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Flatwoods Citrus

Vol. 15, No. 1 **January 2012**

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/

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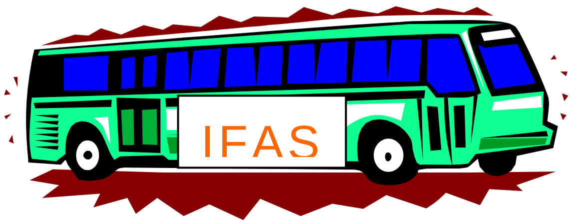
HENDRY COUNTY EXTENSION AG TOURS



Saturday, 4 February 2012
For more information or to sign up,
call Debra at 863 674 4092

The Florida Citrus Show in Fort Pierce, January 25-26 2012

For more information and registration, go to: http://www.citrusshow.com/

-- Workshop on CITRUS SCOUTING AND PEST MANAGEMENT

Speakers: Phil Stansly, Jawwad Qurashi, Moneen Jones, Barry Kostyk
Date: Thursday, February 16, 2012, Time: 10:00 AM – 12:00 Noon
Location: Southwest Florida REC (Immokalee).
No registration fee and lunch is free, but **pre-registration is required.**
2 CEUs for Pesticide License Renewal; 2 CEUs for Certified Crop Advisors (CCAs)

Annual Certified Pile Burners Course in SW Florida

Date & Time: Tuesday, 21 February 2012, 8:00 AM – 5:00 PM
Location: Southwest Florida Research and Education, Immokalee, Florida
The number of trainings offered and attendance at each training are LIMITED.
For more details and registration, go to: http://www.fl-dof.com/calendar/cal_pdf/PileBurner_Immokalee_Feb2012.pdf
or contact: Dr. Mongi Zekri, Office phone: 863 674 4092, maz@ufl.edu
Registration form is attached here (Page 21).

International Symposium on Mechanical Harvesting & Handling Systems of Fruits & Nuts

April, 2-4, 2012, Lake Alfred CREC
For more details and registration, go to:
http://conference.ifas.ufl.edu/harvest/

ANNUAL FLORIDA CITRUS GROWERS' INSTITUTE

Date & Time: Tuesday, 10 April 2012, 8:00 AM – 3:30 PM
Location: Avon Park Campus of South Florida Community College

IMPORTANT WEBSITES

Citrus Extension: http://www.crec.ifas.ufl.edu/extension/

Citrus Health Management Areas (CHMAs):

http://www.crec.ifas.ufl.edu/extension/chmas/chma_overview.shtml

Florida Citrus Extension Agents:
http://citrusagents.ifas.ufl.edu/Citrus_Agents_Home_Page/Citrus_Agents_Home.html

Southwest Florida Research and Education Center (SWFREC):
http://swfrec.ifas.ufl.edu/

Citrus Research & Education Center:
http://www.crec.ifas.ufl.edu/

Florida Citrus Resources: http://irrec.ifas.ufl.edu/flcitrus/

Florida Citrus Pest Management Guide:
http://edis.ifas.ufl.edu/topic_book_florida_citrus_pest_management_guide

Citrus Greening (Huanglongbing)
http://www.crec.ifas.ufl.edu/extension/greening/index.shtml

History | Regulations | Transmission | Pathogen | Alternate Hosts | Symptoms | Nutrient Deficiencies Compared to Citrus Greening | Diagnostics | Management | Photo Gallery | Links | Contacts

Citrus Canker
http://www.crec.ifas.ufl.edu/extension/canker/index.shtml

History | Eradication | Decontamination | Pathogen Symptoms & Susceptibility | Diseases Commonly Mistaken for Citrus Canker | Spread | Management | Links | Contacts

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CURRENT FLOWER BUD INDUCTION ADVISORY #3 for 2011-2012

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: Not good: the Flowering Monitor Systems indicates that trees in all areas except the southern-most growing region had their first wave of flower buds start growth after the first week of December with accumulated hours below 68 o F at low induction levels from 630 to 750 hours. I hope you had your blocks under moderate water stress to prevent this early start of growth. The continuous daily highs of about 80 o F were sufficient to start growth. There are another 5 days of these temperatures predicted and the flower buds on trees in southern areas probably will be growing also if not prevented by drought. If bud growth on trees has been prevented, accumulated hours of flower bud induction are now above 700 in all areas except the Indian River, which is below 500. From Polk County north, accumulated induction hours were above 700 for the first wave of flower bud growth, minimally acceptable for economic flowering levels. Since warm temperatures will continue for five more days, flower enhancing sprays will probably be beneficial, particularly for southern areas and if drought stress was not established. Growers can consider applying either 53 to 60 lbs of foliar urea/acre or a PO3 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 preferably before Christmas. These products apparently increase the stress level and enhance the amount of flowering induced by the cool temperatures.

