



Berry/Vegetable Times

February 2010



Calendar of Events

Feb. 9 and March 9, 2010
Pesticide License Testing.
Hillsborough County Extension
Office, Seffner. 9 am. For more
information call Dave Palmer at
813-744-5519 ext. 107.

Feb. 17, 2010 Strawberry Field
Day and Education Program,
GCREC. For updates go to
<http://strawberry.ifas.ufl.edu/>.

Feb. 23, 2010 Thrips Identification
and Management Workshop.
GCREC. 5:30 pm. Diner included.
For more information and to RSVP
call Alicia at 813-744-5519.

June 6-8, 2010 Florida State
Horticultural Society Annual
Meeting, Plantation Inn, Crystal
River, Fl. For more information
visit: <http://fshs.org>.

July 31 and Aug. 1, 2010 Florida
Small Farms and Alternative
Enterprises, Osceola Heritage Park
Conference Center, Kissimmee. For
more information visit: <http://smallfarms.ifas.ufl.edu/>.

A University of Florida/IFAS and Florida
Cooperative Extension Service
Newsletter

Hillsborough County, 5339 CR 579
Seffner, FL 33584 (813) 744-5519
Joe Pergola, County Extension Director
Alicia Whidden, Editor

Gulf Coast Research & Education Center
14625 County Road 672,
Wimauma, FL 33598 (813) 634-0000

Jack Rehcigl, Center Director
Christine Cooley, Layout and Design
James F. Price, Co-Editor
<http://grec.ifas.ufl.edu>

From Your Agent

Receiving the Newsletter and Meeting Announcements

You may have noticed that you have not received the Berry/Vegetable Times newsletter in the mail in quite a while. That is because the Berry/Vegetable Times has gone to an electronic format due to budget costs. We would like to keep all our subscribers so if you have not already signed up to receive it by e-mail, please give your e-mail address to either Christine Cooley (ccooley@ufl.edu) or me so that you will keep receiving the newsletter. The newsletter keeps you informed on upcoming events, regulatory issues, the latest research on strawberry and vegetables and other information you may find helpful. If you do not have e-mail access I can fax you the newsletter but just remember you will miss having

(Continued on page 2)

GCREC Strawberry Field Day

Christine Cooley, GCREC Media Coordinator




Wednesday, February 17th will mark the next Strawberry Field Day at Gulf Coast Research and Education Center in Wimauma. This year's event will include two special guest speakers. Mark Murai, President of the California Strawberry Commission, will be speaking on the California strawberry market and Mark McLellan, Dean of Research for IFAS/UF will give an update on IFAS research. As always, participants will be able to see research in action during the field tours which will highlight UF varieties, soil fumigation and weed management, plant pathology and horticultural practices. Participants will also be able to taste test new varieties. The event starts at 12 noon with lunch and registration. CEUs are being applied for. Call Christine Cooley at 813-634-0000 Ext. 3101 or email ccooley@ufl.edu to attend this year's Strawberry Field Day. Registration is free so sign up your entire team.

the pictures in color. If you want the newsletter faxed to you please give me a call at the office number below.

Occasionally there are meetings or announcements that come up with too short a time to notify you in the newsletter. When this happens, I fax out notices of the meeting or information that needs to get to you. If you would like to be able to receive these notices, please give me your fax number or an e-mail address so that I will be able to contact you. My phone number and e-mail address are below.

Remember to report your freeze pumpage to the Southwest Florida Water Management District. In this issue we have a message from Ron Cohen with a link to the forms you will need.

A thrips workshop for strawberry and vegetable growers is scheduled for Tuesday, Feb. 23. It will be held at the Gulf Coast Research and Education Center in Balm. It will start at 5:30 with dinner and will be over at 8:00-8:30 p.m. Thrips are a major problem for us in the spring and this workshop will help you identify the species you are dealing with so you will be able to take the appropriate action to control them. Drs. Joe Funderburk and Jim Price will be speaking on identifying thrips and proper control measures for strawberry and vegetables. This information is especially important for those that grow vegetables after their strawberry crop. Resistance management is critical in managing thrips populations. To receive more information on this meeting please be sure I have a way to send you the information or give me a call. RSVP to me for the meeting so I will have a headcount for the dinner.

