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Citrus Leaves is the monthly
newsletter for employees
and friends of CREC.

Citrus Leaves welcomes
your contributions, sugges-
tions, and corrections.

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Citrus Leaves

Forty-Fifth Annual Citrus Packinghouse Day

(photos by Kathy Snyder)

Undaunted by the renovations and repairs taking place at the Ben Hill Griffin Hall, Dr. Mark Ritenour (Indian River REC), Program Coordinator, opened the meeting of the 45th Annual Citrus Packinghouse Day. Approximately 150 attendees were welcomed by Dr. Harold Browning (CREC Center Director), who jokingly referenced the recent crop estimates by saying, "No, those are not oranges dropping on the roof," as roof repairs continued at Ben Hill Griffin Hall.

This year's meeting featured citrus canker information and shipping fruit under the new regulations. The opening presentation, "Shipping Fresh Citrus Under the New Canker Quarantine Regulations" by Mr. Mark Estes of the Florida Department of Agriculture and Consumer Services (FDACS), explained some of the new

(continued on page 3)



Dr. Harold W. Browning welcomes everyone to Packinghouse Day

Lab Highlight - September 2006 Dr. Ed Etxeberria's Lab

"In this laboratory, we concentrate our efforts to understand the fundamental physiological and cellular aspects of sugar and acid metabolism in sink tissues such as Citrus fruits," states Dr. Ed Etxeberria, Professor of Horticultural Sciences, specializing in plant cell physiology. Continuing, Etxeberria explains, "Primary emphasis is placed into the study of the mechanisms of sucrose and citrate uptake into the vacuole of heterotrophic plant cells and their mobilization at times of high energy demands. At the plant level, my laboratory is also involved in the study of the effect of imposed water deficit periods on Citrus fruit quality."

Few processes are as vital to plant productivity as the uptake of photoassimilates into heterotrophic plant cells. Whether intended for short- or long-term storage, uptake of photoassimilates not only supplies energy and building blocks to sustain growth and development, but excess carbon is stored in diverse cellular structures building massive reserves. These same reserves, contained in the vacuole(s), amyloplasts or elaioplasts, become sources of energy to support metabolism during postharvest shelf life and to support germination and sprouting of seeds, tubers, hypocotyls, and



Etxeberria checking equipment readings.

photo by Gretchen Baut

(continued on page 3)

Update your address for Open Enrollment

In preparation for open enrollment, the state of Florida usually captures address information in early August; therefore, it's important to make sure your address is current so that you do not miss any important mailings. To ensure you receive important benefit and human-resource related communications — particularly relating to fall benefits open enrollment — make sure your home and work addresses are up-to-date as soon as possible in the myUFL systems by completing the following steps:

Log on to the myUFL portal with your GatorLink username and password. (Call **392-HELP** if you don't know your GatorLink username or password.)

1. Click "My Account" in the myUFL systems menu.
2. Select "Update My Directory Profile." Once you are on the Gatordex Self Service page, you may modify the appropriate address information by clicking on the orange hyperlinked text that reads "Addresses and Phone Numbers."
3. To modify an address, select the radio button for Permanent Home Mailing Address and/or UF Business Mailing Address and hit submit. Make the necessary change, and hit submit again. ****IMPORTANT NOTE: Foreign nationals are required to maintain a foreign address for tax purposes and therefore should not modify the Permanent Home Mailing Address which is reserved for the foreign address. Instead, the Local Home Mailing Address field should be used for the local address. Questions regarding foreign addresses or tax implications should be directed to the Tax Services Office at 392-1324.**
4. If Permanent Home Mailing Address or UF Business Mailing Address is not available, you must add the address by clicking on "Add New Address and Related Phone Numbers" found in the menu options located at the top left of the page.
5. Fill in your updated address information and click "submit" at the bottom of the page to complete the address change.

Contact your directory administrator or the UF Help Desk at **392-HELP** or helpdesk@ufl.edu with questions pertaining to the UF Directory. Need additional help? Visit <http://www.bridges.ufl.edu/training/docs/AddANewAddress.pdf> for an instruction guide.

