



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.

Winter 2009

January, February & March

UF UNIVERSITY of FLORIDA

IFAS Extension

Lake County Extension



Upcoming Events

<http://cfextension.ifas.ufl.edu/calendar.shtml>

MFCF Field Day	Winter Garden	Jan. 22nd
Indian River Seminar	Ft. Pierce	Jan.28-29th
OJ –How to Maximize your Fertilizer Program	Tavares	Feb. 3rd
OJ -Risk Management & Crop Insurance	Tavares	Feb. 17th
Pesticide Applicator Training	Sanford	Feb. 19th
Mature Citrus Mentors	Tavares	March 24th

Dear Growers,

I would like to wish you a Merry Christmas and a Happy New Year! This fall was a busy one for me and your citrus extension program. We had the opportunity to go visit other growers to see their responses to producing citrus in the presence of greening. I continue to meet new people and have enjoyed getting to know everyone. With HLB continuing to spread around the state the time to unify with fellow growers to combat this threat is now! I will be helping in the coordination of an area wide psyllid control spray in our area. The area wide dormant spray has been scientifically proven as the most beneficial spray of the year for reducing psyllid population levels. If you are interested in participating in this application please give me a call.

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.



Greening, Psyllid Control, & Area Wide Spraying in Central Florida

I continue to see more groves with HLB (greening) infected trees throughout Central Florida. I have am providing some pictures that hopefully will help you in identifying this disease. Remember when you have low infection levels removing HLB infected trees is recommended. Recent research has shown that newly infected trees are most likely to occur within 125 feet of the original find. So if you have found any HLB infected trees than taking extra time to scout around those areas for new infections would be wise.



Psyllid suppression is important. The single most important spray of the year, is

the dormant spray which is done before leaf flush in January or February. Do not let the fact that you do not see many psyllid during this time of year prevent you from trying to control them with a dormant spray. The idea is **NOT** to wait for psyllid populations levels to rise first and then try



to suppress, basically starting from behind and trying to play catch up the rest of the year. What you want to be doing is spraying psyllids before the populations build, suppressing their numbers as much as possible going into the spring and summer months. I realize with current fruit prices management practices are under evaluation. If you had to choose only one spray for the entire year the dormant spray would be the most beneficial. Current research is showing that only 1 out of 1,000 psyllids are testing PCR positive for HLB when collected out in groves. It truly is a

Picture: Left a HLB infected tree that has started to drop fruit and leaves. You can see the upper canopy is sparse and has lost much of its leaves. Much of the fruit that dropped to the ground is small and undersized.





numbers game, the lower the population level and the lower the inoculum source (infected trees), the slower the spread. There is an effort underway to coordinate growers to apply a dormant application on an area wide basis. This requires growers to participate and coordinate so that the psyllid population can be knocked down in our geographic area.



The more growers that participate the greater the reduction in populations in our growing region. If you are willing to participate in an area wide dormant spray please contact Ryan at 352-343-4101, if I am not in the office please leave a message and I will return your phone call. It is important to work together as a group to maximize the results of our efforts.



Pictured right: A young tree infected with HLB. Again you can see fruit on the ground. As you can see many of the trees around it look perfectly healthy with no fruit drop. Fruit and leaf drop are a very obvious symptom of HLB. When you look more closely at the tree you see leaves with blotchy model (sporadic green and yellow patterns) and yellow veins.



Mid Florida Citrus Foundation's A.H. Krezdorn Grove Field Day Jan. 22nd 9:30-Noon

We will be having a field day at the Mid Florida Citrus Foundation's (MFCF) A.H. Krezdorn grove on Jan. 22nd from 9:30-12. This will be the first of two field days this year in which researchers will provide an update on their current research trials conducted at the MFCF. Topics will include current citrus variety and rootstock improvement research being conducted at the A.H. Krezdorn grove. Also, covered will be results of automated citrus irrigation research. There will also be a discussion on alternative deciduous fruit evaluation.

