Look What's Out There

in

Integrated Pest Management

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Christmas Tree Pests Target of New Project - July 2008

(*University Park, PA*, July 30, 2008) A new Penn State research project is helping six Pennsylvania Christmas tree growers keep invasive pests at bay while reducing pesticide use. Under the direction of Cathy Thomas, Pennsylvania IPM coordinator, the project will focus on scale pests from Asia such as Elongate hemlock scale and Cryptomeria scale that cause a lot of damage to hemlock and fir trees. "Scale pests attack Fraser, canaan, and balsam firs, all of which are important Christmas tree varieties in Pennsylvania," says Thomas. The scales are difficult to control with pesticides because they have two generations each year and adults having a waxy, armored-like covering. In addition, many of the pesticides used to control scales and other insect pests are broad-spectrum and also kill natural predators of the scales. Thomas and Sarah Pickel, PA IPM program associate, are working with growers to develop better scouting and monitoring techniques, which will allow for fewer applications and substitution of safer chemicals. Scouting, monitoring and the substitution of safer chemicals is all part of an integrated pest management (IPM) program. IPM aims to manage pests -- such as insects, diseases, weeds and animals -- by combining physical, biological and chemical tactics that are safe, profitable and environmentally compatible.

Thomas says they are working with six growers in Schuykill and York Counties. "We collaborate with PDA entomologists and plant inspectors in the field using IPM techniques such as scouting, weather monitoring and record keeping so we know what pests are in the field and at what life stage," says Thomas, who also provides on-site training for growers on scale lifecycles and IPM techniques. In a previous PA IPM project targeting White Pine Weevil, Thomas helped three conifer growers in Schuylkill County reduce pesticide use by over 50 percent by using an IPM approach. As a result, growers were able to produce high quality conifer trees while substantially reducing pesticide use, which resulted in improved profitability. Thomas expects similar results with the scale project. In addition, Thomas plans to develop a conifer pest scouting manual to help participating and non-participating growers to incorporate IPM techniques into their farm operation. "Several conifer/Christmas tree manuals exist, but none are specific to Pennsylvania. With the help of specialists at Penn State University and PDA, conifer growers will be able to directly access regionally pertinent IPM advice from experts in the industry," Thomas explains. The project also aims to establish a crop management association to help growers transition to a system of employing IPM techniques. "A trained consultant will provide grower with professional IPM services and promote more economical and environmentally sound crop production

practices," says Thomas. The project is being funded by a grant from PDA agricultural research funds. Educational presentations of the data collected will be available for statewide use and additional training programs. The data will also be available on the Pennsylvania IPM Program's 1-800 PENN IPM hotline and the Penn State Christmas Tree Web site at http://ctrees.cas.psu.edu/default.html. For more information on Christmas tree pests, see PA IPM's Christmas Tree Pest Problem Solver at http://paipm.cas.psu.edu/259.htm. Questions about the project can be directed to Thomas by calling (717) 705-5857 or by e-mail at caththomas@state.pa.us. The Pennsylvania IPM program is a collaboration between the Pennsylvania State University and the Pennsylvania Department of Agriculture aimed at promoting integrated pest management in both agricultural and urban settings. For more information, contact the program at (814) 865-2839, or Web site http://www.paipm.org/. To view our archived news releases, see Web site http://paipm.cas.psu.edu/10.htm.

(*Source: Northeastern IPM Monitor*)

