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Institute of Food and Agricultural Sciences

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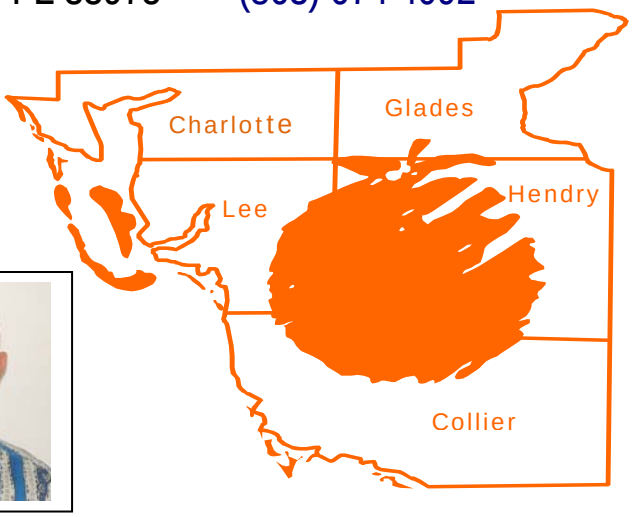
Flatwoods Citrus



Vol. 19, No. 7 **July 2016**

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

Table of Contents

Previous issues of the Flatwoods Citrus newsletter can be found at:
http://citrusagents.ifas.ufl.edu/agents/zekri/index.htm
http://irrec.ifas.ufl.edu/flcitrus/

Seminar

Canker, Greening, CHMA, & Psyllids

Date: Thursday, July 28th, 2016
Time: **10:00 AM – 12:00 Noon**
Location: Immokalee IFAS Center
Program Coordinator: Dr. Mongi Zekri, UF-IFAS

Topics

1. Canker & Greening: A Grower Perspective**, Tom Stopyra, The Packers of Indian River, Ltd**
   --Description of the problem: Canker
   --IPM for Canker control
   --Description of the problem: HLB
   --Current methods for vector control
   --Current tactics employed to combat HLB
   --Recent additions
   --What is the role of zinc?
   --Collateral effects of HLB
   --What can be done?
   --Future recommendations
2. Asian Citrus Psyllid (ACP) management and population within CHMAs**, Brandon Page, UF-IFAS Citrus REC**
   --Current ACP populations
   --Management strategies
   --Coordinating a spray
   --Why is ACP control important?
3. Psyllid management in young and mature citrus trees, **Dr. Jawwad Qureshi, UF-IFAS, Indian River Research & Education Center**
   --Citrus phenology and psyllid biology
   --Biological Control (conservation, augmentation)
   --Chemical control in young trees
   --Chemical control in mature trees (organic, conventional)

2 CEUs for Certified Crop Advisors (CCAs)
2 CEUs for Pesticide License Renewal
12:10 PM, Sponsored Lunch

Pre-registration is required. No registration fee and lunch is free Thanks to **Cody Hoffman** with **Syngenta.** To reserve a seat, call 863 674 4092, or send an e-mail to Dr. Mongi Zekri at: maz@ufl.edu

CITRUS EXPO IN NORTH FORT MYERS

http://www.citrusexpo.net/

August 17-18, 2016 at the Lee Civic Center in North Ft. Myers, FL

2016 Seminar Program

Wednesday, August 17, 2016

Morning Session (9:30 a.m.–noon)

9:30 – Welcome, announcements and introduction — Gary Cooper, AgNet Media
9:40 – Introduction to the "HLB Playbook" — Michael Rogers, UF/IFAS/CREC
9:50 – What you can do now to manage the health and productivity of HLB-affected groves — Tripti Vashisth, UF/IFAS/CREC
10:15 – From planning to planting: the latest information for establishing new groves in the presence of HLB — Ute Albrecht, UF/IFAS/SWFREC
10:40 – Thermal therapy: putting the latest results to work in your grove — Reza Ehsani, UF/IFAS/CREC
11:05 – Developing a psyllid management plan that works for you — Phil Stansly, UF/IFAS/SWFREC
11:30 – Citrus canker update — Evan Johnson, UF/IFAS/CREC
11:55 – Session wrap-up and concluding comments on future research advancements — Michael Rogers, UF/IFAS/CREC

12:00 – Break for lunch

Afternoon Session (2:00 p.m.–4:35 p.m.)

2:00 – Opening announcements — Gary Cooper, AgNet Media
2:05 – Current economics of citrus production — Ariel Singerman, UF/IFAS/CREC
2:30 – BMPs: new regulations and compliance issues — Kelly Morgan, UF/IFAS/SWFREC
2:55 – Incentive opportunities — Mike Sparks, Florida Citrus Mutual
3:20 – A grower's success pursuing incentive opportunities — TBA
3:45 – Future of the Florida Department of Citrus — Shannon Shepp, FDOC
4:00 – Water policy and HLB funding: how FDACS is working to serve the Florida citrus industry — TBA
4:30 – Session wrap-up and announcements — Gary Cooper, AgNet Media
4:35 – Citrus Expo Shindig on the trade show floor

Thursday, August 18, 2016

Morning Session (9:30 a.m.–noon)

9:30 – Welcome, announcements and introduction — TBA
9:40 – Update on postbloom fruit drop and 2016 field trial results — Natalia Peres, UF/IFAS/ GCREC
10:05 – Citrus black spot update — Jeff Rollins, UF Department of Plant Pathology
10:30 – Results of the grower bactericide use survey — Harold Browning, CRDF
10:45 – CRDF grower bactericide trials — Stephanie Slinski, CRDF
11:05 – USDA/Agricultural Research Service bactericide field trial results — TBA
11:30 – Grower panel: experiences to date with bactericide use in Florida citrus — TBA
12:00 – Concluding comments — Michael Rogers, UF/IFAS/CREC

12:05 – Lunch: Stay for Steak and Seafood

TBA = to be announced

Special Thanks to 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 or maz@ufl.edu

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EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by

CLIMATE PREDICTION CENTER/NCEP/NWS
and the International Research Institute for Climate and Society
9 June 2016

ENSO Alert System Status: Final El Niño Advisory/ La Niña Watch

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Synopsis: ENSO-neutral conditions are present and La Niña is favored to develop during the Northern Hemisphere summer 2016, with about a 75% chance of La Niña during the fall and winter 2016-17.

