ARS & You

Research for the Growing World

February 2011 www.ars.usda.gov

SRRC Community Garden Does Its Community Good!

Members of the SRRC Community Garden (from left): Tracy Condon, Clay Alexander, Doug Hinchliffe, Isabel Lima, Scott Pelitire, Gregory Ford, Kelly Williams, Mary Lovisa, Bruce Ingber, and Jaffor Ullah.

In June 2009, **USDA Secretary Tom Vilsack** called for the establishment of "Community Gardens" at USDA facilities all across America to benefit people who have fallen on hard times during the economic downturn. In response to that call, several scientists at the ARS Southern Regional Research Center (SRRC) in New Orleans, LA, formed a committee to spearhead an SRRC Community Garden—completed fall of 2009. SRRC employees grew turnips, radishes, rutabaga, bunching onions, leeks, and lettuce, and donated that produce to Café Reconcile, a nonprofit restaurant that provides job training to youth from at-risk communities in the New Orleans area.

The employees also grew straight neck squash, eggplant, bell pepper, okra, jalapeño pepper, string beans, cucumber, and Asian bottle gourd, and donated it to Second Harvest Food Bank of Greater New Orleans and Acadiana. The food bank provides food to people in the New Orleans area, and most recently has been providing hundreds of emergency food boxes to fishermen and families affected by the Gulf oil spill. Food bank recipients praised the quality and freshness of the produce from the SRRC Community Garden.

As the spring planting time nears, SRRC Community Garden Committee members are excited about repeating their past success of yielding more than 2,300 pounds of produce. The land will be ready by the end of March. ✤

The 2010 Dietary Guidelines for Americans was released on January 27, 2011, in an event hosted by **USDA Secretary Tom Vilsack** and Secretary of the Department of Health and Human Services Kathleen Sebelius. This dietary guidance supports U.S. food policy. ARS human nutrition research plays an important role in shaping the science foundation of these guidelines. For more information, visit the USDA Center for Policy and Promotion's Web site at: http://www.cnpp.usda.gov/DietaryGuidelines.htm. ✤

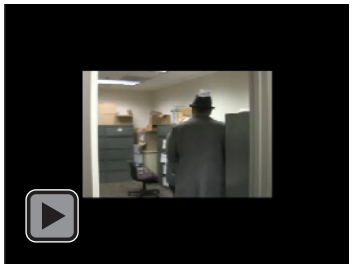
Around ARS

www.ars.usda.gov/yourtwocents

Thanks to all those employees who were able to tune in for our "Your Two Cents" Web Conference last week where we had the Agency Administrator, Associate Administrators, and the entire Administrator's Council on-hand LIVE to answer your questions and address concerns that you sent in via the webmeeting console. For those who missed it, please visit this link: https://downloads.mymeetings.com/NetReplay/2011/February/PW1049818/PW1049818.wmv and TYPE IN (Do not

cut and paste!) the following: USERNAME: PW1049818 PASSWORD: 46941. Thanks again for making "Your Two Cents" a success! ✤

Have you heard that ARS Cultural Transformation efforts are underway? We are calling our effort "Review, Refresh, and Reform" and will build on data collected from you through "Your Two Cents" and other venues. We are embarking on this effort because we believe that employees are ARS' most valuable asset, that strength comes from diversity and inclusion, and that a diverse organization hears its employees' needs and ideas and adapts as necessary. Stay tuned for more information, as well as the opening of the "Review, Refresh, Reform" Web site, which is under construction now! View the video to find out what ARS employees know and think about cultural transformation.



Many of you may recall that last year's historic snowstorms in the Washington, DC, area caused major delays and closings in the region, including the rescheduling of the ARS Annual Recognition Program ceremony from February to June. The venue was also changed as a result: from USDA Headquarters, Washington, DC, to ARS Beltsville Agricultural Research Center (BARC), Beltsville, MD. You might be interested in knowing that the balmy June date, as well as the BARC venue, was so well-received that this year's ceremony has been scheduled for June 15 and will once again be at BARC. Mark your calendar and stay tuned for upcoming issues of *ARS & You* for updates. ✤

