

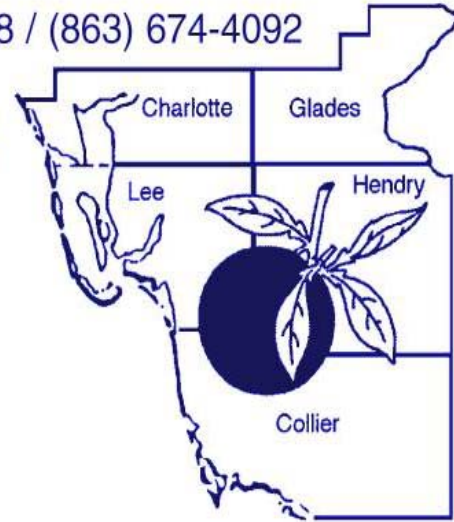


UNIVERSITY OF
FLORIDA

IFAS EXTENSION

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

Flatwoods Citrus



Vol. 8, No. 6

June 2005

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



U P C O M I N G E V E N T S

Exotic Citrus Diseases: **CVC, Stem Pitting Tristeza, Leprosis and Greening**

Date: Tuesday, 14 June 2005, 10:00 AM – 12:00 Noon

Location: SW Florida Research & Education Center, Immokalee

Speaker: Dr. Ron Brlansky

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

Sponsor: Ed Early, DuPont

Following the seminar, we are planning a free lunch (Compliments of DuPont). To reserve lunch, call 863 674 4092 no later than Monday, 13 June 2005.

A RULE DEVELOPMENT WORKSHOP

Gulf Coast Citrus Best Management Practices

Time and date: 1:00 PM, Tuesday June 14, 2005

Place: Collier County Extension Office, Naples

For more details, see enclosed information

**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 11, 2005, Immokalee IFAS Center

Coordinator: Mongi Zekri

CITRUS EXPO IN FORT MYERS

Wednesday, August 24 &
Thursday, August 25, 2005



Annual Conference of Extension Professionals (FAEP)

Date: September 12-15, 2005

Location: HYATT Sarasota on Sarasota Bay, FL

<http://faep.ifas.ufl.edu/>

7th International Congress of Citrus Nurserymen (ICCN)

Date: September 17-21, 2005

Location: Cairo EGYPT

<http://www.iccncongress.gov.eg/>

Contact E-mail: iocd_far@yahoo.com

51st Annual Meeting of the InterAmerican Society for Tropical Horticulture (ISTH)

Date: October 10-14, 2005

Location: Hotel Hamaca Coral Hilton, at Boca Chica ten minutes from Santa Domingo International Airport, The Dominican Republic,

<http://www.cedaf.org.do/eventos/ISTH2005/index.htm>

For more information, contact Dr. Richard Campbell at rcampbell@fairchildgarden.org

Information and Tables of budgeting costs and returns for Florida citrus production 2003-04 by Ron Muraro can be obtained at:

<http://www.crec.ifas.ufl.edu/extensiontab.htm>

Special Thanks to 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 CITRUS PSYLLID

The Asian citrus psylla or psyllid, *Diaphorina citri* can be a serious pest of citrus. The citrus psyllid is similar to aphids and the citrus leafminer in requiring young leaves for reproduction. However, unlike aphids and the citrus leafminer, adult psyllids can survive on hardened leaves and move to new flush as it becomes available. Young trees should be monitored early in flush cycles to detect aggregations of adults on expanding terminals. High populations of adults should be treated before they reproduce.



Immature psyllid feeding on growing citrus terminals cause permanent damage to young leaves and shoots. They cause leaf distortion and curling of tender growth (flush).



Badly-damaged leaves will die and fall off. Control of the citrus psyllid should be taken seriously if young trees are involved. The citrus psyllid breeds exclusively on young flush and has a very high reproductive rate. Multiple, overlapping generations can lead to very high populations. Eggs are laid in the late winter and spring on young leaves in the buds or in leaf axils. The egg stalk is forced into the leaf tissue by the ovipositor of the female. Each female may lay up to 800 eggs during her two-month lifespan. The life cycle takes about 20 days and there may be up to 30 overlapping generations per year. Adults are about the size of aphids (2.5 mm).

