



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



Vol. 6, No. 12

December 2003

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



UPCOMING EVENTS

Tuesday, December 16, 2003, 10:00 AM – 12:00 Noon

Immokalee IFAS Center

Sensitivity of Flatwoods citrus to phosphorus and potassium, and How to adjust fertilizer programs based on leaf and soil analysis?

The Scotts approach to citrus reset fertilization.

Speakers: Drs. Tom Obreza and Andree-Anne Couillard

2 CEUs for Certified Crop Advisors

Sponsor: The Scotts Company

To reserve a free lunch, call 863 674 4092 no later than Monday, 15 Dec 2003.

Wednesday, January 14, 2004, 9:00 AM – 4:00 PM,

Hendry County Extension Office, LaBelle

Workshop on scouting for pests and diseases. **Registration form is enclosed.**

Speakers: Drs. Pete Timmer, Steven Rogers, and Phil Stansly

6 CEUs for Pesticide License Renewal, 6 CEUs for Certified Crop Advisors

Sponsor: Shelby Hinrichs, Nufarm Agriculture USA

If you want to print a color copy of the Flatwoods Citrus Newsletter, get to the Florida Citrus Resources Site at <http://flcitrus.ifas.ufl.edu/> You can also find all you need and all links to the University of Florida Citrus Extension and the Florida Citrus Industry

Immokalee IFAS Center

Tuesday, January 20, 2004, 9:00 AM – 3:00 PM

Workshop Using organic amendments in citrus production. **Agenda is enclosed.**

Speakers: Drs. Jim Ferguson, Tom Obreza, Jim Graham, Monica O. Hampton, and more

2 CEUs for Pesticide License Renewal

4 CEUs for Certified Crop Advisors

Sponsor: Les Kemp, Syngro, Inc.

Lake Alfred CREC

January 21, 2004, 9:00 AM – 4:35 PM

Workshop Precision Agriculture for Florida Citrus

For more information, contact William Miller or Monica Lewandowski at 863 956 1151

Indian River Citrus Seminar

January 27–28, 2004

For more information call 561 468 3922 or 561 462 1660

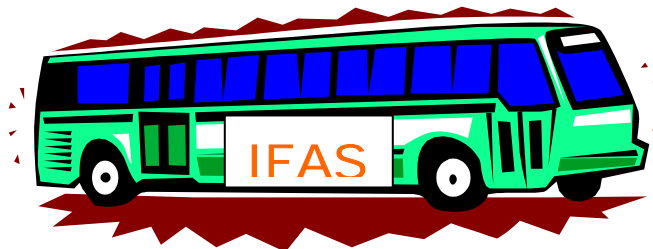
INTERNATIONAL SOCIETY OF CITRICULTURE

10th International Citrus Congress

February 15-20, 2004, Agadir, Morocco

http://www.lal.ufl.edu/ISC_Citrus_homepage.htm

COLLIER COUNTY EXTENSION AG TOURS



Wednesday 17 March and Friday 19 March 2004

For more information, call the Collier County Extension Office at 239 353 4244

FACTS ABOUT GRAPEFRUIT AND GRAPEFRUIT JUICE



By

Florida Department of Citrus

<http://www.floridajuice.com/floridacitrus/intro.html>

Iron Deficiency. Seventy-seven percent of American women under the age of 50 are iron deficient. Consuming citrus foods like grapefruit and grapefruit juice can help boost the absorption of non-heme iron (the iron found in plants—not meat products). What this means is that if you drink a glass of grapefruit juice before you eat a spinach salad – your body absorbs two to four times as much iron. This is great news for young women, female athletes and vegetarians – all susceptible to iron deficiencies.

Healthy Heart. Florida Grapefruit is the first fresh produce item to receive the American Heart Association heart-check mark—designating foods low in sodium, cholesterol and fat.

Dietary Fiber. One half of a Florida grapefruit has more dietary fiber (six grams) than many other popular fruits, including bananas, apples and strawberries. In recent years, low fat diets high in fruits and vegetables containing dietary fiber have been shown to have a variety of health benefits, specifically the reduction of risk of cardiovascular disease and cancer.

