



Citruslines

The Mission of UF/IFAS is to develop knowledge in agricultural, human and natural resources and to make that knowledge accessible to sustain and enhance the quality of human life.

Summer 2009

July, August, and
September

UF UNIVERSITY of
FLORIDA

IFAS Extension
Lake County Extension



[Upcoming Events http://cfextension.ifas.ufl.edu/calendar.shtml](http://cfextension.ifas.ufl.edu/calendar.shtml)

Small Farms Conference

August 1 & 2

Certified Pile Burner

August 6

Private Applicator License Training and Test

August 19

Citrus Expo

August 19 & 20

Packinghouse Day

August 27

Well 2009 is shaping up to be a very interesting year. First we had two hard freezes, then a prolonged drought followed by 20+ inches of rain in two and half week period. Now that we are headed into the heart of hurricane season, lets hope that the weather treats us all a little better. It seems fruit prices have been creeping up a little of late as well, which is vital in our efforts to manage pest and diseases in Florida citrus production. I encourage you to keep up a good fertilization program to promote tree health and to maximize your fruit production. Your grove is an investment and you want to make sure to keep trees healthy so that you have plenty of fruit when prices come back up. I encourage you to make sure you are taking and sending in leaf tissue samples for analysis so that you know what types and how much nutrients that your trees require.

Don't forget summer is a great time to relax and go to the beach with your family!

COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF FLORIDA, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, Larry R. Arrington, Director, in cooperation with the United States Department of Agriculture, publishes this information to further the purpose of the May 8 and June 30, 1914 Acts of Congress; and is authorized to provide research, educational information, and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions, or affiliations. Single copies of extension publications (excluding 4-H and youth publications) are available free to Florida residents from county extension offices. Information about alternate formats is available from IFAS Communication Services, University of Florida, PO Box 110810, Gainesville, FL 32611-0810.



Interesting early results from greening related research projects.

I am always trying to write something I feel is of value to growers to help them with current problems. Of course greening and controlling its vector the Asian citrus psyllid has been the number one issue on most people's minds. As we learn more and more, thoughts and ideas begin to clarify or take on more relevance. Two research projects that I have found interesting of late are based on nutrition and production systems. The first is Dr. Bob Rouse's experiment looking at the components of what has been referred to as the "Boyd program". Maury Boyd has been using a cocktail of nutritionals and systemic acquired resistance products (SAR) on one of McKinnon Corporation's groves in Felda for the past 4 years. Many people have visited the grove, our extension program has been twice and I have gone an additional two times. The infected trees seem to be productive even though they have had the disease for sometime. Will the grove eventually quit producing fruit and crash? Most likely, but no one knows for sure. However, so far the observations have been positive. One of the major issues of implementing the "Boyd program" has been the cost of materials.

Dr. Rouse recently presented some of his early observation from an experiment based on the Boyd program. I personally have had the opportunity to view the progress of the trees in these experiments (in the field) and the results look promising. Below is a picture of two trees that were confirmed positive for greening via



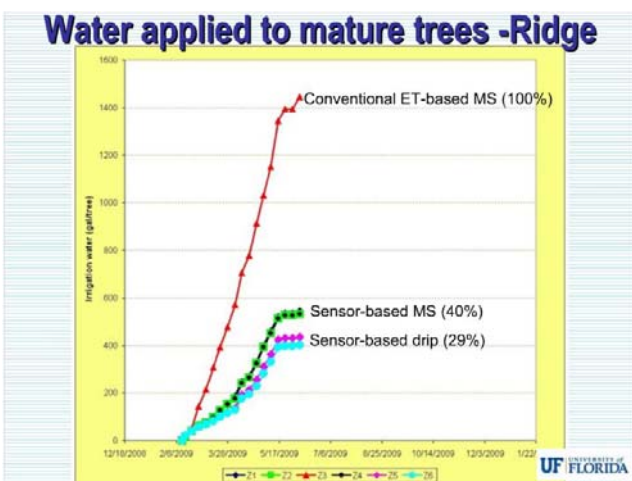
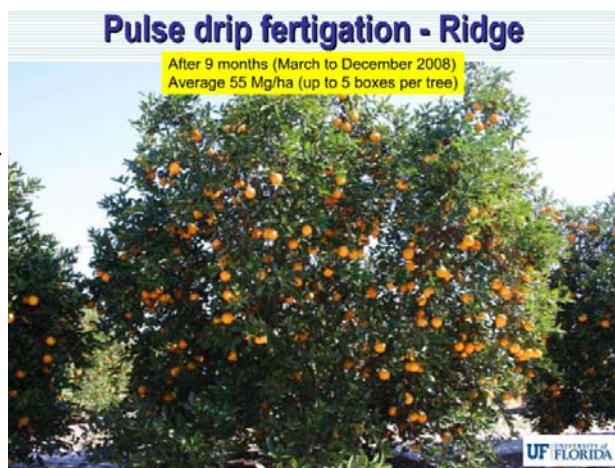
PCR and are located in Dr. Rouse's trial (all trees in the study are greening positive). The top pictures of trees 6-25 and 6-26 were taken in December 2007 the bottom pictures are of the same trees taken in December 2008. All of the trees receive "typical" citrus production fertilization and irrigation. However, 6-25 was supplemented with the components of the "Boyd program" while the 6-26 received just the standard irrigation and fertilizer. Tree 6-26 looks as we expect a greening infected tree to look, while 6-25 has flushed with new leaves and even has set fruit this past season 2009. Dr. Rouse has seen this type of response in multiple trees as the treatment has been replicated. Dr. Rouse is collecting data on number of flush, length of flush, number of set fruit, etc. as part of

this trial. Those data are not yet available; but I think so far it passes the "eye test", that is something seems to be working. Hopefully, information gleaned through this trial will help eliminate some of the products and lessen the cost. Will nutrition be the ultimate answer to greening? Probably not, but if we can at least keep the trees productive for a longer period of time, we in the citrus industry allow ourselves more time for permanent solutions to be developed. It should be noted that a major component of the "Boyd program" is intensive psyllid control. Researchers feel that psyllid control is important to lessen the effects of greening even when using the "Boyd pro-



