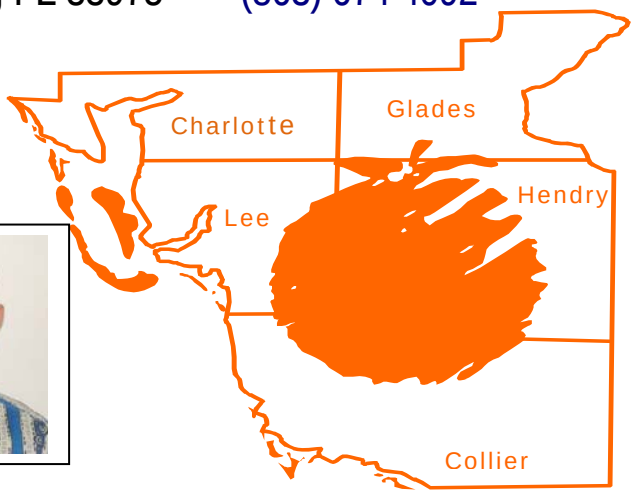
UF UNIVERSITY of FLORIDA
IFAS Extension

EXTENSION

Institute of Food and Agricultural Sciences

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

Flatwoods Citrus



Vol. 16, No. 12 **December 2013**

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

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

Table of Contents

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

Citrus BMPs
Wednesday, January 8, 2014, 10:00 AM – Noon, Immokalee IFAS Center
Coordinator: Dr. Mongi Zekri, UF-IFAS
Speakers: Dr. Kelly Morgan, UF-IFAS and Callie Walker, FDOACS

1. Water quality and quantity
2. Water management including irrigation scheduling
3. FAWN

Annual workshop on insect pest scouting and management
Thursday, January 16, 2014, 10:00 AM - Noon, Immokalee IFAS Center
Coordinator: Dr. Mongi Zekri, UF-IFAS
Speakers: Barry Kostyk, Dr. Phil Stansly and Dr. Jawwad Qureshi, UF-IFAS

1. **Citrus insect pest scouting and management including biological control**
2. **Results of recent trials for control of citrus psyllid and leafminer**
3. **Effectiveness of insecticidal control of citrus psyllid**

2014 Florida Citrus Show
Wednesday, January 29, 2014
Thursday, January 30, 2014

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 FORM MUST BE COMPLETELY FILLED OUT
PRE-REGISTRATION WILL NOT BE ACCEPTED WITHOUT PAYMENT OF THE REGISTRATION FEE
Coordinator: Dr. Mongi Zekri, UF-IFAS
Date & time: Tuesday, 4 February 2014, 7:30 AM – 4:30 PM.
Location: Immokalee IFAS Center
For more details and pre-registration, send an e-mail to maz@ufl.edu or go to: http://www.freshfromflorida.com/content/download/32006/788162/Certified_Pile_Burner_Class-2014.pdf

Annual workshop on fungal disease management
Thursday, Feb 20, 2014, 10:00 AM - Noon, Immokalee IFAS Center
Coordinator: Dr. Mongi Zekri, UF-IFAS
Speakers: Dr. Megan Dewdney and Dr. Pamela Roberts, UF-IFAS

1. **Alternaria brown spot and citrus scab symptoms and managements**
2. **Melanose and greasy spot symptoms and management**
3. **The copper model**
4. **Citrus black spot and Pytophthora management**

2014 ANNUAL FLORIDA CITRUS GROWERS' INSTITUTE

Date & Time: Tuesday, 8 April 2014, 8:00 AM – 3:45 PM
Location: Avon Park Campus of South Florida Community College
Coordinators: Citrus Extension Agents, UF-IFAS

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

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

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

COLDWELL BANKER COMMERCIAL

Saunders Real Estate
114 N. Tennessee Avenue
Lakeland, FL 33801
Toll Free: 877-518-5263

Heath Prescott

KeyPlex®

Toll Free: 800 433 7117
Mobile: 863 781 9096
Nextel: 159*499803*6

Donald Allen

AGLIME SALES, INC.
1375 Thornburg Road
Babson Park, FL 33827-9549
Mobile: 863 287 2925
Agnet # 52925
donald.allen@aglimesales.com

Billy Hopkins

Hopkins Nursery

239 658 0370
tropicals@wildblue.net

Tropical fruit & peach trees

CURTEC

Specialists in Precision
AirCurtain Applicators
and Rotary Atomization

P.O. Box 690365
Vero Beach, FL 32969

Phone: 772-778-0056
Fax: 772-778-2629

The Best Sprayers in the World!
www.CurtecSprayers.com

everris.

Agrocote®

Ward Gunter, Agronomist
ward.gunter@everris.us.com
Mobile: (772) 473-3987

Controlled-Release Fertilizers
Fertilizers for Fertigation
Fertilizers for Foliar Feeding

Plant Food systems

Plant Food Systems, Inc.
P.O. Box 775
Zellwood, FL 32798
Tel: 407 889 7755

COLD HARDINESS AND COLD PROTECTION

Two major environmental factors in Florida citrus that regulate cold hardiness are temperature and water.

At 55^0 F, citrus plant growth slows. As temperatures remain below 55^0 F, citrus trees will continue to acquire acclimation to these cooler temperatures. This process is reversible during warm winter periods, and de-acclimation (loss of acclimation) can occur. The greatest amount of citrus acclimation occurs during consistently cool fall and winters. Once de-acclimation occurs citrus trees will generally not re-acclimate to the same level prior to the onset of de-acclimation.

Irrigation and fall/winter rainfall can have a pronounced effect on the citrus acclimation process. Drought induced stress has been shown to increase the tolerance of citrus trees to freezing temperatures when compared to well watered or over watered citrus trees in Florida. However, excessively drought stressed trees are more susceptible to freeze damage.

Critical Temperatures for Florida Citrus

It is very important to know the critical temperature at which freezing temperatures can damage citrus. Minimum temperature indicating thermometers are a wise investment for any grower concerned with freeze/frost protection. Thermometers should be installed in the coldest grove locations. They should be placed at a height of 42 inches (4.5 ft) on a stand, sheltered at the top and facing north. In citrus trees, there can be a great deal of variation in the minimum temperature at which plant damage will occur.

The reference temperature and duration for the initiation of the freezing process in round oranges is 28^0 F for four hours. Tangerines and fruit with smaller mass would receive freeze damage after shorter durations, while grapefruit would require longer durations.

Minimum temperatures of 26^0 F will damage fully mature, harden-off leaves that have not received any acclimation. Minimum temperatures of 30^0 F can significantly damage unhardened new flush leaves. Leaves that have received extensive acclimation have been shown to survive temperatures as low as 20^0 F in Florida.

Protecting citrus trees from cold damage

Cultural practices can have a major influence on the cold hardiness of citrus trees. A clean, hard-packed soil surface intercepts and stores more solar radiation during the day and releases more heat at night than a surface covered with vegetation or a newly tilled area. Irrigation should be applied minimally during the fall and winter. Reducing irrigation results in an increase in the cold tolerance of citrus trees and enhances tree stress resulting in an increase in the formation of flower buds. Excessive application of nutrients should be avoided late in the fall especially with young citrus trees. Heavy hedging or topping during the winter can reduce citrus cold hardiness by reducing canopy integrity that would trap heat released by the soil. This should be avoided.

Water from micro sprinkler irrigation protects young trees by transferring heat to the tree and the environment. The heat provided is from two sources, sensible heat and the latent heat of fusion. Most irrigation water comes out of the ground at 68° to 72°F, depending on the depth of the well. The major source of heat from irrigation is provided when the water in the liquid form changes to ice (latent heat of fusion).

