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PLP News

*From the students of
the Plant Pathology
Department to our com-
munity.
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The NEWSLETTER of the PLANT PATHOLOGY DEPARTMENT at the UNIVERSITY of FLORIDA

What is Plant Pathology?

Looking at past and current books on what is our discipline, one cannot but marvel at how unique plant pathology is. According to G.N. Agrios (1997), plant pathology “is the study of microorganisms and of the environmental factors that cause disease in plants; of the mechanisms by which these factors induce disease in plants; and of the methods of preventing or controlling disease and reducing the damage it causes”. Thus, one can draw a parallel with both human medicine and veterinary medicine. “Each discipline studies the causes, mechanisms, and control of diseases affecting the organisms with which it deals.”



J.C. Walker (1957) states “plant pathology is concerned with the health and productivity of growing plants. Disease losses are hazards which can be minimized only by continuous process of research and education. It is the responsibility of plant pathology to evaluate and solve new disease problems, to train research investigators and extension specialists, to brief agricultural educators and county agents in applied phases of the science, and to work out practical procedures which growers can adapt to their needs.”

According to G.C. Ainsworth (1981), “the terms medicine and veterinary medicine have, in English, no generally accepted equivalent for plants. A human sufferer from an infectious disease, a nutritional disorder, genetic abnormality or mental disturbance, internal or external infestation by animals, or accidental injury consults a practitioner of medicine who may refer the case to a colleague specializing in one of the numerous subdivisions of medicine. For diseases and disorders of plants the position is very different. Growth defects resulting from lack or imbalance of macronutrients and adverse effects on growth of other environmental factors typically fall into the province of the agriculturalist or horticulturist, pest infestations into that of the applied entomologist, while infectious diseases are the concern of the plant pathologist (phytopathologist)”. But, in some countries in Europe, plant pathology includes both diseases and pests. Further, it is not uncommon for nematode infestations to be included in plant pathology.

In the United States, the American Phytopathological Society (APS) has a more holistic approach to what is our discipline. The APS simply defines Phytopathology or Plant

Pathology as “the study of diseases of plants”. Further, the APS states, “Plant pathology is an interdisciplinary science that includes knowledge of botany, microbiology, crop science soil science, ecology, genetics, biochemistry, molecular biology, and physiology.”



Since a question tends to lead to further questions, here are two that come to mind: 1) What is a plant disease? 2) What is a pathogen?

Oops, maybe a third question should be, “What is a plant pathologist?” (RDF)

References:

Agrios, G.N. 1997. Plant Pathology. 4th edition. Academic Press, Inc. New York. 635 pp.

Ainsworth, G.C. 1981. Introduction to the history of plant pathology. Cambridge University Press. 315 pp.

APS. 2001. What is Phytopathology?
www.apsnet.org/visitors/phytinfo.asp

Walker, J.C. 1957. Plant Pathology. 2nd edition. McGraw-Hill Book Company, Inc. New York. 707 pp.

Faculty, staff, students, alumni, and colleagues of our department...

Dr. James "Jim" Kimbrough, Professor in Plant Pathology, will be the recipient of a 2001 Distinguished Mycologist Award to be announced and presented during the Annual Meeting of the Mycological Society of America in Salt Lake City, UT, August 25-29, 2001. The Distinguished Mycologist Award is presented annually to an individual who has been outstanding in his/her mycology career. This is one of the highest awards to be bestowed by the MSA and is intended to mark a distinguished career. Recipients of the award are evaluated on the basis of quality, quantity of their published research, and on the basis of service to MSA or to the field of mycology in general.



Dr. Kimbrough's research has focused on the taxonomy of fungi, especially cup-fungi and truffles, in which he and his postdoctoral and PhD students have utilized the electron microscope to examine ultrastructural features of these and other fungal groups.

Dr. Kimbrough's extension activities include providing fungal identifications for UF faculty, county extension agents, and Florida growers and homeowners; consulting and organizing workshops on the cultivation of shiitake and other exotic mushrooms; consulting in problems with indoor air pollution; and serving as mycologist for Florida's poison control clinics who have to deal with poisonous mushrooms. For a biographical piece on Dr. Kimbrough, please read the March-June 2001 issue of the PLPNews.