The Second National Bed Bug Summit, co-sponsored by the Federal Bed Bug Working Group, which includes ARS, NIFA, the U.S. Environmental Protection Agency, the Centers for Disease Control and Prevention, and the U.S. Department of Housing and Urban Development, was held at the Georgetown University Conference Center, Washington, DC, on February 1–2. The public meeting was designed to solicit customer and stakeholder input on a national strategic plan against the pest, which has recently experienced a huge resurgence across the nation. **ARS Administrator Ed Knipling** provided welcoming remarks. **Dan Strickman**, ARS National Program Leader for Veterinary and Medical Entomology, was the facilitator for the session on Initiatives and Roles of Local/State/Federal Government. Research Entomologist **Mark Feldlaufer**, ARS Invasive Insect Biocontrol and Behavior Laboratory, Beltsville, MD, was a featured speaker at the session on the "State of Bed Bug Knowledge and Research Needs." ✤

ARS partnered with the American Biological Safety Association (ABSA) to present the USDA ARS First International Biosafety and Biocontainment Symposium held on February 6–9 in Baltimore, MD. The theme of the Symposium was "Animal Production and Protection: Challenges, Risks, and Best Practices." **Joseph Kozlovac**, ARS Biosafety Officer, was the Symposium Chair. **Eileen Thacker**, ARS National Program Leader for Animal Health, and **Jeff Silverstein**, ARS National Program Leader for Aquaculture, served on the steering committee. Featured speakers were U.S. Senator Pat Roberts and **Cathie Woteki**, USDA Under Secretary for Research, Education and Economics. **Steven Kappes**, ARS Deputy Administrator for Animal Production and Protection, provided the opening address. **Dan Strickman**, ARS National Program Leader for Veterinary and Medical Entomology, gave a talk titled "International Challenges Related to Arthropod Containment." ✤

Research Leader **Peggy Tomasula**, ARS Dairy and Functional Foods Research Unit, Wyndmoor, PA, will be in Yangling, China, on February 20–26, to attend the Eighth Annual Joint Working Group Meeting between USDA and the Ministry of Science and Technology (MOST) of the People's Republic of China. Tomasula will be briefing REE **Under Secretary Cathie Woteki** on the ongoing relationship between ARS and MOST as it relates to dairy production and processing. Further,

Under Secretary Woteki and the Vice Minister of MOST will be signing an Annex to the Protocol for Dairy Production and Processing Research that will engage MOST and ARS in collaborative research for the next several years. ✤

Steven Kappes, ARS Deputy Administrator for Animal Production and Protection, **Eileen Thacker**, ARS National Program Leader for Animal Health, and a number of ARS scientists from our animal research locations across the country attended the National Cattlemen's Beef Association (NCBA) Annual Convention and Trade Show in Denver, CO, on February 1–4. The convention was focused on establishing beef check-off and policy priorities for the coming year. ARS staff participated in a number of important committee meetings, and Thacker presented an update on ARS cattle research to the Subcommittee on Emerging Health and Research.

ARS exhibit at NCBA.

ARS' visibility at the conference was enhanced by an ARS exhibit booth staffed and/or funded by several locations—the **ARS U.S. Meat Animal Research Center** in Clay Center, NE, the **ARS National Animal Disease Center** in Ames, IA, the **ARS Food and Feed Safety Research Unit** in College Station, TX, the **ARS Fort Keogh Livestock and Range Research Laboratory** in Miles City, MT, the **Plum Island Animal Disease Center** in Orient Point, NY, and the **ARS Animal Disease Research Unit** in Pullman, WA. National Program Staff partnered with the **ARS Information Staff** in planning and coordinating the exhibit. ✤

The **ARS Beltsville Area Diversity Taskforce** sponsored the Graduate Student Agricultural Research Symposium on February 10–11, in Beltsville, MD. Twenty-eight graduate students from seven 1890 Land Grant Universities gave presentations or poster sessions on their research projects. Each student was assigned an ARS mentor. The goal of the Symposium was to cultivate partnerships between talented students and BARC scientists in hope of encouraging the students to explore career opportunities in the Beltsville area. ✤

The Spring 2011 University of Maryland (UMD) Food Science Internship program was restarted on February 7 at the **National Agricultural Library's** (NAL) **Food Safety Information Center** (FSIC). This internship, part of a cooperative agreement between NAL and UMD, provides UMD food science students experience working with food safety professionals in a congressionally mandated program while simultaneously earning three to four semester credit hours. Interns must work 6 or 8 hours per week at FSIC for one semester, completing an independent project and a final report. FSIC's Tara Smith coordinates the internship program. ✤

Workshop participants.

