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The Newsletter of the Plant Pathology Department at The University of Florida

Barn Owls... Who Gives a Hoot?

by Whitney Elmore with contributions by Diane Hines of the Florida Wildlife Federation

It seems Dr. Rick Raid is one individual who cares a lot about barn owls. Dr. Raid, Professor of Plant Pathology, at the EREC (Everglades Research and Education Center) in Belle Glade was recently named the Florida Wildlife Federation's Conservation Educator of the Year. The award, presented at the 67th Annual Conservation Awards Banquet in Jacksonville, FL, is given to those selected by the Federation's Board of Directors based on dedication to Florida fish and wildlife. Dr. Raid's project cen-

ters on the use of barn owls to control the rodent population, which may be detrimental to crops throughout the region. Not only does this project promote crop protection through rodent control, by utilizing a natural biological control, but it also contributes to the conservation of a native species once on the pest list itself – the barn owl. (*cont. on page 2*)

started sending digital images to USDA-APHIS (Mary Palm, Mycologist), and by Sunday had tentatively identified soybean rust in a research plot at the Louisiana State University AgCenter. By Tuesday morning of that week, scientists with APHIS confirmed the identity of the select agent pathogen with a species-specific PCR protocol. The APHIS soybean rust response team surveyed fields in Louisiana and bordering Mississippi. Soybean rust was

Soybean Rust in the South – another gift from Ivan

by Philip Harmon and Carrie Harmon

Another new plant disease to impact Florida and US agriculture: The Asian soybean rust, pathogen, *Phakopsora pachyrhizi*, apparently rode the winds of hurricane Ivan from South America into soybean production areas of the Southeast. Ray Schneider (Plant Pathologist, LSU) collected samples on a Saturday in early November of 2004. He and Clayton Hollier immediately



Photo courtesy Philip Harmon.

identified in four more states in the following days. The disease was confirmed in nine states in the southern region (LA, MS, AR, FL, GA, AL, SC, TN, and MO) last year. The majority of samples were soybeans but kudzu has been reported with



Pictured: Jenny Brock (Past FWF President), Dr. Rick Raid, and Manley Fuller (Current FWF President). Photo courtesy Salvatore Riveccio.

Asian soybean rust in two states including Florida. Rapid communications, networking of state and federal agencies, and diagnosis of this pathogen were established for *P. pachyrhizi* by the Southern Plant Diagnostic Network (SPDN), and members in all southern states had run exercise and training programs to be prepared for such an event. Asian soybean rust is a devastating disease in parts of Asia, South America, and Africa where the pathogen is endemic. Soybean yields can be reduced by as much as 80% when the disease is severe. In addition to kudzu, various dry and snap beans are also known to be hosts. Several leguminous forage crops and ornamentals such as hyacinth bean, crown vetch, and lupine are potential hosts of the pathogen. Peanuts, however, are not susceptible to the Asian soybean rust pathogen. Disease symptoms include small tan to brown leaf lesions that begin on the undersides of leaves. Lesions expand and become visible on both sides of leaves. Lesions are most commonly found on leaves but also can occur on other above-ground structures. Brown to tan urediniospores of



Photo courtesy Tim Momol.

the pathogen are released freely and in great number from pustules formed on mature lesions. Airborne spores can survive rapid travel of considerable distances in air currents.

The pathogen cannot survive cold temperatures associated with winter in northern states but is predicted to survive winter on persistent leguminous hosts in Florida and other Gulf Coast states. One such host, kudzu, is an invasive weed common in the South. Sporulation does occur on the host, but the disease does not significantly reduce plant vigor (unfortunately not a real good biocontrol).

In anticipation of the introduction of this economically limiting disease to the U.S., the SPDN and the SRIPMC collaboratively held an Asian soybean rust meeting for states in the southern region earlier last year. States developed soybean rust response plans that were followed after the discovery this fall. The state response plans and diagnostic training (traditional and digital) provided by extension faculty, IPM, SPDN, and USDA facilitated the rapid identification and smooth state responses. This fantastic group of folks, in each state had a plan, and was able to hit the ground running. The training and educational efforts that had been conducted through SPDN and SRIMP cooperative efforts helped make the initial diagnosis and rapid response as efficient as anyone had hoped.

