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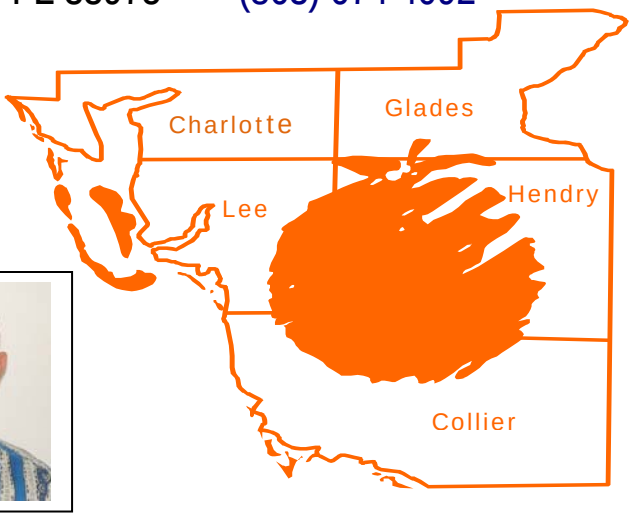
Institute of Food and Agricultural Sciences

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

Flatwoods Citrus



Vol. 19, No. 11 **November 2016**

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

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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/

WORKSHOP

"GULF" Citrus Health Management Areas (CHMAs)

Date & time: Thursday, **November 15, 2016; 10:00 AM – 12:20 PM**
Location: UF/IFAS, SWFREC
Program Coordinators: Ron Hamel, GCGA and Mongi Zekri, UF-IFAS

10:00 – 10:10 AM	Welcome & Introduction Joby Sherrod, Chair, GCGA Research & Production Committee
10:10 – 10:30 AM	Statewide and "Gulf" CHMA Update Brandon Page, CHMA's Program Assistant, UF/IFAS, CREC
10:30 – 11:00 AM	"Gulf" CHMA "Hot Spots" and Dormant Spray Strategy Dr. Phil Stansly, Entomologist, UF/IFAS, SWFREC
11:00 – 11:15 AM	Break
11:15 – 11:35 AM	Abandoned Grove Program Update and Other Programs Callie Walker, Chief of Pest Eradication and Control, DPI
11:35 – 12:00 Noon	The "NEW" Psyllid, Etc. Dr. Harold Browning, Chief Operating Officer, CRDF
12:00 Noon – 12:20 PM	Available Products for Psyllid Management Program Sponsors
12:20 PM	**Gator Hammock - Sponsored Lunch**

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Pre-registration is required. No registration fee and lunch is free**.**

Register at: www.gulfcitrus.org , Scroll down to upcoming events,
Under "Gulf" CHMA Workshop, Click Here to Register

Or Contact Bernadette with:
Company AND Attendee Name(s), Email: GulfCitrus@embarqmail.com / Phone: 239-690-0281

Seminar

WEATHER

Date: Wednesday, December 14th, 2016
Time: **10:00 AM – 12:00 Noon**
Location: Immokalee IFAS Center
Program Coordinator: Dr. Mongi Zekri, UF-IFAS

Agenda

10:00 AM – 10:55 AM, **Chris Oswalt**, UF-IFAS
Winter weather watch,
Ag weather forecasts,
Freeze protection,
Citrus leaf freezing information,

10:55 AM – 11:05 AM Break

11:05 AM – 12:00 Noon, **Rick Lusher**, UF-IFAS
Florida Automated Weather Network (FAWN),
Management tools,
Cold protection tools
Irrigation scheduling tools

2 CEUs for Certified Crop Advisors (CCAs)

12:00 Noon, Sponsored Lunch

2016 Ridge Citrus Production School

UF/IFAS Citrus REC, BHG Hall, Lake Alfred, Florida 9:30 am – 1:00 pm

Register online at https://ridgecitrusproductionschool.eventbrite.com

The Ridge Citrus School will be a series of educational seminars held at the UF/IFAS Citrus Research and Education Center (700 Experiment Station Road, Lake Alfred, Florida 33850). Each seminar will have speakers from throughout the state of Florida who will provide core concepts and research updates for the Florida citrus industry.

