

PESTICIDE REPORTS

Division of Agricultural Sciences and Natural Resources • Oklahoma State University
<http://pested.okstate.edu>



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CHEM

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ODAFF LICENSE RENEWALS

ODAFF license renewals have been mailed out to pesticide applicator license holders. License renewals should be returned to ODAFF before **December 31, 2011** to avoid any penalties. All applicators working under the license should be listed and sign the appropriate spot on the renewal form. It is also a good time to make sure any new applicators are added to the license.

BED BUG INSECTICIDE RESISTANCE MECHANISMS IDENTIFIED AT VIRGINIA TECH

A research team at Virginia Tech has discovered some of the genetic mechanisms for the bed bug's resistance to two of the most popular pyrethroids — deltamethrin and beta-cyfluthrin.

The discoveries will accelerate efforts to understand the biochemical basis for insecticide resistance in bed bugs, and in the meantime provides molecular markers for surveillance. "Different bed bug populations within the U.S. and throughout the world may differ in their levels of resistance and resistance strategies, so there is the need for continuous surveillance," said Zach Adelman, associate professor of entomology with the [Vector-Borne Disease Research Group](#) at Virginia Tech and lead author.

UNWANTED PESTICIDE DISPOSALS FOR 2011

The 2011 Unwanted Pesticide Disposals will be held November 15th in Ada and November 17th in Apache. There is no charge for this program. Limit is 2,500 pounds per entity. **ONLY PESTICIDES** will be taken at the sites (no fertilizer, paint, oil, etc)! If you have any questions contact Charles Luper (OSU) at 405-744-5808 or Jason Baker (ODAFF) at 405-522-5993.

Times for all locations are 8:00 am to 1:00 pm.
Nov. 15 Ponotoc County Fairgrounds in Ada
Nov. 17 Apache Farmers COOP in Apache

For more information please go to
<http://pested.okstate.edu/unwanted.htm> (PSEP)

The research was published in the Oct. 19 issue of PLoS One, the Public Library of Science open-access journal, in the article, "Deep sequencing of pyrethroid-resistant bed bugs reveals multiple mechanisms of resistance within a single population," by Adelman, Kathleen A. Kilcullen of Ashburn, Va., a 2010 graduate with bachelor's degrees in biology and psychology in the College of Science; Reina Koganemaru of New Britain, Conn., a Ph.D. student in entomology in the College of Agriculture and Life Sciences; Michelle E. Anderson, research technician with the [Fralin Life Science Institute](#); Troy D. Anderson, assistant professor of entomology with the Vector-Borne Disease Research Group; and Dini M. Miller, associate professor of entomology with the [Dobson Urban Pest Research Laboratory](#) at Virginia Tech.

Adelman and colleagues studied two populations of bed bugs -- a robust, resistant population that had come from Richmond, Va., in 2008, and a non-resistant population that had been collected from Ft. Dix, N.J., and raised in a lab since 1973. A bioassay conducted to determine the susceptibility of each strain to the pyrethroids determined that it requires 5,200 times more deltamethrin or 111 times more beta-cyfluthrin to kill the Richmond bed bugs than the lab bugs during a 24-hour test.

Because the bed bug's genome has not been sequenced, the researchers sequenced the bed bug transcriptome – that is, the genes that are actively expressed. They looked at the expression profile of the Richmond bed bugs compared to the non-resistant bugs. They were able to identify genes (cytochrome P450 monooxygenases, carboxylesterases, and glutathione S-transferases) that are commonly used to produce enzymes that can bind to, deactivate, and break down insecticides; and the researchers found that production of few of these was turned way up in the insecticide-resistant bed bugs. The researchers also found a mutation in the sodium channel gene, the target for pyrethroid insecticides, which makes the bed bug nervous system partially resistant to the toxic effects of insecticide treatment.

