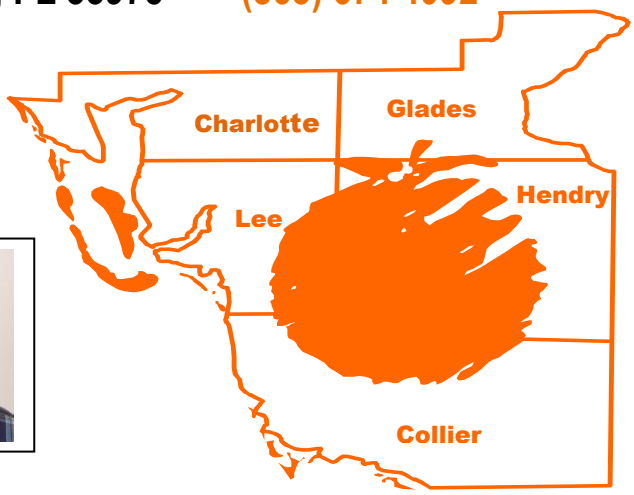
UF UNIVERSITY of FLORIDA
IFAS Extension

EXTENSION

Institute of Food and Agricultural Sciences

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

Flatwoods Citrus



Vol. 12, No. 11 **November 2009**

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

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

Agriculture and Farming for Ecosystem Services

Tuesday, November 10, 2009, 8am - 1pm
UF/IFAS Southwest Florida Research and Education Center—Immokalee
Details are on page 19.
Any questions, please contact Julie Carson or Dr. Fritz Roka at 239-658-3400.

LOCAL CITRUS SPOT BURNERS WORKSHOP

Florida Division of Forestry & UF-IFAS Hendry County Extension

Date & Time: November 17, 2009, 9:00 AM - 12:00 Noon

Location: Hendry County Extension Office, LaBelle

Details are on pages 21 & 22.
Any questions, please contact Hank Graham (grahamh@doacs.state.fl.us) or Greg Cox (coxg@doacs.state.fl.us) at 239 690 3500 ext. 100 or 101

► MECHANICAL HARVESTING UPDATE

Location: **Immokalee IFAS Center**
Date: Tuesday, December 8, 2009, Time: 10:00 AM – 12:00 Noon
1 CEU for Pesticide License Renewal, 2 CEUs for Certified Crop Advisors

Tree Health---Dr. Jim Syvertsen
Abscission---Dr. Bob Ebel
Current Machines---Dr. Reza Ehsani
Economics---Dr. Fritz Roka

Go to: http://citrusmh.ifas.ufl.edu/

http://www.citrusshow.com/?page=reg

Special Thanks to the following sponsors (on pages on pages 3, 4, and 5) of the Flatwoods Citrus Newsletter for their generous contribution and support. If you would like to be among them, please contact me at 863 674 4092 or maz@ifas.ufl.edu

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HOW TO REDUCE DRIFT?

■ Avoid high spray pressure, which create finer droplets. Use as coarse a spray as possible and still obtain good coverage and control.
■ Don't apply pesticides under windy or gusty conditions; don't apply at wind speeds over 10 mph. Read the label for specific instructions.
■ Maintain adequate buffer zones to insure that drift does not occur off the target area.
■ Be careful with all pesticides. Insecticides and fungicides usually require smaller droplet sizes for good coverage and control than herbicides; however, herbicides have a greater potential for non-target crop damage.
■ Choose an application method and a formulation that is less likely to cause drift.
■ Use drift reduction nozzles.
■ Use wide-angle nozzles, lower spray boom heights, and keep spray boom stable.
■ Use drift control/drift reduction agents. These materials are designed to minimize the formation of droplets smaller than 150 microns. They help produce a more consistent spray pattern and aid in deposition. Drift control additives do not eliminate drift. Therefore, common sense is still required.
■ Apply pesticides early in the morning or late in the evening; the air is often more still than during the rest of the day.
■ Don't spray during thermal inversions, when air closest to the ground is warmer than the air above it. When possible, avoid spraying at temperatures above 90° F.
■ Know your surroundings! You must determine the location of sensitive areas near the application site. Some crops are particularly sensitive to herbicides, which move off-site.
■ Be sure you are getting the spray deposition pattern you think you are; service and calibrate your equipment regularly.
■ Whenever possible, cut off the spray for missing trees in the row. Spray that does not enter the tree canopy is wasted and contributes significantly to drift problems.
■ Keep good records and evaluate pesticide spray results.

Remember,
ALWAYS read and follow label directions.

SAVE MONEY BY ADAPTING MECHANICAL HARVESTING

Change has kept the Florida citrus industry competitive during the last century. It is a general consensus among industry leaders that efficiencies in harvesting offer the greatest potential to reduce costs and keep our juice industry economically viable.

Generally, citrus groves in Florida were not designed and planted with mechanical harvesting in mind. Therefore, in order to gain the efficiencies necessary, changes to tree shape and grove architecture must occur. There are two paths to follow: 1) begin planting new groves designed for mechanical harvesting, and 2) retrofit existing groves that are suitable for mechanical harvesting.

How Do We Start Preparing Groves for Mechanical Harvesting?

