

# Look What's Out There

in

## Integrated Pest Management

John F. Baniecki, Ph.D., Coordinator, Pesticide Safety Education Program  
David P. McCann, Graduate Assistant, West Virginia University  
Rakesh S. Chandran, Ph.D. Coordinator, Integrated Pest Management Program  
**West Virginia University Extension Service.**

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<http://www.wvu.edu/~agexten>

### New Method Speeds the Detection of Ratoon Stunting Disease

A faster method for detecting ratoon stunting disease (RSD)—the most important disease affecting sugarcane production worldwide—has been developed by the Agricultural Research Service (ARS) and cooperators. RSD has been reported in almost every geographic area where sugarcane is grown. It causes an average 5 percent yield loss, but under drought conditions, yield reductions can be as high as 50 percent. RSD is hard to detect because it has no unique external symptoms, so growers have no way of knowing if their fields have been infected. The bacterium that causes RSD, *Leifsonia xyli* subsp. *xyli*, also called “*Lxx*,” is extremely difficult to isolate and culture, making it hard to diagnose for further studies. ARS plant molecular geneticist Yong-Bao Pan with the agency's Sugarcane Research Laboratory in Houma, La., and cooperators in China have developed a rapid and more reliable technique for detecting RSD using standard laboratory equipment. Popular RSD detection methods require the use of either antibodies, which may not be available, or bacterial DNA isolation using toxic organic solvents such as chloroform and beta-mercaptoethanol, a process which can take up to four hours. Due to the low concentration of the bacterium in the host, serological methods—tests that use antibodies to detect infection—have limited use when conducting a large-scale field RSD disease survey or RSD-resistance screening

during breeding selection. Pan's method uses xylem sap to test for RSD. The plant's xylem—the tissue responsible for the transport of water and soluble mineral nutrients from the roots throughout the plant—contains optimum concentrations of *Lxx*, making it an ideal area for collecting DNA. This safe technique uses two inorganic buffers to isolate *Lxx*'s DNA, taking less than an hour to complete. The new method also utilizes general equipment, such as a centrifuge and a polymerase chain reaction (PCR) machine, which are more commonly found in labs worldwide. The PCR method is more sensitive than serological methods and amplifies the DNA sequences of the bacterial genome in areas where it is hard to find, such as in xylem. It is thus a more practical method for labs throughout the world, especially those in developing countries, to detect RSD. ARS is the principal intramural scientific research agency of the U.S. Department of Agriculture

*(By Stephanie Yao, Agricultural Research Service February 6, 2009)*

### Milkweed Oil Tapped for Sunscreen and Other Products

Common milkweed is the only food source of monarch butterfly caterpillars. But for some farmers, the plant is also a valuable source of floss that can be harvested for use as a hypoallergenic filler for high-end pillows, comforters and jacket linings.

Floss, though, isn't the only useable portion of milkweed. Unsaturated oil in the plant's seed also has potential as a base material for sunscreen, cosmetics and skin- and hair-care products, including moisturizers and conditioners. That's the conclusion Agricultural Research Service (ARS) chemist Rogers Harry-O'kuru drew after analyzing the oil's waxes and assorted fatty acids. In studies at the ARS National Center for Agricultural Utilization Research in Peoria, Ill., Harry-O'kuru devised a procedure for using zinc chloride to catalyze the conversion of milkweed oil's triglycerides into ultraviolet (UV)-light-absorbing compounds called cinamic acid derivatives. In tests at the center's New Crops and Processing Technology Research Unit, the derivatives absorbed UV rays in the range of 260 to 360 nanometers--wavelengths that can damage skin. Additionally, the milkweed-oil derivatives accomplished this at very low concentrations of 1 to 5 percent, a range far below that approved for today's topical skin formulations, many of which use chemical fillers or sun blocks. Harry-O'kuru's milkweed-oil-based sunscreen also contains natural antioxidants such as tocopherols, which are often added to cosmetics as skin-nourishing ingredients. The sunscreen's unique combination of fats and waxes may also qualify it as biodegradable and help keep it from washing off during a swim. Its current form is a clear liquid, but gels, creams, sticks and aerosol sprays are also possible, according to Harry-O'kuru. Besides skin- and hair-care products, the UV-absorbent base material he has devised could also be tailored for use in epoxies, paints and other industrial applications. ARS has patented Harry-O'kuru's base material and is seeking an industrial partner to develop the technology further. Read more about the research in the February 2009 issue of Agricultural Research magazine.