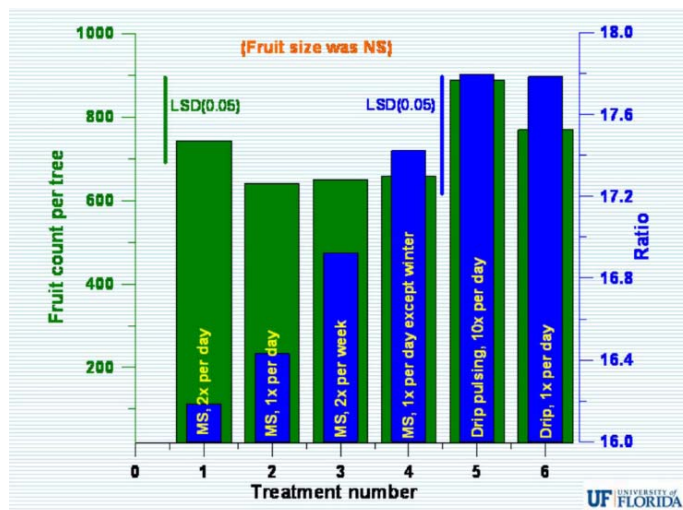
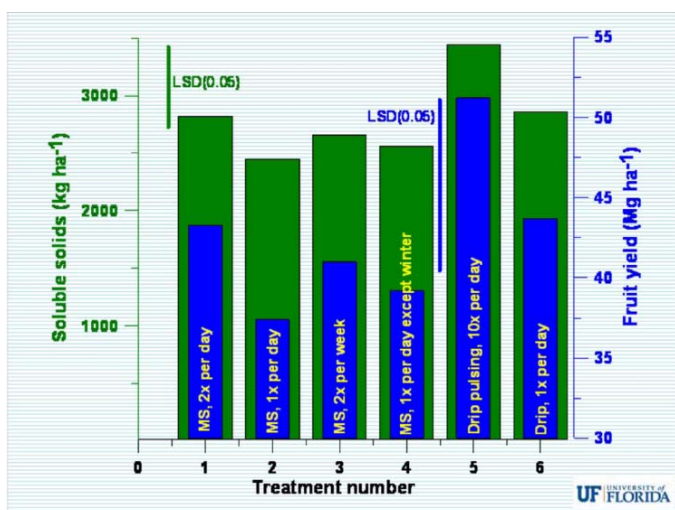
gram” this theory currently being tested by Drs. Rouse and Stansly in the Immokalee area.

Another set of early results that I have found interesting comes from Drs. Schumann, Morgan and Syvertsen’s work on the Advanced Citrus Production Systems (ACPS). Recently, a website was added to describe the purpose and scope of this work it can be found at <http://128.227.177.113/ACPS/Index.html> or by looking under the research section of the CREC’s homepage. The objective of ACPS is "Intensively managed citrus production systems for early high yields and vegetative flush control in the presence of greening and canker diseases". The ACPS takes advantage of new technologies to control irrigation and fertilization in a more precise manner. These techniques have been used successively in other parts of the world but have yet to be proven in Florida climatic conditions.



Early results look promising for increasing production per acre. I personally feel this will be necessary for future citrus production due to the increased cost of production in the face of current and future disease and pest pressures. The greatest gains in yield and quality were achieved with the pulsed drip system. An additional added benefit of this system was a water savings of 71%. As you are aware water use in Florida is increasing with an increase in the state’s population. Technology that produces more fruit, with better quality, while using less water seems like a winner (see graphs –Mg ha is approximately equivalent to box/acre i.e. 50 Mg/ha = 500 boxes/acre). Another

result was the more efficient use of fertilizer for growing young trees. The ACPS system used 13% than that of the conventional method used by the owner of the grove when comparing ACPS to historical program. With fertilizer prices having risen over the past two years, this represents significant cost savings. I encourage you to look at the ACPS website for more information.



The vast majority of Florida's nearly 47,463 farms are classified as small farms. Calculated on an area or on an economic basis, nearly 90% of all Florida farms are small farms. Recent increased efforts to meet the educational needs of small farmers in Florida became visible through the work of the University of Florida/IFAS and Florida A&M University Small Farms Focus Team. The Small Farms Conference will be useful and important to small farmers, allied industry representatives, researchers, educators, institutional members, policy-makers, small farm commodity associations, foundations, and other interested in strengthening the small farm community in Florida.



"Sustaining Small Farms; Strengthening Florida's Communities"

<http://smallfarms.ifas.ufl.edu/floridasmallfarmsconference/index.htm>

The Conference includes many activities that benefit small farmers including:

- A general educational session to attract well known speakers on topics of broad interest.
- Concurrent educational sessions (presentations, workshops, hands-on demonstration, and discussion groups) will be provided to share results of groundbreaking research and provide educational support for producers to operate sustainable and profitable enterprises.

- A large exhibition area to introduce new products and technologies to small producers will be available. Industry suppliers, allied organizations, educational groups, funding agencies, foundations, and other allied industry representatives with services for small farmers will be encouraged to participate.

- Other activities will include other creative ways to facilitate farmer networking at the Conference.
- All these activities in total will help facilitate networking, dialog, and visioning among members of the Florida small farms community, and to increase awareness of the small farms industry to decision makers, supporting institutions, and the general public.

Saturday – August 1, 2009						
7:00-9:00am	Registration and light morning refreshments					
9:00-10:00am	Conference Kick-Off by UF and FAMU Administrators and Innovative Farmers					
10:00-10:30am	AM Break, Visit Exhibitors					
10:30am-12:00pm	CONCURRENT SESSIONS					
	ALTERNATIVE ENERGY	BUSINESS & MARKETING	HORTICULTURE	LIVESTOCK	ORGANIC & SUSTAINABLE FARMING	POLICY & REGULATIONS
	Farm Solar Energy Applications	Roadmap to Owning Your Own Business	Blueberry and Strawberry Production	Biosecurity and Farm Food Safety: Keeping the Farm, Animals, and Consumers Safe	Whole-Farm Nutrient Management	Local Food Systems Concepts and Projects
12:00-1:30pm	Florida's Finest: A Celebration of Local Food. Lunch Provided					
1:30-1:50pm	Welcome Address by Florida Agriculture Commissioner Charles Bronson					
1:50-2:30pm	Keynote Address by Professor John Ikerd					
2:30-4:30pm	PM Break, Visit Exhibitors					
4:30-6:00pm	CONCURRENT SESSIONS					
	Biofuels for Small Farms	Forming Co-Operatives	Producing High-Value Vegetables and Herbs	Pastured Poultry Enterprises: Beyond the Basics	Whole-Farm Pest Management	Local Food Systems Policy
6:00pm	Adjourn					

Sunday – August 2, 2009						
7:30-8:30am	Registration and light morning refreshments					
8:30-10:00am	CONCURRENT SESSIONS					
	ALTERNATIVE ENTERPRISES	BUSINESS & MARKETING	HORTICULTURE	LIVESTOCK	ORGANIC & SUSTAINABLE FARMING	POLICY & REGULATIONS
	21st Century Beekeepers—The Guardians of the Honey Bees	Farm Enterprises To Increase Cash Flow	Low Volume Irrigation for Small Farms	Grass-Fed Beef In Florida: What Is the Potential?	Selecting, Sourcing, and Applying Organic Inputs	Whole Farm Risk Management
10:00-10:30am	AM Break, Visit Exhibitors					
10:30am-12:00pm	Protected Culture for Specialty Crops	"I'll buy from YOU because...."	Stone Fruit and Tropical Fruit Production	Choosing, Building and Repairing the Right Fence for Your Livestock	Accessing the 2008 Farm Bill: Opportunities for Small Farmers	Direct Marketing Regulations
12:00-2:00pm	Florida's Finest: A Celebration of Local Food. Lunch Provided					
2:00-3:30pm	Cut Flower Production	Supplying Intermediate Markets: Taking the Local Food System to the Next Level	Hydroponics for Small Farms	Health Care Management for Farm Animals: What's In Your Toolbox?	How to Conduct Your Own On-Farm Research	Panel for Local Food System Development
3:30pm	Conference Adjourns					



Leaf and soil sampling for increasing tree health and profits

This past year saw dramatic increases in fertilizer prices. Fertilizer represents a large percentage of a citrus production budget. One of the best practices that you can implement to maximize productivity and minimize expenses is taking a leaf tissue sample. I am surprised by the number of growers that I meet that do not take leaf samples annually. Tissue analysis are very inexpensive and can lead to a more effective fertilization program which can save you money.

