



UNIVERSITY OF  
FLORIDA

IFAS EXTENSION

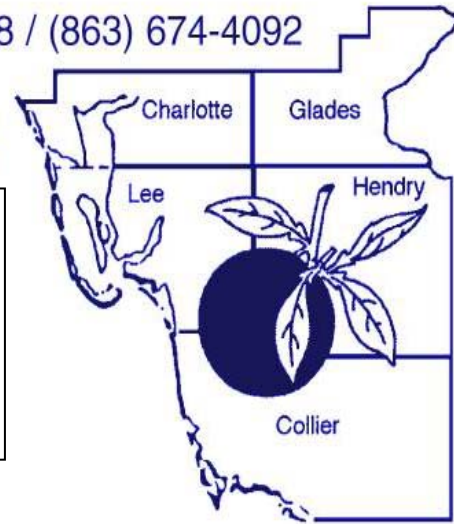
Hendry County Extension / P.O. Box 68 / LaBelle, Florida 33875-0068 / (863) 674-4092

# Flatwoods Citrus

Vol. 10, No. 5

May 2007

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



## U P C O M I N G      E V E N T S

### SQUEEZER SEMINAR

## Citrus canker and greening in Brazil

Speakers: visiting agronomists from Brazil

**Gilberto Tozatti**      **--Greening in Sao Paulo, Brazil**

**Marcos Valerio**      **--Citrus Canker in Paraná, Brazil**

Date & time: May 15, 2007, 10 AM- 12:00 Noon

Location: Immokalee IFAS Center

2 CEUs for Pesticide License Renewal, 2 CEUs for Certified Crop Advisors

The program sponsor is **Rachel Walters** with **Bayer CropScience**. Free lunch will be served (Compliments of **Bayer CropScience**). However, **RSVP is required**. To RSVP, call 863 674 4092 no later than Monday morning, 14 May 2007 or send an e-mail to [maz@ifas.ufl.edu](mailto:maz@ifas.ufl.edu)

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



## FARM SAFETY DAY

Saturday, June 2, 2007, Immokalee IFAS Center

Coordinator: Mongi Zekri

DETAILED INFORMATION ON REGISTRATION AND  
SPONSORSHIP IS ENCLOSED

## 120<sup>th</sup> Annual Meeting of the Florida State Horticultural Society

<http://www.fshs.org/>

Date: June 3-5, 2007

Location: PGA National Resort & Spa,  
Palm Beach Gardens  
[www.pgaresort.com](http://www.pgaresort.com)



**For registration and membership, visit the FSHS website at <http://www.fshs.org>**  
**Renewing your membership will allow you to maintain unlimited access to the**  
**Proceedings online.**

The FSHS hotel information is as follows:

PGA National Resort & Spa, 400 Avenue Of The Champions  
Palm Beach Gardens, FL 33418.

## CITRUS EXPO IN FORT MYERS

Wednesday, August 22 &  
Thursday, August 23, 2007



Special Thanks to all the 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.

**Susan S. Thayer**



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Special Thanks to all the 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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**The Scotts Company**  
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[Ward.Gunter2@Scotts.com](mailto:Ward.Gunter2@Scotts.com)

**Magna-Bon** Agricultural Control Solutions  
**Canker Suppressant, Canker Wash Solutions, Line Cleaner**  
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**Susan Wright**

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## CITRUS PSYLLID AND GREENING MANAGEMENT

The presence of greening in Florida citrus creates a new situation where psyllid management is of primary importance for managing this new disease. To effectively maintain psyllids at low levels throughout the year, it will be necessary to incorporate chemical, cultural, and biological control into a comprehensive management strategy for psyllid suppression. No one management strategy alone is likely to be able to provide the results desired in terms of reducing psyllid populations.



If insecticides are to be used for psyllid suppression, they should be applied earlier in the year when conditions are favorable for rapid buildup of psyllid populations. During the summer months, when temperatures and flush patterns are not favorable for psyllid development, insecticide applications made solely for psyllid management are less likely to reduce psyllid populations.



Predators and parasitoids of the psyllids are more likely to provide sustained control during these periods of low psyllid populations. Management of greening must include propagation of disease-free nursery stock, removal of greening-infected trees, and control of psyllid populations.

