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Institute of Food and Agricultural Sciences

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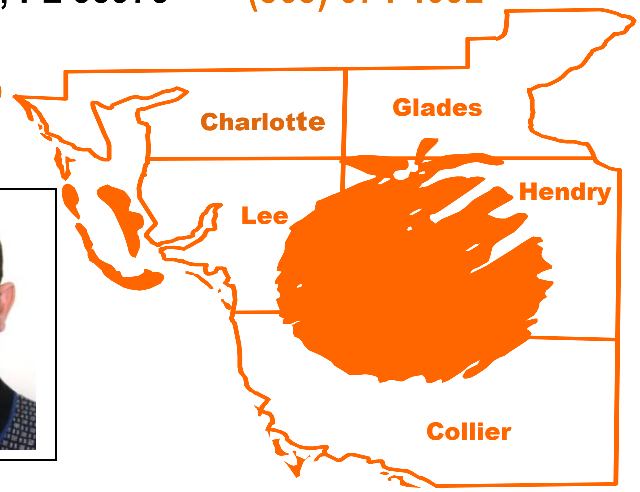
Flatwoods Citrus



Vol. 11, No. 4 **April 2008**

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

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

CITRUS GREENING SUMMIT

Date: Tuesday, April 8, 2008, 8:30 AM - 4:30 PM
Location: South Florida Community College, University Center, Avon Park
CEUs for Pesticide License Renewal, CEUs for Certified Crop Advisors
Attendance & lunch are free, but **pre-registration is required**.

CERTIFIED CROP ADVISOR (See enclosed details)

Date: Wednesday, April 9, 2008, 7:30 AM - 6:30 PM
Locations: Lake Alfred CREC, Immokalee, Wimauma, and Ft. Pierce IFAS Research Centers

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

EMERGING TECHNOLOGY FOR THE 21ST CENTURY CITRUS GROVE

(See enclosed details)

Date: Tuesday, April 22, 2008, 8:00 AM - 12:00 Noon
Location: Immokalee IFAS Center
Lunch is free, but **RSVP is required** for planning purposes. To RSVP, call Barbara Hyman at (239) 658-3461 or send an e-mail to brh@ifas.ufl.edu

Florida State Horticultural Society

& The Soil and Crop Science Society of Florida

Date: June 1 through 4, 2008
Location: Ft. Lauderdale Marriott North hotel

See enclosed details on the meeting, registration, and membership

FARM SAFETY DAY

Saturday, June 7, 2008, Immokalee IFAS Center
Coordinator: Mongi Zekri

Information on registration, program agenda, and sponsorship will be enclosed in the next issue of this newsletter.

Some of the information on the **Summary of 2006-2007 Citrus Budget for the Southwest Florida Production Region** by Ronald Muraro, Extension Economist University of Florida, IFAS, CREC, Lake Alfred, FL, is included in this issue. For more complete listing and information, please go to: **http://www.lal.ufl.edu/extension/economics/pdf/SW_Budget_Summ_2006-2007.pdf**

Special Thanks to all the sponsors of the Flatwoods Citrus newsletter for their generous contribution and support. If you would like to be among them, please contact me at 863 674 4092.

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FERTILIZER PRICES ARE SKYROCKETING

 

World fertilizer prices surged by more than 200% in 2007 and are expected to keep climbing in 2008. From January 2007 to January 2008, diammonium phosphate (DAP) prices rose from $252 to $752/ton; prilled urea rose from $272 to $415/ton; and muriate of potash rose from $172 to $352/ton. Urea is selling for over $500/ton, up from about $400/ton a year ago. Recently, the prices for phosphorus-based fertilizer and potash, a source of potassium, have risen even more dramatically, with some being sold for more than $800/ton.

Several Factors are contributing to this price surge.

Increases in fertilizer prices often are blamed on natural gas prices because natural gas accounts for 80-90% of the cost of producing anhydrous ammonia, the base material for producing all other nitrogen fertilizers. However, that doesn't represent the whole story. Changes in natural gas use are also influencing fertilizer prices. Gas that once went toward ammonia production in fertilizer manufacture is increasingly being liquefied and used for energy.