If you would like to register for all of the seminars, the cost will be $40.00. To receive the reduced rate, you must register by October 12, 2016.

Each seminar will cost $7.00 per participant. If you register for each seminar individually, the deadline to register is the Friday prior to the seminar day.

The registration fee will cover the costs of printed materials and refreshments. Lunch will be provided compliments of our sponsors.

PRESENTATIONS

October 18: Horticulture and Engineering
New Technologies in Citrus Disease Detection and Management, Reza Ehsani, UF/IFAS CREC
Corrective Pruning to Rehabilitate HLB Affected Trees, Tripti Vashisth, UF/IFAS CREC
Plant Physiology is Not an Abstract Concept, Christopher Vincent, UF/IFAS CREC

October 25: Plant Pathology
Foliar Fungal Diseases, Megan Dewdney, UF/IFAS CREC
Root Health in Florida Citrus Trees, Evan Johnson, UF/IFAS CREC
Postbloom Fruit Drop, Megan Dewdney, UF/IFAS CREC
Citrus Tristeza Virus and *Candidatus* Liberibacter asiaticus Infection Pathways, Amit Levy, UF/IFAS CREC

November 1: Entomology
Why When and How to Manage Asian Citrus Psyllid, Phil Stansly, UF/IFAS SWFREC
Management of Asian Citrus Psyllid for Organic and Conventional Citrus, Jawwad Qureshi, UF/IFAS IRREC
Using Nematodes and Other Tactics to Manage Root Weevils, Larry Duncan, UF/IFAS CREC
Citrus Leafminer Management Practices in Citrus, Lukasz Stelinski, UF/IFAS CREC
CHMA Performance, Implementation, and Effect on the Ridge, Brandon Page, UF/IFAS CREC

November 8: Handling and Processing
Improvement of Citrus Flavor Using a Flavoromics Platform, Yu Wang, UF/IFAS CREC
Food Safety Update – FSMA's Produce Safety Rule, Michelle Danyluk, UF/IFAS CREC
Effects of Preharvest Factors and Management Practices on Citrus Fruit Quality and the Development of Postharvest Decay and Disorders, Mark Ritenour, UF/IFAS IRREC

November 15: Varieties and Rootstocks
The Importance of Rootstocks for Citrus Production in Florida, Ute Albrecht, UF/IFAS SWFREC
Progress in Developing Rootstocks for the HLB World, Jude Grosser, UF/IFAS CREC
New Scion Varieties from the UF/IFAS CREC for Florida Citrus Production, Fred Gmitter, UF/IFAS CREC

November 22: Alternative Crops
Peach Production in Florida, Tripti Vashisth, UF/IFAS CREC
Considerations for Commercial Blueberry Production in Central Florida, Jeff Williamson, UF Gainesville
Challenges to Peach Production in Florida, Jose Chaparro, UF Gainesville
Economics of Alternative Crops, Ariel Singerman, UF/IFAS CREC

November 29: Citrus Economics
Economics of Citrus: Understanding CHMA Participation Decisions, Ariel Singerman, UF/IFAS CREC
Navigating Wage/Hour Rules with and without H-2A Workers, Fritz Roka, UF/IFAS CREC
Florida Citrus Industry 2016-17 Outlook, Marissa Zansler, FDOC, Gainesville
Development of Florida's Citrus Forecast, Candi Erick, USDA-NASS

UF IFAS Extension UNIVERSITY of FLORIDA

REGISTRATION FORM

2016 Ridge Citrus Production School

UF/IFAS Citrus Research and Education Center, 700 Experiment Station Road, Lake Alfred, FL 33850

Submit form to: Sarah McCoy, sarahmccoy@ufl.edu Phone: 863-956-8632 Fax: 863-956-8768

Register online at https://ridgecitrusproductionschool.eventbrite.com

Participant Name: _____

Company Name: _____

Phone: _____ Email: _____

Please select the days attending.

