

Look What's Out There

in

Integrated Pest Management

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

First Ever Nano-Herbicide in the Works

According to Food Production Daily, the first nano-herbicide being developed is a joint effort between scientists in Mexico and India and will likely expand nanotechnology in the food industry. Currently the science is focused on helping manufacturers produce novel products to improve their processing and packaging. This development could mean nanotechnology would influence all aspects of food production from farm to fork.

The research will focus on ways to attack a weed's seed coating, which will prevent them from germinating. This approach will destroy the weed even when it is buried in soil and will prevent them from growing in even the most favorable conditions, say the researchers. The researchers believe this method is more preferable to tilling and manual picking because of the costs incurred with such high-maintenance methods. Due to the incredibly small proportions of nano-scale herbicides, they can easily blend with soil and attack seeds that are buried below the reach of tillers and conventional herbicides.

The researchers say this nanotech approach will reduce the need for conventional herbicides, which many weed species have developed resistance to. Tilling as well can have the harmful effect of spreading weeds that will multiply through stem cuttings. However, this does not mean the new technology will be safe. A number of

environmental groups, led by the Natural Resources Defense Council, sent comments to EPA on its voluntary nanotechnology program encouraging the agency to develop standards for reviewing nano-pesticides, which are currently unregulated and adverse effects unknown.

Experts say the properties that make engineered nanomaterials exciting for science also present unique regulatory challenges, huge potential impacts on human and environmental integrity, and fears of product liability and litigation. While such new nanotechnologies promise advances in human health and environmental clean-up, almost nothing is known about the risks these nano-sized chemicals may pose to exposed workers, consumers, and wildlife. Animal studies suggest that nanoparticles can trigger a variety of inflammatory and immune responses that would not be predicted by current toxicity models based solely on particle mass and composition. Early research also has highlighted the unique ability of tiny nanoparticles to move from one area of the body to another: from the lungs to the blood stream and beyond, from the GI tract to other organs, and from the nose via olfactory nerves into the brain. A nanoparticle may easily penetrate into a cell, while the bulk form of the same chemical may be unable to enter. When used as a therapeutic device, a nanoparticle may enter a cancerous cell to deliver a cancer-fighting drug, but when it contaminates food, drinking water, or consumer products, the same nanoparticle may also enter healthy cells to cause cancer or other adverse effects.

Just as the minute size of nanomaterials gives them unusual properties of strength and reactivity, environmentalists anticipate that this would give them unpredicted properties of toxicity. Scientists thus anticipate that many otherwise relatively inert and stable chemicals, such as carbon, might pose toxic risk in their nano-scale form. Many unknowns remain, especially regarding the long-term impacts of exposure and the possible effects of nano-engineered materials on the environment and ecosystems. It is also difficult to predict which of these new materials may bioaccumulate and persist in the environment because of their unique physiochemical characteristics that are largely unknown with respect to either environmental or physiological implications.

The combined nano-herbicide research programs between the Tamil Nadu Agricultural University in India and Monterey Tech in Mexico was announced in July of 2006 in a bid to share information and research in the fields of energy, environmental management and agricultural biotechnology. The nano-herbicide project is expected to last five years and has a budget of nearly \$240,000 (Beyond Pesticides, August 25, 2006).

EPA meets settlement deadline, determines atrazine's effects on salamanders

EPA completed its atrazine effects determination on the Barton Springs salamander Aug. 21, meeting a court-ordered Aug. 22 deadline from a settlement with the Center for Biological Diversity (CBD) and Save Our Springs Alliance (SOSA). The agency found the herbicide atrazine is "not likely to adversely affect" the salamander. (Pesticide and Toxic Chemical News: Volume 8, Issue 166, Aug. 8, 2006).

Funding Opportunity

- The Northeastern Integrated Pest Management (IPM) Center is pleased to announce the availability of funding through the Northeastern Regional IPM Competitive Grants Program. A Request for Applications (RFA) is posted on the Center's web page at

http://NortheastIPM.org/about_fund.cfm. Approximately \$610,000 will be available in 2006 to support projects that develop individual pest control tactics, integrate tactics into an IPM system, and develop and implement extension education programs. A letter of intent is required with a deadline of Friday, October 7, 2005. Proposals are due Friday, November 18, 2005.

