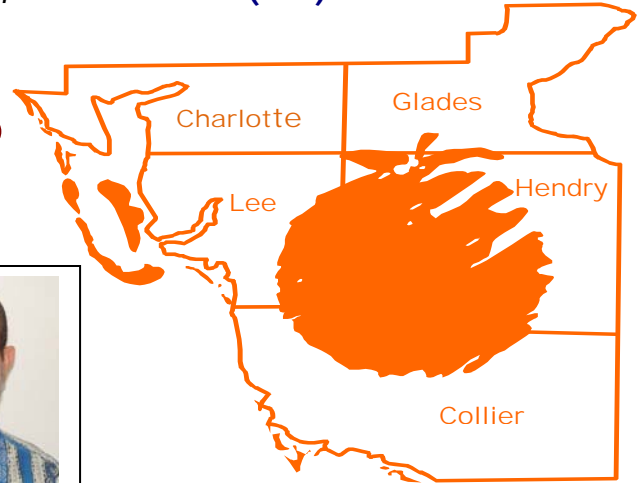


Hendry County Extension, P.O. Box 68, LaBelle, FL 33975 (863) 674 4092

Flatwoods Citrus



Vol. 19, No. 1

January 2016

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



Have a Happy Holiday Season and a Productive New Year!!!

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Previous issues of the Flatwoods Citrus newsletter can be found at:

<http://citrusagents.ifas.ufl.edu/agents/zekri/index.htm>

<http://irrec.ifas.ufl.edu/flcitrus/>

I M P O R T A N T E V E N T S

Time: **10:00 AM – 12:15 PM**

Location: Immokalee IFAS Center

Program Coordinator: Mongi Zekri, UF-IFAS

12:15 PM, Sponsored Lunch

2 CEUs for Certified Crop Advisors (CCAs)

2 CEUs for Pesticide License Renewal

Phil Stansly Jawwad Qureshi Barry Kostyk	<u>01-12-2016 - All You Need to Know About Scouting and Management of Citrus Insect Pests</u> 1. Scouting citrus for pests and beneficials 2. Biological control of Asian citrus psyllid 3. Scouting and Insecticidal Control of Citrus Rust Mites
Sponsor:	Stacey Howell with Bayer CropScience
Megan Dewdney Katherine Hendricks	<u>02-11-2016 - All You Need to Know About Scouting and Managing Citrus Fungal Diseases</u> 1. Alternaria brown rot and citrus scab symptoms and managements 2. Melanose and greasy spot symptoms and management 3. The copper model and postbloom fruit drop 4. Citrus black spot and Phytophthora management
Sponsor:	Cody Hoffman with Syngenta



Pre-registration is required. No registration fee and lunch is free. To reserve a seat, call 863 674 4092, or send an e-mail to Dr. Mongi Zekri at: maz@ufl.edu

Annual Certified Pile Burners Course in SW Florida

Pre-registration is required to attend, and class size is limited to the first 50 people.

Registration fee: \$50

The \$50 fee covers the training sessions, a booklet with all the presentations in color, other handouts, refreshments, and lunch.

PRE-REGISTRATION WILL NOT BE ACCEPTED WITHOUT PAYMENT OF THE REGISTRATION FEE.

Send your registration form and check as soon as possible. This class usually gets full 2-3 weeks before the event.

Date & time: Thursday, 4 February 2016, 8:00 AM – 4:30 PM.

Location: The Immokalee IFAS Center

The Florida Division of Forestry and University of Florida Cooperative Extension Service will be conducting a Certified Pile Burners Course that will show you how to burn piles **legally, safely and efficiently.**

Most importantly, it could save a life. If you burn piles regularly, don't put off registering for this training. When the weather is dry, certified pile burners will receive priority for authorization to burn. Also, certified pile burners are allowed to burn up to two hours longer per day and get multiple day authorizations. Don't wait. The number of trainings offered and attendance at each training is LIMITED. This training will be held from 8:00 am till 4:30 pm at the **Southwest Florida Research and Education Center in Immokalee.**

Registration form and agenda are included in this issue. Detailed information is also available online:

<http://www.freshfromflorida.com/Divisions-Offices/Florida-Forest-Service/Education/For-the-Community/Withlacochee-Training-Center-WTC/Class-Schedule>





**THE SHOW FOR
CITRUS PROFESSIONALS**
January 27-28, 2016
Havert L. Fenn Center, Ft. Pierce, FL

Wednesday, January 27, 2016

Moderator: Parker Platts, Multi-country Citrus Extension Agent

- | | |
|-----------------------|--|
| 8:50 a.m.-9:00 a.m. | Welcome - Indian River Citrus League, Scott Lambeth, Chairman IRCL |
| 9:00 a.m.-9:20 a.m. | Florida Grapefruit Outlook, Marisa Zansler, FDOC |
| 9:20 a.m.-9:40 a.m. | Grapefruit Cost Of Production And Economic Returns, Ariel Singerman, UF/IFAS-CREC |
| 9:40 a.m.-10:00 a.m. | Cuba's Citrus Industry: Realities and Future Prospects, William A Messina Jr., UF/IFAS-FRED |
| 10:00 a.m.-11:00 a.m. | Visit the Trade Show |
| 11:00 a.m.-11:15 a.m. | New Rootstock Summary, Steve Futch, UF/IFAS-Extension |
| 11:15 a.m.-11:30 a.m. | Which Rootstock Should You Plant Now? When Will There Be Something Better? Kim Bowman, USDA-ARS |
| 11:30 a.m.-11:45 a.m. | New Fresh Fruit Varieties from UF-CREC, Fred Gmitter, IFAS-CREC |
| 11:45 a.m.-12:00 p.m. | Managing Citrus Tree Nutrition - Balancing Foliar and Ground Applications, pH Adjustments, and Irrigation, Kelly Morgan, IFAS-SWFREC |
| 12:00 p.m.-1:30 p.m. | Lunch – Visit the Trade Show |

