BARC e-Update

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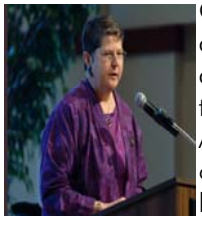
BARC is part of the USDA's Agricultural Research Service and encompasses programs at the Beltsville Agricultural Research Center; the U.S. National Arboretum in Washington, D.C.; and worksites in Chatsworth, New Jersey; Presque Isle, Maine; and McMinnville, Tennessee. BARC is the largest and most diversified agricultural research complex in the world. BARC's record of accomplishments and its ongoing programs have made it a world leader in agricultural research.

Blowing Our Own Horn!

SCIENTIST AWARDED RESEARCH GRANT FROM FRESH EXPRESS

Dr. Manan Sharma, Research Microbiologist with BARCs Food Tehnology and Safety Laboratory, and **Dr. Michael Donnenberg** U-MD Medical School) have been awarded a research grant on developing "a novel approach to investigate internalization of Escherichia coli O157:H7 in lettuce and spinach." This project involves three objectives: (1) developing a strain of E. coli O157:H7 from the 2006 lettuce and spinach outbreaks that contains the gfp gene inserted into the bacterial chromosome; (2) determine the survival and growth of gfp-labeled wild type and rpoS-deficient E. coli O157:H7 populations in internalized tissues; and (3) determine differences in the expression of virulence factors in E. coli O157:H7 in produce commodities and ground beef. Dr. Sharma can be contacted at Manan.Sharma@ars.usda.gov.

SCIENTIST RECOGNIZED BY CHESTNUT HILL COLLEGE ALUMNI ASSOCIATION



On May 2, The Chestnut Hill College Alumnae and Alumni Association announced that alumna **Dr. Joan K. Lunney**, Class of 1968, is the recipient of the 2007 Distinguished Achievement Award for her singular contributions to science research and service to her profession. The Chestnut Hill College Achievement Award recognizes graduates of the College who have a history of accomplishment in their business or profession or in civic, philanthropic, or other volunteer activities. Dr. Lunney graduated from Chestnut Hill College with honors in chemistry and holds a Ph.D. in biochemistry from Johns Hopkins University, with associated research at the National Institutes of Health. For the past 24 years, Dr. Lunney has served in various research capacities at BARC. Dr. Lunney is a Research Chemist in the Animal Parasitic Diseases Laboratory.

FRESH PRODUCE AWARD FOR ORGANIC TABLE GRAPE STORAGE

Dr. Yaguang Luo, a Food Technologist at the Produce Quality and Safety Laboratory, has developed an alternative technology to the commercially used chemical sulfur dioxide treatment to maintain the quality of table grapes. By utilizing the combination of a sanitized wash, mild heat treatment, and modified atmosphere packaging, this new technology maintained table grapes free of decay for a least four months at 5 degrees C in the absence of sulfur dioxide. This technology, which meets the standards of the National Organic Standard Board, will enable organic grape growers/marketers to reduce product decay and the associated economic losses while providing American consumers with fresh, wholesome organic grapes. This research was presented at the FreshTech conference and received a special first place award from the United Fresh Produce Association, a leading produce association in the US. A number of companies are interested in the technology because they found it especially useful for the growing organic grape industry.

Community Interest...

HERRING RELEASE – FOLLOW UP

On April 14, approximately 60 river (alewife) herring (males and females with eggs) were successfully transplanted into the Upper Beaverdam Creek on the BARC-East campus. A number of groups participated in the release, among them were Metropolitan Washington Council of Governments, Beaverdam Creek Watershed Watch Group, Friends of Still Creek, Citizens to Conserve and Restore Indian Creek, NOAA (the funding agency), Maryland-National Capitol Park and Planning Commission, Department of the Environment of the District of Columbia, Interstate Commission on the Potomac River Basin, and BARC employees. This release was part of an on-going effort to restore anadromous fish in the Anacostia watershed. For additional information, contact Mr. Phong Trieu at ptrieu@mucog.org.

On the Research Side...

