

# Manatee Vegetable Newsletter

December 2007

Calendar

Publications & Websites

Increased Water Restrictions Likely

Label Updates/Changes

Pesticide Potpourri

New Use for Metalized Mulch Film

In Managing Greenhouse Pests

Pesticide License Reminders

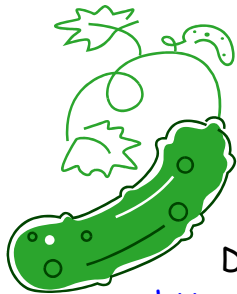
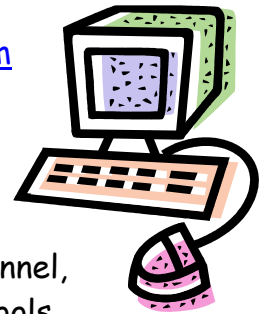
Triple Virus Threat for Cucurbits



## Publications/Websites of Interest

▣ Department of Labor website for information on the H-2A Certification Program <http://www.foreignlaborcert.doleta.gov/h-2a.cfm>

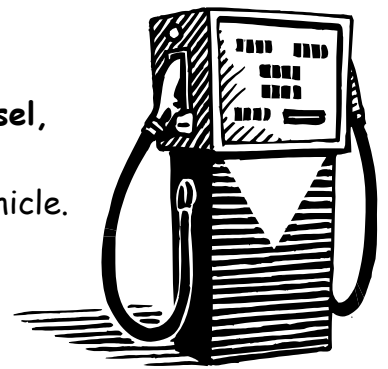
▣ The Florida Automated Weather Network (FAWN) has launched its new-and-improved Internet site. The site has been completely overhauled with a new user interface, database, and web and data servers. All this, operating on new servers monitored 24/7 by UF personnel, will provide the user with faster, more reliable access to FAWN data, tools, and other resources. The new site can be accessed at <http://fawn.ifas.ufl.edu>.



▣ PP237/PP159 **Plectosporium Blight of Cucurbits**, a 4-page illustrated fact sheet by J. Stacy Strickland, Gary K. England, and Robert J. McGovern, discusses this relatively new disease of cucurbits, its disease cycle, symptoms, and management. Includes a table of fungicides recommended for use in pumpkin and squash. Published by the UF Department of Plant Pathology, September 2007.

<http://edis.ifas.ufl.edu/PP159>

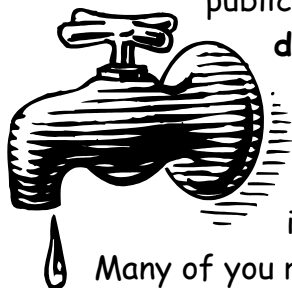
▣ With so much buzz about ethanol and future biofuels, how many Floridians know where the nearest station selling **E85, E10, biodiesel, and biodiesel-blended fuels** is located? E85, an alternative fuel comprised of 85% ethanol and 15% gasoline, requires a flex-fuel vehicle.



E10, gasoline blended with 10% ethanol, and biodiesel-blended fuels can be used in virtually any modern gasoline or diesel engine respectively. For those searching for alternative fuel stations, FDACS has launched a Web site dedicated to this cause. The site called Florida's Alternative and Renewable Fuel Station Locator allows consumers to search for stations by region across Florida. The Web site is the latest effort in Commissioner Charles Bronson's "Farm to Fuel Initiative," which is designed to ease both Florida and the nation's dependency on foreign oil and promote cleaner, renewable fuels by having Florida farmers grow fuel crops to support this production. The initiative stems from the "25 x '25" vision, which calls for 25% of the nation's energy needs to be produced by America's farms, ranches, and forests by the year 2025. Go to <http://www.doacs.state.fl.us/standard/petro/AltSiteMap.html> to find the nearest station selling alternative fuels. (Frank Giles, FL Grower To Go, 11/13/07)