Cholesterol. The high level of pectin fiber found in citrus fruits like grapefruit may also help to maintain healthy cholesterol levels.

Antioxidants. One half of one medium grapefruit gives you 110% of the current daily value of vitamin C. Vitamin C is an important anti-oxidant, which neutralizes "free radicals" that are released in the body during oxidation. Many scientists believe that cell damage caused by free radicals may contribute to the development of chronic diseases like heart disease and cancer.

Losing Weight. Americans trying to lose weight should consume fruits and vegetables with high fiber and water content—like grapefruit. Grapefruit is fat free and contains 60 calories per serving and actually takes the "edge" off your appetite to avoid overeating.

Potassium. A deficiency of potassium is sometimes caused by dehydration of diuretics such as coffee or tea. To overcome this loss, physicians recommend eating more foods that supply potassium. A serving of grapefruit provides 188 mg, which is seven percent of the daily value.

Cold Season. When you get a cold it's important to give your body the fluids and nutrients that it needs. A serving of grapefruit provides more than 100 percent of the daily value for vitamin C, which is important to support a healthy immune system. In fact, some research suggests that vitamin C may shorten the duration and/or lessen the severity of colds.

Improve Your Smile. Vitamin C is an essential nutrient for healthy skin and gums.

UREA

Urea is a white crystalline substance with the chemical formula $\text{CO}(\text{NH}_2)_2$; it is highly water-soluble and contains 46% nitrogen (N). Urea is considered an organic compound because it contains carbon.



Incorporate Urea for Best Use

Nitrogen from urea can be lost to the atmosphere if urea remains on the soil surface for an extended period of time during warm weather. The key to the most efficient use of urea is to incorporate it into the soil. It may also be blended into the soil with irrigation water. A rainfall as little as 0.2 inch is sufficient to blend urea into the soil to a depth at which ammonia losses will be minimized.

Advantage of urea for foliar application of N

Urea is the best source of nitrogen for aerial application. Use of urea compared to other nitrogen fertilizers offers several advantages. Urea is taken up rapidly by plants. Research has shown that up to 50% of the urea can be taken up within 30 minutes. Second, there is reduced foliar burn due to salt injury because the nitrogen is organic rather than a fertilizer salt.

Guidelines for foliar applications of urea

Urea uptake is increased under mildly acidic conditions so the pH of the solution should be buffered to about 5.5 to 6.5 for maximum uptake. When the pH of the solution exceeds 7, the possibility of free ammonia exists, and the potential for leaf burn increases dramatically. Low-biuret urea solution specifically manufactured for foliar application can be buffered to eliminate free ammonia and a special dye can be added to act as a visual indicator of the solution pH. For citrus, the quantity of nitrogen applied at one time should not exceed 28 lbs (60 lbs of urea) per acre.

Winter application (6 to 8 weeks before bloom) of low biuret urea at 10-15 gal (18-28 lbs N) per acre can increase flowering and fruit set.



Biuret

Biuret is formed during the manufacturing of urea. It is two urea molecules joined together accompanied by the removal of an ammonia molecule. Biuret is of little concern for soil-applied nitrogen fertilizers, but it can be toxic when nitrogen fertilizers containing biuret are foliar-applied to sensitive crops such as citrus. Research data indicate that urea should contain no more than 0.25% biuret for use in foliar sprays.

Special Thanks to the following 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.

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Fax: 239 995 0691

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LaBelle, FL 33975
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Fax: 863 675 2104

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PESTICIDE NEWS!

PESTICIDE CERTIFICATION OFFICE

SEPTEMBER 2003

Pesticide Recordkeeping

Proper recordkeeping of pesticide applications is an important part of a comprehensive integrated pest management (IPM) plan.

Additionally, Florida Pesticide Law and the US Department of Agriculture (USDA) both require pesticide application records of Restricted Use Pesticides (RUPs) applied. Refer to the enclosed pamphlet for more information about the benefits and requirements of keeping pesticide application records. The enclosed record keeping form can be used to keep the required records or you can make your own, as long as it has all the required elements.