- 9:30-10:00 Deciduous fruit crops overview
-Gary England/Ryan Atwood
- 10:00-10:20 Development of new citrus varieties-Dr. Fred Gmitter
- 10:20-10:40 Tree size controlling rootstocks & Potentially new citrus cultivars
-Dr. Jude Grosser
- 10:55-11:10 Midsweet Trial results
-Dr. Paul Ling
- 11:10-11:25 Valencia Trial results
-Dr. Bill Castle
- 11:25-11:40 USDA rootstock results
-Dr. Kim Bowman
- 11:40-11:55 Automatic citrus irrigation
-Dr. Larry Parsons

Please call Maggie at 352-343-4101 for directions. Don't forget to bring a lawn chair so

OJ Meeting –How to Maximize your Fertilizer Tavares Lake Co. Ag. Center Feb. 3rd 5-7PM

We will be having our next OJ Meeting on Feb. 3rd from 5-7 PM at the Lake County Agricultural Center in Tavares. The topic will be fertilizer and fertilizer alternatives. Over the last year fertilizer prices have risen dramatically. In addition to fertilizer price increases juice price have dropped. Determining ways to save money and optimizing your fertilization plan is critical. Please plan on joining us for How to Maximize your Fertilizer session. Joining us will be forage and woody ornamental producers. There will be a general session for everyone and breakout sessions for specific information pertaining to each crop.

Dinner is being provide for by **Southeast Ag-Net /AgNet Online/Citrus Industry Magazine and Growers Fertilizer**, so please let us know if you will be attending. Please call Maggie at 352-343-4101 to register.

- 5:00-5:30 Dinner**
- 5:30-6:15 General Session -
Everything you need to know
concerning Fertilizer**
- Dr. Tom Obreza
- 6:15-7:00 Breakout Session 1-
Fertilization for Citrus**
-Dr. Arnold Schumann
- Breakout Session 2 & 3
Fertilization for Forages
Fertilization for Woody
Ornamentals



OJ Meeting Feb. 17th 5-7PM Agricultural Risk Management & Crop

We will be having our next OJ Meeting on Feb. 17th from 5-7 PM at the Lake County Agricultural Center in Tavares. The topic will be on risk management and crop insurance. Do you understand the new Farm Bill and how it could have an effect on your business after a natural disaster? A dinner is being provided by Lake Co. Citrus Extension Advisory Committee, so please let us know if you will be attending. Please call Maggie at 352-343-4101 to register.

- 5:00-5:45 Dinner
- 5:45-6:15 Crop Insurance for Agricultural Producers- Ray Thigpen
- 6:15-6:35 The new Farm Bill & Agricultural Risk Management -Ken Windsor
- 6:35-6:55 Greening Update-Ryan Atwood

Mature Citrus Mentors (Old Timers) March 24th 11:00-1:30

Did you work the grove with a hoe growing up? Do you remember the 62 freeze? Then you maybe considered an Old Timer. This year we will again be reuniting with old friends and transferring knowledge from our citrus industry elders. If you are an old timer please plan on joining us at the Lake County Agricultural Center in Tavares starting at 11 AM. Lowell Teal will be our speaker. Mr. Teal is a citrus grower, author, and Florida cracker. I have been told he is quite the story teller.

There will be a BBQ lunch provided, cost is \$20. Registration is required. Please register with

Maggie Jarrell at 343-4101 by **March 18th.**



Private Agricultural License Review & Exam Feb. 19th 8:30-4:00

A pesticide license is required by any persons who apply or supervise the application of restricted use pesticides for agricultural production. This certification requires a passing grade of 70% on the General Standards and Private exam. This certification must be renewed ever 4 years either by testing or by 8 CEU's.

There will be a review and exam in Sanford on February 19th. The review starts at 8:30 AM. There is a \$20 charge for the class.

It is advisable to purchase the "Applying pesticides correctly" and "The private applicator training manual" from the IFAS bookstore on-line at www.ifasbooks.ufl.edu or by calling 800-226-1764.

The private agricultural license itself cost \$60 which does not have to be paid until after you pass the exam. To register please call Richard Tyson at 407-665-5551.





Receive Technical Support to Transition to Organic Production

Gainesville-based Florida Organic Growers (FOG) is now offering farmers an opportunity to receive free technical assistance to transition to organic production. By pairing growers with crop advisors who are experienced with organic production methods, the program aims to give growers the support, technical know-how, and assurance they may need or desire to successfully make the transition. The U.S. organic food industry has grown from \$1 billion in sales in 1990 to an estimated \$23 billion in 2008 and is expected to average 18% annual growth through 2010. "The organic marketplace continues to expand and Florida growers may want to seriously consider the market opportunities," stated Marty Mesh, Executive Director of FOG. "We are extremely happy to bring this project to growers which ultimately can have both long-term environmental and economic benefits."