Moderator: Steve Futch, Multi-county Citrus Extension Agent

- | | |
|---------------------|---|
| 1:30 p.m.-1:50 p.m. | Developing New Bactericides with Nanotechnology for Citrus Disease Management, Swadeshmukul Santra, UCF |
| 1:50 p.m.-2:10 p.m. | Evaluating Germplasm For HLB Resistance: USDA-ARS Inoculation Program, David Hall USDA-ARS |
| 2:10 p.m.-2:30 p.m. | Pesticide Product Registration - FDACS Process and Timeline, Dr. Davis Daiker, FDACS |
| 2:30 p.m.-3:30 p.m. | Visit the Trade Show |
| 3:30 p.m.-3:50 p.m. | Using 3D Printing Technology To Make A Better Asian Citrus Psyllid Trap Eric Rohig & Greg Hodges, FDACS-DPI |

- 3:50 p.m.-4:10 p.m. Can Plant Regulator Compounds Be Used To Defend Citrus From Asian Citrus Psyllid?
Joe Patt, USDA-ARS
- 4:10 p.m.-4:30 p.m. Update On Fruit Drop Research: Plant Growth Regulators, Fungicides, And Antibiotics,
Ed Stover, USDA-ARS and Gene Albrigo, IFAS - Emeritus

Thursday, January 28, 2016

Moderator: Laurie Hurner, Multi-county Citrus Extension Agent

- 8:00 a.m.-8:30 a.m. Visit the Trade Show / Continental Breakfast
- 8:30 a.m.-8:50 a.m. Reduced Stress Tolerance Of HLB-Infected Root Systems, *Jim Graham, UF/IFAS-CREC*
- 8:50 a.m.-9:10 a.m. Growing HLB - Free Fresh Citrus Under Cover and with Whole-Tree Thermotherapy,
Arnold Schumann, IFAS-CREC
- 9:10 a.m.-9:30 a.m. Thermotherapy of HLB Infected Citrus Trees: An update, *Reza Ehsani, IFAS-CREC*
- 9:30 a.m.-10:30 a.m. Visit the Trade Show
- 10:30 a.m.-10:50 a.m. Importance of Continued Psyllid Management, *Lucasz Stelinski, IFAS-SWFREC*
- 10:50 a.m.-11:10 a.m. Postbloom fruit drop: What are the options? *Megan Dewdney IFAS-CREC*
- 11:10 a.m.-12:00 p.m. What's Working In The Fight Against HLB- Panel Discussion, *Grower panel*
- 12:00 p.m.-1:30 p.m. Lunch – Visit the Trade Show

Anti-Microbial Breakthroughs *Moderator: Dr. Brian Scully, USDA-ARS*

- 1:30 p.m.-1:40 p.m. Introduction: Where We Stand On Anti-Microbials And HLB, *Brian Scully, USDA-ARS*
- 1:40 p.m.-2:00 p.m. Update Of CRDF Coordinated Research On Antibacterial Compounds For HLB,
Stephanie Slinski, CRDF
- 2:00 p.m.-2:20 p.m. Update On Antimicrobial Field Trial To Control HLBs, *Charles Powell, IFAS-IRREC*
- 2:20 p.m.-2:40 p.m. Commercial Grove Studies On the Effectiveness Of FireLine™ And FireWall™ On HLB
Symptoms In Florida Citrus, *Bob Shatters, USDA-ARS*
- 2:40 p.m.-3:00 p.m. Section 18 Emergency Exemption Use Guidelines for FireLine™ 17 WP and
FireWall™ 50 WP to Control HLB in Florida Citrus, *Taw Richardson AgroSource*
- 3:00 p.m.-3:30 p.m. Open Discussion
Speaker Panel

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



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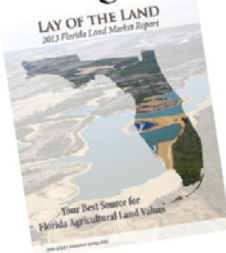
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EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by

**CLIMATE PREDICTION CENTER/NCEP/NWS
and the International Research Institute for Climate and Society**

10 December 2015

ENSO Alert System Status: El Niño Advisory

Synopsis: El Niño is expected to remain strong through the Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during late spring or early summer 2016.

A strong El Niño continued during November as indicated by well above-average sea surface temperatures (SSTs) across the central and eastern equatorial Pacific Ocean (Fig. 1). The Niño-4, Niño-3.4 and Niño-3 indices rose to their highest levels so far during this event, while the Niño-1+2 index remained approximately steady (Fig. 2). The subsurface temperatures in the central and eastern Pacific, while still well above average, decreased slightly (Fig. 3) due to the eastward push of the upwelling phase of an equatorial oceanic Kelvin wave (Fig. 4). Low-level westerly wind anomalies and upper-level easterly wind anomalies continued over the most of the tropical Pacific. The traditional and equatorial Southern Oscillation Index (SOI) values remained negative. These conditions are associated with enhanced convection over the central tropical Pacific and suppressed convection over Indonesia (Fig. 5). Collectively, these atmospheric and oceanic anomalies reflect a strong El Niño episode that has matured.

Most models indicate that a strong El Niño will continue through the Northern Hemisphere winter 2015-16, followed by weakening and a transition to ENSO-neutral during the late spring or early summer (Fig. 6). The forecaster consensus remains nearly unchanged from last month, with the expectation that this El Niño will rank among the three strongest episodes as measured by the 3-month SST departures in the Niño 3.4 region dating back to 1950. El Niño is expected to remain strong through Northern Hemisphere winter 2015-16, with a transition to ENSO-neutral anticipated during the late spring or early summer 2016 (click [CPC/IRI consensus forecast](#) for the chance of each outcome for each 3-month period).