- ☐ October 18: Horticulture and Engineering
- ☐ October 25: Plant Pathology
- ☐ November 1: Entomology
- ☐ November 8: Handling and Processing
- ☐ November 15: Varieties and Rootstocks
- ☐ November 22: Alternative Crops
- ☐ November 29: Citrus Economics

Please make checks payable to: UF

Registration fee is $7.00 per seminar day.
Payment is due the Friday before each seminar day.

A one time fee for all seminars is $40.00.
Must register by October 12, 2016.

CRDF Soil Microbial Amendment Field Day

Tuesday, December 6, 2016, 10 AM

This field experiment, which is replicated in two other sites in Florida, was established in 2014 on 6 yr-old Valencia/Swingle trees to evaluate the ability of 5 soil microbe amendment products to promote tree health in the presence of HLB. The 5 soil amendments:

- Serenade Soil (Bayer CropScience)
- Aliette (Bayer CropScience)
- Quantum product line (AE Microbiology)
- BioFlourish (Triangle Chemical)
- Ecofriendly Products Citrus Soil Amendment

have been applied at recommended rates in replicated plots (Dudley Sutherland, Glades Crop Care) over three seasons and data have been collected on tree growth, bacterial titer, and fruit productivity.

RSVP

There is no registration fee but please RSVP by Monday, December 5 to Garima Kakkar, UF/IFAS Multi-County Extension Agent,
e-mail: garimaiari@ufl.edu
Phone: 772-462-1628 for a head count.

Field Day Site

Premier Citrus Capron Trail,
14885 Indrio Rd.
Fort Pierce, Fl 34945
Latitude and Longitude:
27.535596, -80.486062

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CRDF Citrus Research and Development Foundation, Inc.

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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EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by

CLIMATE PREDICTION CENTER/NCEP/NWS
and the International Research Institute for Climate and Society
13 October 2016

ENSO Alert System Status: La Niña Watch

Synopsis: La Niña is favored to develop (~70% chance) during the Northern Hemisphere fall 2016 and slightly favored to persist (~55% chance) during winter 2016-17.

ENSO-Neutral conditions were observed during September, with negative sea surface temperatures (SSTs) anomalies expanding across the eastern equatorial Pacific Ocean by early October (Fig. 1). All of the Niño regions cooled considerably during late September and early October, with the latest weekly value of Niño-3.4 index at -0.9°C (Fig. 2). Subsurface temperature anomalies also decreased toward the end of the month (Fig. 3), reflecting the strengthening of below-average temperatures at depth in the east-central equatorial Pacific (Fig. 4). Atmospheric anomalies across the equatorial Pacific edged toward La Niña during September, with a stronger tendency toward La Niña late in the month. The traditional Southern Oscillation index and the equatorial Southern Oscillation index were positive. The lower-level winds were near average across most of the basin during the month, but enhanced easterlies were becoming more persistent west of the International Date Line. Upper-level winds were anomalously westerly near and just east of the International Date Line. Convection was weakly suppressed over the central tropical Pacific and was more enhanced over Indonesia compared to last month (Fig. 5). Overall, the combined ocean and atmosphere system reflects ENSO-Neutral during September, but are more clearly trending toward La Niña conditions.

The multi-model averages favor borderline Neutral-La Niña conditions (3-month average Niño-3.4 index less than or equal to -0.5°C) persisting during the Northern Hemisphere fall and continuing into the winter (Figs. 6 and 7). Because of the recent cooling in the Niño-3.4 region and signs of renewed atmospheric coupling, the forecaster consensus now favors the formation of a weak La Niña in the near term, becoming less confident that La Niña will persist through the winter. In summary, La Niña is favored to develop (~70% chance) during the Northern Hemisphere fall 2016 and slightly favored to persist (~55% chance) during winter 2016-17 (click CPC/IRI consensus forecast for the chance of each outcome for each 3-month period).

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 10 November 2016. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.enso-update@noaa.gov.

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

FLOWER BUD INDUCTION ADVISORY #1 for 2016-2017-11/1/16

http://www.crec.ifas.ufl.edu/extension/flowerbud/2017/11_01_16.shtml

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 2016-2017-10/31/16

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 paragraphs.