EPA Sued For Failing to Protect Workers, Children, Wildlife from Diazinon

(*Beyond Pesticides*, July 29, 2008) On July 28, 2008, a coalition of farmworker, public health, and environmental groups -including Beyond Pesticides- filed a lawsuit challenging the Environmental Protection Agency's (EPA) decision to allow continued use of the toxic pesticide diazinon. "The lack of action on diazinon is yet another example of EPA's failure to fully consider the risks to farmworkers, children, and the environment from pesticides," said Jay Feldman, executive director of Beyond Pesticides. The lawsuit is part of the coalition's multi-year campaign to protect children, farmworkers, and wildlife from the most dangerous pesticides and to reform EPA's lackadaisical regulation of public and environmental health. The coalition has filed a series of lawsuits targeted at the worst poisons on the market: diazinon is near the top of that list. "EPA's system for protecting the public from the dangers of pesticides like diazinon is broken," said Joshua Osborne-Klein, an attorney for Earthjustice, the public interest law firm that represents the coalition. "The agency should be protecting farmworkers and children, not the profits of pesticide manufacturers." Diazinon is an organophosphate pesticide that originates from nerve gases the Nazis developed during World War II. Farmworkers who are exposed to diazinon can suffer muscle spasms, confusion, dizziness, seizures, vomiting, and diarrhea. Severe exposures can cause coma and death. Exposure is also associated with damage to the liver and pancreas, diabetes, and non-Hodgkins lymphoma (a form of cancer). "In the 21st century, we don't need poisons like diazinon to grow our food," said Margaret Reeves, senior scientist for Pesticide Action Network. "Americans increasingly are demanding pesticide-free food for their own health, their children's health, their community's health." After application, diazinon can become airborne. Monitoring has detected the poison in the air near schools at unsafe levels. Infants and children are especially vulnerable to diazinon, which can interfere with growth and development. "Children and farmworkers are breathing diazinon in the air in their schools, homes, and workplaces," said Mike Meuter, an attorney from California Rural Legal Assistance. "In failing to protect our children from diazinon exposures, EPA has failed us all." Diazinon is also notorious for contaminating water–it is the most common insecticide detected in surface waters and is implicated in numerous bird and fish kills. Almost 20 years ago, the U.S. Fish and Wildlife Service determined that diazinon threatened the survival of numerous endangered species. Diazinon is used on a wide variety of crops including apples, blueberries, broccoli, cherries, cranberries, pears, spinach, and tomatoes. In 2004, EPA cancelled home uses of diazinon due to the extreme risks that it poses to children, but EPA has continued to allow farm uses of the pesticide. The lawsuit was brought by Earthjustice, Farmworker Justice, and California Rural Legal Assistance on behalf of United Farm Workers, Pesticide Action Network North

America, Pineros y Campesinos Unidos del Noroeste (Northwest Treeplanters and Farmworkers United), Beyond Pesticides, Teamsters Local 890, Farm Labor Organizing Committee (AFL-CIO), and Luis Garcia Lopez, an individual farmworker in California. The complaint is available on the Earthjustice website. For more information, see the diazinon profile on Beyond Pesticides' Gateway on Pesticide Hazards or download the Earthjustice factsheet.

EPA Acts to Address Carbofuran Residues in Food

Due to considerable risks associated with the pesticide carbofuran in food and drinking water, EPA is revoking the regulations that allow carbofuran residues in food. Even though carbofuran is used on a small percentage of the U.S. food supply and therefore the likelihood of exposure through food is low, EPA has identified risks that that do not meet our rigorous food safety standards. EPA is taking the necessary steps to address these risks to ensure we have the safest food supply possible. The United States has a safe and abundant food supply, and children and others should continue to eat a variety of foods, as recommended by the federal government and nutritional experts. In addition, EPA is proceeding on the path toward cancellation of the pesticide registration, which will address the risks to pesticide applicators and birds in treated fields. As part of this effort, EPA is also releasing its response to the peer review conducted by the independent Scientific Advisory Panel and the agency's response to the U.S. Department of Agriculture's comments on the effect of the cancellation of carbofuran on the agricultural economy. EPA will accept public comments on the proposed tolerance revocation for 60 days. For additional information, visit: epa.gov/pesticides/reregistration/carbofuran/carbofuran_noic.htm

(*EPA July, 24 2008*)

Pesticide News Story: EPA To Revoke All Tolerances for the Pesticide Carbofuran

Following up on a July 24 announcement of its plans to revoke all tolerances (maximum residue limits) for the pesticide carbofuran, EPA has opened a public comment period and will accept comments on the proposed tolerance revocation through September 29, 2008. The Agency has concluded that there are considerable risks associated with carbofuran in food and drinking water, and is revoking the regulations that allow carbofuran residues in food. Revoking carbofuran tolerances is part of a broader series of Agency actions to cancel all uses of carbofuran in the United States due to dietary, occupational, and ecological risks of concern. The cancellation process requires the development of several documents, including this proposed tolerance revocation. After moving to revoke carbofuran tolerances, EPA subsequently plans to publish a final Notice of Intent to Cancel. In 2006, EPA identified significant risks from the use of carbofuran and concluded that all uses must be canceled. For additional information or to find out how to provide comments, see the EPA Federal Register notice or visit EPA's carbofuran Web page.

For general information contact Jude Andreasen, by mail at: Special Review and Reregistration Division (7508P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460-0001; by phone at: (703) 308-9342; by fax at: (703) 308-8090; or by e-mail Jude Andreasen (andreasen.jude@epa.gov).