El Niño has already produced significant global impacts and is expected to affect temperature and precipitation patterns across the United States during the upcoming months (the [3-month seasonal outlook](#) will be updated on Thursday December 17th). Seasonal outlooks indicate an increased likelihood of above-median precipitation across the southern tier of the United States, and below-median precipitation over the northern tier of the United States. Above-average temperatures are favored in the West and northern half of the country with below-average favored in the southern Plains and along the Gulf Coast.

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts are also updated monthly in the [Forecast Forum](#) of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an [ENSO blog](#). The next ENSO Diagnostics Discussion is scheduled for 14 January 2016. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.ensu-update@noaa.gov.

Climate Prediction Center
National Centers for Environmental Prediction
NOAA/National Weather Service
College Park, MD 20740

WATER WATCH

Keeping an Eye on Water Resources

District-Wide Conditions for December 16, 2015

The South Florida Water Management District (SFWMD) is issuing the following briefing:

December is already the wettest December on record in Miami-Dade County, since District record keeping began in 1932. Nearly all of South Florida has experienced above-average rainfall so far this month.

Most of Miami-Dade's record 9.82 inches of rain through Tuesday fell on December 3 and 5, with about 3.5 inches on each of those days. This total amount is more than 10 times the average amount for the basin in the first half of December.

Rainfall estimates also show spots within agricultural areas of South Dade received from 12 to 16 inches in one week. The District continues flood control operations to move remaining excess stormwater as efficiently and safely as possible.

Nearly all areas of the District received significantly above-average rain to date in December. A total of 3.08 inches has fallen District-wide as of Tuesday, representing 361 percent of average, or 2.23 inches above average. The Upper Kissimmee Basin was the lone exception, with a slightly below-average first half of December.

Even with this rainfall, water levels outside of Miami-Dade are being maintained at dry season levels for water supply.

Water Levels in Key Locations (Dec. 16)		
Location	Today's level (NGVD29)	Water Supply Floor
Water Conservation Area-1	17.35 feet	14.00 feet
Water Conservation Area-2A	12.95 feet	10.50 feet
Water Conservation Area-3A	10.61 feet	7.50 feet

Water Conservation is Essential

- South Florida is under the District's Year-Round Landscape Irrigation Rule, which limits residential and business landscape irrigation to two or three days per week.
 - To determine watering days and times in your area, contact your local government or visit www.sfwmd.gov/2days.
- Permitted water users such as nurseries, agriculture, golf courses and utilities can find water use conditions in their permits online at www.sfwmd.gov/ePermitting.
- For tips and information about water conservation, visit www.sfwmd.gov/conserve.

Lake Okeechobee Operations

- The U.S. Army Corps of Engineers manages Lake Okeechobee water levels based on its regulation schedule.
- The most recent Operational Position Statement is available at www.sfwmd.gov/opsreports.

Lake Okeechobee Levels	
Today (Dec. 16)	14.79 feet
This Date One Year Ago	15.35 feet

Flower Bud Induction Overview and Advisory



The following information has been developed as part of the Decision Information System for Citrus

[L. Gene Albrigo](#), Horticulturist Emeritus
Citrus Research & Education Center, Lake Alfred, FL

FLOWER BUD INDUCTION ADVISORY #1
for 2015-2016-11/5/15

http://www.crec.ifas.ufl.edu/extension/flowerbud/2016/11_05_15.shtml

FLOWER BUD INDUCTION ADVISORY #2
for 2015-2016-11/24/15

http://www.crec.ifas.ufl.edu/extension/flowerbud/2016/11_24_15.shtml

EMERGENCY FLOWER BUD INDUCTION ADVISORY #3
for 2015-2016-12/01/15

http://www.crec.ifas.ufl.edu/extension/flowerbud/2016/12_01_15.shtml

EMERGENCY FLOWER BUD INDUCTION ADVISORY #4
for 2015-2016-12/15/15

http://www.crec.ifas.ufl.edu/extension/flowerbud/2016/12_15_15.shtml

EMERGENCY FLOWER BUD INDUCTION ADVISORY #5
for 2015-2016-12/23/15

http://www.crec.ifas.ufl.edu/extension/flowerbud/2016/12_23_15.shtml

If you have any suggestions or questions, contact Dr. Gene Albrigo at
albrigo@ufl.edu



AGRICULTURAL WORKER PROTECTION STANDARD (WPS) COMPARISON OF THE NEW PROTECTIONS TO THE EXISTING PROTECTIONS

October 2015
US EPA

This table summarizes key provisions in the EPA's current WPS regulation and the 2015 revisions. It does not cover all of the details in the rule nor does it include all of the information needed to comply with the regulation.

Requirement	New 2015 Provision	Current Provision
Training		
Frequency of full training for workers and handlers	Annual training.	Every 5 years.
Training grace period for worker training	No grace period. Workers must be trained before they work in an area where a pesticide has been used or a restricted-entry interval has been in effect in the past 30 days.	5-day grace period with abbreviated training.
Qualifications for trainers of workers	Certified applicators, State/Tribal/Federal approved trainers, and persons who have completed an EPA-approved train-the-trainer course.	Handlers, certified applicators, State/Tribal/Federal approved trainers, and persons completing an approved train-the-trainer course.
Expand training content for workers and handlers	Keep existing and expand content. Final worker training topics expanded to 23 items, and handler training expanded to 36 items. Training on new content not required until 2 years from effective date of final rule.	11 basic training items for workers and 13 items for handlers. Minimal training on reducing take-home exposure, reporting use violations, and prohibition from employer retaliation.
Recordkeeping of training	Keep records for 2 years. Give copy of record of training to workers and handlers upon their request.	No recordkeeping of training. Voluntary verification card system.
Hazard Communication		
Content and availability of hazard communications materials	Employer must display application information and safety data sheets (SDSs) at central location within 24 hours of end of application and before workers enter that treated area. Display both for 30 days after REI expires. Keep application information and SDS for 2 years from end of REI and make available to workers, handlers, designated representatives (identified in writing) or treating medical personnel upon request.	Employer must display application-specific information at a central location before application occurs, or, if no workers or handlers are on the establishment, before next period workers/handlers are on establishment. Keep posted for 30 days after REI expires. No recordkeeping.