## Increased Water Restrictions Likely

Since January 2007, SWFWMD has been under *Phase II Severe Water Shortage Restrictions* for the entire sixteen county area. At the November 2007 governing board meeting, the board voted to extend the Phase II Severe Water Shortage Restrictions through June 30, 2008. At the December 18, 2007, governing board meeting, the board discussed declaring a Phase III or Phase IV Water Shortage for all or parts of the District. Phase III Extreme Water Shortage Restrictions would include once-per-week watering on the same days but fewer hours than the current measures, limitations on the current exemptions (such as new plant establishment), and additional restrictions for other water users. A full Phase IV Critical Water Shortage Restrictions would include stricter water hours than Phase III, time-of-day and day-of-week limitations on micro irrigation, and the ability to ban lawn watering use not immediate to public health and safety. **At the December 18 meeting, the board**



**decided to stay at Phase II but gave the executive director the authority to make changes if needed before the January 29 board meeting.** Growers in the Manatee/Ruskin area need to be aware that if Phase IV restrictions are implemented, there will be increased scrutiny of tailwater runoff from vegetable operations.

Many of you remember several years ago when we were being monitored aerially for runoff. Get ready for a similar scenario if this should happen.

## Label Updates/Changes

- The Florida Department of Agriculture and Consumer Services (FDACS) has approved a Special Local Needs (SLN) registration for the use of EPTC (Eptam® 7-

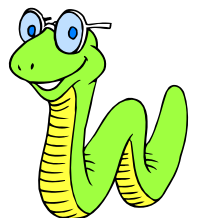
**E) herbicide** to control weeds such as nutsedge under plastic mulch in transplanted tomato. The registration is FL-070007. (FDACS letter of 10/22/07).

- The FDACS has approved a SLN registration for the use of **lactofen (Cobra®)** herbicide for pre- and postemergent weed control between rows of fruiting vegetables and okra grown in raised bed plastic-mulch production systems. The registration is FL-070006. (FDACS letter of 9/26/07).
- The FDACS has conditionally approved the registration of **Actara® (thiamethoxam)** insecticide for use on brassica leafy vegetables, leafy vegetables, cucurbits, and other crops for control of aphids, whiteflies, and other pests. The EPA Reg. No. for the Syngenta product is 100-938. (PREC Agenda, 11/1/07).
- The FDACS has conditionally approved the registration of **Platinum® (thiamethoxam)** insecticide for use on brassica leafy vegetables, leafy vegetables, cucurbits, and other crops for control of aphids, whiteflies, and other pests. The EPA Reg. No. for the Syngenta product is 100-939. (PREC Agenda, 11/1/07).
- The FDACS has conditionally approved the registration of **Radiant® insecticide (spinetoram)** for use on bulb vegetables, grains (except rice), cole crops, cotton, cucurbits, fruiting vegetables, herbs, leafy and legume vegetables, leaves of root/tuber and legume vegetables, okra, peanut, potato, tuberous and corm vegetables, soybean, and strawberry for control/suppression of caterpillars, leafminers, thrips, and certain psyllids. The EPA Reg. No. for the Dow AgroSciences product is 62719-545. (PREC Agenda, 12/6/07 via Chemically Speaking Newsletter, Dec 2007).



## Pesticide Potpourri

► A modified version of the Bt toxin may help manage the development of resistance. Thus far, resistance has only been documented in the field for two insects: diamondback moths (*Plutella xylostella*) and cabbage loopers (*Trichoplusia ni*), both of which produce larvae that munch their way through vegetable crops. Two researchers from the National Autonomous University of Mexico in Morelos and their colleagues have designed a new way to stave off pests by modifying the Bt toxins. They found that when they deleted a specific region of a Bt toxin, the toxin no longer needed to bind to a receptor before it could kill its host. They tested two versions of the new toxin against Bt-resistant pink bollworms (*Pectinophora gossypiella*) reared in the laboratory. The bollworms were at least a hundred times more susceptible to one form of the modified Bt toxin than to the natural compound and another version of the modified toxin killed all of the resistant bollworms. (*Nature*, 11/1/07).