(*EPA August, 1 2008*)

Switchgrass May Mean Better Soil

Soils with native grasses such as switchgrass have higher levels of a key soil component called glomalin than soils planted to non-native grasses, according to a study by the Agricultural Research Service at two locations in Mandan, N.D. Kristine Nichols, a microbiologist with the ARS Northern Great Plains Research Laboratory in

Mandan, conducted the study. Glomalin is a sugar-protein compound that might trigger the formation of soil. The more glomalin in a given soil, the better and less erosion-prone that soil probably is. In 2004, Nichols collected soil from under grass plots established between 1987 and 2002. The amount of glomalin in the soil increased as the degree of interdependence between plants and the arbuscular mycorrhizal fungi increased. These fungi produce glomalin and live inside plant roots and the surrounding soil. That interdependence is greatest in warm-season native grasses such as switchgrass, blue grama, big bluestem and indiangrass. Further evidence that soils underneath native grasses are higher in glomalin came from another study on rangeland areas at Mandan and near Platte, S.D. In an earlier study, Nichols analyzed samples from undisturbed soils with native vegetation in Maryland, Georgia and Colorado. According to her analysis, glomalin stored a large percentage of the carbon found in those soils and contributed greatly to soil fertility. On average, glomalin stored 15 percent of the soil carbon, with the highest amount—30 percent— in a Colorado soil and the lowest amount—9 percent—in a Georgia soil. These results are similar to those from other soil samples taken around the world. The increased glomalin and underground carbon storage observed with switchgrass adds to its value as a potential source of cellulosic ethanol. Nichols uses glomalin measurements as a quick guide to evaluate how "soil-friendly" farming or rangeland practices actually are. She originally worked with soil scientist Sara Wright, who discovered and named glomalin in 1996. Wright has since retired. Read more about the research in the July 2008 issue of *Agricultural Research* magazine. ARS is a scientific research agency of the U.S. Department of Agriculture.

(*By Don Comis, Agricultural Research Service July 17, 2008*)

B.t. not Bad for Beneficial Bugs

Genetically modified (GM) plants that use B.t. (Bacillus thuringiensis), a common soil bacterium, to kill pests won't harm the pests' natural enemies, according to new research by Cornell entomologists. That is welcome news for ecologists and farmers in the debate over GM plants. Much of the debate surrounding the use of GM crops focuses on their effect on organisms that aren't pests. The research showed that GM plants expressing B.t. insecticidal proteins are not toxic to a parasite that lives inside the caterpillar of the diamondback moth, a devastating worldwide vegetable pest. “The conservation of parasites is important for enhancing natural biocontrol that will help suppress pest populations as well as reduce the potential for the pest insects to develop resistance to the B.t.,” explained Anthony Shelton, Cornell professor of entomology at the New York State Agricultural Experiment Station in Geneva, N.Y., who conducted the study with postdoctoral associate Mao Chen. “Our studies make it clear that B.t. plants are a win-win situation to control pest insects and to enhance biocontrol and biodiversity.” The B.t. bacterium, which is not harmful to humans, has been used for decades as a leaf spray inorganic and conventional agriculture and since 1996, in GM plants, a method that has proven much more effective and is now more widely used. “Few studies have examined the effect of B.t. plants on parasites of caterpillars, but some of them have reported negative impacts,” said Chen, noting that the new research suggests that those negative findings were likely due to testing methods. To separate out the effect of insecticides and B.t. proteins on the caterpillar and parasite, the researchers isolated and bred strains of caterpillars that were resistant to B.t. or a conventional or organic insecticide. Then the caterpillars were parasitized with a wasp that kills the caterpillar in nature. The resistant caterpillars were then either fed GM plants expressing the B.t. protein or non-GM plants sprayed with the Bt protein, conventional insecticides, or organic insecticides. The parasitized caterpillars that ate plants treated with conventional and organic insecticides to which they were resistant, survived and developed into moths because the parasite was killed by the insecticide the caterpillar ingested. However, when the caterpillar fed on the B.t.-sprayed plants or B.t. plants, the parasite was not affected

and killed its host caterpillar as it emerged as an adult wasp, showing that B.t. plants are not toxic to the parasite.

(*Source: Chemically Speaking, July, 2008; by Checkbiotech, Jume 4, 2008*).

ANOTHER REMINDER! 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.

Did You Know That

Fungal and bacterial vascular pathogens often cannot live outside their hosts. They require another organism, generally an insect, to vector or transport them to new hosts, or they may gain access through root grafts. Therefore, two ways to prevent the spread of vascular pathogens are: 1) control insect populations with insecticides; and, 2) trench around infected individuals to prevent root grafts.

Events

August 14, 2008 (Tentative)
Plant Diagnostics Clinic
Moundsville, WV (Marshall Co.)
Contact: Edgar Hooper 304-843-1170

August 22, 2008
Plant Diagnostics Clinic
New Martinsville, WV (Wetzel Co.)
Contact: Stephanie Moore 304-847-2727

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:

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