On January 20–21, 2011, the **ARS Western Regional Research Center**, Albany, CA, hosted an international workshop on advances in intragenics—organisms that have been genetically modified using gene technologies, but do not contain DNA from another species. Forty-eight workshop participants, consisting of molecular biologists, geneticists, regulators, and intellectual property experts from

10 countries (Canada, Denmark, Greece, Italy, the Netherlands, New Zealand, Norway, Spain, United Kingdom, and the United States), participated in this conference. The purpose of the conference was to explore intragenic technologies aimed at reducing the use of non-plant sequences to genetically modify specific traits in crops—thus promoting greater consumer acceptance. The workshop included scientific reports on recent advances in development of tools and methods for intragenics, as well as applications of the technology to improve fruit, vegetable, cereal, and forage crops. Additional sessions addressed public acceptance, regulatory concerns, and technology needs for developing countries, including Africa and Latin America. ✤

The ARS **National Agricultural Library's Food and Nutrition Information Center** (FNIC), in partnership with the University of Maryland, College Park, hosted its annual Joint Class Day on January 10 at the Library. The event brought together about 80 dietetic interns to participate in sessions on "Nutrition, Communication, and Information Management." Robert Post, Deputy Director, USDA Center for Nutrition Policy and Promotion, delivered the keynote address, and speakers from both the government and private sectors gave presentations on topics such as mobile technology for health, social media, nutrition informatics, electronic health records, nutrition education, and health literacy. Attendees also viewed NAL exhibits and resources. ✤

USDA scientists and leaders joined university and industry scientists in San Diego, CA, on January 15–19, for the International Plant and Animal Genome XIX Conference. ARS scientists presented on cutting-edge application of genomic and computational technologies that advance crop breeding made possible by agricultural research programs. Among the ARS presenters were Research Geneticist **Ed Buckler**, ARS Plant, Soil and Nutrition Research Unit, Ithaca, NY; Research Geneticist **Brian Freeman**, ARS Corn Insects and Crop Genetics Research Unit, Ames, IA; and Research Molecular Biologist **Eric Jackson**, ARS Small Grains and Potato Germplasm Research Unit, Aberdeen, ID. These new advances in tools and information for crop breeders are the result of combined support from the NIFA-Coordinated Agricultural Research Programs, National Science Foundation, industry grants (General Mills, North American Millers Association, and United Soybean Board), and ARS. ✤

Soybeans.

A group of scientists from the Jilin Academy of Agricultural Sciences, Gongzhuling, Jilin, China, visited the ARS Beneficial Insect Introductions Research Unit (BIIRU), Newark, DE, on January 21, 2011. The group included the Vice Director of the Academy, three soybean geneticists on the faculty, and a soybean production manager. Research Entomologist **Keith Hopper**, gave a presentation about research being done at BIIRU on soybean aphids, followed by a tour of the molecular laboratory and quarantine facility. The group also discussed possible cooperative research between the Academy and BIIRU. Dr. Li Qiyun, a Vice Director of the Jilin Academy of Agricultural Sciences, is finishing a 1-year sabbatical at BIIRU.✤

Mary Torrence, ARS National Program Leader for Food Safety, participated in a panel discussion on "Enhancing the Collaborative Response to Foodborne Hazards," held on January 25, 2011, at a meeting in Washington, DC. The meeting, titled "Managing the Risk of Foodborne Hazards: STECs and Antibiotic-Resistant Pathogens," was hosted by the Pew Charitable Trusts and the Center for Science in the Public Interest. Among the speakers, who represented government, academia, and industry, were Elizabeth Hagen, USDA Under Secretary for Food Safety, and Michael Taylor, U.S. Food and Drug Administration Deputy Commissioner for Foods. ✤

Research Entomologist **John Vandenberg**, ARS Biological Integrated Pest Management Unit, Ithaca, NY, gave an invited presentation on the potential for biological control of the emerald ash borer (EAB) at the annual meeting of the New York Society of American Foresters, held on January 26–28, 2011.

The invasive EAB, native to Asia and discovered in the United States in 2002, has now spread to most northeastern states. It has killed millions of ash trees throughout the region and was first discovered in New York in 2009. ARS research on this pest is aimed at providing sustainable tools for EAB management and ash tree preservation. ✤

Geraniums.