### **Nonbearing Trees/Resets**

Young trees that produce multiple flushes throughout the year are at greater risk of greening infection than mature trees because of the attraction of adult psyllids to the new flush. Even without greening, young trees in the field need to be protected for about 4 years from psyllids and leafminers to grow optimally. Soil-applied systemic insecticides will provide the longest lasting control of psyllids with the least impacts on beneficials. Drenches are best applied once in the spring and possibly again in the fall, when the trees are flushing most and rainfall is less likely to move the material past the root zone before it can be taken up by the plant. Foliar sprays with different types of materials including petroleum oil can be used during the rainy season if psyllids are observed on the new flush of young trees. When making multiple foliar insecticide applications within a season for psyllid control, rotate between products with different modes of action to reduce the likelihood of pesticide resistance development.

### **Bearing Trees**

Management options for psyllid control on mature trees are much more limited than for smaller trees. Currently, the only soil-applied insecticide that has been shown to provide reduction in psyllid numbers on large trees is aldicarb. If aldicarb is applied to mature trees as a part of a program for psyllid management, application should be made about 30 days prior to the initiation of flushing. This timing will allow for the material to move from the roots up to the tree canopy.

At present, the only other chemical control option for suppressing psyllids on mature trees is the use of broad-spectrum foliar insecticide applications. If greening is present in a grove or nearby, the best timing of foliar sprays for psyllid control is during the early season flush periods when temperatures are at or below 90°F and psyllids are most abundant. Foliar sprays should be timed to the presence of feather-leaf flush. Successfully controlling psyllids with foliar sprays on large trees after the spring flush is difficult because of the unsynchronized sporadic flushing patterns within a grove and the short-

residual effects of these foliar sprays. Successful suppression of psyllids during the early part of the year may result in lower populations throughout the rest of the summer when psyllid populations do not develop rapidly due to the higher temperatures, limited availability of new flush, and to abundant natural enemies.

### Biological Control

Foliar insecticide applications should be used sparingly to minimize the impact on natural enemies that maintain psyllids at lower levels later in the year. Excessive sprays could easily result in resurgence of psyllids and other pests.

### Other Management Considerations

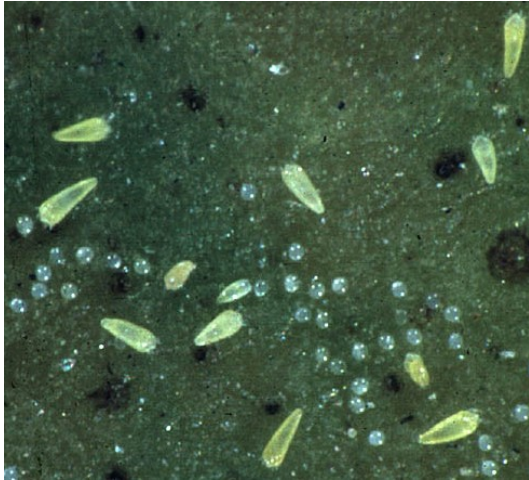
In groves where citrus greening has been confirmed, trees showing signs of infection should be removed quickly. Foliar insecticides that provide quick knockdown of psyllids should be sprayed on the infected tree(s) prior to removal to prevent further spread of the disease by psyllids. Otherwise, the greening-infected psyllids will disperse from the tree(s) being removed and infest nearby healthy trees. Trees in the immediate vicinity of infected trees should be considered higher risk due to increased likelihood of infection and receive extra scouting and treatment if necessary.

Management practices used within a grove can also affect psyllid populations, especially those practices that promote new flush such as hedging and topping and fertilization. Management strategies that reduce or limit the duration of flush, may help to keep psyllid populations at low levels and reduce the need for additional pesticide applications.

## Recommended Chemical Controls for Asian Citrus Psyllids

Pesticide	IRAC MOA <sup>1</sup>	Mature Trees Rate/Acre <sup>2</sup>	Comments	Other Pests Controlled
Admire 2F	4	16 to 32 fl oz per grove acre <b>OR</b> 1/8 oz per tree (4-6' height)	Soil applied systemic intended primarily for use on young trees. Apply prior to or at onset of pest infestation for optimal results. See label for application options. Do not apply more than 32 oz/acre/year.	Aphids, citrus leafminer
Provado 1.6F	4	10 to 20 fl oz per acre	Foliar-applied systemic	Aphids
Danitol 2.4EC	3	1 pt	Restricted use pesticide. Highly toxic to bees.	Flower and orchid thrips, adult root weevils
Lorsban 4EC	1B	5 pt	Restricted use pesticide. May increase spider mite populations.	Mealybug, orangedog, katydids, grasshoppers, aphids, thrips
Temik 15 G	1A	33 lb	Restricted use pesticide. Notification of intent to apply is required. Application permitted only between Nov. 15 and Apr. 30. See label for application restrictions. When psyllid control is required, apply at least 30 days prior to anticipated flush.	Citrus nematodes, citrus rust mites, aphids, psyllids