► Keep in mind that with this winter's warm temperatures to, insects, particularly whitefly, will keep reproducing and will be ready to find

those young tomatoes as soon as they are planted. Even though planting and harvesting will likely overlap this winter if the weather and market hold, it's still important to destroy old crops as soon as you are finished. Remember to include oil or some insecticide in your tank mix. If using oil, use it **with** the herbicide and not ahead of it. Using it 1 or 2 days ahead will probably result in poor efficacy of the herbicide, plus require an extra, unnecessary trip through the field.

## **New Use for Metalized Mulch Film in Managing Greenhouse Pests**

A recent article in the Vegetarian Newsletter discusses the use of metalized mulch film for insect, specifically whitefly, control. Although this article focused more on fruit production, it is also applicable to transplant production. With greenhouses, pest exclusion is the first control strategy and even with screens, etc., whiteflies can still get close enough to cooling pads to gain entry via the air pulling through the pad. In an on-farm trial in Obrien, Florida, one greenhouse was surrounded with metalized mulch which was secured to the ground with nursery pins beginning next to the structure and covering 10 ft on the sides of the greenhouse and 20 ft in the back of the greenhouse where the evaporative cool pad was located. Whitefly adults were monitored by using yellow sticky cards inside the greenhouse. Even before the crops of vegetables and cut flowers were established, adult whiteflies were found on sticky cards inside the greenhouses. Over the entire season, the metalized mulch reduced the whitefly adults from entering the greenhouse by approximately 90%. The population of whitefly that season was very high, making total exclusion very difficult. (R. C. Hochmuth, W. L. Laughlin, R. K. Sprenkel and K. S. Smith, Vegetarian Newsletter, Dec 2007) For a copy of the complete article and photos, please go to <http://www.hos.ufl.edu/vegetarian/index.htm> and click on the article topic.

## **Pesticide License Reminders**

For those of you with pesticide licenses, please note that your contact in this office will be Jennifer Glassburn. Many of you may already know Jennifer but she will have information on CEUs, licenses, testing, etc. We will still be offering pesticide tests on an appointment basis only. Just call Jennifer at 722-4524 (ext. 265) to schedule an appointment. There are plans to continue the CEU articles in Citrus and Vegetable Magazine. For a listing of other CEU opportunities through this office, check out the link <http://manatee.ifas.ufl.edu/pesticide.htm> Remember.....if you don't want to take the tests again, keep up with those CEUs!



Remember as you are getting ready to start a new crop season to check and make sure your posters are up to date. There is a list on the vegetable website at <http://manatee.ifas.ufl.edu/vegetable.htm> You can also find a copy of the WPS inspection form at this site. This is a good document to use as a self-audit to make sure you are ready for inspections.

## Triple Virus Threat for Cucurbits

Over the last couple of years, the number of whitefly-transmitted viruses in some cucurbit fields has increased to almost epidemic proportions. Growers and scientists are now dealing with 3 major viruses in cucurbits, all of which are transmitted by the silverleaf whitefly, *Bemisia tabaci*. The host range is similar (mostly cucurbits) but the symptoms differ.

Most growers are aware of ***Squash Vein Yellowing Virus (SqVYV)***. Symptoms of this Ipomovirus were first seen in watermelon in Florida in the mid 1980's. It is widely distributed in SW and West Central Florida and has also been reported from southern Indiana. It is probable that this virus is native to Florida. Cucurbits are hosts, especially squash and watermelon, but *Momordica charantia* (balsam-apple) is also a known host and potentially an excellent reservoir of SqVYV. Symptoms of SqVYV in watermelon are death of young plants, death of vines of older plants and necrosis in the fruit, especially just inside the rind. This virus is the cause of watermelon vine decline (WVD) which Florida watermelon growers have been battling since 2003. Trials for resistance to SqVYV are being conducted by grafting watermelon germplasm onto gourd rootstock and evaluating the watermelon scions for symptoms. Several potential sources of resistance in wild type watermelons have been identified. Also being evaluated are insecticides and use of silver plastic mulch to manage SWF and thus WVD.