In the on-line version you can shift from one FAWN weather site to another without back tracking. All citrus area FAWN sites are in the menu. The total accumulated hours is now listed as is the forecast (projected) hours to be accumulated the following week. By January we hope to have estimates of the number of days before full bloom for the start of vegetative flush and 5-10 % open flowers to aid in managing psyllid sprays for the bloom period. This latter information is a CRDF supported effort.

Flowering related to the current 2016 -17 Crop Estimate– In spite of a reportedly strong El Niño winter, cool flower bud inductive temperatures did not start until January. The later than normal inductive period was also largely responsible for the later final bloom in April. Even so, last spring's flowering had two strong flowering periods in March and April and should have resulted in a good crop considering the HLB disease condition of the trees. Unfortunately, heavy spring rains followed off-season and regular blooms that carried over PFD fungal inoculum to the final flowering cohort resulted in severe losses to PFD in many blocks, particularly of navels and Valencia. The current estimate is for 70 million boxes of round oranges, which would have been closer to last year's crop without the PFD losses.

Flower bud induction status 2016-17 for 2017-2018 crop- This is probably going to be a weak La Niña ENSO winter (45% chance) with higher than average cool temperature accumulation and lower rainfall. Currently, citrus locations have accumulated low inductive temperatures, < 68 degrees F, of only 65 to 147 hours from southern to northern areas, respectively. The next 7 days will have low cool temperature accumulation with less than 40 to 75 hours, south to north. This is slightly more hours than last year, which had very low accumulation of low temperatures until January. Accumulation of cool temperatures and prevention of growth during a winter warm spell is very important for good 2017-18 citrus production. The weather needs to cool down soon and follow a better pattern of cool temperature accumulation than last year.

During the previous 4 years with chronic HLB Florida citrus trees have had early to late winter flowering due to water stress induced flowering because of poor root systems and infrequent irrigation in the fall.

Several IFAS faculty, including me, are advocating daily, lower volume, irrigations to minimize fall water stress. Fewer off-season flowers results in more buds available for normal winter cool temperature induction and spring season flowering. Reduced off-season flowering also reduces off-season leaves for psyllid population development.

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, 20° C). 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 probably will be a weak ENSO-El Niña year, above average temperatures and lower than average rainfall. Under these conditions, enough hours of low temperatures < 68 degrees F. will usually accumulate to induce an economic level of flower buds, but intermediate warm periods during the winter 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, HLB) where tree recovery is not complete. Excessive leaf loss leads to low carbohydrate levels in developing buds which reduces their ability to become flower buds and/or to set. None of the adverse environmental conditions appear to be in play for the coming season's flower bud induction but a freeze is still possible. The biggest concern will be reduced available carbohydrates in weaker trees 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 800-850 hours < 68 degrees F. If the crop load is light and trees are healthy, 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 (350-450 hours < 68 degrees F). Later in the winter when the accumulated cool temperature induction hours are higher, fewer days and lower daytime highs (5-7 days, 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 and evaluated with the Citrus Flowering Monitor System using data 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 350 to 450 accumulated hours < 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 mid-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, usually two to three, but all in the mid-February to early April normal spring flowering period.

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 near but before the initiation of the first wave of 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 in healthy trees.

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 water 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 of cool periods. Sufficiently cool temperatures (< 68 o F maximums) 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. (**See water stress from HLB and mature fruit retention issues in next paragraph.)**