The first change is to begin planting all new trees, both new and resets in groves suitable for conversion to mechanical harvesting, with high-headed trees. High-headed trees have longer than normal (16-inch) trunks, with the scaffold branching beginning at about 30 inches. These high-headed trees are suited to accommodate mechanical harvesting by having higher tree skirts as well as providing greater trunk length to allow for trunk shaker attachment as well as having additional horticultural and practical advantages in the grove. Regardless of the harvesting machine utilized, a catch frame must fit under the tree to capture fruit for maximum cost efficiency. The second objective is to reshape existing trees to accommodate existing mechanical harvesting equipment. The important point to consider is that not all groves may be good candidates for mechanical harvesting and the first criteria should be to determine where mechanical harvesting may be utilized to obtain maximum harvesting efficiency. Groves determined not to be candidates for mechanical harvesting will have to be hand harvested until a decision is made to remove the grove and replant with an architecture that maximizes mechanical harvesting efficiency.

New plantings should be designed along the following criteria:

- High-headed trees should be planted with scaffold branching starting at 30 inches and skirting maintained at the drip line at 36 inches.
- In-row spacing should be 10 to 15 feet and 22 to 24 feet between rows.

Hedging down the row needs to maintain 8-foot width for passage of equipment.

- Tree heights limited to 16 feet with either flat or roof-top.
- Irrigation emitters need to be equal distance between trees in the row.
- Efficiency of machine is enhanced with longer rows.
- Turn space is need at end of row to accommodate large machines.
- In bedded groves, furrows must not be steep and must be suitable to accommodate heavy equipment.

What are the Horticultural Advantages of High-Headed Trees?

In addition to preparing for the future of mechanical harvesting and improving the recovery of fruit, there are many horticultural advantages to high-headed trees:

- Reduced herbicide damage to the tree without contact to low hanging foliage;
- Less exposure to brown rot and greasy spot with improved air drainage under the canopy;
- Reduce severity and frequency for mechanical skirting;
- More uniform wetting pattern of irrigation emitters with fewer obstacles from low hanging limbs;
- Irrigation emitters are visible for checking proper operation and maintenance;
- Fruit production will start sooner after planting because an older tree is planted.

This is not to suggest that high-headed trees won't require some change in attitude and adjustment in cultural practices. The following issues need to be addressed:

- Need a rigid nursery tree to withstand wind, mechanical, and pest pressure;
- Taller tree wraps will be needed and longer stakes if staking is necessary to support the tree at planting time;
- Taller wraps will house insects that attract predators that can pull over and break the tree;
- Initial tree cost may be $0.50 to $1.00 more but production starts sooner.

What About Converting My Existing Grove to Mechanical Harvesting?

Not all groves are suitable for conversion to mechanical harvesting. It must be determined whether existing tree and grove structure (straight trunk and size, high scaffolds, tree health, age, grove layout, missing trees, grove size, etc.) would be cost effective to change. Additional costs will be incurred if irrigation emitters need to be relocated. If the trees can be skirted, hedged and topped, and meet the criteria of a grove design discussed above, it may be a good candidate. Skirting has been shown in several studies to only reduce yield a minimal amount the year skirting is done. Where mechanical harvesting has been used the past 10 years, no negative long-term effects have been observed. Limb breakage the first year is usually interior dead wood and live wood is no more than usually experienced with harvesting ladders. Any root damage is quickly recovered with no affects on yield.

This information is from the following EDIS publication:

Start Now to Design Citrus Groves for Mechanical Harvesting

Bob Rouse and Steve Futch

http://edis.ifas.ufl.edu/HS219

For more information on citrus mechanical harvesting check the Citrus mechanical harvesting website at: http://citrusmh.ifas.ufl.edu/

FIRE ANTS

With the harvesting season just got started

Imported fire ants are reddish brown to black and are 1/8 to 1/4 in long. These ants are aggressive and notorious for their painful, burning sting that results in a pustule and intense itching, which may persist for a week. Some people have allergic reactions to fire ant stings that range from rashes and swelling to paralysis or even death. In addition to stinging humans, imported fire ants can sting pets, livestock, and wildlife. Crop losses are also reported due to fire ants feeding on plants and even citrus trees. Fire ants may damage young citrus by building nests at the trunk bases. The ants feed on the bark and cambium to obtain sap, often girdling and killing young citrus trees. Fire ants also chew off new growth at the tips of branches and feed on flowers and developing fruit. In groves infested with ants, harvesting crews may not be willing to work and may request a higher fee to do their job. The ants are also known to cause extensive damage to irrigation lines and plug emitters. They aggregate near electrical fields where they can cause short circuits or interfere with switches and equipment such as water pumps, computers and air conditioners.

BIOLOGY

Red imported fire ants live in colonies that contain cream-colored to white immature ants, called brood. The brood is comprised of the eggs, larvae, and pupae. Also within the colonies are adult ants of different types. They include winged males and winged females, workers, and one or more queens. While thousands of winged males and females can be produced per year in large colonies, they do not sting. Newly-mated queens can fly as far as 12 miles from the nest (or even farther in the wind), but most land within a mile. New colonies do not make conspicuous mounds for several months. Once a colony is established, a single queen can lay over 2,000 eggs per day. Depending on temperature, it can take 20 to 45 days for an egg to develop into an adult worker. Workers can live as long as 9 months at 75°F, but life spans usually are between 1 and 6 months under warmer outdoor conditions. Queens live an average of 6 to 7 years.

