Citrus Leaves
UF UNIVERSITY of FLORIDA
IFAS Research
Citrus Research and Education Center
University of Florida, IFAS, Citrus Research and Education Center December 2006

Staff Meeting, Holiday Party

The Center Staff Meeting will be held Friday, Dec. 15 at 3 p.m. immediately followed by the Annual CREC Holiday Party, BHG, Jr. Citrus Hall. The evening begins with drinks and snacks followed by a Chinese dinner. Entertainment begins at 6:30 p.m. There will be a Dessert and Appetizer Contest. All personnel, current and retired, and their immediate families or a special guest are invited. For more info or to RSVP, call Jill Dunlop at ext. 1283.

Also, CREC-related photos are needed for the video to be shown during the party. Please put photos in x:\2006 Photos for Christmas Video as soon as possible.

Send List of Essential Personnel

CREC will be closed Dec. 25 through Jan.1, 2007. Supervisors must provide the HR Office with a list of those required to work during those days. Only personnel who have been determined to be "Essential Personnel" will be authorized to work and record payable time. The deadline is Thursday, Dec. 14. For more info, call the HR Office at ext. 1210.

The Future of Citrus Is Out of This World

CREC Joins NASA to Increase Industry Productivity

The future of citrus is literally out of this world.

By using satellites and space imagery, CREC faculty members hope to increase citrus competitiveness by determining needs and detecting diseases such as greening.

"The satellite image analysis may provide quicker and broader information than a visual tree-to-tree inspection," said Dr. L. Gene Albrigo, Professor of Horticulture, UF/ IFAS, CREC. "The hope is that a lot of things learned in studying citrus can be applied to other tree crops, as well."

The satellites can monitor tree conditions every 16 days at medium (10-20 m) or high resolution (0.6 to 1 m), and from those reports scientists can determine numerous things. The reflectance evaluation, using medium resolution, can identify citrus and its quality (see "Citrus and eucalyptus photo on page 2). This is done by measuring the canopy size and the health of the tree. Using high resolution imagery, trees can be counted and diseases may be detected (see "tree counting" photo on page 2).

NASA is funding the project along with the Department of Citrus. Data Star, a private company, and CREC scientists study and analyze images collected and other data to evaluate citrus trees or area conditions and potential for

See GPS on page 2

(From left) Juan Valiente (Mexico), Jan Stuckens and Ben Sommers (Belgium) work as cooperators on satellite image anaylsis project.

BHG Phase II Renovations to Begin After New Year

CREC volunteers move books and journals after the new carpet was laid in the Library ending Phase II.

Phase I of the Ben Hill Griffin, Jr. Citrus Hall is finished with these renovations completed:

- The reworking of the ceilings and roof; front entrance renovations;
- The Library ceiling, lights, and other renovations;
- West entry/EM Lab corridor new flooring, acoustical grids, lighting, and tile;
- Teaching lab area drywall removal and replacement/painting.

Phase II will begin after the first of the year and will encompass:

- Front entrance and lobby/store front to the Library;
- Creation of the new media center;
- Meeting rooms; Restrooms;
- Replace various walls and doors throughout the building.

During Phase II, the Teaching Lab and the Meeting Room will be available with a reservation except during the restroom renovations. No other rooms will be offered until the completion of Phase II in early 2007.

For more information, call Linda Murphy or Kathy Witherington at the Center Switchboard.

Happy Holidays!

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Dr. Harold W. Browning, Center Director

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Citrus Leaves is published by UF/IFAS, CREC in the interest of faculty, staff, and friends.

CREC Mission Statement: "CREC discovers and delivers innovative solutions that empower citrus and other agricultural interests to conduct responsible and profitable business. CREC fosters scientific excellence and efficient use of resources."

We welcome suggestions and comments concerning Citrus Leaves. Please contact Anita Whitaker, Public Relations Coordinator, 956-1151, ext. 1233 atwhit@ufl.edu

Related Seminar Coming

Geodesy Fundamentals and GPSP Positioning for Agricultural, Surveying, and GIS Applications Seminar by Dr. Muneendra Kumar (Retired Chief Geodesist) and Dr. Reza Ehsani (CREC, Assistant Professor) on GPS Pitfalls, Geodetic Positioning, Designing a GPS Project, GPS Surveying and Positioning, Precision/ Repeatability and Accuracy, Selection of a GPS Receiver, Three Coordinate Systems, Major Datum Systems, and Fundamentals of Geodesy, Tuesday, Dec. 19 from 8 a.m. – 5 p.m.,$150,(Students: $50), BHG, www.citrusprecisionag.com. For info, call (863) 956-1151 ext. 1248.