The Asian soybean rust pathogen is on the USDA APHIS Select Agent List. Al-

though soybeans are not considered a major crop in Florida, the potential for this pathogen to over winter here on leguminous weeds and ornamentals is reason for concern. Select agent status carries with it federal regulatory restrictions and actions. Such restrictions and actions limit researchers' abilities and rights to possess and conduct research with the pathogen and could potentially include quarantine and eradication programs in the future (although currently no plans for such programs are in place for this pathogen). For more information about Asian soybean rust, check <http://spdn.ifas.ufl.edu>.

Barn Owls continued from page 1

Although the owls are excellent rodent controls, they do cause harm to buildings, barns, and pump houses on farms when nesting. In his program, Dr. Raid, enlisting the aid of area school children, widened the arms of extension to include property owners and teachers, was able to begin building barn owl nesting boxes for distribution in the Belle Glade and West Palm Beach areas. Dr. Raid quickly realized the barn owls adapt readily to the boxes, limiting their destructive behavior to structures. Placed along wetland and cropped areas, the barn owl boxes are utilized as teaching tools in area classrooms through Dr. Raid's traveling teaching kit. Once pellets

are removed and sterilized from the boxes, students in science classes are often able to dissect and reconstruct entire rodent skeletons, which not only teaches them animal anatomy, but it also enhances their understanding of conservation as well as crop protection when combined with videos and lectures. A "Barn Owl Fact Sheet" and instructions from Dr. Raid on the proper construction of barn owl boxes can be obtained by contacting Dr. Raid at (561) 993-1564. Further information concerning the award given to Dr. Raid, the program, or the Florida Wildlife Federation may be obtained at info@fwfonline.org.

**International Focus:
Iraqi Dignitaries Visit
UF-IFAS**

by Dr. Gail Wisler

The Southern Plant Diagnostic Network meets Iraqi Agriculturists! Lieutenant Colonel Ken Rudisill and Colonel Logan Barbie, both UF/IFAS county faculty are also reservists with the Armed Forces of the United States. Ken is located in Bay County and Logan at Calhoun County. Both Ken and Logan served in Iraq last year as part of a team of experts who worked to rehabilitate agriculture and related environmental areas in Iraq and Afghanistan (see Impact Vol. 21, No. 1, 2005). This team served as advisors to the Iraq Ministry of Agriculture. They provided a critical liaison with the military to ensure security for activities to restart the ministry.

During their time in Iraq, Ken and Logan met several members of the Ministry of Agriculture and the University of Baghdad. As part of their efforts, they arranged a trip to the University of Florida to establish a Memorandum of Understanding for future collaborations. One of the stops



Pictured: Iraqi dignitaries with Carrie Harmon and Dr. Gail Wisler (front, center).

in their visit was to our Plant Disease Clinic (PDC) to learn about the training and diagnostic activities of the Southern Plant Diagnostic Network (SPDN) and the digitally-assisted diagnostics (DAD). Richard Cullen, PDC Senior Biological Scientist, gave an excellent demonstration of the DDIS system to show how DAD can be used to identify insects, weeds and pathogens that cause disease, and the importance of training for these skills. Carrie Harmon described the diagnostic activities that we have been involved in for sudden oak death, soybean rust and *Ralstonia solanacearum*. The group was pleased to see that our information developed is readily available on our SPDN web site. Amanda Hodges detailed our training program for First Detectors nationwide and also outlined our

regional entomology program. Bob McGovern described the Doctor of Plant Medicine program and sent the group back with information for prospective students. The group of visitors engaged in discussions of specific pests, developing a system like DDIS for digital diagnostics in Iraq, and the need for diagnostic information to be kept in the public arena for use nationally and internationally. Although all were administrators, they had a good grasp of the importance of rapid identification and diagnostic methods for important arthropod pests and pathogens that we have in common. The SPDN is part of a national program, but our goal for the future is to network with our international partners in agriculture and natural resources. We hope this visit will be a small start toward that goal.