Open Enrollment and Benefits Fair Slated for Fall

This year's annual Open Enrollment and Benefits Fair is just around the corner. Open enrollment is scheduled to begin on September 19 at 8:30 a.m. and end on October 18 at 5:30 p.m. A Benefits Fair, which provides more information about available programs and options, will be held on



Photo by Kathy Snyder

September 25 and 26 in the Reitz Union Grand Ballroom. Additional Benefit Fairs may be available closer to this area, but a schedule is not currently available. As additional information is received, the HR Office will try to make it available to all employees.

Watch for Employee "State Sponsored" Benefits Statements which will be mailed to home addresses beginning September 5. The People First Service Center will be available to respond to general inquiries about Open Enrollment starting September 12. The Service Center staff will also be able to provide information and assistance in preparation for Open Enrollment, such as helping to establish and reset passwords, etc., which are necessary to log into the People First web site. However, they will not be available to accept Open Enrollment elections or changes until September 19.

Additional information will be provided in the September InfoGator. Questions? Please contact University Benefits and Retirement at **392-1225 (SC 622-1225)** or at benefits@ufl.edu.

Packinghouse Day: Decontamination Training

By Holly Chamberlain

A decontamination training session was held for packinghouses at the Citrus REC, Lake Alfred on August 17, 2006. The program was designed to review decontamination procedures and regulations for the 2006-2007 fresh fruit harvest. Holly Chamberlain, UF/IFAS – CREC provided information and a review on decontamination followed by Dr. Tim Schubert, FDACS-DPI who led the discussion on regulations. Participants, 28 in total, will receive an updated certificate in the mail for decontamination training.

It was decided by FDACS-DPI that this training is now only required every other year. As presented in the Citrus Health Response Plan (CHRP), citrus packers must register by signing the newly revised compliance



Bins are decontaminated with an approved product and then remaining debris swept out with a broom.

agreements similar to last season that contain the standard decontamination requirements. Trailers that do not come into contact with citrus trees do not need to be decontaminated.

- Citrus-Producing States - As of this writing, fresh fruit movement to citrus-producing states will likely be prohibited. The Department is still seeking a response to our request to open some of these markets.

(cont. on page 4 Decontamination Training)

regulations affecting the Florida citrus industry.

During his presentation entitled **"Packing and Shipping Fresh Florida Citrus in 2006-2007,"** Dr. Tim Schubert, also from FDACS, stated "This season will be a test, a transitional period...because of the reluctance in other citrus producing states to accept Florida fresh fruit based on perceived canker risks, naturally any blemish will be considered a canker lesion." Schubert continued by saying, "Let's not give them any ammunition to criticize this program.

Like all other aspects of this program, we must work together to accomplish this. One failure could be a setback for everyone." Schubert stressed to everyone that this upcoming season will represent the first step in the process of regaining unrestricted market access for Florida Fresh Fruit.



Approximately 150 attendees are welcomed.

Dr. Tim Gottwald, USDA/ARS, continued during his presentation, **"Citrus Canker on Fresh Fruit,"** along the same line as Schubert. "California, Texas, Arizona, Louisiana, Hawaii, Puerto Rico, and the EU have all expressed concern and/or are legislating to keep Florida fresh fruit, nursery plants, and ornamental citrus relatives out of the marketplace in some of those locations," stated Gottwald. The presentation showed research for identifying lesions on freshly picked fruit and some decontamination procedures prior to the packinghouse line. Dr. Jan Narciso, USDA/ARS, in her presentation, **"Reduction of *Xanthomonas* on Surfaces,"** also followed similar research lines.

"New Fresh Citrus Cultivars for Florida," presented by Dr. Jude Grosser, revealed a new mandarin hybrid that will be available to the Florida growers. LB8-9 mandarin hybrid is a mid-season maturing hybrid that combines medium fruit size, attractive orange color, and good fruit flavor. Grosser explained one economic advantage of the new hybrid would be the harvest time of at least a month earlier than other similar varieties.