GPS, continued from page 1

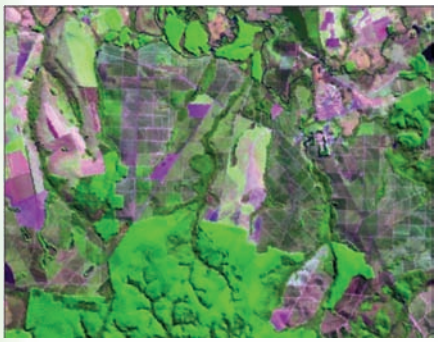
production.

The primary objectives of the project are to automatically determine area or trees in an area, the health or production potential of the trees, and considering weather, a yield estimation based on the productivity potential times weather effects on fruiting.

Albrigo is working on the project with Drs. Reza Ehsani and Arnold Schumann, UF/IFAS CREC Assistant Professors of Precision Agriculture and Mechanical Harvesting.

There is interest in this technology all around the world, not just here in Florida.

Belgium recently sent two graduate students, Ben Somers and Jan Stuckens, here to work with CREC. Although Belgium isn't concerned with citrus *per se*, the country is working with South Africa on a citrus analysis project and they hope that the U.S.'s lessons learned will also benefit them. A South African-Belgium consortium is developing a medium resolution hyperspectral satellite to be launched in 2008.

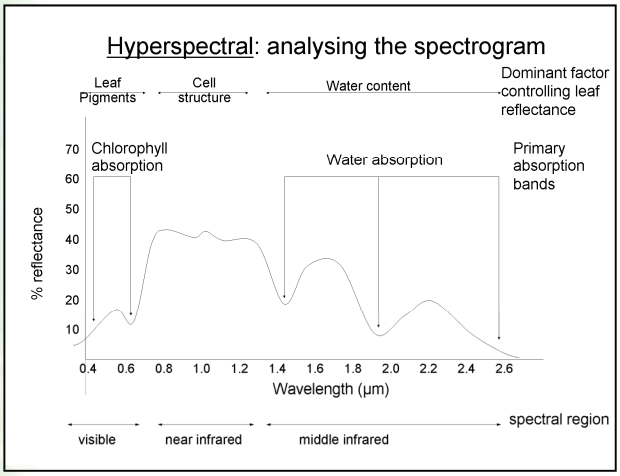


Citrus and eucalyptus in Brazil.

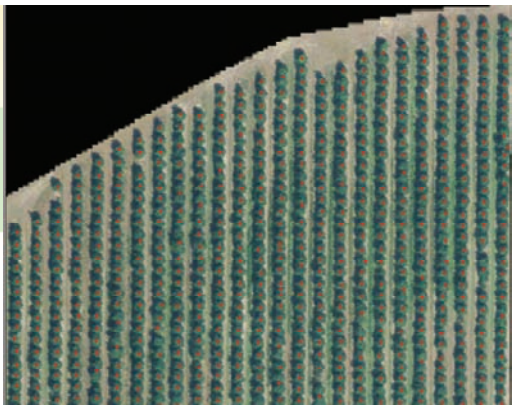
It is expected that plant water and nutritional status (see graph on page 2) can be monitored in real time with this satellite.

"The role of our team is to see what applications can be developed, as well as the feasibility of it."

CREC expects to be part of the research team using the hyperspectral satellite. Brazil (Sao Paulo State) is also interested in the potential of satellite image analysis in understanding their land area devoted to citrus production, changes in tree health, and improving citrus production.



Hyperspectral reflectance and key physiological indicators.



Tree counting using automated program with 94 percent accuracy. Each green/red dot represents a tree.

The benefit of having Brazil and the U.S. involved in the project is that the countries are in different hemispheres, and citrus trees are in different stages of development at all times.

At the same time, many of the production and disease problems are the same. Additional interest in image analysis of citrus comes from Mexico also. A former UF student, Dr. Juan Valiente, is starting a project with CREC's assistance and is visiting this week.

Satellites are in place, so the major cost is incurred with the production of the "images," the visual and hyper-visual information received from space.

"When we order an image we are very specific about what we want," Albrigo explained. "We decide what kind of test area is needed, the cloud cover, the time of year, and so on."

This month marks the end of Phase II of the NASA project, a year-long phase which was preceded by preliminary tests.

Phase III begins after the first of the year and, hopefully, some of the collected imagery will be a big asset for greening survey work.