Ethanol production is also among the factors contributing to the increasing fertilizer prices. New demand for grain for biofuel production has been pushing farmers to use more fertilizer to maximize harvests of grain at the highest prices ever. While 70% of corn production has traditionally been used as animal feed, the use of 18% to 20% of the 2007 U.S. corn crop was for ethanol which increased corn prices by 70%. The situation will worsen in 2008 when 25% of corn production is forecast to go into ethanol.

Fertilizer prices are also high due to increased global demand, especially in South America, China, and India. Their demand was raised by 14% during the last a couple of years.

With fertilizer being a worldwide commodity, the U.S. must compete with other buyers. The weak U.S. dollar makes fertilizer more expensive for U.S. producers. The U.S. imports 75% of its urea nitrogen fertilizer. Because of tight cost margins and environmental and safety regulations, 25 U.S. ammonia production facilities have closed permanently during the last few years. New production facilities are being built in China and the Middle East. One of the major production ports for shipping urea and ammonia is Yuzhnyy in the Ukraine on the Black Sea.

Transportation costs also are higher because of higher oil prices and are considerable for farmers and growers in areas far from major distribution centers.

All indicators point to increasing fertilizer costs and tight supplies. Therefore, fertilizer application at recommended rates is even more important, and management that maximizes fertilizer use efficiency is essential.

The key to maintaining profitability is to know soil and plant tissue test levels and apply fertilizer accordingly. Growers also can reduce demand for synthetic fertilizers by including manure, biosolids, and compost into their fertilizer programs and follow best management practices (BMPs).

UNITED NATIONS: BIOFUELS ARE STARVING THE POOR BY DRIVING UP FOOD PRICES

February 14, 2008

Echoing sentiments increasingly expressed by politicians, scientists, and advocates for the poor, the U.N. Food and Agriculture Organization warned that the world's poorest people are suffering as a result of the push to use food crops for biofuel production.

"We're seeing more people hungry and at greater numbers than before," Josette Sheeran, executive director of the Rome-based World Food Program, said in an interview with The Associated Press. "We're seeing many people being priced out of the food markets for the first time. For the world's most vulnerable, it's extremely urgent."

The FAO said that some 100 million tons of cereals — almost entirely corn — are being diverted to the production of biofuels each year. The drop in grain supplies is causing food prices to surge: U.S. ethanol production have accounted for about one third of the price rise for corn, while the FAO's global food price index rose 40 percent in 2007 to the highest level on record.

"Urgent and new steps are needed to prevent the negative impacts of rising food prices from further escalating and to quickly boost crop production in the most affected countries," said FAO Director-General Jacques Diouf in a press conference in December. "Without support for poor farmers and their families in the hardest-hit countries, they will not be able to cope. Assisting poor vulnerable households in rural areas in the short term and enabling them to produce more food would be an efficient tool to protect them against hunger and undernourishment."

Sheeran said that the market will eventually adjust to produce more grain to meet demand from biofuels.

"More food will be produced. Farmers will respond, and maybe there'll be investment in the African farmer for the first time, for example, in many decades," she said. "When that happens we'll get increased food in the food supply system. But there's a lag, so we have people very vulnerable right now who can't afford the food."

A spate of recent studies have also warned of the increasingly global impact of biofuels on the environment. Last week two papers published in *Science*, a prominent scientific journal, linked ethanol and biodiesel production to deforestation and rising greenhouse gas emissions.

INCREASING EFFICIENCY AND REDUCING COST OF NUTRITIONAL PROGRAMS

Economics, nutrition, and Florida soils

- To maintain a viable citrus industry, it is necessary to produce large, high quality crops of fruit economically.
- Good production of high quality fruit will not be possible if there is a lack of understanding of soils and nutrient requirement of the grown trees.
- Most Florida citrus is grown on soils with inherently low fertility and low nutrient holding capacity and thus unable to retain enough amount of soluble plant nutrient against the leaching action of rainfall and irrigation.