The **graduate student population** will "explode" due to the arrival of several

new members to our plant pathology community. The new graduate students are: **Nicole Smith** (M.S., Drs. Stiles and McGovern), **Penny Robinson** (uncommitted), **Eddy Andersen** (M.S., Dr. Strandberg), **Karen Chamusco** (M.S., Dr. Chourey), **Ryan Donahoo** (M.S., Dr. Norman), and **Robin Oliver** (M.S., Dr. Hopkins). Two students will continue on for their Ph.D. degrees. They are: **Wayne Jurick II** (Dr. Rollins) and **Matt Pettersen** (Dr. Charudattan).

(Ed. Note: Last we heard, two more students might be joining us during the next few weeks. If that is so, we will update our readers on our next edition of the PLPNews.)

Dr. Raghavan "Charu" Charudattan attended a symposium, "The Practice of Biological Control: Importation and Management of Natural Enemies in the New Millennium," sponsored by the International Organization for Biological Control (IOBC), USDA-CSREES, USDA-APHIS-National Biological Control Institute, and others, held at Montana State University, Bozeman, Montana; August 2-5, 2001. About 250 persons from several countries attended. Presentations, by invitation only, included biological control of foliar, root, and post-harvest diseases as well as pathogens used in classical and bioherbicide approaches to weed control.



Gina Cory, an undergraduate in our department, was awarded a Plant Molecular and Cellular Biology Research Internship to work in Wen-Yuan Song's lab for the summer. Gina worked on mutant *Arabidopsis* screens and



the interaction between *Pseudomonas syringae* pv *tomato* and *Arabidopsis*. Gina is active here in the department and is the President of the UF Fencing Team. She

will continue to work in the Song lab this semester. Applicants for this internship are college juniors from around the world. The award supports the student for 10 weeks and facilitates the hands-on learning of plant molecular biology. This summer, the **PMCB** program supported three interns. For more information, contact: PMCB@mail.ifas.ufl.edu.

Dr. Francisco Ochoa, a recent graduate of our department, will receive the Caribbean Division Award at the APS meeting in Salt Lake City from August 24-29, 2001. This award, established through the generosity of Malcolm Shurtleff, Jose Amador, and the Caribbean Division, recognizes highly qualified students.

Francisco is a native of Venezuela, where he served as a botany professor at the Universidad Central de Venezuela prior to returning to graduate school. He recently graduated with his Ph.D. degree in plant pathology under the guidance of Richard F. Lee. Francisco is presenting both a talk and a poster from his dissertation research, which examined aspects of localization and transgenic expression of the capsid protein of *Citrus tristeza virus*.

Matt Brecht, a master's student under the direction of Drs. Kucharek and Datnoff, was awarded an APS Council and Foundation Travel award. Matt will be presenting a poster detailing results obtained for the control of gray leaf spot in St. Augustinegrass caused by *Magnaporthe grisea* using a pre-plant application of calcium silicate slag.

Dr. Pranjib K. Chakrabarty, Senior Scientist (Plant Pathology) with the Central Institute for Cotton Research (Indian Council of Agricultural Research), Nagpur, India, has joined Dr. Wen Yuan Song's program as a post-doctoral research associate.



During his stay in the Department, Pranjib will conduct research aimed at characterizing plant genes and understanding molecular mechanisms

involved in the signal transduction pathways for disease resistance. Pranjib is not a new face to this Department; previously, he worked as a visiting scientist with Dr. Dean W. Gabriel for a period of 20 months from Oct 1994 through June 1996.