"It is much better to have an instrumented method (when determining greening)," Albrigo said. "With visual survey work, there is always human error, fatigued workers, and an unstable labor force. But once you train an instrument, it's reliability is constant."

CREC Retirements

Dr. Herb Nigg, 32 years

Dr. Nigg accepts a Certificate of Appreciation from Dr. Harold Browning, Center Director.

Dr. Herb Nigg, Professor of Entomology, UF/IFAS Citrus Research and Education Center, retired Nov. 30 after 32 years of service

During Nigg's career at CREC, his research focused primarily on the interactions of pesticide application and worker exposure. His pioneering work in this area provided the scientific basis for managing pesticide application and human safety issues. Later in his career, Nigg directed his program to biological aspects of several important citrus pests, including Diaprepes root weevil and Caribbean fruit fly. He worked closely with growers to address needs associated with these pests and their impact on the health of the industry.

In retirement, he looks forward to fishing more often, spending time with his family, traveling, and his entrepreneur endeavors.

During his speech at his retirement luncheon, Dr. Nigg said, "I've been proud to work at and be a part of the best and most famous research and experiment center in the world."

Good luck, Dr. Nigg!

Nancy Burke, 24 years

Nancy Burke, CREC's Receptionist, retired Nov. 30 after more than 24 years here.

Originally from Wisconsin, Nancy has five children and two great grandchildren. She is a member of the First Baptist Church of Lake Alfred, loves Nascar, reading, fishing, sewing, and antiquing. She looks forward to taking a well-deserved vacation, shopping, and fishing.

Kathy Witherington (left) presents Nancy Burke with a gift from the Center.

During her retirement reception, Nancy thanked everyone and said, "You all are my family."

We'll miss you, Nancy!

CREC Passes Worker Protection Safety and Pesticide Procedures Inspection

Gary Carroll, Florida Department of Agriculture, along with Dr. Fred Fishel, IFAS, conducted a thorough inspection of CREC's Worker Protection Safety programs, and pesticide storage and handling facilities and procedures on Nov. 30.

CREC was found to be in compliance with the vast majority of the regulations and only a few minor deficiencies were pointed out. In many cases, the inspectors indicated that the Center was going beyond the minimal requirements of the regulations and were complimented on the professional handling of the procedures.

"We would like to thank all those who worked hard to take care of potential problems with storage and handling, and who participate in the ongoing WPS training," Dr. Harold Browning, Center Director, said.

Special thanks to Troy Gainey, Senior Biological Scientist, for handling many of the pesticide storage and application matters. Also, thanks to Perry Love, Customer Service/Public Relations, who handles WPS training. Recognition also goes to Dr. Pete Timmer, Plant Pathologist, the primary contact with the review process

"They did a great job, in addition to all of you for following the proper measures when working with pesticides," Browning said.

Just a Reminder!

Attention:

All CREC Faculty and Staff

CREC faculty and staff

are reminded that all fruit

grown here on Campus

MUST go through the

packinghouse wash area.

There are no exceptions.

DECEMBER 2006

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	VALIC rep 8 a.m. - 1 p.m. 7	Secret Santa Luncheon 8	9
10	11	12	Dr. Reyes Seminar (see below) 13	14	CRIS Projects Due Staff Meeting & Holiday Party 15	16
17	18	Faculty Meeting 19 GPS Workshop (see page 2)	20	21	22	23
24	Holiday 25	26	27	28	29	30
Happy 2007! 31						

Center Closed the week of Dec. 25-29- Happy Holidays!

Back to work on Tuesday, Jan. 2.

Dec. 13 - Dr. Reyes will present "Applications of Nanotechnology to Food. Insights from the Nano4Food 2006 Conference" Dec. 13 at 10 a.m. in the Teaching Lab, BHG with refreshments at 9:45 a.m.

CAROLINA COLORS

Jack Smoot, (on the bridge) chemist, enjoys the change of leaves in North Carolina recently.

BRUNE'S BEAUTIFUL BABY

Andi Brune, who worked in Dr. Ed Echeverria's lab from 1995-1998, and his wife, Simona Bullert, who worked with Dr. Jude Grosser at the same time, with their daughter, Leonie, at their home in Berlin.

FAREWELL, DENISE

Dr. Larry Duncan gives Denise Dunn a hug at her farewell party on Nov. 27. Dunn accepted a position as a research leader in Melbourne, Florida. She will help to develop natural product insecticides and repellents.

NHS INDUCTEE

Shelby Flynn, daughter of Karla, PR/WP, was inducted into the National Honor Society of the International Baccalaureate School in Bartow on Nov. 7.