



February 2008

**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.

## Farewell...

The Beltsville Area Office will be changing! Current Director, **Dr. Phyllis Johnson**, and Associate Director, **Dr. Ron Korcak**, will be retiring from federal service effective February 15, 2008.

## Introducing...

**Dr. Joseph Spence**, currently Deputy Administrator for Nutrition, Food Safety, and Quality of the ARS National Program Staff will be the new Director of BARC. **Dr. Thomas Sexton**, currently the Director of BARC's Animal and Natural Resources Institute, will be the new Associate Area Director. The effective date for this transition will be February 17, 2008.

## Blowing our own horn!

### TOP ARTICLES IN HORTICULTURE



According to the newsletter of the American Society for Horticultural Science two articles by **Drs. Shioh Wang** and **Kim Lewers** of our Genetic Improvement of Fruits and Vegetables Laboratory were the most accessed articles from the society's Journal of the American Society for Horticultural Science in September 2007. The articles were: "Antioxidant Capacity and Flavonoid Content in Wild Strawberries" and "Antioxidant Activities and Anticancer Cell Proliferation Properties of Wild Strawberries". These articles provided evidence that certain kinds of wild strawberries are potential sources for breeding for obtaining high antioxidant activity. Food high in antioxidants may prevent cellular and tissue damage in the human body and block the development of cancer cells and help fight off the potentially devastating disease. For more information contact: [Shioh.Wang@ars.usda.gov](mailto:Shioh.Wang@ars.usda.gov) or [Kim.Lewers@ars.usda.gov](mailto:Kim.Lewers@ars.usda.gov)

### FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER - AWARD WINNER



"Color-Infrared Digital Camera for Managing Agriculture and Natural Resources" has been selected as a winner of the 2008 Award for Excellence in Technology Transfer by the Federal Laboratory Consortium for Technology Transfer (FLC). The award recognizes laboratory employees who have accomplished outstanding work in the process of transferring a technology developed by a federal laboratory to the commercial marketplace. **Dr. Ray Hunt** of BARC's Hydrology Remote Sensing Laboratory was the developer of the technology. A distinguished panel of technology transfer experts from industry, state and local government, academia, and the federal laboratory system evaluated the nominations. Dr. Hunt will be recognized at an award ceremony on Thursday, May 8, 2008 at the FLC National Meeting in Portland, Oregon. Befitting such a prestigious honor, the FLC has invited to the National Meeting officials from the Department of Agriculture to recognize his accomplishments. Dr. Hunt can be contacted at [Raymond.Hunt@ars.usda.gov](mailto:Raymond.Hunt@ars.usda.gov).

## EFFECTIVE HOUSEHOLD DISINFECTION METHODS FOR KITCHEN SPONGES

Kitchen sponges deserve attention in the household because they can remain wet and serve as a reservoir and vehicle for foodborne pathogens that can cause illness in households according to **Dr. Manan Sharma** in the BARC Food Safety Laboratory. Cross contamination of foodborne pathogens in the household kitchen may contribute to the estimated 76,000,000 cases of foodborne illness in the United States each year. Improper domestic food handling and unhygienic practices are thought to be a major factor in sporadic cases of foodborne illness. Kitchen sponges used to wash dishes containing foodborne pathogens can transfer pathogens. Dr. Sharma and Cheryl Mudd worked with two high school students on a science project to identify the best way to control bacteria and yeasts and molds on kitchen sponges. Several household disinfecting treatments to reduce bacteria, yeasts and molds on kitchen sponges were evaluated. Sponges were soaked in 10% bleach solution for 3 minutes, lemon juice for 1 minute, or pure water for 1 minute, placed in a microwave oven for 1 minute at full power, or placed in a dishwasher for a full wash-dry cycle, or left untreated (control). Microwaving and dishwashing treatments significantly lowered bacterial counts compared to any of the immersion chemical treatments or the control. Counts of yeasts and molds recovered from sponges receiving microwave or dishwashing treatments were significantly lower than those recovered from sponges immersed in chemical treatments. The results show that microwaving and dishwashing treatments may kill foodborne pathogens in a household kitchen environment. **CAUTION:** wetting sponges before placing them in the microwave oven is a necessary safety precaution! Placing dry sponges or those containing metallic scrub pads in the microwaves is a potential fire hazard! Sponges that contain metallic pads are not appropriate for microwave disinfection and should be placed in a dishwasher for disinfection. For more information contact Dr. Sharma at [manan.sharma@ars.usda.gov](mailto:manan.sharma@ars.usda.gov)

## On the Research Side...

ARS genomics and phenomics research is laying the foundation for future livestock production improvements. Understanding how inherited characteristics relate to specific genomes will eventually allow researchers to develop tools that can be used to guide animal breeding selection and management decisions. Throughout the United States, ongoing ARS research projects are changing the way industry members breed, raise, and produce our nation's most valuable agricultural animals. Bovine Functional Genomics Research Unit, **Curt Van Tassell**, with ARS geneticists **Tad Sonstegard** and **George Wiggans**, is working to whittle down the cost of progeny testing to about \$500 a bull. Their approach, called genome-enhanced improvement, combines computer-aided statistical analysis with more than four decades' worth of records on dairy performance and conformation. A key objective is to discern the chromosomal whereabouts of desirable genes. Collaborating with the Beltsville team are professors Jerry Taylor and Robert Schnabel with the University of Missouri-Columbia; and a San Diego firm specializing in genotyping technologies. The researchers plan to examine a total of 52,000 SNPs from 13,000 cows and bulls representing several commercial dairy breeds and an ARS research population at Beltsville. Following that stage, they'll correlate SNP data to traits of interest, such as milk, fat, and protein production. Eventually, information derived from the markers will help dairy producers streamline their identification and breeding efforts. In addition, Van Tassell says, cutting test costs while increasing the rate of genetic improvement in dairy cattle will help make the U.S. germplasm industry more competitive globally. Dr. Van Tassell may be contacted at [curtvt@aipl.ars.usda.gov](mailto:curtvt@aipl.ars.usda.gov).

## Mark Your Calendar!



### BELTSVILLE AREA DISTINGUISHED LECTURE SERIES

*This seminar is open to the public*



**Dr. John Norman**, Professor, Department of Soil Science, Forest Ecology and Management Sciences, University of Wisconsin

**Date:** Thursday, **February 28, 2008**

**Time:** 10:30 am – 11:30 am

**Place:** Building 003 Auditorium, BARC-West

**Title:** "Applying Site-Specific Research in Crop Production and Environmental Protection to Farm Management"

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