Happy Valentines Day 

Alicia Whidden

Alicia Whidden

Hillsborough County Extension Service

813-744-5519 ext. 134

awhidden@ufl.edu

What the Public Needs to know about Protecting Strawberries from Freeze Damage

Craig Chandler and Vance Whitaker



As you talk to people about strawberry freeze protection, here are some facts you may want to keep in mind:

Understanding that this was an extremely rare January can be of great help to the public. Typically, there are no more than a few freezes each winter in the Plant City/Dover area, and these are often of short duration (3-4 hours or less). A period of 9 days in which the minimum daily air temperature is below 32 ° F and the maximum air temperature is ≤ 60 ° F, as was the case during the first half of January this year, is a once in a lifetime occurrence. According to FAWN, the weather station at Dover typically experiences a total of 96 hours below 45 ° F in January. This year it was 264 hours.

When a freeze is the result of clear skies and calm conditions, sprinkler irrigation is an efficient and cost effective method to protect strawberry flowers and fruit. Eighty calories of energy (in the form of heat) are generated for each gram of water that freezes. This heat can keep plants at 32 ° F, but water has to be applied continuously and in sufficient quantities.

Newspaper and TV reporters often state that a coating or blanket of ice insulates flowers and fruit, protecting them from air temperatures below 32 ° F. To the casual viewer or reader this sounds like a logical explanation, but if it were true sprinkler systems could just be run until the plants were covered with ice and then turned off. What protects strawberry flowers and fruit is the heat of the liquid water (which comes out of the ground at about 72 ° F) and the heat that is generated as the irrigation water changes from liquid to solid (a chemical property known as the heat of fusion).

Damage to strawberry flowers and fruit can start to occur when tissue temperature reaches 30 °F. A period of very warm weather preceding the freeze may result in tissue being damaged at a higher temperature. Conversely, a period of cold weather preceding the freeze may condition tissue such that it can withstand temperatures below 30 °F before damage occurs.

When there is little or no wind, sprinkler systems will generally not be turned on until the air temperature is 31 °F. However, when an advective (windy) freeze is expected, it is common to turn the sprinkler system on when the air temperature is 34 °F. This is because the temperature of wet plant tissue exposed to wind will initially drop due to evaporative cooling. Then as water begins to freeze, the heat of fusion will counteract the heat loss due to evaporation and the temperature will stabilize at about 32 °F.

Wind can result in evaporative cooling that lowers tissue temperatures 5-6 °F below the air temperature. This is why, if it's windy, the air temperature may need to be 36 °F or higher before it is safe to turn off the sprinklers.

Reporting Freeze Protection Pumpage to the Water District

Ron Cohen, P.E., Agricultural and Irrigation Engineer
Southwest Florida Water Management District
(352)796-7211 Ext. 4300 / Fax: (352)544-2328
1-800-423-1476 ext 4300
Ron.Cohen@Watermatters.org

Besides being a requirement of a water use permit, reporting cold protection pumpage is needed to help avoid potential compliance issues and to ensure that a permittee's conservation credits are calculated correctly. Cold protection amounts are not limited by a permit's annual average allocation. However, the cold protection

amounts need to be reported so that they can be subtracted from the submitted pumpage quantity. If a permittee does not report the use of irrigation for cold protection this could make it appear that the permittee overpumped the permitted quantity and cause the District's computer system to flag the reported high water use as a permit violation.

Reporting cold protection water use also ensures that a permittee receives all the SWUCA conservation credits they have earned. The cold protection pumpage report is used by the District to ensure that conservation credits are not deducted for this important use of irrigation for crop protection.

Copies of the form can be found on the District's web site at: <http://www.swfwmd.state.fl.us/permits/wup/>. The District realizes that the producers are busy with their crops, but it will be in their own best interest to follow through with this information. If they can get the reports to the District the same time they report their monthly meter readings it will help both the growers and the District.