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

Copies of the new Florida Citrus Nutrition book are available. If you have not picked up your free copy, contact your citrus extension agent. <u>No mailing requests please</u>.

Tissue and soil analysis

- Leaf sampling and analysis is a useful management tool for fertilizer decisions.
- The best indication of successful fertilizer management practices for citrus trees is having leaf nutritional standards within the optimum ranges.
- Trends in leaf N and K over several years provide the best criteria for adjusting rates within the recommended ranges.
- 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.
- P does not leach readily where the soil pH is 6 or higher and the fruit crop removes very little.
- Therefore, regular P applications are not necessary.
- However, some soils used for new citrus plantings may have low native P and P fertilizers should be applied for several years.

Micronutrients

- The use of most micronutrients is recommended only when deficiency symptoms persist.
- 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 postbloom or 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.
- Under normal conditions, a clear advantage of pH 6 over pH 5 has been demonstrated in several studies. A pH of 7 was no better than a pH of 6.
- 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.

Nutritional balance

- Correct ratios of nutrients are critical to fertilizer management and sustainability.
- If an element is below the critical level, yield production will fall even though the other elements are kept in good supply.
- Too much N with too little K can reduce fruiting and result in lost crop yield and quality.
- High K with low N and P supply will induce luxury consumption of K, delay fruit development and reduce juice content.

FOLIAR FEEDING

Foliar feeding is not intended to completely replace soil-applied fertilization of the macronutrients (nitrogen, potassium, and phosphorous). However, macronutrients can be foliarly applied in sufficient quantities to influence both fruit yield and quality. Some crops, such as citrus, can have a large part of the nitrogen, potassium, and phosphorous requirements met through foliar applications.

Foliar applications of other plant nutrients (calcium, magnesium, and sulfur) and micronutrients (zinc, manganese, copper, boron, and molybdenum) have proven for many crops to be an excellent means for supplying the plants' requirements.

Foliar feeding should be used as an integral part of the annual nutritional program. It can be used in other situations to help plants through short, but critical periods of nutrient demand, such as fruit set and bud differentiation. Foliar nutrition may also prove to be useful at times of soil or environmentally induced nutritional shortages. Foliar application of nutrients is of significant importance when the root system is unable to keep up with crop demand or when the soil has a history of problems that inhibit normal growth.

Foliar feeding is proven to be useful under prolonged spells of wet soil conditions, dry soil conditions, calcareous soil, cold weather, or any other condition that decreases the tree's ability to take up nutrients when there is a demand. Foliar feeding may be utilized effectively when a nutritional deficiency is diagnosed. A foliar application is the quickest method of getting the most nutrients into plants. However, if the deficiency can be seen, the crop might have already lost some potential yield.

Foliar fertilization is also efficient since it increases the accuracy of fertilizer application. Applications made to the soil can be subject to leaching and volatilization losses and/or being tied up by soil particles in unavailable forms to citrus trees.

While foliar feeding has many advantages, it can burn plants at certain rates under certain environmental conditions. It is important, therefore, to foliar feed within the established guidelines. There are a number of conditions that can increase the chances of causing foliar burn. A plant under stress is more susceptible to damage. Stressful conditions include drying winds, disease infestations, and poor soil conditions. The environmental conditions at the time of application are also important factors. Applications when the weather is warm (above 80^0F) should be avoided. This means that during warm seasons, applications should be made in the morning or evening. Additionally, applications should not be at less than two-week intervals to give the plant sufficient time to metabolize the nutrients and deal with the added osmotic stress.

Another important factor when applying nutrient foliarly is to ensure that the pH of the material is in the proper range. The pH range of the spray solution should be between 6 and 7. Attention should be paid to the pH of the final spray solution. This is significant in areas where water quality is poor.

Postbloom foliar applications <u>(applied in April when the spring flush leaves are about fully expanded)</u> of potassium nitrate or mono-potassium phosphate have been found to increase fruit yield and size.

