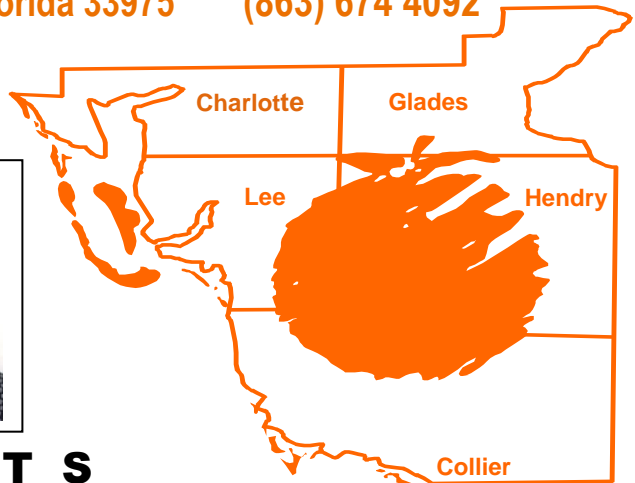


Hendry County Extension, P.O. Box 68, LaBelle, Florida 33975 (863) 674 4092

Flatwoods Citrus



Vol. 10, No. 10 October 2007

Dr. Mongi Zekri
Multi-County Citrus Agent, SW Florida



U P C O M I N G E V E N T S

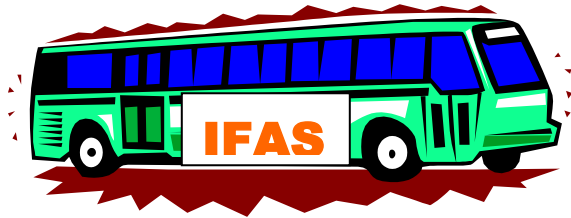
CITRUS GREENING IDENTIFICATION & WORKER SURVEY

TRAINING in October (see enclosed details)

FLORIDA'S CERTIFIED PILE BURNER TRAINING

Wednesday, November 7th, 2007 (see enclosed details)

HENDRY COUNTY EXTENSION AG TOUR



Saturday, 8 December 2007

For more information or to sign up,
call 863 674 4092

International Symposium hosted by UF-IFAS Lake Alfred CREC:

“Application of Precision Agriculture for Fruits and Vegetables”

January 6 – 9, 2008, Orlando, Florida (see enclosed details)

If you want to see or print a color copy of the **Flatwoods Citrus** Newsletter,
get to the Florida Citrus Resources Site at <http://flicitrus.ifas.ufl.edu/>



SECC Fall Climate Outlook, Date updated: September 10, 2007

Current Conditions

August brings record heat and more dry conditions to the Southeast - The month of August brought record heat and little rainfall to much of the area, worsening conditions in drought plagued Alabama and Georgia. Average August temperatures were the highest on record for the states of Alabama, Florida, and Georgia, running from 2.5 degrees F above normal in Florida to 4 and 5 degrees above normal in Georgia and Alabama. Rainfall totals continue to lag behind normal for the most part, with only south Georgia seeing an abundance in August. Due to the hit or miss nature of summer rainfall in the Southeast, some localities have enjoyed occasional relief from afternoon showers while others are left out. However, this temporary relief has been neither often enough nor widespread enough to make a real dent in the drought that has affected the three states this year. Northern and eastern Alabama along with northern Georgia remain in drought characterized from severe to exceptional according to the [U.S. Drought Monitor](#). Exceptional drought corresponds to an event that on average occurs less often than once every 50 years. While the localized rainfall has certainly been welcome, much more is needed to ease the impacts of long-term deficits. In Georgia, Alabama, and north Florida, summer evapotranspiration rates exceed even normal rainfall amounts, meaning significant recharge of surface and groundwater will likely not happen until winter patterns set in.

Fall and Winter Outlook

With an active hurricane season still anticipated, there is a good chance that the area will see one or more widespread rain events from a tropical system. Tropical storms and even hurricanes are a vital component of the late summer and fall climate in the Southeast, which would otherwise be quite dry without their contribution. La Niña conditions usually bring a warmer and drier cool season (October through March) to Florida, central and lower Alabama, and central and south Georgia. With the arrival of La Niña, there is a good chance that drought conditions, currently ranging from exceptional across much of Alabama and Georgia to moderate in South Florida, will continue and possibly worsen throughout the winter and into next spring. If below normal rainfall occurs during the cool season, moisture recharge of groundwater, soils, ponds and reservoirs will be limited. Southeastern states depend on water recharge during the cool season. Farmers who plan to plant winter forage and do not have irrigation capability have a high risk of being seriously impacted by the winter drought. In addition the risk of increased wildfires should be expected during the winter and spring wildfire season in Florida, south Georgia, and south Alabama. We have estimated the impacts on climate based on past La Niña events. For central Florida, the probability of normal or above rainfall for January 2008 is only 8%. The chance of moderately dry (rainfall amounts from just below normal to half of normal) is 20%, and for very dry conditions 72 % (less than half of normal rainfall). For the Panhandle of Florida, southern Georgia, and southern Alabama the probability of normal or above rainfall in January 2008 is 20%, for moderately dry 50%, and for very dry 30%. More information on the developing La Niña and its potential impacts can be found at www.AgClimate.org and www.CoastalClimate.org.

