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Treasure Coast Citrus Notes

September - 2009

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2009 Citrus Expo PowerPoint Presentations

Most of the PowerPoint presentations from the recent 2009 Citrus Expo in Ft. Myers are now posted on the Extension Citrus Website. If you didn't make the show, you can still get an idea about what sort of information the presenters were focused on. To get to the website, click on the following hyperlink:

<http://www.crec.ifas.ufl.edu/extension/Citrus%20Expo/expopresentations.htm>

2010 Florida Citrus Show

While we're on the subject of presentations, the former Indian River Citrus Seminar is going to be called the [Florida Citrus Show](#) in 2010. The venue for 2010 will again be the Havert Fenn Center in Ft. Pierce and the 2-day show will be held on January 27- 28, 2010. Much more information will be forthcoming in the next several months.

Citrus Mechanical Harvesting Workshop

Harvesting activities for the 2009-2010 season are just around the corner. We have scheduled a Citrus Mechanical Harvesting Workshop to be held on Thursday, September 24 at the Indian River Research and Education Center, 2009 S. Rock Road in Ft. Pierce.

About 8% of the citrus crop is currently mechanically harvested in Florida. This volume is likely to increase as the technology and economics improve. Please let your harvesting contractors know about this meeting in the event that I don't have them on my mailing list.

Citrus Mechanical Harvesting Workshop

Thursday, September 24
Indian River Research and Education Center

- 9:30 AM - Registration and Welcome
- 9:45 - Concerns on Tree Health,
Dr. Juan Carlos Melgar, CREC
- 10:15 - Abscission Chemical Update,
Dr. Bob Ebel, SWFREC
- 10:45 - Current Machinery and Machine Enhancements,
Dr. Reza Ehsani, CREC
- 11:15 - Mechanical Harvesting Economics,
Dr. Fritz Roka, SWFREC

Training for Citrus Growers/Harvesters/Packers

Those entities that are shipping fruit to international markets may find that they must ensure that their employees receive additional training related to food safety and Good Agricultural Practices (GAP's). This training will include Personal Hygiene, WPS/PPE and Canker/Greening Identification & Decontamination topics to satisfy portions of GlobalGap or EurepGap audit requirements.

Check with the individual in your organization responsible for these audits to find out if your production and harvesting personnel require this training. Now is the time to get this issue taken care of before you get busy harvesting and packing. Individual certificates will be awarded upon completion of the training to provide documentation for audits.

Training sessions (English & Spanish) are scheduled for September 25 and October 2, 2009 at the Indian River Research and Education Center, 2199 Rock Road, Ft. Pierce, FL. We're expecting large crowds for both sessions, so please **Pre-Register** by calling Dr. Mark Ritenour at (772) 468-3922, ext. 167 or email: ritenour@ufl.edu.

A copy of the program announcement and agenda is available by clicking on the following:
http://postharvest.ifas.ufl.edu/Events/Hygiene_WPS_Canker_Greening_Training_Fall09.pdf

**Florida Citrus Extension Agents
Fall Mini Series**

**Low Volume Application Technology
for Citrus Pests**

Program Agenda

8:30 am	Registration
9:00 am	Low Volume Labeled Materials
9:30 am	Low Volume Application
10:00 am	Application Considerations
10:30 am	Worker Safety
11:00 am	Equipment Demonstration/Show
12:00 pm	Lunch

Attendees will receive 3.5 Continuing Education Units (CEUs) for the Restricted Pesticide and Certified Crop Advisor Licenses.

Meeting Dates and Locations

October 1 st	Lake County Extension Service Office	1911 Woodlea Road	Tavares
October 6 th	Southwest Florida Research & Education Center	2685 SR 29 North	Immokalee
October 8 th	Polk County Stuart Conference Center	1702 Hwy 17-98 South	Bartow
October 13 th	Indian River Research & Education Center	2199 S. Rock Road	Ft. Pierce
October 15 th	Turner Agri-Civic Center Exhibition Hall	2250 NE Roan Street	Arcadia
October 20 th	Bert J. Harris Agricultural Center	4509 George Boulevard	Sebring

For more information, please contact the local multi-county citrus extension agents

Speakers

(Florida multi-county citrus or horticultural agents)

Steve Futch (Lake Alfred) 863-956-1151	Mongi Zekri (LaBelle) 863-674-4092
Chris Oswald (Bartow) 863-519-8677	Ryan Atwood (Tavares) 352-343-4101
Gary England (Bushnell) 352-793-2728	Tim Hurner (Sebring) 863-402-6540
Tim Gaver (Ft. Pierce) 772-462-1660	

To register for a specific location, please contact:

Tavares	Lake County Extension Service	352-353-4101
Immokalee	Hendry County Extension Service	863-674-4092
Bartow	Polk County Extension Service	863-519-8677
Ft. Pierce	St. Lucie County Extension Service	772-462-1660
Arcadia	DeSoto County Extension Service	863-993-4846
Sebring	Highlands County Extension Service	863-402-6540

Registration is required to plan for the lunch!