*(By Jan Suszkiw, Agricultural Research Service  
February 5, 2009)*

### **Pesticide News Story: Organic Arsenicals Agreement**

EPA has reached an agreement in principle with

the major manufacturers of the organic arsenicals MSMA, DSMA, CAMA, and cacodylic acid and its sodium salt. This voluntary agreement steadily removes all organic arsenical pesticide uses, except the use of MSMA on cotton, from the market and implements new restrictions to better protect drinking water resources. Phasing out these uses is expected to accelerate the transition to new, lower risk herbicides. Under the agreement, many uses, including use on residential lawns, will be canceled by the end of this year. For products used on cotton and products phased out after 2009, new use restrictions and mitigation measures will be added to increase protections to water resources

- By mid-March, the registrants must submit voluntary cancellation requests for all uses, other than the use of MSMA on cotton.
- By the end of 2009, many existing uses will be phased out and canceled including use on residential lawns, forestry, non-bearing fruit and nut trees, and citrus orchards.
- Over the next 4 years, uses on golf courses, sod farms, and highway rights of way will be phased out, promoting transition to alternatives.

In the Agency's 2006 Reregistration Eligibility Decision (RED), EPA concluded that all uses of the organic arsenicals were ineligible for reregistration. Following application, these pesticides convert over time to a more toxic form in soil, inorganic arsenic, and potentially contaminate drinking water through soil runoff. At that time, EPA believed that inorganic arsenic also could enter the human food supply through the meat and milk of animals fed cotton by-products treated with MSMA. In completing the RED, EPA determined that the aggregate dietary risks from food and drinking water combined did not meet the food safety standard. During the last two years, stakeholders have submitted additional data indicating that no residues of inorganic arsenic are likely to remain in the meat and milk of animals fed cotton by-products that

have been grown in fields treated with MSMA, or in food crops that are rotated with cotton that has been treated with MSMA. Cotton growers also have documented the increasing spread of Palmer amaranth or pigweed, a glyphosate-resistant and economically significant pest, which only MSMA controls at present. In light of this new information, the agreement allows for reregistration of MSMA use on cotton, contingent on the development of confirmatory data. If these data are not submitted by the August 2010 due date, or if they do not confirm the current scientific understanding, EPA will proceed to cancel the cotton use. The Agency is also rescheduling the Registration Review of MSMA to begin in 2013. At that time, MSMA's risks and benefits will be reevaluated considering any new toxicity information and the availability of new, lower-risk herbicides that should be entering the market. EPA will amend the 2006 Organic Arsenicals RED to reflect the provisions of the agreement. Public comment opportunities will be provided when the Agency publishes Federal Register notices announcing its receipt of registrants' requests for voluntarily cancellation of uses. The organic arsenicals agreement and related information will be available at [www.regulations.gov](http://www.regulations.gov) in Docket EPA-HQ-OPP-2006-0201 and on the reregistration chemical pages for these pesticides at <http://www.epa.gov/pesticides/reregistration/stat.us.htm>. For additional information, please contact Tom Myers, Office of Pesticide Programs, (703) 308-8589. The press should contact Dale Kemery, Office of Public Affairs, (202) 564-7839.

*(EPA February 2009)*

### **Pesticide News Story: Comment Period Extended on EPA Chemigation Labeling Paper**

Interested parties now have until March 6 to provide comments on EPA's chemigation labeling discussion paper, which is available at: <http://www.epa.gov/pesticides/regulating/labels/chemigation.pdf>. Comments on this paper

should be submitted to:

[opp\\_labeling\\_consistency@epa.gov](mailto:opp_labeling_consistency@epa.gov). Do not submit information considered to be Confidential Business Information or otherwise protected from disclosure. Any comments submitted may be made available to the public. To assist the Agency in responding to comments, please include your name, organizational affiliation, and a telephone number. As background, the Agency is considering developing new guidance for the labeling of pesticide products applied through irrigation systems, known as "chemigation." Such guidance would supersede the existing Agency guidance on this subject contained in Pesticide Registration Notice 87-1 (PRN 87-1), published March 11, 1987. EPA's labeling discussion paper was posted on the Web site in December to give interested parties an opportunity to provide the Agency with preliminary, informal comments on the best approaches to take in developing useful guidance on chemigation labeling. In addition, State pesticide regulatory officials representing the State FIFRA Issues Research and Evaluation Group (SFIREG) requested that EPA consider this step in an issue paper. Information about other Pesticide Program labeling activities is available on the Web site.