The citrus psyllid is an efficient vector of greening disease, which is considered the most serious citrus disease in Asia. Although we don't have the disease at this time, a future introduction of the pathogen would result in effective transmission of the disease by the psyllids that are now here, causing a serious negative impact on our industry. Infected trees or branches with the greening disease will suffer heavy leaf drop, out-of-season flushing and flowering, reduced yield, and dieback. Fruit on infected trees will be small in size and low in juice quality. Many fruit will fall prematurely, while those that remain on the tree will not color properly, but will remain green on the shaded side, hence the name of the disease "greening". Root systems including feeder roots will poorly develop.

All species of citrus appear to be susceptible, but sweet oranges, mandarins,

and tangelos are most affected in Asia. Greening seems to be primarily a disease of sweet orange (*Citrus sinensis*) with Valencias showing more pronounced leaf symptoms than navels. It is less of a problem on grapefruit, lemon, and lime. The psyllid also attacks landscape plants (jasmine orange, *Murraya paniculata*). Generalist predators such as lacewings, syrphid flies, lady beetles, and spiders attack psyllids. These native natural enemies are not expected to suppress the pest populations to a non-economic level. Two parasitoids, *Diaphorencyrtus aligarhensis* and *Tamarixia radiata* of the pest have been imported in Florida and are being released in a classical biological control program. These two natural enemies are recorded as primary (beneficial) parasitoids.



Citrus growers and homeowners may use pesticides to reduce damage on their citrus trees. It is recommended to use pesticides that can help suppress psyllids, but not disrupt natural enemies of citrus pests. The use of oil is less disruptive and should be used. Petroleum oil at the concentration of 3 to 5% should provide adequate control.

Tests with petroleum oil sprays against citrus psylla indicated that oil was most toxic to first and second instar nymphs

and provided good control if applied frequently. Insects do not develop resistance to oil, oil has a low toxicity to vertebrates, and oil breaks down readily in the environment. Based on feed back from citrus growers and production managers in Florida, spray oil works effectively in knocking down psyllid populations.



Soil applied Admire and foliar applied Provado, Danitol, and Lorsban are also recommended for the control of the citrus psyllid. **Get your copy of the 2005 Florida citrus pest management guide. You can print your own copy from this:** <http://www.lal.ufl.edu/CRECHOME/groweraids.htm>



Citrus Rust Mites

Citrus rust mite is found on all citrus cultivars throughout Florida. Citrus rust mite is mainly a pest problem on fruit grown for the fresh market. However, on some cultivars such as Sunburst, Fallglo, and Ambersweet, rust mite damage can be severe on stems and foliage and may cause leaf injury and leaf drop.



Mite populations usually begin to increase in April on new foliage and reach a peak in June-July. Depending on weather conditions and the occurrence of natural enemies (predatory mites and the fungus, *Hirsutella*), citrus rust mite populations usually decline in August, but increase again in October and November.



Generally, the north bottom section of the tree is preferred and supports the highest

mite populations. When rust mite injury occurs on fruit before fruit maturity (late spring-summer), fruit size will be reduced and fruit drop may occur.

Miticides applied for the control of citrus rust mites on fresh fruit cultivars are usually combined with compatible fungicides in the spring and summer. Scouting or monitoring of rust mite populations is very important and should be carried out every 2 weeks throughout the fruit season. The number of citrus rust mite per square centimeter should be determined by averaging 80 readings per 10 acres (1 area of 1 cm² midway between the sun and shade areas of 1 fruit collected from each quadrant of 20 trees).

The threshold at which chemical treatment would be recommended is 2 mites and 10 mites/cm² for fresh fruit and processed fruit, respectively. Other methods of sampling and scouting rust mite populations and use of various types of miticides are described in the 2005 Florida citrus pest management guide. There are several miticides such as 10 oz Agri-Mek plus a minimum of 3 gal petroleum oil/acre, 8-10 gallons petroleum oil/acre, and several formulations of Micromite that can be used to control citrus rust mites. Always alternate materials to minimize development of pesticide resistance. Most miticides require a pH spray solution not to exceed 7. Other miticides, such as Comite, should not be mixed with oil because they may cause damage to leaves and fruit. Nexter and Vendex should not be mixed with copper or oil because their residual effect may be reduced.

For more details, get your copy of the 2005 Florida citrus pest management guide.