Special Thanks to all the sponsors of the Flatwoods Citrus newsletter for their generous contribution and support. If you would like to be among them, please contact me at 863 674 4092.

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Special Thanks to all the sponsors of the Flatwoods Citrus newsletter for their generous contribution and support. If you would like to be among them, please contact me at 863 674 4092.

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Citrus Greening Identification & Worker Survey Training

Presented by the Florida Cooperative Extension Service
Citrus Extension Agents

Program Agenda

9:30 AM	Registration
10:00 AM	Distribution of Citrus Greening & Citrus Psyllid Management
10:20 AM	Scouting Recommendations & Employee Safety Issues
10:40 AM	Citrus Greening Symptom Identification
11:00 AM	Hands-on Citrus Greening Identification Training
12:05 PM	Adjourn

Note: the Tavares location will cover the same topics but begin at 1:30 PM instead of 9:30 AM

Attendees will receive 2.5 Continuing Education Units (CEU's) for the Restricted Pesticide and Certified Crop Advisor Licenses. In addition participants will receive a certificate of completion of Citrus Greening Identification Training.

Speakers, Multi-county citrus or horticultural agents:

Steve Futch Lake Alfred, FL 863-956-1151	Mongi Zekri LaBelle, FL 863-674-4092	Chris Oswalt Bartow, FL 863-519-8677 ext. 108
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Ryan Atwood Tavares, FL 352-343-4101	Gary England Bushnell, FL 352-793-2728
--	--

Meeting locations of training in October, 2007:

Oct. 11	Bartow	1710 Highway 17 South	Polk Co. Ext. Stuart Center
Oct. 17	Arcadia	2250 NE Roan Street	Turner Exhibition Hall
Oct. 23	Immokalee	2686 SR 29 N	SW Fla. REC
Oct. 24	Tavares	1951 Woodlea Rd	Lake County Extension
Oct. 30	Sebring	4509 W. George Blvd	Highlands County Extension
Oct. 31	Ft. Pierce	2199 S Rock Rd	Indian River REC

To register for a specific location of the following locations, please contact:

Bartow – Polk County Extension Service, 863-519-8677
Arcadia – DeSoto County Extension Service, 863-993-4846
Immokalee – Hendry County Extension Service, 863-674-4092
Tavares – Lake County Extension Service, 352-343-4101
Sebring – Highlands County Extension Service, 863-402-6540
Ft. Pierce – St. Lucie County Extension Service, 772-462-1660

CERTIFIED PILE BURNERS COURSE



The training will be held from 8:30 am till 4:30 pm at the Immokalee IFAS Center 2686 State Road 29 North, Immokalee, FL 34142-9515, Phone: 239-658-3400

There will be a test at the end of the session. Enclosed are the agenda and directions. This class is still open; if you know of someone who would be interested in attending please have them contact my office. There is a \$50.00 cost to attend, please make checks payable to Lake County Citrus Extension Program. Please send checks to the Lake County Extension office care of Ryan Atwood at 1951 Woodlea Rd., Tavares, FL 32778. If you have any other questions please feel free to contact Ryan at raatwood@ufl.edu Extension Agent-Multi County Fruit Crops

Lake County Extension/UF/IFAS
1951 Woodlea Rd, Tavares, FL 32778
Phone: 352-343-4101
Fax: 352-343-2767 or Maggie Jarrell (mjarrell@ufl.edu) or myself (Mongi Zekri) at maz@ifas.ufl.edu or at 863 674 4092.

Florida's Certified Pile Burner Training **November 7th, 2007**

1. Opening Comments and Introduction	08:30 – 09:10
2. Smoke Management	09:10 – 10:30
3. BREAK	10:30 – 10:40
4. Fire Weather	10:40 – 11:20
5. Planning and Implementation	11:20 – 12:15
6. LUNCH (provided)	12:15 – 01:15
7. Open Burning Regulations	01:15 – 02:30
8. Safety	02:30 – 03:10
9. BREAK	03:10 – 03:20
10. Public Relations	03:20 – 04:00
11. Wrap Up & Test	04:00 – 04:30

Suggested Facility Security Practices



Awareness

- Conduct a security assessment of your facility.
- Use opening and closing security check lists; note any discrepancies or irregularities.
- Initiate or join your local “crime watchers” program.

Access

- Escort all customers or visitors in storage yards or near loading docks.
- Establish a uniform or ID badge system to distinguish employees.

Alarms

- Install alarms and use a security alarm monitoring service.
- Ensure that phone lines are protected or have a service interruption alarm.
- Locate exterior strobe lights with alarms where neighbors and law enforcement can see them.

Barriers

- Construct structural barriers, including steel doors and barred windows.
- Install fencing as a deterrent where appropriate; fencing should be such that law enforcement and passers-by can view the property.
- Install access gates where fencing is not appropriate.
- Install bollards and chains across driveways or block with trucks and other equipment during off-hours.