Besides assisting transitioning growers, the program is open to any Florida fruit or vegetable producer who is interested in adopting sustainable agriculture practices for reducing pesticide use. Interested growers please contact Matt Vargas at (352) 377-6345 or matt@foginfo.org. More information, including the application to participate in the program can be found at:

CITRUS PEST MANAGEMENT COURSE OFFERED IN SPRING

Citrus Pest Management (PMA 5205, section no. 2563) will be offered for the Spring 2009 term at the University of Florida/IFAS Citrus Research and Education Center (CREC) in Lake Alfred and via polycom at the Department of Entomology and Nematology in Gainesville. Citrus Pest Management is a graduate-level course (3.0 units) for students and citrus industry personnel working in the area of pest management. The course reviews the latest tactics and strategies available to manage diseases and arthropod, nematode and weed pests of citrus. Emphasis is given to techniques by which pest and disease organisms are monitored and how this information is used to effectively manage pests with the least risk to the environment. Course topics include: Identification and biology of citrus pests and diseases, Pest and disease monitoring, Ecological and economic principles as a basis for pest management, Economic thresholds and pest management models, Integrated pest management in citrus, ***NEW - The evolution of Citrus IPM in the era of citrus greening.***

The course is coordinated by Dr. Larry Duncan, University of Florida/IFAS, Professor of Nematology. University credit (3.0) or audit credit. CEU's will be offered.

Dates/Time: Wednesdays Jan. 7 – Apr. 29; 3 - 6 p.m. (8-10 period).

Registration: Registration cost for Citrus Pest Management (PMA 5205; Section no. 2563) is \$1,023.87 for Florida residents (\$341.29 per credit hour). Regular and non-degree registration is until Jan. 5 and students are strongly encouraged to register early. Students must complete the registration procedures online at http://entnemdept.ufl.edu/dept_disted.htm. This site contains an option for non-degree students with step by step instructions and explanations. Non-degree students are encouraged to visit the site in advance of registration. For registration assistance, please contact Ms Debbie Hall (352-392-1901 x 117; dahall@ufl.edu). For additional information about the class contact Dr. Larry Duncan 863-956-1151.



Jatropha Curcas: Promoted as potential biofuel crop for Central Florida

There is a lot of excitement about Florida's potential as a major producer of alternative energy crops. Biodiesel is one type of energy product that can be produced from agricultural crops. *Jatropha curcas* is a crop of interest around the world for its biodiesel potential. Countries such as India, China, and Brazil are planting *Jatropha* for an alternative fuel source. *Jatropha* is also being evaluated in the U.S. in Florida and Texas.



Above: *Jatropha* seedling growing at MFCF.

Currently, there is not much known on *Jatropha*'s performance in the U.S. as an economically viable alternative energy crop. *Jatropha* is native to Mexico and is a subtropical/tropical plant which does not tolerate cold weather. Researchers interested in *Jatropha* currently are evaluating it in South Florida and South Texas which are subtropical areas. There is growing interest in *Jatropha* production in Central Florida. It is an attractive crop because it grows in poor soils and does not require fertilization or irrigation. However, it most likely will not tolerate Central Florida's cold weather events. Currently, IFAS has 40 plants growing in Winter Garden to evaluate the cold tolerance and growth pattern of *Jatropha*. This past winter on January 2nd temperatures reached 28 degrees and caused our young trees (less than a year old) to lose their leaves. Temperatures in Central Florida are known to drop into the teens on occasion and would most likely kill *Jatropha curcas*, although it maybe the root system could rejuvenate a tree. *Jatropha* production in Central Florida remains an extremely high risk endeavor.