Other presentations were **"Postharvest Peel Pitting Relating to Rapid Changes in Relative Humidity,"** presented by Dr. Ferando Alvarez for Dr. Jackie Burns, **"Preharvest Fungicides to Reduce Postharvest Decay of Fresh Citrus,"** presented by Mr. James Salvatore, and **"New Maximum Residue Limits (MRLs) for Fresh Citrus Export Shipments,"** presented by Dr. Mark Ritenour.

For copies of many of the presentations, visit the University of Florida Postharvest Programs & Information website <http://postharvest.ifas.ufl.edu> (click on previous events).

Before the afternoon events, attendees were treated to lunch from The Happy Cooker, PMS of Greater Tampa, Inc. located in Thonotosassa, which was sponsored by Cerexagri, Inc./DECCO of Ft. Pierce.

In addition to the commercial exhibits in the Center's packinghouse, a training session on packinghouse canker decontamination was presented by Ms. Holly Chamberlain and Dr. Tim Schubert at Ben Hill Griffin Hall.

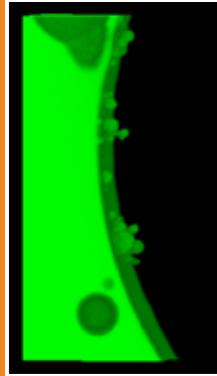


Fig. 1

other reproductive organs.

Central to all studies is the determination of the mechanism of sucrose (sugar) uptake into developing fruits (and other developing storage organs). "The necessary transport of sucrose across several membrane barriers upon its arrival to the citrus juice cells has been investigated using purified membrane systems and, most recently, with the use of membrane impermeable fluorescent markers, quantum dots and nano-spheres," explains Etxeberria.

The newly acquired confocal microscope at CREC has given this investigation a big boost by allowing the visualization and qualitative measurements of previously theorized transport processes. "For example," continues Etxeberria, "in Fig. 1, forming endocytic vesicles can be seen in a 3-D tomographic analysis of a Citrus juice cell during sugar uptake. Fig. 2 shows a cytoplasm demonstrating the synchronous uptake of fluorescent sugars across membrane-bound carriers (green cytoplasm) and fluid phase endocytosis (red dots) using Nomarsky fluorescent microscopy."



Fig. 2

Sucrose uptake studies are paralleled by determinations of the factors affecting citric acid accumulation and decline in Citrus fruits. A multi-year research project is under way to determine the changes in membrane bound citrate carriers and channels, and the accompanying enzyme activities during development of various Citrus fruits differing in their capacity to accumulate and utilize citric acid. Although found at much lower concentrations than sugars, citric acid is a vital component of fruit quality.

Another study, presently being carried out in the Etxeberria lab, focuses on the effect of mild water stress on Brix content in Citrus fruit. "In field studies, we have demonstrated that mild water stress enhances the accumulation of soluble solids in citrus fruits without affecting yield," said Etxeberria. The study also demonstrates the lack of effect on citric acid content and a 2-week delay in flowering. Studies on the postharvest shelf-life of fruit from mildly water-stressed trees is currently being planned.

Sugar uptake studies in the Etxeberria lab are carried out mostly by Pedro Gonzalez (Senior Biological Scientist) and Diego Pozueta (visiting student). Diann Achor is a close collaborator in aspects related to confocal and electron microscopy, and Dr. Larry Parsons (Professor of Horticulture) and James Holten (OPS) complete the team of collaborators dealing with water deficit irrigation. Other close collaborators of Etxeberria include Drs. Javier Pozueta and Edurne Baroja (Pamplona, Spain), and Drs. Edna Negron and Felix Ramos (UPR-Mayaguez).

Dr. Madhugiri Nageswara Rao Recognized by Genome India International



The research work of Dr. Madhugiri Nageswara Rao in the field of agricultural biotechnology and forest genomics has been recently recognized as 'member-spotlight' by Genome India International (GII; www.thegenomes.org), an international organization comprised of several reputed Indian scientists and research

scholars (700+ members) from all over the world.