Leaf tissue samples provide information about citrus nutrition, it is particularly effective for 1) macronutrients, primarily nitrogen (N) and potassium (K), that readily move with soil water, and 2) the micronutrients copper (Cu), manganese (Mn), zinc (Zn), and iron (Fe). Leaf tissue sampling should be done yearly so that you can monitor the changes in nutritional status over a period of several years.

Table 4.2. Guidelines for interpretation of orange tree leaf analysis based on 4 to 6-month-old spring flush leaves from non-fruiting twigs (Koo et al., 1984).

Element	Unit of measure	Deficient	Low	Optimum	High	Excess
N	%	< 2.2	2.2 - 2.4	2.5 - 2.7	2.8 - 3.0	> 3.0
P	%	< 0.09	0.09 - 0.11	0.12 - 0.16	0.17 - 0.30	> 0.30
K	%	< 0.7	0.7 - 1.1	1.2 - 1.7	1.8 - 2.4	> 2.4
Ca	%	< 1.5	1.5 - 2.9	3.0 - 4.9	5.0 - 7.0	> 7.0
Mg	%	< 0.20	0.20 - 0.29	0.30 - 0.49	0.50 - 0.70	> 0.70
Cl	%	---	---	< 0.2	0.20 - 0.70	> 0.70 ¹
Na	%	---	---	---	0.15 - 0.25	> 0.25
Mn	mg/kg or ppm ²	< 18	18 - 24	25 - 100	101 - 300	> 300
Zn	mg/kg or ppm	< 18	18 - 24	25 - 100	101 - 300	> 300
Cu	mg/kg or ppm	< 3	3 - 4	5 - 16	17 - 20	> 20
Fe	mg/kg or ppm	< 35	35 - 59	60 - 120	121 - 200	> 200
B	mg/kg or ppm	< 20	20 - 35	36 - 100	101 - 200	> 200
Mo	mg/kg or ppm	< 0.05	0.06 - 0.09	0.10 - 2.0	2.0 - 5.0	> 5.0

¹Leafburn and defoliation can occur at Cl concentration > 1.0%.

²ppm = parts per million.

The tables in this article are from the Nutrition of Florida Citrus Trees 2nd Edition. Edited by: Drs. Tom Obreza & Kelly Morgan. An electronic version of this publication can be found online at <http://edis.ifas.ufl.edu/SS478>

Click on link to access.

Leaf sampling should be done in management blocks no greater than 20 acres. The grove should be sampled to minimize any differences in soil or tree health. The best time to take tissue samples is in the month of August. A typical sample should consist of approximately 100 leaves taken from 6-8 month spring flush leaves that are not on fruiting twigs. Typically samples should be taken from 15-20 trees distributed in different areas of the block. Trees should be the same variety and rootstock.

If you have made a copper spray or micro-nutritional spray prior to sampling, be sure to wash leaves with deionized water prior to sending in for analysis. Small amounts of micro nutrients residuals can have large effects on you results. Also, you do not want to send the leaves wet, drying them before shipping is recommended.



Soil sampling in Florida should be done in August as well. Leaf sampling and soil sampling can be collected at the same time. Soil samples should be taken within the tree row, in an area that is being wetted by the micro sprinkler. Soil cores should be taken 8 inches deep.

Table 4.3. Adjusting a citrus fertilization program based on leaf tissue analysis.

Nutrient	What if it is less than optimum in the leaf? Options:	What if it is greater than optimum in the leaf? Options:
N	1. Check yield. 2. Check tree health. 3. Review water management. 4. Review N fertilizer rate.	1. Check soil organic matter. 2. Review N fertilizer rate.
P	1. Apply P fertilizer (see Chapter 8).	1. Do nothing.
K	1. Increase K fertilizer rate (see Chapter 8). 2. Apply foliar K fertilizer.	1. Decrease K fertilizer rate.
Ca	1. Check soil pH. 2. Check soil test Ca status. 3. Consider applying lime or soluble Ca fertilizer depending on soil pH.	1. Do nothing.
Mg	1. Check soil test Mg status. 2. Check soil pH. 3. Consider applying dolomitic lime or soluble Mg fertilizer depending on pH.	1. Do nothing.
Micro nutrients	1. Check soil pH and adjust if needed. 2. Apply foliar micronutrients. 3. Include micronutrients in soil-applied fertilizer.	1. Check for spray residue on tested leaves. 2. Do nothing.

Soil samples should be taken from 15-20 trees in a block (these should be the same trees that you leaf samples were taken from). Again you want to work in blocks less than twenty acres in size with fairly uniform soils. Soil samples should be air dried before shipping. Soil and tissue samples can be sent to the University of Florida's soil laboratories which can be accessed at <http://soilslab.ifas.ufl.edu/pdf%20files/ProducerCitrus.pdf>. If you were to send in both soil and tissue samples the total cost would be \$27.00.

For more detailed information on leaf and soil sampling for Florida citrus read Citrus Grove Leaf Tissue and Soil Testing: Sampling, Analysis, and Interpretation <http://edis.ifas.ufl.edu/CH046>

Table 4.4. Interpretation of soil analysis data for citrus using the Mehlich 1 (double-acid) extractant.

Element	Soil test interpretation				
	Very Low	Low	Medium	High	Very High
	mg/kg (ppm) ¹				
P	< 10	10 – 15	16 – 30	31 – 60	> 60
Mg ²	---	< 15	15 – 30	> 30	---
Ca ²			250 ³	> 250	
Cu			< 25 ⁴	25 – 50 ⁵	> 50 ⁶

Soil and leaf analysis checklist:

- Leaf tissue analysis is valuable for all elements
- Soil analysis is valuable for pH, Ca, P, Mg and Cu.
- Be aware of residuals on leaf surfaces, try to avoid collecting samples from recently sprayed groves
- A sampling program that is conducted annually will be the most successful.
- Leaf and soil analysis interpretations should be used to make fertilization decisions. Wise use of these results will allow for optimal yield and savings.

Thanks to All of You who support the 4H Citrus Tree project!

We had over 150 4-H youth participate in the Citrus Tree Project this past year. The kids learn about the importance of Florida citrus production. In addition, the kids learn about different citrus varieties, rootstocks, pests and diseases. Also, the kids grow a citrus tree over a course of the year, which are judged and the top 30 are auctioned at the fair. Events included a field day at the Mid Florida Citrus Foundation A.H. Krezdorn grove where youth get to learn about citrus production and pick some fruit (funny there is always a big turnout by parents as well). The 4-H youth work on project books and take a knowledge test as well. There is the Jim Yates horticulturist award (\$500) which is given to the best overall participant. Juniors and Seniors in high school that have participated in the 4-H Citrus Tree Project also are eligible for the John Jackson scholarship to help with college expenses. This is a great project to educate our youth. It would not be possible without the growers who volunteer their time and donate money to help fund the project. I would specially like to thank Bill Lennon, Mickey Page, Wade Beck, Ben Krupski, James Strong, Doug Raymond, Jamie Yates and Martha Yates for their help!! For more info go to our website http://cfextension.ifas.ufl.edu/4h/4h_tree.shtml

Pictured upper right: 4-H youth picking fruit at the MFCF.