The Federal Worker Protection Standard (WPS) also contains a recordkeeping requirement. The WPS requires agricultural establishments (farms, forests, nurseries and greenhouses) to post pesticide application records for pesticides applied at that establishment in a central location. The required records for WPS are different from those required by the State and USDA and are not related to whether the applied pesticide is an RUP. Refer to our website at <http://www.safepesticideuse.com> for more information on recordkeeping and WPS.

Our Website

Did you know our office has a website that makes it easier than ever to get law and rule updates and pesticide news? You'll find lots of information about all our programs including licensing, recertification, Worker Protection Standard and Temik permits. You can also download forms, get helpful links and look up license numbers, expiration dates and Authorized Purchasing Agents listed on your license! Our site is located at <http://www.safepesticideuse.com>

Additionally, IFAS has some valuable pesticide certification and licensing information at their website which can be found at <http://pested.ifas.ufl.edu/>

CEU Class Search

Do you need to find CEU classes to renew your license? You can now go online and search for CEU classes according to date ranges, class locations, license categories or educational provider. Maybe you are lacking those elusive Core CEUs but can only attend a class during the month of October and are limited to Miami-Dade County. Maybe you just got your license and want to stay ahead of the game and begin earning Private Applicator CEUs in Orange and surrounding counties right away. Maybe you want something you can do through the mail or online. You can search for all of this at our website. No user names or passwords or logons are required. You'll have instant access to all the CEU classes available, the credits awarded and all the contact information you'll need. For most classes, you'll even be able to view the class agenda.

Coming Soon

Coming soon...exam scores online and credit card payments for license fees. Watch our website for updates!

Pesticide Security

Pesticide applicators need to be aware of the possibility that pesticides and fertilizers can be used as instruments of terror. Keep in mind the following recommendations when developing a comprehensive pesticide security plan:

- Keep agrichemicals locked at all times and do not allow unauthorized access.
- Be aware of suspicious persons or activities around areas where pesticides and fertilizers are stored.
- Report suspicious activity or missing products to local law enforcement.
- Maintain an updated inventory of products and perform routine inventory inspections.
- List contact and emergency phone numbers outside of the storage facility.
- Keep pesticide application equipment secure.

- Establish contact with local law enforcement so they can be aware of hazardous materials on your property.

A good document with security information on pesticides and fertilizer is online at <http://www.aradc.org/secureagribusinessguidelines.pdf>

New CEU Requirements

Be aware that the CEU requirements for license recertification are changing. Starting January 1, 2005, licensees must earn 4 Core CEUs to renew their license. This is in **addition** to the CEUs required for each category. However, you will only need to earn 4 Core CEUs regardless of the number of categories on your license. For example, beginning January 1, 2005, Private applicators must earn 8 CEUs in the Private category **plus** 4 Core CEUs for a total of 12. If you are an applicator licensed in the Aquatic and Right of Way categories you'll need 16 Aquatic CEUs, 8 Right of Way CEUs and 4 Core for a total of 28 CEUs. This means that anyone who has a license that expires in January 2005 or later will have to meet the new requirements. So, plan ahead and get your CEUs early during your license period to avoid problems later. Don't forget, you can still retake exams at your county extension office to renew without having to earn any CEUs.

O&T or L&O

There always seems to be confusion on what types of applications are covered by the Ornamental and Turf category (issued by the Bureau of Compliance Monitoring) versus the applications covered by the Limited Lawn and Ornamental (L&O), Commercial L&O and the Limited Commercial Landscape Maintenance certificates (each of which are issued by the Bureau of Entomology and Pest Control). Although it would be impossible to cover every scenario in one newsletter, we will try to shed some light on this often confusing subject.

Let's start with the Ornamental and Turf license. This license is most commonly used for RUP applications to golf courses, parks, cemeteries and athletic fields. However, it does not include applications to structures or dwellings in or adjacent to these areas or the lawns associated with these structures. These areas are covered by Bureau of Entomology certifications. For some of the gray

areas where some interpretive guidance is necessary, use a general rule of thumb that says if the area in question is within 10 feet of a structure, then it is covered by an Entomology certification.

