

Look What's Out There

in

Integrated Pest Management

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

Issue 1-Jan 2008
<http://www.wvu.edu/~agexten>

Squash Vein Yellowing Virus Identified as Cause of Watermelon Vine Decline

With popular and nutritious watermelon now battling a new plague called watermelon vine decline, Agricultural Research Service (ARS) scientists in Fort Pierce, Fla., are trying to pinpoint the cause of the disease and find ways to control it. A crippling plant disease, watermelon vine decline (WVD) has made a serious economic impact since first being seen in Florida in May 2003. So far, it has been limited to the Sunshine State, but growers fear it could spread anywhere watermelons are commercially grown. Research efforts are being led by plant pathologist Scott Adkins, who's in the ARS Subtropical Plant Pathology Research Unit at Fort Pierce. Symptoms of WVD include interior browning of the fruit rind, rapid vine collapse and death just before harvest. Yield losses totaled more than \$60 million in 2005, relegating Florida watermelon producers to the No. 2 spot, behind Texas. Plant pathologist Benny Bruton has worked with Adkins since the initial stages of WVD research, and plant pathologist Shaker Kousik joined the effort in November 2005. Bruton is at the ARS South Central Agricultural Research Laboratory in Lane, Okla., while Kousik is at the ARS U.S. Vegetable Laboratory in Charleston, S.C. Adkins—in collaboration with Susan Webb, a University of Florida entomologist, and Carlye Baker, a plant pathologist with the Florida Department of

Agriculture and Consumer Services, Division of Plant Industry—has determined that the novel ipomovirus named squash vein yellowing virus is causing the disease. The host range of squash vein yellowing virus appears to be limited to the Cucurbitaceae family, with the most dramatic symptoms occurring on squash and watermelon. It had been known for some time that the principal insect pests on watermelons in Florida were aphids, rindworms, whiteflies and thrips, but it took two years of research to determine that squash vein yellowing virus, transmitted by the silverleaf whitefly, was responsible for WVD. Screening of watermelon germplasm for resistance to squash vein yellowing virus in greenhouse trials in Fort Pierce and field trials with University of Florida scientists has yielded promising results.

(By Alfredo Flores, USDA ARS, November 2007)

Training Initiative Seeks to Promote Water Protection Through Better Practice

New advice for operators to keep pesticides out of water has recently been published by UK and European experts. The initiative, Training the Operators to Prevent Pollution from Point Sources, or 'TOPPS', is the first of its kind to collate and define best management practice from 15 European countries. TOPPS aims for a sustainable improvement of water quality through education and training with the key

messages being published in a supporting leaflet entitled “Best Practice, Better Water Protection”. Research suggests that a significant proportion of pesticides reaching water come from point sources and that a few drops of spilt pesticide can break water quality standards. The best management practice recommendations focus on six stages in the pesticide management process including transport, storage, before, during and after spraying and remnant/waste management, where improvements in operator practice will have a positive impact on reducing pesticide losses. Following a few simple rules can help stop pesticides reaching water. Simon Cooper at Harper Adams University College and the UK Partner coordinator of TOPPS emphasizes “Everyone who uses pesticides has a responsibility to ensure that they use them safely, correctly and effectively. TOPPS strives to re-enforce this message and disseminate consistent advice, training and information across Europe. Following a few simple rules can help stop pesticides reaching water. Whenever you are using pesticides it is essential to adopt best practice to protect water.” For further details on the TOPPS Project please view www.TOPPS-life.org or e-mail info@topps-life.org.