Pictured right: Youth learn about varieties, pests and diseases.

Pictured lower right: Judges inspect trees to determine the grand champion.

Pictured below: 4-H youth show off their citrus trees at the Central Florida Fair and are evaluated by the judges.



Pictures of recent Extension Activities



Left: Field Day participants tally up the number of psyllids collected in a sweep net. Dr. Michael Rogers spoke about the importance of psyllid surveying and control. He also discussed his current research efforts at the MFCF. In the background, Dr. Stelinski showed off a prototype of a DMDS (think guava chemical) applicator used to hopefully repel psyllids. Dr. Stelinski is currently evaluating DMDS in the field. Other speakers include Gary England giving an update on peach production and Dr. Steve Futch talking about his experimental herbicide trials.

Right: Dr. Bill Castle shows off the Mid Florida Citrus Foundations newly planted windbreak trees. Dr. Castle also discusses the importance of windbreaks for slowing/preventing the spread of canker from nearby groves.



Left: Bill Lennon counts psyllids captured in a sweep net demonstration.

Below: Rob Arnold demonstrates his LV-8 low volume sprayer.



Fall 2007

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<http://cfextension.ifas.ufl.edu/agriculture/citrus>



The Vision for the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) is to increase and strengthen the knowledge base and technology for:

- Expanding the profitability of global competitiveness and sustainability of the food, fiber, and agricultural industries of Florida.
- Protecting and sustaining natural resource and environmental systems.
- Enhancing the development of human resources.
- Improving the quality of human life.

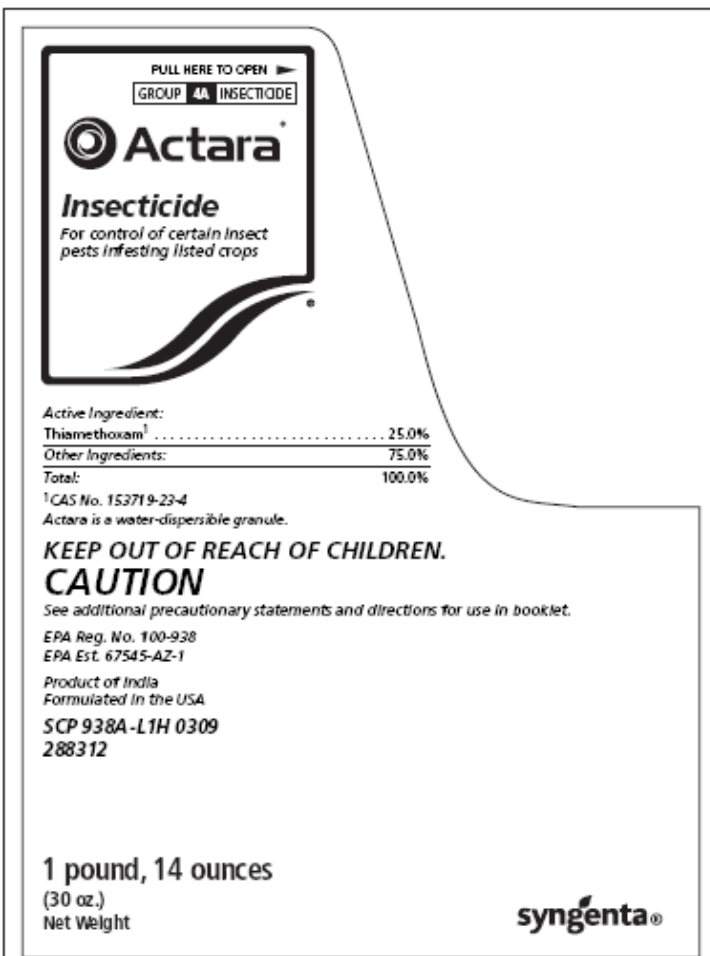
BioQuip Products
2321 Gladwick Street
Rancho Dominguez, CA 90220
Phone: (310) 667-8800



Pictured above is a heavy duty sweep net used for capture insects to monitor control programs. Personal I like the sweep nets for monitoring psyllid populations better than the sticky traps or tap sampling. They cost around \$24 dollars, relatively inexpensive tool to help you monitor psyllid population levels. More can be found here: <http://www.bioquip.com/Search/DispProduct.asp?itemnum=7625HS> or contact BioQuip Products (contact info above).

Actara 25WG recently was labeled for citrus. The active ingredient is Thiamethoxam which is a group 4A insecticide

Admire Pro recently was labeled for the suppression of citrus canker in newly established citrus groves.



Actara
Insecticide
For control of certain insect pests infesting listed crops

Active Ingredient: Thiamethoxam 25.0%
Other Ingredients: 75.0%
Total: 100.0%

¹CAS No. 153719-23-4
Actara is a water-dispersible granule.

KEEP OUT OF REACH OF CHILDREN.
CAUTION
See additional precautionary statements and directions for use in booklet.

EPA Reg. No. 100-938
EPA Est. 67545-AZ-1
Product of India
Formulated in the USA
SCP 938A-L1H 0309
288312

1 pound, 14 ounces
(30 oz.)
Net Weight

syngenta

Bayer CropScience

Bayer CropScience LP
P.O. Box 12014
2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
1-866-99BAYER (1-866-992-2937)

ADMIRE® PRO Systemic Protectant
For Use on Citrus to Suppress
Citrus bacterial spot and Citrus canker
EPA Reg. No. 264-827

PRODUCT BULLETIN
FOR DISTRIBUTION AND USE ONLY IN THE STATE OF FLORIDA

FIFRA Section 2(e) Recommendation: This recommendation is made as permitted under FIFRA Section 2(e) and has not been submitted to or accepted by the U.S. Environmental Protection Agency. It is a violation of federal law to use this product in a manner inconsistent with its label. This product bulletin must be in the possession of the user at the time of pesticide application. Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the EPA registered label.

DIRECTIONS FOR USE
It is a violation of Federal law to use this product inconsistent with its labeling.

CITRUS (Field)
Crops of Crop Group 10 including: Calamondin, Citrus citron, Citrus hybrids (includes chironja, tangelo, and tanger), Grapefruit, Kumquat, Lemon, Lime, Mandarin (tangerine), Pummelo, Orange (sweet and sour), Satsuma mandarin, White sapote (Casimiroa spp.) and other cultivars and/or hybrids of these.