Besides the cold threat, there are also economic issues. Wild *Jatropha* produces 1 to 3 pounds of seed a year. It takes approximately 20 lbs of seed to produce 1 gallon of biodiesel. There are no IFAS recommended planting densities; the company selling *Jatropha* seedlings recommends 400 trees per acre. Using these numbers the 600 gallons of biodiesel per acre would be good production. If you consider a sales price of \$3.00 gallon for biodiesel, an acre would produce \$1800 dollars. Collection of *Jatropha* seed currently requires hand harvesting every 7 to 10 days which is very expensive. It most likely would not be profitable to even harvest the crop with these estimated yields and numbers.

Breeding work to increase the yields and cold tolerance of *Jatropha curcas* is needed for any possible future production in Central Florida. Also, mechanical harvesting of the fruit is essential to reduce harvesting expenses. *Jatropha* production in Central Florida may have great potential in the future if new research and technologies can be implemented. The recommendation for current production should be one of caution for growers as they may never see a harvest and/or may not be able to turn a profit.



Syngenta Crop Protection is recruiting for 2009 internship program

Syngenta Crop Protection is recruiting for 2009 internship program. The summer-long internship will allow students to be involved in sales, marketing and field activities as well as building customer relationships through work with growers, retailers and manufacturers. Syngenta currently recruits sophomores and juniors in college, though seniors will be considered.

The candidate should have a background in agriculture and an interest in pursuing a career in the agricultural industries after college. Interns will be responsible for a variety of field activities, including scouting, soil sampling and collecting and analyzing agricultural data.

Qualified applicants should be willing to work outdoors and must have basic familiarity with pest, disease and weed control. Six intern positions are currently available, and Syngenta plans to interview candidates through February 2009. Interns will be placed across various regions of Florida and must be willing to relocate if necessary.

Interested candidates should fax resumes to John Taylor at 561-694-7939 or e-mail him at john.taylor@syngenta.com.

Are you interested in new citrus varieties?

Are you are interested in new citrus varieties or would like to attend future tasting of varieties currently under evaluation? If so, Peter Chaires who is the Executive Director of the New Varieties Development and Management Corporation (NVDMC) is working with the IFAS and USDA Citrus Plant Improvement teams to bring growers, packers, processors, and marketers together to taste, eat, drink and help evaluate newly developed varieties. This allows market expertise to be integrated with research activities. If you are interested in new citrus varieties or would like to help evaluate new varieties please contact Peter at:

Peter Chaires
Executive Director, (NVDMC)
PO Box 1113
Lakeland FL 33802
Lakeland Phone: 863.682.0151
Lake Mary Phone: 407.302.3510
Primary Fax: 863.688.6758
Email: pchaires@flcitruspackers.org

Planned Dates for Fruit Evaluation. Some dates have obviously passed however, I wanted to include them so you would know that there where multiple events in which to participate in a year.

Oct 14 – CREC
Nov 20 – CREC
Dec 16 – CREC
Jan 28 – Indian River Citrus Seminar
Feb 19th – CREC
March 26th - CREC



Pictures of recent Extension Activities

I included pictures of recent activities to your extension program. If you have not been coming, I wanted to show you what you have been missing!



Above: Pete Spyke spoke about his OHS/APS grove at our field day in Ft. Pierce. We also had the opportunity to visit the USDA Horticulture research facility.

Below: Maury Boyd talks about McKinnon Corp. Felda grove and discusses their experience with and approach to managing HLB infection.



Left and below: It was on fire! Safety Day participants showed off their skills after being trained by the Lake County Fire Department.



Below: Dr. Any Krajewski visiting from Australia gave a lesson on citrus pruning at the Mid Florida Citrus Foundation.



Above; 4-H youth and their parents visit the Mid Florida Citrus Foundations A.H. Krezdorn's research grove to learn about the citrus industry. During the tour the participants learn about citrus varieties, diseases and pests. Of course picking fruit is the most popular activity! This project would not be possible if it were not for you growers who generously buy the 4-H youth citrus trees at the end of the year. This year the kids are growing Murcott on Cleo.




Right: I am leading a tour of Brazilian citrus industry group. They really enjoyed seeing a harvesting crew in action and enjoyed some of our Florida grown Red Navels.



Report from the HLB International Conference-Orlando Dec.2-5

It was recommended by my Advisory Committee to attend the HLB Conference held in Lake Buena Vista from Dec. 2nd through the 5th. This event brought together over 400 participants from around the world. A one page report cannot possibly cover all the information presented. However, the proceedings are available at http://www.doacs.state.fl.us/pi/hlb_conference/Proceedings.pdf.