Community

- Establish a process for including neighbors and the community as part of facility security and emergency response planning.

Inventory Control

- Know your inventory.
- Establish an ongoing process for inventory control of materials stored at the facility.
- Do not allow unattended, loaded trailers on site.
- Record stored nurse tanks by identification number and weight of remaining product.
- Inspect tanks visually each morning.
- Keep bills of lading, blank forms and all shipping/receiving paperwork secured.

Law Enforcement

- Establish and maintain relationships with local law enforcement and emergency responders. Provide them with your emergency plans and keys to locked gates.
- Provide law enforcement dispatchers with current emergency contact information for the facility. Keep this information current.
- Immediately report unusual or suspicious persons, vehicles or activity to local law enforcement.

Lighting

- Contact your local power company for a lighting assessment and information on leasing lights for your property.
- Install sufficient exterior lighting for law enforcement and passers-by to see your property.
- Discuss your lighting plan with local law enforcement.

Locks

- Establish a procedure and responsibility for locking up at close of business.
- Use high-security locks for doors, enclosures and gates, following local fire code requirements. Keep padlocks locked on hasps while not in use to prevent your lock from being replaced by someone else's.
- Use deadbolt locks on doors with a minimum of 1.5-inch throw.
- Implement key control for locked containers, equipment, hoppers, vehicles and vessels.

Signage

- Post alarm monitoring service signs in highly visible locations. Include signage for:
 - No trespassing
 - Private property
 - Closed circuit TV surveillance
 - Patrolled
 - No vehicles beyond this point
 - All visitors must check-in with front office
 - All visitors must be escorted

Surveillance

- Install CCTV surveillance cameras to monitor less visible or high-risk areas.

Training

- Involve employees in security planning.
- Train employees to spot suspicious individuals and behavior.
- Conduct periodic emergency drills, e.g. fire, evacuation and security, with employees.

Vendors

- Know vendors that service your facility.
- Require all vendors to check in.
- Escort vendors.

Visibility

- Assure an open area around the facility, unlimited by shrubs, trees, large signs or other barriers to open sight.

SUGGESTED CUSTOMER TRANSACTION PRACTICES

Awareness

- Heighten employee awareness of what constitutes an unusual customer and sales transaction.
- Heighten customer awareness of potential for criminal misuse of agricultural chemicals.
- Advise customers to contact law enforcement immediately with any concerns about unusual persons, vehicles or activities in the vicinity of your facility or theirs.

Sales Transaction

- Know your customer.
- Follow all requirements for verification when selling restricted use pesticides.
- For all sales, record customer's name, address, telephone number. If in doubt ask for a driver's license.
- Make deliveries only when the customer or agent is available to take custody and sign for the material.
- Do not deliver tanks or other products to empty fields or other unattended locations.
- Make follow-up calls to verify receipt of materials by customer in quantity ordered.
- Be alert to those who:
 - ☹ Pay in cash;
 - ☹ Won't take delivery;
 - ☹ Behave in an unusual manner;
 - ☹ Hesitate when asked for ID to complete the sale;
 - ☹ Don't know the product;
 - ☹ Insist on certain products, such as ammonium nitrate, and will not consider other suggestions;
 - ☹ Ask questions about product manufacturing;
 - ☹ Aren't familiar with farming, pesticides or fertilizer products.
- If in doubt:
 - ☹ Write down vehicle color, make, license number and state and a physical description of the individual;
 - ☹ Retain papers the customer may have touched for fingerprints;
 - ☹ Save this information in the event that it needs to be provided to law enforcement.

Certain agricultural inputs stored at your facility may warrant special security measures, such as anhydrous ammonia, ammonium nitrate, bulk urea and insecticides.

Alarms

- Install alarms near tanks.
- Install explosion-proof alarm systems near combustible material.

Awareness

- Be alert to those attempting to buy ammonia if they cannot state a legitimate, agronomic need for the product.
- Inspect tank and bulk storage areas daily.
 - Check for fresh tracks in mud or snow or disturbed ground around tanks and bulk storage areas;
 - Check to see if tank valves are closed tightly;
 - Look for suspicious items near tanks such as duct tape, garden hose, bicycle inner tubes, buckets and coolers;
 - Check for broken or missing wire ties or seals that you may have placed on valve wheels as markers.
- Make customers aware of the potential for theft or tampering with tanks and bulk ag chemicals.
- Remove hoses between tool bars and nurse tanks; relieve pressure with the bleed valves when left overnight. Encourage end-users to do the same.

Law Enforcement

- Work with local law enforcement to encourage frequent nighttime patrols.
- Contact local law enforcement immediately if you suspect tampering or theft at your facility or the presence of unusual persons, vehicles or activities.
- Do not disturb a potential crime scene.

Locks for Tanks

- Use brightly colored plastic ties or wire seals between the valve wheel and the roll cage to ease visual checks and to identify tampering.
- Use tamper resistant seals and locks.
- Use high-security locks.
- Use specialized tank locks for nurse tanks containing anhydrous ammonia.
- Paint tank locks red so law enforcement can identify anhydrous ammonia tanks.