Battling Botrytis Fruit Rot

Jim Mertely and Natalia Peres

Strawberry losses to plant diseases may be high this season due to the increased cloud cover, higher relative humidity, and frequent rains associated with an El Nino winter. Angular leaf spot (ALS) has already caused problems. An article on ALS appeared in Berry Vegetable Times last March and can be found on the internet at <http://strawberry.ifas.ufl.edu/BVT0309.pdf>. Botrytis fruit rot is another disease favored by El Nino conditions, and we are now entering the peak bloom period when the battle against Botrytis can be won or lost.

Botrytis fruit rot (BFR) or "gray mold" is a disease caused by *Botrytis cinerea*. This fungus usually attacks flowers and fruit,

although transplants stored in the cooler for too long may also be damaged. Fruit developing BFR are often infected as flowers. That's why it is so important to apply fungicides for Botrytis during the flowering period. Some of our berry fields have already entered the main flowering period or will do so very soon. Infected flowers develop into visibly diseased fruit within two to four weeks (Photo 1). By then, it can be too late to apply effective control measures. The time for effective management of BFR is now, during the bloom period.



Photo 1. BFR lesion on young fruit

Conventional wisdom says to begin spraying for Botrytis at the start of the main flowering period (i.e., at 10% bloom). Depending on the cultivar and season, 10% bloom usually occurs between mid- to late January. Applications are made weekly for three to four weeks to protect the majority of flowers that open during the bloom period. Another approach would be to target the applications to periods when flowers are most likely to be infected, that is, when the weather is wet and temperatures are cool to mild. A grower once remarked that he sprays periodically when dew starts dripping off the metal roof of his tool shed before he goes to sleep. This is a very perceptive statement since how long the leaves and flowers remain wet is one of the most

important factors in modeling and predicting Botrytis diseases. An internet-based system to help strawberry growers decide when to spray for BFR is available at <http://www.agroclimate.org>. Locate “Agroclimate tools” on the main menu and click on “Strawberry disease tool” to start the program, then on the weather station icon closest to your field to begin. Growers can also sign up to receive e-mail or cell phone text messages (SMS) alerts when disease risk reaches moderate or high levels. If you are interested, please contact Dr. Natalia Peres (nperes@ufl.edu).

After the decision is made to spray for Botrytis, the next decision involves fungicide selection. Standard protectant fungicides such as Captan (or Captec) and Thiram are both suppressive to Botrytis, but by themselves, neither is adequate when weather conditions favor the disease. When these conditions prevail, products with good activity against Botrytis should be applied, either alone or tank mixed with a protectant fungicide. Products that can be applied alone include Captevate (a premix of captan and fenhexamid), Pristine (a premix of pyraclostrobin and boscalid), and Switch (a premix of cyprodinil and fludioxonil). In some areas, Botrytis has developed resistance to boscalid, so the effects of Pristine should be monitored closely. Elevate (fenhexamid) and Scala (pyrimethanil) are usually tank mixed with protectant fungicides. By using mixtures of different fungicides, other diseases which flare up during the bloom period (e.g., anthracnose fruit rot) are also suppressed.

If flowers are adequately protected during the main bloom period, BFR is minimized, usually for the remainder of the season. Fruit losses can be further reduced by good harvest practices such as plant sanitation. Pickers should be encouraged to pick and throw down newly infected fruit, as well as fruit mummified by Botrytis (Photo 2). Plant sanitation will reduce spore production, but

more importantly, will minimize the amount of infected material left in the plant canopy. This reduces the spread of BFR from diseased fruit or infected fruit stalks to healthy fruit by direct contact (Photo 3).

Additional information on Botrytis Fruit Rot is available on the University of Florida's EDIS website <http://edis.ifas.ufl.edu/pp152>.



Photo 2. BFR-affected old mummified fruit



Photo 3. Fruit-to-fruit spread of BFR

Please remember...

The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products named and does not signify that they are approved to the exclusion of others of suitable composition. Use pesticides safely. Read and follow directions on the manufacturer's label.

Notes on Cultural Practices: Can High Tunnels Reduce Water Volumes for Freeze Protection and Improve Strawberry Yields at the Same Time?