## Citrus Rust Mites



The citrus rust mite and the pink citrus rust mite are found on all citrus varieties throughout Florida. The pink citrus rust mite develops to greater damaging populations early in the season (April-May). Both rust mites are important pests of fruit grown for the fresh market. On some specialty varieties (such as Sunburst tangerine), damage may be particularly severe on stems and foliage, causing leaf injury and drop. Fruit damage is the main concern with other varieties.



Egg deposition begins within two days after the female reaches sexual maturity and continues throughout her life of 2-3 weeks. The pink citrus rust mite populations can begin to increase in April to early May on new foliage, reaching a peak in mid-June to mid-July, depending on geographical location and weather. The

pink citrus rust mite is more abundant in drier weather conditions. The citrus rust mite population densities increase in May-July and then decline in late August, but can increase again in late October or early November. Mite densities in the fall rarely approach those early in the summer. Generally, the north bottom of the tree canopy is preferred and supports the highest mite populations. While the primary effect of fruit damage caused by rust mites appears to be a reduction in grade, other conditions have been associated with severe fruit injury such as reduced size. Severe leaf injury to some specialty varieties (Ambersweet, Fallglo, and Sunburst can lead to leaf drop. Citrus groves producing fruit designated for the fresh market may receive 3-4 miticides/year typically during April, June, August, and October. In contrast, groves producing fruit designated for processing may not need to be treated. Miticides applied for the control of rust mites on fresh fruit varieties are often combined with compatible fungicides in the spring and summer. An alternative approach is using petroleum oil as a fungicide for greasy spot control and to suppress mites. Scouting for rust mite populations is very important for efficient control.

## Spider Mites



They occur on citrus throughout the year and usually are most abundant in groves between March and June. They are found

most commonly on the upper leaf surface of recently mature flush, and all stages of the mites orient along the mid-vein. As populations increase, they move to leaf margins and fruit. Spider mites feed primarily on mature leaves and differ from rust mites by feeding beneath the epidermal layer of cells. They are capable of removing cellular contents, causing cell destruction and reducing photosynthesis. Mesophyll collapse and leaf drop can result when trees are stressed by high spider mite infestations alone or in combination with sustained dry, windy conditions that may occur in early spring, late fall, or winter months. Spider mites prefer dry weather and low relative humidities in the range of 30 to 60% and generally do not pose a sustained problem

in the higher humidity conditions that occur between June and September. An average of 5 motile spider mites/leaf equaled 70 to 80% infestation levels. This constitutes a treatment threshold for processing fruit. Spider mites are suppressed to low densities by several species of predacious mites and insects in some groves. However, when populations averaging 5 to 10 motile spider mites/leaf develop between September and May it would be reasonable to apply a miticide, especially if the trees are stressed. Petroleum oil provides some ovicidal activity against spider mite eggs. None of the other miticides provide ovicidal activity, and their residual activity must be sufficiently long-lasting to kill subsequently emerging larvae.

## Application of Miticides.

### **Recommended Chemical Control. READ THE LABEL.**

<b>Supplemental (early Spring)</b>	<b>Post Bloom</b>	<b>Summer</b>	<b>Fall</b>	<b>Supplemental Fall</b>
--	--	Agri-mek + oil	--	--
--	--	--	Comite	Comite
Dicofol	Dicofol	--	--	--
Envidor	Envidor	Envidor	Envidor	Envidor
--	Petroleum oil	Petroleum oil	Petroleum oil	--
--	--	--	Sulfur	Sulfur
--	--	Micromite	Micromite	--
Temik	--	--	--	--
Vendex	Vendex	--	Vendex	Vendex

**Except for petroleum oil, do not use the same miticide chemistry more than once a year.**



# The Seventeenth Annual Farm Safety Day



**Saturday, 2 June 2007**

## **AN IMPORTANT MESSAGE TO EMPLOYERS**



Safe and competent equipment operators are important to you as an employer. Accidents, which cause damage, injury or death to employees, equipment and crops are costly. We believe all types of accidents can be reduced with proper employee training. Our training has been designed to help your employees perform better, operate safely to prevent accidents, fulfill necessary training requirements and build pride in themselves and their farm company.