*(EPA February 2009)*

### **Pesticide News Story: Office of Pesticide Programs Performance Management and Accountability Web Page—Now Online**

The Office of Pesticide Programs (OPP) has launched a new Web page highlighting some of our efforts to track the real-world outcomes of the work we do. OPP's Performance Management and Accountability Web page provides an introduction to why and how we are measuring outcomes, and describes progress we have made toward goals stated in the Agency's

Strategic Plan. Achieving these goals will demonstrate that the Pesticide Program's efforts are resulting in improved protection of human health, the environment, and society, while realizing the benefits of pesticide availability. OPP strives to enhance its transparency and accountability, so we invite you to take a look at the page and comment on our efforts. The page will be updated to reflect annual progress and to add new objectives as they are developed. We appreciate hearing your ideas on how we might improve our measures work. You'll find contact information for OPP's Measures Improvement and Implementation Team at the bottom of the page.

(EPA February 2009)

### **Plan Announced to Improve Pest Control in Schools by 2015**

(Washington, Jan. 7, 2009) Pest- and pesticide-related risks to children will be reduced in all U.S. public schools by 2015 as envisioned in a new plan released by the Environmental Protection Agency and others. The plan, *School IPM 2015: a Strategic Plan for Integrated Pest Management in Schools in the United States*, calls for a 70 percent reduction in both pest complaints and pesticide use in schools. It relies on the coordinated efforts of teachers, custodians, food service staff, school administrators, pest management professionals, Agricultural Extension staff, regulators, architects, and parents to reduce pesticide risk in our schools. Developed in cooperation with the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service and Regional Integrated Pest Management (IPM) Centers, and the IPM Institute of North America, the plan provides a roadmap to understanding pest biology, inspection and monitoring, and pest prevention that are key to successfully implementing IPM. Pests and pest management can have long-term health effects and affect school attendance. Schools that adopt IPM should have less

pesticide residue, fewer pest problems, and lower pest-related allergens. Studies show that IPM reduces pest complaints and pesticide use in schools by 70 percent to 90 percent, with no long-term increase in costs. More information about the IPM in Schools plan:  
<http://www.epa.gov/pesticides/ipm/schoolipm2015.htm>

(EPA February 2009)

### **Obama Administration Faces First Test on Genetically Engineered Crops**

(*Beyond Pesticides*, February 9, 2009) The U.S. Environmental Protection Agency (EPA) is currently soliciting comments on Monsanto's second application to extend its experimental use permit for soybeans genetically engineered (GE) with the soil bacterium *Bacillus thuringiensis* (Bt). This will be the new administration's first test on how it handles the issues surrounding GE crops. Among a number of concerns regarding GE crops, crops engineered to contain Bt threaten the long-term efficacy of Bt, which is an approved insecticide in organic farming. Monsanto's permit on these GE soybeans was first granted by EPA in September 2007 and then extended in April 2008. Under the permit, plantings are permitted through July 31, 2009. Monsanto is requesting to extend the experimental program until December 31, 2010 and amend it by conducting tests with up to 0.466 pounds of Bt Cry1Ac protein in soybeans on 1,362 acres, according to the February 4th Federal Register notice. The testing trials will take place in Arkansas, Illinois, Indiana, Kentucky, Maryland, Missouri, North Carolina, Puerto Rico, South Carolina, and Virginia. Following the review of the application and any comments and data received in response to this solicitation, EPA will decide whether to issue or deny the EUP request, and if issued, the conditions under which it is to be conducted. Any issuance of an EUP will be announced in the Federal Register. Comments must be submitted by March 6, 2009. There is some debate on what President Obama's new administration's position will be on GE crops as there is no reference to