- **<u>8 lb K_2O per acre per application</u>**

- **<u>Foliar applications are not a substitute for a good nutrition program.</u>**

Table 1. A Listing of Estimated Comparative **Southwest Florida** Production Costs Per Acre for **Processed Oranges**, 2006-2007[z]

Costs represent a mature (10+ years old) Southwest Florida Orange Grove.		Processed Cultural Program			
		Without Canker-Greening		With Canker-Greening	
PRODUCTION/CULTURAL COSTS[v]					
Weed Management/Control:					
Mechanical Mow Middles (3 times per year)			$ 25.09		$ 25.09
Chemical Mow Middles (3 times per year)			24.77		24.77
General Grove Work (2 labor hours per acre)			30.88		30.88
Herbicide (1/2 tree acre treated):					
Application (3 residual applications)		30.75		30.75	
Material		82.15		82.15	
Total Herbicide Cost			112.90		112.90
Spray/Pest Management:					
Temik (33 lbs):	Application	—		14.93	
	Material	—		98.67	
	Total Temik Cost		—		113.60
Winter-Spring #1:	Application (125 GPA)	—		23.94	
(February)	Material	—		30.99	
	Total Spring #1 Cost		—		54.93
Spring #1:	Application (125 GPA)	—		23.94	
	Material	—		34.92[x]	
	Total Spring #2 Cost		—		58.86
Summer Oil #1:	Application (125 GPA)	23.94		23.94	
	Material	40.54		73.50	
	Total Summer Oil #1 Cost		64.48		97.44
Summer Oil #2:	Application (125 GPA)	23.94		23.94	
	Material	66.67[x]		50.54	
	Total Summer Oil #2 Cost		90.61		74.48
Fall Insecticide:	Aerial Application (10 GPA)	—		8.00	
	Material	—		13.03	
	Total Fall Insecticide Cost		—		21.03
	Total Spray/Pest Management Costs		155.09		420.34

Table 1. A Listing of Estimated Comparative **Southwest Florida** Production Costs Per Acre for **Processed Oranges**, 2006-2007 (cont'd.)[z]

Costs represent a mature (10+ years old) Southwest Florida Orange Grove.	Processed Cultural Program			
	Without Canker-Greening		With Canker-Greening	
Field Inspections for Citrus Greening (4 inspections @ $22.73)		—		90.92
Mandatory Citrus Canker Decontamination Costs		29.35		29.35
Fertilizer (Bulk):4 Applications	26.28		26.28	
Material (17-4-17-2.4MgO @ 220 lbs N)	209.32		209.32	
Total Fertilizer Cost		235.60		235.60
Dolomite (one ton applied every 3 yrs) – Material/Application		14.76		14.76
Pruning[w]: Topping ($28.92/A ÷ 2.5 yrs)	11.97		11.97	
Hedging ($27.33/A ÷ 2 yrs)	13.67		13.67	
Chop/Mow Brush after Hedging ($11.99/A ÷ 2 yrs)	6.00		6.00	
Total Pruning Cost		31.64		31.64
Tree Replacement – 1 thru 3 years of age (**4 trees/acre without greening; 7 trees/acre with greening**)				
Remove Trees: Pull, Stack & Burn (Clip-Shear & Front End Loader)	25.44		37.10	
Prepare Site and Plant Tree (includes reset trees)	57.72		94.50	
Supplemental Fertilizer, Sprays, Sprout, etc. (Trees 1-3 years old)	50.16		114.80	
Total Tree Replacement Cost		133.32		246.40
Irrigation: Microsprinkler System[v]	186.70		186.70	
Clean Ditches (Weed Control)	18.56		18.56	
Ditch and Canal Maintenance	17.48		17.48	
Water Control (Pump water in/out of Ditches and Canals)	16.72		16.72	
Total Irrigation Cost		239.46		239.46
IRRIGATED PROCESSED FRUIT PRODUCTION COSTS		$1,032.86		$1,502.11

[z]The listed estimated comparative costs are for the example grove situation described in the Economic Information Report Series entitled: "Budgeting Costs and Returns for Southwest Florida Citrus Production" and may not represent your particular grove situation in Southwest Florida.

Source: Ronald P. Muraro, University of Florida-IFAS, Citrus Research and Education Center, Lake Alfred, FL, December 2007.