Diseases Suppressed	Rate fluid ounces/Acre
Citrus bacterial spot (<i>Xanthomonas axonopodis</i> pv. <i>citimelo</i>)	14.0
Citrus canker (<i>Xanthomonas axonopodis</i> pv. <i>citri</i>)	

Notes and Restrictions
Pre-Harvest Interval (PHI): 0 day
Maximum ADMIRE PRO allowed per season: 14.0 fluid ounces/Acre (0.5 lb AI/Acre)

Applications
Apply specified dosage in one of the following methods:
1. Chemigation into root-zone through low-pressure drip, trickle, micro-sprinkler or equivalent equipment. For optimum results, apply to newly planted trees or those previously trained to drip, trickle or micro-sprinkler irrigation. Soil should be lightly pre-wetted to break soil surface tension prior to applications of ADMIRE PRO. Chemigation application can be made separate to normal irrigation but followed by 10 to 20 minutes of additional watering to move ADMIRE PRO into root-zone. Allow 24 hours before initiating subsequent irrigations.
2. Soil surface band spray on both sides of the tree. Bands should overlap at the tree base to create a continuous band within the drip-line area of the tree, to be followed immediately with light sprinkler irrigation sufficient to move the product into the upper portion of the root-zone. This method is suitable for very coarse soils with 0.75% organic matter or less.
3. Drench to base of tree not exceeding one-quart total solution per tree immediately around trunk of tree and extending outward covering the entire fibrous root system of the tree. Only recommended for trees up to 6 feet tall.

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** information Call 1-866-99BAYER (1-866-992-2937) or
Visit our worldwide web site at www.bayercropscience.com
As with any crop-protection product, always read and follow label directions.
For additional information call toll-free 1-866-99BAYER (1-866-992-2937).

Admire is a registered trademark of Bayer

04/01/09

REVIEW AND EXAMS FOR RESTRICTED USE ORNAMENTAL/TURF OR PRIVATE AGRICULTURE APPLICATOR PESTICIDE LICENSES
4 CEU'S Available – 2 Core, 2 Ag Row Crop, Ag Tree, O&T or Private App

AUGUST 19, 2009- \$20.00 per person, non-refundable fee for class
If you plan to take an exam, you should study the training manuals given below

Ornamental and Turf - This license is issued to persons employed on a golf course, park, athletic field, or cemetery. You will need to take **both** the General Standards exam and the Ornamental and Turf exam. The study manuals are:

- Applying Pesticides Correctly (SM-1) \$7.00, also called the “Core” manual
- Ornamental & Turfgrass Pest Management (SM-7) \$20.00
- Spray Equipment & Calibration (SM-38) \$2.00

Private Applicator Agricultural - This license is issued to persons who apply or supervise the application of restricted use pesticides for agricultural production such as vegetable, fruit, cattle farm, sod farm nursery or greenhouse. You will need to take **both** the General Standards exam and the Private Agricultural Applicator exam. The study manuals are:

- Applying Pesticides Correctly (SM-1) \$7.00, also called the “Core” manual
- The Private Applicator Pest Control Training Manual (SM-53) \$7.00

8:15 – 8:30 a.m.	Registration
8:30 -10:00 a.m.	Review for the General Standards Exam
10:00 – 10:15 a.m.	Break
10:15 – 11:00 a.m.	O&T and Private Ag App Review
11:00 – 12:00 p.m.	Calibration Review
12:00 – 1:00 p.m.	Lunch on your own
1:00 – 4:00 p.m.	All Exams Administered



Review and Exam: Pvt. Ag and O&T Pesticide Certification
AUGUST 19, 2009- LAKE COUNTY EXTENSION OFFICE

Individuals needing special accommodations to participate in program should call Juanita Popenoe at least (5) five working days prior to the program. 352-343-4101

NAME _____

COMPANY _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE _____

EMAIL _____

CHECK WHICH CLASS/EXAM YOU WILL BE ATTENDING

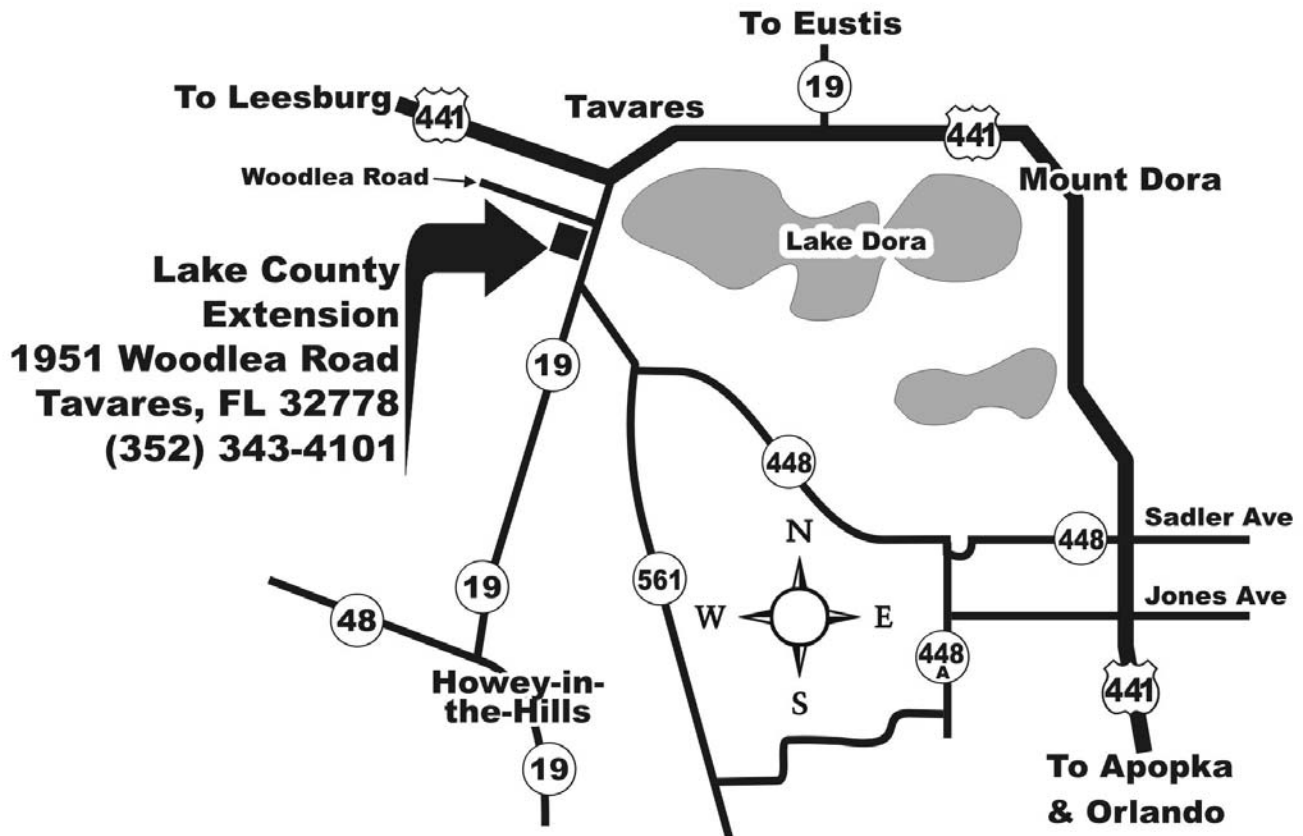
General Standards (CORE) Exam

Ornamental & Turf Exam

Private Applicator Exam

Deadline to register: August 18, 2009: Make check payable to “HORTICULTURAL ADVISORY” and send to LAKE COUNTY EXTENSION, 1951 WOODLEA ROAD, TAVARES, FL 32778

LAKE COUNTY EXTENSION 1951 WOODLEA ROAD TAVARES, FL



The Lake County Extension Office is located just north of the Florida Turnpike, between I-75 and I-4.