As long as water is constantly changing to ice, the temperature of the ice-water mixture will remain at 32°F. The higher the rate of water application to a given area, the greater is the amount of heat energy that is applied. When expecting a freeze, turn on the water early before the air temperature reaches 32^0F. Remember that in cold pockets, the ground surface can be colder than the air temperature reading in a thermometer shelter. Once irrigation has begun, the system must run for the duration of the time plant temperatures are below the critical temperature. Growers are recommended to use the information at the FAWN website (http://fawn.ifas.ufl.edu) to determine when it would be safe to turn off or on their micro-sprinkler irrigation system. For more details, go to http://edis.ifas.ufl.edu/HS179, http://edis.ifas.ufl.edu/CH182, http://edis.ifas.ufl.edu/CH054

In bedded groves to provide additional cold protection, water should also be pumped high in the ditches the day before and during the time of freezing weather.

FAWN (Florida Automated Weather Network)

Go to http://fawn.ifas.ufl.edu/

Click on Tools, then click on Cold Protection Toolkit or go directly to http://fawn.ifas.ufl.edu/tools/coldp/

Then Select a Tool.

New! **Graphic Forecast data for FAWN sites**

National Weather Service (NWS) forecast data for next 96 hours. Updated hourly.

Fruit Frost Station Forecasts

With the demise of the NWS agricultural program in April of 1996 the minimum temperature forecast and winter summaries went away. An opportunity now exists to once again provide temperature forecasts for the old Fruit Frost locations with the development of the Point forecast by NWS.

Minimum Overnight Temperature

Estimates based on the Brunt equation and the air & dew point temperatures at sunset.

Forecast Tracker for FAWN sites

Plots the actual temperature and forecasted temperature for the previous twenty four (24) hours and the forecasted temperature for the next twenty four (24) hours in order to show how well the forecast is tracking the actual temperature. The Forecast Tracker is easy to use with a drop down menu to select the desired FAWN site.

FAWN does not make weather forecasts, but utilizes the National Weather Service products, especially the pin point forecasts. For more information see **JETSTREAM, an online weather school, Pinpoint Forecasts.**

Evaporative cooling potential

Determining the risk of using irrigation for cold protection, and see the risk calculated at FAWN stations.

There is always a risk when using water systems, micro-sprinkler or conventional sprinkler, for cold and/or frost protection. Low humidity and wind can produce evaporative cooling which can chill plant surfaces to the wet bulb temperature. Dry and windy conditions can result in wet bulb temperatures 5F to 6F degrees lower than air temperature. Therefore, wetted plant surfaces that experience evaporation would be 5F to 6F degrees cooler than air temperature. Evaporative cooling may result in plant damage when water is used for cold protection during dry windy conditions. Evaporative cooling should always be taken into consideration.

It is possible that, on nights when temperatures are close to critical levels, introduction of water could produce more damage than would result if no action was taken!

Wet-Bulb Based Irrigation Cutoff Temperature

The safe cutoff temperature based on current FAWN conditions.

United States Department of Agriculture
National Agricultural Statistics Service

CITRUS

NOVEMBER FORECAST
MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture & Consumer Services
2290 Lucien Way, Suite 300, Maitland, FL 32751
(407) 648-6013 · (407) 648-6029 FAX · www.nass.usda.gov/fl

November 8, 2013

Florida All Orange Production Down 6 Percent From Last Season
Florida Non-Valencia Orange Production Down 14 Percent
Florida Valencia Orange Production Up 1 Percent
Florida All Grapefruit Production Down 3 Percent
Florida All Tangerine Production Up 14 Percent
Florida Tangelo Production Unchanged

FORECAST DATES – 2013-2014 SEASON	
December 10, 2013	April 9, 2014
January 10, 2014	May 9, 2014
February 10, 2014	June 11, 2014
March 10, 2014	July 11, 2014

Citrus Production by Type and State – United States

Crop and State	Production [1]			Forecasted Production [1]
	2010-2011	2011-2012	2012-2013	2013-2014
	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)	(1,000 boxes)
Non-Valencia Oranges [2]				
Florida	**70,300**	**74,200**	**67,100**	**58,000**
California	48,000	45,500	44,000	44,000
Texas	1,700	1,108	1,499	1,400
United States	120,000	120,808	112,599	103,400
Valencia Oranges				
Florida	**70,200**	**72,500**	**66,500**	**67,000**
California	14,500	12,500	12,500	12,500
Texas	249	311	289	364
United States	84,949	85,311	79,289	79,864
All Oranges				
Florida	**140,500**	**146,700**	**133,600**	**125,000**
California	62,500	58,500	56,500	56,500
Texas	1,949	1,419	1,788	1,764
United States	204,949	206,119	191,888	183,264
Grapefruit				
Florida-All	**19,750**	**18,850**	**18,350**	**17,800**
White	**5,850**	**5,350**	**5,250**	**4,800**
Colored	**13,900**	**13,500**	**13,100**	**13,000**
California	4,310	4,000	4,000	4,000
Texas	6,300	4,800	6,100	5,190
United States	30,360	27,650	28,450	26,990
Lemons				
California	20,500	20,500	21,000	21,500
Arizona	2,500	750	1,800	1,785
United States	23,000	21,250	22,800	23,285
Tangelos				
Florida	**1,150**	**1,150**	**1,000**	**1,000**
Tangerines				
Florida-All	**4,650**	**4,290**	**3,280**	**3,750**
Early [3]	**2,600**	**2,330**	**1,910**	**2,050**
Honey	**2,050**	**1,960**	**1,370**	**1,700**
California [4]	10,600	10,800	13,000	13,500
Arizona [4]	300	200	200	200
United States	15,500	15,290	16,480	17,450

[1] Net pounds per box: oranges in California-80, Florida-90, Texas-85; grapefruit in California-80, Florida-85, Texas-80; lemons-80, tangelos-90; tangerines and mandarins in Arizona and California-80, Florida-95.
[2] Navel and miscellaneous varieties in California. Early (including Navel) and midseason varieties in Florida and Texas. Includes small quantities of tangerines in Texas and Temples in Florida.
[3] Fallglo and Sunburst varieties.
[4] Includes tangelos and tangors.

All Oranges 125.0 Million Boxes

The 2013-2014 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 125.0 million boxes, a 6 percent decrease from last season's production. If realized, this would be the lowest production since the freeze-affected 1989-1990 season. The total is comprised of 58.0 million boxes of non-Valencia oranges (early, midseason, Navel, and Temple varieties) and 67.0 million boxes of Valencia oranges. The Navel orange forecast is 2.1 million boxes, 4 percent of the non-Valencia total.

The hurricane seasons of 2004-2005 and 2005-2006 have been excluded from the usual 10-year regression analysis and from comparisons of the current season to previous seasons. For those previous 8 seasons, average actual production is 157.5 million boxes. The initial forecast has deviated from final production by an average of 4 percent with 7 seasons above and 1 below, with differences ranging from 1 percent below to 15 percent above.

The estimated number of bearing trees for all oranges is 56.8 million, down 1 percent from the previous season. Trees planted in 2010 and earlier are considered bearing this season. Field work for the latest Commercial Citrus Inventory was completed in July 2013. Attrition rates were applied to the results to determine the number of bearing trees which are used to weight and expand objective count data in the forecast model.

The early months of 2013 brought little precipitation and average temperatures to the citrus growing region. Significant rainfall returned in late spring and slowly eliminated drought conditions by the first week in July. Seasonal temperatures together with above average precipitation continued throughout the summer months and kept the citrus groves drought-free through mid-October. Dry seasonal conditions returned during the final weeks of October as the harvest began.

The procedures used in this forecast are the same as used in past seasons. The methodology is described on page 5 of this report. All references to "average" refer to the average of the previous 8 non-hurricane seasons.

Non-Valencia Oranges 58.0 Million Boxes

The **non-Valencia** forecast of 58.0 million boxes is 14 percent lower than last season's production. The estimated number of bearing trees (excluding Navels) is 23.7 million, down 1 percent from the previous season. The estimated fruit per tree for early-midseason oranges is 918, a decrease of 11 percent from last season. Projected fruit size is below the minimum, requiring an estimated 284 pieces of fruit to fill a 90-pound box. Projected droppage is near the maximum at 18 percent.

The prorated forecast shows a decrease of 1.4 million boxes in the Southern area compared to last season. The Indian River area shows a decrease of 100 thousand boxes and all other areas show a combined decrease of 7.6 million boxes when compared to 2012-2013.