Fire ants are omnivorous feeders. Workers will forage for food more than 100 feet from the nest. They can forage during both the day and the night, generally when air temperatures are between 70° and 90°F. When a large food source is found, fire ants recruit other workers to help take the food back to the colony. Liquids are ingested at the food source, and stored within the ants until they are regurgitated to other ants within the colony. Liquids from solid foods are extracted at the source, or are carried back as solid particles. Large solids may be cut into smaller pieces so they can be carried back to the colony. There are two types of fire ant colonies: single-queen, and multiple-queen colonies. A colony may contain as many as 100,000 to 500,000 workers.

CONTROL STRATEGIES AND TECHNIQUES

Numerous methods have been developed to control fire ants. Unfortunately, there are no

control methods that will permanently eliminate fire ants. Four strategies are currently being used to control fire ants: broadcast bait applications, individual mound treatments, a combination of broadcast baiting and individual mound treatments, and barrier/spot treatments.

1. Broadcast Bait Applications

This strategy attempts to reduce fire ant populations by applying insecticides incorporated into an attractant or bait. The ants carry the bait to the colony. The slow action of the toxicant allows the ants to feed it to other members of the colony before they die. When the toxicant is fed to the queen(s), she either dies or no longer produces new workers and the colony will eventually collapse.

●***Keep baits dry.*** Wet baits are not attractive to fire ants. Apply baits when the grass and ground are dry or drying, and rain is not expected, preferably for the next 24 hours.

●***Apply baits when fire ants are actively foraging.*** During hot, summer weather, apply baits in the late afternoon or evening because fire ants will forage at night under these conditions.

●***Follow the directions on the label.*** It is against the law to apply baits in areas not listed on the label.

2. Individual Mound Treatments

This strategy attempts to eliminate colonies of fire ants by treating mounds individually. Individual mound treatments are time consuming and labor intensive. However, colonies treated individually may be eliminated faster than colonies treated with broadcast bait applications.

Baits

Bait products used for broadcast bait applications can be applied to individual mounds. Sprinkle the recommended amount of bait around the base of the mound up to three feet away. In addition, follow the Guidelines for Effective Bait Applications given previously. As with broadcast bait applications, the use of baits for individual mound treatments may take one to several weeks to eliminate colonies.

Dusts

Dusts are dry powder insecticidal products. The dusts stick to the bodies of ants as they walk through treated soil. Ants that contact the dust will eventually die. Dusts are applied by evenly sprinkling a measured amount of dust over the mound. Avoid inhaling or touching the dust. Some dusts, such as those containing 75% acephate, should kill an entire colony within a week.

Aerosols

Some products are available in aerosol cans equipped with a probe, and contain insecticides that quickly immobilize and kill ants on contact. As the probe is inserted into a mound, the insecticide should be injected into the mound for a specified amount of time. Similar to other individual mound treatments, application on cool, sunny mornings will help maximize contact with the colony.

3. Combining Broadcast Baiting and Individual Mound Treatments

This strategy utilizes the efficiency of broadcast baiting and the fast action of individual mound treatments. Baits must be broadcast first to efficiently reduce fire ant populations. Wait a minimum of 3 days after broadcasting to allow fire ants to forage and distribute the bait before individually treating mounds. Treat mounds preferably with a dust, granular, or aerosol insecticide specifically labeled for fire ant control.

4. Barrier/Spot Treatments

These products are usually sold as sprays or dusts. They may be applied in wide bands on and around building foundations, equipment and other areas to create barriers that exclude ants. They also may be applied to ant trails to eliminate foraging ants. Barrier and spot treatments do not eliminate colonies.

Increasing Efficiency and Reducing Cost of Nutritional Programs

Importance of N & K

- N & K are the most important nutrients for Florida soils and citrus.
- An adequate level of N is required for vegetative growth, flowering, and fruit yield.
- K also plays an important role in determining yield, fruit size, and quality.
- Fertilizer ratios of N to K_2O are usually 1:1. However, a ratio of 1:1.25 is recommended for high pH or calcareous soils.

Management practices to improve fertilizer efficiency

They include:

♦ Evaluation of leaf analysis data

♦ Adjustment of N rates to the level based on expected production and IFAS recommendations

♦ Selection of fertilizer formulation to match existing conditions

♦ Careful placement of fertilizer within the root zone

♦ Timing to avoid the rainy season

♦ Split application

♦ Irrigation management to maximize production and minimize leaching

Tissue and soil analysis

- Leaf sampling and analysis is a useful management tool for fertilizer decisions.
  - Soil analysis is useful for determining the pH and concentrations of P, Ca, and Mg.

N requirements for mature trees

- In a mature grove where there is little net increase in tree size, N used for leaf growth is largely recycled as leaves drop, decompose, and mineralize. Replacement of the N removed by fruit harvest becomes the main requirement, and nutrient requirements should vary as the crop load changes.

Fertilizer Sources

- Inorganic and synthetic organic nitrogen fertilizers are high-analysis materials and are generally most economical to use in citrus groves. They are rapidly available, unless they have been formulated in a controlled-release form.
- The use of high analysis fertilizers eliminates much of the filler. A great deal of the mixing, transportation, and application cost is reduced.

- The use of controlled-release fertilizers for resets in established groves is a feasible option.

Timing and frequency of application

- 2/3 of the tree's nutritional requirements should be made available between January and early June, with most of it in place during flowering and fruit-setting period. The remaining 1/3 can be applied in September or October.
- Split fertilizer application or fertigation combined with sound irrigation management increase fertilizer efficiency by maintaining a more constant supply of nutrients and by reducing leaching if unexpected rain occurs. Less fertilizer will be required.
- Less fertilizer may also be required if fertilizer is confined to the root zone and if timing is adjusted to avoid rainy periods.