A group of ARS researchers had the double honor of having their article titled "Rare Excitatory Amino Acid From Flowers of Zonal Geranium Responsible for Paralyzing the Japanese Beetle," published in the *Proceedings of the National Academy of Sciences (PNAS)* on January 4, 2011, and then having their *PNAS* article highlighted in the "Editors' Choice" section in the January 21, 2011, issue of *Science,* entitled "Floral Cure-All." Among the co-authors of the article are Research Entomologists **Christopher M. Ranger** and **Michael Reding**, Research Plant Pathologist **James C. Locke**, and Research Horticulturist **Charles R. Krause**—all with the ARS Application Technology Research Unit, Wooster, OH—and Research Horticulturist **Jonathan M. Frantz**, with the ARS New England Plant, Soil and Water Research Lab, Orono, ME. The scientists discovered that a substance in geranium flowers may control the devastating Japanese beetle. Almost 300 plant species are targeted by this insect, which costs the ornamental plant industry $450 million in damage each year. In addition to feeding on ornamental plants, the Japanese beetle also attacks fruits and vegetables. *Science* notes, "the work indicates that zonal geraniums may be a promising natural source of a novel pest control agent." [See "Did You Know?" article on page 7.] ✤

Notable Awards

Joan Conway, photo taken by Stephen Voss for *The Washingtonian* (Copyrighted); ARS used with permission.

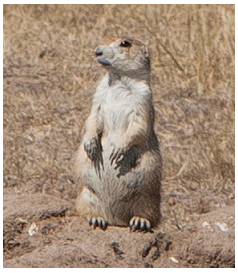
Retired ARS Research Chemist **Joan Conway,** formerly with the ARS Beltsville Area Human Nutrition Research Center in Beltsville, MD, was among the luminaries recently named "Washingtonian of the Year." Conway was honored by *The Washingtonian*, a magazine covering the Greater Washington Metropolitan Area, for her dedication to providing not just nutritious, but also culturally appropriate food to various families and individuals served by her church, including those from Latin America, Africa, Asia and South Asia, and the Caribbean. As volunteer director of the pantries at the St. Camillus Catholic Church in Silver Spring and Langley Park, MD, Conway sees to it that up to 6,000 families a year are served at St. Camillus' food pantries. Conway also works closely with 150 volunteers who provide bilingual service to those visiting the pantries. After retiring from a career in nutrition research at ARS, Conway started volunteering at the food pantries and studying Spanish. In the January issue of *The Washingtonian*, Conway tells story writer Leslie Milk: "The graces of this work are the people I meet…. They teach me how blessed I am to be able to offer service." Read more about Conway and her selfless contributions to her community in the January issue of *The Washingtonian*. ✤

Research Agronomist **Russell Nuti**, ARS National Peanut Research Laboratory, Dawson, GA, was awarded the Young Cotton Physiologist of 2011 at the National Cotton Council's Beltwide Cotton Conferences held in Atlanta, GA, on January 4–7, 2011. The award is based on careerwide accomplishments, publications, and significant contributions to the cotton industry. Nuti's current research focuses on developing sustainable management systems in irrigated and non-irrigated peanut production areas in the United States. He is

associate editor for the *Agronomy Journal* and regularly serves as reviewer for nine other journals. ✤

Research Geneticist **Sukumar Saha**, ARS Genetics and Precision Agriculture Research Unit, Mississippi State, MS, received the 2010 Cotton Genetics Research Award at the 2011 Beltwide Cotton Conferences. He has provided leadership in cotton genomics and cytogenetics in developing resources that are being used by scientists worldwide. He is one of two lead scientists providing leadership in the release of 17 interspecific chromosome substitution lines in cotton. This research opens new paradigms in cotton breeding and genetics studies. He has helped in establishing the International Cotton Genome Initiative (ICGI), an organization that facilitates collaborative research on a global level. He is currently the elected Co-Chair of the Germplasm and Genetic Stocks Workgroup of ICGI.✤

Research Molecular Biologist **Michelle Cilia**, ARS Biological Integrated Pest Management Unit, Ithaca, NY, has been awarded the Outstanding Scientist/Technologist Award from the Association of Biomolecular Resource Facilities. The award was presented at its annual meeting held February 19–22 in San Antonio, TX. Cilia has made important contributions to the ARS Functional and Comparative Proteomics Center in technique development and methods refinement. ✤



Prairie dog.