(Harper-Adams University Press and Events November 2007)

New Device Aids in Proper Pesticide Application

Heping Zhu and Adam Clark at the Agricultural Research Service (ARS) Application Technology Research Unit, Wooster, Ohio, have developed an easy-to-use and easy- to-build portable instrument so that farmers and greenhouse growers can test the accuracy of their pressure gauges. Farmers rely on the accuracy of pressure gauges to ensure that desired rates of pesticide sprays or irrigation water are applied. But the pressure gauges on pesticide spraying equipment or irrigation lines often fail after a few years. So Zhu, an agricultural engineer, and Clark, an engineering technician, developed a tester that can be assembled by any do-it-yourselfer. The main body of the tester is commercially

available. Farmers go to the field with this hand-held tester, remove a pressure gauge from their equipment and screw it into a threaded port on the left hand side of the instrument. On the right hand side there is an accurate factory-calibrated gauge. In the middle is a small canister of water attached to a pistol-grip handle. Squeezing the handle generates pressures to the two gauges for comparison. If the farmers' gauges don't match the factory-calibrated gauge they can keep using their gauges and just mark the actual location where the dials should be for their desired readings or buy new gauges. Extension personnel are already using a tester based on Zhu and Clark's design. They find the tester a very useful and inexpensive tool for checking the accuracy of farmers' pressure gauges. This saves farmers money, saves precious water, and helps keep unneeded pesticides out of the environment.

(By Don Comis, USDA ARS December 2007)

Global Summit Discusses Pest Control Needs and Consumer and Environmental Protection

Meeting in Rome earlier this month, participants at a Global Minor Use Summit developed key recommendations aimed at meeting farmers' pest control needs while promoting high levels of consumer and environmental protection. Among the conclusions of the conference was a recommendation for building capacity in developing countries, especially with respect to biological and reduced-risk pesticides and integrated pest management (IPM) systems. EPA joined with the U.S. Department of Agriculture (USDA), and the Food and Agriculture Organization of the United Nations (FAO) to sponsor the conference, which brought together leading authorities from around the world to explore ways to address specialty (“minor”) crop issues on a global basis and exchange information about use of safer pesticides and other pest control practices. “Specialty crops include most fruits and vegetables and are important to a healthy, varied diet,” noted EPA Assistant Administrator Jim Gulliford. “Increasingly, trade in food is global. This enables consumers to choose from a wider

variety of foods, year-round. By working more effectively at a global level to share information and promote sound pest management for these crops, we will benefit consumers and farmers here and around the world.” Although specialty crops account for approximately 40 percent of the U.S. food supply, the market for pest control products for individual crops may be relatively small. Manufacturers may lack sufficient economic incentive to develop the data required for review by regulatory agencies, particularly if data must be developed separately for each country. A major goal of the conference was to develop common approaches for developing and sharing data for review. Gulliford continued by stating that newer, often safer means of pest control are being developed as science advances, and EPA places a priority on review of reduced-risk pesticides, but the full benefit of new approaches will not be realized unless they are also approved in other countries, since American farmers may hesitate to use the newer products if they plan to export their crops. Harmonization is being sought without lowering the high food safety standards that American consumers demand, and laws require. “We want to achieve greater consistency at the international level with those high standards, and we believe farmers and consumers in other countries, particularly developing countries, will also benefit from this work.” Additional information about the Summit is available at <http://www.fao.org/ag/AGP/AGPP/Pesticid/JMP R/GMUS/GMUS.htm>. Learn more about EPA’s work with foreign governments, international organizations, and stakeholders to ensure high levels of protection for human health and the environment at <http://www.epa.gov/oppfead1/international/>, including its participation in international agreements designed to reduce risks from pesticides; partnerships with other national pesticide regulatory authorities and technical organizations to facilitate routine sharing of scientific resources; and assistance given to foreign countries in complying with U.S. and international trade requirements.

(EPA December 2007)