El Niño dissipated and ENSO-neutral conditions returned during over the past month, as indicated by the expansion of near-to-below average surface temperatures (SST) across the eastern equatorial Pacific Ocean (Fig. 1). Other than the westernmost Niño-4 region, the Niño indices were near zero by the end of May (Fig. 2). Below-average subsurface temperatures continued (Fig. 3) and extended to the surface across the eastern equatorial Pacific (Fig. 4). For the first time in 2016, atmospheric anomalies over the tropical Pacific Ocean were also consistent with ENSO-neutral conditions. The traditional and equatorial Southern Oscillation indices were near zero, while the upper and lower-level winds were both near average across most of the tropical Pacific. Convection was also near-average over the central tropical Pacific and over most of Indonesia (Fig. 5). Collectively, these atmospheric and oceanic anomalies reflect a transition from El Niño to ENSO-neutral conditions.

Many models favor La Niña (3-month average Niño-3.4 index less than or equal to -0.5°C) by the Northern Hemisphere fall (Fig. 6). However, most dynamical models indicate La Niña onset as soon as the Northern Hemisphere summer, which is slightly favored by the forecaster consensus. In contrast, many statistical models favor a later onset time, with about half indicating the persistence of ENSO-neutral conditions through the winter. At this time, the forecasters are leaning toward a weak or borderline moderate La Niña if an event were to form. Overall, ENSO-neutral conditions are present and La Niña is favored to develop during the Northern Hemisphere summer 2016, with about a 75% chance of La Niña during the fall and winter 2016-17 (click CPC/IRI consensus forecast for the chance of each outcome for each 3-month period).

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site (El Niño/La Niña Current Conditions and Expert Discussions). Forecasts are also updated monthly in the Forecast Forum of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an ENSO blog. The next ENSO Diagnostics Discussion is scheduled for 14 July 2016. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: ncep.list.enso-update@noaa.gov.

Climate Prediction Center
National Centers for Environmental Prediction
NOAA/National Weather Service
College Park, MD 20740

Asian Citrus Psyllid

New flush is required for psyllid females to lay eggs as well as for subsequent development of the psyllid nymphs. Female psyllids lay their eggs in developing leaf buds and on feather-stage flush which has not yet unfurled. Once young leaves have expanded, they are no longer attractive to psyllids for egg laying. When suitable flush is not available for egg laying, psyllids may either remain on a tree feeding on the mature leaves until new flush is available for reproduction or they may leave the tree in search of other host plants on which to lay their eggs.

Nonbearing Trees

Soil-applied systemic insecticides will provide the longest lasting control of psyllids with the least impacts on beneficials. Currently three soil-applied insecticides (imidacloprid, thiamethoxam, and clothianidin) are available that provide control of psyllids on young nonbearing trees. The active ingredients of all three are considered neonicotinoids or group 4A according to the Insecticide Resistance Action Committee (IRAC) mode of action classification system (www.irac-online.org). Depending on formulation, neonicotinoids may be applied as either to the soil as a drench or as foliar sprays. However, drench applications are by far the most effective way to use these products on young trees.

Soil-drenches are best applied using an applicator metered to deliver 8–10 oz of formulated drench solution to each tree. Drench applications should be applied directly at the soil-rootstock interface. Use restrictions limit the number applications that can be made in a growing season. Imidacloprid applications are limited to no more than 0.5 lbs AI/A per growing season, regardless of application method. This equates to 14 fluid ounces per acre for 4.6F formulations, 16 oz/ac for 4F formulations or 32 fluid ounces per acre for 2F formulations. A 24(c) Special Local Need (SLN) label was issued for Admire Pro 4.6F. This SLN is valid until December 31, 2014 and permits application of up to 28 fl oz/A of Admire Pro (1.0 lbs a.i./A) as a soil drench per 12 months. No more than 14 fl oz/A may be applied at one time. This SLN for Admire Pro allows for an additional soil drench application needed to provide additional protection for citrus trees 5–9’ in height. Thiamethoxam applications are limited to no more than 0.172 lb AI/A (or 3.67 oz Platinum) per growing season. Clothianidin (Belay 50 WDG) is currently labeled for non-bearing use only and is limited to 0.4 lbs AI/A (or 12.8 oz Belay 50 WDG) per growing season. However, the Florida Department of Agriculture and Consumer Services (FDACS) has issued a Section 18 Emergency Exemption for Belay 2.13 Insecticide (EPA Reg. No. 59639-150) permitting two applications at a rate of 12 fl oz/A/application to bearing citrus trees. Applicators must have the Section 18 label for Belay Insecticide and letter issued by Commissioner Putnam (FDACS) present when making applications of Belay Insecticide to bearing citrus.

Due to restrictions on the amount of neonicotinoid insecticide products that can be used in a growing season, the

number of applications that can be made in solid plantings of trees 5–9' in height is greatly limited. It is also important to note that because imidacloprid, thiamethoxam, and clothianidin all share the same mode of action these products are not considered alternatives for rotation to prevent pesticide resistance. Foliar sprays of products other than imidacloprid or thiamethoxam should be used between soil-drench applications to provide additional control of psyllid populations and to help minimize selection for insecticide resistance development.

Bearing Trees

Broad-spectrum foliar sprays targeting adults are most effective when used prior to the presence of new flush. Once psyllids begin reproducing on new flush, it becomes increasingly difficult to gain control of rapidly increasing populations with these products. Psyllid management programs should begin by first targeting overwintering adult psyllids when the trees are not producing flush. By eliminating these overwintering adults, psyllid populations will be greatly reduced on the following spring flushes. Targeting psyllids early in the year this should provide enough suppression in psyllid populations to reduce the need for psyllid sprays during bloom when pollinators are present and most pesticide products cannot be applied. Additional sprays for psyllids should be made when observing an increase in adult populations in a grove.

Biological Control

Foliar insecticide applications should only be used when needed to minimize the impact on natural enemies that maintain psyllids and other pests at lower levels later in the year. While a single female psyllid can lay as many as 800 eggs, studies in Florida and Puerto Rico have shown that over 90% of psyllids that hatch in the field do not survive to become adults. Many are consumed by predaceous insects such as ladybeetles. The parasitic wasp (*Tamarixia radiata*) has become established throughout Florida and also contributes some mortality, especially in fall. Additionally, there are many potential pests such as scales, mealybugs, whiteflies, etc. that are currently maintained at low levels in Florida citrus due to biological control. Excessive sprays could result in resurgence of these pests.

Other Management Considerations

Management practices used within a grove can affect psyllid populations, especially those practices that promote new flush such as hedging and topping and fertilization. Trees should always be sprayed with a broad spectrum insecticide prior to or just after hedging and topping before any flush develops. 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.