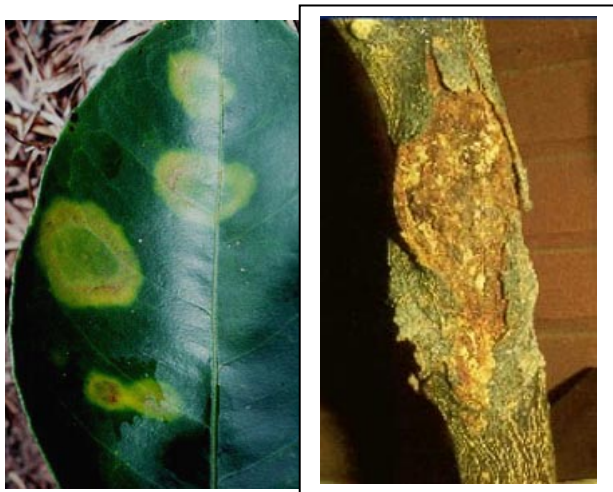
Always read the product label prior to use.

CITRUS LEPROSIS

Leprosis is one of the most important citrus diseases in Brazil. This problem is caused by the *Citrus leprosis* virus and is transmitted by mites of *Brevipalpus* spp. It also occurs in other South American countries and has been recently identified in Central America. This northbound spread of leprosis is being considered a serious threat to the Florida citrus industry.

Prior to 1925, leprosis had a negative impact on citrus production in Florida. Then about 1926, the incidence of leprosis in Florida drastically declined, with the decline coinciding with the introduction of sulfur as an effective miticide for controlling citrus rust mite. The last time leprosis was reported in Florida was in the mid-1960s.

This disease alone is responsible for approximately \$60 to 100 million per year losses in Brazil. It is quite difficult to work with the citrus leprosis virus, which has hindered much of the progress regarding its accurate detection. Symptoms require field experience and can be confused with those caused by other plant pathogens. On the other hand, laboratory analysis of lesions is time-consuming, requires experience, and is not always very accurate, leading to some false negatives.



Leprosis produces symptoms on leaves, branches and fruit. It causes lesions in the fruit skin, premature drop of leaves and fruits, and twigs dieback, with the possible death of the tree. The damage to the branches can

decrease the plant productivity after some years because the damaged branches prevent the normal flow of plant sap. With effective mite control, it might take two years for a citrus tree with leprosis to fully recover. Citrus leprosis infects all varieties of sweet orange, and has been reported on lemon and mandarin. Tangerines and tangor are also susceptible to the disease. Grapefruit is reported to be tolerant.



Dissemination of the disease occurs only when infected citrus trees and vectors are present. In citrus, the population of the leprosis mite is low and usually occurs in clusters of trees, which should be monitored carefully. When the trees are contaminated with the leprosis virus, the number of diseased trees will increase as the contaminated mites disperse.

Leprosis control is based mainly on the elimination of the sources of inoculum by pruning the affected trees and by using miticides to reduce the vector. Additional control procedures are also recommended, such as:

- Planting of young trees free from leprosis mites and from leprosis virus
- Controlling the leprosis mites host weeds
- Disinfection of equipment, boxes and vehicles
- Use of mite non-host species as windbreak
- Developing and using procedures that favor the increase of the population of natural enemies of the leprosis mite.

Summary of Rule Changes - “Licensed Pesticide Applicators and Dealers”
Chapter 5E-9, Florida Administrative Code
Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services
Bureau of Compliance Monitoring
Effective September 17, 2004

1. Continuing Education Units (CEUs). Effective January 1, 2005, all applicators licensed under Chapter 487, F.S., who renew their licenses using Continuing Education Units (CEUs) will be required to have 4 core CEUs. For private applicators, the 4 core CEUs will be part of the 8 total CEUs required, so the CEU requirements are not increasing for private applicators. Private applicators must now make sure they have 4 core CEUs plus 4 private applicator agriculture CEUs to renew. This affects all private licenses renewed after January 1, 2005.

Commercial and public applicators renewing their licenses after January 1, 2005 must have 4 core CEUs in addition to the number of category CEUs now required. Beginning January 1, 2005, all category CEUs must be approved for the specific category. There will no longer be a requirement for having 2 core CEUs per primary category, and core CEUs can no longer be applied to the required number of category CEUs.

The **category** CEU requirements as of January 1, 2005 are:

<u>Category</u>	<u>CEUs Required</u>
Aerial	16
Ag Animal	4
Ag Row Crop	8
Ag Tree Crop	8
Antifouling Boat Paint	4
Aquatic	16
Chlorine Gas Infusion	4
Demonstration and Research	4
Forestry	8
Natural Areas Weed Management	16
Ornamental and Turf	12
Private Applicator Agriculture	4
Raw Ag Commodity Fumigation	4
Regulatory Inspection and Sampling	4
Regulatory Pest Control	12
Right-of-Way	8
Seed Treatment	4
Sewer Root Control	4
Soil and Greenhouse Fumigation	4
Wood Treatment	4

Effective January 1, 2005, all applicators must have 4 core CEUs in addition to the above category CEUs. The 4 core CEUs are required per license, not per category.