this issue on the White House website, [www.whitehouse.gov](http://www.whitehouse.gov). There are, unfortunately, signs that make some worry. For instance, during the presidential election, Obama responded to ScienceDebate2008's questions on a number of issues, including GE, in which he stated, "Advances in the genetic engineering of plants have provided enormous benefits to American farmers. I believe that we can continue to modify plants safely with new genetic methods, abetted by stringent tests for environmental and health effects and by stronger regulatory oversight guided by the best available scientific advice. And, according to the article "Obama's Team Includes Dangerous Biotech 'Yes Men,'" published in the *Huffington Post*, President Obama's new Secretary of Agriculture Tom Vilsack was "co-creator and chair of the Governors' Biotechnology Partnership in 2000 and in 2001 the Biotech Industry Organization named him BIO Governor of the Year." Yet, there is still a chance for the promised change with President Obama's new EPA Administrator Lisa P. Jackson. In her recent testimony at her Senate confirmation hearing and open letter to EPA employees, Ms. Jackson pledges a return to scientific integrity and agency transparency. Environmental groups, which have been frustrated by years of unresponsive regulators, hope that Ms. Jackson's EPA will use this promise of scientific integrity and transparency to increase protections for human health and environment that have been ignored, removed, or spent years in the system waiting for action. Many feel the incorporation into food crops of genes from the natural bacterium, Bt, or the development of a herbicide resistant crop, as an approach to pest management is short sighted and dangerous. GE crops have encountered resistance from advocates throughout the world with concerns of insect resistance, superweeds, contamination of other plants from the same species through pollen drift, impact on human health, wildlife and other non-target organisms, soil contamination, hidden allergens, religious and moral considerations, antibiotic resistance, and unreasonable business contracts with farmers. A recent report by organic group the Soil Association, concludes that yields of all

major GM varieties are equivalent to, or less than, those from conventional crops. On November 10, 2008, the Austrian government released a report of long term research showing GE corn fed to mice significantly reduced their fertility over three to four breeding cycles within one generation. Similar effects were found in mice fed GE corn and bred over four generations. Roundup Ready crops, which are genetically engineered to be resistant to Monsanto's best selling herbicide Roundup (active ingredient glyphosate) have been a boon to Monsanto's profits, but not without environmental costs. Currently grown Roundup Ready crops include soy, corn, canola, cotton, and sugar beets. The crops' resistance to glyphosate enables the use of the herbicide during the growing season without harming the crop itself. Glyphosate is now the number one herbicide in the United States. This has serious implications for public health and the environment, as glyphosate has been linked to cancer, reproductive effects, kidney and liver damage, and skin irritation; it is neurotoxic and toxic to fish and other aquatic organisms. Increased herbicide usage has also led to resistant varieties of "superweeds." Over 70% of all GE crops are altered to be herbicide-resistant. More and more GE crops are being grown around the world. The International Service for the Acquisition of Agri-biotech Applications reports that biotech crops grew by 30 million acres, or 12 percent, in 2007 for a total of 282.4 million acres worldwide. Also astounding is the fact that 2 million more farmers planted biotech crops last year to total 12 million farmers globally. Notably, 9 out of 10, or 11 million of these farmers, are resource-poor farmers. In fact, the number of developing countries (12) planting biotech crops surpassed the number of industrialized countries (11), and the growth rate in the developing world was three times that of industrialized nations (21 percent compared to 6 percent.) The long-term environmental effects of GE crops are largely unknown, and this was the premise of a recent successful lawsuit that Beyond Pesticides joined with other environmental and consumer groups. In September, a federal court upheld a ban on Roundup Ready alfalfa. The Court determined

that the planting of genetically modified alfalfa can result in potentially irreversible harm to organic and conventional varieties of crops, damage to the environment, and economic harm to farmers. Environmental and public health groups believe that, at a very minimum, labeling as a means of identifying products that contain genetically engineered ingredients are critical and complete regulatory review of all GE crops, which is currently not the case. Organic agriculture does not permit GE crops or the use of synthetic herbicides, and focuses on building the soil—minimizing its effect on climate change. For more information on GE food issues, see Beyond Pesticides GE Food and Organic Food program pages, as well as past news articles in Beyond Pesticides' Daily News Blog archives.