***Cucurbit Leaf Crumple Virus (CuLCrV)*** is a begomovirus first seen in Florida in 2006 in squash. At the same time it was found in grafted watermelon transplants received in Georgia from the Western U.S. Known hosts include tobacco and bean. Like the other viruses, SqVYV and CYSDV (see below), CuLCrV is able to infect most cucurbits including watermelons, cucumbers, squash, and pumpkin. Weed hosts are being investigated, but it is possible that balsam apple may be a host as it is in SqVYV. Initial symptoms include a chlorotic mottle pattern on foliage and crumpling of leaves. Plants which are infected early are stunted. In squash, leaves can be thickened and distorted as well as curled and crumpled. Fruit symptoms vary but severe color break was observed in yellow summer squash in 2006.

***Cucurbit Yellow Stunting Disorder Virus (CYSDV)*** was not seen in Florida until 2007. It infects melons, cucumbers, gourds and winter and summer squash. Symptoms appear

first on older leaves toward the center of the plant, progressing outward along vines toward growing points. Symptoms often mimic water stress. Then a yellowing between the leaf veins appears and the leaves later turn bright yellow. On some, small green spots develop on leaves of certain varieties. Older leaves drop as the plant's internal transport system breaks down. This virus does affect fruit quality by reducing fruit size and sugar content, plus shortening the product's shelf life. It was first identified in cucumber and melon crops in the Middle East more than 15 years ago and in cucumbers and melons in Spain about 10 years ago. In 2003-04, it was identified in Central America and the Rio Grande Valley, Texas, and 2006 in Arizona and California where it and CuLCrV caused significant yield losses. It is not known if this virus infects wild cucurbits or other uncultivated hosts. As with some other viruses, it may cause symptomless infections in some hosts.

Management recommendations for these viruses are not that dissimilar to recommendations for tomatoes and TYLCV. They include:

- Select the most vigorous and well adapted varieties
- When using transplants, use pathogen-free, whitefly-free transplants. Use caution when buying transplants that were produced in the western U.S.
- Use reflective mulches
- Treat prior to planting with nicotinoids to manage whiteflies in the field
- Apply appropriate insecticides for whitefly control during production in the field
- Don't plant in old established fields. Volunteers, especially cucurbits and balsam apple, can be a significant reservoir for these viruses.
- Post-production sanitation - pull up the plastic and plow fields under. Prevent growth of volunteers or remove all volunteers
- Maintain a host-free period between spring and fall crops

(Alicia Whidden, UF/IFAS, Hillsborough County Extension Service, Jane Polston, UF/IFAS, Plant Pathology Department, Phyllis Gilreath, UF/IFAS, Manatee County Extension Service, Scott Adkins, USDA/ARS, Ft. Pierce)

References for this article and for additional information on these cucurbit viruses:

"On Guard Against Watermelon Vine Decline", USDA/ARS, Nov/Dec 2007. Adkins, S. T., B. Bruton and S. Kousik.

<http://www.ars.usda.gov/is/AR/archive/nov07/vine1107.htm>

"Proactive efforts underway to minimize CYSDV losses in fall desert cucurbit crops" Western Farm Press, Aug 20, 2007.

<http://westernfarmpress.com/vegetables/082107-cucurbit-virus/>

"Whitefly-Transmitted Cucurbit Leaf Crumple Virus in Florida". S. E. Webb, F. Akad, T. W.Nyoike, O. E. Liburd, and J. E. Polston. UF/IFAS. EDIS ENY-477. March 2007. <http://edis.ifas.ufl.edu/pdffiles/IN/IN71600.pdf>

"New Virus Attacks Melons, Cucumbers and Squash". University of Arizona, UA News. March 21, 2007. <http://uanews.org/node/13185>

For a copy of this article plus the accompanying photos, please go to the website at <http://manatee.ifas.ufl.edu/vegetable.htm>

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