Requirement	New 2015 Provision	Current Provision
Notification of Treated Areas		
Notification of treated areas under an REI	Post warning sign if REI is greater than 48 hours (outdoor applications) or 4 hours (enclosed space applications (e.g., greenhouses)), otherwise option for posting or oral notification unless label requires both.	Farms, forests and nurseries: Post warning sign or give oral notification for any REI, unless label requires both. Greenhouses: all applications require signs to be posted.
Warning sign	Same as current sign.	Red circle containing stern-faced man with upraised hand. At the top: "DANGER" and "PELIGRO", "PESTICIDES", "PESTICIDAS". At the bottom: "KEEP OUT", "NO ENTRE."
Information exchange between handler employer and agricultural employer	Agricultural employer must provide application information on treated areas the handler may be in (or walk within ¼ mile of). Handler employer must notify before the application begins for certain changes and within 2 hours of end of application for most other changes, unless only change was less than 1 hour difference in application time.	Agricultural employer must provide application information on treated areas the handler may be in (or walk within ¼ mile of). Handler employer must notify of changes to application plans before application begins.
Minimum Age		
Minimum age for handlers and early-entry workers	Handlers and early-entry workers must be at least 18 years old. (Members of owner's immediate family are exempt from this and most other requirements of the WPS.)	No minimum age.
Entry Restrictions During Application for Outdoor Production		
Ag employers must prohibit entry in areas during application for outdoor production. (Restrictions for greenhouses/enclosed space production are different.)	All outdoor production: No entry into treated area or the application exclusion zone, which is an area up to 100 feet area around the application equipment during pesticide application on farms, forests and nurseries. Size of the application exclusion zone depends on type of application. Revised descriptions of application methods.	Farms and forests: No entry into treated area. Nurseries: No entry into treated area or an area up to 100 feet around the treated area, where the size of the additional area depends on type of application.
Handler Suspend Application		
Handler (applicator) must suspend application in certain circumstances	Handler must apply pesticides so as not to contact workers or other persons. Handler must suspend application if a worker or other person is in the application exclusion zone, an area up to 100 feet around the application equipment.	Handler must apply pesticides so as not to contact workers or other persons. No specific requirement to suspend applications.
Exemptions and Exceptions		
Exemption for certified crop advisors and their employees	Only certified crop advisors are exempt from labeling PPE and WPS requirements as specified in exemption. Certified crop advisor employees must use label-required PPE while working in a field during an REI, and employer must provide all required WPS protections, or rely on the PPE substitutions allowed under the crop advisors.	Certified crop advisor chooses PPE for themselves and their employees working under their direct supervision in a field during an REI. Also exempted from providing decontamination supplies and emergency assistance for themselves and employees.
Exceptions to REIs for early entry workers – notification requirements	Notify early-entry workers of application specifics, tasks to be performed, conditions of the early-entry exception, and hazard information from the pesticide label.	Inform early-entry workers of hazard information from the pesticide label.

Requirement	New 2015 Provision	Current Provision
Basic Pesticide Safety Information		
Display of pesticide safety information	Display pesticide safety information at a central location and at sites where decontamination supplies are located, if the decontamination supplies are at a permanent site or at a location with 11 or more workers or handlers.	Display a safety poster at central location.
Content of pesticide safety information	Information can be displayed in any format (doesn't have to be a poster); keep the 7 concepts about preventing pesticides from entering your body; delete the point that there are federal rules to protect workers and handlers; add instructions for employees to seek medical attention as soon as possible if they have been poisoned, injured or made ill by pesticides; add name, address and telephone number of state or tribal pesticide regulatory authority; revise "emergency medical facility" to " <u>a nearby</u> operating medical care facility." New content for safety information display not required until 2 years from effective date of final rule.	The safety poster must include 7 concepts about preventing pesticides from entering your body; the point that there are federal rules to protect workers and handlers; and the name, address and phone number of the nearest emergency medical care facility.
Personal Protective Equipment		
Respirators	Employer must provide respirator and fit testing, training, and medical evaluation that conforms to OSHA standards for any handler required to wear any respirator by the labeling. Require recordkeeping of completion of fit test, training, and medical evaluation.	Employer must provide respirator listed on label and ensure it fits. No recordkeeping required.
Definition of chemical-resistant	Same as current definition.	Made of a material that allows no measurable movement of the pesticide through the material during use.
PPE exception for closed systems	Exceptions to the labeling-specified PPE allowed for handlers when using closed systems. A closed system must meet a broad performance-based standard and basic operating standards (written operating instructions and training of handlers in use of the system) must be provided.	Exceptions to the labeling-specified PPE allowed for handlers when using closed systems. No specific criteria for closed systems.
PPE exception for crop advisors and their employees	Crop advisors and their employees entering treated areas while a REI is in effect to conduct crop-advisor tasks may wear a standard set of PPE (coveralls, shoes plus socks and chemical-resistant gloves made of any waterproof material, and eye protection if the labeling of the pesticide product applied requires protective eyewear for handlers, as outlined in rule), <i>OR</i> the PPE specified on the pesticide labeling for early-entry activities instead of the PPE specified on the pesticide labeling for handling activities, provided certain conditions are met. (See exemption for certified crop advisor.)	Crop advisors and their employees entering treated areas while a REI is in effect to conduct crop-advisor tasks may wear the PPE specified on the pesticide labeling for early-entry activities instead of the PPE specified on the pesticide labeling for handling activities, provided certain conditions are met. (See exemption for certified crop advisor.)
PPE exception from eyewear for pilots in open cockpits	If product label requires eye protection, pilots in open cockpits may wear a helmet with lowered face shield instead of label-required eye protection.	If product label requires eye protection, pilots in open cockpits may wear visor instead of label-required eye protection.