Table 4. Estimated Total Delivered-in Cost for **Southwest Florida Hamlin Oranges** Grown for the **Processed Juice Market** **Without** and **With** Citrus Canker and Greening, 2006-07

Represents a mature (10+ years old) Southwest Florida Orange Grove	Processed Cultural Program **Without Canker-Greening** **and Resetting-Tree Replacement**			Processed Cultural Program **With Canker-Greening** **and Resetting-Tree Replacement**		
	$/Acre	$/Box	$/P.S.	$/Acre	$/Box	$/P.S.
Total Production/Cultural Costs	$1,032.86	$2.029	$0.3382	$1,502.11	$3.280	$0.5466
Interest on Operating (Cultural) Costs	51.64	0.101	0.0169	75.11	0.164	0.0273
Management Costs	48.00	0.094	0.0157	48.00	0.105	0.0175
Taxes/Regulatory Costs:						
Property Tax/Water Management Tax	61.00	0.120	0.0200	61.00	0.133	0.0222
Total Direct Grower Costs	$1,193.50	$2.345	$0.3908	$1,686.22	$3.682	$0.6136
Interest on Average Capital Investment Costs	321.22	0.631	0.1052	321.22	0.701	0.1169
Total Grower Costs	$1,514.72	$2.976	$0.4960	$2,007.43	$4.383	$0.7305
Harvesting and Assessment Costs:						
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	1,308.13	2.570	0.4283	1,177.06	2.570	0.4283
DOC Assessment	111.98	0.220	0.0367	100.76	0.220	0.0367
Total Harvesting and Assessment Costs	1,420.11	2.790	0.4650	1,277.82	2.790	0.4650
Total Delivered-In Cost	$2,934.83	$5.766	$0.9610	$3,285.25	$7.173	$1.1955
P.S. = Pound Solids	Refer to cultural program shown in Table 1.			Refer to cultural program shown in Table 1.		
145 trees per acre	Yield: 509 boxes/acre; 6.0 P.S./box			Yield: 458 boxes/acre; 6.0 P.S./box		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, December 2007.

Table 5. Estimated Total Delivered-in Cost for **Southwest Florida Grapefruit** Grown for the **Fresh Fruit Market Without** and **With** Citrus Canker and Greening, 2006-07

Represents a mature (10+ years old) Southwest Florida Grapefruit Grove	Fresh Market Cultural Program **Without Canker-Greening and Resetting-Tree Replacement**			Fresh Market Cultural Program **With Canker-Greening and Resetting-Tree Replacement**		
	$/Acre	$/Box	$/Carton	$/Acre	$/Box	$/Carton
Total Production/Cultural Costs	$1,115.19	$2.013	$1.0065	$1,711.20	$3.528	$1.7641
Interest on Operating (Cultural) Costs	55.76	0.101	0.0503	85.56	0.176	0.0882
Management Costs	48.00	0.087	0.0433	48.00	0.099	0.0495
Taxes/Regulatory Costs:						
Property Tax/Water Management Tax	61.00	0.110	0.0551	61.00	0.126	0.0629
Fly Protocol Cost	56.65	0.102	0.0477	56.65	0.117	0.0477
Total Direct Grower Costs	$1,336.60	$2.413	$1.2029	$1,962.41	$4.046	$2.0124
Interest on Average Capital Investment Costs	321.22	0.580	0.2899	321.22	0.662	0.3311
Total Grower Costs	$1,657.81	$2.992	$1.4928	$2,283.62	$4.708	$2.3436
Harvesting and Assessment Costs:						
Pick/Spot Pick, Roadside & Haul and Canker Decontamination	1,323.51	2.389	1.1945	1,158.67	2.389	1.1945
DOC Assessment	193.90	0.350	0.1750	169.75	0.350	0.1750
Total Harvesting and Assessment Costs	1,517.41	2.739	1.3695	1,328.42	2.739	1.3695
Total Delivered-In Cost	$3,175.22	$5.731	$2.8623	$3,612.04	$7.447	$3.7131
Two cartons per box	Refer to cultural program shown in Table 2.			Refer to cultural program shown in Table 2.		
119 trees per acre	Assumes 100% packout Yield: 554 boxes/acre			Assumes 100% packout Yield: 485 boxes/acre		

Source: Ronald P. Muraro, Extension Farm Management Economist, University of Florida, IFAS, CREC, Lake Alfred, FL, December 2007.