Research Ecologist **David Augustine**, ARS Crops Research Laboratory, Fort Collins, CO, was honored by the Society for Range Management with its Outstanding Young Range Professional Award, presented at the Society's 64th Annual Meeting, held February 6–10, in Billings, MT. His research has shown that management of herbivores, like prairie dogs, plays a key role in biodiversity conservation in a wide range of ecosystems, and has led to new insights concerning the influence of herbivores on the biogeochemistry of rangeland ecosystems. ✤

Augustine has also been selected to receive the USDA Forest Service's "Wings Across the Americas—International Cooperation" award, along with his collaborators on the Burrowing Owl Project. This award recognizes outstanding work by Forest Service personnel and partners in bird conservation work in the Americas. The award will be presented by the Chief of the Forest Service at a special awards ceremony on March 17 at the annual North American Wildlife and Natural Resources Conference in Kansas City, MO. ✤

Krishna N. Reddy.

Krishna N. Reddy, Research Plant Physiologist and Acting Research Leader at the ARS Crop Production Systems Research Unit, Stoneville, MS, was awarded the Southern Weed Science Society's 2011 Weed Scientist of the Year Award at the Society's annual meeting in San Juan, PR, January 24–26, 2011. Reddy was honored for his outstanding achievements in weed science. ✤

Did You Know?

Japanese beetles are tough hombres in the bug world, ripping and chomping their way through more than 300 plant species and nearly 80 plant families. Farmers and ornamental plant growers spend more than $450 million annually on control measures and replacements for plants destroyed by the beetle, which is by far the most destructive pest of ornamental and turf plants in the eastern United States.

The beetle, *Popillia japonica*, is anything but a finicky eater. They'll happily tear through a vast variety of plants, from corn and soybeans to fruits, vegetables, and landscaping stock, to name a few of their victims.

So delicate-looking geranium petals must look like colorful finger food to these ungainly flying marauders. Little do the beetles know that those petals pack a powerful wallop. Though its lovely, colorful flowers are very attractive for all and profitable for growers, the flowers are deadly to the beetles.

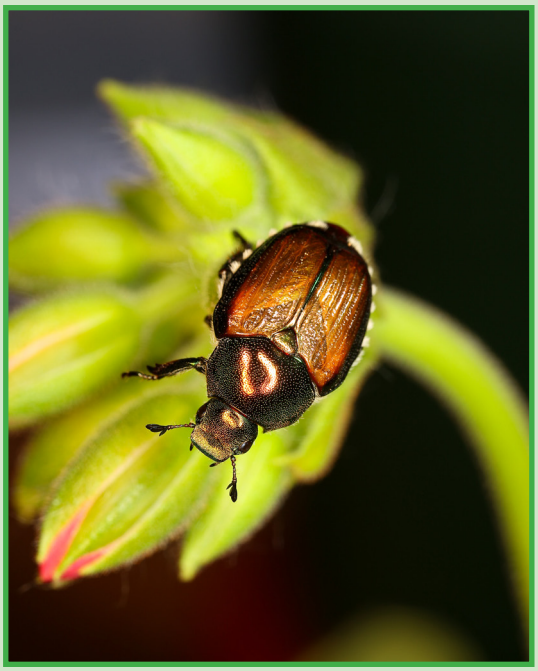
The voracious beetles can't resist chomping the geranium petals—but within half an hour of indulging their appetites, the beetles are flat on their backs, nearly paralyzed with only their legs and antennae twitching slightly. It's a classic case of "what goes around, comes around," as the immobilized pests quickly become the prey of other hungry bugs. When paralyzed under laboratory conditions, the beetles typically recover within 24 hours, but they often die under field conditions because predators spot and devour them.

The poisoning effect of geranium flowers on beetles is not a new discovery; it has been known since the 1920s. But the phenomenon has not been studied in depth—how or why it happens—until recently, when scientists at the **ARS Application Technology Research Unit**, in Wooster, OH, picked up where scientists left off more than half a century ago.

ARS scientists are working on a natural, botanical formulation for controlling the beetles based on geraniums' bug-busting compound. ARS is filing for patent protection on this technology. An all-natural bug-fighting compound will help consumers protect their valuable investment.

Power to the petals!

Adapted from information written by **Chris Guy**, Public Affairs Specialist, ARS Information Staff.



Please submit story ideas and national award items to Tara T. Weaver-Missick, tara.weavermissick@ars.usda.gov or call 301-504-1663.