Requirement	New 2015 Provision	Current Provision
Personal Protective Equipment		
PPE exception from gloves for pilots in enclosed cockpits	Same as current requirement.	Gloves are optional when entering and leaving aircraft unless required by product label.
PPE exception for enclosed cabs	Maintain exception for dermal PPE as in existing rule with same conditions, but handlers in enclosed cabs must wear the labeling-specified respiratory protection except when the only labeling-specified respiratory protection is a particulate filtering facepiece respirator (NIOSH approval number prefix TC-84A), previously called a dust/mist filtering respirator.	Exceptions to the labeling-specified PPE are allowed when handling tasks are performed from inside an enclosed cab that meets the specifications defined in the rule and certain conditions are met. Exceptions to the labeling-required respiratory protection are allowed only if the cab has been certified by the manufacturer to provide respiratory protection equivalent to the respiratory protection required by the pesticide labeling for handling.
Decontamination Supplies		
Quantity of water	Provide 1 gallon for each worker and 3 gallons for each handler and each early entry worker as measured at beginning of workers' or handlers' work period.	Provide enough water for routine washing and emergency eye flushing for workers and handlers. For handlers, also provide enough to wash entire body in emergency.
Use of natural waters	Must provide water for decontamination. There is no reference to, or prohibition from, using natural waters in addition to decontamination water provided. Workers and handlers are trained to use any nearest clean water source in case of emergency.	Must provide water for decontamination. May use natural waters in addition to water provided for decontamination.
Eye wash for handlers	Provide a system capable of delivering 0.4 gallons/minute for 15 minutes, or 6 gallons of water able to flow gently for about 15 minutes at a mix/load site if handlers use products requiring eye protection or use a pressurized closed system. One pint of water in a portable container must be available to each handler applying pesticides if eye protection is required.	Provide enough water for emergency eye flushing. One pint of water in a portable container must be available to each handler if eye protection is required.
Emergency Assistance		
Emergency Assistance	Provide prompt transportation to medical facility. Promptly provide the SDS, product information (name, EPA Reg No and active ingredient) and circumstances of exposure to treating medical personnel.	Provide prompt transportation to medical facility and provide any obtainable information about the product, antidote, first aid, and circumstances of exposure to the worker/handler or treating medical personnel.
Definitions		
Immediate Family	Expand to also include all in-laws, grandparents, grandchildren, aunts, uncles, nieces, nephews and first cousins.	Includes spouse, parents, stepparents, foster parents, children, stepchildren, foster children, brothers, and sisters.
Enclosed space production	New definition: enclosed space production that is indoors or in a structure or space that is covered in whole or in part by any nonporous covering and that is large enough to permit a person to enter.	Greenhouse means an operation inside any structure or space that is enclosed with nonporous covering and that is of sufficient size to permit worker entry.
Employ	Employ means to obtain, directly or through a labor contractor, the services of a person in exchange for a salary or wages, including piece-rate wages, without regard to who may pay or who may receive the salary or wages. It includes obtaining the services of a self-employed person, an independent contractor, or a person compensated by a third party.	No definition of "employ" in existing rule. Definitions of "agricultural employer" and "handler employer" covered aspects of what types of employment covered.

FACTORS AFFECTING CITRUS FRUIT PRODUCTION AND QUALITY

Citrus fruit production and quality are influenced by many factors including climatic conditions and production practices.

In subtropical climates, the temperature usually falls below 70 °F for several months during winter. This period of cool temperatures causes growth to cease and citrus trees to become dormant for about 3 months. The cool temperatures during this dormant period promote floral induction. When warm spring temperatures, among other things, stimulate the resumption of vegetative growth, induced buds grow and produce flowers. In tropical climates, there is no period of cold temperature to induce dormancy. However, with periods of less than ample soil moisture (drought stress), flushes of bloom and vegetative growth normally follow these drought periods.



It is well documented that vegetative and reproductive (fruit) growth compete for available resources, such as carbohydrates (sugars) and mineral nutrients. Flushes of heavy vegetative growth will reduce the resources available to developing fruit, resulting in fruit with

lower total soluble solids (TSS). A period of dormancy, during which there is little or no vegetative growth, reduces this competition for resources and results in fruit with increased TSS. The competition for resources between vegetative and reproductive growth is one of the reasons that citrus fruit grown in tropical climates tend to have lower TSS than those grown in subtropical climates.

CLIMATE

Within fairly broad parameters of adequate soil and reasonably good cultural and crop protection practices, climate is the most important component of the climate-soil-culture complex causing differences in fruit quality among commercial citrus production areas.

There is considerable diversity among citrus cultivars in their response to climate, especially as regards to market quality of the fruit. For example, ‘Navel’ orange develops its best eating and eye-appeal qualities in a Mediterranean type climate with cool, wet winters and hot, dry summers. In wet, tropical regions, ‘Navel’ fruit tends to be large, with poorly colored rinds, and low TSS and acid in the juice. Unlike ‘Navel’, grapefruit cultivars develop optimum internal quality in warm climates with little winter chilling. ‘Valencia’ orange is adapted to a broad range of climates, producing excellent to acceptable fruit quality in most of the world’s important citrus regions.

