

# 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!



### TWO BARC SCIENTISTS HONORED BY THE PSA



The Poultry Science Association (PSA) is a professional organization consisting of approximately 3,500 educators, scientists, extension specialists, administrators and producers who are committed to advancing the poultry industry. Since 1908, the PSA has maintained a level of prestige that ranks it among the top professional organizations in the field. **Dr. John A. Proudman**, Research Physiologist with BARC's Biotechnology and Germplasm Laboratory, was recently elected Fellow of the Poultry Science Association. This is the highest honor that the society bestows upon its members. **Dr. Hyun S. Lillehoj**, Research Immunologist with the Animal Parasitic Diseases Laboratory is the 2006 winner

of the PSA Merck Award for Achievement in Poultry Science. More information about the PSA can be found at [www.poultryscience.org](http://www.poultryscience.org).

### BARC SCIENTIST RECOGNIZED BY THE AIA

On June 25, the Association of Indians in America (AIA), Metropolitan Washington, D.C. Chapter, held its 27th Annual Academic and Outstanding Achievement Awards Ceremony and recognized **Dr. Autar K. Mattoo**, Plant Physiologist with the Sustainable Agricultural Systems Laboratory as the 2006 AIA Scientist of the Year for his outstanding contributions to science. Founded in 1967, the AIA is the oldest national association of Asian Indians in America. Visit the AIA at [www.aiausa.org](http://www.aiausa.org) and its DC Chapter at [www.aia-dc.org](http://www.aia-dc.org).

## Community Interest...

### SUMMER BARBECUES AND FOOD SAFETY!

It's summertime, and that means barbecue! When planning to fire up the grill, there are important food safety guidelines you should follow to prevent harmful bacteria from multiplying and causing foodborne illness. Completely defrost meat and poultry before grilling so it cooks more evenly. Marinate food in the refrigerator, not on the counter; if some of the marinade is to be used as a sauce on the cooked food, reserve a portion of the marinade before putting raw meat and poultry in it. Cook food to a safe minimum internal temperature to destroy harmful bacteria, and use a food thermometer to be sure the food has reached a safe minimum internal temperature. NEVER partially grill meat or poultry and finish cooking later. When taking food off the grill, use a clean platter - don't put cooked food on the same platter that held raw meat or poultry as any harmful bacteria present in the raw meat juices could contaminate safely cooked food. In hot weather (above 90 °F), food should never sit out for more than 1 hour. Click the grill to view the USDA/FSIS fact sheet for a lot more information on barbecuing food safely!



### NEW EXHIBIT AT THE U.S. BOTANIC GARDEN



Four BARC laboratories have installed and opened a new exhibition entitled, "Systematics: Roots and Relationships" at the U.S. Botanic Garden on the mall in Washington D.C. Situated at the foot of the U.S. Capitol, the U.S. Botanic Garden is a major attraction for tourists with as many as 75,000 visitors each month. The newly renovated conservatory houses a vast array of plants and exhibits. The BARC exhibit teaches the public about the science of systematics and highlights the many contributions made by ARS taxonomic programs to food security and to the environment. It includes information on the many contributions of systematics to trade, homeland security, and invasive species. Running at the same time as the Botanic Garden's "Summer Reunion: a gathering of plant families," the exhibit will run through October 16th in the West Orangerie of the garden. Learn more at [www.usbg.gov](http://www.usbg.gov).



