UF/IFAS
Everglades Research and Education Center
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Belle Glade, FL 33430-4702

From the editor:

The News reflects only a small segment of what we do at the EREC. For additional information you are welcome to arrange a visit, or learn more about us on our website.

In addition to this newsletter, we send information and notices about seminars and meetings via email. If you would like to be included on our mailing or email lists, please contact me. If you prefer to reduce your paper intake, you can ask to be removed from this list and I will send you the News as a pdf file. This newsletter may also be found on our website at: **http://erec.ifas.ufl.edu** Your comments, questions, and corrections are always welcome.

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The Everglades REC will be closed on May 29th in observance of Memorial Day

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Established by an act of the Florida Legislature on June 14, 1921, the Everglades Research and Education Center (EREC) in Belle Glade, Florida is an agricultural and environmental research and education unit of the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS). The Everglades Research and Education Center is distinctive in that it is the only academic agricultural research and extension education facility in the United States located on subtropical organic soils.

Barn Owl Update

The barn owl boxes that were destroyed by Hurricane Wilma are quickly being replaced and re-colonized. There now are 160 boxes in Palm Beach County (down from 270), 78% of which currently have nests in them. Jason Martin, a PhD student from the Department of Wildlife Ecology & Conservation, is studying the potential of barn owls to impact rodent populations in the EAA.

He is also examining the ecology of the owls in the area (e.g., diet, nesting success, juvenile dispersal, nest site fidelity). He recently completed his first year of data collection and will be working on this project for one additional year. There are two live barn owl webcams positioned in nests in the EREC barn. These cameras can be accessed through the EREC webpage (http://erec.ifas.ufl.edu).

Green cane management strategies for South Florida

There is world-wide pressure on sugarcane industries towards adoption of the green cane production system (harvesting sugarcane without burning). Motivation comes largely from regulatory response to changed community attitudes to smoke and ash from cane fires. A clear examination of the benefits and challenges of green cane harvest in Florida is necessary for an informed dialogue on this issue.

The green cane system is clearly most suited to rain-fed systems on well drained soils in the tropics and sub-tropics, where soil and water conservation benefits often translate into increased yield. Research needs to be conducted to determine the best management strategies for green cane systems on the often-flooded organic and mineral soils of Florida.

Scientists at EREC (R. Gilbert, G. Kingston, M. McCray, G. Nuessly, R. Raid, C. Rainbolt, and R. Rice) are working with our sugarcane clientele on a multidisciplinary research program to examine different residue management strategies in green cane systems. This effort will indicate opportunities for success and challenges for management in adoption of a green cane system in South Florida.

In November 2004 and March 2005, green cane trash management trials were established at EREC on organic soil after early and late harvest to compare impact on yield, crop nutrition, weed, pest and disease activity in response to a full blanket, trash raked from the stool and pre-harvest burning of trash (see photos). In December, 2005 and February, 2006 a second field experiment on sand land soils at Hilliard Bros. Farms was established with Ike Ezenwa and Kelly Morgan of SWFREC with objectives similar to the EREC site. Research at both sites will continue through the second ratoon crop.

UF/IFAS is Providing Solutions for Your Life
See the new Solutions website: http://ics.ifas.ufl.edu/extension/

UF/IFAS Everglades Research and Education Center

NEWS

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UF/IFAS and FAMU to host Small Farms conferences around the state

The University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) and Florida A&M University (FAMU) will host a "Florida Small Farms Conference" series to help small farmers build more efficient operations.

Small farms workshops were designed by UF/IFAS and FAMU county extension agents and faculty to help small farmers learn more about marketing, business planning, alternative production, worker health and safety, and more.

The Small Farms Conferences will be held at various locations around the state during the next several months. For a detailed list of the locations of the small farms conferences and other small farms resources log on to: http://

smallfarms.ifas.ufl.edu/calendar.htm

From the Director's Desk:

As you review this newsletter you will see the Everglades Research and Education Center has a lot of exciting research and education work in progress, however we have been seriously injured by the 2004 and 2005 hurricanes, and by losses due to frost and other environmental challenges. We are working very hard during this legislative session to obtain support for two IFAS initiatives. The first entitled 'Diversified Sciences Initiative' is discussed below, and is based on priorities of the Sugar Cane Research Advisory Committee. The second initiative is for statewide repairs and upgrades to modernize outdated facilities. In order that our excellent faculty accomplish their industry identified research priorities, and meet future research goals, they need safe, modern laboratories, greenhouses and field equipment.