### Funding Opportunity

- This notice announces the availability of funds and solicits from eligible entities project proposals to receive financial assistance through the Community Action for a Renewed Environment (CARE) program. CARE is a unique community-based, community-driven, multimedia demonstration program designed to help communities understand and reduce risks due to toxic pollutants and environmental concerns from all sources. The CARE grant program works with the eligible entities to help their communities form collaborative partnerships, develop an understanding of the many local sources of risk from toxic pollutants and environmental concerns, set priorities, and identify and carry out projects to reduce risks through collaborative action at the local level. CARE's long-term goal is to help communities build self-sustaining, community-based partnerships that will continue to improve human health and local environments into the future. The objective of the CARE grant program is to work collaboratively within the community to investigate the effectiveness of the CARE process--whether this cross-Agency, multi-media program provides greater environmental benefits than either non-collaborative or single media approaches.

**Deadline: March 16, 2009.** For more information:  
[http://www.epa.gov/air/grants\\_funding.html#0902](http://www.epa.gov/air/grants_funding.html#0902)

- The Pest Management Foundation is pleased to announce the availability of \$35,000 for pest management industry related research. Funds may be used to fund a single or multiple projects; however, the Foundation reserves the right to decline to fund any of the proposed submissions. Research ideas may include, but are not limited to:

- Effective pesticide runoff mitigation measures for exterior perimeter treatments
- Effective management of small flies in commercial accounts
- Early season migration habits/patterns of the paper wasp (*Polistes* sp)
- Impact of outside/perimeter cobweb control in managing spiders in structural settings
- Discovering new and emerging pest inspection methods
- Highlighting the role pest management plays in protecting and enhancing children's health;
- Determining why or if termite swarming has decreased in recent years;
- Determining the impact of insect and rodent pests on the elderly;
- The pathogenic transfer via stored product pests;
- Determining how many termites make up an infestation and if an infestation may be comprised of multiple colonies;
- Termite infestation as related to moisture level in hardwoods and softwoods;
- Establishing that certain pests have reemerged due to demise of pesticides resulting from the implementation of the Food Quality Protection Act;
- Humaneness of euthanasia methods for nuisance wildlife; and 2
- Identifying methyl bromide alternatives.

While the ideas listed above may certainly be worthy projects, it should be stressed that the purpose of this document is not to prescribe specific research projects as much as encourage the submission of potentially worthwhile, stimulating, and valuable proposals. Therefore, potential applicants are strongly encouraged to present projects that are not listed above in their submissions. As noted above, countless changes are occurring within the industry and the Foundation is eager to review as many proposals that may potentially benefit the industry as possible. **Deadline: February 20, 2009**; for more information visit: [http://northeastipm.org/ipm\\_funding\\_popover.cfm?id=1329](http://northeastipm.org/ipm_funding_popover.cfm?id=1329)

- The Specialty Crop Research Initiative (SCRI) was established to solve critical industry issues through research and extension activities. Specialty crops are defined as fruits and vegetables, tree nuts, dried fruits, and horticulture and nursery crops, including floriculture. SCRI will give priority to projects that are multistate, multi-institutional, or trans-disciplinary; and include explicit mechanisms to communicate results to producers and the public. Projects must address at least one of five focus areas: research in plant breeding, genetics, and genomics to improve crop characteristics; efforts to identify and address threats from pests and diseases, including threats to specialty crop pollinators; efforts to improve production efficiency, productivity, and profitability over the long term; new innovations and technology, including improved mechanization and technologies that delay or inhibit ripening; and methods to prevent, detect, monitor, control, and respond to potential food safety hazards in the production and processing of specialty crops. **Letter of intent due 3/23/09, proposal due 4/15/09.** See web link for details: <http://www.csrees.usda.gov/fo/specialtycropresearchinitiative.cfm>
- Pest Management Association: Pest Management Foundation  
Focus: management of structural pests and pests

in urban and suburban environments

**Deadline: February 20, 2009**

Duration: 18 months

Amounts: \$35,000

While the solicitation lists specific project ideas, the Foundation is interested in any proposal that pertains to the management of pests in structures and urban and suburban environments. The Foundation recently funded research published by Cornell University, University of Kentucky, and Spokane Falls Community College researchers on the effectiveness of yellow jacket trapping, the efficacy of residential mosquito control, and various methods of controlling the black widow and hobo spiders. The Foundation also supported the World Health Organization's recently published research on the public health significance on public health pests, and is funding ongoing research on the efficacy of canines as bedbug detectors, the significance of an emerging invasive ant species in the Southeastern U.S., and the odorous house ant. For more information visit: <http://www.npmapestworld.org/PMFoundation/>

