



UF/IFAS/St. Lucie Extension, 8400 Picos Road, Suite 101, Ft. Pierce, FL 34945
(772) 462-1660 <http://stlucie.ifas.ufl.edu>

Treasure Coast Citrus Notes

March - 2012

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2012 Florida Citrus Grower's Institute

The 2012 Institute is scheduled for **Tuesday, April 10, 2012** at the South Florida Community College in Avon Park. The program is being finalized at this time and more details will be available shortly. This annual event is a part of the overall effort by the citrus extension agents to keep our grower clients aware of the newest citrus production management information available. Mark the April 10 date on your calendar and be ready to register for the program when details are finalized.

Citrus Resource Identification Tool

This interactive tool was authored by a couple of USDA personnel and Dr. Megan Dewdney, citrus pathologist at the CREC, with input from many others. The *Citrus ID* segment covers over 500 cultivars and citrus relatives that may act as hosts for citrus pests and diseases in the United States. The *Citrus Diseases* segment is designed to aid in the identification of 21 citrus diseases, including those that are not currently present in the U.S. A *Citrus Pests* tool is coming soon. Early disease detection and management are essential to ensuring continued viability of the U.S. citrus industry. These tools contain fact sheets, a glossary, an image gallery, and an interactive key.

<http://idtools.org/id/citrus/resource/index.php>

The USDA Animal and Plant Health Inspection Service has also launched a **SAVE OUR CITRUS** website to educate the public about the potential for spreading disease by moving citrus plant material from state to state.

<http://www.saveourcitrus.org/index.php/is-your-citrus-sick>

2012 Citrus Pest Management Guide

The 2012 Citrus Pest Management Guide should be available very soon. Copies of the new guide will be **free** and available at my office and through other citrus extension agents.

Olives as an Alternative Crop?

An Olive Workshop was held at the CREC in Lake Alfred on February 2, 2012, featuring a couple of olive experts from California. Over 100 people attended, indicating the interest in this potential new crop in Florida. A couple of items I took from the program are:

- There are several hundred olive varieties. Most require 200-400 chilling units for an economic bloom. The 200 hour line would be about the same latitude as Orlando. The Indian River Area average is 150 chilling units.

- Pollination is required for fruiting and is accomplished by the wind. Rainfall during bloom (usually April in cooler zones) gums up the pollen and severely inhibits the distribution of pollen.
- Hand harvesting is economically prohibitive. Mechanical harvesting equipment has been developed and could be contracted.
- Producing olive oil and selling it on the commodity market is likely unprofitable. Establishing and marketing your own brand may provide a profit opportunity.

Click on the following link to go to the IFAS Olive website which has the presentations from the Olive Workshop posted and other resources:

<http://www.crec.ifas.ufl.edu/extension/olives/>

Asian Citrus Psyllid Management

Scouting reports indicate that psyllids are starting to increase in many areas and plans should be made to manage populations during the coming growing season. Management options are many, and a psyllid control program should consider cost, effect on beneficial organisms, efficacy on adults and nymphs, length of control and pest resistance. That is quite a list of factors to consider, but there is some help in the Citrus Health Management Area (CHMA) website toolkit. Drs. Rogers, Stansly and Stelinski (IFAS Citrus Entomologists) have developed a **Guide to Developing a Psyllid Management Plan** that could help you with the timing of applications and selecting appropriate pesticides for that application period. Click on the following link to access the plan:

http://www.crec.ifas.ufl.edu/extension/chmas/PDF/CHMA_spray%20plan_10_11_10.pdf

In case you missed it, a terrific article by Dr. Michael Rogers, entitled **Protection of Young Trees from the Asian Citrus Psyllid and HLB** was published in the January edition of the Citrus Industry Magazine. This article is a “must read” for anyone who has planted or intends to plant new trees.

Foliar Potassium Nutrition to Increase Fruit Size

Dr. Brian Boman, IFAS/IRREC (Comments related to several foliar K experiments conducted in the Indian River area)

There are many factors that contribute to the size of fruit in a particular year such as the fruit load, rainfall pattern, fertilization program, hedging and topping operations, and the rootstock/scion combination. However, it is difficult to predict how these factors combine to affect final fruit size at harvest. Of all the factors

that may affect ultimate fruit size, fertilization practices are probably the easiest to manipulate. Increased potassium (K) fertilization is associated with larger fruit size, thicker rinds, and increased acid. Potassium deficiencies have resulted in slowed growth, thinning of topmost foliage, increased preharvest fruit drop, smaller sized fruit, and decreased total soluble solids (TSS), acid, and vitamin C content. Increased rates of K fertilization have been shown to reduce splitting and creasing and produce larger and heavier fruit.