Register for the workshop in your area **today** and visit the Low Volume Application Webpage:
<http://www.crec.ifas.ufl.edu/extension/greening/>

Brown Rot of Fruit¹

Management of brown rot, caused by *Phytophthora nicotianae* or *P. palmivora*, is needed on both processing and fresh market fruit. While the disease can affect all citrus types, it is usually most severe on Hamlin and other early maturing sweet orange cultivars. See also [PP-156 Phytophthora Foot Rot and Root Rot](#).

Phytophthora brown rot is a localized problem usually associated with restricted air and/or water drainage. It commonly appears from mid-August through October following periods of extended high rainfall. It can be confused with fruit drop due to other causes at that time of the year. If caused by *P. nicotianae*, brown rot is limited to the lower third of the canopy because the fungus is splashed onto fruit from the soil. *P. palmivora* produces airborne sporangia and can affect fruit throughout the canopy.

Early season inoculum production and spread of *Phytophthora* spp. are minimized with key modifications in cultural practices. Skirting of the trees reduces the opportunity for soil-borne inoculum to contact fruit in the canopy. The edge of the herbicide strip should be maintained just inside of the dripline of the tree to minimize the exposure of bare soil to direct impact by rain. This will limit rain splash of soil onto the lower canopy. Blocks with overhead irrigation should be converted to undertree microsprinklers to avoid the promotion and spread of inoculum in the canopy. Boom application of herbicides and other operations dislodge low-hanging fruit. Fruit on the ground becomes infected and produces inoculum of *P. palmivora* that can result in brown rot infection in the canopy as early as July while fruit are still green. The beginning stages of the epidemic are very difficult to detect before the fruit are colored and showing typical symptoms. Application of residual herbicides earlier in the summer may reduce the need for post-emergence materials later and minimize fruit drop throughout this early stage of inoculum production from fallen fruit.

Usually a single application of Aliette, Phostrol or ProPhyt before the first signs of brown rot appear in late July is sufficient to protect fruit through most of the normal infection period. No more than 20 lb/acre/year of Aliette should be applied for the control of all Phytophthora diseases. Aliette, Phostrol and ProPhyt are systemic fungicides that protect against postharvest infection and provide 60-90 days control. Copper fungicides are primarily protective but are capable of killing sporangia on the fruit surface and thus reducing inoculum. They may be applied in August before or after brown rot appearance and provide protection for 45-60 days. If the rainy season is prolonged into the fall, a follow-up application of either systemic fungicides at one-half of the label rate, or copper in October may be warranted. With average quality copper products, usually 2-4 lb of metallic copper per acre are needed for control.

Precautions should be taken during harvesting not to include brown rot-affected fruit in the field containers as this could result in rejection at the processing or packing facility.

Recommended Chemical Controls for Brown Rot of Fruit

Pesticide	MOA ²	Rate/Acre ¹
Aliette WDG	13	5 lb
Phostrol	13	4.5 pints
ProPhyt	13	4 pints
copper fungicide	M9	Use label rate.

¹Lower rates may be used on smaller trees. Do not use less than minimum label rate.

²Mode of action class for citrus pesticides from the Fungicide Resistance Action Committee (FRAC) 2003. Refer to ENY624, Pesticide Resistance and Resistance Management, in the 2009 Florida Citrus Pest Management Guide for more details.



¹2009 Citrus Pest Management Guide: Brown Rot of Fruit, J.H. Graham and L.W. Timmer, <http://edis.ifas.ufl.edu/CG022>





Citrus Health Response Program

Shipping to Europe for the 09/10 season?

- If you plan to ship fresh citrus to the European Union, you will need to have your grove block(s) inspected prior to harvest.
- Call a few weeks ahead of your estimated harvest date to request a pre-harvest survey and harvesting permit.
- Permits (to begin harvest) will be good for 120 days if the surveyed grove block with 50-foot buffer is found free of citrus canker.
- Please contact your local CHRP office when you are ready to schedule a pre-harvest inspection.



Harvesting Permits are only required for EU shipments.