I want to express my sincere appreciation to the Western Palm Beach County Farm Bureau, Sugar Cane Growers Cooperative of Florida, many individual producers, and our legislative delegation for supporting our efforts to bring critical funding to the Everglades REC.

Chris T. Waddill

Economic Contribution of EREC Research . . . . . Jose Alvarez

In October 2001, the Food and Resource Economics Department at UF/IFAS published the results of a study conducted by Edward A. Evans, Max R. Langham and Leo C. Polopolus titled Historic Analysis of the Economic Contribution of the Everglades Research and Education Center (EREC). Previous issues of this Newsletter have highlighted EREC's general and specific contributions. This one expands on the topic of the last issue: funding.

Recall that, during the study period (1950-97), EREC's funding increased at only 1.7% per annum in constant dollars, reflecting a decline in state contributions. Despite that, the average annual rate of return on investment –excluding non-measurable benefits– was a substantial 16%.

By the mid 1990's, it became obvious that new approaches needed to be pursued to make up for shrinking state allocations to alleviate the situation. A strengthened partnership between industry, USDA/ARS - Canal Point, and UF/IFAS/EREC came to the rescue of sugarcane funding for research and extension programs. The charts show how much progress has been made in only five years (2000-2004). For example, the increase in the number of FTEs (Full Time Equivalent scientists, involved in sugarcane research) increased more than five-fold at the EREC and almost two-fold at USDA/ARS (Fig. 1). The resources allocated to sugarcane research increased 2.7 times from $1,910,500 in 2000 to $5,148,750 in 2004 (Fig. 2). Two important points to consider: First, the industry lobbying efforts at the federal and state levels were instrumental in obtaining those additional funds. Second, industry figures do not include in-kind contributions in the experiments conducted in commercial fields by the scientists. If their donations of land, labor, machinery and equipment, and other inputs were considered, the imputed value would reach a few million dollars per year. Those resources are in fact the substitutes for shrinking state dollars.

Despite the recent gains, funding is still insufficient. Recognizing that, the new sugarcane partnership has initiated a Legislative Budget Request of 4.1 million dollars in state funding. Both UF/IFAS and industry are united in making this request a reality. Sugarcane is Florida's number one agronomic crop and the second in acreage and cash receipts. Hopefully, future funding will acknowledge the importance of sugarcane to Florida's economy.

Fig. 1. Number of FTEs (Full Time Equivalent scientists) in sugarcane research, January 2000 and December 2004.

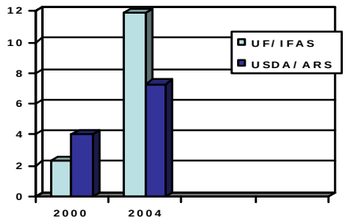
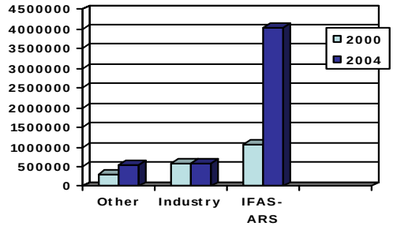


Fig. 2. Resources allocated to sugarcane research by funding source, 2000 and 2004.



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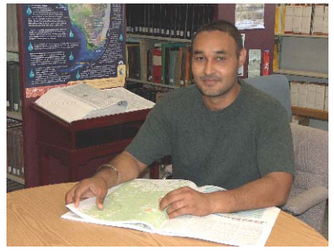
New Graduate Students

Lalitha Janardhanan is a MS student working under Dr. Daroub, in the Soil and Water Sciences Department. She earned her BS degree in Agriculture, from Kerala Agricultural University in India. Her research is focused on soil phosphorus.



Dr. Nuessly's PhD student, Hardev Singh Sandhu, from Punjab, India, takes advantage of the EREC library. His project involves research on the lesser cornstalk borer in sugarcane.

Jaya Das is a PhD student also working with Dr. Daroub. She has a MS in Agricultural Chemistry and Soil Science from the University of Calcutta, India, and also a post graduate diploma in Computer Science from Kalyani University.