### **Certificates**

The 2007 Southwest Florida Farm Safety Day is almost here. Farm Safety Day is an educational event designed to emphasize the importance of farm/equipment safety. Each participant is presented with a certificate of attendance and **the employer will be provided with a certificate of training that can be placed into the employee=s file.**

### **Registration Info**

**The deadline for registration is May 25<sup>th</sup>.** It is the employer=s responsibility to assure that the employee is present at 7:45 a.m. on June 2<sup>nd</sup> to receive their nametag. Upon arrival each participant will check in at the registration table and receive a packet containing their nametag, instructions (in both English and Spanish) session handouts, an evaluation form, lunch ticket, rodeo cap and pencil. They will be directed to their respective course sessions.

In the event of a substitution, **the substitute employee must let the registration desk know** the name of the person they are replacing. A new nametag with the same color coding will be issued.

### **Language Preference**

The courses will be marked by color coded signs. The signs will rotate throughout the morning session and the employee will follow the color sign that matches their nametag. Courses will be offered in both Spanish and English so it is very **important to either check an AE@ for English or an AS@ for Spanish on the registration form.**

### **Tractor Rodeo**

Participation in the rodeo will be on a first come/first serve basis and a driver must be designated. Only one driver per farm will be allowed. You must have your participator registered prior to the day of the rodeo to insure your company=s participation. If company checks are issued from somewhere other than your local office, please contact Barbara and arrangements will be made to proceed with pre-registration.

If there are any questions, please feel free to contact **Barbara Hyman at 239 658 3400.**

# SEVENTEENTH ANNUAL SAFETY DAY

Saturday, June 2 2007

Southwest Florida Research and Education Center  
2686 S.R. 29 N., Immokalee, FL

## **SCHEDULE:**

7:45-8:10	Check In and Coffee
8:10-9:00	Sessions 1, 2, 3, 4 (Begin sessions by group no.)
9:00-9:10	Break (change session)
9:10-10:00	Sessions 1, 2, 3, 4
10:00-10:10	Break (change session)
10:10-11:00	Sessions 1, 2, 3, 4
11:00-11:10	Break (change session)
11:10-12:00	Sessions 1, 2, 3, 4
12:00-12:30	Lunch
12:30-2:30	Rodeo
2:30-3:00	Awards Presentation

## **CONCURRENT SESSIONS:**

1. Insect/spider safety
2. Fire safety
3. Tractor safety
4. First aid



## **Sponsorship for the Annual Farm Safety Day**

The Southwest Florida Farm Safety Day has been conducted annually since 1991. The program is strongly supported by area citrus, vegetable, sugarcane, and sod growers. Southwest Florida agricultural employers collectively send between 140 to 180 employees annually to receive training on various safety related topics. The Seventeenth Annual Farm Safety Day will be held on Saturday, June 2, 2007 and will feature a very comprehensive farm safety program.

We ask you to consider sponsorship of the Sixteenth Annual Farm Safety Day to help make it a success. Any profits generated will support extension and other farm safety related programming, such as WPS training, agent in-service-training, teaching tools and related equipment, and travel for extension agents to approved conferences and meetings.

Annual expenses are estimated to be approximately \$3,000. Costs include lunches, refreshments, handouts, hats, awards (trophies, plaques, door prizes), travel expenses for out-of-town speakers, and other supplies. Participants receive certificates of attendance and employers receive certificates of training that can be placed into the employee's file. The highlight of the Farm Safety Day is farm/equipment safety education and a tractor-driving contest. Trophies are provided to the winners along with display plaques for their respective companies.

We hope you will be able to help sponsor the Sixteenth Annual Farm Safety Day. We have enclosed a sponsorship form for your use. Please return the form and your sponsorship check as indicated on the form no later than May 25, 2007. As a sponsor, you will be recognized during the Farm Safety Day at the Master of Ceremonies and in the southwest Florida extension newsletters, "Flatwoods Citrus" and the "South Florida Pest and Disease Hotline." You will also receive a "Thank you" certificate.