If you have successfully established drought stress, trees should still be at rest and the weather until New Year's Day should be followed closely. After another 4 or 5 days of 80 o F, the temperatures are predicted to drop to the low 70s. As long as daytime highs stay near 70, the chance of tree growth should be minimal. If you get to the New Year without growth, flower bud induction levels should be adequate and normal irrigation can be resumed.

Have a Merry Christmas and New Year. The next advisory will be the first week of January.

If you have any questions, please contact me (albrigo@ufl.edu).

From: Phil Stansly pstansly@ufl.edu and
Moneen Jones mmjones2@ufl.edu

Gulf CHMA

The CHMA (Citrus Health Management Area) concept is evolving from an area-wide spray plan toward a more knowledge-based management system, thanks to monitoring efforts of the citrus health response program (CHRP) as well as individual growers. The goal of the CHRP program is to monitor 6,000 citrus blocks throughout the state every 3 weeks. Five 10-tap samples are taken in each block, one at each of 4 corners and the 5th in the middle. How can we use this information to fine tune and extend our ACP management efforts? Individual data points by TRS or "multiblock" number are available at www.flchma.org. Also available is a summary map showing upward or downward trends over the last two monitoring cycles. In an effort to provide a more complete picture of ACP count trends in the Gulf CHMA area, we have created an interactive map that allows the user to zoom in or out, choose monitoring cycles and identify hotspots.

Average ACP Per Cycle Map
(http://swfrec.ifas.ufl.edu/entomology/extension/chma/?dl=chmamap)

The interactive map has been designed to illustrate Gulf CHMA data from all the monitoring cycles spatially and temporally. Created using ArcMap 10 and exported as a .pdf file, anyone with Adobe Acrobat can open and use the map without having to purchase specialized software. A proportional circle symbol (i.e. ring) in designated colors represents a particular cycle, and the ring size the number of psyllid adults per 50 taps. The largest ring indicates psyllid numbers of 21 or greater per 50 taps. The map allows you to click different monitoring cycle layers on and off and view data for Cycle #, Cycle Date, County Name, Multi-block ID, and ACP #. Data for a particular multi-block can be viewed by just clicking on the circle ring. In addition, a layer of 'hot spots' representing multi-blocks that have had continuous high numbers of ACP counts for the previous three cycles is included on the map. An excel file also available for download on our website, ACP Locations Cycles, provides the user with the ability to view graphs of ACP totals for their particular location. We will update the map on the SWFREC website every three weeks. More detailed instructions can be found at: http://swfrec.ifas.ufl.edu/docs/pdf/entomology/chma/chma_map_instructions.pdf. Your input is important. Let us know what changes or improvements you would like to see.

Freeze Damage to Citrus Trees

Severe freezes can damage leaves, twigs, and even kill entire trees. Freeze damage to citrus occurs when water inside the fruit, leaves, and twigs becomes ice and ruptures the cell membranes. During the fall and winter, extended periods of cool weather prior to a freeze can allow citrus trees to harden and acclimate, and therefore withstand more cold weather than non-acclimated trees. On the other hand, freeze damage is more severe when it follows a warm spell. Because new growth is more susceptible to freeze damage, do not do anything that stimulates new growth during the winter.

Symptoms of Freeze Damage

The evidence of freeze damage to citrus fruit is the presence of ice crystals in the fruit. Ice formation inside the fruit usually ruptures the juice sacs. Within several days of warm weather after a freeze, water will be lost from the fruit causing a reduction in its juice content.

Following severe freezes, mature fruit should be harvested as soon as possible to minimize losses due to excessive fruit drop and reduction in juice content.

Freezes cause the leaves to dry out, curl, turn brown, and fall.

If twigs and wood have not been damaged severely, the leaves will rapidly shed.

If twigs or wood have been seriously damaged, the frozen leaves may remain attached on the tree for several weeks.