The **Navel** forecast of 2.1 million boxes is 5 percent lower than last season's production. The estimated number of bearing trees is 985 thousand, down 2 percent from the previous season. The estimated fruit per tree is 429, an increase of 4 percent from last season. Projected fruit size is near the minimum, requiring an estimated 142 pieces of fruit to fill a 90-pound box. Projected droppage is above average at 19 percent.

Valencia Oranges 67.0 Million Boxes

The **Valencia** forecast of 67.0 million boxes is 1 percent higher than last season's production. The estimated number of bearing trees is 32.1 million, down 1 percent from the previous season. The estimated fruit per tree is 614, a decrease of 7 percent from last season. Projected fruit size is below the minimum, requiring an estimated 234 pieces of fruit to fill a 90-pound box. Projected droppage is above average at 18 percent.

The prorated forecast shows a decrease of 1.6 million boxes in the Southern area compared to last season. The Indian River area shows an increase of 900 thousand boxes and all other areas show a combined increase of 1.2 million boxes when compared to 2012-2013.

FCOJ Yield 1.60 Gallons per Box

The projection for frozen concentrated orange juice (FCOJ) is 1.60 gallons per box of 42° Brix concentrate. Last season's final yield for all oranges was 1.587680 gallons per box, as reported by the Florida Department of Citrus. Projections for the components will be published in January. Record yields are 1.597195 gallons per box for the early-midseason category in 2008-2009, and 1.790343 gallons per box for the late oranges (Valencias) in 2007-2008. The record yield for all oranges is 1.672737 gallons per box set in 2007-2008.

All Grapefruit 17.8 Million Boxes

The forecast of grapefruit production is 17.8 million boxes, 3 percent lower than last season's production. The total is comprised of 4.8 million boxes of white grapefruit and 13.0 million boxes of colored grapefruit. All grapefruit bearing trees are estimated to be 4.9 million, up less than 1 percent from the previous season.

The **white** grapefruit forecast of 4.8 million boxes is 9 percent lower than last season's production. The estimated number of bearing trees is down 3 percent from the previous season. The estimated fruit per tree is 555, an increase of 1 percent from last season. Projected fruit size is below the minimum, requiring an estimated 122 pieces of fruit to fill an 85-pound box. Projected droppage is above average at 20 percent.

The **colored** grapefruit forecast of 13.0 million boxes is 1 percent lower than last season's final production. The estimated number of bearing trees is up 1 percent from the previous season. The estimated fruit per tree is 500, an increase of 2 percent from last season. Projected fruit size is close to the minimum, requiring an estimated 122 pieces of fruit to fill an 85-pound box. Projected droppage is above average at 20 percent.

All Tangerines 3.75 Million Boxes

The forecast of all tangerines is 3.75 million boxes, 14 percent higher than last season's production. The total is comprised of 2.05 million boxes of the early varieties (Fallglo and Sunburst) and 1.7 million boxes of the later maturing Honey variety. All tangerine bearing trees are estimated to be 1.69 million, down 4 percent from last season.

The **Fallglo** tangerine forecast of 550 thousand boxes is 7 percent lower than last season's final production. The estimated number of bearing trees is down 2 percent from the previous season. The estimated fruit per tree is 999, an increase of 16 percent from last season. Final fruit size is above average, requiring an estimated 255 pieces of fruit to fill a 95-pound box. Final droppage is average at 16 percent.

The **Sunburst** tangerine forecast of 1.50 million boxes is 14 percent higher than last season's final production. The estimated number of bearing trees is down 4 percent from the previous season. The estimated fruit per tree is 1,128, a 16 percent increase from last season. Projected fruit size is near the minimum, requiring an estimated 404 pieces of fruit to fill a 95-pound box. Projected droppage is above average at 31 percent.

The **Honey** tangerine forecast of 1.7 million boxes is 24 percent higher than last season's final production. The estimated number of bearing trees is down 3 percent from last season. The estimated fruit per tree is 1,092, a 1 percent increase from last season. Projected fruit size is below average, requiring an estimated 293 pieces of fruit to fill a 95-pound box. Projected droppage is above average at 40 percent.

Tangelos 1.0 Million Boxes

The tangelo forecast of 1.0 million boxes is equal to last season's final production. The estimated number of bearing trees is down 6 percent from the previous season. The estimated fruit per tree is 905, an increase of 4 percent from last season. Projected fruit size is near the minimum, requiring an estimated 302 pieces of fruit to fill a 90-pound box. Projected droppage is above average at 9 percent.

Forecast Procedures

All citrus forecasts are based on actual fruit counts and measurements. The objective count method uses four components:

(1) bearing age trees provided from the latest Commercial Citrus Inventory;
(2) average fruit per tree obtained from the Limb Count survey using randomly selected trees and limbs;
(3) fruit size from the fruit measurement survey and
(4) fruit loss from the drop survey.

These measurements are used in the forecast models, which use data from the 2003-2004 through 2013-2014 seasons, excluding the hurricane seasons of 2004-2005 and 2005-2006.

The latest tree inventory is used to determine estimated tree numbers. All trees planted in 2010 and earlier are included for the current season. An attrition factor was applied to these tree numbers (by age and area) to account for losses since the inventory period.

Statistically valid procedures are used to provide unbiased estimates of fruit count. Samples are drawn with known probabilities from the Commercial Citrus Inventory, taking into account the variability in fruit per tree. Limbs are randomly selected from sample trees. Fruit on these limbs are counted in the mid-July to mid-September period.

Fruit size and loss surveys were conducted in August, September, and October. Results of these surveys are used in the models to project the fruit size at harvest and the fruit population expected to be available for harvest.

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

2013 WATER WATCH

Keeping an Eye on Water Resources

District-Wide Conditions for November 18, 2013

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

Following several weeks of below-average rainfall, water levels across South Florida continue dry season declines. The water supply at this time remains adequate because of above-average rainfall during the most recent wet season.

The District continues to operate the water management system to maximize water storage for the remainder of the dry season.

Water Levels in Key Locations (November 18)		
Location	**Today's level**	**Target for this date**
East Lake Tohopekaliga	56.97 feet	58.00 feet
WCA-2	12.73 feet	12.22 feet
WCA-3	10.29 feet	10.50 feet

Coastal Estuaries

- The SFWMD is working with local, state and federal partners on strategies to improve the health of the St. Lucie Estuary. Visit www.sfwmd.gov/stlucie.
- The SFWMD is working with local, state and federal partners on strategies to improve the health of the Caloosahatchee Estuary. Visit www.sfwmd.gov/caloosahatchee.

Lake Okeechobee Operations

- The U.S. Army Corps of Engineers manages Lake Okeechobee water levels with the goal of balancing flood control, public safety, navigation, water supply and ecological health. The Corps bases operational decisions — whether to retain or release water in the lake — on its regulation schedule and the best available science and data provided by its staff and a variety of partners, including SFWMD.
  - SFWMD makes an operational recommendation each week based on conditions. The most recent Operational Position Statement is available at www.sfwmd.gov/opsreports.

Lake Okeechobee Levels	
Today (Nov. 18)	**14.84** feet
Historical Average for Today	**14.94** feet
This Date One Year Ago	**15.41** feet

Navigation

- Information on navigational locks in the region can be found at www.sfwmd.gov/recreation.

# # #

Media inquiries can be directed to:
Randy Smith
South Florida Water Management District
Office: (561) 682-2800 or Cellular: (561) 389-3386

UF UNIVERSITY of FLORIDA
IFAS Extension

CITRUS Research and Education Center

Summary of 2011-2012 Citrus Budget for the Southwest Florida Production Region

Ronald P. Muraro, Extension Economist
University of Florida, IFAS, CREC, Lake Alfred, FL

Citrus budgets are tabulated annually for the Central, Southwest and Indian River citrus production regions of Florida. The attached budget costs are for the Southwest Florida citrus production region. These costs may not represent your particular grove situation. However, they represent the most current comparative cost estimates for Florida citrus. The budget costs items for the **Southwest Florida** are more representative of an **owner-managed operation; not a custom-managed operation.**

Budget analysis provides the basis for many grower decisions. Budgets can be used to calculate potential profits, determine cash requirements and determine break-even prices. The budget costs presented will serve as a format for growers to analyze their own individual records. The cost data were developed by surveying custom operators, suppliers, growers, colleagues with UF/IFAS and County Extension Agents in each production region.

