes.org](http://www.flaes.org) and click on 'database searches and then 'earned CEU search'. We are also happy to help you find this information and help you find CEU classes or other ways to acquire CEUs. We also still keep many of the pesticide study guides on hand for sale. If you have pesticide license questions, please call 941-722-4524, ext. 265, Linda Means. She can assist you and if she cannot answer your questions, she will let us know. Thanks for your cooperation.

### Pest/Pesticide Update

Ô **Assail 30SG** has received a 2ee recommendation for control of pepper weevil. It allows Assail to be applied with a rate range of 2.5-4 oz per acre on fruiting vegetables.

- Do not make more than 4 applications per season.
- Do not apply more than once every 7 days.
- Do not apply less than 7 days before harvest (PHI = 7 days).
- Do not exceed a total of 0.3 lbs. active ingredient (16.0 ozs. product) per acre per season.

This FIFRA 2(ee) recommendation expires December 31, 2006. (Email: Tony Estes, 9/27/06)

Ô **Sinbar (Terbacil) labeled on Watermelon** Sinbar herbicide has just received a supplemental label for use for control of annual broadleaf weeds in watermelon. A maximum of one preemergence, ground application of Sinbar (terbacil) may be applied at a rate of 2 to 4 ounces product (0.1 to 0.2 lb ai) per acre. A 70-day preharvest interval (PHI) is required. Sinbar may be used for direct seeded or transplanted watermelons. For direct seeded watermelons, apply post seeding, but preemergence. Where transplants are used, apply pretransplant. In mulch culture, apply pre-under the mulch or can be applied to row middles.

Sinbar is especially effective for annual morningglory and nightshade. Be especially aware of plant back restrictions. Use lower rate on very sandy soil with low organic matter and for seeded watermelons.

Use on watermelon only. Other cucurbit crops, such as squash, cucumber and muskmelon are not tolerant to terbacil. Have the supplemental label in hand before use. (Bill Stall, Vegetarian Newsletter)

Ô **Southern Blight (*Sclerotium rolfsii*)** has been more prevalent in tomato fields this fall than in the past, and has shown up not only on wet row ends as is often the case, but also in drier areas of the field and on older plants than we



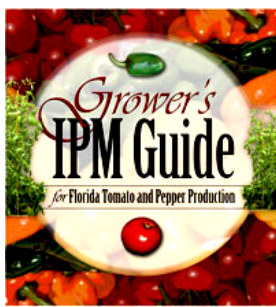
usually see it. The culprit was likely the prolonged rain earlier this season that some farms saw for 2-3 weeks straight. This disease prefers wet and warm (80-95°F) conditions and like many diseases, is just waiting for the right host and environmental conditions. The initial symptom that most will notice is wilting of the plant. Under moist conditions, white mycelium develops on the stem and after a few days the sclerotia, mustard seed size tan to reddish-brown overwintering structures, may appear. The fungus also readily goes to the fruit, causing a massive soft rot. Southern blight has many hosts and other than removing diseased plants, little can be done during the season. Even removing plants is not completely effective as often masses of sclerotia are on the soil as well as on the plant stem. What about next fall for those who are going back with tomatoes on this same ground? Rotation to corn, sorghum, other grasses (including pasture) or resistant plants can help as can eradicating weeds. This pathogen also favors acidic soils but liming to levels that are very effective results in soil too alkaline for growth of many crops. Deep plowing to bury plant residue may help. Sclerotia do not survive as well when buried at least 6 inches deep. Also, organic debris remaining on the soil surface offers a food base for this fungus. In smaller fields at first sign of disease, another alternative mentioned in the literature is using a propane torch for roging, aiming the flame at the soil surface and lower 10 inches of the stem. Growers should make note of fields that are particularly affected this season, and ensure good fumigation next fall. If trying new alternatives, these fields would be good choices for those alternatives with higher levels of chloropicrin. (Personal Communication - Ken Pernezny; and UF/IFAS PP-22)

○ **Monitor Label Changes** There have been some changes to the Monitor 24C label in tomatoes. **Please note that the REI has been changed from 48 hours to 4 days.**

○ **TYLCV has been reported from tomatoes in Sinaloa Mexico.** Symptoms were first seen in fall of 2005 and were widespread in Culiacan, Guasave, and Los Mochis. The sequence is very slightly different from the one we have which suggests that it was not introduced into Mexico from Florida or the Caribbean.