Linley Smith, a PhD student, from Maryland, is working with Drs. Pernezny and Datnoff on the plant pathogenic fungus *Corynespora cassiicola*, which causes Target Leaf Spot on cowpea, cucumber, papaya, pepper, rubber, soybean and tomato.

Amit Sethi is conducting research toward his PhD in entomology. His research focus is on mechanisms of resistance to multiple insect pests in romaine lettuce. Amit is a student dent of Drs. Nagata and Nuessly.

Norma Flor, a native of Cali, Colombia and a MS student, working with Drs. Raid, Nagata and Datnoff, is investigating the fungal pathogen that causes "Brown Patch" of St. Augustinegrass and is trying to identify possible sources of host-plant resistance.

Student Interns

Carlos Lynch, a student intern from Zamorano University in Honduras is shown here cutting a tomato stem. Carlos works with Dr. Pernezny conducting research focused on the essential oils of plants. Carlos is from Ecuador.

Miguel Castillo (left) works with chemist, Xing Wang, in Dr. Wright's soil science laboratory. Miguel is also a Zamorano intern from Ecuador and is investigating the fate of P fertilizers in soil growing lettuce.

Pedro Korndorfer, a short-term scholar from the Universidade Estadual de Goias in Brazil, measures residue in a green cane field. He conducted research on green cane projects for Dr. Rob Gilbert from Dec. 2005 - Mar. 2006. Pedro's father, Gaspar Korndorfer, has twice been a Visiting Professor at the EREC.

The Policy Corner

By José Alvarez

In addition to the debate about winners and losers in the free trade agreements that the United States has signed or is negotiating at present, there are other important aspects that do not receive adequate publicity. The website of the Office of the United States Trade Representative (www.ustr.gov) contains a wealth of factual information. This issue of the Newsletter covers two of those aspects.

Free and FairTrade: Real Results in Leveling the Playing Field

The trade enforcement strategy is to use every available tool to level the playing field for America's farmers, ranchers, workers, and businesses by:

- Opening new markets.
- Removing barriers that hinder American exports.
- Bringing WTO enforcement actions.
- Combating unfair trading practices.
- Increasing dedicated trade enforcement resources.
- Empowering American workers to remain the best in the world.

The fact sheet contains eight pages of specific achievements under each of these six objectives, and interested persons are encouraged to visit the website for startling insights that remain unknown most of the time.

State Sovereignty and Trade Agreements: The Facts

This is one of the fact sheets in the "Trade Facts" series. It explains how the United States remains very sensitive to, and protective of, our federal system of shared power. It does so by following three general principles:

- Trade agreements fully preserve a state's right to regulate.
- Trade agreements do not automatically preempt or invalidate state and local laws.
- Trade panels cannot overturn or change U.S. federal, state or local laws.

FACULTY RESEARCH UPDATE

Working for the Farmers and the Environment in the Everglades Agricultural Area

Dr. Jose Alvarez is collaborating with Dr. Fritz Roka from the Southwest Florida REC in Immokalee. They are working to develop enterprise budgets for sugarcane on muck and mineral soils.

He is also working with **Dr. Rob Gilbert**; they are analyzing data collected from Dr. Gilbert's nutrient experiments with sugarcane production on sandy soils.

Dr. Ron Cherry and Dr. Phil Stansly from the Southwest Florida REC in Immokalee are involved in testing local sugarcane fields to establish the best method for sampling sugarcane fields to determine when soil insecticides are really needed for wireworm control. Initial data indicate overuse of soil insecticides in some fields. Hopefully their efforts will reduce this usage, thus saving local cane growers money.

Dr. Samira Daroub and the water resources group have initiated a new outreach program for a one on one BMP consultation program in the EAA. Participants in this program have staff from UF/IFAS visit their farms and provide recommendations to improve their BMP implementation.

BMP training workshops and seminars for 2006 are scheduled to start in May at EREC. If you need more information about how to participate in these two programs, please contact Dr. Samira Daroub (sdaroub@ufl.edu ph:561 993-1593) or Dr. Tim Lang (talang@ufl.edu ph: 551-993-1547).