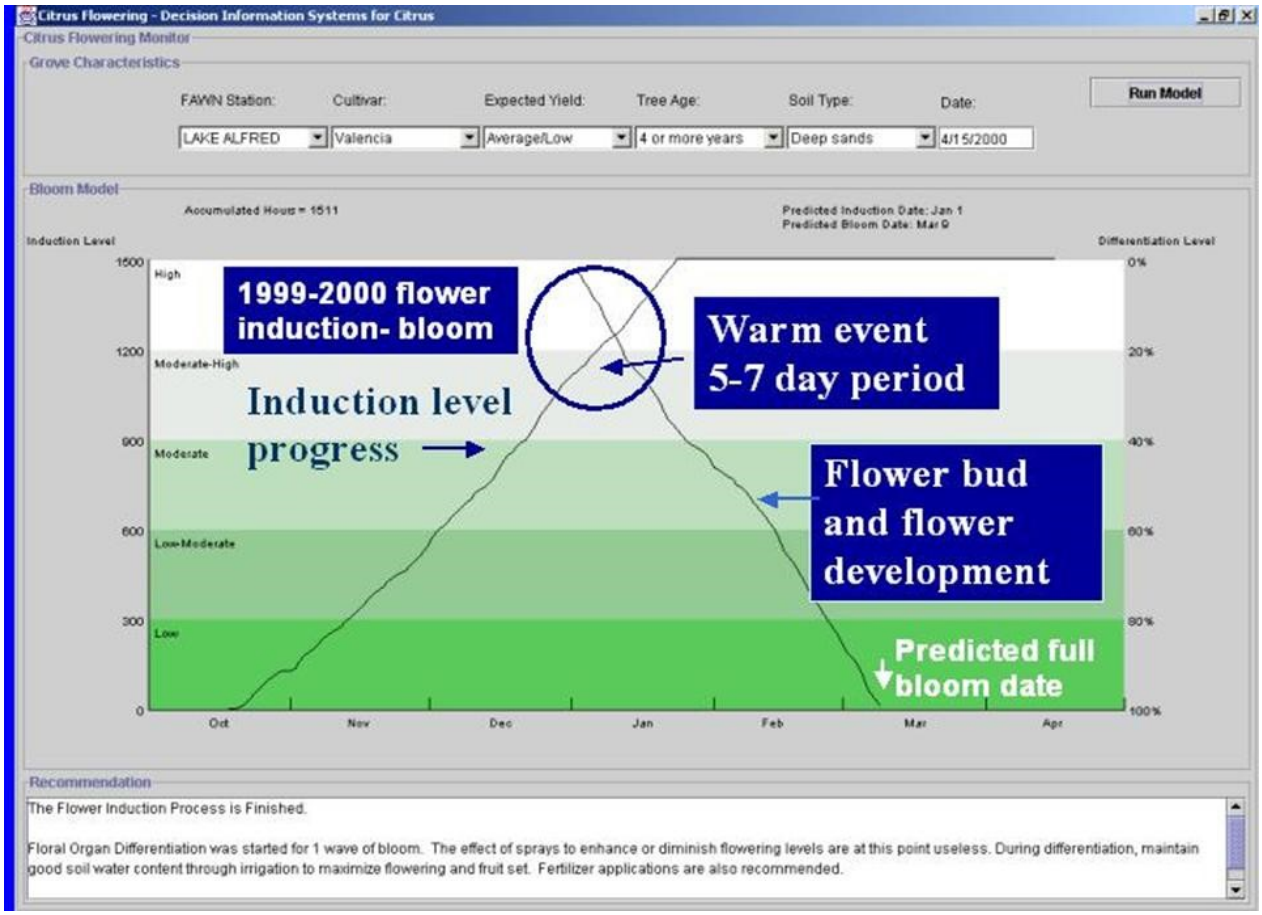
In the shallow soils of bedded groves, it is relatively easy to create sufficient water stress to suppress growth by withholding irrigation for a few days if no rains occur. In deeper, sandy soils, 2 or more weeks without irrigation or rainfall may be required. To minimize the time required for soil 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 pre-HLB studies, Valencia trees in Central Florida had good flowering and no apparent impact on current crop when irrigation was stopped in early December and resumed in the spring. **Unfortunately, with poorer root systems associated with HLB, trees are likely to be under some water stress much of the dry fall, even with normal irrigation practices. This has led to unwanted early flowering (late Dec. to Feb.) due to water stress induction of flower buds. For this reason plus associated preharvest fruit drop, drought stress management of flowering is not a good option for HLB infected trees, essentially all citrus trees in Florida.**

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 after the second warm period.