Foliar feeding

- Foliar feeding is useful under calcareous soil or any other condition that decreases the tree's ability to take up nutrients when there is a demand.
- Foliar applications of low-biuret urea (25-28 lbs N/acre) or phosphorous acid (2.6 quarts/acre of 26-28% P_2O_5) in late Dec.-early Jan. are known to increase flowering, fruit set, and fruit yield.
- Postbloom foliar applications of potassium nitrate or mono-potassium phosphate (8 lbs/acre K_2O) in late April have been found to increase fruit size and yield.

Phosphorus

- P applied to established groves had not leached but had accumulated in the soil at high levels and is available slowly so that P application may be reduced or omitted in established groves.

Micronutrients

- Copper should not be included in fertilizers if Cu sprays are used and if the grove soil test show adequate Cu (5-10 lbs/acre).
- Molybdenum (Mo) deficiency occurs on soils that have been allowed to become very acid. Liming those soils should fix the problem.
- Foliar spray applications of micronutrients (Mn, Zn, Cu, B, and Mo) are more effective and economically practical than soil applications when included with post-bloom and summer foliar sprays after full expansion of the new flush.

Soil pH & liming

- Soils should have a pH ranging from 5.5 to 6.5 with the higher values used for soils containing high Cu levels.
- Soil pH can be increased by application of either calcite or dolomite. Dolomite supplies both Ca and Mg. Therefore, the choice of dolomite would be more appropriate to supply Mg and have a good balance between Ca and Mg.

Overliming

- Liming soils having a pH at or above 6 will be costly and not useful. In groves, where soils have adequate pH but low Ca levels, gypsum ($CaSO_4$) can be used as a source of Ca without affecting the soil pH.
- Applying dolomite as a source of Mg is not recommended if the soil pH is in the desired range. Under these conditions, soil application of either magnesium sulfate ($MgSO_4$) or magnesium oxide (MgO) and foliar application of magnesium nitrate ($Mg(NO_3)_2$) are effective for correcting Mg deficiency.

LOW VOLUME APPLICATIONS FOR PSYLLID CONTROL ARE BECOMING POPULAR, By Ryan Atwood, Mongi Zekri, Lukasz Stelinski, and Phil Stansly

1. Psyllid management requires multiple seasonal treatments, which is expensive.
2. During spring and summer, when psyllid populations peak, foliar applications of insecticides against the psyllid are effective for only 2-3 weeks.
3. Psyllids quickly re-colonize groves from surrounding areas.

What is a Low Volume (LV) application?

1. Spray volumes are typically 2-5 GPA
2. LV applicators run at higher speeds (5-10 MPH)
3. LV applicators tend to produce smaller droplets and deploy more droplets per acre than standard airblast sprayers.
4. LV applications typically are made at night to minimize drift.

Why should you be interested in Low Volume (LV) applications?

1. Application is relatively inexpensive!
2. Application is fast!
3. Covers relatively larger areas in short amount of time!
4. Some equipment is truck mounted allowing for quick access in and out of groves.

Concerns with Low Volume application

1. Effectiveness of controlling psyllid adults, nymphs, and eggs?
2. Legality -Labeling.
3. The misuse of one product, no rotation of chemicals having different mode of action.
4. Potential for drift.
5. Worker Safety.

In laboratory experiments, greater psyllid kill was obtained with smaller spray droplet size

All current available LV machines work

With pre-flush application, LV is equivalent to HV when chemicals are applied to every row

Do I need to add Oil?

NO for Pyrethroids like Danitol and Mustang

YES for Delegate and Micromite, don't need much--1.5-2.0%

NEED MORE TESTING for organophosphates like Malathion and Dimethoate

How fast should I run the truck?

For Pyrethroids (Danitol)—efficacy was equivalent between 5 and 8-10 MPH.

For an Organophosphate (Dimethoate)—efficacy was slightly better at 5 MPH than 8-10MPH.

When should I apply?

Most efficient during the fall-winter dormant season

Must spray at night or early morning hours to minimize drift

Don't spray when wind is above 10 MPH—lots of drift and low efficacy

United States Department of Agriculture
National Agricultural Statistics Service

CITRUS

OCTOBER FORECAST
MATURITY TEST RESULTS AND FRUIT SIZE

Cooperating with the Florida Department of Agriculture & Consumer Services
2290 Lucien Way, Suite 300, Maitland, FL 32751
(407) 648-6013 · (407) 648-6029 FAX · www.nass.usda.gov/fl

2009 FORECAST DATES
2009-2010 SEASON

November 10, 2009 December 10, 2009

All Oranges 136.0 Million Boxes

The 2009-10 Florida all orange forecast released today by the USDA Agricultural Statistics Board is 136.0 million boxes. This forecast is 16 percent less than the final production of 162.4 million boxes last season and 20 percent less than the 170.2 million boxes produced in 2007-08. The forecast is comprised of 67.0 million boxes of the late maturing Valencia oranges and 69.0 million boxes of the non-Valencia oranges (early, midseason, Navel, and Temple varieties). Navel orange production is forecast at 2.3 million boxes, which is 3 percent of the non-Valencia total.