CHRP OFFICES

Avon Park, FL

863-314-5900

Immokalee, FL

239-658-3684

Tavares, FL

352-253-4547

Vero Beach/Ft Pierce

772-778-5069

Winter Haven, FL

863-298-7777



1-800-282-5153 ♦ www.fl-dpi.com/chrp

Citrus Grove Leaf Tissue and Soil Testing: Sampling, Analysis and Interpretation¹

Introduction

Fertilizer use efficiency in Florida citrus groves can be enhanced by "program fertilization," where annual fertilizer applications are scheduled after considering a number of grove characteristics. The information necessary to formulate an efficient fertilization program for a particular grove includes tree age, past production, fertilization history, and diagnostic information. This fact sheet details the value of grove nutritional diagnostic information in determining fertilizer programs that increase fertilizer efficiency while maintaining maximum yield and desirable fruit quality.

Usefulness of Leaf-tissue and Soil Testing

Leaf tissue testing is useful to evaluate tree nutritional status with respect to most nutrients, but 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 analysis is a much better indicator of the effectiveness of soil-applied fertilizer for these elements than soil analysis. In addition, if particular elements have not been applied as fertilizer, leaf tissue analysis indicates the availability of those nutrients in the soil. An annual leaf tissue sampling program can establish trends in tree nutrition resulting from fertilizer practices carried for several years. Both leaf tissue and soil testing can be valuable, but leaf analysis provides more useful information about citrus nutrition than soil analysis. With the results of a soil test, one tries to predict how much of a particular nutrient will be available to plants in the future. Predictive soil testing works best with 1) short term crops, and 2) nutrients which are not very mobile in the soil. Thus, for long-term crops such as citrus, predictive sampling should be used for only those nutrients which have slight mobility in most soils, including phosphorus (P), calcium (Ca), and magnesium (Mg).

Leaf-tissue Sampling Programs

The benefits of leaf tissue sampling are fully realized by establishing an annual sampling program. In this way, trends in tree nutrition over several years may be noted. The grove should be sampled to minimize soil and tree type variability. The sampling scheme is the one area of the nutritional testing process controlled by the individual taking the sample. Thus, the manager needs to ensure that the leaf sample is representative of a particular area. For sampling purposes, the grove should be partitioned into management units of not more than 20 acres. Each unit should contain similar soil series and scion/rootstock types. For small groves, the entire grove may be partitioned into these units, and a sample taken from each. For large groves, where sampling the entire grove is unfeasible, indicator blocks may be used.

The standard leaf sample consists of at least 100 four- to six-month-old spring flush leaves taken from non- fruiting twigs. If the majority of the spring flush occurs in March, **the best time to sample leaves would be July through September**. About 15 to 20 trees should be sampled within each management unit. The time of year for leaf and soil sampling coincides and can be accomplished during the same trip through the grove. It is convenient to remove leaves from the same trees under which soil samples are taken.

Analytical Procedures for Leaf Samples

If samples require hand-washing (necessary for accurate Fe determination), it is best done when the leaves are still in a fresh condition. Laboratories do not normally hand-wash leaves, so washing should be done by the person taking the sample at the time he/she takes the sample. When the sample arrives at the laboratory, the following steps are typically taken: 1) the leaves are dried and finely-ground; 2) a known weight of tissue is either digested in acid (for N analysis) or ashed in a furnace (for all other elements); 3) the concentration of elements in the digest or ash are measured; 4) nutrient concentrations are expressed as either percentage or parts per million (ppm) in the tissue. Procedures for plant tissue analysis usually do not vary among laboratories because the entire amount of each nutrient in the leaves is measured. Thus, results from different laboratories can be directly compared.

Leaf-analysis Interpretation

Well-defined categories of classification for citrus leaf tissue analysis values from mature, bearing trees exist from years of experimentation in Florida and California. The categories are "deficient," "low," "optimum," "high," and "excess." Remember that this classification applies only to the standard age leaf sample taken from mature trees as described above.

The categories are not valid for young, nonbearing trees. Maintenance of leaf sample elemental concentrations in the "optimum" range is desirable. Those consistently above this range indicate possible over-fertilization. Analysis values can be interpreted by the grower and fertilization rates adjusted in the appropriate direction, such that future leaf values reach the "optimum" range.