The Limited L&O certificate is for business owners or employees who apply pesticides to property owned or leased by that business, or for government employees applying pesticides to government owned or leased property. The sites that can be treated with this certification are lawns and ornamental plants associated with public buildings or business facilities (structures) such as office complexes, schools, hospitals, nursing homes, restaurants, apartment/condo complexes, etc.

The Commercial L&O certificate is for individuals employed by licensed pest control companies who make or supervise pesticide applications on a commercial (for hire) basis to lawns and ornamental plants associated with buildings. Residential as well as business lawns and ornamentals may be treated with this certification. Common uses for this certification are contract lawn and ornamental pest control at homes, apartment/condo complexes, and public and commercial buildings (banks, restaurants, grocery stores, schools, hospitals, nursing homes, libraries, etc.).

The Limited Commercial Landscape Maintenance certificate is for individuals who make limited pesticide applications to ornamental plants and plant beds as part of a landscape business. No applications to lawn or turf are authorized with this certificate. These certificate holders are limited to using only herbicides, insecticide products with the signal word "Caution" on the label, and spray tanks of no more than 5 gallon capacity. No power equipment is allowed. Typical application sites are ornamentals and plant beds around homes, apartment/condo complexes, and public and commercial buildings (banks, restaurants, schools, hospitals, libraries, etc.).

Renewing Your License

Please hold on to your CEU attendance forms until it is time to renew your license, otherwise we will have to return them. You will receive a blue renewal notice in the mail approximately 60 days before your license expires. When you receive this notice simply fill it out completely and return it in the pre-addressed envelope along with your license fee and CEU

forms. Sign everything! This includes the renewal notice, CEU attendance forms and any other form you turn in to our office. Completely filling out and signing all necessary forms will help us get your license to you as quickly as possible.

Changes for Aerial Applicators

Aerial applicators no longer need to be licensed in categories other than aerial. On February 21st, 2002, the aerial category was changed from a secondary category to a primary category. The aerial category now covers all types of agricultural aerial pesticide applications. The CEU requirement for aerial applicators has gone up to 16 but you no longer need to renew the other primary categories that were on your license. Applicators that must renew after January 1, 2005 must meet the new core CEU requirements.

Another important change that affects aerial applicators is the new aircraft registration rule. All aircraft that make applications of pesticides, fertilizer or seed must be registered with our office (including mosquito control aircraft). Any transfer of aircraft ownership must also be reported. If you have not received an aircraft registration form, please contact our office so we can send you one or download the form from our website.

In addition to the new aerial CEU and aircraft registration rules, there are also new provisions for increased security of aircraft and of products applied aerially and special record keeping requirements of applied products during declared emergencies. Visit our website for specific information pertaining to all the new aircraft regulations.

Product Updates

Be aware of recent regulatory and labeling changes for pesticide products. Two commonly used products with recent changes in availability are chlorpyrifos (commonly known as Dursban or Lorsban) and diazinon. Most chlorpyrifos formulations are now labeled only for agricultural use and the emulsifiable concentrates are restricted use. If you have a chlorpyrifos product in stock, you are still permitted to apply it according to the label; however, you should be aware of possible changes in tolerances to crops.

The phase-out of diazinon products is ongoing. Retailers have discontinued the sale of diazinon products labeled for indoor use. However, under the current EPA agreement, about 70% of

current agricultural uses will be allowed to continue.

EPA is continuing to phase out additional pesticides, especially those classified as organophosphates. Other products that have seen or will see at least some registration cancellations or significant labeling changes include products containing methyl parathion, azinphosmethyl, fenamiphos, ethion and methyl bromide. Be aware of changes that might be affecting these or any other pesticides. One useful method to help applicators stay abreast of labeling and registration changes is to keep a current and thorough inventory of pesticide products. This will facilitate a revolving inventory where older products are used first and newer ones later where consequently, labeling information will be kept current.