Bielinski M. Santos and Teresa P. Salamé-Donoso

1. What is the Difference between Tunnels and Greenhouses?

There are two main production systems for strawberry throughout the world: Open-field and protected culture. Protected culture includes structures such as greenhouses, high tunnels, and mini-tunnels. A greenhouse is a permanent structure (e.g. set on concrete on the ground) with a glass or plastic roof and walls and in most cases possesses heating and cooling systems. This characteristic can be beneficial for winter season production and for crops that need warm temperatures. Crops inside greenhouses are mostly produced in growing media or soilless culture. Structures range in size from small sheds to very large buildings. Greenhouses could be set up for production, with computer-controlled screens, lights, and heating and cooling systems.

High tunnels are temporary, unheated, plastic covered, solar structures, with passive ventilation through roll-up side walls (Picture 1). These are secured with metal or wooden poles on the ground, similar to a giant backyard tent. Their height might vary from 5 to 20 ft. Crops are usually grown in soil (Picture 2). However, pot, bag and sack culture could be used, along with various growing media (e.g. peat, perlite and vermiculite) depending on availability, prices, and crops. Mini-tunnels or low tunnels are made of galvanized iron or steel bars at a height of about 50 cm from the plants, which are grown on raised beds. Mini-tunnels are covered with clear plastic during cold weather or rain.



Picture 1. Panoramic view of high tunnels at the Gulf Coast REC, IFAS, Univ. of Florida.
Credits: B.M. Santos.



Picture 2. Inside view of strawberries growing on mulched beds in high tunnels at the Gulf Coast REC, IFAS, Univ. of Florida. Credits: B.M. Santos.

Strawberry production under protected structures might not need the use of sprinkler irrigation for freeze protection. Some of the potential benefits of growing strawberries in protective structures, such as high tunnels, are improved yield and fruit quality, reduced incidence of insect populations, weed interference, and protection from rain damage. In addition, high tunnels could diminish the adverse effects of cold weather on late fall and winter production.

2. Effects of Tunnels on Water Use for Freeze Protection and Yields.

2.1. Procedures. In spite of the popular use of high tunnels and protected agriculture in countries such as China, Spain, and Japan, it was still necessary to investigate their effects on Florida strawberry production, due to the differences in climate, cultivars, and production systems. Therefore, research was conducted to compare the effects of high tunnel and open-field production on the growth, fruit earliness and yield of strawberry cultivars. Studies were conducted during two years at the Gulf Coast Research and Education Center of the University of Florida, Balm, Florida. The soil was fumigated with methyl bromide + chloropicrin (67:33 v/v) and the beds were covered with black high-density polyethylene mulch. Fertigation was applied through a single drip tape line delivering 0.23 gal/100 ft/min. The experimental area

was equipped with 4 gal/min sprinklers for frost protection and crop establishment. The tested cultivars were Strawberry Festival, Winter Dawn, and Florida Elyana. The high tunnels were 16 ft high, 25 ft wide and 280 ft long, and covered with a single layer of clear polyethylene film that reduced active solar radiation by 30% (Picture 3). For freeze protection, the ends and sides of the units were covered 24 h before the forecast freezing with a single layer of the same film used on the high tunnel roofs. The units were ventilated by lowering the sides and ends of each unit as soon as the air temperature reached 50°F, provided that another freezing event was not forecast for the following night. Air temperature data loggers were placed 8 inches above bed tops inside and outside the high tunnels and recorded maximum and minimum temperatures each hour during the growing seasons. Bare-root strawberry transplants from Canadian nurseries were planted on 15 Oct. of each year, in double rows 15 inches apart between plants. Immediately after transplanting, overhead irrigation was used for 8 h for the first 10 d to ensure plant establishment. Marketable fruit yield was collected twice per week for a total of thirty harvests during each season. Early

and total yield were considered the total marketable fruit weight from the first six harvests, and from all thirty harvests, respectively.