Thank you for your support!

Dr. Mongi Zekri  
Farm Safety Day Coordinator  
Multi-County Citrus Agent, SWF  
Hendry County Extension Office  
P.O. Box 68  
LaBelle, FL 33975



UNIVERSITY OF  
**FLORIDA**

IFAS EXTENSION

# 17<sup>th</sup> Annual Farm Safety Day

**WHEN:** Saturday, June 2, 2007

**WHERE:** Southwest Florida Research & Education Center, Immokalee

**AUDIENCE:** Anticipate 160 farm workers, managers, equipment operators, and crew leaders from the 5-county area of Southwest Florida.

**COST:** Sponsorships: \_\_\_\_\_ \$300 Platinum  
 \_\_\_\_\_ \$200 Gold  
 \_\_\_\_\_ \$100 Silver

*Sponsorship goes to support awards, expenses, and other extension programs.*

## **SPONSORSHIP REGISTRATION FORM**

Business \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Zip Code: FL \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Check here if you are a \$300 sponsor and desire an outdoor exhibit space.

*Please make checks payable to: **SW Florida Citrus Advisory Committee***

*Mail to:*

**Dr. Mongi Zekri**  
**Multi-County Citrus Agent**  
**Hendry County Extension Office**  
**PO Box 68**  
**LaBelle, FL 33975-0068**

# The 2007 FARM SAFETY DAY REGISTRATION FORM

Please give us the names of those who will be attending our 16<sup>th</sup> Farm Safety Day on **Saturday, 2 June 2007**. The cost is \$15.00 per person, which will include educational sessions, handouts, refreshments, lunch, the rodeo, and a cap.

Make checks payable to:  
SW Florida Citrus Advisory Committee

Mail registration and checks to:  
University of Florida, IFAS, SWFREC  
Attention: Barbara Hyman  
2686 State Rd. 29 North  
Immokalee, FL 34142

Or fax registration to: 239 658 3469  
Entry Deadline is Friday, May 25, 2007

Company Name:

Administrative Contact Person:

E-mail address:

Mailing Address:

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ County: \_\_\_\_\_

Name of authorized driver for tractor rodeo contest, one per farm:

\_\_\_\_\_ Alternate/second choice: \_\_\_\_\_

(Any driver substitutions made the day of the event will require authorization by his/her company.)

Please list the employees who will be attending our safety training and rodeo and please check their language preference.\* If there is not enough space to fill in all attendants, please attach an additional sheet with the necessary information.

English   Spanish

English   Spanish

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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_____	_____

**\*Please Note: It is very important that we know the language capabilities for each attendee. Next to each attendee's name please mark in which language they are more fluent.**

2007 Joint Annual Meeting  
Florida State Horticulture Society &  
Soil and Crop Science Society of Florida  
June 3-5  
PGA National Resort



Preliminary Citrus Program, Mongi Zekri, Presiding

**Monday Morning Session**

**Harvesting, fertigation, irrigation**

**C-1 In-situ measurement of the actual detachment force of oranges harvested by a canopy shaker harvesting machine**

R. Ehsani, M. Hebel<sup>1</sup>, G. Bora, K. Lee, Citrus Research and Education Center

<sup>1</sup>Southern Illinois University

**C-2. Daily fluctuations in fruit detachment force of Valencia orange are related to temperature and relative humidity.**

L. Pozo, A. Malladi, F. Alferez, Y. Lluch, and J.K. Burns, Citrus Research and Education Center, UF/IFAS

**C-3. Reconciling grower and processor objectives when deciding to harvest juice oranges**

Jake Searcy\*, Fritz Roka, and Thomas Spreen  
Food and Resource Economics, University of Florida

**C-4. Georeferenced ground photography of citrus orchards for canopy research and variable rate technology**

AW Schumann, JP Syvertsen, KH Hostler, Citrus Research and Education Center, IFAS

**C-5. Effect of winter and spring foliar urea, NPK or K-phosphite sprays on productivity of citrus in Central Florida**

L.G. Albrigo, University of Florida Citrus Research and Education Center, Lake Alfred, FL 33850

**C-6. Optimum Nitrogen Rate for Fertigated Young Navel Orange Trees in Arizona**

Ayako Kusakabe\*, Scott A. White, James L. Walworth, Glenn C. Wright, and Thomas L. Thompson, Soil, Water and Environmental Sci., Univ. of Arizona, Tucson, AZ 85721.