Dr. Rob Gilbert is responsible for Stage III of the CP (Canal Point) breeding program in collaboration with USDA-ARS and the Florida Sugar Cane League which produces new sugarcane clones for growers. In addition Dr. Gilbert is leader of the green cane research project at EREC (see article). His other research projects include comparisons of nutrient sources for sandland sugarcane and the effect of flooding on sugarcane growth and yield.

Dr. Victor Guzman [retired] continues his work on breeding lettuce varieties adapted to the soils in south Florida. He is also working on a project which involves methods to reduce phosphorus application to vegetable crops. His 'luxury consumption' method is being tested with local growers.

Dr. Mabry McCray's work on sugarcane nutrition is proceeding reasonably well in spite of hurricanes the last 2 years. Treatment differences were found in the plant cane crop of phosphorus and silicon small-plot studies that were planted in fall 2004. New trials planted in fall 2005 were a calcium silicate rate study at EREC, a test of nitrogen response on organic soil at EREC, and a mill mud/compost amendment study on a mineral soil at Hilliard Brothers of Florida farm in Hendry County.

Dr. Russell Nagata's research group has been busy propagating NUF-76 plugs for the Florida Sod Grower Cooperative members who signed up to evaluate this material. If you signed up and have not received your allotment please contact him. Evaluation of 25 bacterial spot resistant bell pepper varieties is ongoing in Immokalee and Delray Beach despite the slow start due to hurricane Wilma which destroyed the first planting in October. A pepper field day is planned at Delray Beach for March 31, and then around the first of May for Immokalee. Look for the announcements.

Dr. Gregg Nuessly will be conducting insecticide field tests in sweet corn and cabbage here at the EREC during the Spring. A project on sugarcane variety testing for susceptibility to yellow sugarcane aphid and lesser cornstalk borer will be conducted at an EREC greenhouse in the coming months. And, his research with the insect pest management aspects of greencane harvesting will continue on the organic soils; similar studies have begun on the on sandy/silica soils in Hendry and Glades counties.

Dr. Ken Pernezny and his staff are currently researching copper resistance among bacterial pathogens of vegetable crops (including lettuce, pepper, and tomato). Their research shows that resistant and susceptible strains react quite differently when populations are assayed quantitatively in vitro. However, so far, this has not translated into differences in disease control with copper bactericides in the greenhouse. They are also investigating novel materials for bacterial disease control, including plant essential oils and commercially available biological bactericides (fungicides).

Dr. Richard Raid is currently investigating new control measures for lettuce downy mildew. He had a field demonstration on March 1st at C&B Farms and hopes to have several more field trials for display before the end of spring. Stay tuned.

Drs. Raid and Nagata will also be demonstrating some new sweet corn varieties this spring. This will be a good opportunity for viewing promising new lines to see how well they hold up to important diseases, such as common corn rust and northern corn leaf blight.

Dr. Curtis Rainbolt is conducting a variety of field trials with the herbicide DuPont K4. The goal of these trials is to expand the label to include plant cane and to define use rates for sugarcane grown in sandy soils. He is also conducting trials to evaluate the effect of dense nutsedge populations on sugarcane yields.

On May 11, Dr. Rainbolt will conduct a Weed Science Research Plot Tour, time TBD.

Dr. George Snyder [retired] and **Dr. Alan Wright** are participating in a Florida Department of Environmental Protection-sponsored project to examine nitrogen losses in home lawns, with the objective of improving urban fertilizer BMPs.

Dr. Snyder is advising the South Florida Water Management District on a project using rice to stabilize sediments in a portion of a Storm Water Treatment Area.

In February, he participated in a meeting on the development of a Best Management Practice (BMP) document for Golf Courses, lead by the Florida Department of Environmental Regulation, and in March he participated in a separate Urban Fertilizer BMP effort led by the Florida Fertilizer and Agrichemical Association to assist in the Governor's Lake Okeechobee and Estuary Recovery plan.

In April, **Dr. Snyder** will present "Contemporary Topics in Pasture Forage Fertilization" at the United States Sugar Corporation Professional Ranchers Symposium in Haines City.

Dr. Alan Wright's current focus of research is on P fertilization effects on lettuce and celery growth and yield; and the fate of applied P in soil.

For additional information on any of these projects you are welcome to contact faculty members at 561-993-1500