There were changes in the prices of fertilizer (8.2% increase) and chemical inputs (2.7% increase) and application costs (2.6% increase). Total average cultural production costs per acre increased about 6% between 2010-2011 and 2011-2012. Growers have increased their focus on controlling the Asian citrus psyllid that transmits HLB-greening disease incorporating more aerial and low-volume ground spray applications to reduce total spray costs. To reduce the total materials applied by 15% to 20% and reduce total cultural-production costs, growers are using electronic sensors on their fertilizer spreaders and herbicide and PTO sprayers. Also, growers have begun including calcium with at least one-half of their fertilizer applications.

The 2011-2012 comparative budget is for a processed orange cultural program. There are two scenarios presented for the budget costs: 1) **Traditional HLB Management Program** and 2) **Cultural Program With an Enhanced Foliar Nutrient Program.** Scenario one represents costs of traditional HLB grove practices which include HLB scouting and removal of symptomatic trees but does not include an enhanced foliar nutrient program. Scenario two is the same cultural program for scenario one without HLB scouting and removal of symptomatic trees but includes the costs of an enhanced foliar nutrient program that most growers are now using to maintain and improve the health and yield of their citrus trees. The enhanced foliar spray program consists of five foliar nutrient applications of which three are included with other spray applications and two additional PTO applications. Each budget scenario shows a Total Cost Per Acre **without** and **with resetting-tree replacement**.

With the introduction of citrus greening in 2005, Florida citrus growers have had to develop new management strategies such as to identify and remove infected trees along with adding new spray programs to control the insect vector, the Asian citrus psyllid. During the past couple of years, many growers have decided not to remove HLB symptomatic trees and have begun adding a foliar nutritional formulation to their air-blast ground spray applications. Likewise, with the end of the citrus canker eradication program in 2006, to reduce the impact of canker infestations on new tree flushes and reduce fruit drop, copper spray material is being added with each spray tank mix. For fruit grown for the fresh fruit market, additional costs are incurred by growers to assure that the blocks and fruit can be certified "canker free" for shipments to the U.S. domestic and European markets. The estimated additional costs required to manage citrus greening and canker were

based on the cultural programs being implemented in UF/IFAS CREC research groves and information from citrus growers. These costs were incorporated into Tables 1 and 2.

The budgets shown in Table 1 list the costs of individual grove care practices normally performed in a citrus grove. These costs reflect current grove practices being performed by growers. The estimated costs are for a mature grove (10+ years old); the grove care costs for a specific grove site may differ depending upon the tree age; tree density and the actual grove practices performed. For example, tree losses due to blight, tristeza or citrus greening could increase the tree replacement costs by double or more. Travel and set-up costs may vary due to the size of a citrus grove and the distance from the grove equipment barn. Citrus canker and greening control costs will also vary between individual blocks due to variety and fresh or processed market destination.

In previous citrus budgets, the traditional citrus psyllid HLB-greening management included a soil-applied Temik treatment in January along with five ground spray applications. With the use of Temik discontinued, the 2011-12 spray programs (refer to Table 1) include a total of eight applications; 125 GPA ground sprays, ultra low-volume ground sprays and aerial sprays. Also, the additional spray costs for citrus black spot would be about $83.48 per acre.

The comparative budget costs are shown as an expanded **"total grower costs"** format in Table 2 and are presented **with** and **without** an enhanced foliar nutrient program as well as no resetting and resetting. The total grower costs include cultural/production, management, regulatory and a charge on the initial investment costs. The costs are presented on a per acre unit basis.

Break-even prices for processed Hamlin oranges are shown in Table 3 for yields ranging from 250 to 600 boxes per acre and for the 2011-12 state average yield of 390 boxes per acre. Under a traditional HLB management program and **without** the enhanced foliar nutrient program and **no resetting**, the delivered-in break-even price ranged from $1.69 to $0.96 per pound solids and at the state average yield $1.24 per pound solids; **with resetting** the break-even prices ranged from $1.84 to $1.02 per pound solids and at the state average yield $1.34 per pound solids. Under a no HLB scouting and symptomatic tree removal program but **with** an enhanced foliar nutrient program and **no resetting**, the delivered-in break-even prices ranged from $1.84 to $1.02 per pound solids and at the state average yield $1.33 per pound solids; **with resetting** these break-even prices ranged from $1.94 to $1.07 per pounds solids and at the state average yield $1.40 per pound solids.

The three ADDENDA tables provide the detailed information on the herbicide, spray and fertilizer programs used in the comparative budgets.

Additional information on budgeting and cost analysis can be obtained by contacting the author, your County Extension Citrus Agent, or going to the Lake Alfred UF/IFAS CREC **Extension-Economics** website: http://www.crec.ifas.ufl.edu/extension/economics.

Table 1. A Listing of Estimated Comparative **Southwest Florida** Production Costs per Acre for **Processed Oranges**, 2011-2012[z]

Costs represent a mature (10+ years old) Southwest Florida Orange Grove.	Processed Cultural Program			
	With Canker-Greening (**WITHOUT** Enhanced Foliar Nutrient Spray)		**With Canker-Greening** (**WITH** Enhanced Foliar Nutrient Spray)	
PRODUCTION/CULTURAL COSTS[y]				
Weed Management/Control:				
Mechanical Mow Middles (4 times per year)	$ 40.48		$ 40.48	
Chemical Mow Middles (2 times per year)	12.58		12.58	
General Grove Work (2 labor hours per acre)	33.60		33.60	
Herbicide (1/2 tree acre treated):				
(See Supplemental Table 1 - Herbicide Programs #1, #2 and #3)	117.44		117.44	
Total Weed Management Costs		204.10		204.10
Spray/Pest Management: (See Supplemental Table 3)				
With Greening: Spray Programs #1, #2, #3, #4, #5, #6, #7 and #8		400.63		400.63
Enhanced Foliar Nutrient Spray[x]				265.98
Fertilizer (Bulk): 4 Applications – 220 lbs/acre (See Supplemental Table 2)		392.75		392.75
Fert Prog. #2 – 2 Applications: 15-2-15-2.4MgO-5Ca @ 110 lbs N Fert.Prog. #5 – 2 Applications: 17-4-17-2.4MgO @ 110 lbs N				
Dolomite (one ton applied every 3 years) (Material/Application)		16.88		16.88
Pruning:[w] Topping ($29.20/A ÷ 2 yrs)	14.55		14.55	
Hedging ($28.19/A ÷ 2 yrs)	14.09		14.09	
Chop/Mow Brush after Hedging ($15.48/A ÷ 2 yrs)	7.74		7.74	
Total Pruning Cost		36.38		36.38
Irrigation: Microsprinkler System[v]	165.15		165.15	
Clean Ditches (Weed Control)	17.71		17.71	
Ditch and Canal Maintenance	16.67		16.67	
Water Control (Pump water in/out of Ditches and Canals	16.08		16.08	
Total Irrigation Cost		215.61		215.61
Tree Removal & Site Cleanup-Preparation				
(Remove Trees: Pull, Stack & Burn; Clip-Shear and/or Front End Loader) **(7 trees/acre with HLB-greening; 5 trees/acre with enhanced foliar nutrients)**		67.06		57.05
Mandatory Citrus Canker Decontamination Costs		31.77		31.77
Field Inspections for Citrus Greening (4 inspections @ $27.74) or for Scouting for Psyllids		110.96		55.48
TOTAL PROCESSED PRODUCTION COSTS **WITHOUT** TREE REPLACEMENT-RESET COSTS		1,476.14		1,676.63
Tree Replacement – 1 thru 3 years of age **(7 trees/acre with HLB-greening; 5 trees/acre with enhanced foliar nutrients)**				
Prepare Site and Plant Tree (includes reset trees)	69.65		51.50	
Supplemental Fertilizer, Sprays, Sprout, etc. (Trees 1-3 years old)	148.96		119.75	
Total Tree Replacement Cost		218.61		171.25
TOTAL PROCESSED PRODUCTION COSTS **WITH** TREE REPLACEMENT-RESET COSTS		$1,694.75		$1,847.88

[z]The listed estimated comparative costs are for the example grove situation and may not represent your particular grove situation in Southwest Florida.