The researchers conclude that highly-resistant bed bug populations can have multiple genetic

mechanisms conferring resistance to pyrethroid and possibly other insecticides. "It is reasonable to suggest that the genes responsible for both acquired insensitivity to these neurotoxicants and their enhanced detoxification have been selected for in populations that have been subjected to long-term insecticide pressure." (PCT) <http://www.pctonline.com/bed-bug-resistance-research-Virginia-Tech.aspx>

NPDES PESTICIDE GENERAL PERMIT ISSUED AND POSTED ON EPA WEBSITE

EPA has posted the General Permit for NPDES permits on its website. This permit covers applications of a pesticide to water such as aquatic weed control, mosquito abatement treatments to water, and any other applications that will be applied to or near water. The permit can be found on EPA's webpage at www.epa.gov/npdes/pesticides. EPA was required to have the permit in place by October 31, 2011. (EPA)

IMPRELIS LAWSUITS CONSOLIDATED IN EASTERN DISTRICT OF PENNSYLVANIA

Eighteen federal lawsuits filed in 10 states against DuPont over its Imprelis herbicide have been consolidated and transferred to the U.S. District Court for the Eastern District of Pennsylvania.

Three Michigan companies in July 2011 sued DuPont in the U.S. District Court for the District of Delaware, seeking national and state class action status regarding their claims that the company misrepresented Imprelis's safety and hid or omitted the fact that the herbicide seriously damages trees. Other lawsuits soon followed.

"Over 40 actions are pending in eighteen districts," John G. Heyburn II, chairman of the U.S. Judicial Panel on Multidistrict Litigation, writes in an Oct. 20 transfer order, referring to the 18 lawsuits and 26

related actions pending in federal districts. "The actions and related actions make similar allegations against DuPont and share factual questions regarding the development, marketing, sale and performance of Imprelis herbicide and its alleged propensity to harm certain coniferous trees.

"The putative nationwide classes sought by some plaintiffs overlap with each other and with the statewide classes sought by other plaintiffs," Heyburn writes.

Parties in the 18 cases moved for coordinated or consolidated proceedings but disagreed regarding the district in which such proceedings should take place.

"We are persuaded that the Eastern District of Pennsylvania is an appropriate transferee forum for this litigation. The U.S. Environmental Protection Agency office responsible for the investigation and handling of the Imprelis matter is located in Philadelphia; the federal courthouse in Philadelphia is not far from DuPont headquarters in Wilmington, Delaware; Pennsylvania is within the geographic concentration of Imprelis damage according to DuPont; and actions are pending in this district," Heyburn writes.

EPA announced in August that it had launched an investigation into reports from multiple states that Imprelis might be damaging evergreen trees. That same month DuPont voluntarily suspended the sale of the herbicide, and shortly thereafter EPA issued a stop sale, use or removal order. In early September, the company launched a claims resolution process to provide compensation for damaged trees; however, property owners must waive their right to participate in a lawsuit to receive benefits through the resolution process. ."(Pesticide & Chemical Policy, October 28 2011, Volume: 39 Issue: 47)

EPA TO GIVE PERMITTEES UNTIL JANUARY TO SUBMIT NOIS FOR NPDES PESTICIDE PERMIT COVERAGE

Permittees will have to comply with the requirements of EPA's National Pollutant Discharge Elimination System (NPDES) Pesticide General Permit on Nov. 1 but will have until Jan. 12, 2012 to submit their notices of intent (NOIs) to obtain coverage.

Allison Wiedeman, chief of the Rural Branch in EPA's Office of Water, announced the brief reprieve at a session during this week's Pesticide Program Dialogue Committee (PPDC) meeting.

The deadline for submitting a notice of intent (NOI) stems from EPA's recognition that the timing of the permit's release is "problematic," Wiedeman said.

The 6th Circuit Court of Appeals stayed its ruling requiring NPDES permits for certain pesticide applications to, over, or near waters of the U.S. until Oct. 31. The stay was initially slated to end on April 9, but EPA requested an extension. The agency has decided not to ask for another one.

"We do plan to have a final permit by Oct. 31, and it will be published both in the *Federal Register* as well as our website," Wiedeman said.