Soil-sampling Programs

As with leaf sampling, the benefits of soil sampling are fully realized if samples are taken annually from the same production units (or indicator blocks), because trends in soil pH or extractable nutrients can be established. The traditional soil sampling technique is as follows: One 6-inch deep soil core is removed from the dripline (within the herbicide band) of 15 to 20 average" trees scattered throughout the block. The cores should be composited into the same bag and air-dried before being sent for analysis. **Samples should be taken in the latter part of the summer rainy season (July-September), before fall fertilization.**

Soil-test Interpretation

A soil test interpretation verbally explains the relative meaning of soil test values. Interpretation uses the categories "very low," "low," "medium," "high," and "very high" to relate to various levels of an extracted nutrient. However, soil test results have no meaning unless they are calibrated with crop response. The category "very low" indicates that the soil can supply little of the Crop Nutrient Requirement (CNR), thus most of the nutrient must come from applied fertilizer. The categories "low" and "medium" mean that proportionally more of the CNR can be supplied from the soil, resulting in reduced need for fertilization. When a soil tests "high" or "very high," all of the CNR can be satisfied from the soil alone and no fertilization with that nutrient is required.

Soil and Leaf-tissue Sampling Checklist

1. Sampling programs are most effective if done annually.
2. Use leaf tissue testing for all nutrients, especially the mobile soil nutrients (N and K) and micronutrients (Cu, Fe, Mn, and Zn).
3. Use soil testing for pH and immobile soil nutrients (P, Ca, and Mg).
4. Use the standard sampling procedures for soil and leaves described in this fact sheet.

5. Be aware that spray residues or dust on leaf surfaces affect sample results; wash leaves for accurate Fe analysis, and avoid leaves with spray residues.
6. Be aware that a number of soil extracting solutions exist, and they can differ in their ability to extract plant nutrients, especially P.
7. Test interpretations should be used to make fertilization or liming decisions. Wise use of the analytical information allows optimal citrus production and minimizes the fertilizer pollution of the environment.

The above is a summary of “**Citrus Grove Leaf Tissue and Soil Testing: Sampling, Analysis and Interpretation**”, <http://edis.ifas.ufl.edu/CH046>, T.A. Obreza, A.K. Alva, E.A. Hanlon, and R.E. Rouse, UF/IFAS

What's the Farmer's Share?

A new webpage on **The Hand that Feeds Us** website shows that U.S. farmers on average only receive about 20% of the retail price of food products in the supermarket. For some items, it is way less than that figure. Packaging and transportation are two significant factors in the ultimate cost of a grocery item.

<http://www.thehandthatfeedsus.org/farmersshare.cfm>

New Pesticide Training Webpage

We added a new page to the St. Lucie Extension Website last month with lots of good information relative to Pesticide Application Safety and Certified Pesticide Applicator training and licensing. The St. Lucie County Extension agents are committed to providing timely and comprehensive training for our Certified Pesticide Applicator clients. Take a minute to click on the following hyperlink and see all the sites we've gathered under one handy page:

<http://stlucie.ifas.ufl.edu/PesticideTraining.html>

General Standards (Core) Pesticide Applicator Training

Preparation for the General Standards Exam required for all of the Certified Pesticide Applicator Categories. 2 General Standard CEU's will be offered for individuals who are current license holders (This includes Private Applicator and Ag Tree Crop). Ken Gioeli, Natural Resources Agent will be offering this course on Wednesday, October 7, 2009. Pre-registration is required to help Ken prepare his handout materials and the cost is \$20. Call (772) 462-1660 for details and to pre-register.

Dates to Remember

- Citrus Mechanical Harvesting Workshop, IRREC, September 24
- Food Safety Training for Citrus Growers/Harvester/Packers, IRREC, September 25 & October 2
- Certified Pesticide Applicator General Standards Training, October 7
- Low Volume Application Technology for Citrus Pests, IRREC, October 13

I'm not too proud to ask for a good representation of growers and managers for the Mechanical Harvesting and Low Volume Application Technology Workshops (CEU's, CCA credits and **lunch** offered for the LV workshop). Call (772) 462-1660 to **pre-register!** You will learn something that you can use in your operation.

Just for Fun

Nugene was out duck hunting on the west side of Lake Okeechobee when he was approached by the game warden, who asked to see his hunting license and federal duck stamp.

The warden looked at the license and handed it back. "This license is no good, it's for last year", he said.

"That's okay," Nugene replied. "I'm only shooting at ducks I missed last year."

Billy Bob and Clyde were out on the lake fishing on beautiful Sunday morning when the church bells started ringing out in the distance. Clyde looked over his shoulder at Billy Bob and said, "Don't you feel kind of guilty being out here fishing when church is about to start?"

"Not really," said Billy Bob. "I couldn't have gone to church today, anyway."

"Why not?" asked Clyde.

"The wife is awful sick."

Take care,

Tim

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UF/IFAS St. Lucie Cooperative Extension
<http://stlucie.ifas.ufl.edu>

(Click on the CITRUS tab at the upper left for my citrus section)

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