**C-7. Citrus Water Requirements: Linking Irrigation Scheduling and Fertilizer Strategies**

K.T. Morgan, Southwest Florida Research and Education Center, UF

**C-8. Effect of Water Management and Soil Application of Nitrogen Fertilizers, Petroleum Oils, and Lime on Inoculum Production by *Mycosphaerella citri*, the Cause of Citrus Greasy Spot.**

S.N. Mondal<sup>1</sup>, K.T. Morgan<sup>2</sup>, and L.W. Timmer<sup>1</sup>, <sup>1</sup>Citrus Research and Education Center, UF and <sup>2</sup>Southwest Florida Research and Education Center, UF

**Monday Afternoon Sessions**

**Salinity, rootstocks**

**C-9. The Relative Salt Tolerance Of ‘Rangpur Lime’ Seedlings And ‘Arbequina’ Olive Cuttings**

J. C. Melgar, J. P. Syvertsen, Citrus Research and Education Center, UF, V. Martinez and F. Garcia-Sanchez, CEBAS-CSIC, Murcia, Spain

**C-10. Shade effects on salinity tolerance of ‘Valencia’ orange trees on contrasting rootstocks**

J. P. Syvertsen and F. García-Sánchez, CREC UF/IFAS, Lake Alfred; V. Martínez, CEBAS, CSIC Universitario de Espinardo, Murcia, Spain and J. C. Melgar, Universidad de Córdoba, Spain.

**C-11. Performance of ‘Hamlin’ Orange Trees on Flying Dragon Trifoliolate Orange, Changsha Mandarin, and Koethen Sweet Orange x Rubidoux Citrange Rootstocks at Three In-Row Spacings in a Flatwoods Site**

W.S. Castle, J.C. Baldwin, and R.P. Muraro, IFAS, Citrus Research and Education Center

**C-12. Field Performance of ‘Hamlin’ Orange on 27 Rootstocks in Lake County**  
K.D. Bowman, G. McCollum, and U. Albrecht, USDA-ARS-USHRL, Ft. Pierce 34945

**C-13. Creating an Improved Sour Orange Rootstock**  
K.D. Bowman, U. Albrecht, USDA-ARS-USHRL, Ft. Pierce 34945

**C-14. Screening citrus rootstock genotypes for tolerance to *Phytophthora-Diaprepes* under field conditions**

J. H. Graham<sup>1</sup>, K. D. Bowman<sup>2</sup>, D. B. Bright<sup>1</sup> and R. C. Adair, Jr.<sup>3</sup>

<sup>1</sup>UF-IFAS-CREC, Lake Alfred 33850; <sup>2</sup>USDA-ARS-USHRL, Ft. Pierce 34945; <sup>3</sup>Florida Research Center for Agricultural Sustainability (FLARES), Vero Beach, FL 32966

## **Rootstocks, insect pests, diseases**

**C-15. Progress in the Development of New Rootstocks Tolerant of the *Diaprepes/Phytophthora* Complex**

J.W. Grosser, J.H. Graham, D. Bright, A. Hoyte, and H.M. Rubio, Citrus Research and Education Center, UF

**C-16. Use of landscape cloth to manage *Diaprepes* Root Weevil in citrus groves**

L.W. Duncan<sup>1</sup>, S.L. Lapointe<sup>2</sup> and R.J. Stuart<sup>1</sup>. <sup>1</sup>University of Florida, IFAS, Citrus Research and Education Center, Lake Alfred, FL, and <sup>2</sup>USDA-ARS, U.S. Horticultural Research Lab, Ft. Pierce, FL.

**C-17. Integrated approaches for managing the Asian citrus psyllid (Homoptera: Psyllidae) in Florida**

Jawwad A. Qureshi and Philip A. Stansly

University of Florida/IFAS, Southwest Florida Research and Education Center, 2686 SR 29 N, Immokalee, FL 34142

**C-18. Effectiveness of several soil-applied systemic insecticides for managing the Asian citrus psyllid, *Diaphorina citri* Kuwayama (Homoptera: Psyllidae)**

Michael E. Rogers, University of Florida, IFAS, Entomology and Nematology Department, Citrus Research and Education Center, 700 Experiment Station Road, Lake Alfred, FL 33850

**C-19. Defoliation of Canker Infected Citrus Trees by Diquat**

Shiv D Sharma and M Singh, Department of Horticulture, Citrus Research and Education Center, UF, Eric K. Rawls and John B. Taylor, Jr., Syngenta Crop Protection, North Palm Beach, FL

**C-20. Severe pruning for control of citrus canker in São Paulo State Brazil**

J. Belasque Jr., Luciane M. Ribeiro, Antonio J. Ayres, and Nelson Gimenes-Fernandes.

Fundo de Defesa da Citricultura (Fundecitrus). CP 391, 14901-870, Araraquara, São Paulo, Brazil.