Bee Caution

Citrus growers should be aware that most insecticides recommended for psyllid control have restrictions on the pesticide label due to the impact these products may have on pollinators. Planning ahead to control psyllids prior to the presence of bloom will help reduce the need to apply pesticides during the bloom period. Check the pesticide label for restrictions on application of a product when trees are in bloom. Currently there are three products which are considered to have minimal effects on pollinators and thus can be applied during bloom.

For more details go to:

2016 Florida Citrus Pest Management Guide: Ch. 9 Asian Citrus Psyllid and Citrus Leafminer
M.E. Rogers, P.A. Stansly, and L.L. Stelinski
http://edis.ifas.ufl.edu/pdffiles/IN/IN68600.pdf

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YOUNG TREE CARE

Michael Rogers[1]

August 2014

•Insecticides (neonicotinoids) which provide 6-8 weeks of psyllid control are the most effective tool for managing psyllids (and leafminer) on young trees.
•Currently three neonicotinoid products are registered for use in citrus: Admire Pro 4.6F (imidacloprid*), Platinum 75 SG (thiamethoxam), and Belay Insecticide 2.13 SC (clothianidin**)
•Although psyllids must first insert their mouthparts into the treated plant to contact the insecticide, the presence of these insecticides in the plant cause the psyllids to immediately quit feeding, thus reducing the chances of a tree becoming infected with HLB.

*various generic formulations are also available
** read and follow directions on Belay Insecticide Section 18 label.

RATE PER ACRE (single application)
(Based on 140 trees/A)

	New Reset (2-3′ height)	1-2 yrs (3-5′ height)	3-5+ yrs (5-9′ height)
Admire Pro 4.6F	3.5 fl oz (0.025 fl oz/tree)	7 fl oz (0.05 fl oz/tree)	14 fl oz [1] (0.1 fl oz/tree)
Platinum 75 SG	1.835 oz (0.0131 oz/tree)	1.835 oz (0.0131 oz/tree)	3.67 oz (0.026 oz/tree)
Belay Insecticide 2.13 SC[2]	3.0 fl oz (0.02 fl oz/tree)	6.0 fl oz (0.04 fl oz/tree)	12.0 fl oz (0.08 fl oz/tree)

[1]As per Admire Pro 24c label (EPA SLN FL-120008)
[2]Applicator must have in possession the Belay Sec 18 label and crisis declaration letter from FDACS.

SEASON-LONG ACP CONTROL ON YOUNG TREES

Tree size	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Reset (<3′)	P		A	A		B	B		A	A		P
1-2 yr (3-5′)	P		A	B		B	B		B	A		P
3-5 yr (5-9′)[1] bearing				P		A	B		A	B		

A= Admire (imidacloprid); B=Belay (clothianidin); P=Platinum (thiamethoxam); timing of foliar applications with different modes of action to prevent pesticide resistance to neonics depicted by white boxes.
[1]EPA SLN No. FL-12008 now permits up to 2 applications of Admire Pro at a rate of 14 fl oz/A per 12 months for trees 5-9′ in height; Belay section 18 label permits 2 applications at 12 fl oz/A per 12 months for trees 5-9′ in height. Always read and follow label directions.

In order to provide the most protection possible, applications of soil-applied neonicotinoids should be made a minimum of every 6 weeks, thus requiring 8-9 applications per year to provide season-long protection. There are limits on the amount of each product (active ingredient) that can be applied per acre/per year. The following tables show the number of applications of each product that are possible at the recommended use rate for trees of a given size class (see table on front) based on tree planting density. As tree size and planting density increase, fewer soil-applications will be possible, further increasing the need for effective psyllid control in the areas surrounding young tree plantings.

<3′ height	# of applications possible			
Trees/A	Admire Pro	Platinum	Belay	Total
140	8	2	8.57	18.57
170	6.5	1.6	7.1	15.2
217	5.1	1.3	5.5	11.9
290	3.8	0.96	4.1	8.86

3-5′ height	# of applications possible			
Trees/A	Admire Pro	Platinum	Belay	Total
140	4	2	4.3	10.3
170	3.2	1.6	3.5	8.3
217	2.6	1.3	2.8	6.7
290	1.9	0.96	2.1	4.96

5-9′ height	# of applications possible			
Trees/A	Admire Pro	Platinum	Belay	Total
140	2	1	2.1	5.1
170	1.65	0.8	1.76	4.21
217	1.3	0.6	1.4	3.3
290	0.96	0.5	1.03	2.49

Resets (<3′)

1-2 yr (3-5′)

3-5+ yr (5-9′)

1. Michael E. Rogers, associate professor, Department of Entomology and Nematology, Citrus REC, Lake Alfred, Florida; Cooperative Extension Service, Institute of Food and Agricultural Sciences; University of Florida; Gainesville, FL 32611.

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Developing a CHMA psyllid management plan

Month	Timing	Product[3]	Comments
November / December	After last flush of the season	Organophosphate[1]	*Optimal time for coordinated spray*; first dormant spray; serves as a clean up spray to eliminate adult ACP going into the overwintering period.
January / February	Prior to first flush of season	Pyrethroid[2]	*Optimal time for coordinated spray*; second dormant spray; prior to first flush in spring control ACP that overwintered as adults or reproduced on unexpected winter flushes.
March (bloom period)	Depending on pest pressure	several options	Do not use pyrethroid since previously used. Do not use an organophosphate which is planned for the next application. Products that can be sprayed during bloom include Micromite and Portal but should only be applied when new flush is present since these products only control psyllid nymphs (not adults).
April	Immediately post bloom	Organophosphate[1]	*Possible time for coordinated spray using an OP*; this time is the first opportunity to control adult psyllids that developed on flush associated with bloom when most insecticides cannot be applied due to label restrictions preventing application during bloom. Growers in CHMAs not participating in a coordinated spray at this time may choose to use a product with a different mode of action.
May	Depending on pest pressure	Various options	Could use a pyrethroid since not previously used. Other options include Movento, Delegate (if leafminer present) or carbaryl.
June	1st summer oil spray	Various options	Depending on the product used in the previous spray, numerous products (see Table 2) could be added to the summer oil sprays as well as tank mixed with other products depending on the life stages of psyllid controlled by each product and other pests requiring control such as leafminer or rust mites. During this time it may be difficult to coordinate sprays with the same mode of action, but coordination of the timing of summer oil sprays by growers within a CHMA could still be a feasible goal.
July	2nd summer oil spray	Various options	
August / September	Prior to fall flush	Pyrethroid[2]	*Possible time for coordinated spray using a pyrethroid*; Control psyllids that may have developed on sporadic summer flushes prior to the fall flush period when psyllid populations can rapidly increase. Growers in CHMAs not participating in a coordinated spray at this time may choose to use a product with a different mode of action.
October	Depending on pest pressure	Various options	Do not use pyrethroid since previously used. Do not use an organophosphate which is planned for next application. Options include Movento, Delegate, and carbaryl.