After a severe freeze, twig dieback can continue for a couple of years. Another sign of severe freezing damage includes splitting of barks.

The true extent of freeze damage to branches may not be clear within the first three months following a freeze. No attempt should be made to prune or even assess damage from freezes until at least the new spring flushes get fully expended and mature.

Care of Freeze-Damaged Trees

Pruning Freeze-Damaged Wood

No pruning should be done until late in the spring or the summer after a freeze. In early spring, freeze-damaged trees often produce new growth that soon dies back. Sufficient time should be given for the dying back to cease and for the new healthy growth to take place and fully expand. Experience has shown that early pruning does not promote recovery and that delaying pruning to the proper time will save money.

Irrigation & Fertilization

When leaves are lost, evaporation from the tree canopy is greatly reduced. Therefore, the amount of water required should be reduced. Over irrigation will not result in rapid recovery, but may cause root damage. Normal irrigation should be practiced when trees regain their normal foliage development and canopy density. Fertilization of freeze-damaged trees should also be reduced until the trees are back to their original size and their canopy is back to the original density.

Using Citrus Leaf Freezing Information to Determine Critical Temperature

http://fawn.ifas.ufl.edu/tools/coldp/crit_temp_select_guide_citrus.php

Chris Oswalt, Polk County Extension

E-mail Chris Oswalt

With the onset of cooler temperatures citrus trees cease active growth and become quiescent. This continued quiescence at lower temperatures results in a subsequent increase in cold hardiness termed acclimation. Citrus trees proceed through many changes during acclimation. These changes include: increases in sugars and amino acids with decreases in starch levels within plant tissues. Tissue moisture decreases along with increases in the stability and binding of cell water. These factors combine to increase the ability of citrus tissues to withstand the formation and presence of ice.

Citrus trees acclimated to cold temperatures have survive temperatures as low as 14°F. Acclimation is affected by exposure temperatures, scion cultivar, rootstock cultivar, rootstock/scion combination, tree nutritional status, crop load and water stress. Acclimation is dynamic and will change during the winter in response to warming exposure temperatures with a possible resumption of growth.

Leaf killing points vary in magnitude in response to the above conditions, although the predominate factor, would be exposure temperatures. Studies of citrus leaf killing point temperatures clearly indicate that citrus trees grown in more northern growing areas acquire greater acclimation than trees grown in growing regions further south. Trees grown in southern regions of the state are also more susceptible to active growth due to favorable growing conditions during the winter.

Non-acclimated citrus leaves will generally survive to temperatures of 24°F. New spring flush leaves formed in April will rarely survive temperatures of 31°F, by mid-May these leaves will have similar leaf killing points to mature leaves. Research studies indicated that citrus leaf killing points can range from 16°F to 24°F during the winter with a Satsuma cultivar reaching 14°F during one year. Field observations indicated that these leaf killing point values hold up in a number of freezes.

Citrus Leaf Killing Temperatures for Florida Citrus

Location	Variety/Rootstock	11/28/2011	12/05/2011	12/12/2011	12/19/2011	12/26/2011
Balm	**Hamlin/Swingle**	**25**	**24**	**24**	**22**	**21**
Ft. Meade	**Valencia/Carrizo**	**24**	**24**	**24**	**21**	**21**
Frostproof	**Hamlin/Swingle**	**24**	**24**	**24**	**21**	**21**
Green Swamp	**Hamlin/Swingle**	**24**	**22**	**23**	**20**	**21**
CREC	**Valencia/Carrizo**	**23**	**21**	**24**	**21**	**21**
Conserv A	**Hamlin**	**24**	**22**	**22**	**21**	**20**
Conserv B	**Valencia**	**22**	**23**	**23**	**20**	**21**
Umatilla		**21**	**24**	**23**	**20**	**20**

HEDGING AND TOPPING CITRUS TREES

Hedging and topping is an important cultural grove practice during late fall and winter. 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 more susceptible to cold injury.

In general, tree response to hedging and topping depends on several factors including variety, tree age, vigor, growing conditions, 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, topping, and to take advantage of research results as well as consulting knowledgeable colleagues and custom operators for their observations.

Hedging should be started before canopy crowding becomes a problem that would cause cutting of small 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 used vary from 0 to 25 degrees from vertical, with 10 to 15 degrees being more commonly used.