Some, but not all of these climate-induced differences can be overcome with cultural practices. For example, there is no known cultural practice that allows California (a Mediterranean climate) to produce low-acid, thin-peel grapefruit similar to the world’s top quality grapefruit grown in Florida (a humid subtropical climate).

Worldwide climate has a significant effect on citrus yield, growth, fruit quality, and economic returns. In growing regions where the average temperatures remain high all year (tropical climates), fruit peel chlorophyll does not degrade and oranges and tangerines remain green, whereas in cool-winter subtropical climates oranges and tangerines develop more intense orange peel color and greater eye-appeal at maturity.

In lowland tropical areas, due to high respiration rates at warm temperatures, fruit mature quickly and do not have sufficient time to accumulate high TSS and acidity declines rapidly so that the soluble solids/acid ratio increases sharply and the fruit quickly become insipid and dry. TSS in fruit accumulate most slowly in cool coastal areas. Maximum levels of TSS are usually attained in the mid-tropics and in humid subtropical regions with warm winters. Total acid (TA) levels are generally greatest in semiarid or arid subtropical and coastal climates and decline more slowly as fruit mature compared with other climates. Decrease in TA is primarily a function of temperature (heat unit accumulation) and the rapid respiration of organic acids at those higher temperatures.

GROWTH REGULATORS

Application of plant growth regulators (PGRs) can provide significant economic advantages to citrus growers when used in appropriate situations. Depending on cultivar and timing, PGRs may improve fruit set, increase fruit size by reducing cropload, extend the harvest season by delaying rind aging, and reduce preharvest fruit drop.

Gibberellic acid (GA) is recommended for citrus hybrids that are weakly parthenocarpic and without sufficient cross-pollination to improve

fruit set. Applied from full bloom to two-third petal fall, GA can effectively set and produce an excellent crop of seedless 'Robinson', 'Nova', 'Orlando', 'Minneola', or other self-incompatible mandarin hybrids. Application of GA to citrus fruit approaching maturity enhances peel firmness and delays peel senescence.

Application of GA in the fall often increases juice extraction from sweet oranges. It is likely that GA enhances juice extraction efficiency because increased peel firmness provides better mechanical support for fruit within extraction cups.

Applied in winter during floral induction to cultivars that routinely flower heavily but set poor crops such as 'Navel', 'Ambersweet', and 'Ortanique', GA reduces flowering and often results in increased fruit set. A combination of GA and 2,4-D has been used in many fresh fruit growing regions to enhance peel strength and extend the harvest seasons for grapefruit and sweet oranges.

Naphthalene acetic acid (NAA) is used to thin fruit when excessive set occurs. Thinning heavily cropping trees with NAA increases fruit size. The greatest thinning response to NAA has been shown to occur when applications are made when the average fruit diameter is about 1/2 inch, which typically occurs 6 to 8 weeks post bloom. Thinning of 'Murcott' and 'Sunburst' tangerines with NAA was found to increase fruit size, average fruit weight, and percent packout through improved fruit appearance.

CULTIVAR/ROOTSTOCK

The most important determinant of fruit production and quality under the grower's control is cultivar selection. Under comparable conditions, 'Hamlin' orange always has poorer juice color and lower TSS than 'Midsweet' or 'Valencia' orange. On the other hand, 'Hamlin'

produces higher, more consistent yields per acre than any other sweet orange cultivar. Worldwide, 'Valencia' produces premium quality fruit with excellent internal quality, high sugars, superior flavor, and deep orange juice color at maturity.

Besides cultivar, many of the horticultural characteristics of cultivars are influenced by the rootstock, including tree vigor and size, and fruit yield, size, maturity date, and quality. One of the best-known examples is the small fruit size of 'Valencia' budded on 'Cleopatra' mandarin (Cleo) rootstock. Cleo is well suited for use with 'Temple' orange, tangerines and tangerine hybrids. Sweet orange and grapefruit cultivars on Cleo generally produce small fruit and are not precocious, thus it is not commonly used for these varieties. Low yield associated with Cleo rootstock is the result of poor fruit set and size, and fruit splitting. Scions on Cleo are most productive on heavier soils.

Larger fruit with thicker, rougher peel, and lower concentrations of TSS and acid in the juice are generally associated with cultivars budded on fast-growing vigorous rootstocks such as rough lemon, 'Volkamer' lemon, *Citrus macrophylla*, and 'Rangpur'. However, these rootstocks impart high vigor to the scion and induce high yield. Tangerine fruit from trees grown on vigorous rootstocks tend to be puffy, hold poorly on the tree, and have high incidence of granulation.

Cultivars on slower-growing rootstocks generally do not produce vigorous vegetative growth, but tend to produce small to medium size fruit with smooth peel texture and good quality fruit with high TSS and acid content in the juice. This latter group of rootstocks includes trifoliolate orange and some of its hybrids (citranges and citrumelos). Sweet

oranges budded on 'Carrizo' citrange have been among the most profitable combinations over the long term in Florida. Planted on the right soils, trees on 'Swingle' citrumelo are very productive at high-density plantings.

IRRIGATION AND NUTRITION

Although citrus trees develop largely in response to their genetic endowment and the climate, good production practices can have favorable influences on fruit production and quality. Cultural practices that attempt to cope with climatic or weather problems include irrigation and nutrition. Irrigation is of particular importance during the spring, which coincides with the critical stages of leaf expansion, bloom, fruit set, and fruit enlargement.