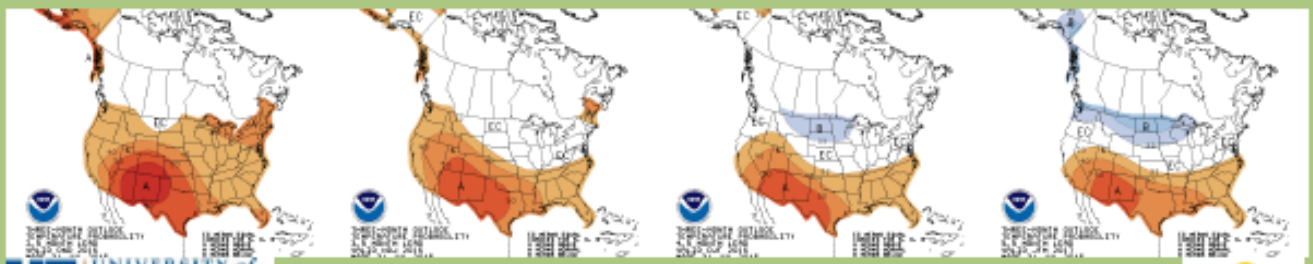
Much of what has been stated above has now been incorporated into a 'Citrus Flowering Monitor Expert System for Florida'. Figure 1 represents the different aspects of flower induction as depicted by the software program. The program gives an average bloom situation represented by the shades of green to white, vegetative to heavy flowering, respectively. The left side line tracks low temperature accumulation. 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. The right side line(s) track flower bud initiation and development to full bloom. Recommendations (text below graph) consider the current crop level in assessing when action should be taken to try to reduce or to enhance initiation in the flower bud development process. The system is available on-line: http://disc.ifas.ufl.edu/bloom . The on-line version can be used to evaluate any previous

year back to 1998-99 by putting in a March or April date for a FAWN location of your choice in the menu.

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 a previous background introduction for previous important yield responses to cool temperatures: **FLOWER BUD INDUCTION ADVISORY #1 for 2012-2013.**
If you have any questions, please contact me (albrigo@ufl.edu).



Winter Weather Watch



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IFAS Extension
Polk County Extension

Polk County Cooperative Extension Service
Phone: 863-519-1052
Email: wcoswalt@ufl.edu

POLK COUNTY

UF/IFAS Polk County Cooperative Extension Service

The 2016 - 17 version of the Winter Weather Watch will begin on November 15, 2016. Time is short so send in your subscription form to receive timely agricultural winter weather forecasts and information.

The 2016-17 edition of the Polk County Winter Weather Watch program will begin on November 15, 2016. The program provides growers with winter weather forecast information specifically geared toward agricultural interests in West Central and Southwest Florida. The program provides subscribers with an unlisted phone number for (24 hour/7 days a week) access to daily weather forecasts. The zone forecasts are from the National Weather Service (NWS) and are listed on the automated phone menu, so you can select the products you are interested in. Forecasts include the zone forecasts, 6-10 and 8-14 day outlook forecasts. In addition to the forecasts we have special weather narratives provided as needed in the event of freezing temperatures and a weekly outlook. When freezing temperatures are predicted in our area additional updates will include the afternoon zone forecast and the modified sunset brunt minimum temperature equation. If this is not enough we will also provide the weekly citrus leaf freezing temperatures and the 2016-17 Winter Weather Watch manual. You will also have access to weather data from seven Polk County Citrus Extension Weather Stations.

Subscriptions for the Winter Weather Watch program are only $100.00 for the entire 4 month period (Nov 15 to Mar 15). The cost is about the same as one tank of gas for your pickup truck. You can subscribe to the Winter Weather Watch by completing and returning the enclosed "subscription form".

Forecast Schedule

The following schedule lists the products available from the Winter Weather Watch. The times and specific days of week and the forecasted minimum temperature dictate when these forecasts products will be updated. Our Winter Weather Watch area includes the following areas by county: Pasco, Hillsborough, Polk, Highlands, Hardee, Manatee, Sarasota, DeSoto, Charlotte, Lee, Glades, Hendry and Inland Collier Counties.