Directions

From the Turnpike, take Exit #289, Leesburg North (US 27) to US 441.

From I-75, take Exit #329, SR 44 East.

Where US 27 and US 441 merge, take US 441 South to Tavares. As you enter Tavares, veer off to the right on Old 441. Turn right at the first traffic light onto SR 19, heading South. Turn right again at the third traffic light at Woodlea Road. The Extension Office is on the left. It is a cream-colored one-story building.

CITRUS EXPOsm

Citrus Exposm and Citrus Industry magazine wish to express appreciation to the following organizations for their collective program planning input and promotional support:



Citrus Expo Details

Admission:

Registration in advance **OR** on site required for admission. Complimentary attendance and meals provided both days to bona fide grove owners and managers, citrus production managers, professional crop advisers, association representatives and board members and the citrus research community. Pre-registered growers are entered to win a John Deere Gun Safe sponsored by Everglades Farm Equipment.

Non-exhibiting company and vendor personnel may become a sponsor at any level for trade show, lunch and seminar admission, or purchase an individual one- or two-day admission pass. Visit www.CitrusExpo.net for details.

Events & Prize Drawings:

Must be present to win. Doors open 8:00 am both days. Prize Drawings: Wed. and Thurs. – 9:00 am and 1:30 pm. Gun Safe Grand Prize Drawing 1:30 pm Wed., Aug 19. Some restrictions apply, rules at prize drawing area and registration desk.

Trade Show:

More than **150** citrus-related exhibits inside the air-conditioned Lee Civic Center arena plus outdoor displays.

Meals in Trade Show:

Continental breakfast 8-9:30 am both days. Lunch 11:30 am - 2:00 pm both days. Meal tickets distributed with name badges at check-in.

HOST HOTELS

Holiday Inn Fort Myers (I-75 South, Exit 128)
9931 Interstate Commerce Dr., Ft. Myers, FL 33913
Phone: 239-561-1550 Fax: 239-561-9999
Ask for the \$85.00 Citrus Exposm Rate

Homewood Suites by Hilton Fort Myers
(I-75 South, Exit 128)
16450 Corporate Commerce Way, Ft. Myers, FL 33913
Phone: 239-210-7300 Fax: 239-210-7301
Ask for the \$94.00 Citrus Exposm Rate

Courtyard by Marriott Fort Myers
(I-75 South, Exit 128)
10050 Gulf Center Drive, Ft. Myers, FL 33913
Phone: 239-332-4747 Fax: 239-332-4748
Ask for the \$99.00 Citrus Exposm Rate

Sponsors “as of June 9, 2009”

DIAMOND

Bayer CropScience
Everglades Farm Equipment
Monsanto
PLATINUM

- Cabela’s • Carden & Associates, Inc.*
• Florida Citrus Mutual • Florida Department of Citrus
• Florida Grove Hedgers, Inc. • Gulf Citrus Companies
• Homes of America SA, Inc. • LRA Insurance
• McLean Ag Chem, Inc. • Nuvee Enterprises, Inc.
• Root Solutions, Inc. • Stallings Crop Insurance
• Timac U.S.A. • Vigiron

GOLD

- Diamond R Fertilizer • Helena Chemical Company
• IRRA-CHEM, Inc. • Kelly Tractor Company
• Oxbo International Corp. • Southern Gardens Citrus
• The Andersons, Inc. • Tropicana Products, Inc.

SILVER

- AgraQuest • Agricultural Employee Services
• BASF • Chemtura Corporation
• Curtec of Florida, Inc. • E Co Consultants, Inc.
• Environmental Consulting & Tech., Inc.
• Farm Credit Association of Florida
• Fred Juliano Enterprises, Inc.
• GeoAg Solutions • Metal Culverts, Inc.
• Morse Enterprises, LTD, Inc./Keyplex
• NuFarm Americas, Inc. • Omega Protein, Inc.
• Oro Agri, Inc. • Oswald Trippe & Company, Inc.
• Tradewinds Power Corporation
• Tree-See Control Systems • Wedgworth’s, Inc.

BRONZE

- ADAPCO, Inc. • Ag-Tronix, Inc.
• Airtec Sprayers, Inc. • Bellingham & Stanley, Inc.
• Brandt • Bruce Hendry Insurance, Inc.
• Brush Hog Grinding Services, LLC
• Central Florida Mulching • Curtis Dyna-Fog, LTD
• Custom Harvest Insurance, LTD
• Engine Distributors, Inc. • Flo-Tec, Inc.
• H2A USA • Index Instruments • Joe L. Davis, Inc.
• Martin Realty Florida, Inc. • Pallet One
• ProPak Software • Riverside Bank • Tiger-Sul
• TWC Distributors, Inc. • Terssenderlo/Kerley, Inc.

2009

CITRUS EXPOsm

“Using Today’s
Innovations Toward
Future Success”



**Lee Civic Center
Ft. Myers, Florida**

CITRUS EXPOSM 2009

“Using Today’s Innovations Toward Future Success”

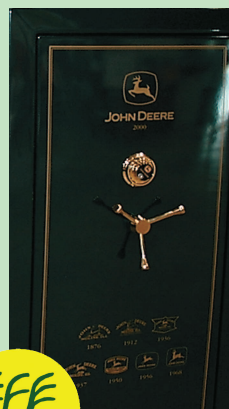
18th Annual Citrus ExpoSM Seminar Program
Lee Civic Center – Ft. Myers, FL, August 19 & 20, 2009

Citrus ExpoSM 2009 is shaping up to be the biggest and best Citrus ExpoSM ever. Unprecedented research funding has been devoted to citrus greening (HLB) over the past few years. Using information gained to date, Expo speakers from UF/IFAS and around the world will inform growers about options on how to most effectively deal with today’s challenges to remain viable, keeping Florida’s citrus industry the best in the world.

Once again the citrus industry’s largest trade show event will provide a great opportunity for good food and fellowship among the more than 150 exhibiting companies on display.

Register to Win!!

All pre-registered growers are entered in the grand prize drawing for a John Deere gun safe from



Everglades
FARM EQUIPMENT

SEMINARS SPONSORED BY



Seminar Topics

\$20 Million in Research Invested — How to Use the Results to Our Advantage

Production Systems and Economic Thresholds to Survive Greening

Critical Grower Partnerships to Effectively Battle Greening

Low Volume Spray Technology

Aerial Spray Applications

Area-wide Psyllid Control Strategies

Foliar Nutrient Sprays — Do They Work Against Greening?

Impact of Greening Management Costs on Profit Goals in Florida and Brazil

Analyses of Florida and Brazilian Production Costs and Processed Orange Prices

Novel Approaches for Citrus Nursery Production

Advanced Production Systems — Developing Methods Today to Succeed Tomorrow

New Ideas in Managing Citrus Tree Growth

Mechanical Harvesting — Equipment Innovations, Abscission Products, Microbial Contamination and Food Safety

Good Agricultural Practices (GAPs): Their Importance to Growers and Food Safety

The California Pistachio Experience: How a GAP-less Tree Crop Industry Has Been Devastated by a Salmonella Outbreak: Implications for Florida citrus.

Find updated schedule details as they develop at www.CitrusExpo.net

CEU and CCA credits will be available for appropriate segments of both days’ programs.