[1] Organophosphate insecticides that can be used for psyllid control include Dimethoate, Imidan, Lorsban, Malathion and various generic formulations of these products.
[2] Pyrethroid insecticides currently registered for use in Florida citrus include Danitol and Mustang.
[3] Refer to Table 2 for information on product rates, application methods, psyllid life stages controlled and effective application methods.

Pesticide use information for developing CHMA psyllid management programs.

Chemical class	Active ingredient	Product	Rate/A	Recommended in Pest Management Guide	Application methods[1]	REI	PHI	Comments
Products that control all psyllid life stages (eggs, nymphs and adults)								
Carbamates	carbaryl	Sevin XLR	1.5 qts	No	Air, lv, ss	12 hrs	5 days	Short residual; fresh fruit for export should avoid use due to European MRL issues.
	oxamyl	Vydate	2 qts	No	ss	48 hrs	7 days	Short residual; fresh fruit for export should avoid use due to European MRL issues.
Organophosphates	chlorpyrifos	Lorsban	5 pts	Yes	Air, lv, ss	5 days	21 days	
	dimethoate	Dimethoate 4E	1 pt	Yes	Air, lv, ss	10 days	15-45 days	Consult label for buffering instructions when pH is greater than 7.
	malathion	Malathion 5	2 pts	No	Air, lv, ss	12 hrs	7 days	
	phosmet	Imidan	1.0 lb	Yes	Air, lv, ss	24 hrs	7 days	Consult label for buffering instructions when pH is greater than 7.
Pyrethroids	fenpropathrin	Danitol 2.4EC	1 pt	Yes	Air, lv, ss	24 hrs	1 day	
	zeta-cypermethrin	Mustang	4.3 fl oz	Yes	Air, lv, ss	12 hrs	1 day	
	cyfluthrin	Baythroid XL	3.0-6.4 oz/acre	Yes	Air, lv, ss	12 hrs	0 day	
Neonicotinoids	clothianidin	Belay Insecticide	3 – 6 fl oz	Yes	Soil drench	12 hrs	0 day	Important to minimize use of foliar applications to prevent insecticide resistance development to maintain use for young tree care.
	imidacloprid	Admire Pro 4.6F	7-14 fl oz	Yes	Soil drench	12 hrs	0 day	
	imidacloprid	Admire Pro 4.6F	3.5 – 7 fl oz	Yes	ss	12 hrs	0 day	
	thiamethoxam	Actara 25 WG	4.0-5.5 fl oz	Yes	ss	12 hrs	0 day	
	thiamethoxam	Platinum 75 SG	1.83-3.67 fl oz	Yes	Soil drench	12 hrs	0 day	
Spinosyns	spinetoram	Delegate WG	4 oz	Yes	lv, ss	4 hrs	1 day	Apply with 2% oil v/v. Also controls leafminer
Products that control psyllid immature stages only (eggs and/or nymphs)[2]								
Benzoylureas (growth regulator)	diflubenzuron	Micromite 80 WGS	6.25 oz	No	lv, ss	12 hrs	21 days	Apply with 2% oil v/v. Also provides control of leafminer and rustmites.
METI insecticides	fenpyroximate	Portal	4.0 pts	No	ss	12 hrs	14 days	Provides suppression of rustmites.
Petroleum distillates	petroleum oil	numerous	2% v/v	No	ss	12 hrs	0 days	Provides suppression of leafminer and rustmites.
Tetramic acid derivatives	spirotetramat	Movento 240 SC	10 fl oz	Yes	ss	24 hrs	1 day	Systemic activity provides extended control of nymphal populations. Must use surfactant.

[1] air=aerial application; lv=low volume application; ss=speed sprayer / traditional airblast application.
[2] To obtain control of adult psyllids, these products may be combined with products listed above.

Revised August 2015

Leaf Tissue and Soil Sampling and Testing

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Introduction

Nutrient deficiency or excess will cause citrus trees to grow poorly and produce sub-optimal yield and/or fruit quality. For this reason, diagnosis of potential nutritional problems should be a routine citrus-growing practice. Quantifying nutrients in soils and trees eliminates guesswork when adjusting a fertilizer program.

Benefits of leaf analysis

The goal in tissue analysis is to adjust fertilization programs so that nutritional problems and their costly consequences are prevented. Considerable research involving citrus leaf testing has established its reliability as a management tool, but sampling guidelines should be followed precisely to ensure that analytical results are meaningful.

Leaf tissue analysis:

- Determines if the tree has had a sufficient supply of essential nutrients.
- Confirms nutritional deficiencies, toxicities, or imbalances.
- Identifies hidden toxicities and deficiencies when visible symptoms are not present.
- Evaluates the effectiveness of fertilizer programs.
- Provides a way to compare several fertilizer treatments.
- Determines the availability of elements not tested for by other methods.

Leaf tissue analysis tests all the factors that might influence nutrient availability and uptake.

Considerations in leaf sampling

Procedures for proper sampling, preparation, and analysis of leaves have been standardized to achieve meaningful comparisons and interpretations. If the procedures are done correctly, chemical analysis reliability, data interpretation, fertilization recommendations, and fertilizer program adjustments will be sound. Considerable care should be taken from the time leaves are selected for sampling to the time they are received at the laboratory for analysis.

Leaf Sample Timing

• Leaf samples must be taken at the correct time of year because nutrient concentrations within leaves continuously change. As leaves age from spring through fall, N, P, and K concentrations decrease; Ca increases; and Mg first increases and then decreases. However, leaf mineral concentrations are relatively stable from four to six months after leaf emergence in the spring.

• The best time to collect 4-6-month-old spring flush leaves is July and August. If leaves are sampled later in the season, summer leaf growth can be confused with spring growth.