Visibility

- Store tanks in well-lit areas with a clear line-of-sight.
- Store tanks with flow valves facing outward to speed visual inspections.
- Do not leave tanks in remote areas.

SUGGESTIONS FOR PARTNERING WITH YOUR CUSTOMERS ON SECURITY AND SAFETY

- Take delivery of tanks as close to time of application as possible.
- Position tanks in open, visible areas.
- Don't take delivery of tanks to unattended locations.
- Don't store tanks and tool bars inside buildings, near the farmhouse or livestock confinement houses.
- Remove hoses between tool bars and nurse tanks and relieve pressure with the bleed valves if tanks are left overnight. Store hoses and tool bars away from tanks.
- Don't leave tanks unattended for long periods of time.
- Inspect tanks every day, especially after a weekend when most thefts occur.
- Return tanks immediately after use.
- Inspect and record the condition of each nurse tank upon delivery and return.
- Store all agricultural chemicals, e.g. bulk, bagged, in a secured area.
- Where appropriate, use alarm systems to protect secured storage areas and chemicals.
- Be aware of and maintain inventory control.
- Lock any containers, equipment, hoppers, tanks and vessels containing product whenever possible.
- Be aware of signs of theft of anhydrous ammonia, ammonium nitrate or bulk urea.

Law Enforcement

- Urge customers to contact local law enforcement immediately if tampering or theft is suspected or suspicious persons or vehicles are seen.
- Do not approach or confront suspicious individuals.
- Do not disturb the area around a possible crime scene.

FERTILIZER FORMULATIONS AND APPLICATIONS

Fertilizers have many different formulations, analyses and grades available for purchase. Among the many choices, formulation-fluid or granular-is one of the most important. How do you decide which is the right product for your needs?

A fluid fertilizer is formulated and packaged as a liquid. This includes fertilizers that are clear liquids (solutions) or liquids that contain suspended solids (suspension fertilizers). Growers and production managers frequently use more solids (granules) than fluid fertilizers.

Solid fertilizers are dry particles that manufacturers size between an upper and lower limit of screen sizes. They may be finely crushed, granular, crystalline, powder or processed into uniform prills. These fertilizers by themselves usually are water-soluble for quick release but sometimes are coated as controlled-release products.



Water-soluble fertilizers are rapidly available for crops. Examples of common water-soluble products include ammonium nitrate (33-0-0) and urea (46-0-0). Some water-soluble fertilizers are homogeneous products (every particle has the same composition). These homogeneous products have a uniform appearance and

are made from blends of raw fertilizer materials such as superphosphate, urea, and potassium chloride. Fertilizer bags always list which raw materials the manufacturer used in the fertilizer bag.

Other solid fertilizers are non-homogeneous blends (you can see the individual granules of different fertilizer materials), where the manufacturer simply has mixed particles together to produce a desired overall composition. Non-homogeneous products may not spread as uniformly as homogeneous products, especially if the particles are different in size and in weight.



Water-soluble fertilizers produce a rapid response, have a low cost per unit of nutrient, are easy to apply, and do not take expensive equipment or intensive training to ensure correct application.

Foliar feeding uses a small amount of fertilizer sprayed directly to the foliage, providing rapid uptake of nutrients and quick correction of a nutrient deficiency. Typically, applicators use foliar feeding to supply a small amount of a deficient nutrient or as part of a pesticide application. Sometimes, a nitrogen-phosphorous-potassium mix is used.

Benefits from using soluble solids as liquid fertilizers include the ability to apply nutrients through irrigation (fertigation), possible use as a carrier for post-emergence herbicides and flexibility of application as a foliar feed. Liquid application of a soluble-solid fertilizer through fertigation can reduce the risk of foliar burn, provide even coverage and allow simultaneous application of water and fertilizers. Liquid fertilizers can be

applied at low rates on a frequent basis to spoon-feed the crop, promoting consistent and uniform growth. Application of small amounts of fertilizer on a regular basis can increase fertilizer efficiency and reduce environmental risk. Disadvantages of liquid fertilizer may include the extra cost of new application equipment and the issues of handling a heavy, bulky, liquid material.



New technologies have led to the development of resin or polymer-coated fertilizers. Nutrient-release rates depend on factors such as moisture and temperature (depending on the product) and vary with the composition and the thickness of the coating. These fertilizers tend to be uniform in granule size and provide controlled release nutrients. They are an excellent choice in high-value crops or when frequent application of soluble N is not an easy and a cheap option.



On the positive side, use of controlled release fertilizers creates a long-term, consistent growth. Because of the low application frequency, labor cost is low. These products also have a low

burn potential. On the negative side, they do not tend to provide a rapid response, and their cost per unit of nutrient is much higher than that of soluble sources.



All fertilizers have both advantages and disadvantages. The appropriate type for each operation depends on several factors. Consider the following in making your choice of fluid or solid fertilizers. Do you have the labor and/or the equipment to make the frequent applications that soluble liquid or solid products require? Consider controlled release products for some blocks.