Pre-Registration Form

**CITRUS
EXPOSM** “Using Today’s Innovations Toward Future Success”

To register visit www.CitrusExpo.net or Mail or fax form to: Citrus ExpoSM
 5053 NW Hwy. 225A, Ocala, FL 34482
 Phone 352-671-1909 – Fax 352-671-1364
CitrusExpo@southeastagnet.com

Name: _____

Company/Farm: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

E-mail: _____

Check All That Apply

- Grove owner, Manager, Foreman, Caretaker, Citrus Nursery
- I am a Certified Crop Adviser
- Handler, Packer, Shipper, Processor, Fruit Buyer
- Association Executives and Board Members, Government, University, Research, Legislative, Student
- Product Manufacturer, Vendor, or Supplier Representative doing business with growers or others in the citrus industry (see admission details)

Other _____

Complimentary meal tickets provided at registration desk
 Please check days you plan to attend

- Wednesday, August 19, 2009
- Thursday, August 20, 2009

2009 Citrus Exposm Seminar Program

Lee Civic Center - Ft. Myers, Florida August 19 & 20, 2009

Wednesday - August 19

Morning Session 9:15 - 11:30: Moderator - Dr. Tim Spann, UF/CREC

9:15	Welcome / Seminar Overview	Dr. Tim Spann, UF/CREC
9:30	Citrus Nursery Industry Update	TBA
9:50	Advanced Citrus Production Systems: What You Need to Know to Install a System Today	Dr. Arnold Schumann, UF/CREC
10:10	Foliar Nutrition Sprays: Are they working against HLB?	Dr. Tim Spann, UF/CREC
10:30	Determining Greening Infection Levels Using Multiple Survey Methods	Dr. Steve Futch, UF/IFAS Extension
10:50	New Strategies in Canopy Management to Improve Yield, Fruit Size and Management Efficiency	Dr. Andy Krajewski, International Citrus Technologies Pty Ltd, Australia
11:30	Lunch at the Trade Show!	

Afternoon Session 2:00 - 4:00: Moderator - Dr. Megan Dewdney, UF/CREC

2:00	Major Emerging Land & Water Issues Now Threatening Florida Agriculture	Charles Shinn, Gov't & Community Affairs, FL Farm Bureau Don Parrish, Regulatory Affairs, American Farm Bureau, Washington D. C.
2:20	What has \$20 million revealed about HLB and how can we use it to our advantage?	Dr. Megan Dewdney, UF/CREC
2:40	Update on psyllid management: Low Volume Technology, pesticides and pesticide alternatives	Dr. Lukasz Stelinski, UF/CREC
3:05	Aerial Spray Applications for Psyllid Control	Dr. Michael Rogers, UF/CREC
3:30	Area-wide Psyllid Control Programs	Dr. David Hall, USDA, Ft. Pierce

2009 Citrus Exposm Seminar Program
Lee Civic Center - Ft. Myers, Florida August 19 & 20, 2009

Thursday - August 20

Morning Session 9:30 - 11:30: Moderator - Dr. Michelle Danyluk, UF/CREC

9:30	Mechanical Harvesting - Machine enhancements and innovations	TBA
9:50	Abscission and Mechanical Harvesting	Dr. Bob Ebel, UF/SWFREC
10:10	Mechanical Harvesting Effects on Fruit Microbial Contamination and Food Safety	Dr. Michelle Danyluk, UF/CREC
10:30	GAPs 101: What are they and why does citrus need them?	Dr. René Goodrich, UF Food Science & Human Nutrition
10:50	The California Pistachio Experience: How ignoring GAPs led to a <i>Salmonella</i> recall - Implications for Florida Citrus	Dr. Bob Klein, CA Pistachio Research Board, Fresno, CA
11:30	Lunch at the Trade Show!	

Afternoon Session 2:00 - 4:00: Moderator - Mr. Ron Muraro, UF/CREC

2:00	Update on HLB management costs in Florida	Mr. Ron Muraro, UF/CREC
2:20	Issues with the relationship between U.S. orange juice prices and processed orange prices	Mr. Allen Morris, UF/CREC
2:40	The Economic Sustainability of Sao Paulo's Citrus Production	Dr. Margarete Boteon, CEPEA USP/ESALQ, Brazil
3:20	Citrus production systems to survive greening - Economic thresholds	Dr. Fritz Roka, UF/SWFREC
3:40	Importance of grower partnering in effectively battling greening	Dr. Tom Spreen, UF Food & Resource Economics



Info for Certified Pile Burners Course:

The Florida Division of Forestry and University of Florida Extension Service will be conducting a Certified Pile Burners Course on August 6th, 2009. This course will show you how to burn piles *legally, efficiently and safely*. Most importantly it could save a life. When weather is dry certified pile burners will receive a priority to burn. Also certified pile burners are able to burn 2 additional hours a day and get multiple day authorizations. The training will be held from 8:30 am till 4:30 pm at the Mid Florida Research and Education Center located in Apopka, Florida. Enclosed are the agenda and directions.

Registration is required to attend and class size is limited. To attend please email/mail the following information:

1. Your full name (as wanted on your pile burning certificate).
2. Your mailing address (where you want the certificate mailed).
3. Your Division of Forestry Customer Number (It is the number that you are required to give the DOF when you call in for your burn permits. If you do not know it please call the local DOF office and ask them).
4. Your email address (if you have one) or contact phone number.
5. A check made out to Lake County Citrus Extension for \$50.00.

The first fifty individuals to provide the following five requirements will be registered; there will be a 48 hour non refundable fee limit. If you do not make the training and did not contact our office at least 48 hours before the class, you will not receive a refund. There will be a test at the end of the session. You must receive a grade of 70% or higher on the exam and demonstrate a proper pile burn with your local DOF office to become certified. Once you are certified it will be noted with your customer number, thus it is important for us to have the proper number. If you do not have a customer number the Division of Forestry local office will set one up for you. Please send checks to Lake County Extension 1951 Woodlea Rd. Tavares, FL 32778.

Sincerely,

Ryan Atwood

Registration Form

Florida's Certified Pile Burner's Program

Mid Florida Research and Education Center
2725 S. Binion Road, Apopka, FL 32703-8504
Tel (407) 884-2034

Please send this form and check for \$50.00 made out to the Lake County
Citrus Extension Program Attention: Maggie Jarrell
1951 Woodlea Rd. Tavares, Fl 32778