The hurricane seasons of 2004-05 and 2005-06 have been excluded from the usual 10-year regression analysis and from comparisons of the current season to previous seasons. For those previous 8 seasons, average actual production is 200.0 million boxes. The October forecast has deviated from final production by an average of 5 percent with 5 seasons above and 3 below, with differences ranging from 9 percent below to 8 percent above.

Weather conditions during early 2009 were characterized by a series of cold fronts, freezing temperatures, and below average rainfall in many citrus producing areas. In mid-March, the start of the 2009-10 crop began with a full citrus bloom. Drought conditions worsened throughout April and May. Heavy afternoon rains and typical Florida weather patterns returned in late May and continued into the harvest season.

Non-Valencia Oranges 69.0 Million Boxes

Forecast of the non-Valencia oranges (early, midseason, Navel, and Temple varieties) is 69.0 million boxes. The Navel portion of the forecast is 2.3 million boxes. If realized, this forecast would be 18 percent less than last season's production.

Valencia Oranges 67.0 Million Boxes

The initial forecast of production of Valencia oranges is 67.0 million boxes, 14 percent below the previous season.

Tangelos 1.0 Million Boxes

The tangelo forecast of 1.0 million boxes is 13 percent less than last season's 1.15 million boxes

All Tangerines 4.9 Million Boxes

The forecast of all tangerines is 4.9 million boxes, 27 percent more than last season's production. The total is made up of 2.6 million boxes of the early varieties (Fallglo and Sunburst) and 2.3 million boxes of the late maturing Honey variety.

All Grapefruit 19.8 Million Boxes

The forecast of grapefruit production is 19.8 million boxes. If attained, this will be 9 percent less than the 21.7 million boxes produced last season.

UF UNIVERSITY of FLORIDA IFAS Extension

Quick Reference Guide to Citrus Insecticides and Miticides

M.E. Rogers, P. A. Stansly, L. L. Stelinski and J. D. Yates

ENY-854

Products recommended in the Florida Citrus Pest Management Guide and their effects on selected pests and their natural enemies.

Pesticide active ingredient	Product Brand Name Examples	Restricted entry interval (REI)	Pre-harvest interval (PHI)	Target pest								Effects on natural enemies
				Mode of Action[1]	Psyllid	Leafminer	Rust Mites	Spider Mites	Root Weevil Adults	Scale Insects	Mealybugs	
Abamectin + oil	Agri-mek 0.15EC	12 hours	7 days	6	++	+++,R	+++,R	+	+ (oil)	+(oil)	+ (oil)	medium
Acetamiprid	Assail 70WP	12 hours	7 days	4	-	+++,R	-	-	?	+	++	medium
Aldicarb	Temik 15G	48 hours	0; 30 days (lemons)	1A	+++,R	-	+++,R	+++	-	-	-	low
Carbaryl	Sevin XLR Plus	12 hours	5 days	1A	++	-	+	-	+++,R	+++,R	+	high
Chlorpyrifos	Lorsban 4E	5 days	21 days	1B	+++,R	+	+	-	+	+++,R	+++,R	high
Diflubenzuron	Micromite 80WGS	12 hours	21 days	15	++	+++,R	+++,R	-	+++,R	-	-	low
Dimethoate	Dimethoate 4E	48 hours	15-45 days	1B	+++	-	-	-	?	+++,R	+	high
Fenbutatin oxide	Vendex 50WP	48 hours	7 days	12	-	-	+++,R	+++,R	-	-	-	low
Fenpropathrin	Danitol 2.4EC	24 hours	1 day	3	+++,R	-	+	+	+++,R	-	+	high
Imidacloprid (soil)	Admire Pro	12 hours	0	4	+++,R	+++,R	-	-	+	++	+	low
Imidacloprid (foliar)	Provado 1.6F	12 hours	0	4	+++,R	+	-	-	-	++	+	medium
Petroleum oil	numerous	12 hours	0	NR	+	++,R	++,R	++	+(eggs)	++,R	+	low
Phosmet	Imidan 70W	24 hours	7 days	1B	+++, R	-	+	?	+++,R	?	?	medium/high
Pyridaben	Nexter Miticide	12 hours	7 days	21	-	?	+++,R	+++,R	-	-	-	high
Spinosad	Spintor 2SC	4 hours	1 day	5	-	+++,R	-	-	-	-	-	low
Spinetoram	Delegate WG	4 hours	1 day	5	+++,R	+++,R	-	?	?	?	?	low
Spirodiclofen	Envidor 2SC	12 hours	7 days	23	-	-	+++,R	+++,R	?	-	-	low
Spirotetramat	Movento 240SC	24 hours	1 day	23	+++,R	?	+++,R	?	?	+++	?	low
Sulfur	numerous	12 hours	0	NR	-	-	+++,R	+++	-	?	?	high (short term)
Thiamethoxam	Actara 25 WG	12 hours	0	4	+++,R	+	-	-	-	++	+	medium
Thiamethoxam	Platinum 75 SG	12 hours	0	4	+++,R	+++,R	-	-	+	++	+	low
Zeta-cypermethrin	Mustang Insecticide	12 hours	1 day	3	+++,R	-	-	?	+++	?	?	high

[1]Mode of action class for citrus pesticides from the Insecticide Resistance Action Committee;
NR = no resistance potential (R) = product recommended for control of pest in Florida Citrus Pest Management Guide

Revised September 2009

(+++) = good control of pest (++) = short-term control of pest (+) = low levels of pest suppression (-) = no observed control of pest (?) = insufficient data available

You can get a good quality laminated sheet from your citrus extension agent. You can also get more free laminated sheets in color on citrus canker, citrus greening, citrus foliar fungal diseases, Phytophthora management for commercial citrus groves, exotic diseases, and quick reference guide to citrus insecticides and miticides. Visit with your citrus extension agent.