Proper irrigation increases fruit size and weight, juice content and soluble solids:acid ratio. Soluble solids per acre may increase due to yield increase. However soluble solids per box and acid contents are reduced. Through its tendency to stimulate vegetative growth, irrigation in the dry fall and winter may reduce soluble solids in the fruit. Decline in total acid levels can also be aggravated by excessive irrigation.

Citrus trees require a good water management system and a balanced nutrition program formulated to provide specific needs for maintenance and for expected yield and fruit quality performance. Adequately watered and nourished trees grow stronger, have better tolerance to pests and stresses, yield more consistently, and produce good quality fruit. On the other hand, excessive or deficient levels of water or fertilizer will result in low fruit yield and oversize fruit with poor quality and diluted soluble solids content.

The most important nutrients influencing fruit quality are nitrogen,

phosphorus, and potassium. However, when any other nutrient is deficient or in excess, fruit yield and quality are negatively altered. Nitrogen (N) increases juice content, TSS per box and per acre, and acid content. However, excessive N can induce excess vigor and promote a vegetative rather than a flowering tree and can result in lower yields with lower TSS per acre. In contrast, low N levels promote extensive flowering but fruit set and yields are poor.

Phosphorus reduces acid content, which increases soluble solids:acid ratio. Potassium (K) increases fruit production, fruit size, green fruit and peel thickness. Foliar spray of potassium nitrate or monopotassium phosphate in the spring often increases fruit size of tangerine and grapefruit, and fruit size and total pound solids of 'Valencia' orange. Foliar application (6-8 weeks before bloom) of urea can increase flowering and fruit set.

SUNLIGHT AND PRUNING

Even though citrus trees can tolerate shade and still flower and fruit, maximum flowering occurs when trees are grown in full sun and light penetration through the canopy is maximized. Therefore, pruning, including topping and hedging, to avoid crowding is extremely important for optimum flowering. The amount of fruit that is set has a very significant effect on fruit quality. There is a positive correlation between the number of fruit per tree and fruit quality. When the number of fruit per tree is low, the peel texture, shape of fruit, and often fruit color are poor. Quality of individual fruit varies significantly, even on the same tree. Heavily shaded fruit borne on the interior of the canopy have less TSS than fruit on the exterior of the canopy. Insufficient light contributes to reduced TSS

concentration of interior fruit nourished by heavily shaded leaves.

It is well established that shoots with fruit do not flower the following year. A heavy fruit crop tends to deplete carbohydrates and results in a small crop and increased vegetative growth the following year. Pruning after a heavy crop additionally stimulates vegetative growth and reduces fruit yield the following year. Pruning after a light crop and before an expected heavy crop can increase fruit size and help reduce alternate bearing. Pruning or topping and hedging usually increase fruit size and packout of fresh-market fruit by reducing crop load, thus increasing net cash returns to growers.

CONCLUSION

The improvement in citrus fruit production and quality that a grower can achieve through choice of scion/rootstock combinations, good irrigation management, balanced nutrition, and proper pruning may easily be overwhelmed by pests, diseases, and other injuries. Excessive leaf loss will noticeably reduce flowering the following spring and subsequent fruit production. The primary causes of leaf loss are freeze, tropical storm injury, salt and water stress problems including drought stress and flooding injuries, mites, greasy spot, herbicides and pesticide toxicities. Excessive leaf loss in the fall and in early winter is the worst thing that can happen to citrus trees. It will reduce accumulation of carbohydrates affecting flowering, fruit set, and fruit yield. Therefore, good practices in citrus groves should be adapted to minimize negative plant physiological stresses, improve tree health and performance, and enhance citrus trees to produce high yield of good fruit quality.



**Institute of Food and Agricultural Sciences
UF-IFAS Hendry County Extension Service**

**P.O. Box 68
LaBelle, FL 33975**

Information for the next Certified Pile Burners Course:

The Florida Forest Service and University of Florida Cooperative Extension Service will be conducting a Certified Pile Burners Course on **Thursday, February 4th, 2016**. This course will show you how to burn piles ***legally, safely and efficiently***. Most importantly, it could save a life. If you burn piles regularly, don't put off registering for this training. When the weather is dry, certified pile burners will receive priority for authorization to burn. Also, certified pile burners are allowed to burn up to two hours longer per day and get multiple day authorizations. Don't wait. The number of trainings offered and attendance at each training is LIMITED. This training will be held from 8:30 am till 4:30 pm at the **Southwest Florida Research and Education Center, Immokalee, Florida**. Included are a registration form and program agenda.

Registration is required to attend and class size is limited. To attend please send the following information (see form on next page):

1. Your full name (as wanted on your pile burning certificate).
2. Your mailing address (where you want the certificate mailed).
3. Your Florida Forest Service Customer Number (It is the number that you are required to give the FFS when you call in for your burn permits. If you do not know it please call the local FFS office and ask them to create one for you).
4. Your email address (if you have one) and/or contact phone number.
5. A check made out to: Hendry County 4-H for \$50.00.

The first fifty individuals to provide these five requirements will be registered; there will be a 7-day non-refundable fee limit. If you do not make the training and did not contact our office at least one week 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 FFS 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 FFS office will set one up for you. Fill out the registration form on the next page and return as directed.

Sincerely,

Mongi Zekri

For Questions Contact: Dr. Mongi Zekri at maz@ufl.edu or 239-595-5494

Registration Form

Florida's Certified Pile Burner Program
Thursday, February 4th, 2016

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

Please send this form and a check for \$50.00 made payable to:
Hendry County 4-H

Mail to: Hendry County Extension Office
Attn: Dr. Mongi Zekri
P. O. Box 68
LaBelle, FL 33975

Name

Mailing address

Email address

Phone Number

FFS Customer Number



**Florida's Certified Pile Burner Training
Thursday, February 4th, 2016**

**Location: Southwest Florida Research and Education Center
2685 State Road 29 North, Immokalee, FL 34142
(239) 658-3400**

All Times Are Local

1. Opening Comments and Introduction	08:30 – 09:10
2. Fire Weather	09:10 – 09:50
3. BREAK	09:50 – 10:00
4. Smoke Management	10:00 – 11:20
5. Open Burning Regulations	11:20 – 12:15
6. LUNCH (provided)	12:15 – 01:15
7. Planning and Implementation	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!