Source: Ronald P. Muraro, Extension Farm Management Economics, University of Florida, IFAS, CREC, Lake Alfred, FL, September 2012.

Table 2. Estimated total grower costs for **Southwest Florida** Hamlin oranges grown for the processed juice market **with** citrus canker and HLB-greening, 2011-12

Represents a mature (10+ years old) Southwest Florida Orange Grove	Traditional HLB Management Processed Cultural Program **With Canker and HLB-Greening Without Additional Foliar Nutrient Sprays**	Traditional HLB Management Processed Cultural Program **With Canker and HLB-Greening With Additional Foliar Nutrient Sprays**
NO Resetting-Tree Replacement	$/Acre	$/Acre
Total Production/Cultural Costs	$1,476.14	$1,676.63
Interest on Operating (Cultural) Costs	73.81	83.83
Management Costs	48.00	48.00
Taxes/Regulatory Costs: Property Tax and Water Management Tax	61.00	61.00
Total Direct Grower Costs	$1,658.95	$1,869.46
Interest on Average Capital Investment Costs	321.22	321.22
Total Grower Costs **Without** Resetting	$1,980.16	$2,190.68
WITH Resetting-Tree Replacement	$/Acre	$/Acre
Total Production/Cultural Costs	$1,694.75	$1,847.88
Other Grower Costs	514.95	522.61
Total Grower Costs **With** Resetting	$2,209.70	$2,370.49

SOURCE: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, September 2012.

Table 3. Delivered-in Break-even Price for Processed Hamlin Oranges in Southwest Florida, 2011-12

Box Yield Per Acre								State Average
250	300	350	400	450	500	550	600	390
With Citrus Canker and HLB-Greening and **Without** Additional Foliar Nutrient Spray								
Delivered-in Price Per Pound Solids[a]								
NO Resetting-Tree Replacement								
$1.69	$1.48	$1.33	$1.22	$1.14	$1.07	$1.01	$0.96	$1.24
WITH Resetting-Tree Replacement								
$1.84	$1.60	$1.44	$1.31	$1.22	$1.14	$1.08	$1.02	$1.34
With Citrus Canker and HLB-Greening and **With** Additional Foliar Nutrient Spray								
Delivered-in Price Per Pound Solids[a]								
NO Resetting-Tree Replacement								
$1.82	$1.59	$1.43	$1.31	$1.21	$1.13	$1.07	$1.02	$1.33
WITH Resetting-Tree Replacement								
$1.94	$1.69	$1.51	$1.38	$1.27	$1.19	$1.12	$1.07	$1.40

[a]Assumes: $2.587 per box for harvesting costs (pick & haul); $0.23 per box for FDOC assessment; 6.35 pounds solids per box.

Drought likely to persist or develop in the Southwest and Southeastern U.S. this winter

No strong climate pattern influence anticipated through upcoming winter season

Winter is likely to offer little relief to the drought-stricken U.S. Southwest, and drought is likely to develop across parts of the Southeast as below-average precipitation is favored in these areas of the country, according to NOAA's annual Winter Outlook announced today.

Drought has been an ongoing concern across parts of the Southwest and Texas for nearly three years, and after some relief during the past few months, drought is likely to redevelop during winter.

Sea surface temperatures across the equatorial Pacific have been near average since spring 2012, and forecasters expect that to continue through the winter. This means that neither El Niño nor La Niña is expected to influence the climate during the upcoming winter.

"It's a challenge to produce a long-term winter forecast without the climate pattern of an El Niño or a La Niña in place out in the Pacific because those climate patterns often strongly influence winter temperature and precipitation here in the United States," said Mike Halpert, acting director of NOAA's Climate Prediction Center. "Without this strong seasonal influence, winter weather is often affected by short-term climate patterns, such as the Arctic Oscillation, that are not predictable beyond a week or two. So it's important to pay attention to your local daily weather forecast throughout the winter."

The Precipitation Outlook favors:

- Below-average precipitation in the Southwest, Southeast and the Alaskan panhandle.

The Temperature Outlook favors:

- Above-average temperatures in the Southwest, the South-Central U.S., parts of the Southeast, New England and western Alaska.

The rest of the country falls into the "equal chance" category, meaning that there is not a strong or reliable enough climate signal in these areas to favor one category over the others, so they have an equal chance for above-, near-, or below-normal temperatures and/or precipitation.

Flower Bud Induction Overview and Advisory

http://www.crec.ifas.ufl.edu/extension/flowerbud/2014/index.shtml

L. Gene Albrigo, Horticulturist Emeritus
Citrus Research & Education Center, Lake Alfred,

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

FLOWER BUD INDUCTION ADVISORY #1 for 2013-2014-11/21/13

This is a service to our citrus growers posted on the CREC website. The indicated Expert System on intensity and time of bloom can be accessed at the designated Web Site:
http://disc.ifas.ufl.edu/bloom
If you are not familiar with the website and flower bud induction in citrus you should read the overview section below the current status paragraph.

Flowering for the current 2013-14 Crop – Last spring we had 3 flowering waves. The predicted dates of full bloom were late January after 600 hrs of induction for the first bloom, for the second it was in mid-February after about 800 hours of induction and the last was for March 1st after 1000 hours. The first wave actually occurred about mid-February and was very light. Early flowering cultivars, through Hamlin oranges, had their second wave of flowers about March 1st with the third in Mid-March. However, Valencias did not bloom until April whereas normally they bloom within a week of Hamlin trees of similar condition. There was a warm period in early February that pushed flower development and helped early cultivars to complete flower development as the rest of February and early March had alternating cool and warmer spells, particularly for night time minimums. Later cultivars apparently could not develop fast enough under these temperature conditions and about March 22nd a very cool period occurred that lasted until April 1st. This completely stopped flower development and Valencias did not flower until April, nearly a month after Hamlins. We can expect some additional delay in Valencia maturity after the Hamlin harvest. The spring was relatively cool and all cultivars appear to be late in maturing, but some of that may be attributed to HLB, which reduces soluble solids accumulation and maintains higher acidity levels.

Flower bud induction status 2013-14 - This is supposed to be an ENSO-Neutral winter with average cool temperature accumulation and rainfall. But until now, accumulated inductive hours have been fairly low. Currently, citrus locations have accumulated low temperatures, < 68 degrees F, of less than 170 to 380 hours from southern to northern areas, respectively. The next 7 days will be intermediate for cool temperature accumulation with about 56 hours in the Indian River and 100 hours in Umatilla. Continued accumulation of cool temperatures and prevention of growth during a winter warm spell is very important for good 2014-15 citrus production. Unfortunately, you may not want to risk heavier preharvest fruit drop of the current crop by using water stress to prevent unwanted early vegetative growth and initiation of flower bud development (see later section on use of drought stress). An alternative is to spray a gibberellin just as flower bud growth initiation starts, which will reverse the induction already stimulated (see below). Trees will be very vulnerable to growth stimulation by a warm period after they accumulate 300-400 hours of cool temps. Keep track of induction hours in your area and watch for projected warm periods from the weather services. The next advisory will be after December 2nd. Remember drought stress adds to flower bud induction, just avoid excessive drought to maintain adequate condition of the current crop.