THINKING AHEAD--Resetting

Resetting is a good strategy if resets can be grown to maturity in a mature grove with greening management. If it is not possible to grow healthy young trees in greening-infected groves, when the grove becomes unproductive, replanting solid blocks at higher tree density and using the Open Hydroponic System (OHS) may be a successful strategy to stay in business. The benefit of using OHS will be rapid tree growth and increased early fruit production.

http://citrusmh.ifas.ufl.edu/pdf/field_day/042208/morgan_rouse_castle_concept_grove.pdf

http://www.arapahocitrus.com/ohscomp.html

For maximum efficiency of a production unit or grove, it is essential that every tree location is occupied by a tree and that every tree be healthy. It is very important to remove and replace declining trees that are not profitable. However, the reason for the decline should be found and the condition should be corrected so that the replacement tree does not suffer the same fate.

Replanting/Resetting in a mature grove seems justified only when a minimum of 8 ft between canopy driplines, not from trunk-to-trunk, is available for canopy development of the new trees.

Caring for young citrus trees is not an easy task. Resets should be watered, protected, fertilized, and weeded regularly. Because of their frequent flushing cycles, young trees are more sensitive and more attractive to pests than mature trees. Therefore, special care is needed to have pests under control. Because of citrus greening, citrus psyllid, and citrus leafminer, young trees cannot be grown successfully without supplemental frequent applications of soil-applied systemic insecticides.

Scattered resets can also have serious weed problems since removal of the previous tree allows the area to receive more sunlight and provides more favorable conditions for weed growth.

Keeping weeds under control during the established period of the reset is very important. Weed control around a reset site should be considered at pre-plant, early post-plant, and after the tree is established. If residual herbicides are used, they should be used in reduced rates and well in advance of planting so that harmful residues do not remain which might damage the reset. Contact or growth regulating herbicides are usually preferred since they do not leave residual effects.

If the grove is under a fertigation program, there is no need for special care in terms of nutrition. The use of controlled-release fertilizers may be a better option rather than making several trips to scattered resets throughout large blocks with soluble dry fertilizers. Young citrus trees require frequent but moderate water application for survival and proper growth. Drainage is as important as irrigation. Excess water must be removed from the rootzone.

Gulf Citrus Growers Association Manager's Memo

REGIONAL CITRUS PSYLLID SUPPRESSION PLAN

As you are keenly aware, the Citrus Greening (HLB) disease is one of the most serious citrus diseases in the world. In Florida, our citrus industry is united in its efforts to battle this disease to survive! The industry's recent commitment to the unprecedented multi-million dollar investments into production research stands as testimony to the extent of our fight. It is hoped that the research investment will pay great dividends very soon, and that growers will have more "tools" to deal with HLB!

During the past year, UF/IFAS scientists, including Dr. Phil Stansly, Dr. Mongi Zekri and others in the "GULF" region… have concluded that "THE" most effective tactic that growers can "immediately" employ in their groves is a targeted dormant spray program to reduce the population of the citrus psyllids, which are vectoring "greening"! In addition, these scientists recently documented the results of our region's spraying initiative from last season and are promoting TWO sprays for the 2009-2010 season during the coming "dormant period"! We are targeting the (November--December and January--February) periods. This is the time when the psyllid populations are in decline here in the "GULF" region, and "the science" indicates that this timeframe would be the most effective time to conduct our comprehensive, coordinated psyllid suppression plan using aerial and ground spraying of selected chemical insecticides.

In this regard, the Gulf Citrus Growers Association, UF/IFAS' Southwest Florida Research and Education Center and the Florida Department of Agriculture & Consumers Services' Division of Plant Industry are initiating "ROUND TWO" of our "regional" psyllid suppression plan featuring coordinated aerial and comprehensive ground spraying throughout the five county "Gulf" area. Meetings have been held through GCGA's Production & Research Committee to put this plan together. This MEMO is your "INVITATION" to join our fight against the psyllid! PLEASE review our "Gulf" Citrus Psyllid Suppression Plan.

2009-2010
REGIONAL CITRUS PSYLLID SUPPRESSION PLAN

Based upon the best available science, the psyllid suppression plan will begin in the "Gulf" citrus production region in early November. The plan will feature cooperative aerial and/or ground applications of selected insecticides. This season's plan suggests TWO application periods: NOVEMBER-DECEMBER AND JAUNUARY-FEBRUARY!
These recommendations are based on the scientific evaluation of last season's efforts!