**TYLCV was also reported to infect tomatoes in Shanghai China** coincidentally in the same issue of Plant Disease. They report incidences of 90% in their tomato plants in March 2006. (Jane Polston, Plant Pathology Dept. UF/IFAS)

○ **Grower's IPM Guide for Tomatoes and Peppers in the Works** The UF/IFAS Integrated Pest Management office has been assembling an IPM decision-making resource for Florida's pepper and tomato industry. An interdisciplinary, comprehensive resource is being compiled to direct growers through the process of IPM planning and show how IPM tactics can be used to reduce the risk of epidemics, conserve chemistries against resistance and reduce overall production costs.



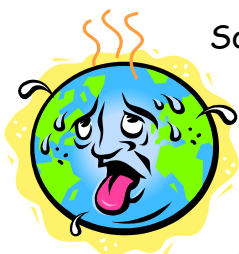
The guide is a work in progress, and suggestions and comments are welcome. It can be viewed online at <http://ipm.ifas.ufl.edu/agricultural/vegetables/tomato/T&PGuide.htm>

Upon its completion, the guide will be published and available for purchase.

## Florida Ag Expo

The first Florida Ag Expo to be held Dec. 8-9 at the University of Florida's Gulf Coast Research & Education Center in Balm will be packed full of seminars, demonstrations, trials and exhibits to keep vegetable growers profitable. Presented by Florida Grower magazine, the University of Florida, the Florida Fruit and Vegetable Association, Florida Tomato Committee and Florida Strawberry Growers Association, this 2-day event will not only feature presentations but running equipment showcases, variety trials, field demonstrations and an expanded trade show - a smorgasbord or one-stop-shopping event for growers. Registration is free and can be done online at [www.floridagrower.net/agexpo/](http://www.floridagrower.net/agexpo/) Watch for more information in the weeks to come.

## Rising Temperatures and Plant Productivity

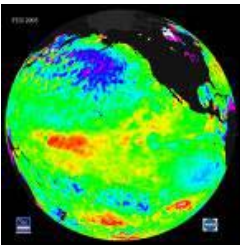


Some like it hot. But some plants don't. In fact, they stop setting seeds. "While higher carbon dioxide levels may encourage some plants to grow larger and increase crop yields, elevated temperatures could leave seed crops sterile," says L. Hartwell Allen, Jr., a soil scientist in [ARS's](#) Chemistry Research Unit in Gainesville, Florida. "Increased temperatures affect reproductive processes more than they affect photosynthesis and vegetative growth. A plant may still grow to its typical size even if its seed development fails." Allen and ARS plant physiologist Joseph C. Vu have carried out temperature-elevation studies with colleagues associated with the University of Florida-Gainesville and the International Rice Research Institute. They used growth chambers under natural sunlight and greenhouses set for gradient temperatures to evaluate heat tolerance of various cultivars. They measured heat's effect on yields of rice, grain sorghum, kidney beans, soybeans, and peanuts grown at two levels of carbon dioxide—near ambient (350 parts per million, or ppm) and double ambient (700 ppm)—and at four maximum/minimum daily temperature cycles. Each crop was found to have its own optimal mean daily temperature (OMDT) for seed yield. As temperatures rose, yields decreased, dropping to zero at about 18°F above each crop's specific OMDT. Allen says seed productivity generally decreased by about 6 percent for every 1°F above a given plant's OMDT. Current summer temperatures in the southern United States are 2°F - 4°F higher than optimum for most grain crops. Compared to rice and grain sorghum, which yield best at an OMDT of 77°F, kidney beans were more sensitive to heat, while soybeans and peanuts were less so. Pollination failure was the chief cause of yield declines at higher temperatures. The number of pollen grains per