Dr. Rao's scientific research in India has contributed significantly to the understanding of impacts of human disturbances on the genetics of various forest species, mapping for germplasm collection in medicinal and economically important tree species, the role of protected areas and wild-life sanctuaries, and identification of bioactive chemical compounds in forest plants. The outcome of his studies, perhaps the first of their kind in the Western Ghats (one of the mega diversity 'hot-spots' in the world), has important implications for future conservation and sustainable management of various forest genetic resources in India.

At CREC, Dr. Rao works with Dr. Fred G. Gmitter, Jr. as a Postdoctoral Research Associate and he is currently working on genetic improvement of Citrus for obtaining tolerance to various diseases and environmental stresses using advanced biotechnological tools.

UF/IFAS Faculty and County Extension Agents Travel to Brazil

In July, a group of 10 county faculty and researchers traveled to Brazil to gain a better understanding of citrus canker and greening control practices. Citrus canker has been endemic in the state of Parana since the 1950s, and greening was more recently found in the state of Sao Paulo in 2004. With both of these major citrus diseases present in Brazil, practical lessons on management can be obtained by visiting with and observing grower disease management practices.

The week-long tour was planned and developed by Drs. Steve Futch, Ron Brlansky, and Ms. Julia Beretta of the CREC. Other tour participants were Drs. Kuang-Ren Chung and Michael Rogers of the CREC; Gary England, Chris Oswalt, and Dr. Mongi Zekri representing the county agents; and Drs. Robert E. Rouse and Phillip A. Stansly from the Southwest Florida Research and Education Center in Immokalee. The tour began in the state of Parana with grove visits arranged by Dr. Rui Leite, Plant Pathologist, from the Instituto Agronomico do Parana, Brazil.

These visits included seeing citrus canker in groves and

the production practices that have been established to maintain adequate and profitable citrus production. For the management of canker, growers in Parana have developed extensive production practices as well as variety selections to remain profitable while living with citrus canker.

Later in the week, the group visited groves in the state of Sao Paulo to view greening and its management practices. Growers in Sao Paulo have instituted extensive grove surveys to identify and remove infected trees as well as vector management and clean nursery trees to remain productive and economically viable.

Drs. Brlansky, Rogers, and Stansly then attended the Huanglongbing/Greening International Workshop in Ribeirao Preto.



Guacho Farm, from Nova America Group, Sao Paulo State, Brazil

From left to right: Michael Rogers, Bob Rouse, Mongi Zekri, Phil Stansley, Kuang-Ren Chung, Julia Beretta, and Ron Brlansky. Back row, left to right: Steve Futch, Chris Oswalt, and hidden behind Ron is Gary England. Others pictured are employees of Guacho Farm.

(cont. on page 4 Decontamination Training)

- Non-Citrus Producing States - Fruit must originate from a grove block that is inspected and found free of canker within 30 days of harvest. The Department and the USDA are taking pro-active measures to conduct inspections on a timely basis. Fruit must be shipped under Limited Permit.

- Fresh Fruit Exported to other Countries - Fruit destined to other countries must meet the receiving country's entry requirements.



Grapefruit being washed with SOPP for fresh fruit packing.

Europe will accept citrus from Florida if an inspection of the grove block and immediate vicinity are free of citrus canker. Asian countries do not classify citrus canker as a quarantine pest, but the fruit must be free of citrus canker to meet basic phytosanitary requirements. Contact the Department for specific details.

- Fruit for Processing or Sale Within Florida - There are no restrictions. (Photos Courtesy: H.L. Chamberlain, UF/IFAS - CREC)

CREC EMPLOYEE NEWS

Pens, Pencils, and Calculators for South African Schools

Winter Haven High School (WHHS) students collected pens, pencils, and calculators to be delivered to Berseba Primary School, a needy school located north of Johannesburg in South Africa. The project was organized by **David Futch**, a student at WHHS, and **Deborah Futch**, a history teacher, in May 2006. The project provided in excess of 2,500 pens, 3,000 pencils, and 275 solar powered calculators, all which were donated by WHHS students to aid the South African needy primary school. The donated items were delivered to the school by the **Futch family** while on vacation in South Africa. This was the second year of providing basic school supplies to needy schools, with last year's project donating items to a school in Peru.