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 increases the cost of the operation due to heavy cutting and more brush disposal. Excessively tall trees are more difficult and expensive to harvest and spray. Topping trees will increase fruit quality and size. Some common topping heights are 12 to 14 ft at the shoulder and 15 to 16 ft at the peak.

Excessive nitrogen after severe hedging or topping will produce vigorous vegetative growth at the expense of fruit production. Therefore, nitrogen applications should be adjusted to the severity of hedging and/or topping. Reducing nitrogen applications avoids an imbalance when heavy pruning is done. Reducing or omitting a nitrogen application before and possibly after heavy hedging will reduce both costs and excessive vegetative growth. However, light maintenance hedging should not affect fertilizer requirements.

Large crops tend to deplete carbohydrates and results in a reduced crop and increased vegetative growth the following year. Pruning after a heavy crop additionally stimulates vegetative growth and reduces fruit yield the following year. Pruning after a light crop and before an expected heavy crop is recommended because it can help reduce alternate bearing which can be a significant problem in Valencia and Murcott production.

Severe hedging 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 leaf area. The larger the wood that is cut, the larger is the subsequent shoot growth. Severe pruning reduces fruiting and increases fruit size.

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 later maturing varieties. Many prefer to hedge early before bloom, but they may also get more vegetative regrowth, which may not be desirable. Pruning could begin as early as November in warmer areas. Valencia trees may be hedged in the 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 more susceptible to cold injury. With the finding of citrus greening disease, 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 psyllids and aggravate the spread of citrus greening. For more information on pruning, go to http://edis.ifas.ufl.edu/HS290

From: **Citrus Industry magazine**
December 2011

FACTORS AFFECTING CITRUS FRUIT PRODUCTION AND QUALITY

By Mongi Zekri

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

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

It is well documented that vegetative and reproductive (fruit) growth compete for available resources, such as carbohydrates (sugars) and mineral nutrients. Flushes of heavy vegetative growth will reduce the resources available to developing fruit, resulting in fruit with lower total soluble solids (TSS). A period of dormancy, during which there is little or no vegetative growth, reduces this competition for resources and results in fruit with increased TSS. The competition for resources between vegetative and reproductive growth is one of the reasons that citrus fruit grown in tropical climates tend to have lower TSS than those grown in subtropical climates.

CLIMATE

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

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

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

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

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

GROWTH REGULATORS

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

Gibberellic acid (GA) is recommended for citrus hybrids that are weakly parthenocarpic and without sufficient cross-pollination to improve fruit set. Applied from full bloom to two-third petal fall, GA can effectively set and produce an excellent crop of seedless ‘Robinson’, ‘Nova’, ‘Orlando’, ‘Minneola’, or other self-incompatible mandarin hybrids. Application of GA to citrus fruit approaching maturity enhances peel firmness and delays peel senescence.

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

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

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

CULTIVAR/ROOTSTOCK

The most important determinant of fruit production and quality under the grower’s control is cultivar selection. Under comparable conditions, ‘Hamlin’ orange always has poorer juice color and lower TSS than 'Midsweet' or 'Valencia' orange. On the other hand, 'Hamlin' produces higher, more consistent yields per acre than any other sweet orange cultivar. Worldwide, 'Valencia' produces premium quality fruit with excellent internal quality, high sugars, superior flavor, and deep orange juice color at maturity.

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

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

Cultivars on slower-growing rootstocks generally do not produce vigorous vegetative growth, but tend to produce small to medium size fruit with smooth peel texture and good quality fruit with high TSS and acid content in the juice. This latter group of rootstocks includes trifoliate orange and some of its hybrids (citranges and citrumelos). Sweet oranges budded on 'Carrizo' citrange have been among the most profitable combinations over the long term in Florida. Planted on the right soils, trees on 'Swingle' citrumelo are very productive at high-density plantings.