Nutritional K sprays are usually not a substitute for ground applications, but rather are made as supplemental applications. Supplemental nutrient sprays have been shown to be effective in correcting K deficiencies for citrus grown on calcareous soils. Foliar sprays of potassium nitrate (KNO₃) also have been shown to be more effective in rapidly increasing the K content of leaves than ground applied fertilizers and can be an effective method of shortening the time required for uptake.

Salt Index

The salt index is a measure of the tendency of a material to increase osmotic pressure of soil solution as compared to an equal weight of sodium nitrate (set at 100). High concentrations of soluble salts may develop an osmotic pressure of the soil solution exceeding that of the plant sap. The result may be dehydration and permanent injury. When applied as a spray to leaf surfaces, similar results may occur. Typically, the higher the salt index, the more potential for burn to leaves or fruit.

Materials

Materials generally used for foliar K applications include: potassium nitrate (KNO₃, 13-0-46), monopotassium phosphate (MKP, 0-52-34), and dipotassium phosphate (DKP, 0-18-20), a solution made by combining MKP and potassium hydroxide. Applications with MKP and DKP should be made with a small amount (3-5%) of low-biuret urea to enhance uptake. KNO₃ is usually applied without surfactants or urea.

Rates and Timing

Research on the Indian River has shown that 7-8 lb of K₂O per acre per application is generally required to achieve satisfactory results. Experiments with double this amount have not shown any significant additional benefit and studies with lesser amounts resulted in less fruit enlargement. Making several successive applications throughout the summer have also not shown additional benefits. For applications made with 100 or more gal/acre of water, any of the materials are acceptable (use cheapest material). When making applications with low-volume technology, MKP or DKP should be used to minimize the potential for

burn. MKP has been used on some grapefruit trials at rates as high as 106 lb MKP applied in 125 gal water per acre under hot, dry conditions with no adverse effects. The low salt index of the material makes it very "safe" to use. For instance, the salt index per unit K₂O for MKP is only 1/6 that of KN₃O₈. It should be cautioned that you must be very careful if MKP is tank mixed with other materials. The MKP-water solution will have a pH of about 4.5, which may not be suitable for some tank mix combinations (**copper fungicides!!**).

DKP is a pH neutral solution that would be a better choice if tank mixing with other materials. Timing is important for the K applications to be effective in enhancing fruit size. Potassium is a primary component of cell walls, accounting for over 40% of the ash from fruit. Studies have shown that about 70% of ultimate fruit size is related to the number of cells in the fruit, and more cells generally means larger fruit. Typically cell division ceases by late April, and size changes throughout the rest of the year comes from cell enlargement. Therefore, maximum effect is achieved from applications that make K available in the bloom and postbloom stages when the applied K can be used both during the cell division and in the rapid cell enlargement phase that follows. An additional application with the summer spray (normally in July) is also recommended to ensure adequate K through the summer growing season. Studies have shown that late summer or fall applications also may be effective in some years. In about half of the field trials with K applications in the fall, fruit size enhancement resulted in grapefruit experiments in the Indian River area. The fall applications were most effective in years with wet summers and falls. The shorter day lengths and cooler weather results in a dramatically decreased fruit expansion rate after mid-October in most years. With that in mind, if foliar K applications for fruit enlargement are considered for the late summer or fall, they should be made in August or September to be the most effective.

Expected Results

Studies on Sunburst and Valencia have shown a 25-33% increase in the number of larger sized fruit as compared to non-treated plots. In addition, the Valencia experiments resulted in a corresponding increase in solids produced per acre. The combination of pre-bloom, post bloom, and summer K sprays can increase average fruit size 4-6 mm, which is generally equivalent to 1 or more pack sizes. When successful, the fall applications to grapefruit increased fruit size 2-4 mm, or about 1/2 to 1 size. The applications won't make small fruit large, but they can move a significant portion of the fruit into a larger size class.

The following observations and recommendations are based on the experiments conducted in the Indian River area.

- Pre-bloom and post-bloom K applications are the most important.

- The recommend program for most varieties is 8 lb K2O per application applied prebloom (typically February), post-bloom (typically April), and summer (July).
- In years with wet summer and falls, later K applications should be considered. When made, they should be scheduled in August and September to be most effective.
- The foliar K applications have resulted in little or no differences in juice volume, acid, Brix, or Brix:acid ratios.
- The diameters of smaller fruit tend to increase more than larger fruit when foliar K applications were made.
- Fruit "burn" problems have not been observed at the following concentrations: KN03 at 25 lb/ac in 125 gal/ac, MKP at 15 lb/ac in 32.5 gal/ac, or 15 lb/ac MKP with 10 gal water/ac applied by airplane.

OSHA Most Frequently Cited Standards

The most recent statistics from OSHA reveal the top standards cited in the fiscal year 2011 for the crop production industry.