In addition to the permit, a fact sheet describing permit requirements, accompanying forms that must be completed or that will help permittees document compliance activities will be available. The agency also intends to have an electronic NOI system ready for permittees to use, and a decision-tree Web tool to help permittees determine whether they need to apply for coverage and their applicable requirements will also be available.

However Wiedeman noted publishing the permit by Oct. 31 "is essentially on the effective date of that permit or essentially on the same day that folks are required to comply with it."

While the requirements of the permit, such as preparing a Pesticide Discharge Management Plan, will have to be met starting Nov. 1, the Jan. 12 deadline for NOI submission will give permittees "time to get into compliance and do what they need to do to submit a notice of intent," she said.

Provisions in the permit have not changed from those in the draft final permit EPA published in April, except for those regarding endangered species protections, Wiedeman said. Endangered species provisions weren't included in the draft final permit because consultation with federal wildlife agencies had not yet been completed.

However, the 44 states with NPDES permitting authority don't have to include the endangered species provisions in their permits. While the EPA permit is a federal action bound by Endangered Species Act requirements, state permits are not federal actions that must undergo consultation, Wiedeman noted. The 44 states "can certainly include ESA requirements but they are not required to include the ones that we will have in our permit. They are able to go ahead and finalize their permits," she said.

"We know that 35 out of those 44 states will have final permits by the Oct. 31 deadline, and we are working with the others to get them on board as well," Wiedeman said.

Endangered Species

In the meantime, EPA is nearing the end of its consultation with the National Marine Fisheries Service [NMFS]. NMFS issued its draft biological opinion on the permit in June. It found that without implementation of reasonable and prudent alternatives that essentially would increase the number of entities that would have to seek coverage under the permit, issuance of the permit is likely to jeopardize the continued existence of 33 endangered and threatened species (see *P&CP* July 1, 2011, Page 1).

EPA sought public comment on the draft BiOp and has submitted those comments to NMFS for consideration as it develops its final BiOp.

"NMFS plans to issue its final BiOp, and we plan to incorporate what we believe are appropriate provisions to protect the [affected endangered] species into our permit. That will be in the version that will be published at the end of this month," Wiedeman said.

EPA is also in consultation with the U.S. Fish and Wildlife Service, "but frankly the outcome of that is to be determined. We will actually not be able to discuss it until the permit is finalized," Wiedeman said.

Details regarding the FWS consultation have been sparse, and it is unclear whether FWS is developing a BiOp. Wiedeman has said it's unknown whether the general permit would have to be modified based on input from FWS (see *P&CP* Sept. 23, 2011, Page 5).

"I'm particularly concerned about the total lack of visibility at the Fish and Wildlife Service in this process, and the assertion that we just have to do it this way, and you won't know about it until [the] end, and things could be a whole lot different [with the permit]," PPDC member Ray McAllister, senior director of regulatory policy at CropLife America, told Wiedeman. "We've long said this is a train wreck in the making, and it's happening."

McAllister asked Wiedeman about whether FWS is expected to provide a BiOp "at some point."

"The chances of having that done in the next two weeks are rather slim," she replied.

McAllister pressed Wiedeman further, asking again whether FWS will provide a BiOp at some point. "Don't they have a legal obligation to do so?" he asked.

"I'm not the attorney. I can't speak to that, but I can speak to that we want to make consultation successful. We're trying to work with them in the same vein that we've worked with [NMFS], and we are still working it out," she said.

EPA told *P&CP* last month that Endangered Species Act regulations don't require FWS to

prepare a biological opinion document. point."(Pesticide & Chemical Policy, October 14 2011, Volume: 39 Issue: 45)

FEDERAL AGENCIES FACE MORE LITIGATION OVER FAILURE TO CONSULT ON PESTICIDE-ENDANGERED SPECIES IMPACTS

Add the California red-legged frog to the list of species that have not been subject to consultation between EPA and federal wildlife agencies regarding the impacts of pesticides, despite an EPA request to initiate such consultation, a new lawsuit alleges.