**UF- PLP Professor
Signs Cooperative
Agreement with
IMTECH**

by Whitney Elmore



An agreement, garnered by UF-IFAS and IMTECH (Institute of Microbial Technology) officials was formed to share exchange students as well as scientific research ideas and tech-

nologies. Dr. R. Charudattan, Professor of Plant Pathology at UF-IFAS is pictured on the far right, below, signing the agreement along with Dr. Andrew Ogram, UF Professor of Soil and Water Science, Amit Ghosh, IMTECH Director, and Rakesh Jain, IMTECH Deputy Director. IMTECH, a biological laboratory in India, is one of 39 national laboratories which functions under the Council of Scientific and Industrial Research. Scientists and students within the institute are involved in four major areas of research: molecular biology and microbial genetics, cell biology and Immunology, protein science and engineering, and fermentation technology and applied microbiology.

PLP International Luncheon

by Alana den Breeÿen

The International luncheon, hosted by the Plant Pathology Graduate Student Association, took place on November 17th 2004. It turned out to be a taste adventure as we toured the different cuisines representing countries from Australia, Brazil, Canada, China, Colombia, Hungary, India, the Mediterranean region, Oman, Panama, South Africa, Suriname, Thailand, and USA were served. The turnout was fantastic and a number of students and faculty from various departments within Fifield attended. This event not only exposed everyone to dishes from around the world, but also provided an op-

portunity to interact with people from different countries. The International Lunch committee would like to thank everyone who participated in making this event such a success.

Hurricane Memoirs

by Dr. Ken Pernezny

The main stress from the hurricanes has been on the psyche of the residents of southern Florida, both within and outside our discipline of interest. The vegetable growers of the east coast were especially hard hit. Because of land constraints, many of the prominent Palm Beach Co. vegetable growers have been planting more and more of their early fall crops up in the Ft. Pierce/Port St. Lucie area (more and cheaper land available). These early plantings were virtually 100% wiped out. Plants were destroyed, plastic ripped up, irrigation systems compromised, etc. Most of the guys decided not to replant, because of market windows, chances of frost, whatever. I understand that the citrus industry in the Indian River area also took a hard hit. We were without power for two weeks at EREC in Belle Glade with Frances and suffered significant roof damage in Jeanne. The center is now functioning more-or-less normally, but planting schedules are behind at least a month. We saved 28 years worth of bacterial cultures (ca. 350 strains) by keeping dry ice in the cabinet until we got power.

At home, most of us had

some type of damage, but overall, we fared much better than the Treasure Coast residents. The biggest problem at our house was getting anybody out to do any repairs. I got tired of taking off early to meet some repair service and the jerks never showing up for the appointment. So two weekends ago, a friend and I fixed the damage ourselves in our daughter's bedroom. I now know a little about drywall repair and can reasonably reframe a window. I painted the room on Veteran's Day, and all we have to finish is to replace the carpeting, because of mold.

Departmental News

Kimbrough Nominated

Dr. James W. Kimbrough has been nominated for the Academy of Distinguished Teaching Scholars at the University of Florida. Provost Colburn announced the creation of this new program specifically to recognize faculty who have excelled as teaching scholars throughout their careers. The program serves to recognize those who provide the very best educational experiences of our graduate and undergraduate students. Once selected, Academy members will serve for three years on the Advisory Board of the University Center for Excellence in Teaching (UCET). Once serving on the Advisory Board, members will continue to be a part of the Academy and will be called upon periodically to advise the Administration.



Drs. Datnoff and Liang

Datnoff Travels to China

Dr. Lawrence E. Datnoff traveled to Beijing, China, 30 November to 6 December, 2004. He was invited by Director Liu Tang and Dr. Yongchao Liang, Soil and Fertilizer Institute/Institute of Agricultural Resources and Agricultural Planning, Chinese Academy of Agricultural Sciences to present his research findings on using silicon for plant disease control, and his understanding on mechanisms of silicon mediated disease resistance. While there, he and Dr. Liang discussed the possibility of organizing a cooperative silicon research program between their two institutions. This trip was sponsored in part by the Office of International Programs, the Office for the Dean of Research and the Chinese Academy of Agricultural Sciences.