The "Gulf" citrus production region has been sub-divided into Sub-Regions. Each Sub-Region will be coordinated by volunteer "Team Captain(s)", who will follow-up with citrus growers within their Sub-Region to implement the plan. The "Sub-Regions", and respective "Team Captains" AND their CONTACT INFORMATION are as follows:

EASTERN HENDRY SUB-REGION:	**Jim Snively**	**(863) 228-0002**
	Joe Hilliard, II	**(863) 673-2043**
	Danny Sutton	**(863) 675-2966**
GLADES CO.--ORTONA SUB-REGION:	**Kevin Rayburn**	**(863) 673-8900**
CENTRAL HENDRY SUB-REGION:	**Mark Colbert**	**(863) 673-0262**
	Jim Cloughley	**(772) 473-9370**
	Wes Mathis	**(863)-673-2892**
FELDA/CORKSCREW SUB-REGION:	**Dr. Mongi Zekri**	**(863) 674-4092**
N. & S. SR 82/SR 29 SUB-REGION:	**Tom Kirschner**	**(239) 340-4729**
SOUTH IMMOKALEE SUB-REGION:	**Paul Meador**	**(863) 675-8500**
CHARLOTTE COUNTY SUB-REGION:	**Fred Walters**	**(941) 628-9310**

AERIAL APPLICATORS will also serve as "key contacts" throughout the plan's implementation. They will be making contacts on their current "grower customers", as well as on growers within the "Sub-Regions" based on efficient aerial "logistics".
Our AERIAL APPLICATORS are: Steve Fletcher, Fletcher Flying Service (239) 860-2028 and Jeff Summersill TRS AG Services (561-722-4502).
"Pre" and "Post" testing for Psyllids will be coordinated through UF/IFAS'/ SWFREC scientists and FDACS/DPI staff as to measure our program's effectiveness. Their phone numbers are: Dr. Phil Stansly (239) 464-7395 and Paul Mears (239) 707-6084. PLEASE CONTACT THE TEAM CAPTAIN NEAREST YOUR GROVE, YOUR AERIAL APPLICATOR AND/OR THE "GCGA" OFFICE TO PARTICIPATE IN OUR EFFORTS!

YOUR SUPPORT AND PARTICIPATION WILL MAKE OUR EFFORT A SUCCESS!

Agriculture and Farming for Ecosystem Services

Tuesday, November 10, 2009, 8am - 1pm

UF/IFAS Southwest Florida Research and Education Center--Immokalee

PRESENTATIONS:

Farming in the Future – Reaping Ecosystem Services
Ed Hanlon, UF/IFAS

Markets for Ecosystem Services
Laila Racevskis, UF/IFAS

Current Status of U.S. Cap & Trade Policy and an Overview of the European Carbon Market
Alan Hodges, UF/IFAS

Mechanics of Carbon Credit Market – Opportunities in both the U.S. and international Market
Andrew Walmsley, Florida Farm Bureau

Carbon Accounting – Citrus Case Study
Tom Spreen, UF/IFAS

Experiences with Trading Water Quality Credits
Tatiana Borisova, UF/IFAS

Assessing Cost Data from SFWMD Projects
John Capece, Southern DataStream

What's Missing from Current Public Policy That Limits Agriculture's Production of Ecosystem Services
Speaker to be determined

This workshop includes lunch (American Farmland Trust invited speaker).

To register, please call the Southwest REC at 239-658-3400. A complete agenda will be available soon on the center's web site: http://swfrec.ifas.ufl.edu.

IMPORTANCE OF FERTILIZERS

Meeting the world's escalating food needs cannot be achieved without fertilizer input. Without fertilizer, the world would produce only about half as much food and more forested lands would have to be put into production. Inorganic commercial fertilizer plays a critical role in the world's food security and is important from both yield and food quality perspectives. Intensification of production and increasing yield on limited arable land is clearly important in securing an adequate food supply, and the role of fertilizer in this is very critical.

Intensification of production will be increasingly essential to the challenge of meeting future food demands. However, this intensification must be done so as to minimize environmental impacts. The Nutrient Stewardship Framework (right fertilizer source, right rate, right time, and right place) is therefore very important.

Let's talk about Potassium (K)

The rate of photosynthesis drops sharply when plants are K deficient. Too much N with too little K can result in a back-up of the protein building blocks, set the stage for disease problems, reduce production of carbohydrates, reduce fruiting, and increase fruit creasing, plugging and drop. A shortage of K can result in decreased yield and low fruit quality. Moderately low concentrations of K in the tree will cause a general reduction in growth without visual deficiency symptoms. The onset of visual deficiency symptoms means that production has already been seriously impaired.
In Florida, low K fertilization can lead to deficiency symptoms that develop in late summer and fall on the recently matured spring flush leaves. When K is low, the general leaf pattern begins as a yellowing of the tips and margins, which then gets broader. Necrotic areas and spotting can develop on the leaves. Symptoms appear first on older leaves because K tends to concentrate in the rapidly growing tissues. Potassium deficiency will cause slow growth, small leaves, fine branches, compact tree appearance, an increase in susceptibility to drought and cold, reduction in fruit size, very thin peel of smooth texture, premature shedding of fruit, and lower acid concentration in the fruit.

Potassium deficiency symptoms usually result from an insufficient K supply in the soil. Potassium deficiency may occur on acid sandy soils where leaching may be considerable. The supply of K to plants may be decreased by soils that have very high concentrations of Ca and Mg or by heavy application of N. Decreased K uptake is typical on some calcareous soils. Lack of soil moisture also reduces K uptake and may lead to K deficiency. If the supply of N and P is high relative to that of K, growth may be rapid at first, but the K concentration in the plant may ultimately decrease to deficiency. Addition of K would be necessary to maintain the nutrient balance required for uniform and continued growth. In situations where available K is high compared with the N or P supply, luxury consumption of K can occur.
Under most soil conditions, K deficiency can be corrected by applying potassium chloride (muriate of potash) or potassium sulfate to the soil. However, in fine textured, saline, or calcareous soils, K applications to the soil are sometimes ineffective or slow to correct K deficiency. Foliar application of potassium nitrate or mono-potassium phosphate can be very effective and rapid to correct K deficiency.