SAFETY OF POTATO EXPORTS

In April of 2006, one microscopic cyst nematode was discovered in a half-quart of soil collected from the floor of a potato processing plant in Idaho. Unfortunately, this led to the first detection of the pale cyst nematode in the most important U.S. potato-growing state and was predictably followed by the refusal of four countries to allow entry of potatoes from Idaho. Scientists in the Nematology and Molecular Plant Pathology Laboratories at BARC were instrumental in quickly proving that the original suspect nematode cyst was indeed the pale cyst nematode. In the months that followed, Idaho scientists processed 38,000 soil samples and sent 2,000 containing suspect nematodes to BARC. At the end of the analysis, the conclusion was that the Idaho infestation is limited to a very small area. As a result, Canada and Mexico – the largest importers of U.S. potatoes – again allow the entry of potatoes from Idaho. The Mexican decision is based upon surveying Idaho potato fields before planting; technology developed at BARC will be used to identify the nematodes, thereby enabling a $25 million export market to occur. For additional information, contact **Dr. David Chitwood** at chitwood@ba.ars.usda.gov.

HONEY BEE COLONY COLLAPSE DISORDER

"Where Have All The Bees Gone?" was the lead for a CBS Evening News story which aired on May 8, 2007, about the loss of honey bees pollination in the production of about a third of our food. The story included an interview with **Dr. Jeff Pettis**, Research Leader of BARCs Bee Research Laboratory and included video of **Mr. Bart Smith**, Entomologist, working in the laboratory, Mr. Smith runs the Disease Diagnosis Service in the Bee Research Laboratory. The news segment reported that a national working group is working to analyze hive samples to determine why bees around the country are disappearing. Beekeepers in 35 states have reported colony losses as high as 90%. The BARC laboratory is involved in searching for answers to what is being called Colony Collapse Disorder. For more information, contact Dr. Pettis at Jeffrey.Pettis@ars.usda.gov.

NEW BEAUTYBERRY CULTIVAR TO BE RELEASED

A new beautyberry cultivar was released in November 2006 by the U.S. National Arboretum in conjunction with Tennessee Technological University. 'Duet' is a variegated sport of the Japanese beautyberry, *Callicarpa dichotoma* var. *albafructus*. It has medium green leaves with distinct yellow margins. It was selected for its attractive foliage and the stability of its variegation pattern. Small white fruit appear in late summer and persist through mid-autumn. 'Duet' is a small, rounded shrub that is well suited to a variety of landscape uses. It is hardy in USDA zones 5 to 8 and performs best in light shade. Beautyberry has been used as an ornamental for many years , but it is growing in popularity due to the introduction of several new and improved cultivars and its freedom from major insect and disease problems. 'Duet' was discovered in 2000 by two researchers working at Tennessee Technological University in Cookeville, Tennessee. They enlisted the aid of the U.S. National Arboretum for evaluating the plant and getting it into the marketplace. It is the first cultivar released by the ornamental breeding program at the U.S. National Arboretum's Floral and Nursery Plant Research Unit worksite in McMinnville, Tenn. 'Duet' has been tested by cooperators throughout the U.S. and is currently being propagated by growers for expected retail availability in 2008. **Dr. Sandra Reed**, Research Geneticist, is stationed at our McMinnville, TN worksite and she can be reached at Sandra.Reed@ars.usda.gov.

Mark Your Calendar!

MID-ATLANTIC PLANT MOLECULAR BIOLOGY MEETING

August 16-17, the Mid-Atlantic Plant Molecular Biology Meeting (MAPMBS 2007) will be held on August 16-17 at the Patuxent Wildlife Visitors Center, Laurel, MD. The Invited Keynote Speaker will be Dr. Robert Innes, Indiana University, who will present his latest research on the molecular biology of the defense response in plants. Eight other invited speakers and several society members will also present their data on topics at the leading edge of plant science in the fields of molecular biology, genomics, proteomics, and bioinformatics. For more information, contact Co-Chairs **Dr. Ben Matthews**, (301-504-5730, matthewb@ba.ars.usda.gov) or **Dr. Leslie Wanner**, 301-504-5953, wannerl@ba.ars.usda.gov).