Some of the information on the **Summary of 2006-2007 Citrus Budget for the Southwest Florida Production Region** by Ronald Muraro, Extension Economist University of Florida, IFAS, CREC, Lake Alfred, FL, is included in this issue. For more complete listing and information, please go to: **http://www.lal.ufl.edu/extension/economics/pdf/SW_Budget_Summ_2006-2007.pdf**

Florida State Horticultural Society

& The Soil and Crop Science Society of Florida

2008 Meeting

FORT LAUDERDALE, Fla.—The Florida State Horticultural and Florida Soil and Crop Science Societies will hold their joint, annual meeting June 1 through 4, 2008 at the Ft. Lauderdale Marriott North hotel, located at 6650 North Andrews Avenue in Fort Lauderdale, Florida.

Don't miss our Keynote Speaker, Florida Agriculture Commissioner Charles Bronson, our Horticulture Breakfast speaker, University of Florida Environmental Horticulture Chair Dr. Terrill Nell, and over 170 technical presentations featuring applied research seminars covering horticultural and agronomic crops. New developments and practices for growers, processors, allied industries, and other horticultural interests in Florida will also be presented. Members and nonmembers of both societies are welcome to attend. There will be two evening receptions for friends and colleagues. Programs from the FSHS sections will include talks on:

- **CITRUS**: Greening and canker control, psyllid management, mechanical harvesting, use of weather data in management decision making, and general horticultural practices;
- **HANDLING AND PROCESSING**: Pre- and postharvest factors affecting fruit and vegetable quality and aroma, laser labeling of citrus, impacts of mechanical harvesting, and new citrus juice processing technologies;
- **GARDEN AND LANDSCAPE**: Ornamental plant varieties, new pests, "natural" and integrated pest management tools, best management practices, potting mixes, irrigation and fertilizers;
- **KROME**: Tropical fruit, blueberry, and low-chill peach production in Florida, pest management, and evaluation of new cultivars;
- **VEGETABLE**: Practices and profitability of greenhouse production systems, new information on fertility management and the latest pests and diseases, vegetable sensory quality and market opportunities.

Tuesday afternoon through Wednesday morning, June 3-4, the University of Florida/IFAS will offer in-service training for County Extension faculty on "Phytosanitary inspections and quarantine treatments of imported fruits, vegetable, and floral crops."

For information about the Florida State Horticultural Society, including meeting details, on-line registration and FSHS membership dues payment, please visit www.fshs.org. For additional assistance, contact the Program Coordinator at the number below.

Contact information: Eric Simonne (352) 392-1928, ext. 208, esimonne@ufl.edu

CHEMICAL CULPRIT IN GRAPEFRUIT-DRUG INTERACTIONS IDENTIFIED

People are discouraged from consuming grapefruits or grapefruit juice while taking certain medications because they can affect the way the medications are metabolized. Now scientists are closer to understanding why this dangerous interaction occurs. Johns Hopkins Health Alerts reports on the latest research.

New York, NY (PRWEB) March 18, 2008

FOOD AND DRUG INTERACTIONS

Certain foods and drinks don't mix well with certain medications. For example, grapefruits or grapefruit juice may interact badly with a number of medications, because natural grapefruit contains a substance that affects the activity of an enzyme in the intestines and liver that processes these medications. This could result in a dangerous increase in the level of the drug in your blood.

Another potentially dangerous interaction is between the blood thinner warfarin (Coumadin and generic brands) and vitamin K. The vitamin, present in many multivitamins and supplements, neutralizes or reduces the effect of the medication warfarin. This raises the risk of a blood clot, which the warfarin is intended to prevent.