Overview of flower bud induction in Florida – Citrus flower bud induction starts in the fall and usually is completed by early January. Low temperatures first stop growth and then promote induction of flower buds as more hours of low temperatures accumulate (below 68 degrees F, 19 0C). Periods of high temperatures in winter can then initiate bud differentiation which after sufficient days of warm winter-springtime temperatures leads to bloom. The meteorologists predict that this winter in Florida will be an ENSO-Neutral year, average temperatures and rainfall. Under these conditions, enough hours of low temperatures below 68 degrees F. will usually accumulate to induce an economic level of flower buds, but intermediate warm periods during the winter can lead to multiple flower cohorts and a very prolonged bloom. Other conditions that can interfere with good flower bud induction include: 1) exceptionally high previous crop or 2) excessive leaf loss from hurricanes, freezes or other causes (canker) when tree recovery was not complete. Excessive leaf loss leads to low carbohydrate levels in developing buds which reduces their ability to become flower buds. Generally, none of these adverse conditions appear to be in play for the coming season's flower bud induction. The

biggest concern may be reduced available carbohydrates because of HLB.

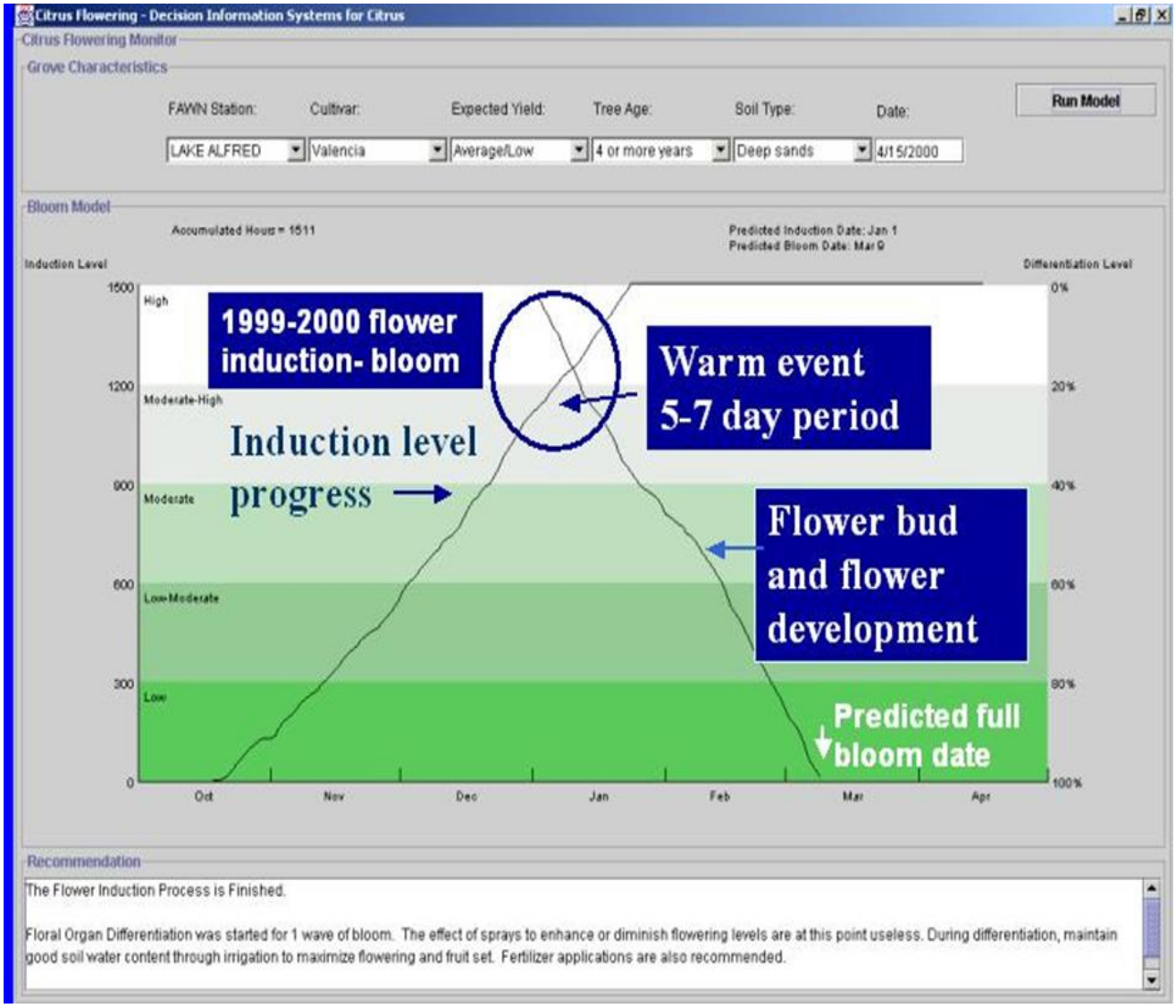
Under normal Florida weather conditions but with a moderate to heavy previous crop, sufficient flower bud induction should be achieved when total accumulated hours of low temperatures exceed 800 hours below 68 degrees F. If the crop load is light, sufficient flower bud induction may occur after 700-750 hours of accumulated low temperatures. A warm period of 7 to 12 days, with maximum temperatures from 80 to 85 degrees F., can trigger growth (bud swelling) if a minimum total hours of low temperatures have accumulated (300-400 hours below 68 degrees F). Later in the winter when the accumulated cool temperature induction hours are higher, fewer days and lower daytime highs (75 degrees F.) are required in a warm period to stimulate growth of buds. Weather information relative to Florida citrus flower bud development for the current and several previous years (back to 1998) can be obtained from the Florida Automated Weather System (fawn.ifas.ufl.edu) for locations near you. An 8 day forecast from the National Weather Service predicts Florida weather for several sites around the citrus belt for the next week. Find this information at: http://www.nws.noaa.gov/mdl/forecast/text/state/FL.MRF.htm. This is an easy way to see if a warm period, which could trigger flower bud growth, is predicted for your specific area in Florida.

Some flower buds will be induced in the range of 300 to 450 accumulated hrs < 68 degrees F. Warm events after these levels of induction are met result in weak flowering intensity, and therefore many buds remain that can be induced by later cool periods, or these buds may sprout as vegetative shoots if warm weather continues and the trees are well irrigated. The first situation results in multiple cohorts of flower buds developing to different bloom dates. The second condition leads to low flowering-fruit set and excessive early spring vegetative growth. During the years from 1963 to 2003, multiple blooms occurred in over half of the years. Historically, the time period in which an early warm period (7-12 day) can lead to an initial low number of buds growing and flowering is roughly mid-November to early-December. Then after more cool temperatures additional flower buds are induced and a later warm period starts their growth and repeats of this temperature cycle result in multiple blooms.

Presently, the only management tools available to eliminate or reduce the chance of multiple blooms are sufficient drought stress to stop growth or a timely gibberellin (GA) spray at the initiation of first wave bud growth. Water stress may be provided by stopping irrigation well before these predicted warm periods occur. If the warm periods(s) are of the typical 7 to 10 day duration, a coincident short period of drought stress will have little impact on current crop development or quality. Sufficient drought stress may be interpreted as leaf wilt observed by 10 or 11 am, but leaves recovering by early the next morning. If no rains interrupt a drought stress condition in citrus trees, buds will not grow in response to high temperatures. If a warm period has passed, trees again can be irrigated to minimize current crop stress. Although no weather prediction is guaranteed, rains in the winter usually come on the fronts for cool periods. Sufficiently cool temperatures after a cold front rain will usually prevent growth even though soil moisture is adequate for growth. Since winter rains usually occur just before cool temperatures, the chances that drought stress will prevent an early flower bud differentiation event are reasonably good for many warm periods. Even so, growers in some growing districts have often found it difficult to maintain winter drought stress. In the shallow soils of bedded groves, it is relatively easy to create sufficient water stress to suppress growth by withholding irrigation for a few days if no rains occur. In deeper, sandy soils, 2 or more weeks without irrigation or rainfall may be required. To minimize the time required for soil to dry sufficiently to initiate water stress, the soil should be allowed to dry out by mid-November so that trees show wilt by mid-day. For bedded groves, minimum irrigation can then be applied at low rates as needed until a weather prediction indicates a warm period is expected. At this time, irrigation should be shut down. For deep sands, the soil needs to be dried out and kept nearly dry below 6 to 8 inches of depth until at least Christmas so that no growth can occur. Minimum irrigations that re-wet perhaps the top 6 to 8 inches of the root zone may minimize excessive drought, while allowing quick return to a water stress condition if a high temperature period is forecast. Soil moisture monitoring can help to achieve these goals. Prolonged late-fall, early-winter drought may be risky for ‘Hamlin’ or other early maturing cultivars not yet harvested that tend to drop fruit near harvest. In recent studies, Valencia trees in Central Florida have had good flowering and no apparent impact on current crop when irrigation was stopped in early December and resumed in the spring. Now in the face of HLB and related preharvest drop, it may not be a good idea to allow trees to become drought stressed.