Keep an eye out for upcoming changes in registrations and pesticide labels for products containing the active ingredient carbaryl. Proposed changes to these products would significantly affect their availability and use. Some of the risk mitigation measures that are proposed include modifications to the application rates and methods, increased restricted entry intervals (REIs) and cancellation of a variety of uses. No time frame is currently available for when these proposed measures might take place but changes are eminent.

Another pesticide with an uncertain future is antifouling boat paints containing the active ingredient tri-butyl tin (TBT). Many manufacturers have voluntarily cancelled their registrations of this product in response to a request from EPA. They have subsequently registered several replacement products containing primarily copper based active ingredients.

EPA has yet to remove TBT products from the market but this scenario is possible and contingent upon a pending International Marine Organization Treaty. You can contact our Pesticide Registration Office for the latest information regarding specific product labels and registration information at (850) 487-2130.

17 copies of the 140-page book entitled **“WORKER PROTECTION STANDARD FOR AGRICULTURAL PESTICIDES – HOW TO COMPLY”** are available for sale at the Hendry County Extension Office **(only \$3.00/copy).**

Change of Address

Don't forget to let us know if you've moved or are changing your mailing address. We need to have your correct address on file so we can notify you of important information and send your license renewal notice. We've enclosed a form you can fill out to notify us of any changes in personal information. Mail or fax the change of information form to:

**Florida Department of Agriculture and Consumer Services
Pesticide Certification Section
3125 Conner Blvd, Bldg 8, (L-29)
Tallahassee, FL 32399-1650
Phone (850) 488-3314 Fax (850) 922-6961
<http://www.safepesticideuse.com>**

Additional Information Request

Due to new security measures that are in place, this office will be requesting additional personal information to complete our records. These requests for additional information forms will be sent with renewal notices. Please complete these forms and return them to our office with your license renewal request.

County Extension Offices

Look to the Florida County Extension Service to receive training for pesticide education. Most programs will award continuing education credits to participants who are looking to renew their pesticide license. Following is a list of phone numbers for the county offices:

<u>County</u>	<u>Phone number</u>
Alachua	352-955-2402
Baker	904-259-3520
Bay	850-784-6105
Bradford	904-966-6224
Brevard	321-633-1702
Broward	954-370-3725
Calhoun	850-674-8323
Charlotte	941-764-4340
Citrus	352-726-2141
Clay	904-284-6355
Collier	239-353-4244
Columbia	386-752-1030
Dade	305-248-3311
Desoto	863-993-4846
Dixie	352-498-1237
Duval	904-387-8850
Escambia	850-475-5230
Flagler	904-437-7464

Franklin	850-653-9337
Gadsden	850-875-7255
Gilchrist	352-463-3174
Glades	863-946-0244
Gulf	850-639-3200
Hamilton	386-792-1276
Hardee	863-773-2164
Hendry	863-674-4092
Hernando	352-754-4433
Highlands	863-402-6540
Hillsborough	813-744-5519
Holmes	850-547-7433
Indian River	772-770-5031
Jackson	850-482-9620
Jefferson	850-342-0225
Lafayette	904-294-2016
Lake	352-343-4101
Lee	941-461-7500
Leon	850-487-3004
Levy	352-486-5131
Liberty	850-643-2229
Madison	850-973-4138
Manatee	941-722-4524
Marion	352-620-3440
Martin	772-288-5654
Monroe	305-292-4415
Nassau	904-879-1019
Okaloosa	850-689-5850
Okeechobee	863-763-6469
Orange	407-836-7570
Osceola	321-697-3000
Palm Beach	561-996-1655
Pasco	352-521-4288
Pinellas	727-582-2100
Polk	863-519-8677
St. Johns	904-824-4564
St. Lucie	772-462-1660
Santa Rosa	850-623-3868
Sarasota	941-861-9800
Seminole	407-665-5554
Sumter	352-793-2728
Suwannee	386-362-2771
Taylor	850-838-3508
Union	386-496-1111
Volusia	386-822-5778
Wakulla	850-926-3931
Walton	850-892-8172
Washington	850-638-6180
Lake Alfred	863-956-1151

BACKGROUND, ADVISORIES AND RECOMMENDATIONS REGARDING FLOWER BUD INDUCTION

FLOWER BUD INDUCTION

OVERVIEW and ADVISORY #1 for
2003-2004-11/06/03

Gene Albrigo, Citrus Research &
Education Center, Lake Alfred.