FORECAST SCHEDULE

Forecast Product	Above 32	32º	Below 28
Zone	Daily 8:30 a.m.	Daily 8:30 a.m.	Daily 8:30 a.m.
6-10 & 8-14 Day Outlooks	Mon/Wed/Fri 8:30 a.m.	Mon/Wed/Fri 8:30 a.m.	Mon/Wed/Fri 8:30 a.m.
Weekly Outlook	Friday 5:00 p.m.	Friday 5:00 p.m.	Friday 5:00 p.m.
Leaf Freezing Temperatures	Friday 5:00 p.m.	Friday 5:00 p.m.	Friday 5:00 p.m.
Special Weather Narratives	As Needed	Daily 4:00 p.m.	Daily 4:00 p.m.
Afternoon Zone	None	Daily 5:30 p.m.	Daily 5:30 p.m.
Sunset/Brunt	As Needed	As Needed	Daily 7:00 p.m.

2016 – 2017 WINTER WEATHER WATCH PROGRAM

NOVEMBER 15, 2016 TO MARCH 15, 2017
REGISTRATION FEE: $100.00

It's once again time to register for the upcoming 2016 - 2017 Winter Weather Watch Program. Upon receiving your $100.00 registration payment, you will be sent an unlisted telephone number with which you can retrieve the latest **Ag Forecasts**, 24 hours a day. **Please do not give this number to others**. The *Winter Weather Watch Program* is funded by the registration fees to pay for telephone equipment rentals, long distance calls, repairs and our meteorologist.

2016 - 2017 Winter Weather Watch Program

NAME:_____ PHONE NUMBER:_____

COMPANY:_____

MAILING ADDRESS:_____

EMAIL ADDRESS:_____

CITY:_____ZIP CODE:_____

REGISTRATION FEE $100.00

PLEASE RETURN THIS REGISTRATION FORM AND YOUR CHECK PAYABLE TO:

POLK COUNTY EXTENSION CITRUS ADVISORY COMMITTEE
PO BOX 9005, DRAWER HS03
BARTOW, FL 33831-9005

HEDGING, TOPPING, AND SKIRTING CITRUS TREES

The interception and utilization of sunlight should be an important consideration in citrus grove design. The effect of insufficient light is frequently observed in mature citrus groves that are not pruned (hedged, topped) regularly. Shading reduces yield and foliage on the lower parts of the trees. Sunlight not only influences flowering and fruit set but also enhances fruit quality and color development. Increased sunlight penetration within the tree canopy might also allow foliage to dry quicker after a rain shower and could help reduce establishment of fungal pathogens. Therefore, adjustments must be made in tree height and hedging angle to maximize sunlight interception.

Hedging and topping are important cultural grove practices. Severe hedging or topping of citrus trees during the winter can reduce cold hardiness. Trees with exposed internal scaffold wood and new tender growth are susceptible to cold injury.

In general, tree response to hedging and topping depends on several factors including variety, rootstock, tree age, growing conditions, time of pruning, and production practices. No one system or set of rules is adequate for the numerous situations encountered in the field. Growers are encouraged to gain a clear understanding of the principles involved in hedging and topping, and to take advantage of research results as well as consulting knowledgeable colleagues and custom operators for their observations.

Figure 1. Crowded trees needing hedging

Hedging should be started before canopy crowding (Figure 1) becomes a problem. As a general rule of thumb, pruning of branches greater than 0.13”- 0.25” in diameter should be avoided. Developing a pro-active pruning program should assist managers in removing the right-sized branches. Removal of a significant portion of the tree will result in excessive vegetative growth and a drastic reduction in subsequent yield. Hedging is usually done at an angle, with the boom tilted inward toward the treetops so that the hedged row middles are wider at the top than at the bottom. This angled hedging allows more light to reach the lower skirts of the tree. Hedging angles being commonly used vary from 10 to 15 degrees from vertical.