# Tuesday Morning Sessions

## Citrus greening, canker

### **C-21. Citrus leafminer control and copper fungicide sprays for management of citrus canker on lemon in Tucumán, Argentina**

B. Stein<sup>1</sup>, J. Ramallo<sup>1</sup>, L. Foguet<sup>1</sup>, J. H. Graham<sup>2</sup>. <sup>1</sup>Estación Experimental Agroindustrial O. Colombres, Av. William Cross 3150, Las Talitas, 4101 Tucumán, Argentina. <sup>2</sup>University of Florida, Citrus Research and Education Center, 700 Experiment Station Road, Lake Alfred 33850

### **C-22. The Impact of Citrus Greening and Canker on Florida Grove Care Management Practices and Costs**

Ronald P. Muraro, Citrus REC, UF, Thomas H. Spreen and Jordan C. Malugen, Food and Resource Economics Department, UF

### **C-23. The Projected Impact of Citrus Greening in Sao Paulo and Florida on Processed Orange Production and Price**

Thomas H. Spreen, Food and Resource Economics Department, UF, Mark G. Brown, FDOC Economic-Market Research Department, and Ronald P. Muraro, Citrus REC, UF

### **C-24. Culturing Fastidious Prokaryotes - Points to Consider When Working with Citrus Greening**

M. J. Davis and R. H. Brlansky, University of Florida, Citrus Research and Education Center, 700 Experiment Station Road, Lake Alfred 33850

### **C-25. Characterization of recently introduced HLB and CTV isolates**

W. Dawson, S. Garnsey, C. Robertson, S. Gowda, S. Tatineni, M. Irely, P. Sieburth, and M. Hilf, University of Florida, Citrus Research and Education Center, Lake Alfred, FL 33850, US Sugar, Clewiston, FL 33440, and USDA Horticultural Research Laboratory, Fort Pierce, FL 34945

### **C-26. Update on the Southern Gardens Diagnostic Laboratory and the procedure for submitting diagnostic samples for Huanglongbing**

M. S. Irely, P. Z. Mai, United States Sugar Corporation, and T. Gast, Southern Gardens Citrus Corporation, J.H. Graham, University of Florida, IFAS, CREC

### **C-27. Seasonal and spatial variability in the titer of *Candidatus Liberibacter asiaticus* in sweet orange and the Asian citrus psyllid as it relates to sampling.**

M. S. Irely, United States Sugar Corporation, D. G. Hall and T. R. Gottwald, Agricultural Research Service-United States Department of Agriculture, and T. Gast, Southern Gardens Citrus Corporation

# GREASY SPOT

Management of greasy spot fungal disease must be considered in every grove. Greasy spot is usually severe on grapefruit, early season sweet oranges, and tangelos. Greasy spot can cause defoliation and dieback, reduce fruit yield, and make the tree weak and more susceptible to stresses and other pests. Symptom expression takes 3-4 months in grapefruit leaves, up to 6 months on grapefruit fruit and much longer in sweet orange.



Greasy spot spores germinate on the underside of the leaves and penetrate the leaves through the stomates (natural openings on the lower leaf surface). Warm humid nights and high rainfall in the summer favor infection and disease development. Favorable conditions for infection in SW Florida occur from late May through September. Leaves are susceptible once they are fully expanded and remain susceptible throughout their life. Two spray applications are needed to control greasy spot in SW Florida. The spring flush leaves can be protected with a spray in May or early June before the start

## • Processed fruit

### May-June

- Petroleum oil (455, 470) 5-10 gal
- Cu fungicides 2-4 lb metal
- Abound, Gem, Headline + 5 gal oil
- Enable (grapefruit only)

### July

- Petroleum oil (455, 470) 5-10 gal
- Cu fungicides 2-4 lb metal
- Abound, Gem, Headline + 5 gal oil
- Enable (grapefruit only)

of the summer rains. The summer flush leaves should be protected as soon as they are fully expanded. Oil sprays are equally effective from June through August. Copper fungicides are more effective when applied earlier in the season. Copper fungicides provide a high degree of control more consistently than oil sprays.