flower and the percent of viable pollen declined as temperature increased, as did the number and size of seeds per pod. Allen found that fewer soybeans were produced at above-optimal temperatures, and individual beans grew less. Peanut yields fell because the number of viable pollen spores and percentage of flowers setting seeds declined, eventually reaching zero. For all the crops studied, even when pollination was successful, shortened seed-filling time and higher respiration rates at moderate temperature increases also contributed to yield declines. Allen says that using traditional breeding to develop crops with built-in heat tolerance may offer the best hope for helping plants—and growers—cope with rising temperatures. "We're trying to identify cultivars that yield well in very hot environments," he says. "If heat tolerance could be incorporated into all productive crop varieties, it would lessen the agricultural impact of climate change. "Also, adjusting the time of day when pollen is shed by a plant could improve its viability. Varieties that shed pollen earlier in the day, when temperatures are cooler, would be more likely to flourish."—By [Jim Core](#), formerly with ARS. "**Rising Temperatures and Plant Productivity**" was published in the [August 2006](#) issue of *Agricultural Research* magazine.

## Climate Phase Forecast

(Updated September 12, 2006) It appears that El Niño has returned for the first time since the weak event of 2002-2003. The easterly trade winds that are normal for the tropical Pacific have been significantly weaker than normal this summer. This relaxation of the trade winds has triggered the appearance of unusually warm sea surface temperatures along the equator from the International Date Line all the way to the coast of South America. The spread of unusually warm water has taken on the traditional El Niño pattern. While this El Niño event began a little later in the year than most El Niño's, summer/fall is the usual development season when sea surface temperatures rise and spread across the Pacific. El Niño normally reaches peak intensity and coverage in the winter months. With this in mind, it is very likely that the current El Niño will intensify further and last through the winter of 2007. The affected area of the Pacific Ocean is vast and a tremendous amount of heat is stored once an El Niño reaches maturity, and this stored heat does not dissipate quickly once an El Niño has formed.



For portions of the Southeast United States (Florida, the coastal plains of Alabama and Georgia) El Niño brings very wet and cool winter and spring seasons. El Niño is also known to be associated with a relatively inactive tropical hurricane season. For more information on how we expect this El Niño to impact our climate, please reference the Fall Climate Outlook and Climate Risk Tool on this website.

<http://staging.agclimate.org/Development/apps/agClimate/controller/perl/agClimate.pl?function=climforecast/current.html&location=local&type=html&primary=2&major=5&sub=0>

## Plants Try to Shut the Door on Bacteria

Researchers at Michigan State are unveiling new knowledge of how bacterial pathogens invade plants and take hold. The most recent paper redefines the role of the plant's stomates in defense against invading bacteria. Stomata are like tiny mouths that open and close during photosynthesis, exchanging gases. In sunshine, the stomata open. In darkness, they close to conserve water. It has been assumed that these tiny ports were busy with their photosynthesis business and were merely unwitting doorways to invading bacteria on a plant's surface. MSU researchers have discovered that stomata are an intricate part of the plant's immune system that can sense danger and respond by shutting down. The research group performed experiments on *Arabidopsis*, a common laboratory plant, but the mechanisms could be universal across all land plants. Some bacteria have gotten smarter. The group found that plants recognized human-infecting bacteria, such as *E. coli*, and kept the stomata closed to them. But plant-infecting bacteria, like those most destructive to crops, have figured out a way to reopen the shut-down stomates. It appears those plant-based bacteria produce a phytotoxin, a chemical called coronatine, to force the stomates back open. For bacteria, plant entry is crucial to causing disease and probably survival. They could die if left lingering on the surface. Interestingly, animal-based bacteria are not known to produce coronatine. (*MSU Today*, 9/8/06). (Chem Speaking Sept 2006)

## Pesticide Requires Help to Kill

Recent work at the Univ. of Wisconsin has shown that the most widely used organic insecticide, a bacterium known as Bt, requires the assistance of other microbes that colonize the insect gut to perform its lethal work. They found that when they used antibiotics to clear all the native bacteria that colonize the gut of gypsy moth caterpillars and then exposed them to Bt, the caterpillars showed no toxic effects. When the insect's microbial gut flora were reestablished, Bt's insecticidal activity was restored. The upshot may be in designing strategies to manage insect pests by enhancing the killing effects of Bt using indigenous insect gut microbes or other bacteria known to promote blood poisoning. (Excerpted from UW-M Press Release, 9/25/06, via *Chemically Speaking*, October 2006)