Do you need a quick fix of a visual manganese, zinc, boron, copper, or magnesium deficiency? Foliar liquid application may be the best solution. Controlled release fertilizers and properly timed, frequent applications of soluble fertilizer sources can help protect the water supplies and the environment, especially in areas prone to heavy rains near environmentally sensitive areas. Test your crop and soil to determine what nutrients you need to apply and which application methods you should use.

IRRIGATION, NUTRITION AND FRUIT QUALITY

Florida has the highest citrus fruit quality standards in the world. Fruit quality factors include juice content, soluble solids and acid concentrations, soluble solids-acid ratio, fruit size, and color. Florida citrus growers know that quality factors differ for the fresh and processing markets. For example, fruit size, shape, color, and maturity date are most important for fresh fruit, but high juice content and soluble solids are desired for processing fruit. Fruit quality is affected by several factors including cultivar, rootstock, climate, soil, pests, irrigation, and nutrition.



The effects of irrigation and nutrition on fruit quality are very important and should be understood and taken into consideration by citrus growers and production managers to increase their profitability and enhance their sustainability and competitiveness on a worldwide basis. In general, excessive irrigation and nutrition reduce fruit quality. Therefore, balanced nutrition with sound irrigation scheduling based on **IFAS** recommendations should be a high priority management practice for every grower. Citrus trees require a properly designed, operated, and maintained water management system and a balanced nutrition program formulated to provide specific needs for maintenance and for

expected yield and fruit quality performance. Irrigation contributes to the efficiency of fertilizer programs.

Adequately watered and nourished trees grow stronger, have better tolerance to pests and stresses, yield more consistently, and produce good quality fruit. On the other hand, excessive or deficient levels of watering or fertilization will result in poor fruit quality. The most important management practices influencing fruit quality are irrigation and nitrogen, phosphorus, potassium, and magnesium nutrition. However, when any nutrient element is severely deficient, fruit yield and fruit quality will be negatively altered. Trends in fruit quality response to high nutrition and irrigation are described and summarized below.

Nitrogen (N)

- ❑ Increases juice content and color, total soluble solids (TSS), and acid content.
- ❑ Increases soluble solids per box and per acre. However, excessive N, particularly with inadequate irrigation, can result in lower yields with lower TSS per acre.
- ❑ Decreases fruit size and weight.
- ❑ Increases peel thickness and green fruit at harvest.
- ❑ Increases incidence of creasing and scab but decreases incidence of peel blemishes such as wind scar, mite russeting, and rind plugging.
- ❑ Reduces stem-end rot incidence and green mold of fruit in storage.

Phosphorus (P)

- ❑ Reduces acid content, which increases soluble solids-acid ratio. Phosphorus rates have no effect on soluble solids per box but may increase soluble solids per acre due to increase in fruit production in soils that are low in P.
- ❑ Increases number of green fruit but reduces peel thickness.

- Increases expression of wind scar but reduces that of russeted fruit.

Potassium (K)

- Potassium produces mostly negative effects on juice quality except soluble solids per acre. Potassium increases fruit production therefore producing more soluble solids per acre.
- Decreases juice content, soluble solids, ratio, and juice color.
- Increases acid content.
- Increases fruit size, weight, green fruit and peel thickness.
- Reduces incidence of creasing and fruit plugging. In storage, reduces stem-end rot.

Magnesium (Mg)

- Slightly increases soluble solids, soluble solids-acid ratio, soluble solids per box and soluble solids per acre.
- Slightly increases fruit size and weight but decreases rind thickness.

Irrigation

- Increases juice content and soluble solids-acid ratio.
- Reduces soluble solids and acid contents. Soluble solids per box will decrease, but soluble solids per acre may increase due to yield increase.
- Increases fruit size and weight, increases green fruit at harvest, but decreases rind thickness.

Specific effects on juice and external fruit qualities are summarized in the Table below. This summary is based on numerous field experiments conducted over many years, mostly on responses of oranges to irrigation and fertilizer practices. Most of these effects were consistently observed, but some of them appear to depend on local conditions and growing regions. These observations are useful in developing a strategy to improve fruit quality for a particular variety or location.

EFFECTS OF MINERAL NUTRITION AND IRRIGATION ON FRUIT QUALITY

Variable	N	P	K	Mg	Irrigation
<u>Juice Quality</u>					
juice content	+	0	-	0	+
soluble solids (SS) acid (A)	+	0	-	+	-
SS/A ratio	+	-	+	0	-
juice color	-	+	-	+	+
solids/box	+	0	-	?	0
solids/acre	+	0	-	+	-
	+	+	+	+	+
<u>External Fruit Quality</u>					
size	-	0	+	+	+
weight	-	0	+	+	+
green fruit	+	+	+	0	+
peel thickness	+	-	+	-	-

Increase (+), Decrease (-), No change (0), No information (?).

Quick Overview of the Federal Worker Protection Standard (WPS)



Key Definitions Relating to WPS

Agricultural establishment --- any farm, forest nursery or greenhouse.