Applicators have the option of retaking the core and/or category exams if desired or if they do not have enough CEUs for renewal. Example: Effective January 1, 2005, a commercial applicator with the aquatic and right-of way categories will be required to have 4 core CEUs plus 16 aquatic CEUs plus 8 right-of-way CEUs (total: 28 CEUs) to renew both categories. The applicator may choose to retake any or all of the exams – core, aquatic, and/or right-of-way – to avoid having to earn the corresponding CEUs (core, aquatic, and/or right-of-way).

2. Authorized Purchasing Agents (APAs). The APA Designation form has been adopted by rule, so this form must be filled out completely and signed by both license holder and APA to designate purchasing agents.

3. Recordkeeping. The recordkeeping requirements for restricted use pesticide applications have been revised to require start time and end time for each application instead of a general time of application. Also, Global Positioning Satellite (GPS) coordinates or longitude/latitude points have been added as an option for recording pesticide application site locations for all applicators.

The recordkeeping rule also now specifies the records required to meet the pesticide contamination liability exemption provided by Section 487.081(6)(b), F.S. This provision in the law allows property owners to be exempt from proceedings by the Florida Department of Environmental Protection to recover costs or damages associated with evaluation, assessment, or remediation of pesticide contaminated property or potable water supplies, provided pesticides were used legally and the property owner or leaseholder maintains records of all pesticide applications and makes the records available to the Department upon request. The recordkeeping requirements are the same as for restricted use pesticides, except that the records should be kept indefinitely.

4. Certification Exams. Pesticide certification exams will be given in English only. No written or verbal translations may be made. Previous regulations provided for exams to be translated into other languages upon request if labels were available in the language requested, and licensing was valid only for use of restricted use products with labels in the language in which tested.

5. CEU Program Approvals. The regulations have been modified to authorize electronic CEU program requests and approvals. Rule language regarding CEU programs has also been modified to be consistent with terminology used by the Bureau of Entomology and Pest Control. “Sponsoring organizations” are now referred to as “education providers”.

6. Aerial Category. The aerial category is now limited to commercial and public applicators. Previously, the aerial category was also available to private applicators, but no private applicators were licensed in this category. Aerial applicators are now required to be licensed in all work related categories (ag row crop, forestry, etc.) if they make pest management decisions (decide when treatment is needed, what to apply, etc.) concerning their applications. If they make no pest management decisions but only apply pesticides on contract to or at the request or direction of other individuals, then only the aerial category is required.

7. Aerial Insurance. Insurance is no longer required for licensing of aerial applicators since it is now required for all aircraft used to apply pesticides as part of the aircraft registration process. Pilots must still provide a copy of their FAA pilot’s license before being licensed by FDACS in the aerial category. Aircraft registrants must submit proof of insurance or surety bond with each aircraft registration or renewal if agricultural pesticides will be applied and must keep certificates of insurance for two years after the aircraft registration expires or is withdrawn. No insurance is required for aerial application of public health/mosquito control pesticides, fertilizer, or seed.

8. Aerial Recordkeeping During Emergencies. During times of declared emergencies, aerial applicators must now record the start time and end time (instead of general application time) of each pesticide application made. The pilot’s FDACS pesticide applicator license number is now also required in the records.

9. Forms. Updated versions of the following Department forms have been adopted and may be downloaded from our website <http://www.safepesticideuse.com>

Application for Private Applicator License (DACS-13312), Rev. 05/04

Application for Public Applicator License (DACS-13313), Rev. 05/04

Application for Commercial Applicator License (DACS-13310), Rev. 05/04

Authorized Purchasing Agent Designation (DACS-13352), Rev. 05/04

Application for Pesticide Dealer License (DACS-13337), Rev. 05/04

Request for Granting Continuing Education Units (CEUs) for Renewal of Pesticide Applicator Licenses and Certificates (DACS-13326), Rev. 05/04

Record of Attendance for Continuing Education Units (CEUs) (DACS-13325), Rev. 05/04

DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

Office of Agricultural Water Policy

RULE TITLE: **Gulf Coast Citrus Best Management Practices** **RULE NO.** 5M-7:

PURPOSE AND EFFECT: The purpose and effect of the proposed rule is to adopt the *Water Quality/Quantity BMPs for Gulf Coast Citrus*, and provide the mechanisms for the Florida Department of Agriculture and Consumer Services to verify compliance with the Best Management Practices (BMPs) in accordance with Chapter 403.067 (7) F.S.