IRRIGATION AND NUTRITION

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

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

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

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

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

SUNLIGHT AND PRUNING

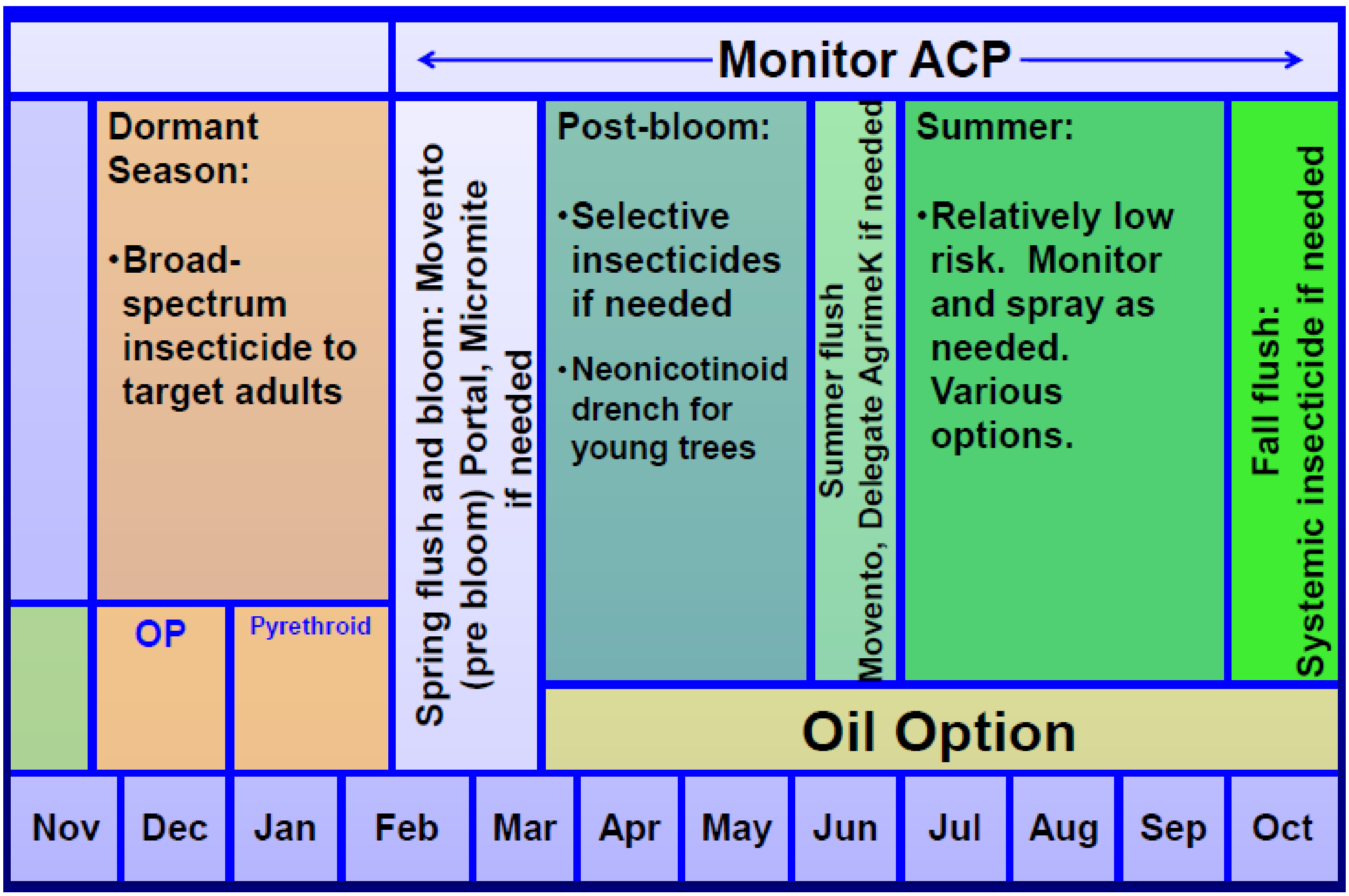
Even though citrus trees can tolerate shade and still flower and fruit, maximum flowering occurs when trees are grown in full sun and light penetration through the canopy is maximized. Therefore, pruning, including topping and hedging, to avoid crowding is extremely important for optimum flowering. The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

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

CONCLUSION

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

One of the Psyllid Management Programs by Dr. Phil Stansly



REGISTRATION FORM

Florida's Certified Pile Burner Program

Tuesday, February 21st, 2012

c/o Dr. Mongi Zekri
UF-IFAS Hendry County Extension Office
P.O. Box 68
LaBelle, FL 33975-0068

Registration is required to attend and class size is limited to the first 50 people.

Registration fee: $50

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

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

Dr. Mongi Zekri
University of Florida IFAS
Hendry County Extension Office
P.O. Box 68
LaBelle, FL 33975-0068

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(Membership fee is $25 per year. Please make checks payable to SWFREF, Inc.)