Leaf sampling technique

- One leaf sample should represent an area not to exceed 20 acres. The sampler should make sure the selected trees are representative of the average within the block being sampled.
- Each leaf sample should consist of approximately 100 leaves taken from nonfruiting twigs of 15 to 20 uniform trees of the same variety and rootstock that have received the same fertilizer program.
- Use clean paper bags to store the sample. Label the bags with an identification number that can be referenced when the analytical results are received.
- Avoid immature leaves due to their rapidly changing composition.
- Do not sample abnormal-appearing trees. Also, trees at the block's edge or at the end of rows should not be sampled as leaves from these trees may be coated with soil particles and dust.

● Do not include diseased, insect-damaged, or dead leaves in a sample.
● Select only one leaf from a shoot, and remove it with its petiole (leaf stem).

Special Case: Diagnosing growth disorders

● Collect samples from both affected trees as well as normal trees and label each bag separately.
● Trees selected for comparison sampling should be of the same age, scion type, and rootstock.
● If possible, confine the sampling area to trees that are in close proximity to each other.

Handling of leaf samples

● Protect leaves from heat and keep them dry. Place them in a refrigerator for overnight storage if the leaves cannot be washed and oven dried during the day of collection.
● For macronutrient analysis, leaves do not need to be washed. Macronutrients include N, P, K, Ca, and Mg.
● For micronutrient determinations, leaf samples should be washed by hand soon after collection and before the leaves dehydrate. Leaves should be rubbed between the thumb and forefinger while soaking them in a mild detergent solution and then thoroughly rinsed with distilled or deionized water. It is difficult to remove all surface residues, but this procedure removes most of this contamination.
● Dry the leaves in a ventilated oven at about 140°F.

Analysis and interpretation

● The laboratory determines the total concentration of each nutrient in the leaf sample. Since total concentration is determined, there should be no difference in leaf analysis results between different laboratories.

● To interpret laboratory results, compare the values with the leaf analysis standards in Table 1. These standards are based on long-term field observations and experiments conducted in different countries with different citrus varieties, rootstocks, and management practices. The tabulated standards are used to gauge citrus tree nutrition throughout the world.

● The goal in nutrition management is to maintain leaf nutrient concentrations within the optimum range every year (Table 1). If the level of a particular nutrient is not optimum, various strategies can be used to address the situation. These might include supplemental foliar or soil applications of the appropriate nutrients.

Benefits of soil analysis

Soil analysis is helpful in formulating and improving a fertilization program because soil testing measures organic matter content, pH, and extractable nutrients. Soil analysis is particularly useful when conducted for several consecutive years because trends can be observed. However, a citrus grower cannot rely on soil analysis alone to formulate a fertilizer program or to diagnose a nutritional problem in a grove. Leaf sample analysis and observations of leaf deficiencies and toxicities should also be used.

Similar to leaf analysis, organic matter and soil pH determination methods are universal, so results should not differ between laboratories. However, soil nutrient extraction procedures can vary from lab to lab, including the University of Florida Extension Soil Testing Laboratory (ESTL). The University of Florida now recommends the Mehlich 3 extraction procedure. The single most useful soil test in a citrus grove is for pH. Soil pH greatly influences nutrient availability. Some nutrient deficiencies can be avoided by maintaining soil pH between 5.5 and 6.5.

Considerations in soil sampling

Standard procedures for sampling, preparing, and analyzing soil should be followed for meaningful interpretations of the test results and accurate recommendations.

Soil sample timing

● In Florida, soil samples should be collected once per year at the end of the summer rainy season and before fall fertilization (August to October).
● It is convenient to take annual soil samples when collecting leaf samples to save time and reduce cost.
● The accuracy of soil test interpretations depends on how well the soil sample represents the grove block or management unit in question.

Soil sampling technique

● Each soil sample should consist of one soil core taken about eight inches deep at the dripline of 15 to 20 trees within the area wetted by the irrigation system in the zone of maximum root activity.

● Sampled areas should correspond with grove blocks where leaf samples were collected. The area should contain similar soil types with trees of roughly uniform size and vigor.

● Thoroughly mix the cores in a nonmetal bucket to form a composite sample. Take a subsample from this mixture, and place it into a labeled paper bag.

Special case: Diagnosing growth disorders

● Collect soil samples from beneath affected trees as well as normal trees, and analyze them separately.

● If possible, confine the sampling area to trees that are close to each other.

Preparation for analysis

● Soil samples should be air-dried before shipping to the laboratory for analysis.

Analysis and interpretation

● The basic soil analysis package run by most agricultural laboratories includes soil pH and extractable P, K, Ca, and Mg. Organic matter is sometimes part of the basic package, or it may be a separate analysis. Extractable Cu is normally determined upon request.

● Since **extractable** nutrients are measured, the magnitude of soil test values may differ between different laboratories. This difference is not a concern as long as the extraction method is calibrated for citrus.

● The laboratory interprets each soil test result as very low, low, medium, high, or very high or low, medium and high in the case of Mehlich 3 and may also provide fertilizer recommendations accordingly. Citrus growers can independently interpret the numerical results according to UF-IFAS guidelines based on the extractant used.

● The interpretations should be used to make management decisions regarding soil pH adjustment or fertilizer application.

Summary

Tissue and soil analysis are powerful tools to confirm nutrient deficiencies and toxicities, identify “hidden hunger,” evaluate fertilizer programs, study nutrient interactions, and determine fertilizer rates. However, if any steps in site selection, sampling, or analysis are faulty, the results may be misleading.

Experience interpreting sample results is essential due to the many interacting factors that influence the concentrations of elements in soil and leaf tissue. Tree age, cropping history, sampling techniques, soil test interpretations, and leaf analysis standards all must be considered before making a final diagnosis. If done properly, tissue and soil analysis will lead to more economical and efficient use of fertilizers because excessive or insufficient application rates will be avoided. A summary of the most important attributes of citrus nutrient of soil and leaves is provided in the following list.

Soil and leaf tissue analysis summary

Use this checklist as a guide for starting a soil and leaf tissue testing program:

* A sampling program is most effective if it is done annually at the same time of year.
* Leaf tissue testing is valuable for all elements.
* Soil testing is most useful for pH, P, K, Ca, Mg, and Cu.
* Use the standard sampling procedures for soil and leaves described in this document.
* Be aware that spray residues or dust on leaf surfaces affect sample results; wash leaves for accurate micronutrient analysis. Avoid sampling recently sprayed trees.
* Be aware that a number of different soil extracting solutions exist, and they can differ in their ability to extract plant nutrients, especially P.
* Interpretation of leaf and soil tests should be used to make fertilizer or liming decisions. Wise use of the results allows optimal citrus production and minimizes fertilizer loss.