Agricultural employer --- any person who hires or contracts for services of workers/handlers, for any type of compensation, to perform activities related to the production of agricultural plants, or any person who is an owner or responsible for the management or condition of an agricultural establishment that uses workers/handlers.

Agricultural plant --- any plant grown or maintained for commercial or research purposes and includes, but is not limited to, food, feed, and fiber plants; trees; turfgrass; flowers; shrubs; ornamentals; and seedlings.

Handler --- any person, including a self employed person, who mixes, loads, transfers, applies, disposes pesticides or pesticide containers, cleans, adjusts, handles or repairs application equipment, acts as a flagger, etc.

Restricted entry interval (REI)--- the time after the completion of a pesticide application during which entry into the treated area is restricted.

Worker --- any person, including a self employed individual, who performs hand labor tasks, including weeding, harvesting, topping, sucker removal, packing produce in the field, thinning, etc.

What Employers Must Do for Both Workers and Handlers

Information at a central location

Information must be made available to workers and handlers at a central location where it can be easily accessed during normal business hours and must include the following information:

- EPA WPS Safety Poster
- Name, address and telephone number of the nearest medical facility
- Facts about each pesticide application (from before each application begins to 30 days after the REI)
 - Application list which includes the location and description of the area to be treated.
 - Product name, EPA registration number, and active ingredient(s) of the pesticide.
 - Time and date the pesticide is scheduled to be applied.
 - Restricted entry interval for the pesticide.

Pesticide Safety Training

Agricultural workers must be trained within the first 5 days of employment. Handlers must be trained before any handling activity is performed. Workers and handlers must each be trained at least once every 5 years.

Trainers must:

- Use written and/or audiovisual materials,
- Use EPA approved materials for training,
- Conduct the training orally and/or audiovisually in a manner the employees can understand with an opportunity to answer questions and
- Meet one of the following criteria to perform training:
 - Currently be a certified applicator of Restricted Use Pesticides (RUPs) or
 - Currently be designated by a State, Federal or Tribal agency having jurisdiction, as a trainer of pesticide applicators or
 - Have completed a pesticide safety Train the Trainer program conducted by a State, Federal or Tribal agency having jurisdiction.

Decontamination Supplies

Employers must establish a decontamination site within 1/4 mile of where workers and handlers are performing their duties. Handlers mixing pesticides must have a decontamination site at the mixing area.

The decontamination site must include:

- Enough water for routine washing and for eye flushing,
- An adequate supply of soap and single use towels,
- Enough water to wash the entire body (for handlers only) and
- A clean change of clothes such as coveralls (for handlers only).



Employer/Commercial Applicator Information Exchange

Before any application, commercial handler employers must make sure the operator of the agricultural establishment where a pesticide will be applied is aware of:

- Specific location and description of area (s) to be treated,
- Time and date of application,
- Product name, EPA registration number, and active ingredient,
- Restricted entry interval for the pesticide,
- Notification requirements; oral/posting and
- Any other specific requirements for the protection of workers and other persons during or after the application.

Operators of agricultural establishments must make sure any commercial pesticide establishment operator they hire is aware of:

- Specific location and description of all areas on the establishment where pesticides will be applied or where an REI will be in effect while the commercial handler is on the establishment and
- Restrictions on entering those areas.

Emergency Assistance

Agricultural employers must make emergency transportation available for workers and handlers to an emergency medical facility. In the event of a suspected poisoning, they must also provide information to the victim and medical personnel about the pesticide including:

- product name, EPA registration number and active ingredients,
- all first aid and medical information from the label,
- description of how the pesticide was used and
- information about the victim's exposure.

Get your 140-page book of the **Worker Protection Standard for Agricultural Pesticides - How to Comply, What Employers Need To Know** from my office. \$2.00 each.

Additional Duties for Handler Employers

- Do not allow handlers to apply a pesticide so that it contacts, either directly or through drift, anyone other than trained and PPE equipped handlers.
- Make sight or voice contact at least every 2 hours with anyone handling pesticides with a skull and crossbones on the label.
- Make sure a trained handler equipped with labeling-specific PPE maintains constant voice or visual contact with any handler in a greenhouse who is doing fumigant-related tasks, such as application or air-level monitoring.
- Before any handling task, inform handlers, in a manner they can understand, of all pesticide labeling instructions for safe use.
- Keep pesticide labeling accessible to each handler during entire handling task.
- Before handlers use any assigned handling equipment, tell them how to use it safely.

Additional Duties for Worker Employers

- During any REI, do not allow workers to enter a treated area and contact anything treated with the pesticide to which an REI applies.



Institute of Food and Agricultural Sciences 700 Experiment Station Road
Citrus Research and Education Center Lake Alfred, FL 33850 - 2299
Website: www.crec.ifas.ufl.edu

Application of Precision Agriculture for Fruits and Vegetables
The International Symposium: “Application of Precision Agriculture for Fruits and Vegetables” will be held Jan. 6 – 9, 2008 at the Regal Sun Resort (formerly known as the Grosvenor Resort) in Orlando.