Please place form in envelope and mail to address on brochure (Attn: Kris Sytsma).

To make a tax-deductible donation to the Southwest Florida Research and Education Foundation, please indicate on your check subject line whether the gift is for the foundation's general use or for a specific foundation project (i.e. the ICP).

A general-use contribution may be submitted on its own, with the check made payable to the Southwest Florida Research and Education Foundation, Inc. A specific-use contribution must be accompanied by a letter stating how the donation is to be used by the foundation, with the check made payable to the University of Florida SHARE.

For more information, please contact John Dunckelman or Bob Rouse at 239-658-3400.

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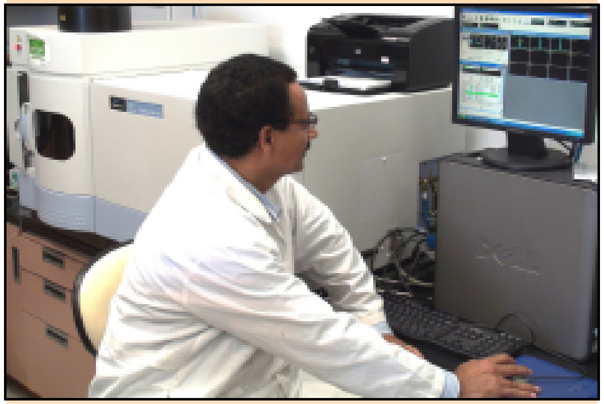
Mission Statement

The Southwest Florida Research and Education Foundation (foundation/SWFREF), Inc., is a Direct Support Organization to the University of Florida established in 1992 as a 501c3 tax-exempt corporation by the agricultural producers of southwest Florida. **The Corporation is organized exclusively to further the education, research and service mission and goals of the University of Florida by providing research and educational support to the UF/IFAS Southwest Florida Research and Education Center (SWFREC).** The SWFREC has provided teaching, research and extension service to citrus, vegetable and sugarcane growers in Charlotte, Collier, Glades, Hendry and Lee counties since its designation as a research and education center in 1986.

Priority Funding Need

We are currently seeking matching funds for money provided by the Dean for Research to purchase an ICP (Inductively Coupled Plasma) Spectrometer to perform mineral analysis on soil & plant tissues in our citrus HLB and plant nutrition research. Improved capability to process soil and plant samples at SWFREC is imperative so that results of our research projects, particularly those dealing with plant nutrition (e.g. HLB and BMPs), can be delivered to stakeholders in a timely manner. Until recently, we had to send materials off to other stations and wait in line for the analysis to be sent back to us, often months. Our existing spectrometer is outdated and not capable of performing the analysis needed. The new instrument will allow the processing of samples rapidly and accurately, which is necessary for timely results and recommendations to be used by growers in the fight against HLB. Our goal is $40,000 in matching funds.



Highlights of Foundation Support to UF, SWFREC & Growers

- Nutrient/SARs experimentation on HLB-infected trees
- Entomological trials for psyllid control and dormant spray recommendation
- Seed sources developed for propagation of new rootstocks
- Insecticide, herbicide, and fungicide management and product evaluation trials
- High-density "concept" grove planting to explore mechanical harvesting and Open Hydroponic System
- Scion evaluations on various rootstocks
- Screenhouse structures evaluated for production of disease-free stocks
- Evaluation of windbreaks for disease management and protection
- Supplementary support of vegetable and sugarcane research in areas including nutrition, irrigation and pest control
- Evaluation of alternative crops (e.g. stone fruit)
- Support of reference library

Support Your Foundation: Act Today!

If you would like to **become a member** of the foundation to show your support (membership fee is $25 a year), please make checks payable to: Southwest Florida Research and Education Foundation, Inc. Complete the green form on the back to include with your check.

To **make a donation** to the foundation, please see the instructions included in the yellow section on the back.

Without your past gifts, the foundation would not have been able to create a research grove. Likewise, continued support is required to maintain the grove now and in the future.

For further information on **how to make a tax-deductible donation** to the foundation, please contact interim center director John Dunckelman or citrus horticulturalist Bob Rouse.

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.

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Multi-County Citrus Agent
Hendry County Extension Office
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__Asian American
__Hispanic
__White, non-Hispanic
__Black, non-Hispanic

Gender

__Female

__Male