Table 1. Guidelines for interpreting orange tree leaf analysis based on four- to six-month-old spring flush leaves from nonfruiting twigs. The information contained in this article pertains to healthy citrus trees. The values for some nutrients in HLB-affected trees may not conform to Table 1 values.

Element	Unit of measure	Optimum
N	%	2.5 – 2.7
P	%	0.12 – 0.16
K	%	1.2 – 1.7
Ca	%	3.0 – 4.9
Mg	%	0.30 – 0.49
S	%	0.20 – 0.40
Cl	%	< 0.20
Na	%	< 0.15
Mn	mg/kg or ppm[1]	25 – 100
Zn	mg/kg or ppm	25 – 100
Cu	mg/kg or ppm	5 – 16
Fe	mg/kg or ppm	60 – 120
B	mg/kg or ppm	36 – 100
Mo	mg/kg or ppm	0.10 – 2.0

[1]ppm = parts per million.

Danger of Heat Stress

Be alert to early warnings of heat stress, both in yourself and in your co-workers.

Heat stress needs to be taken seriously.

Working in a hot environment puts stress on the body's cooling system. When heat is combined with other stresses like hard physical work, loss of fluids, or fatigue it may lead to heat-related illness. Individuals over 40 years of age need to take extra care when the weather is hot because their ability to sweat declines as they age. However, heat stress can also affect individuals who are young and fit.

POINTS TO EMPHASIZE:

●Drink plenty of water to keep body fluid levels up

●Get out of the heat occasionally

Water is crucial to help the body adjust to high temperatures. The rate of water intake must be equal to the rate of water loss by perspiration to keep body temperature normal. **When it's hot, drink plenty of water!**

Your body must work even harder to get rid of excess heat when conditions are both hot and humid. Unfortunately, water can't evaporate as readily under muggy conditions. The process is easier if the surrounding air is moving. That's why we welcome a cool breeze, or turn on a fan when the air is "sticky".

Sickness and accident rates increase when heavy work is done at temperatures above 86 F.

Don't push yourself beyond your limits. It could be harmful to your health, and could put you at increased risk of having an accident.

Heat stress hazards

1. **Heat cramps:** Heavy sweating drains the body of salt, which cannot be replaced by simply drinking water. Painful cramps occur in the arms, legs, or stomach while on the job, or later at home. Move to a cool area at once if cramping is experienced. Loosen clothing and drink cool, commercial fluid replacement beverage. Seek medical aid if the cramps are severe, or don't go away.

2. Heat exhaustion: Inadequate water and salt intake causes the body's cooling system to break down. Symptoms include heavy sweating, cool, moist skin, body temperature over 100 F, weak pulse, and normal or low blood pressure. The victim is likely to be tired, weak, clumsy, upset, or confused. He will be very thirsty, and will breathe rapidly. His vision may be blurred. **Get medical help immediately!** Heat exhaustion can lead to heat stroke, which can kill. Move the person to a cool, shaded area. Loosen or remove excess clothing. Provide cool, lightly-salted water. Fan and spray the victim with cool water.

3. **Heat stroke can kill a person quickly!** Once the body uses up all its water and salt, sweating ceases. Temperature can rise quickly. You can assume a person is suffering from heat stroke if their body temperature is over 105 F, and any of the following symptoms are present:

- ●weakness, confusion, distress, strange behavior
- ●hot, dry, red skin
- ●rapid pulse
- ●headache or dizziness
- ●In later stages of a heat stroke, a victim may pass out and have convulsions

Call an ambulance immediately if heat stroke is suspected. The victim's life may be on the line! Until help arrives, move the victim to a cool area and remove excess clothing. Fan and spray them with cool water. Offer sips of water if the victim is conscious.

Heatwave guidelines

The following measures should help prevent the development of heat-related illnesses.

- ●Slow down in hot weather. Your body's temperature regulating system faces a much greater workload when temperature and humidity are high.
- ●Heed early warnings of heat stress, such as headache, heavy perspiration, high pulse rate, and shallow breathing. Take a break immediately and get to a cooler location. **Watch for heat stress signs among your co-workers.**
- ●Dress for hot weather. Lightweight, light-colored clothing reflects heat.
- ●**Drink plenty of water.** Don't let yourself "dry out".
- ●Try to get used to warm weather gradually. Take it easy for those first three hot days. Your body will have a better chance to adjust if you take it slow.
- ●Get out of the heat occasionally. Physical stress increases with time in hot weather. Take breaks in a cool, shady location.
- ●Wear a hat and long-sleeved shirt to prevent burning (which can increase the risk of skin cancer.)

"Do's" and "Don'ts" of preventing heat-related illnesses

DO:	**DON'T:**
Drink plenty of water Take breaks in a cool, shady area Watch for symptoms of a heat stress, both in yourself and co-workers	Ignore symptoms of heat stress Try to "keep up" with the rest of the crew, even though you feel ill

MANAGING HEAT STRESS

By Dr. Norman Nesheim, UF-IFAS

Heat stress is caused by working in hot conditions and when the body builds up more heat than it can cope with. Several factors work together to cause heat stress. Before beginning a task, think about whether any of these factors are likely to be a problem. Consider making adjustments in the task itself or in the workplace conditions, including: heat factors--temperature, humidity, air movement, and sunlight; workload--the amount of effort a task takes; drinking water intake; and scheduling.

High temperatures, high humidity, and sunlight increase the likelihood of heat stress. Air movement, from wind or from fans, may provide cooling. Because hard work causes the body to produce heat, a person is more likely to develop heat stress when working on foot than when driving a vehicle. Lifting or carrying heavy containers or equipment also increases the likelihood of overheating. Use fans, ventilation systems (indoors), and shade whenever possible. A work area or vehicle sometime can be shaded by a tarp or canopy or provided with fans or air conditioners. Consider wearing cooling clothes that help keep the body cool.

People who have become used to working in the heat are less likely to be affected by heat stress. To become adjusted to hot work environments, do about two hours of light work per day in the heat for several days in a row; then gradually increase the work period and the workload for the next several days. An adjustment period of at least seven days is recommended. If the warm weather occurs gradually, workers may adjust naturally to working in hot conditions.

Whenever it is practical, choose coveralls that allow air to pass through. Woven fabrics (cotton, or cotton-polyester blends) allow air to pass through fairly easily. Rubberized or plastic fabrics and fabrics coated with chemical-resistant barrier layers allow almost no air to pass through.