DESCRIPTION OF VIOLATION	CITED STANDARD NUMBER	ACV*
1. General Duty Clause – Providing employees with a place of work free from recognized hazard and complying with all applicable OSHA rules and regulations.	29 USC 654	\$3,996
2. Wiring Methods, Components and Equipment for General Use – Using proper wiring technique and equipment to ensure safe electrical continuity.	29 CFR 1910.305	\$535
3. Powered Industrial Trucks – Ensuring safety of employees on powered industrial trucks through fire protection, design, maintenance and proper use.	29 CFR 1910.178	\$973
4. Forms – Using the OSHA 300, 300-A and 301 forms, or equivalent forms, properly for recordable injuries and illnesses.	29 CFR 1904.29	\$267
5. Guarding Floor and Wall Openings and Holes – Guarding stairway, ladder, hatchway, open-sided floor, platform, runway and chute openings according to standard.	29 CFR 1910.23	\$1,900
6. Reporting Fatality, Injury and Illness to Government - Ensures reporting of the death of an employee or in-patient hospitalization of three or more employees.	29 CFR 1904.39	\$2,500
7. Lockout/Tagout – Following minimum performance requirements for controlling energy from the unexpected start-up of machines or equipment.	29 CFR 1910.147	\$1,375
8. General Electrical Requirements – Ensuring electric equipment is free from recognized hazards likely to cause death or serious physical harm to employees.	29 CFR 1910.303	\$1,604
9. Maintenance, Safeguards and Operational Features for Exit Routes - Exit routes must be kept free of explosive or highly flammable furnishings or other decorations.	29 CFR 1910.37	\$0
10. Sanitation - Keeping all areas of the establishment clean, orderly and sanitized to the extent that the nature of the work allows.	29 CFR 1910.141	\$525

*ACV (Average Cost per Violation) - The dollar amount represents the average cost per violation that employers in this industry paid in 2011. To understand the full capacity and scope of each standard, click on the standard number to visit www.osha.gov and view the language in its entirety. Source: OSHA.gov

Ag Research Service US Horticultural Research Laboratory
2001 S. Rock Road, Ft. Pierce, FL 34945
Tel: (772) 462-5810
Fax: (772) 462-5986



You are Invited to Attend:

The U.S. Department of Agriculture

U.S. Horticultural Research Laboratory

Annual Open House

2001 S. Rock Road, Ft. Pierce, FL. 34945

Thursday, April 5th, 2012

10:00 AM – 3:00 PM

Labs, pilot plant and greenhouse tours will showcase research on a broad range of science topics including citrus variety genetics, disease and insect pest biology and management, water quality and post-production quality and value-added studies on fresh and processed fruits and vegetables. For more information, please call (772) 462-5800.

Pesticide Applicator Training/CEU Opportunities

2012 Pond Appeal Aquatic CEU Series

- 3, 1/2-day CEU Classes which offer 9 CEUs for Aquatic Pest Control License Holders and other Certified Pesticide Applicator categories. Classes will be held in the mornings on March 14, 21 & 22 at the St. Lucie Extension Office. **Pre-registration is Required.**

<http://www.eventbrite.com/event/2839937329>

General Standards (CORE) Training & Testing

- Wednesday, March 7, 2012, 9:00 AM to 11:00 AM with exam to follow at the Extension Classroom, 8400 Picos Rd, Ft. Pierce, FL 34945
- Cost is \$20 with checks payable to SLC Extension Advisory Council
- **Pre-registration Requested.** Call 772 462-1660 for more information

<http://www.eventbrite.com/event/2886322067>

Citrus Industry Magazine

- Pesticide Safety Communication CEU article
- One General Standards (CORE) CEU

<http://www.citrusindustry.net/2012ceu1.html>

Florida Grower Magazine

- A Large Selection of General Standards (CORE) CEU articles

<http://www.growingproduce.com/floridagrower/ceu/>

Just for Fun

Really Fast Chickens

Nugene was driving down a country road in his pickup when suddenly a chicken darted into the road in front of him. He slammed on his brakes, but realized that the chicken was speeding off down the road at about 30 miles an hour. Intrigued, he followed the bird with his truck, but he couldn't catch

up to the accelerating chicken. Seeing it turn into a small farm, Nugene followed it. To his astonishment, he realized that the chicken had three legs. Looking around the small farm, he noticed a bunch of chickens and ALL of the chickens had three legs.

The farmer came out of his house, and Nugene said, "Three-legged chickens? That's amazing!"

The farmer replied, "Yep. I bred 'em that way because I love drumsticks."

So, asked Nugene, "How does a three-legged chicken taste?"

The farmer smiled. "I don't know. Haven't been able to catch one yet."

Take care,

Tim Gaver, Extension Agent - Citrus
UF/IFAS/St. Lucie County Extension
8400 Picos Rd, Suite 101
Ft. Pierce, FL 34945
(772) 462-1660
Tgaver.49@ufl.edu

UF/IFAS/St. Lucie County Extension Website

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

(Click on the **CITRUS** tab at the upper left for my **CITRUS** pages)



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