### **Don't Forget to Take Advantage of Online First Detector Training**

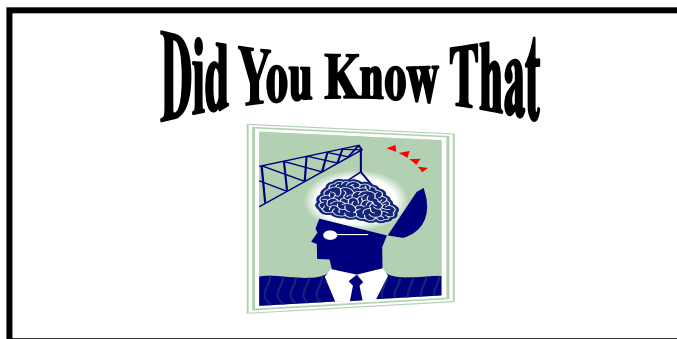
The National Plant Diagnostic Network (NPDN) is pleased to announce that the Online First Detector Training modules are up and running and can be found at: <http://cbc.at.ufl.edu/>. The site allows anyone to participate in the First Detector Program. The course is composed of several modules, and includes topics such as:

- The NPDN Mission
- Agricultural Biosecurity
- Purpose of a First Detector
- Monitoring for Exotic Pests
- How to Submit a Suspicious Sample
- The Art and Science of Plant Pest Diagnostics
- And more....

Each module takes anywhere from 40 to 60 minutes and the course can be completed at your own pace. To get started, first register for the

First Detector Training Workshops to get your user name and password.

The general goal of the program is to get the public involved in protecting our plant related industries and our natural plant resources from being impacted by exotic and potentially damaging plant pests be they insects, weeds or pathogens. Upon completion of the training, First Detectors receive a certificate of training completion. Trained First Detectors are also provided with the opportunity to receive the national NPDN First Detector newsletter as well as pest alerts via e-mail through the National First Detector registry. For more information, go to <http://cbc.at.ufl.edu/> or contact Dr. John Baniecki at: [John.Baniecki@mail.wvu.edu](mailto:John.Baniecki@mail.wvu.edu).



### Early Detection is Important

Understanding signs and symptoms of pests be they insect, fungal, or other is important not only for continuing management activities but for disease prevention. Signs of a pest are physical evidence of the pest itself such as molted skins, eggs, and galleries of insects or fungal mats and mushrooms of fungi. Symptoms are the plants response to a pest and include defoliation, wilting, discolored plant parts, and abnormal growth. Recognizing signs and symptoms is essential for early detection of pests. Periodic inspection of crops can uncover signs and symptoms and lead to disease prevention.

# Events



### The 27th National Pesticide Forum April 3-4, 2009

Century Center in Carrboro, NC  
Call 202-543-5450 or register online at:  
<http://www.beyondpesticides.org/forum/brochures/index.htm>

### Pesticide Applicator Training and Exam February 24, 2009

Training 8am to noon  
Testing immediately after training  
Del Tech Corporate Training Center Room 400  
Dover, DE  
Call 1-800-282-8685 or 302-698-4569 to reserve a seat.

### 9th Annual Pesticide Stewardship Conference February 22-24, 2009

Albuquerque, NM  
**For information:**  
[info@tpsalliance.org](mailto:info@tpsalliance.org)

### Mid-Atlantic Specialty Crop Planning Workshop, March 3-4

Harrisburg, PA.  
**For information:**  
Dana Ollendyke, call (814) 863-5567 or e-mail  
[djm428@psu.edu](mailto:djm428@psu.edu).

### Questions?

If you have any comments or questions regarding any of the material presented, please let us know by sending an e-mail to:

[John.Baniecki@mail.wvu.edu](mailto:John.Baniecki@mail.wvu.edu).