GRAPEFRUIT AND DRUG INTERACTIONS

Now, scientists have identified the specific chemical in grapefruit juice responsible for many drug-food interactions, according to an article in the American Journal of Clinical Nutrition (Volume 83, page 1097). Previous research implicated a family of chemical compounds called furanocoumarins (FCs) as the culprit in grapefruit juice. To confirm this suspicion, the scientists created FC-free grapefruit juice and compared its effects with those of whole grapefruit juice or orange juice (the control group in the study).

GRAPEFRUIT AND DRUG INTERACTION STUDY

Eighteen study volunteers drank 8 oz of whole or FC-free juice along with a dose of felodipine (Plendil), a blood pressure medication.

The blood concentration of Plendil was nearly THREE times higher when people took it with 8 ounces of whole grapefruit juice, compared with blood levels after subjects took it with the FC-free grapefruit juice or orange juice (the control group in the study).

This means that the blood level of Plendil was higher when taken with whole grapefruit juice, potentially causing dangerously low blood pressure.

The researchers said their finding could assist in the study of other drug-food interactions.

Grapefruit has also been known to diminish the absorption of some drugs in the body. So always follow the guidelines given on your medications with regard to food and drug interactions.

One further note: In reference to the control group in the study, regular orange juice was found to be safe to drink with Plendil. However, you may want to avoid Seville oranges in juice or marmalade, as they are the only type of oranges to contain furanocoumarins.

For more free Prescription Drug Health Alerts, please visit: Johns Hopkins Prescription Drugs Health Alerts

You can learn more about the latest research on prescription drugs in the annual Johns Hopkins Prescription Drug White Paper: The Johns Hopkins White Paper: Prescription Drugs

Medical Disclaimer: This information is not intended to substitute for the advice of a physician.

Emerging Technology for the 21st Century Citrus Grove

When: **Tuesday, April 22, 2008**
Where: **Southwest Florida Research and Education Center,**
2686 State Road 29 North, Immokalee, FL 33415

7:30 Registration, Coffee and refreshments

8:00 Welcome and Program Outline, Dr. Dunckelman and/or Dr. Waddill

8:15 Travel to SWFREC field sites

Concept Grove and New Ideas for Grove Design-Dr. Bob Rouse, UF-SWFREC, Dr. Kelly Morgan, UF-SWFREC and Dr. Bill Castle, UF-CREC

Autonomous Guidance for Robotic Harvesting and Disease Detection-Dr. Tom Burks, UF-Ag. Eng.

Abscission Trials, 2007-08- Dr. Bob Ebel, UF-SWFREC

10:30 Presentations in SWFREC main building

Yield Estimation with Digital Photography- Dr. Arnold Schumann, UF-CREC

Machine Enhancements for Mechanical Harvesting- Dr. Reza Ehsani, UF-CREC

12:00 Lunch

Update on Abscission Research and CMNP Registration- Dr. Jackie Burns, UF-CREC

Field Day Evaluation

1:15 Adjourn

For more information or to RSVP, please contact Barbara Hyman @ (239) 658-3461 or Fritz Roka @ (239) 658-3428

UF UNIVERSITY of FLORIDA
IFAS Extension

Certified Crop Adviser

Pest Management / Nutrient Management
Educational Seminar and CEU Session

Wednesday, April 9, 2008

7:30 AM to 6:30 PM

Pest Management (5 CEUs)
Nutrient Management (5 CEUs)

On site at the UF/IFAS Citrus Research and Education Center in Lake Alfred, and offered by videoconference only at:

- **Gulf Coast REC in Wimauma**
- **Southwest Florida REC in Immokalee**
- **Indian River REC in Ft. Pierce**
- **University of Florida main campus in Gainesville**

Regular registration is $100.
Lunch will be provided at all sites.

Please send the attached registration form to:

Citrus Research and Education Center, Lake Alfred

700 Experiment Station Rd., Lake Alfred, FL 33850.

For the latest version of the program, visit the CCA Seminar website at www.crec.ifas.ufl.edu/cca

Flatwoods Citrus

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

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Racial-Ethnic Background

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

Gender

__Female __Male