Charudattan in International Spotlight

Dr. R. Charudattan participated in two prestigious conferences in the United Kingdom in the fall of 2004. In early September, he was a keynote speaker in a symposium on non-native and invasive species at the annual meeting of the British Ecological Society held at Lancaster University. In De-

ember, he gave an invited talk at the Centennial Meeting of the Association of Applied Biologists held at St. Catherine's College, Oxford University. He discussed the role of bioherbicides in managing invasive weeds and reviewed his research on the use of a viral pathogen to control tropical soda apple.

New Faces in PLP Dept.

by Carla Burkle

There are two new members of the Plant Pathology Department working in Dr. Chourey's lab, Qin-Bao (Q.B.) Li and Mukesh Jain. Q.B. is from the south of China and moved to the U.S. 13 years ago. Before leaving China he got a B.S. in Botany and a Masters in Plant Physiology from Lanzhou University. Prior to working in this department he was a scientist in Horticultural Science, where his wife still works. They have a daughter who has just started college at the University of Southern California. He moved departments in October 2004 and is a molecular biologist in Dr. Chourey's lab working on analysis of sugar signaling pathways in developing maize kernels and protein biochemistry. He enjoys the lower population of the U.S., the convenience of having a car, the weather, and the pleasant work environment here. After 13 years away from it though, he misses Chinese culture and food.

Mukesh is from New Delhi, India and has lived in the

U.S. for approximately three years. He completed his Ph.D. in Botany from Jawaharlal Nehru University and followed that up with a post-doc at the Weitzman Institute of Science in Israel. He then moved to the Agronomy department at UF and is now a postdoctoral associate in our department working on the effect of heat stress on sugar metabolism during microsporogenesis in sorghum and corn. His favorite things about living in the U.S. are the comfortable, pleasant work environment and especially the TV show "Law & Order." He and his wife miss Indian food though.

Maria Raquel Silva (Rachel) is a visiting student from Brazil working in Jeff Jones' lab.



Student Publications

Wayne M. Jurick II, Martin B. Dickman, and Jeffrey A. Rollins. 2004. Characterization and functional analysis of a cAMP-dependent protein kinase A catalytic subunit gene (pka1) in *Sclerotinia sclerotiorum*. *Physiological and Molecular Plant Pathology*. 64:3. Pp 155-163.

Lisa A. Nodzon, Wei-Hui Xu, Yongsheng Wang, Li-Ya Pi, Pranjib K. Chakrabarty, Wen-Yuan Song. 2004. The ubiquitin ligase XBAT32 regulates lateral root development in Arabidopsis. *The Plant Journal*. 40:6. Page 996.

Retirements

Mr. "Uncle" Gene Crawford retired in October, 2004 after many years of service at UF-IFAS in Plant Pathology. Over the years, Gene worked with many faculty members and students, making him one of the most well-known faces and most-liked people in the PLP Department. Gene was responsible for many important tasks within the department and his expertise in many areas makes him irreplaceable. Gene will be missed around the department. He is enjoying retirement by doing some remodeling at home and traveling to visit family and friends.

Student Section

Plant Pathology students held a Halloween Party at the



home of Matt Brecht and Aaron Hert. Among those attending

were PLP students as well as DPM students. The highlight of the party was a costume contest, with Best Costume awarded to Jorge, as "the ugliest woman in the world" and Best Make-up to Juan for his resemblance to "Teen-Wolf."

Departmental News

by Sarah Clark

Members of our department were recognized at the annual Holiday departmental breakfast, December 17, 2004. Three USPS/Teams awards were given, the first to Patti Rayside, who received the USPS Research Award in honor of her research in the areas of soil-borne pathology, turf pathology and Oomycete identification. Terry Davoli received the USPS Teaching Award in recognition of excellence in teaching PLP 6404, Epidemiology of Plant Diseases, as well as for her seamless transition from an applied to a molecular research program. Jan Sapp, Dana LeCuyer and Sherri Mizell shared the USPS Service Award in recognition of their Herculean effort to keep our department functioning during the transition to PeopleSoft. The Golden Fish Award was given to Kris Beckham and Gary Marlow for their important roles as move coordinators for the 1st and 2nd floors, respectively, during the Fifield renovation. Last but not least, Jonathan Oliver received the Weber Award for undergraduates. The graduate student award will be given at a later date. Congratu-

lations to all of our award recipients!

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If you would like to contribute a short piece, article, or photo please send submissions to:

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