Thorough coverage of the underside of leaves is very important and necessary for the control of greasy spot. High spray volumes (125-150 gal/acre) and slower tractor speeds may be needed for good control of this disease. There is a high risk of fruit spray burn when 5 gallons of oil are added to 4 lbs metallic copper. For fresh fruit, petroleum oil alone is inadequate for the control of greasy spot rind blotch. Heavier oils (455 or 470) are more effective for rind blotch than lighter oils (435), but may cause phytotoxicity problems. Copper is effective for the control of greasy spot rind blotch, but if applied in July or August at full rate in hot, dry weather with oil, it will cause fruit spotting. Enable can only be applied on grapefruit for rind blotch control on fruit and for greasy spot control on foliage. The strobilurin fungicides (Abound, Gem, Headline) can be used successfully to control greasy spot on any cultivar at any time. They can provide effective control of the disease on leaves and fruit, but should not be applied more than once a year. Addition of petroleum oil increases the efficacy of Enable, Abound, copper, and Gem.

## • Fresh fruit

### May-June

- Petroleum oil (455, 470) 10 gal
- Cu fungicides < 2 lb metal, No oil
- Abound, Gem, Headline + 5 gal oil

### July

- Petroleum oil (455, 470) 10 gal
- Cu fungicides < 2 lb metal
- Abound, Gem, Headline + 5 gal oil
- Enable (grapefruit only) 8 oz. + 5 gal oil

# CitrusSafari.com

**Contact: Greg Land, Tel: 772 770 0297**

**Email: [land\\_g@bellsouth.net](mailto:land_g@bellsouth.net)**

**[www.CitrusSafari.com](http://www.CitrusSafari.com)**

Lucky Citrus Growers will tour like royalty on exclusive, one-time only Citrus Safari through stunning South African citrus country.

Citrus growers and industry players will soon have the extremely rare opportunity to travel to beautiful South Africa on an educational learning experience and luxury 10 Day Citrus Safari vacation.

Tour members on the safari will explore two of the major citrus producing regions of Southern Africa, the Western Cape and the Mpumulanga Lowveld areas. These visits will offer insights into the cultivars, cutting edge research, and the current farming practices required to keep this small nation ranking as one of the top citrus exporting countries in the world.

The Citrus Safari will be guided by South African citrus industry veteran, Greg Land, who now lives in Vero Beach. He promises tour members exclusive 'Insider Access' to some of the best and most innovative citrus growers and researchers in the world.

Prominent Florida Ag radio personality, Gary Cooper - President, Southeast AgNet, said the following when asked about the planned Citrus Safari tour.

" Sounds like another great opportunity for citrus growers wanting to learn more about citrus in other parts of the world."

Of prime interest to local Florida citrus growers will be how the SA growers have handled problems similar to those currently facing Florida like:

- increasing worldwide competition
- increasing production costs and regulation
- factors affecting export production
- control of diseases like Tristeza (CTV) and Greening
- high density tree plantings
- methods to bring plantings into early production
- new fresh fruit cultivar development
- use of windbreaks
- open hydroponics systems

The trip will definitely not be all work or citrus related, with plenty of time scheduled to enjoy the many tourist wonders and some secret 'off the beaten track' sightseeing gems.

For the last few days of the trip, group members will complete their safari adventure in style at one of the exclusive game lodges in the famous Kruger National Park/Sabie Sands area. The game viewing in this area is outstanding and tour members will almost certainly see the big five.

The Citrus Safari is scheduled to take place in mid to late June. Final trip dates to be finalized. For further information please go to our website at '[www.citrussafari.com](http://www.citrussafari.com)', or contact Greg Land.

# Flatwoods Citrus

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

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

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Multi-County Citrus Agent  
Hendry County Extension Office  
P.O. Box 68  
LaBelle, FL 33975

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## *Racial-Ethnic Background*

American Indian or native Alaskan

Asian American

Hispanic

White, non-Hispanic

Black, non-Hispanic

## *Gender*

Female

Male