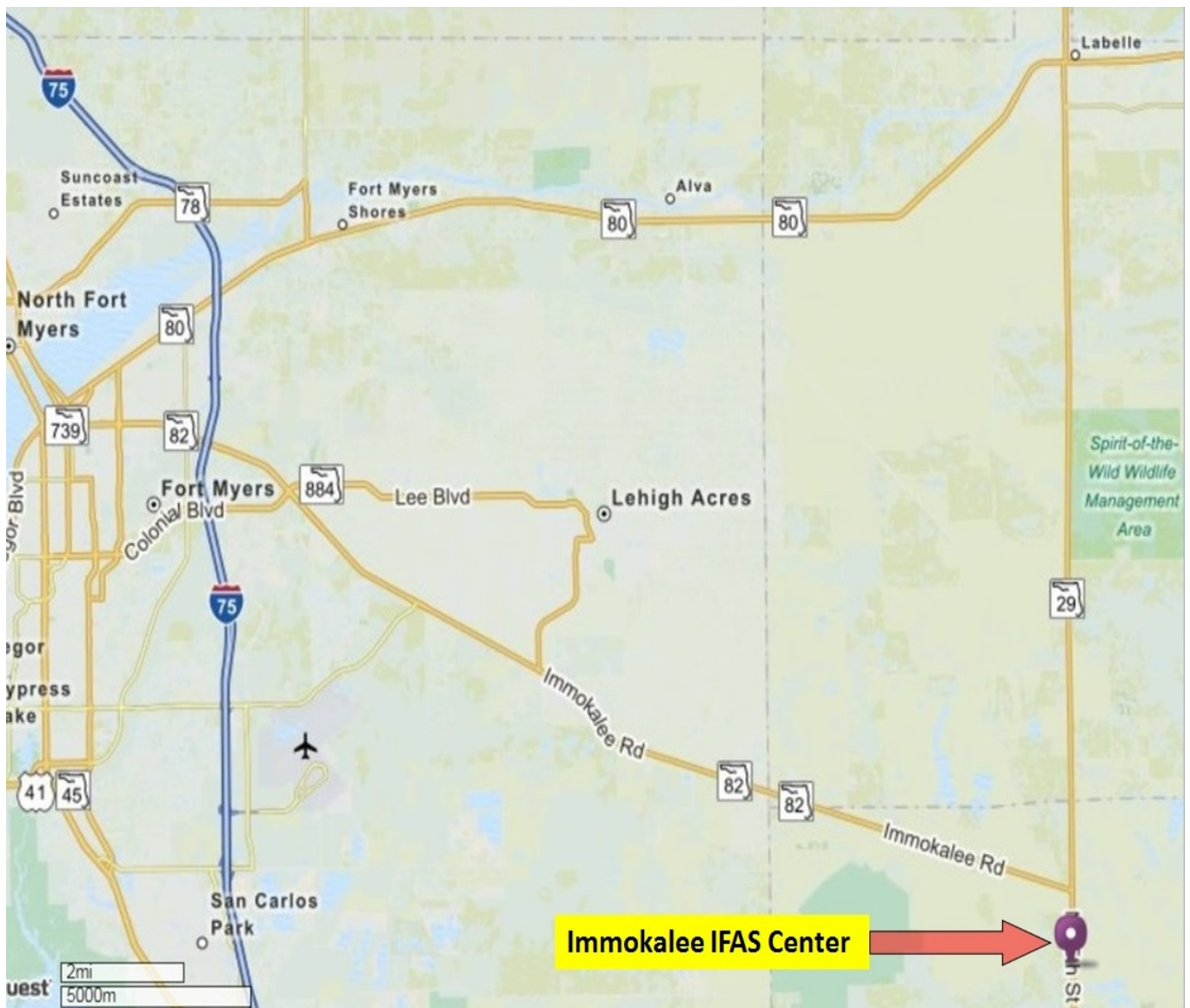
Location & Contact Information

**Location: Southwest Florida Research and Education Center
(Immokalee IFAS Center)**

2685 State Road 29 North, Immokalee, FL 34142 (239) 658-3400

Contact:

Dr. Mongi Zekri, Multi-County Citrus Extension Agent
Hendry County Extension Office, P.O. Box 68, LaBelle, FL 33975
Office Phone: 863 674 4092
Cell: 239 595 5494



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 Forest Service (FFS). 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 FFS 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 FFS 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, and how long do I have to complete the certification from the time I finish the class?

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. You **MUST** complete the certification burn within a year of taking the class.

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 FFS to become certified. You will need to complete a simple burn plan, have it reviewed and approved locally by the FFS and also have the burn itself reviewed and approved by the FFS.

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.

Revised 3/28/2013

Flatwoods Citrus

If you did not receive the *Flatwoods Citrus* newsletter and would like to be on our mailing list, please check this box and complete the information requested below.

If you wish to be removed from our mailing list, please check this box and complete the information requested below.

Please send: Dr. Mongi Zekri
Multi-County Citrus Agent
Hendry County Extension Office
P.O. Box 68
LaBelle, FL 33975

Subscriber's Name: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Fax: _____

E-mail: _____

Racial-Ethnic Background

__ American Indian or native Alaskan

__ Asian American

__ Hispanic

__ White, non-Hispanic

__ Black, non-Hispanic

Gender

__ Female

__ Male