That leaves application of a GA spray as an alternative. GA will reverse induction and knock out a weak first flower initiation, but it has to be applied just before or as the warm period starts. If induction level is above 600 or 650 hours the spray will not completely stop all of the flowering,

but a more concentrated flowering should occur from the second warm period.
Much of what has been stated above has now been incorporated into a 'Flowering Expert System for Florida Citrus'. Figure 1 represents the different aspects of flower induction as depicted by the software program. The program gives an average bloom situation represented by the shades of green to white, vegetative to heavy flowering, respectively. If the current crop is very heavy, then more cool induction is needed to compensate for the crop load effect. If the current crop is lighter or tree condition better, then fewer total cool temperature hours are needed for an equal level of flowering. Recommendations (bottom text) do consider the current crop level in assessing when action should be taken to try to prevent or to promote initiation of the flower bud growth process. The system is available on-line: http://disc.ifas.ufl.edu/bloom . The on-line version is in black and white and does not list the hour or the predicted bloom date. You must interpret those from the intersections with the graph axis. Additional advisories will follow this preliminary one, roughly bi-weekly, and update the reader on accumulating hours of related cool or warm temperatures and other weather effects on flower bud induction. Methods for enhancing (urea or PO3 sprays) or reducing (GA3 sprays) flowering intensity as conditions and cultivars dictate will be discussed in later advisories. Read the archived advisories from previous years (link at top of this page) for more background.
See last year's background introduction for previous responses **(FLOWER BUD INDUCTION ADVISORY #1 for 2012-2013)**
If you have any questions, please contact me (albrigo@ufl.edu).



FLOWER BUD INDUCTION ADVISORY #2 for 2013-2014-12/03/13

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

This is a service to our citrus growers posted on the CREC website. The internet Expert System on intensity and time of bloom can be accessed anytime: http://orb.at.ufl.edu/DISC/bloom

Current Status: The projection is for a Neutral ENSO winter and moderate cool temperature accumulation. However, the accumulated hours below the threshold for induction, <68 ^{o}F, through December 1 were <300 to 550 from southern to northern citrus areas. Another 30 to 50 hours are predicted for the next week. The minimum hours in southern areas will be about 400 hours less than the desired 850 after next week. **Please note that the on-line Flowering Monitor System is not recording hours for the Indian River. The previous site at Ft. Pierce had its name changed and we did not catch that.** Hopefully, we can get Indian River recognized by the program soon.

In order to improve the induction level beyond a minimum, trees should remain at rest at least through Christmas. Three more weeks of induction may add another 300 hours, which would bring the East Coast growing areas to near 700 hours, an acceptable level of flowering for an economic crop. A level of near 750-800 hours should be reached in most growing areas north of Sebring in three more weeks if cooler temperatures persist. Particularly in southern growing areas remember to watch the weather reports. If daytime high temperatures are projected to be in the mid-80 degree range in any of the next 3 weeks be sure that soil moisture is low to avoid initiation of bud growth. This can allow later cool weather to still influence bud induction, but if buds start to grow in a warm period their flowering potential is set at the level they had reached at the beginning of the warm weather. Induction levels are now high enough that a warm period will easily initiate bud growth in the 1st and 2nd terminal buds. **I am concerned that induction levels are still low and need some cool weather help, particularly in the southern growing areas.** An alternative to drought stress is to enhance flower bud induction with a stress inducing spray of urea or PO3 at the beginning of a winter warm period after more than 600 hours of cool temperatures accumulate.

If cool temperatures continue for 3 weeks, flower enhancing sprays may not be needed in southern areas. The exceptions could be trees with a heavy crop and/or weak root systems due to high water levels this past summer and fall. Weak root systems from HLB may also be a problem. If with additional cool temperatures 800 hours below <68 ^{o}F is not reached, a flower bud induction enhancement spray of urea or a phosphorous acid product sprayed during the early part of the warm period probably will be effective. Growers can consider applying either 53 to 60 lbs of foliar urea/acre or a PO_3 product at 3 pints to 2 quarts per acre depending on which product is used (60 %P (3pts) or if 26% P (2 qts)). The chosen material should be applied in 80 to 125 gal of water early in a warm period. These products apparently increase the stress level and enhance the amount of flowering induced by the cool temperatures. We have not tested these sprays on HLB affected trees, but these trees, if not severely declined, may also respond.

Don't forget that winter freezes occur most often between Christmas and 15 January. Moderate drought stress increases cold hardiness on healthy trees, also increases flower bud induction and prevents bud growth in warm weather. However, drought stress is likely to increase preharvest fruit drop now, particularly in Hamlins and early mandarins with HLB. Again follow the weather for cold and warm periods. What a dilemma.

I will post an advisory before 20 December, earlier if a major change in weather is predicted. If you have any questions, please contact me (albrigo@ufl.edu).

Florida Gulf Citrus Growers Association

Florida Gulf Citrus Growers are good neighbors and good stewards of the land. They are keenly aware that they must carefully balance the needs of the environment and the needs of citrus growing. This delicate balance starts in the basic design of the groves, and then to the use of the latest technology and the most progressive management practices. All these factors enable Florida Citrus Growers to be sustainable in this region. Growers carefully manage the water resources through state-of-the-art low volume computerized irrigation systems, spraying water directly to the root zone. There are many other positive impacts that citrus groves have on the environment. Go to http://www.gulfcitrus.org/ and become a member or an associate member.

GULF CITRUS GROWERS ASSOCIATION SCHOLARSHIP FOUNDATION, INC.

Membership:

Membership in the Scholarship Foundation is open to all Gulf Citrus Growers Association (GCGA) members for just $25 per year. Members are able to vote for and serve on the Board of Directors for the Foundation.

Donations:

Donations are a crucial source of funding for scholarship awards and may be made to the Foundation at any time during the year in any denomination, **regardless of membership status**. Checks should be made payable to the Foundation. For more details, please call the GCGA office at **863 675 2180**.

The GCGA Scholarship Foundation is a non-profit corporation operating under Section 501 © (3) of the Internal Revenue Code. Contributions are tax deductible as allowed by law. © (3) of the Internal Revenue Code. Contributions are tax deductible as allowed by law.

Gulf Citrus Growers Association Scholarship Foundation, Inc.

11741 Palm Beach Blvd., #202, Fort Myers, FL 33905
Phone: (239) 690-0281 / Fax: (239) 690-0857 / Email: gulfcitrus@embarqmail.com

About the Gulf Citrus Growers Association

The citrus growers of southwest Florida are committed to supporting education as a long-term investment in the future of our industry. The first Gulf Citrus scholarship was awarded in 1992 through the Gulf Citrus Growers Association, a trade organization representing growers in Charlotte, Collier, Glades, Hendry and Lee Counties.

The Gulf Citrus Growers Association Scholarship Foundation was established in 2000 as a non-profit entity to oversee the distribution of these awards. Scholarship applications are accepted throughout the year and are reviewed semi-annually by a Scholarship Selection Committee comprised of academic and industry members. The number and amount of awards vary depending upon the number of applications received and available funds.

Applicants who are not selected may submit a new application for consideration in the next selection cycle. Previous award winners may also reapply.

Scholarship Criteria

Preferred requirements for scholarships are as follows:

AA, BS, MS and **PhD Degrees:**

- Completion of all placement testing and a **declared major** in agriculture or related major.
- Completion of **12 credit hours** towards agriculture or related degree.
- Minimum overall grade point average of **2.5** for AA and BS degrees; **3.0** for MS and PhD degrees.
- A demonstrated **commitment** to complete the degree at a state college, community college or university.