The Govt. of **India**, and the University of Florida sponsored his previous appointment jointly. Working with Dr. Gabriel, he cloned and characterized two genes which are required for pathogenicity and virulence from the African strains of *Xanthomonas axonopodis* pv. *malvacearum*. Findings of this research were published in the *Canadian Journal of Microbiology* and *Phytopathology*. Based on the success of his research he was awarded a prestigious grant of 35,000,000 (Indian Rupees) for development of molecular diagnostic tools for detection and differentiation of races of *X. a.* pv. *malvacearum*, by the Department of Biotechnology, Ministry of Science and Technology, Govt. of India. At the cotton Research Institute he works basically on the molecular basis of pathogenicity and race-specificity of *X. a.* pv. *malvacearum* strains and biological control of bacterial blight disease of cotton incited by this pathogen. Welcome back, Pranjib!!!

Congratulations to **Mariadaniela Lopez** (M.S., 1999) and her husband, Rodolfo Vera, on the birth of their son Sebastian Vera Lopez. Sebastian was born on August 4, 2001 at 10:45 p.m. He weighed a healthy 8.5 pounds (3.9 kg) and measured 1' 9" (53cm). Mariadaniela was a student of Dr. Jane Polston (Bradenton) and her thesis was titled "Detection, distribution, incidence, and impact of dasheen mosaic virus *Potyvirus* in *Caladium x hortulanum*".

APS Poster Highlight

For those attending the APS meeting in Salt Lake City, don't forget to attend the poster sessions. Among the many posters presented by our faculty, staff, and students, here's one by one of

our most recent faculty members, **Dr. Carol Stiles**:

Isolation of *Pythium* spp. from overseeded bermudagrass and other warm-season grasses in Florida. C.M. STILES (1), L.E. Datnoff (2), and D.J. Mitchell (1).

Dr. Carol Stiles is vice-chair of the APS Mycology Committee and is involved in organizing and moderating a discussion session, "**Strategies for Teaching Mycology in the Plant Pathology Curriculum**" that will be held Wednesday, August 29th, during the annual meeting. Carol will also be helping set up for the "Fungi and Indoor Air Quality"



workshop on Monday, Aug. 27. As APS Representative to the Mycological Society of America, she has arranged for the exchange of newsletter columns between the APS and MSA presidents, published this summer in *Phytopathology News* (APS) and *Inoculum* (MSA), and will be participating in the APS Affiliate Representatives meeting.

APS 2001 Abstract Highlight

Pettersen, M.S., Charudattan, R., Hiebert, E., and Zettler, F.W. 2001. *Tobacco mild green mosaic virus* (TMGMV) induces a lethal hypersensitive response in tropical soda apple (*Solanum viarum* Dunal).

Yandoc, C.B., and Charudattan, R. 2001. Biological control of cogongrass (*Imperata cylindrical*) with fungal pathogens.

Friday Coffee Break Schedule

- 08-31 Gabriel & Jones
- 09-07 Kimbrough & Rollins
- 09-14 Kucharek & Song
- 09-21 Office Staff
- 09-28 Pring & Chourey



- 10-05 PD Clinic, Zettler & EM Lab
- 10-12 Bartz, Berger & Stiles
- 10-19 Charudattan & Hiebert
- 10-26 Gabriel & Jones
- 11-02 Kimbrough & Rollins
- 11-09 Kucharek & Song

Recent Publications

Charudattan, R. 2001. Biological control of weeds by means of plant pathogens: Significant for integrated weed management in modern agro-ecology. *BioControl* 46: 2229-260.

Pring, D. R., and Tang, H. V. 2001. Mitochondrial *atp6* transcript editing during microgametogenesis in male-sterile sorghum. *Curr. Gen.* 39:371-376.

Roberts, P.D., Urs, R.R., Bolick, L.A., and Hert, A. 2000. Efficacy of spray compounds in the control of late blight and bacterial spot on tomato. *Proc. Fla. State Hort. Soc.* 113:194-197.

Rodriguez, F. Á., Datnoff, L. E., Korndörfer, G. H., Seebold, K. W., and Rush, M. C. 2001. Effect of Silicon and Host Resistance on Sheath Blight Development in Rice. *Plant Disease.* 85: 827-832.

Field trip to Tifton, Georgia

Our colleagues, Bob Kemerait and Kenneth Seebold, at the Plant Pathology Department, University of Georgia (Tifton), have invited students, faculty and staff interested in visiting the Tifton Campus for an unforgettable Plant Pathology Field Day.