Overview of flower bud induction in Florida - It is time to start following citrus flower bud induction conditions for the coming year's bloom. Low temperatures first stop growth and then promote induction of flower buds as more hours of low temperatures accumulate. A period of 5-12 days of high temperatures in winter can then initiate bud differentiation, which after sufficient days of warm springtime temperatures leads to bloom. The meteorologists predict that this winter in Florida will be slightly warmer than normal, an ENSO Neutral year. If this winter is only slightly warmer than normal, enough hours of low temperatures below 68 degrees F. should accumulate to induce adequate flower buds for a satisfactory crop. Sufficient flower bud induction under Florida conditions should be achieved when total uninterrupted, accumulated hours of low temperatures exceed 850 hours below 68 degrees F. if the current crop is heavy. If the crop load

is light, sufficient flower bud induction can occur after 750 hours of accumulated low temperatures. A warm period of 7 to 12 days with max. temperatures > 70 to 75 degrees F. after some low temperatures have accumulated can trigger growth (bud swelling). Fewer days of higher temperatures (> 80 degrees F.) are required to stimulate growth. Current and previous seasons weather information is available on the Florida Automated Weather System fawn.ifas.ufl.edu for locations near you. The 8 day forecast from the National Weather Service predicts Florida weather for several sites around the citrus belt and is linked to <http://www.lal.ufl.edu/crehome/crecweather.HTML>

Some flower buds will be induced in the range of 300 to 600 accumulated hrs < 68 degrees F. Warm events after these levels of induction are reached result in weak flowering intensity, and therefore many buds remain that can be induced by later cool periods. This scenario results in multiple blooms. When early winter bud break in Florida was not prevented by cool temperatures or drought stress (1963 to 2002 records), multiple blooms occurred in over half of the years. Historically, the time period in which a warm 7-12 day period can lead to some bud growth and then result in multiple blooms is roughly Thanksgiving to Christmas. Presently, the only management tool available to eliminate or reduce the chance of multiple blooms is to promote water stress by stopping irrigation before these predicted warm periods occur. If the warm periods(s) are of the typical 7 to 10 day duration, mild water stress will have little impact on current crop development or quality. Mild water 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 mild

stress condition of citrus trees, buds will not grow in response to high temperatures. If an extended warm period has passed, trees again can be watered to minimize current crop water stress. Although no weather prediction is guaranteed, rains in the winter usually come on the fronts of cool periods. Therefore, the chances of being able to use water stress to prevent an early flower bud differentiation event is reasonably good for most warm periods. A difficulty that occurred 2 years ago, which resulted in a very small crop, was that high temperatures were continuous through the fall until December 18th. If trees were allowed to be water stressed for this extended period, this could lead to low photosynthesis, little fruit growth or sugar accumulation and probably excessive fruit drop.

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 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. This may be risky for 'Hamlin'

or other early maturing cultivars not yet harvested that tend to drop fruit near harvest. Much of what has been stated above has now been incorporated into a 'Flowering Expert System for Florida Citrus'. Future advisories (usually weekly) will update accumulating hours of related temperatures and other weather effects on flower bud induction plus methods for enhancing or reducing flowering intensity as conditions and cultivars dictate. Read the archived advisories from previous years for more background.