2.2. Early and Total Yields. Production systems and cultivars affected strawberry early and total yields. During both seasons, early yields were 54% and 16% higher inside high tunnels than in open fields (Table 1). ‘Strawberry Festival’ had the highest early yield with 2.2 and 3.2 ton/acre during the 2007-08 and 2008-09 seasons, respectively, followed by ‘Winter Dawn’ and ‘Florida Elyana’. Strawberry total marketable yields maximized inside high tunnels in comparison with open fields, with 63% and 50% increments during both seasons. Among the cultivars, Strawberry Festival produced the highest total marketable yields, followed by Winter Dawn and Florida Elyana. These findings indicated that the protective environment improved strawberry fruit earliness and total yield under Florida conditions.

2.3. Freeze Protection. Both growing seasons had different temperature patterns from October to March of each year. In 2007-08, there was a single freeze in the early hours of 3 Jan. 2008 and the air temperature outside

Table 1. Effects of production systems and strawberry cultivars on early and total marketable yield, Balm, Florida, 2007-08 and 2008-09 seasons.

	Early marketable yield		Total marketable yield	
	2007-08	2008-09	2007-08	2008-09
Production systems	(ton/acre)			
High tunnels	2.2 a	3.2 a	13.4 a	15.8 a
Open fields	1.4 b	2.8 b	8.3 b	10.6 b
Significance ($P<0.05$)	*	*	*	*
Cultivars				
‘Strawberry Festival’	2.6 a	3.6 a	13.6 a	20.5 a
‘Winter Dawn’	1.8 b	3.0 b	10.3 b	9.9 b
‘Florida Elyana’	1.1 c	2.2 c	8.5 c	9.2 b
Significance ($P<0.05$)	*	*	*	*

the high tunnels was as low as 27°F, whereas the air temperature at the same time inside the high tunnels was 34°F. In the 2008-09 season, there were three freezes during this season; from 21 to 23 Jan., and 5 and 21 Feb. 2009. The minimum air temperatures outside the high tunnels were 27, 21, and 23°F (from 21 to 23 Jan.), 27°F (5 Feb.), and 30°F (21 Feb.), whereas the lowest minimum air temperature inside the high tunnels was 34°F during all these freezing events. No sprinkler irrigation for freeze protection was necessary inside the high tunnels.

3. Summary.

These results showed that planting strawberry cultivars under high tunnels has a major influence on the growth and development of strawberry. Using high tunnels led to improved early and total marketable yields by 29% and 56%, respectively, across all the tested cultivars. Furthermore, the marketable yields of the next six harvests after freezing increased by 75% and 64% in the 2007-08 and 2008-09 seasons, respectively (data not shown).

Several environmental factors likely influenced these responses:

- a) High tunnels protected flowers and small fruit against the effects of hard freezes during both seasons;
- b) Flowers and fruit were not exposed to sprinkler irrigation damage during freeze because it was not necessary inside the high tunnels to protect the crop;
- c) High tunnels protected fruit against rainfall, which causes reduced fruit number and quality.

Although a detailed economic analysis is needed, the use of high tunnels in Florida for strawberry production might benefit growers by improving earliness and providing a competitive edge in the market. Also, using high tunnels may open these opportunities for Florida strawberry growers:

- a) Minimal use of sprinkler irrigation for

freeze protection, hence reducing fruit damage and fuel or electricity costs of water pumping;

- b) Decreased incidence of foliar and fruit diseases, which are disseminated by rain drops, leading to less fungicide applications;
- c) Opportunity for alternative production systems, such as intense intercropping and soilless culture to reduce fumigation practices.

Conditions prevailing on individual farms should influence growers' interest in this alternative production system. Care should be exercised to avoid broad generalizations of the suitability of these protective structures.

Rimon Novaluron Approved in Florida for Sap Beetles

James F. Price

U.S. EPA has approved Florida strawberry growers' use of Rimon novaluron for the control of sap beetles now through 31 December 2010 by the Section 18 specific exemption process. Rimon may be applied at the rate of 12 fluid ounces of product per acre up to three applications.