Perspiration or evaporation of sweat cools the body. Under the conditions that lead to heat stress, the body produces a large amount of sweat. Unless the water lost in sweat is replaced, body temperature will rise. Drink plenty of water before, during, and after work during heat stress conditions. Do not rely on thirst alone to guide you. A person can lose a dangerous amount of water before feeling thirsty, and the feeling of thirst may stop long before fluids are replaced. Be sure to keep body weight fairly constant. All weight lost because of sweating should be regained every day.

When the combination of temperature, sunlight, humidity, and workload is likely to lead to overheating, use scheduling to avoid heat stress. Schedule tasks requiring the heaviest workload during the coolest part of the day. When heat stress risk is high, schedule frequent breaks to allow the body to cool. Anyone who gets dangerously hot should stop work immediately and cool down. If necessary, shorten the time between breaks.

The above steps will prevent most heat stress problems. But under extremely hot conditions when cooling devices cannot be used, it may be necessary to stop work until conditions improve.

Signs and Symptoms of Heat Stress

Heat stress, even mild heat stress, makes people feel ill and impairs their ability to do a good job. They may get tired quickly, feel weak, be less alert, and less able to use good judgment.

Severe heat stress (heat stroke) is a serious illness. Unless victims are cooled quickly, they can die. Severe heat stress is fatal to more than 10 percent of its victims--even young, healthy adults. Victims may remain sensitive to heat for months and be unable to return to the same work.

Learn the signs and symptoms of heat stress and take immediate action to cool down if you observe:

- fatigue (exhaustion, muscle weakness),
- headache, nausea, and chills,
- dizziness and fainting,
- loss of coordination,
- severe thirst and dry mouth,
- altered behavior (confusion, slurred speech, quarrelsome or irrational attitude).

Heat cramps can be painful. These are muscle spasms in the legs, arms, or stomach caused by loss of body salts through heavy sweating. To relieve cramps, drink cool water or "sports drinks." Stretching or kneading the muscles may temporarily relieve the cramps.

First Aid for Heat Stress

It is not always easy to tell the difference between heat stress illness and pesticide poisoning. The signs and symptoms are similar. **Don't waste time trying to decide what is causing the illness. Get medical help right away.**

- Get the victim into a shaded or cool area.
- Cool victim as rapidly as possible by sponging or splashing skin, especially face, neck, hands, and forearms, with cool water or, when possible, immersing in cool water.
- Carefully remove clothing that may be making the victim hot,
- Have the victim, if conscious, drink as much cool water as possible.
- Keep the victim quiet until help arrives.
- **Severe heat stress (heat stroke) is a medical emergency! Cool victim immediately. Brain damage and death may result if treatment is delayed**.

How to reduce spray drift of pesticides?

- Avoid high spray pressure, which create finer droplets. Use as coarse a spray as possible and still obtain good coverage and control. Droplet size is one of the most important factors affecting drift, however, addressing droplet size alone is not sufficient to reduce the probability of drift and potential damage.
- 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. After considering the drift potential of a product/formulation/application method, it may become necessary to use a different product to reduce the chance of 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°-95° 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.

Certifying and Training Applicators

EPA works with the USDA and the Florida Department of Agriculture and Consumer services (FDACS) to carry out certification and training programs for pesticide applicators. States have primary responsibility for ensuring that pesticide applicators are licensed and certified, as required by Federal and state laws, to apply pesticides in an appropriate manner. Part of the program for certification includes training about how to protect people and the environment from off-target spray drift. In Florida, the certification exams for restricted use pesticide applicator licenses are administered by the **University of Florida/IFAS Cooperative Extension Service** in local county offices statewide. Individuals who need to take the exams should check with local extension office(s) for training and exam schedules **http://sfyl.ifas.ufl.edu/map/**

Citrus Health Response Program

Protecting from Root to Fruit

Citrus Health Response Program Mission

Working together to produce healthy citrus

- Ensure security of citrus germplasm and citrus nursery programs
- Support effective disease / disease vector management program for groves
- Monitor defendable phytosanitary protocol that allows fresh fruit movement to all markets
- Implement citrus nursery clean stock program

Resources for the Industry

Tools to support citrus

- Compliance agreements and attachments designed to provide guidance and protect citrus
- Grower Assistance Program – decontamination training, survey assistance and self-survey
- Best Management Practices

Citrus Germplasm Introduction Program

Important disease-free start

- Ensures citrus germplasm is free from any known graft-transmissible pathogens
- Each variety undergoes years of intensive testing before release
- Provides approved germplasm to citrus budwood registration program
- New 20,000 sq ft facility at future Alachua County budwood site

Citrus Budwood Registration

Responding to disease pressures

- Provides clean budwood to citrus industry
- Facilities located outside of citrus-growing area
- 80,000 sq ft facility in Levy County
- Redundant 60,000-sq-ft location planned in Alachua County

Citrus Nursery Guidelines

Providing clean stock for citrus groves

- Rules and regulations to protect industry, 5B-62
- Geographic separation of new nurseries and groves
- Citrus nursery stock is propagated and housed in approved insect-proof structures
- All citrus nurseries are on 30-day inspection cycle
- Compliance agreements are required

Florida Department of Agriculture and Consumer Services

CHRP Helpline 1-800-282-5153

www.FreshFromFlorida.com/chrp

ADAM H. PUTNAM
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Division of Plant Industry

GROWER / CARETAKER COMPLIANCE AGREEMENT

Section 581.031(26), F.S. / Rule 5B-63.001, F.A.C.

3027 Lake Alfred Road, Winter Haven, FL 33881

1. OWNER / BUSINESS NAME & MAILING ADDRESS:	2. PROPERTY LOCATION / IDENTIFICATION:
1.1 C/A# (ISSUE DATE)	2.1 COUNTY:
1.2 CONTACT: (NAME) (TITLE)	2.2 T-R-S:
1.3 PHONES: (OFFICE) (CELL)	2.3 CARETAKER: (NAME, IF EMPLOYED BY OWNER)
1.4 BUS.TYPE: (GROWER, AGENT, CARETAKER, SPECIALTY SERVICE)	2.4 TRAINING: (DECONTAMINATION CERTIFICATE NUMBER(S))
3. REGULATED ARTICLE(S): **Any article capable of transporting or harboring Citrus Black Spot, Citrus Canker, Citrus Greening, or the Asian Citrus Psyllid**	
4. APPLICABLE STATE QUARANTINE(S) OR REGULATIONS: **Section 581, F.S. and Rule Chapter 5B-63, F.A.C.**	

In addition to the regulations contained in Section 581, F.S. and Rule Chapter 5B-63, F.A.C., 7 CFR 301.75, 7 CFR 301.76 and Federal Order DA-2012-09, I / we agree to abide by the following stipulations:

I. GENERAL REQUIREMENTS FOR GROVE OPERATIONS

1. All citrus growers (grove owners, agents or lessees) and caretakers (grove contractors, including but not limited to management, planting, fertilizing, cultivating, irrigating, spraying, mowing, pruning, hedging, topping, and tree removal companies) who own, plant, maintain or service commercial citrus groves, or citrus plantings consisting of forty or more trees, are required to sign a Florida Department of Agriculture and Consumer Services' Citrus Health Response Program (CHRP), "GROWER / CARETAKER COMPLIANCE AGREEMENT."