The Futch family, pictured on the landing with the school teachers, presented the much needed school supplies to the Berseba Primary School.



Gretchen Baut is CREC's newest grandma (pictured here with her granddaughter). The Baut/Holiday families were joined this month by the newest family member, **Chelsea Holiday**. Chelsea, daughter of **John and Kasandra Holiday**, was born on August 7, 2006 and weighed 9 lb 10 oz. Congratulations to all!

Send in your travels photos, fun photos, family news, personal and school accomplishments, graduations, school awards: Citrus Leaves Employee News section is the place to share with others places you've been, vacations, community service efforts, etc.

Dr. Kuo-Tan Li recently left Dr. Syvertsen's program to take a faculty position in Fruit Science in the Department of Horticulture at the National Taiwan University in Taipei, Taiwan. Kuo-Tan had a very strong background in whole-tree physiology of apples from his Ph.D. work at Cornell and became a postdoc here 2003. Kuo-Tan soon became the group leader in the project dealing with effects of mechanical harvesting and abscission chemicals on citrus tree health. While here, he independently developed methods to assess light absorption in citrus tree canopies and subterranean methods to monitor root growth *in situ*.



Left to right: Dr. Jim Syvertsen, Dr. Kuo-Tan Li, and Jill Dunlop (photo by Kathy Snyder)

His hard work will be missed and he will be difficult to replace. We will be hearing more from Kuo-Tan, however, as he owes Drs. Syvertsen and Burns several manuscripts.

WELCOME

Marcelo Neres, Student, Muraro

FAREWELL

Joshua Adkins, OPS, Rogers

Ryan Atwood, Scientific Research
Mgr., Gmitter

Diamond Basnaw II, Volunteer,
Hoover

Lawrence Bohannon, Volunteer,
Armstrong

Lillian Brickman, Lab Tech, Grosser

Jacob Butler, OPS, Parsons

Kelly Cook, OPS, Syvertsen

Melinda Grosser, OPS, Graham

Kuo-Tan Li, Postdoc, Syvertsen

Levette Rucks, OPS, Graham

Xiao Zhang, OPS, Timmer

FOR CHANGE OF ADDRESS

PLEASE NOTIFY:

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Attention: Kathy Snyder

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OR E-MAIL:

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September 2006

CREC Calender

www.crec.ifas.ufl.edu

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4 LABOR DAY HOLIDAY	5	Seminar 6	7	8	9
10	11 Fla. Hi-Tech	12 Rural Water	13	14	15	16
17 Faculty Mtg.	18	Seminar 19	20	21	22	23
24	Seminar 25	26	Seminar 27	28	29	30
Oct. 1	Oct. 2	Oct. 3	Oct. 4	Oct. 5	Oct. 6	Oct. 7

Sept. 4 - HOLIDAY - LABOR DAY

Sept. 6 - Seminar: Dr. Michelle Danyluk, Candidate Food Microbiologist, Rm 2, BHG, 11:00 a.m. - 12:00 noon.

Sept. 11 - Hi-Tech, Mike Evans, Rm 2-4, BHG. 10:00 a.m. - 1:00 p.m.

Sept. 12- Rural Water, Don Hamm, Rm 3-4, BHG, 8:00 a.m. - 4:00 p.m..

Sept. 18 - Faculty Meeting, Dr. Harold Browning, Rm 3-4, BHG. 8:30 a.m. to 10:30 a.m. (TENTATIVE)

Sept. 19- Seminar: Dr. Lukasz Stelinski, Entomologist Candidate, Rm 2, BHG, 11:00 a.m. - 12:00 noon.

Sept. 25 - Seminar: Dr. Juan Alvarez, Entomologist Candidate, Rm 2, BHG, 11:00 a.m. - 12:00 noon.

Sept. 27 - Seminar: Dr. James Harwood, Entomologist Candidate, Rm 2, BHG, 11:00 a.m. - 12:00 noon.

Updates and Changes can be seen on the web at <http://www.crec.ifas.ufl.edu/news>

Citrus Leaves Submission Deadline
September 21, 2006

Training Offered

No schedule at this time