Florida Department of Agriculture and Consumer Services
CHARLES H. BRONSON, Commissioner
The Capitol • Tallahassee, FL 32399-0800
www.doacs.state.fl.us

Please Respond to:

Florida Division of Forestry
Caloosahatchee District
10941 Palm Beach Blvd.
Fort Myers, FL 33905`
(239) 690-3500

October 21, 2009

Citrus Grove Owner/Burner:

A workshop is scheduled for 9:00 a.m. on November 17, 2009 at the Hendry County Extension Office (1085 Pratt, La Belle, Florida 33935). This program will cover several topics related to our local Citrus Spot Burners program.

To take full advantage of this program, several requirements must be met:

1. An application, filled out completely for each grove, if you have more than one.
2. Map of grove with Section, Township and Range supplied to D.O.F. on 8 1/2 x 11" paper (several maps can be used to cover larger areas).
3. Once a year, attend a workshop on smoke management practices, burning rules and regulations, On the citrus spot burner program.
4. All pre-approved burn sites must be interior grove and at least 400' from any wooded areas.

Once the application and maps are supplied to the D.O.F. this will initiate a D.O.F. representative to schedule a grove inspection of the individual burn sites. These will then be kept on file at the D.O.F. dispatch office and the grove office to be referenced when requesting a burn authorization.

If you have already been involved in this program, you will still need to submit another application so your record and files can be updated. This is a local program and if we are to make this work, we need your support.

Sincerely,

CHARLES H. BRONSON
COMMISSIONER OF AGRICULTURE

Hank Graham
Center Manager
Caloosahatchee District Website Address:
http://www.fl-dof.com/field_operations/caloosahatchee.html

CITRUS SPOT BURNERS APPLICATION

GROVE NAME: _____

GROVE OWNER: _____

GROVE ADDRESS: _____

GROVE PHONE (day/night/cell): _____

_____

PERSON RESPONSIBLE: _____

PERSON RESPONSIBLE ADDRESS: _____

_____

PERSON RESPONSIBLE PHONE (day/night/cell): _____

_____

_____ _____

Grove Owner Signature Date

_____ _____

Burner Signature Date

2010 COST-SHARE PROGRAM FOR GULF CITRUS
SOUTHWEST FLORIDA RESOURCE CONSERVATION AND DEVELOPMENT COUNCIL

PROJECT SUMMARY AND OBJECTIVES

This contract provides funds to cost-share the implementation of Best Management Practices (BMP's) contained in the *Gulf Citrus BMP Manual (March 2006),* in order to achieve water quality/quantity benefits in the Gulf Citrus Production Region in Southwest Florida. The Southwest Florida Resource Conservation and Development Council (RCDC) will administer the program and disburse cost-share payments to growers qualified under the terms of this contract.

The objective of this program is to facilitate the voluntary implementation of Gulf Citrus BMP's that may not otherwise be economically feasible, thereby increasing participation in BMP's in the region.

Eligible Fiscal Year 2010 BMP's and Cost-Share Amounts:

1. Cost share may be provided through this contract for implementation of the following BMPs, which are contained in the FDACS-adopted manual, *Best Management Practices for Gulf Citrus:*

Cost share rate and maintenance periods for BMP practices		
Practice title	**Maximum cost-share rate**	**Maintenance period**
Aquatic Weed Barrier	75%	3 years
Chemigation Infrastructure	70%	5 years
Conversion/Repair of Flash Board Riser Water Control Structure	75%	5 years
Conversion to Low Volume Irrigation System	75%	10 years
Grade Stabilization	75%	5 years
On-Site Water Detention/Retention	70%	10years
Permanent Agrichemical Mixing/Washdown Facility	60%	10 years
Portable Agrichemical Mixing Station	60%	5 years
Precision Application Equipment	60%	5 years
Water Table Observation Well	75%	1 year
Soil Moisture Monitoring Devices	60%	3 years

2. Reimbursement rates are capped at 75% of receipt-verified costs on eligible items up to a maximum payout of $50,000.00.
3. Qualifying BMP's must be first-time, new installations, as the program will not reimburse for like-kind replacements. Replacement of existing items may be eligible if improvements to the system can be demonstrated to have environmental benefits.

Participant Eligibility Requirements:

To be eligible to receive cost-share payments under this contract, the participant must meet the following criteria:

1. Be a citrus grower in Charlotte, Collier, Glades, Hendry, or Lee counties.
2. Have submitted or submit to FDACS a Notice of Intent (NOI) to implement Gulf Citrus BMP's, pursuant to FDACS Rule 5M-7, F.A.C.
3. Provide a copy of the NOI to the RCDC.
4. If cost-share is requested for water conservation BMP's, all pressurized irrigation systems must undergo an expedited Mobile Irrigation Lab (MIL) evaluation.
5. If approved, practice needs to be installed and documented by June 11, 2010.

Application Procedure:

At this point, the program is being put together and official application forms are not yet released. If you are interested in applying for this program, please send an email, or regular letter, or ask for Jorge Rodriguez when calling the Hendry SWCD phone number:

Mailing Address
Jorge Rodriguez
Hendry SWCD
P.O. Box 248
LaBelle, Florida 33975

Contact Options
Phone: 863-674-5700
Fax: 863-612-0727
Email: jorge.rodriguez@fl.usda.gov