Applicants must send their transcripts including grades for the courses taken the previous semester and complete the attached application, which includes a statement of release giving the selection committee permission to verify information submitted.

APPLICATION DEADLINES ARE JULY 31 AND DECEMBER 31

Gulf Citrus Growers Association Scholarship Foundation, Inc.

11741 Palm Beach Blvd., #202, Fort Myers, FL 33905
Phone: (239) 690-0281 / Fax: (239) 690-0857 / Email: gulfcitrus@embarqmail.com

Scholarship Application

Personal Data

Name: _____Date of Birth:_____

Home Address: _____

City/State: _____ Zip: _____ Phone: _____

Mailing Address: _____

City/State: _____ Zip: _____ Phone: _____

E-mail: _____

Employer: _____

Address: _____

City/State: _____ Zip: _____ Phone: _____

Does your employer reimburse you for tuition or other expenses incurred toward your degree? Yes ____ No _____

Educational Information

College or University in which you are enrolled: _____

Department / Degree Program: _____

I am working toward the following: AA ____ BS _____ MS _____ PhD _____ Other _____

Courses Taken in Major *(completed)*:

_____
_____
_____
_____
_____

Courses (*in which you are currently enrolled*):

_____
_____
_____

Total Credit Hours Toward Degree: _____ Cumulative Grade Point Average (GPA): _____

Expected Date of Graduation: _____

Please answer the following questions in complete sentences with as much detail as possible.

What are your career goals? _____

_____

_____

_____

_____

What is the potential value of your education to the citrus industry *in southwest Florida*?

_____

_____

_____

_____

_____

I authorize the release of this application and any relevant supporting information to persons involved in the selection of recipients for Gulf Citrus Growers Association scholarships.

_____ _____

Applicant's Signature Date

*****APPLICATION DEADLINES ARE DECEMBER 31 AND JULY 31*****

Please return this application with your official transcripts to:

Gulf Citrus Growers Association Scholarship Foundation, Inc.
Dr. Mongi Zekri, Application Coordinator
Hendry County Extension Office
P. O. Box 68
LaBelle, FL 33975

Phone: (863) 674-4092 / Fax: (863) 674-4636
E-mail: maz@ufl.edu

UNIVERSITY OF FLORIDA | EXTENSION
Institute of Food and Agricultural Sciences

Hendry County Extension • P.O. Box 68 • LaBelle, Florida 33975-0068 • (941) 674-4092

Flatwoods Citrus

TOPICS DISCUSSED IN THE FLATWOODS CITRUS NEWSLETTER -YEAR 2013-

January	Flower Bud Induction; Brazil Ending Topsy-Turvy Citrus Season; Western Citrus Mostly Dodges Freeze Damage; Factors Affecting Citrus Fruit Production and Quality; Citrus Health Management Areas (CHMAs); One of the Psyllid Management Program
February	Nutrition of Citrus Trees; Importance of Fertilizer Spreader Calibration and Maintenance; Importance of Fertilizer Spreader Calibration and Maintenance; Foliar feeding; Boron; Spider Mites; Fungicide Effectiveness; Pesticide Resistance and Resistance Management; Fresh vs. Processed Fruit Management Decision; Reset Management; Citrus Production Forecast-Numbers are still dropping
March	Plant Growth Regulators; Effect of Water pH on Pest-Control Materiels; Water Quality Affects Herbicide Efficacy; Africanized Honey Bees; Alternaria Brown Spot; Citrus Scab; March Citrus Forecast-Numbers are still dropping; Florida Citrus Growers' Institute; The 2013 Farm Safety Day
April	Foliar Feeding; Sri Lanka Weevil; Plant Growth Regulators in California; Plant Growth Regulators in Florida; 2013 Water Watch; CHMA Sectional Mapping Program; March Citrus Forecast-Numbers are still dropping; Abandoned Grove Initiative
May	2013 Hurricane Forecast—HLB Escape Trees; Management of Greasy Spot; Citrus Leafminer Management; Citrus Rust Mites; Living With Lovebugs; Rootstock Selection; Coca-Cola Will Plant 25,000 Acres of New Citrus Groves; New Statewide Citrus BMP Manual; Cost-Share Program for Citrus Growers; S FL Water Management District: Wettest April Since 1997
June	Hurricane Preparedness —HLB Escape Trees; Citrus BMPs; Mobile Irrigation Lab; Acididification to Remove Mineral Deposits in Irrigation Systems; Hedging and Topping Citrus Trees; Flooding Injury; Water Table Measurement and Monitoring
July	How to Adjust Fertilizer Programs for Citrus Trees; Citrus BMPs; Brown Rot Management; Biosolids; Citrus and Calcareous Soils; Some Information on Florida Subtropical Peaches; HLB Escape Trees; Florida Gulf Citrus Growers Association and GCGA Scholarships
August	Citrus BMPs; Drainage for Flatwoods Citrus; Dealing with Iron in Irrigation Water; Dealing with Iron in Irrigation Water; ENSO Quick Look; Drainage System; Mosquitoes; Health Benefits of Citrus Fruit; Foliar Nutrition; Algae; Brazil May Have Good News for Florida Citrus Growers; 2013 Farm Labor Supervisor Core Training Program
September	Effect of Water pH on Efficacy of Pesticides; Soil Acidity & Liming; Fertilizer Formulations and Applications; Irrigation, Nutrition and Fruit Quality; Citrus Canker is Still a Devastating Problem; Phytophthora Foot Rot and Root Rot; Grapefruit Could Hold Key to Treatment for Heart Disease; Herbert Hoover Dike Report
October	Citrus Health Management Areas (CHMAs); Spray Option for Pest Management; Example of Pesticide Programs for ACP and Other Pests in Florida; New Insecticides for ACP Control in Florida Citrus; Spray Option for Citrus Pest Management Including Products Not Yet Labeled; Gulf CHMA; 2013 Water Watch; Endangered Species; Citrus Summary–Production, Citrus Acreage, Tree Numbers, Abandoned Acreage; Most Popular Cultivars, Most Popular Rootstocks
November	Component of Citrus Fruits Found to Block the Formation of Kidney Cysts; Drought; Certified Pile Burners Course-Information and Registration; UF/IFAS Immokalee HLB Diagnostic Lab; Tropical review; Winter Weather Watch
December	Cold Hardiness and Cold Protection; FAWN; November Forecast for Citrus Production; Water Watch; Citrus Budget; Drought Likely to Persist; GCGA Scholarship Foundation; Newsletter Evaluation

FLATWOODS CITRUS NEWSLETTER EVALUATION FORM

Please take a moment to rate the quality and usefulness of the information presented in the Flatwoods Citrus newsletter. Please send back the form to:
Dr. Mongi Zekri
University of Florida, IFAS
Hendry County Extension Office
P.O. Box 68
LaBelle, FL 33975
or e-mail to maz@ufl.edu **Thank you for your input!!!**

Please circle your answer

1	Did the information seem up to date and accurate?	Yes	No	Uncertain
2	Was the information delivered on time to be useful?	Yes	No	Uncertain
3	Was the information relevant to your situation?	Yes	No	Uncertain
4	Was the information easy to understand?	Yes	No	Uncertain
5	Have you had an opportunity to use the information?	Yes	No	Uncertain
6	Have you shared the information with someone else?	Yes	No	Uncertain

7 Overall, how do you feel about the Flatwoods Citrus Newsletter?

a. Satisfied b. Neither Satisfied Nor Dissatisfied c. Dissatisfied

8 **Do you have any suggestions that might improve the newsletter?**

(Please write in any comments)

9. How many years have you been using the Extension Service? _____ Years

10. What is your employment status?

_____ Grower	____ Chemical Industry	____ Service Provider
_____ Production Manager	____ Regulator	____ University
_____ Consultant	____ Association	Other _____

We appreciate your reactions and the time you have given us. Thank you, and please contact us when we may be of service to you.

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