Name

Mailing Address

Email Address

Telephone Number

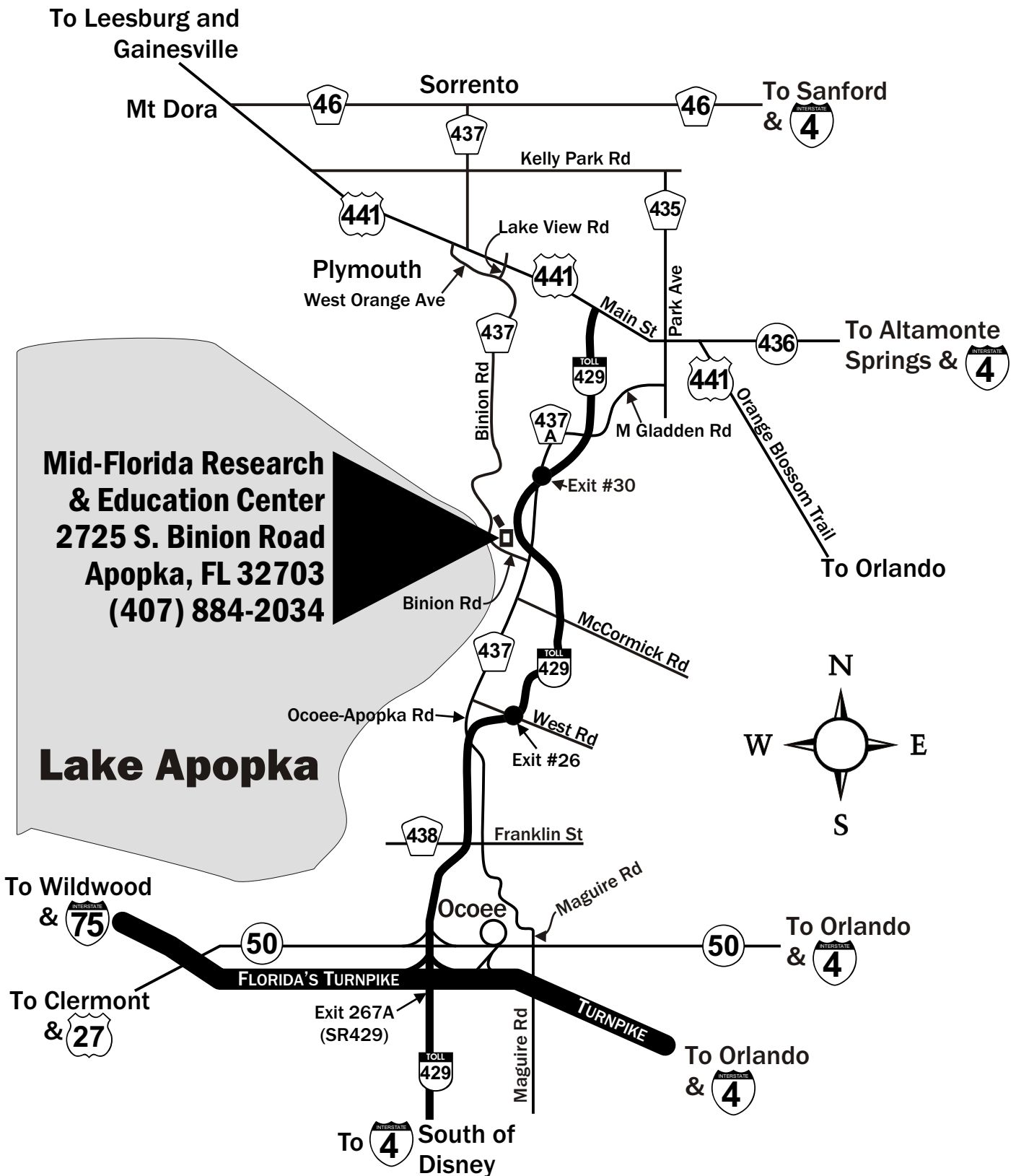
DOF Customer Number

Florida's Certified Pile Burner Training
August 6th, 2009
Apopka, Florida

1. Opening Comments and Introduction	08:30 – 09:10
2. Fire Weather	09:10 – 9:50
3. BREAK	9:50 – 10:00
4. Smoke Management	10:00 – 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

Please bring a Pencil for the Exam!





Directions to MREC

From Florida's Turnpike, take SR429 (toll) north to the West Road exit #26 - turn left on West Road. At Ocoee-Apopka Rd (CR437) head north (right turn) to Binion Rd. Turn left on Binion Rd (CR437) and proceed 1 mile to MREC on right.

From US441, take CR437 (West Orange Ave, which becomes Binion Rd) south 4.6 miles to MREC on the left. Do not take SR429 from US441. There is no south-bound exit from SR 429 before MREC.



Florida's Certified Pile Burner Training

Frequently Asked Questions



Q: Why should I be a certified pile burner?

A: Certified pile burners are trained to burn piles **legally, safely and efficiently**. Most importantly, it could save a life. Also, when the weather is dry, certified pile burners will receive priority for authorization to burn by the Florida Division of Forestry (DOF). Also, certified pile burners are allowed to burn up to two hours longer per day and get multiple day authorizations.

Q: What is a Pile Burner Customer Number?

A: When you call the DOF for an authorization to burn, you will be assigned a personal customer number. This number references your information so it doesn't need to be gathered each time you call for an authorization. You must have your individual DOF customer number in order to be certified.

Q: Is there a test?

A: Yes, the test is 20 questions and open-book. You must receive a score of at least 70% to pass.

Q: What if I don't pass?

A: Very few people fail the test but if you do, you will be provided another opportunity to take the test at a later date. If you fail the second time, you must re-register and take the training again.

Q: Why do you ask for my email on the application form?

A: Email is the fastest and most convenient method to inform registrants of their registration status. If no email address is provided then all correspondence will be sent through the federal mail. This can take several days to relay messages and this may not be practical if changes are made to the course schedule or for last minute registrations.

Q: How much does it cost to register for the training?

A: Registration for the training is \$50 per person and includes lunch, training materials and testing.

Q: How long does my certification last?

A: As long as the person with the certification uses their number at least 5 times in a period of 5 years their certification will not expire under the current program.

Q: Will certified burners be notified if their certification expires?

A: Yes, notification will be sent out to them to let them know of their upcoming certification expiration date.

Q: Will I be certified at the end of the one day training?

A: No, you will need to follow the written instructions that you will receive from the Division to become certified. You will need to complete a simple burn plan, have it reviewed and approved locally by the DOF and also have the burn itself reviewed and approved by the DOF. From that point, the local DOF office will send the expected documentation to Tallahassee to recommend certification for you.

Q: Is there a minimum age to be a certified pile burner?

A: Yes, you must be at least 18 years old to take the test and be a certified pile burner.



Packinghouse Day & The Indian River Postharvest Workshop

2009 Programs

Packinghouse Day

When: Thursday, August 27th, 2009

Where: Citrus Research and Education Center, 700 Experiment Station Road,
Lake Alfred, FL 33850

Time: Registration opens at 8:30 A.M., Program starts at 9:30 A.M.

Lunch Sponsor: DECCO

Indian River Postharvest Workshop

When: Friday, August 28th, 2009

Where: Indian River Research and Education Center, 2199 S. Rock Rd., Ft.
Pierce, FL 34945

Time: Registration opens at 8:30 A.M., Program starts at 9:30 A.M.

Lunch Sponsor: JBT FoodTech

Both programs will include presentations on:

- The latest developments on a new domestic citrus canker rule
- Issues in successfully completing third party certification programs: GAPs, HACCP and fruit quality
- New fungicides, application methods, and handling practices to minimize postharvest decay of citrus
- Effects of washing fruit before degreening
- Electronic detection of canker and other peel defects of citrus

For questions and the latest details, contact Mark Ritenour at 772-468-3922, ext. 167 (mritenour@ifas.ufl.edu) or visit <http://postharvest.ifas.ufl.edu>.