Rimon does not kill adults, but is very effective in preventing the occurrence of larvae in the field and reproduction of sap beetles within the treated area. UF GCREC research sponsored in part by FSGA has determined that Rimon is effective when applications are separated by 3 weeks.

Rimon is provided by Chemtura Corporation. Chemtura, FFVA, FSGA, and UF cooperated in securing the use of Rimon for Florida strawberries.

Spotted Wing Drosophila is Widely Distributed in Our Region of Florida

James F. Price

FDACS fruit fly investigators now have found spotted wing drosophila, pest of ripe strawberry, blueberry, raspberry, and blackberry fruit, in most counties from Lake in

the north to Collier in the south and in a band across the state from Pinellas to Indian River counties. The fly should be considered generally distributed within this area and likely to expand its range soon well beyond these counties.



Farmers should make a skin check a priority

Farming has plenty of challenges, but probably one of the hazards that farmers worry about the least are the dangers from working in the sun year-round. As the harvest concludes and winter sets in, farmers should pay attention to the condition of their skin.

"More than 11,000 Americans die each year from skin cancer," says Dr. David M. Pariser, a dermatologist and president of the American Academy of Dermatology. "But when detected early, skin cancer has a cure rate of 99 percent. Since research shows farmers are among the least likely workers to receive a skin examination by a physician, it's important that farmers perform regular skin self-examinations, which could mean the difference between life and death."

It's as easy as "ABC" to remember how you can identify a mole or lesion that needs the attention of a dermatologist: Asymmetry (one half is unlike the other); Border (irregular, scalloped or poorly defined); Color (varies from one area to another); Diameter (the size of a pencil eraser or larger); Evolving (changing in size, shape or color).

To help farmers minimize their risk of skin cancer, the American Academy of Dermatology recommends that everyone Be Sun Smart:

- * Use water-resistant sunscreen with a sun protection factor (SPF) of at least 30 on all

exposed skin, before heading out to the field or pasture. Re-apply approximately every two hours, even on cloudy days.

- * Wear long-sleeved shirts, pants, a wide-brimmed hat and sunglasses.

- * Stay in the shade when possible, and make sure your tractor has a sun umbrella. The sun's rays are strongest between 10 a.m. and 4 p.m.

- * If working near water, snow or sand, seek extra shade because these surfaces reflect the sun's rays and increase your chance of sunburn.

- * Look at your skin after each harvest. Ask a partner to help. If you notice any moles or spots changing, growing or bleeding, make an appointment to see a dermatologist.

The Academy offers a downloadable Body Mole Map with information on how to perform a skin exam and images of the ABCDEs of melanoma. The mole map is available at www.aad.org/checkspot. The site also has information on how to find a free cancer screening from a dermatologist in your area.

Performing a skin self-exam requires regularly looking over the entire body, including the back, scalp, soles of the feet and between the toes, and on the palms. It is important to use both a full-length mirror and a hand-held mirror to see the scalp, back and buttocks.

For more information about skin cancer, visit the SkinCancerNet section of www.SkinCarePhysicians.com.

Registrants to Lose Inerts Exemption

The U.S. Environmental Protection Agency announced before Christmas that it plans to require pesticide manufacturers to disclose to the public the inert ingredients in their products. An inert ingredient is anything added to a pesticide that does not kill or control a pest. Nearly 4,000 inerts - including several

hundred that are considered hazardous under other federal rules - are used in agricultural and residential pesticides.

The EPA's announcement that it will initiate the rulemaking comes 11 years after it had first been petitioned by activist groups and state officials seeking public disclosure of the ingredients. In 2001, the agency denied those petitions filed by ten state attorney generals and an activist coalition, and its decision was upheld by a federal judge in 2004.

Now, under a new administration, the EPA has decided that drafting a new regulation will "increase transparency" and help protect public health. "EPA believes disclosure of inert ingredients on product labels is important to consumers who want to be aware of all potentially toxic chemicals, both active and inert ingredients, in pesticide products," according to the agency's website.