## CONSEQUENCES OF ELEVATED ATMOSPHERIC CO<sub>2</sub>

**Drs. Lewis H. Ziska** and **Richard C. Sicher**, both of the Crop Systems and Global Change Laboratory, were authors on a paper recently published in the Proceedings of the National Academy of Sciences (PNAS) entitled, "Biomass and toxicity responses of poison ivy (*Toxicodendron radicans*) to elevated atmospheric CO<sub>2</sub>." Contact with poison ivy is one of the most widely-reported ailments at United States' poison centers, and this plant has been introduced throughout the world. Approximately 80% of humans develop dermatitis upon exposure to the carbon-based active compound, urushiol. Rising CO<sub>2</sub> is potentially responsible for increased vine abundance that is inhibiting forest regeneration and increasing tree mortality around the world. In a six-year study at the Duke University Free-Air CO<sub>2</sub> Enrichment (FACE) experiment, scientists have shown that elevated atmospheric CO<sub>2</sub> in an intact forest increases photosynthesis, water-use efficiency, growth, and population biomass of poison ivy. Further, high-CO<sub>2</sub> plants produce a more allergenic form of urushiol. This work suggests that poison ivy will become more abundant and more 'toxic' in the future, potentially affecting global forest dynamics and human health. The full paper can be viewed on-line at [www.pnas.org](http://www.pnas.org).



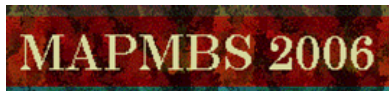
## FINDING THE GENETIC LINK TO PARASITE RESISTANCE IN GRAZING CATTLE

**Dr. Lou Gasbarre**, Research Leader of the Bovine Functional Genomics Laboratory, was featured earlier this year in the Pennsylvania Forage and Grassland Council's "Foraging Around." The article focused on Gasbarre's work on pinpointing genes that are linked to natural parasite resistance in cattle. Nematodes, the dominant types of internal parasites in U.S. cattle, are complex organisms for which the creation of a vaccine is highly unlikely. Over time, the worming drugs which have been in use since the early 1980's have become less effective because of overuse as well as intensive grazing. Rather than working on the development of new chemicals to treat worms, Dr. Gasbarre and his team of scientists are focusing on identifying why some cattle are resistant to parasites while others are not. Studies have shown that there are at least eight locations (in the genome) that have genes or groups of genes which will identify whether the animal will be parasite resistant. The processing of this genetic information has far-reaching implications for the livestock and dairy industries; soon, "molecular markers" will reveal an animal's superior (or inferior) traits.



Mark Your Calendar! 

### 2006 MAPMBS CONFERENCE: August 17-18

The 23rd Mid-Atlantic Plant Molecular Biology Society Conference (MAPMBS 2006) will be held on August 17 and 18 at the National Wildlife Visitors Center – Patuxent Research Refuge in Laurel, MD. This year's event is being co-chaired by two BARC scientists: **Dr. Benjamin F. Matthews** of the Soybean Genomics and Improvement Laboratory and **Dr. Leslie Wanner** of the Vegetable Laboratory. The keynote address will be given by Dr. Philip A. Rea, Professor of Biology, University of Pennsylvania. Meeting pre-registration is strongly encouraged, and abstracts for short talks and posters are due to Dr. Wanner by July 14. The Mid-Atlantic Plant Molecular Biology Society (MAPMBS) was formed to provide a high quality, accessible and affordable plant molecular biology meeting each year for scientists in the Mid-Atlantic region. The society especially wishes to encourage presentations by postdoctoral fellows and graduate students. For more information regarding this conference, click here: 

### IUSSI 2006 CONGRESS: July 30 – August 4

**Drs. Anita M. Collins**, **Jeffery S. Pettis**, and **Jay D. Evans** of the Bee Research Lab are leading the local organizing committee for the XV International Congress of the International Union for the Study of Social Insects, ably assisted by Ted Schultz of the Smithsonian Institution. The President of the Congress is Walter R. Tschinkel, Florida State University. IUSSI holds an International Congress every four years, moving around the globe. It is the premier event for scientists studying ants, bees, wasps, termites and other social insects. This summer it will be held at the Omni Shoreham Hotel, Washington, D.C., from July 30 through August 4. The last time it was held in the US was 1982 in Boulder, CO. More information is available on the Congress Website (click logo to right), or from Anita Collins, Congress Secretary, at [collinsa@ba.ars.usda.gov](mailto:collinsa@ba.ars.usda.gov).



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