Last year's results

Last year (2003-2003) by late December we had 850 hours of uninterrupted cool inductive temperatures with a low current crop on the trees. The following warm period initiated almost all the buds on all of the spring and summer flush to differentiate and bloom in early March. We had a fairly leafy bloom of very short duration (slightly more than 2 weeks). A strong spring flush of leaves may have out competed and suppressed fruit set in navels and grapefruit. In spite of the high temperatures during and following bloom, a good fruit set occurred in other round oranges resulting in the highest crop forecast for Florida that FASS has ever predicted. A good rainfall pattern through the spring and summer allowed the fruit to size better than would be expected for such a large number of fruit. The early March bloom and subsequent warm, wet

weather have advanced maturity to result in low juice content (early cultivars are drying out at stem end) with low solids and acidity. Poorer than average fruit quality will make this another difficult year to schedule harvests to get good fresh fruit quality and high yields of solids with moderate ratios for processing.



The new season's situation - In spite of the heavy current crop, most groves had a surprising amount of vegetative flush, particularly spring flush. The strong flush is good for available buds to become flower buds next year. There have to be sufficient buds available to induce in order to have a good crop. Since we have a large current crop, we will need higher accumulations of low temperatures to induce those buds to produce flowers. So far this Fall, little cool weather has occurred to slow down or stop vegetative growth on mature trees, only about 100 to 120 hr < 68 degrees F. in all districts. Also, the National Weather Service (NOAA) predicts that there will be almost no temperatures below < 68 degrees F. during the next 8 days. To view FAWN data for a location near you in the citrus growing areas, use (www.lal.ufl.edu) and click on **FAWN** or for NOAA's 8 day forecast go to Weather in the homepage graphic locator and 8 day forecast.

The major concern for the next 60 days is the possibility of 1) continuous warm weather that will push vegetative buds to grow as occurred 2 years ago or 2) a warm period with a minimum of 10 to 12 days with max. temperatures > 75 to 80 degrees F following an inductive period of 300 to 500 hrs < 68 degrees F that will initiate differentiation of easily induced flower buds. The first condition will lead to low flowering and the second to multiple blooms. Therefore, keep irrigation amounts low to moderate (if fruit are still present) to minimize growth possibilities, even though a heavy crop should help minimize vegetative growth potential. Keep groves relatively dry and watch for the next advisory.



(Request for potential cooperators) - I believe that we may help our recent problems of low solids and acids for processed oranges and fresh grapefruit by delaying bloom dates each year. This might be accomplished by using water stress to prevent growth during warm winter periods until mid-January has passed. If you are interested in putting a block or a few rows of grapefruit, 'Hamlin' or 'Valencia' trees under this protocol, please let me know (albrigo@lal.ufl.edu or phone 863-956-1151).

FLOWER BUD INDUCTION

ADVISORY #2 for 2003-2004-11/14/03

Other websites for information related to flower bud induction in Florida -The 8 day forecast from the National Weather Service predicts Florida weather for several sites around the citrus belt and is linked to <http://www.lal.ufl.edu/crechome/crecweather.HTML>. Use

(www.lal.ufl.edu) and click on FAWN to get up-to-date accumulated low temperatures for a site near you. Look at hrs <65 degrees F for a good idea of accumulated effective temperatures. The current situation - Finally some cool climate with low temperatures in the flower bud induction range. FAWN records indicate that 100 to 200 hrs < 68 degrees F have accumulate from Ft. Pierce to northern districts, respectively. The 8-day forecast from NOAA indicates that another 80 hours will be accumulated this coming week, bringing our totals to about 200 to 300 hours depending on location. Temperatures are predicted to be lower by the end of next week. Some flower buds will be induced in the range of 300 to 600 accumulated hrs < 68 degrees F. Warm events at these levels of induction result in weak flowering intensity, and therefore many buds remain that can be induced by later cool periods. This scenario results in multiple blooms. Therefore, it will be important to follow the 8-day forecasts closely from this point forward in order to anticipate any warm weather events that could stimulate bud growth.

The only management tool available this early in the season to eliminate or reduce the chance of multiple blooms is to promote water stress by stopping irrigation before these predicted warm periods occur. Now that cool weather has started, mild water stress during warm periods of the typical 7 to 10 day duration will have little impact on current crop development or quality.