So far, the plan is to meet with faculty such as Dave Wilson (aflatoxins), Alex Csinos (vegetables and tobacco), Albert Culbreath (peanuts), Tim Brenneman (peanuts and pecans), Ron Gitaitis (bacteriology), Natalia Martinez-Ochoa (virology), and of course, Kenny (cotton and vegetable diseases) and Bob (cotton and peanut diseases, including nematodes). Fur-

ther, we will visit a commercial vegetable operation and a peanut field. There will be plenty of "plant pathology" to see!!!

The Trip is scheduled for Wednesday, September 5th, 2001. A van will depart at 7:00 a.m. from the Fifield parking (loading dock side). Tifton is only a little over 2 hours away (150 miles on I-75) and we are expected to return NO later than 6:30 pm. Those who wish to drive on their own will be provided with a map and directions to Tifton. (Lunch will be provided by the folks at Tifton!!!)

The sign-up sheet for this one-of-a-kind field trip is taped to the Plant Pathology Front Office door, 1453 Fifield Hall.

Facts on Utah



Admission to Statehood: January 4, 1896.

Bird: American Seagull.

Flower: Sego lily.

Tree: Blue Spruce (*Picea pungens*)

Area: 84,904 square miles (13th in U.S.A)

Border States: Arizona, Colorado, Idaho, Nevada, New Mexico, and Wyoming.

Agriculture: Cattle, dairy products, hay, turkeys.

Industry: Machinery, aerospace, mining, food processing, electric equipment, tourism.

Governor: Mike Leavitt (R)

Lowest point: Beaverdam Creek at 2000 feet above sea level.

Motto: Industry.

Nickname: The Beehive State.

Origin of state's name: Taken from the name of the Ute Indians, whose name means "people of the mountains".

Population: 2,233,169 (12/2000).

Topography: High Colorado plateau cut by brilliantly colored canyons in the southeast; broad, flat, desert like Great Basin of the west; the Great Salt Lake and Bonneville Salt Flats in the north-west; Middle Rockies in the northeast running east-west; valleys and plateaus of the Wasatch Front.

Flag: On a blue field appears the state seal. In the center of the seal is a beehive, the state emblem, with a sego lily growing on either side. The sego lily stands for peace. The state motto "Industry" means steady effort. A national flag shows that Utah supports the United States. The eagle stands for protection in peace and war. The date 1847 represents the year that Brigham Young led a group of people to the Salt Lake Valley to reestablish in Utah, the Church of Jesus Christ of Latter day Saints, also know as The Mormons. The date 1896 represents the year that Utah gained admission to the Union of the United States.

I Scream, You Scream, We All Scream for Ice Cream

The Plant Pathology Ice Cream Social was held on Tuesday, August 21, 2001 in Rooms 1306-1308, Fifield Hall. The "Social" began at 3:30 p.m. as a wide assortment of ice cream flavors were made available for folks to scoop them up themselves. At least a dozen toppings and sprinkles were made available. They ranged from the traditional whipped cream, fudge, and caramel, to mixed berries, cherries, coconut, and walnuts.



Once the several dozen attendees had helped themselves to a bountiful serving of ice cream and fixings, Dr. Gail Wisler handed out the traditional pewter graduation mugs to our most recent official graduates, Wayne Jurick II

and Angela Vincent. Gail also took the opportunity to present some of the new students to our community.

For those who were thirsty after savoring such a sweet helping of ice cream, drinks such as sodas, apple juice, apple cider, grape juice, and water were made available.

The PLP News would like to acknowledge several students who made this event possible: Ronald French (coordinator), Fabricio Rodrigues, Yolanda Petersen, Denise Tombolato, Matt Brecht, Camilla Yandoc, and Abdul Al-Saadi.

If you would like to contribute an article, a short piece, or a suggestion, please mail us at:

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PLP News can now be accessed via the internet at:
<http://plantpath.ifas.ufl.edu/>