Contact: Dr.Reza Ehsani Phone: (863) 956-1151
Assistant Professor Fax: (863) 956-4631
Address: Citrus Research and Education Center E-mail: ehsani@ufl.edu
700 Experiment Station Rd.
Lake Alfred, FL 33850

The Symposium topic is precision agriculture use in horticulture and will use scientific sessions, posters, and technical tours to provide an opportunity to discuss and learn about cutting-edge technologies in several areas.

During this four-day event the Symposium will provide a forum for the exchange of ideas among researchers, academics, professionals and related industries on applying advanced technology and information-based management techniques for fruit and vegetable production.

Dr. Gene Albrigo, Professor of Horticultural Science, Citrus Research and Education Center (CREC), University of Florida (UF), Institute of Food and Agricultural Science (IFAS), and co-convener, said this will be a unique opportunity to learn about the latest work in several fields related to precision applications for horticultural food crops.

These include site-specific management (remote sensing, yield monitoring, GIS) and sensing and control systems (automation, sensors, stress detection).

The Symposium sponsors are the International Society for Horticultural Science; the International Society of Citriculture; the American Society of Agricultural and Biological Engineers; and the UF, IFAS, Citrus Research and Education Foundation. The symposium is hosted by the faculty of the CREC, UF/IFAS.

For more information on how to register for the Symposium, visit www.precisionag2008.com or call Dr. Reza Ehsani, Assistant Professor, or Christen Taylor, Public Relations Specialist, at the CREC, UF/IFAS at (863) 956-1151.

INTERNATIONAL SYMPOSIUM: “APPLICATION OF PRECISION AGRICULTURE FOR FRUITS AND VEGETABLES”

JANUARY 6 – 9, 2008
ORLANDO, FLORIDA

The International Society of Horticultural Science, the International Society of Citriculture, the American Society of Agricultural and Biological Engineers, and the University of Florida are pleased to invite you to join the International Symposium: “Application of Precision Agriculture for Fruits and Vegetables.”

The main goal of the symposium is to provide a forum for the exchange of ideas among researchers, academics, professionals, and related industries on applying advanced technology and information-based management techniques for fruit and vegetable production. The scientific sessions, poster, and technical tours will provide an opportunity to discuss and learn about cutting edge technologies in this area. The symposium will be hosted by the Faculty of the Citrus Research and Education Center of the University of Florida and will be co-sponsored by ISHS and ISC.

Discussion Topics Include But Are Not Limited To:

Site Specific Management:

- Decision Support Systems and Management Zones
- Geospatial Applications for Fruits and Vegetables
- GIS/GPS
- Variable Rate Technology
- Yield Monitoring
- Environmental Issues
- Traceability
- Information Technology (IT) Data Management
- Weather Networks
- Site-Specific Management for Quality Enhancement

Educational and Economic Aspects:

- E-AG Business
- Production of Chain Management
- Economics of Precision Agriculture for Fruit and Vegetables
- Education/ Training Methods for New Production Technologies

Sensing and Control Systems:

- Automation, Robotics and Auto-Guidance for Fruit and Vegetable Production
- New Soil and Plant Sensors
- New Technologies for Quality Detection
- New Technologies for Stress, Pests, and Disease Detection
- Remote Sensing
- Wireless Communication
- Tracking, Traceability, and Food Security

Keynote Speakers

Dr. Simon Blackmore: Managing Director of UniBots Ltd, UK
Dr. Pol Coppin: Katholieke University, Leuven
Dr. John F. Reid: Director, Enterprise Product Technology and Innovation, John Deere, Illinois
Dr. Lawrence Gaultney: E.I DuPont de Nemours & Co. in Newark, Delaware
Dr. Andre Torre-Neto: Embrapa Agricultural Instrumentation Center, Brazil

Deadlines:

Call for Papers and Abstracts deadline: September 28, 2007
Registration deadline: October 26, 2007
Hotel discount room reservation deadline: December 7, 2007

Institutional Sponsors



*Citrus Research and
Education Foundation, Inc.*



For more information or to register, visit our Web site at <http://www.PrecisionAg2008.com> or contact Christen Taylor at (863) 956-1151 ext. 1248 or e-mail chris29@ufl.edu



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- Forestry
- Golf Courses

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 Florida Soybean Producers Association
 Certified Pest Control Operators
 Florida Pest Management Association
 Florida Nursery, Growers & Landscape Association
 Florida Tomato Committee
 Florida Forestry Association
 IFAS/University of Florida
 Florida Citrus Mutual
 Florida Landscape Maintenance Association
 Florida Department of Agriculture & Consumer Services
 Florida Department of Environmental Protection

For more information

CONTACT:

Florida Department of Agriculture & Consumer Services

Cleansweep@doacs.state.fl.us

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Revised Date 7/26/07

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Contact Person: _____

Contact Person Phone Number: _____

Email Address: _____

Fax Number: _____

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Type of Firm:

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<i>LIQUIDS (in gallons)</i>	<i>DRY MATERIAL (in pounds)</i>
Total Liquids:	Total Dry Materials:

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From the Florida Agricultural Statistics Service

Florida Citrus Production (Million Boxes)

Cultivar	Production					
	1997-98	1999-00	2003-04	2004-05	2005-06	2006-07
Early/Mid orange	140.0	134.0	126.0	79.1	75.0	65.6
Valencia orange	104.0	99.0	116.0	70.5	72.7	63.4
All oranges	244.0	233.0	242.0	149.6	147.7	129.0
All grapefruit	49.55	53.4	40.9	12.8	19.3	27.2
Temples	2.25	1.95	1.40	0.65	0.70	
Tangelos	2.85	2.2	1.00	1.55	1.40	1.25
All tangerines	5.2	7.0	6.5	4.45	5.5	4.6
Limes	0.44	0.60				
Lemons	0.12					
Total	304.450	298.15	291.800	169.05	174.6	162.05

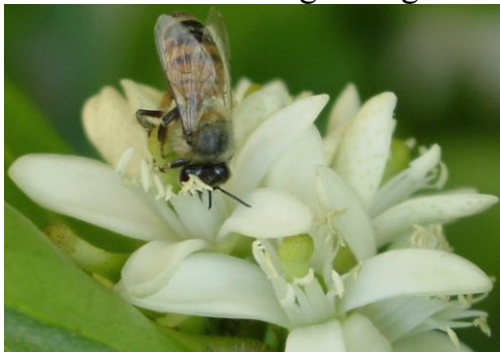
Production of Florida citrus in the 2006-07 season was 162.05 million boxes, down 7.2% from the 2005-06 season. **However, production of SW Florida citrus in the 2006-07 season was 37.755 million boxes, up 36.4% from the 27.678 million boxes in the previous season (2005-06).**

Southwest Florida Citrus Production (Boxes)

SEASON	Charlotte	Collier	Glades	Hendry	Lee	Total
2002-2003	6,066,000	10,159,000	3,398,000	29,290,000	3,238,000	52,151,000
2003-2004	7,214,000	11,413,000	3,806,000	33,852,000	3,511,000	59,796,000
2004-2005	6,119,000	10,478,000	3,517,000	29,607,000	2,861,000	52,582,000
2005-2006	2,246,000	6,134,000	1,740,000	15,752,000	1,806,000	27,678,000
% Reduction from 2005-06 compared with 2004-05	63.3	41.5	50.5	46.8	36.9	47.4
2006-2007	2,996,000	8,390,000	2,372,000	21,414,000	2,583,000	37,755,000
% Increase from 2006-07 compared with 2005-06	33.3	36.8	36.3	35.9	43.0	36.4

WHY SHOULD EVERYONE CARE ABOUT HONEY BEES?

Bee pollination is responsible for \$15 billion in added crop value, particularly for specialty crops such as almonds and other nuts, berries, fruits, and vegetables. About one mouthful in three in the diet directly or indirectly benefits from honey bee pollination. In California, the almond crop alone uses 1.3 million colonies of bees, approximately one half of all honey bees in the United States, and this need is still growing.



LINK BETWEEN VIRUS AND BEE COLLAPSE

A team led by scientists from the U.S. Department of Agriculture's Agricultural Research Service, Pennsylvania State University, and Columbia University has found an association between colony collapse disorder (CCD) in honey bees and a honey bee virus called Israeli acute paralysis virus, according to a paper published in the journal *Science*. Genetic screening of honey bees collected from 30 colonies with CCD and 21 colonies with no CCD from four locations in the United States allowed researchers to identify pathogens to which the sampled honey bees had been exposed. In total,

the honey bees (both CCD and non-CCD honey bees) were found to harbor six symbiotic types of bacteria and eight bacterial groups, 81 fungi from four lineages, and seven viruses. The search for potential pathogens was done using a new means of sequencing the genetic material from the healthy and unhealthy bees. This technology, termed high-throughput sequencing, allows for an unbiased look at DNA from all the organisms, bacteria, fungi and viruses present in the bees. Then the DNA sequences are searched against known genomic libraries for best matches. This gives a very precise picture of the organisms present, at least to the family or genus level. Often specific species can be identified, and unknown organisms can be cataloged for further study. The only pathogen found in almost all samples from honey bee colonies with CCD, but not in non-CCD colonies, was the Israeli acute paralysis virus (IAPV), a dicistrovirus that can be transmitted by the Varroa mite. It was found in 96 percent of the CCD-bee samples. This is the first report of IAPV in the United States. This virus was initially identified in honey bee colonies in Israel in 2002, where the honey bees exhibited unusual behavior, such as twitching wings outside the hive and a loss of worker bee populations. Although IAPV has not yet been formally accepted as a separate species, it is a close relative of Kashmir bee virus, which has been previously found in the United States. More information about CCD can be found at: www.ars.usda.gov/is/br/ccd/ (USDA ARS, 9/6/07).

Flatwoods Citrus

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Multi-County Citrus Agent
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Asian American

Hispanic

White, non-Hispanic

Black, non-Hispanic

Gender

Female

Male