Below is some of the information or quotes from the conference that I found interesting.

- Brazil now has law that growers must survey their groves every 3 months for HLB and report their findings every 6 months if infection rates are lower than 28% they are required to remove infected trees, if < 25% then required to remove whole block.
 - South Gardens grove cumulative 16% infection from when they started surveying, believe they had disease well before 2005 and are catching up from 4-5 years ago. \$476.00 acre for inspection, tree removal, resets, psyllid control.
 - Mike Irey stated Feb-June many less positive PCR samples July-Feb. is when bacteria in greatest concentration.
 - Testing psyllids with PCR can be an early warning for HLB. Psyllids being moved around on fruit trailers, in boats, through nursery stock.
 - CCLP has test in to determine if it is possible to replant young groves in HLB infected areas. At age 2 years with good psyllid control and 6 surveys a year overall trees with HLB estimated at 0.5%.
 - Lots of work being done at the cellular level. RNAi to down regulate genes.
 - Freezing temperatures (under laboratory conditions) that we get in Central Florida do not effect psyllid population levels at any significant level.
 - One study showed psyllids require on average between 50-307 minutes to reach the phloem of citrus. Seems that the thicker the tissue the less likely psyllids were to come into contact with phloem. Most likely why they reproduce and like young leaves.
 - Psyllids can/will move up to 2 miles but seem to only move short distances once into a grove. Most likely to see them on outside boundaries.
 - Study to determine movement of psyllids showed a more flight during the day 6-9 AM 17%, 9-Noon 20%, Noon-3PM 41%, 3-6 PM 17%. Could indicate that nighttime, early morning or late evening spraying maybe more effective.
 - Juice from HLB fruit less preferred by taste test participants but does not appear to be a huge issue yet. Further work needed.
 - Economic evaluation when including good HLB management practices that fruit prices need to be in the \$1.25-1.50 range to make money on growing citrus.
 - In areas where HLB incidence has been studied seems to be a trend in HLB positive trees around edges, ponds, roads, canals, etc. Ideally circular type grove to minimize edge effect.
 - DMDS chemical that is produced by guava which acts as a repellent to psyllids in lab. Plans for field evaluations.
 - Factors in Brazil that have an effect on HLB incidence levels at twelve different farms: 1. HLB incidence level in municipality 2. Distance from no control neighbor 3. Size of grove 4. Age of trees 5. Time period during which inspection and removal take place 6. # of insecticide treatments per year 7. # of inspections/yr 8. Amount of incidence when starting a control program.
 - Guava study in Vietnam resulted in HLB infected trees at age 3. Need chemical control in addition to guava.
 - Tom Turpen compared HLB to HIV AIDS and warned that we need to be prepared to think about the collapse of the citrus industry.
 - Cleo seems to be an unsuitable host plant for Asian Citrus Psyllid.
 - Andrew Beattie who works in Southeast Asia with HLB stated "if you start late you will lose the war".
 - California Citrus Mutual giving 2 million dollars to help fund HLB research.
 - Juliano Ayres from Brazil stated that citrus production with HLB is hard and expensive but in his opinion possible.
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Fall 2007

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Winter Weather Watch service for the 08-09 season began on November 12th, if you would like to sign up there is still time. Contact Maggie to register and receive the phone number. For those already subscribing, thanks!

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.

Do you know of any future college students that are interested in attending the University of Florida? Gator Encounter is designed to familiarize potential students with the opportunities in the College of Agricultural and Life Sciences.

Gator Encounter April 18, 2009

Time: 9 am until noon

Location: TBD

For Additional information please contact Charlotte Emerson at 352-392-1963 or cemer@ufl.edu



Have you been seeing more of this in your groves recently? The above is a picture of Woolly White Flies. Woolly white flies are similar to other white flies. Eggs are beige and are attached by a short stalk. When the nymphs emerge they tend to cluster near the eggs. During their final nymphal stage they produce fine waxy threads which give them a woolly look. Woolly white flies tend to produce heavy amounts of honeydew which can lead to sooty mold. An oil spray will provide effective control of both Woolly white fly and any related sooty mold.