2. Growers are expected to implement self-survey, psyllid control and decontamination programs, and should also consider and adopt the latest recommendations for pest and disease control available from University of Florida's Institute of Food and Agricultural Sciences (UF-IFAS). Any incidence of exotic citrus pests must be reported promptly to Florida Department of Agriculture and Consumer Services (FDACS) Division of Plant Industry (DPI) inspection staff.

3. Training in recognition and control of both exotic and serious endemic citrus pests, and in approved methods of decontamination will be conducted upon request by UF-IFAS. Certified Trainer cards are issued by FDACS/ DPI for successful completion of decontamination training, and delivered by UF-IFAS. For information, please see Schedule 10.

4. All persons who enter a grove are responsible to decontaminate as described in this agreement. The Grower is responsible for the decontamination of all personnel and equipment under direct supervision of the grower. Citrus caretakers, contractors, harvesters, haulers, handlers and equipment operators must also be in compliance with the Citrus Health Response Program (CHRP), hold separate CHRP Compliance Agreements, and be responsible for decontaminating their own personnel and equipment prior to entering and **upon each departure** of all citrus growers' properties.

5. Approved citrus black spot and citrus canker decontamination procedures for all personnel and equipment follow:

5.1. Prior to departing any citrus grove or grove block, disposal site or receiving facility, all personnel must **inspect**

vehicles and equipment for citrus plant material, and **clean** all vehicles, equipment, ladders, tubs, picking sacks and personal clothing free of citrus fruit, leaves, limbs, soil and debris. All plant material and debris must be left on that property or be disposed of on a CHRP approved site that will not pose a risk to citrus groves, trees or nurseries.
5.2. Personnel and equipment must **be decontaminated** in a manner as prescribed in *Approved Decontamination Products & Methods* (Schedule 11) prior to departing a citrus grove, an approved receiving facility or disposal site.
5.3. Caretakers, harvesters and field personnel working on any grove property are required to have adequate decontamination equipment and sufficient quantities of approved decontaminant solutions at acceptable use dilutions readily available, and located on site at all times while equipment or workers are present on the grove property.

6. Growers may require evidence that all personnel and equipment have been properly decontaminated **prior to entering** their groves. For this reason, caretakers, harvesters and equipment operators are advised to communicate with growers and inspectors in advance of performing decontamination events, prior to arrival at the next grower's property. Equipment must always arrive at growers' properties clean and free of citrus fruit, leaves, limbs, soil and debris, and plant pests.

7. Prior to departing a citrus grove in a non-quarantine area, hedging, topping, and tree removal/ land clearing equipment must be cleaned free of fruit, leaves, limbs, soil and debris (which should be left on the property of origin), and then be **pressure washed** with water, and decontaminated by use of an approved product and method (per Schedule 11).

8. All citrus trees planted in new or established groves and all budwood used for top-working must be obtained from a citrus nursery registered with FDACS/ Division of Plant Industry (DPI).

9. Grower must provide authorized FDACS/ DPI and USDA/ Animal and Plant Health Inspection Service (APHIS) personnel access to the property and to documents showing the origin of fruit or trees as requested.

10. Grower must confirm that harvester is accurately maintaining the identity of harvested fruit at all times in order to permit trace back, if necessary. Each load of fruit must be identified by issuing a clearly written, serially numbered trip ticket with the following information: Grove name, Block or sub-block of Origin, Land owner or agent, Lessee, Harvester; Number of boxes, Variety; Tag number; Destination (receiving facility or Disposal Site ID); Date of Harvest. Each load of fruit must also bear the official *Grower/ Caretaker Compliance Agreement* Number, "C/A Number," for the owner of each grove block or sub-block harvested. If a *Citrus Fruit Harvesting Permit* (FDACS-08123) has been issued for the grove block or sub-block, the "HP Number," must also be written on the trip ticket.

11. Fresh fruit destined for movement to interstate or to restricted export markets must be harvested from a grove or sub-block which meets all domestic or export market phytosanitary protocols in addition to federal requirements as contained in 7CFR 301.75, 7CFR 301.76 and DA-2012-09. Grower must confirm this information with the fresh fruit packinghouse. Grower must contact the local CHRP office at least two weeks in advance of harvest if a harvesting permit will be needed.

12. A Citrus Fruit Harvesting Permit is required prior to harvest for any grower who plans to ship fresh fruit to the European Union (EU) from a grove under citrus canker quarantine. All groves in each county with a Citrus Black Spot (CBS) quarantine area must also be inspected for symptoms of CBS in accordance with EU import requirements, as of July 1, 2013. In each county with a citrus black spot quarantine, the Harvesting Permit will serve as a single instrument in documenting a grove and its buffer zones as being visually free of both citrus canker and CBS diseases. In addition to field inspection of each grove, block or sub-block and buffer zones, the EU requires that fruit harvested from each grove, block or sub-block must be inspected in the packinghouse and found free of both citrus canker and CBS diseases.

13. Growers and Caretakers bear the responsibility to remain informed regarding changes in the Citrus Health Response Program. Attachments, procedures, regulations and quarantine areas are subject to change. Quarantine maps, revisions, attachments and updates must be retrieved from local CHRP offices (Schedule 10) and official Internet postings: http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Agriculture-Industry/Citrus-Health-Response-Program

14. Failure to abide by any part of this agreement may result in penalties contained in Section 581.211 F.S.

http://forms.freshfromflorida.com/08316.pdf

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.

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

Subscriber's Name:_____

Company:_____

Address:_____

City:_____State:_____Zip:_____

Phone:_____

Fax:_____

E-mail:_____

Racial-Ethnic Background

__American Indian or native Alaskan
__Asian American
__Hispanic
__White, non-Hispanic
__Black, non-Hispanic

Gender

__Female __Male