Purple Bacteria to Battle Crop Pests

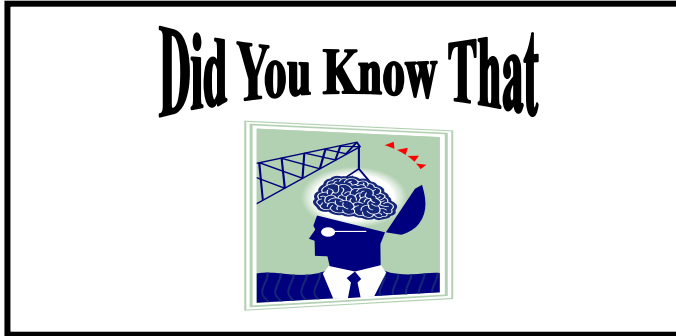
A bacterium discovered by microbiologist Phyllis Martin, technician Ashaki D. Shropshire-Mitchell, entomologist Michael Blackburn, and molecular biologist Dawn Gundersen-Rindal at the Agricultural Research Service (ARS) Invasive Insect Biocontrol and Behavior Laboratory in Beltsville, Md.; found to be toxic to Colorado potato beetle larvae also is toxic in varying degrees to gypsy moth, small hive beetle and tobacco hornworm. The ARS scientists found the new bacterial species, which they named *Chromobacterium subtsugae*, in soil from the Catoctin Mountain region in central Maryland. The team isolated the microbe by suspending samples of forest soil in water and then plating it directly on growth medium. The unusual purple colonies were then tested in a project to develop a more efficient way to test for toxicity in Colorado potato beetle. Other insects were also affected. While tobacco hornworm and gypsy moth weren't killed by the bacteria, their weights were drastically reduced. Weights of tobacco hornworms that were fed the bacteria-laced diet were 24 milligrams, compared to 119 milligrams for insects that didn't eat the bacteria. Gypsy moths that ate the bacteria weighed 40 percent less than gypsy moths that weren't exposed. In previous studies conducted by Martin, *C. subtsugae* also was found to be toxic, in varying degrees, to western corn rootworm, southern corn rootworm, white flies, and diamondback moth. In July 2007, a patent was granted for use of the bacterium as a biocontrol agent against those pests. Additional studies will be conducted to determine potential toxicity to non-target insects. ARS has licensed the technology to Marrone Organic Innovations, Inc., of Davis, Calif., and Natural Industries, Inc., of Houston, Texas.

(By Sharon Durham, USDA ARS December 2007)

Funding Opportunity

- The United States Department of Agriculture Cooperative State Research, Education, and Extension Service is requesting proposals for the Pest Management Alternatives Program (PMAP). The purpose of PMAP is to provide support for and encourage the development and implementation of integrated pest management (IPM) practices, tactics and systems for specific pest problems while reducing human and environmental risks. The successful management of pest problems in commercial production is facing severe challenges due to regulatory changes, emergence of new pest problems, and the development of pest resistance to present management technologies. The greatest impact on current management technologies is in the production of specialty crops; however, other crops, including grain, forage and fiber as well as animal health are also being impacted by these changes. There is a total of \$1.4 million in available funds and there is no maximum cap on awards. The deadline for submittal is February 1, 2008. For further information go to <http://www.csrees.usda.gov/fo/pestmanagementalternativesrgp.cfm> or contact Monte Johnson at (202) 401-1108 or mpjohnson@csrees.usda.gov.
- The United States Department of Agriculture Cooperative State Research, Education, and Extension Service is requesting proposals for Arthropod and Nematode Biology and Management in the area of organismal and population biology. Several emerging issues are challenging our ability to provide high quality food and fiber to the Nation's global economy. This unprecedented level of population growth will necessitate increased production and protection of agricultural commodities. Our ability to respond to and recover from pests and diseases that threaten our food supply has recently assumed paramount importance. Fundamental knowledge is needed to form the basis of novel management strategies for pests, which will lead to better utilization of beneficial species. Applicants are strongly encouraged to read the entire Program Description section for current priorities and additional information relative to the program of interest. Please carefully review the RFA guidelines to ensure application acceptance. The deadline for application is February 14, 2008. For more information go to: <http://www.csrees.usda.gov/fo/arthropodnematoideorganismalbiologyrni.cfm>.
- The United States Department of Agriculture Cooperative State Research, Education, and Extension Service is requesting proposals for the Methyl Bromide Transitions (MBT) program. The purpose of the MBT is to support the discovery and implementation of practical pest management alternatives to methyl bromide uses or minimize methyl bromide emissions for which the United States is requesting critical use exemptions. The program is focused on integrated commercial or field scale research that targets short- to medium-term solutions. There is a total of \$2.95 million in available funds with no maximum limit per project. The deadline for submittal is February 22, 2008. For further information go to <http://www.csrees.usda.gov/fo/methylbromideicgp.cfm> or contact William Hoffman at (202) 401 - 1112 or whoffman@csrees.usda.gov.
- The Cooperative State Research, Education and Extension Service (CSREES) is now accepting applications for two of its grant programs- Crops at Risk (CAR) and Risk Avoidance and Mitigation (RAMP.) The CAR program helps create or enhance IPM practices for individual food or fiber crops grown for commercial purposes. The RAMP program helps develop and implement IPM strategies for multi-crop food and fiber production systems, or production systems on an area-wide or landscape scale. The application deadline for both programs is February 29, 2008. For more information on