- The Northeastern Integrated Pest Management (IPM) Center is pleased to announce the availability of funding through its IPM Partnership Grants Program for 2006. A Request for Applications (RFA) is posted on the Center's website at http://northeastipm.org/about_fund.cfm, where it can be downloaded in various formats. Approximately \$465,000 is available to support projects that will address or develop regional IPM priorities and will further the mission of the Northeastern IPM Center. Proposals are due Friday, December 16, 2005

Agricultural and Environmental News

- EPA is proposing to cancel all uses of the pesticide carbofuran and to revoke the associated tolerances (legal residue limits on food). The agency announced today its conclusion that there are considerable risks associated with carbofuran in food and drinking water, risks to pesticide applicators and risks to birds that are exposed in treated fields (USEPA, News, Aug. 3, 2006).
- EPA last week issued two new rules requiring manufacturers and importers of high production volume (HPV) chemicals not sponsored under the voluntary HPV Challenge Program to submit to the agency production volumes, end uses, and exposure-related information as well as unpublished health and safety data. The rules, issued under TSCA section 8 (a) and (d), were published in the August 16 Federal Register and take effect September 16. Toxic Chemical News: Volume 8, Issue 161, Aug. 21, 2006).

- The U.S. Environmental Protection has fined Orchard Supply Hardware, based in San Jose, Calif., for allegedly selling a pesticide that has not been registered with the federal government. OSH has agreed to pay a \$21,960 penalty in this case. “Goo Gone All Purpose Cleaner,” whose label at the time made claims it “washes away germs and bacteria,” was found at OSH’s Turlock store in January 2004. When a product is said to control bacteria, viruses or fungi it is being sold with a pesticidal claim. Products making pesticidal claims must be registered as pesticides under federal law (USEPA, News, Aug. 24, 2006).

- Alaska pesticide regulators have proposed new notification requirements for pesticide applications in public places, including government buildings and public parks. The proposed regulation requires the posting of a written notice prior to a pesticide application in a public place and calls for the notice to remain in place for at least 24 hours unless more notice is required by the product label. (Pesticide and Toxic Chemical News: Volume 8, Issue 160, Aug. 8, 2006).

- Research conducted at the University of Kansas (KU) showed findings that the popular herbicide Roundup (glyphosate) could lose its effectiveness on weeds over time. The research team, which included Ernst Schönbrunn, associate professor of medicinal chemistry, and Todd Funke, doctoral student at KU, analyzed the protein that makes certain crops resistant to the herbicide Roundup, chemically named glyphosate. The study was recently published in the peer-review journal Proceedings of the National Academy of Sciences. The team’s findings suggest that the farming industry might need to develop a new weed killer or develop better management practices that are environmentally friendly (Beyond Pesticides, August 18, 2006).

Did You Know That

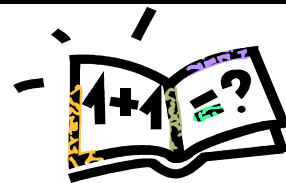


Americans today can be confident that pesticides used in the United States meet the highest health and safety standards in the world, according to the Environmental Protection Agency (8-1, 2006).

Comment Section

If there are any comments from the information presented, please let us know by sending an e-mail to: jbanieck@wvu.edu

Events



Sept. 19-21, 2006

West Virginia Pest Control Operators Association Annual Conference. Ramada Inn, Morgantown. More details are at: <http://www.wvu.edu/~agexten/ipm/pestprog/WVINPAS/06AltrFall.doc>

Sept. 20, 2006

Ornamental and Turf workshop. Ramada Inn, Morgantown. More details are at: <http://www.wvu.edu/~agexten/ipm/pestprog/WVINPAS/06AltrFall.doc>

October 4-7, 2006

Natural Products Expo East, Baltimore, MD. More information is at: <http://www.expoeast.com/>