Formaldehyde, bisphenol A, sulfuric acid, toluene, benzene and styrene are among the ingredients that are allowed in pesticides but are not identified on labels. Some are carcinogens, while some may cause reproductive or respiratory problems if people are exposed. Other inerts seem benign, such as coffee grounds, sunflower oil and licorice extract. One goal of the planned rule is that pesticide companies would be more likely to replace toxic chemicals if they must identify all ingredients on their labels. "By embarking on such rulemaking, EPA intends to effect a sea change in how inert ingredient information is made available to the public," Debra Edwards, the EPA's director of pesticide programs, said in a September letter to the Northwest Coalition for Alternatives to Pesticides, California Attorney General Edmund G. Brown, Jr. and other petitioners.

Edwards wrote that the EPA will seek "a significant amount of input" from stakeholders as they craft the new rule "because of the magnitude of the change and the difficult issues facing the agency" Under current law, pesticide companies already disclose all ingredients to the EPA. The new rule would make them public.

Jay Vroom, chief executive officer of CropLife America, which represents pesticide manufacturers, said that the registrants are concerned they will be revealing confidential business information, or trade secrets, about their formulas. Vroom said it was "just baffling" that EPA will draft a rule when the pesticide products already undergo risk assessments and are approved for use. He said EPA officials are using "unbridled rhetoric" when addressing the issue of inerts.

"We believe these products already have been regulated to protect public health," he said. "What is confusing is why the agency has been out talking about these products as hazardous inert ingredients. To me, that's an oxymoron." Vroom said the industry will work with the EPA but that no timetable for stakeholder meetings has emerged yet. Options the EPA said it will consider include disclosure of all inert ingredients regardless of hazard or only those that are considered potentially hazardous. Some of the requirements may be voluntary. (*Environmental Health News*, 12/23/09).

IFAS CEU Day - 2010

Need CEUs? An opportunity for licensed pesticide applicators to earn CEUs will be held March 30, 2010 from 8:30 to 4:00 EST. The event will be conducted via polycom from participating UF/IFAS county extension offices and research and education centers. An applicator will be able to attend any or all of the 6 sections for pesticide licensing recertification credit. A total of 6 FDACS approved CEUs are available for the entire day in the following categories:

- Agricultural Row Crop
- Agricultural Tree Crop
- Aquatic Pest Control
- Demonstration & Research
- Forest Pest Control
- Natural Areas Weed Management
- Ornamental & Turf
- Private Applicator Agriculture
- Right of Way Pest Control
- Pest Control Operator
- Lawn & Ornamental
- Limited Commercial Landscape Maintenance
- Limited Lawn & Ornamental Pest Control

For more info. and an agendo, visit <http://pested.ifas.ufl.edu>

If interested in attending, contact your local UF/IFAS county extension office
<http://solutionsforyourlife.ufl.edu/map/index.html>



Gulf Coast Research and Education Center

14625 County Road 672
Wimauma, FL 33598
(813) 634-0000
Fax (813) 634-0001
<http://gcrec.ifas.ufl.edu>

**2010 Strawberry Field Tour and Educational Program
February 17, 2010
GCREC, IFAS, University of Florida**

**RSVP - Christine Cooley
(813) 634-0000 ccooley@ufl.edu**

Moderator: Alicia J. Whidden, Hillsborough Co. Extension.

- 12:00 noon Registration and Complimentary Lunch
- 12:25 p.m. Welcome. Jack Reheigl, Center Director, GCREC
- 12:30 p.m. Mark Murai, President, California Strawberry Commission
- 1:00 p.m. Research updates. Mark McLellan, UF/IFAS Dean of Research
- 1:20 p.m. Current issues in extension. Alicia Whidden
- 1:30 p.m. Field tour overview. Bielinski Santos
- 1:40 p.m. Board wagons for field tour at the front of the main building.
20 minute stops:
Stop 1: 2:00 p.m. Soil fumigation and weed management - MacRae & Noling
Stop 2: 2:20 p.m. Plant pathology - Peres & Mertely
Stop 3: 2:40 p.m. Arthropod management - Price
Stop 4: 3:00 p.m. Horticultural practices - Santos
Stop 5: 3:20 p.m. Plant breeding. Strawberry fields - Whitaker & Chandler