the CAR program, go to:
<http://www.csrees.usda.gov/fo/cropsatriskicp.cfm>. For more information on the RAMP program, go to:
<http://www.csrees.usda.gov/fo/riskavoidance/mitigationicgp.cfm>.



Over 500 fires and explosions a year in the United States are caused by “total release foggers”, also known as “bug bombs.” According to the EPA, these pesticide products contain aerosol propellants that release their contents into the air of a room to kill pests such as cockroaches, mice, and fleas. Because these aerosol propellants are highly flammable, improper use may cause a fire or explosion. Since foggers are so flammable, be sure to turn off all ignition sources, including pilot lights and any other open flames, prior to their use. Also, only use the correct number of foggers for a given area as directed by the instructions on the product label.



February 3-7, 2008
USDA-CSREES National Water Conference,

Sparks, NV. For more information go to:
<http://www.soil.ncsu.edu/swetc/waterconf/2008/home08.htm>

Feb 7, 8, & 9 2008

Pennsylvania Association for Sustainable Agriculture’s **17th Annual Farming for the Future Conference** will be held at the Penn Stater Conference Center Hotel, State College, PA. For more information go to:
<http://www.pasafarming.org/conference2008/>

February 10-13 2008

International Plant Resistance to Insects Workshop, Fort Collins, CO. For more information contact Frank Peairs by sending an email to Frank.Peairs@colostate.edu or by phone at 1-970-491-5945.

February 11-15 2008

4th Hemlock Woolly Adelgid Symposium Harford, CT. For more information send an email to DSouto@fs.fed.us or call 1-603-868-7717.

February 24-27, 2008

Pesticide Stewardship Alliance Conference Asheville, North Carolina. For more information go to: <http://tpsalliance.org/conference/Introduction.htm>

February 24-29, 2008

North American Weed Management Association Conference, Washington D.C. For more information go to: <http://www.nawma.org/>

February 26-27, 2008

Northeast Plant Diagnostic Network Annual Meeting, Chadds Ford, PA.

7th Annual NOFA Course in Organic Land Care, A five-day professional course offered in:

January 23, 24, 25, 28 and 29, 2008
New Haven, CT

February 27, 28, 29, March 3, 4, 2008
Narragansett, RI

For more information go to:

<http://www.organiclandcare.net/events/7thannualOLCcourse.php>

March 14-16, 2008

The 26th National Pesticide Forum,
Reclaiming Our Healthy Future: Political change
to protect the next generation, University of
California, Berkeley. For more information go
to: <http://www.beyondpesticides.org/forum/>.

March 25-27, 2008

**Sustainable Agriculture Research and
Education (SARE) 20th Anniversary
Conference: The New American Farm:
Advancing the frontier of sustainable
agriculture,** Kansas City, Missouri. For more
information go to:
<http://www.sare.org/2008conference/>

Management Association Meeting. Stonewall
Resort, Stonewall Jackson Lake State Park,
Roanoke, WV. For more information please
contact Jerry Lewis by calling (717) 285-7162 or
by E-mail at jerry.lewis@uap.com.

May 27-30, 2008

The 2008 Weeds Across Borders conference
will be held in Banff, Alberta, Canada. For more
information go to:
<http://www.nawma.org/documents/2008%20WAB/WAB%20announcement-english.pdf>

Comments or 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.

Thank you.

March 25th – 27th, 2008

43rd Annual West Virginia Vegetation