Mild water 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 mild stress condition of citrus trees, buds will not grow in response to high temperatures. If an extended warm period has passed, trees again can be watered to minimize current crop water 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 down now so that trees show wilt by mid-day. For bedded groves, minimum irrigation at low rates can then be applied more frequently 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 6-8 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. In bedded groves, maintaining a fairly high water table (bottom of water furrow) may also be sufficient to minimize the severity of water stress from shutting down irrigation. Therefore, keep irrigation amounts low to moderate (if fruit are still present) to minimize growth possibilities, even though the current heavy crop should help minimize vegetative growth potential. This will allow you to quickly bring about sufficient water stress to stop any bud development should a warm spell be predicted.

Scouting for Citrus Pests & Diseases Workshop

Location: Hendry County Extension Office, LaBelle

Date: Wednesday, January 14, 2004

6 CEUs for Pesticide License Renewal

6 CEUs for Certified Crop Advisors



Diseases (9:00 AM - 11:00 AM)

By **Dr. Pete Timmer**

Scouting Tips, Techniques, and Models
Foliar and Fruit Production Diseases

Alternaria Brown Spot

Greasy Spot

Citrus Scab

Melanose

Postbloom Fruit Drop

Phytophthora Brown Rot

Phytophthora foot and root rot

Citrus Canker

Accuracy and Precision in Rust Mite

Scouting and Decision-Making (11:00 AM -12:00 Noon)

By **Dr. Steven Rogers**

Mites & Insect Pests (1:00 PM - 4:00 PM)

By **Dr. Phil Stansly**

Principals of Entomology and IPM

Mite Pests of Citrus

Sucking Insect Pests of Citrus

Soil Inhabiting Pests

Citrus Leafminer and Misc. Insects

12:00 Noon - 1:00 PM: Lunch

Program Sponsored by Nufarm Agriculture USA – Shelby Hinrichs

***** DETACH*****

REGISTRATION FORM (Registration is required)

Registration Deadline: Monday, January 5, 2004

Name:

Company:

Address:

Phone:

Mail completed registration form and check for \$10.00* per person to:

Dr. Mongi Zekri, Hendry County Extension Office, P.O. Box 68, LaBelle, FL 33975-0068. Checks should be made payable to: Citrus Advisory Committee.

*The registration fee of \$10.00 includes refreshments, lunch, and handouts.



USING ORGANIC AMENDMENTS IN CITRUS PRODUCTION

Date: Tuesday, January 20, 2004

Location: Immokalee IFAS Center, 2686 State Rd. 29 North

2 CEUs for Pesticide License Renewal

4 CEUs for Certified Crop Advisors

Morning Section

9:00 - 9:30 Registration and coffee

9:30 - 9:45 Opening remarks and introduction. **Dr. Mongi Zekri** (*Multi-County Citrus Agent University of Florida, IFAS Hendry County Extension Office*)

9:45 - 10:15 The benefits of organic amendments in citrus production and environment.
Dr. Monica Ozores-Hampton (*University of Florida/IFAS/SWFREC*)

10:15 - 10:30 Break

10:30 - 11:00 Nutrient management considerations when applying organic soil amendments to citrus. **Dr. Tom Obreza** (*University of Florida/IFAS/Soil & Water Science Department, Gainesville*)

11:00 - 11:30 Mulches of composted wastes improve tolerance of citrus to marginal soils.
Dr Jim Graham (*University of Florida/IFAS/Citrus REC-Lake Alfred*)

11:30 - 12:00 Questions & Answers

12:00 - 1:00 Lunch (**sponsored by Synagro, Inc.**). **Call 863 674 4092 to register and reserve lunch**

Afternoon Section

1:00 - 1:30 Guidelines for organic citrus production. **Dr. Jim Ferguson** (*University of Florida/IFAS/Horticultural Sciences Department, Gainesville*)

1:30 - 2:00 How to handle organic materials in citrus production. **Mr. Mike Ziegler** (*Agricultural Resource Management, Inc.*)

2:00 - 2:30 Biosolids management Services. **Mr. Les Kemp** (*Regional Vice President Business Development, Synagro, Inc.*)

2:30 - 3:00 Questions & Answer