SUBJECT AREA TO BE ADDRESSED:

The purpose of this workshop is to review a draft rule that adopts the *Water Quality/Quantity BMPs for Gulf Coast Citrus*, establishes record keeping requirements and the procedures for landowners and leaseholders to submit a notice of intent to comply with Best Management Practices (BMPs) and interim measures.

SPECIFIC AUTHORITY: 403.067 (7) FS.

LAW IMPLEMENTED: 403.067 (7) FS.

A RULE DEVELOPMENT WORKSHOP WILL BE HELD AT THE TIME, DATE AND

PLACE SHOWN BELOW:

TIME AND DATE: **1:00 PM, Tuesday June 14, 2005**

PLACE: **Collier County Extension Office, 14700 Immokalee Road, Naples, FL**

Phone: **239-353-4244**

THE PERSON TO BE CONTACTED REGARDING THE PROPOSED RULE IS:

Ken Kuhl, Environmental Administrator; Office of Agricultural Water Policy, 1203

Governor's Square Blvd., Suite 200, Tallahassee, Florida 32399-1650

Phone: (850) 488-6249 or FAX (850) 921-2153.

or **Randolph R. Smith**, Environmental Specialist; 850-921-0644

Goal of the BMP Program in Florida

<http://www.floridaagwaterpolicy.com/>



It is to improve water quality to protect the environment while maintaining economic viability by identifying sources and implementing practices, promoting education of and participation by growers. Typically, the development of this statement is an evolving process, much like the BMP practices within the manual, which continues to improve as grower participation and understanding increases. The key emphasis here is that this is a voluntary participation program. It is developed by growers, and it is supported by science where growers feel the science is technically and economically feasible. In addition, the goal is to minimize offsite movement of potential pollutants, and at the same time improve the efficient use by the plant of nutrients, water,

and pesticides, thereby possibly decreasing production costs.

In addition, voluntary participants in the BMP program are given a statutory status in relation to the state's water quality standards for ground water and surface water. If you implement the BMP, you are "presumed" to be in compliance with all water quality standards imposed by the state. If water quality data collected by the state suggests otherwise, you are not liable for fines or other punitive measures as long as you participate in the BMP program. If it is found that the BMP is not effective in a particular watershed or region of the state at some point in time, then the Office of Water Policy within the Florida Department of Agriculture and Consumer Services, in cooperation with you and UF/IFAS must revisit the BMP and consider the appropriate changes for the region or watershed. Any changes in the BMP must be supported by UF/IFAS, and the growers, and other stakeholders before they can be considered for inclusion in the existing BMP by this Department. As long as the grower participates in the program, he or she continues to be in compliance with all water quality standards and is waived of any regulatory enforcement action from the state.

The Office of Agricultural Water Policy

The Office of Agricultural Water Policy (OAWP) was established in 1995 by the Florida Legislature to facilitate and improve communications between federal, state, local agencies, and the agricultural industry on water quantity and water quality issues involving agriculture. The OAWP is actively involved in the development of Best Management Practices (BMPs) on a site specific, regional, and watershed basis. The OAWP works cooperatively with agricultural producers and industry groups, the Florida Department of Environmental Protection (FDEP), the university system, the water management district, and other interested parties to develop and implement BMPs programs that are economically and technically feasible.

The primary mission of the Office of Agricultural Water Policy is to formulate and

establish water policies that will provide assurances that agriculture will have access to sufficient water supplies in the future. –

Commissioner of Agriculture Charles H. Bronson

The official headquarters of the OAWP is in Tallahassee. Charles C. "Chuck" Aller, who has served as the director since its inception, has seen the OAWP grow to a staff of 37 employees. The Tallahassee office is under the direct supervision of Richard J. "Rich" Budell (Assistant Director) with 18 professional and support staff with expertise in several disciplines including soil and water conservation, resource management, environmental regulation, biology, ecology, engineering, GIS, etc. The Tallahassee team provides leadership and supervision for the six field technical teams located around the state.

FLATWOODS CITRUS NEWSLETTER

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

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

Please send: Dr. Mongi Zekri
Multi-County Citrus Agent
Hendry County Extension Office
P.O. Box 68
LaBelle, FL 33975

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__ Asian American

__ Hispanic

__ White, non-Hispanic

__ Black, non-Hispanic

Gender

__ Female

__ Male