Topping should be done before trees have become excessively tall and should be an integral part of a tree size maintenance program. Long intervals between toppings increase the cost of the operation due to heavy cutting and more brush disposal. Furthermore, excessively tall trees are more difficult and expensive to harvest and spray. Topping trees will improve fruit quality and increase size. Some common topping heights are 10 to 12 ft at the shoulder and 13 to 14 ft at the peak (Figure 2). As a general rule,

topping heights should be two times the row middle width.

Figure 2. Topping and hedging of large citrus trees

After severe hedging or topping, heavy nitrogen applications will produce vigorous vegetative regrowth at the expense of fruit production. Therefore, nitrogen applications should be adjusted to the severity of hedging and/or topping. Reducing or omitting a nitrogen application before and possibly after heavy hedging will reduce both costs and excessive vegetative regrowth. Light maintenance hedging should not affect fertilizer requirements.

Large crops tend to deplete carbohydrates and results in a reduced fruit yield 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 is recommended because it can help reduce alternate bearing which can be a significant problem in Valencia and Murcott production.

Severe hedging may create problems of brush disposal (Figure 3) and stimulates vigorous new vegetative growth, especially when done before a major growth flush. This happens because an undisturbed root system is providing water and nutrients to a reduced canopy area. The larger the wood that is cut, the larger is the subsequent shoot growth. Severe pruning reduces fruiting and increases fruit size.

Figure 3. Heavy hedging may create problems of brush disposal

The best time of year to hedge and/or top depends on variety, location, severity of pruning, and availability of equipment. Since pruning is usually done after removal of the crop, early maturing varieties are generally hedged before late maturing varieties. Most growers prefer to hedge before bloom, but trees will get more vegetative regrowth, which may not be desirable. Pruning could begin as early as November prior to harvesting in warmer areas. During this period, pruning operations should only cut minimal foliage and fruit from the trees.

Valencia trees may be hedged in late fall with only minimal crop reduction when the hedging process removes only a small amount of vegetative growth. In cases where excessive growth is to be removed, the trees are usually harvested before hedging is conducted. Light maintenance pruning can be done throughout the summer and until early fall with little or no loss in fruit production. Moderate to severe pruning should not continue into the winter in freeze-prone areas, as trees with tender regrowth are susceptible to cold injury.

With citrus canker and greening diseases, selecting the best time for hedging and topping is becoming more complicated. New growth flushes promoted by hedging

and topping in late spring, during the summer, and early fall can increase the population of leafminers and psyllids and aggravate the spread of citrus canker and greening. Declining trees with defoliated tops, dieback, reduced cropping, and severe root loss due to citrus greening are being hedged and topped to help balance the shoot to root ratio to improve tree performance and extend tree longevity.

Figure 4. Skirted and hedged citrus trees

Skirting is the pruning to raise tree skirts (Figure 4). Without skirting, the movement of herbicide booms and mechanical harvesting equipment is impeded. Fruit and limbs near the ground are often damaged by the passage of such equipment and by herbicide spray and fertilizer contact. Skirting allows uniform distribution of granular fertilizers and good water coverage of microsprinkler irrigation systems under tree canopies. Skirting facilitates the inspection of microirrigation systems and reduces the incidence of Phytophthora foot rot and brown rot because it allows good air circulation.

HLB ESCAPE TREES

To accelerate citrus gene discovery for HLB tolerance/resistance, UF-IFAS Citrus Researchers and Extension Agents are working closely with the citrus industry. They would like to know about trees that appear to be doing better than their cohorts in groves declining from HLB. We need your help in reporting to us about escape trees or potential survivor trees in your groves. Please contact Mongi Zekri (maz@ufl.edu or 863 674 4092) or any other citrus extension agent to determine if your trees meet this research criterion.

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 Fax to 863 674 4636 or E-mail to maz@ufl.edu **Thank you for your input!!!**

Please circle or bold your answer

1	Was the information up to date and accurate?	Yes	No	Uncertain
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3	Was the information relevant to your situation?	Yes	No	Uncertain
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7 Overall, how do you feel about the Flatwoods Citrus Newsletter?

Satisfied Neither Satisfied Nor Dissatisfied 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

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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

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