The Center for Biological Diversity sued EPA and the U.S. Fish and Wildlife Service Oct. 19 in the U.S. District Court for the Northern District of California, charging both agencies with violating both the Endangered Species Act and the Administrative Procedure Act.

According to the complaint, CBD sued EPA in the same court in 2002 alleging the agency violated the ESA by failing to ensure that its registration of 66 pesticides will not affect the California red-legged frog. In an October 2006 settlement agreement, EPA pledged to make effects determinations and initiate consultations (where necessary) within 36 months.

EPA conducted effects determinations for all 66 pesticides. For fenamiphos and molinate, registrations of all products were cancelled, so EPA made a "no effect" determination. For methoprene and telone, EPA concluded they "may affect, but are not likely to adversely affect" the California red-legged frog. For the 62 other pesticides, EPA found they "may affect" and are "likely to adversely affect" the California red-legged frog. Among the 62 pesticides are 2,4-D, aldicarb, atrazine, chlorpyrifos, diazinon, glyphosate, malathion, permethrin and phosmet.

Between July 2007 and October 2009, EPA requested formal consultation from FWS on the 64 pesticides it determined "may affect" the California red-legged frog.

In January 2009, FWS declined to begin formal consultation for 41 of the pesticides, telling EPA the effects determinations are incomplete and it needs more information. In particular, FWS says EPA has failed to provide "a complete description of the manner in which the action may affect the listed species and their critical habitats ... and an estimate of existing and future pollutant loads in the action area as a basis for determining whether listed species are likely to be adversely affected by the addition of the pesticide products," the complaint states.

EPA Acting General Counsel Patricia Hirsch responded in July 2009 that "while ESA regulations contemplate that FWS may seek additional information from an action agency such as EPA to better inform a formal consultation, the regulations do not provide that the [FWS] may reject EPA's written request to engage in formal consultation." Hirsch indicated that the Office of Pesticide Programs planned to respond to the January 2009 FWS letter, but CBD believes EPA never provided a response that CBD finds adequate, leading to the current impasse and the lawsuit.

EPA and FWS have also failed to complete consultation for the 23 other pesticides that received "may affect" determinations, CBD notes.

According to the complaint, EPA and FWS are required to complete consultation within 90 days unless they mutually agree to extend the consultation period, which they have not done here.

"Through this ongoing delay, the agencies have failed to comply with the ESA's strict time limits for completion of the section 7(a)(2) consultation process ... The agencies' delay in completing the required consultations allows toxic pesticides to continue to harm the California red-legged frog and contaminate its habitat," the complaint states, adding that "the use of pesticides has significantly contributed to the California red-legged frog's

decline and continues to pose a hazard to the subspecies."

CBD is seeking a court order requiring EPA and FWS to complete all the consultations as well as an order restricting or prohibiting use of the 64 pesticides that EPA determined "may affect" the California red-legged frog or its habitats until the consultation process has been completed.

In a similar case, the Washington Toxics Coalition sued the National Marine Fisheries Service in November 2007 for failing to consult with EPA on 37 pesticides that EPA had determined may affect some 24 endangered Pacific salmon and steelhead species, pursuant to a separate lawsuit. In July 2008, the two sides reached a settlement agreement, with NMFS agreeing to complete a series of biological opinions over a four year period covering the 37 pesticides. "(Pesticide & Chemical Policy, October 21 2011, Volume: 39 Issue: 46)

EPA TO SOON RELEASE LIST OF CHEMICALS PRIORITIZED FOR ADDITIONAL REVIEW

EPA intends to soon publish a list of chemicals prioritized for further evaluation, according to Maria Doa, director of the Chemical Control Division in EPA's Office of Pollution Prevention and Toxics.

"We will in late fall release an initial group of chemicals that we're interested in moving forward with for further review and assessment," Doa said during a session on chemical regulation at Crowell & Moring's Oct. 19 Product Risk Management Seminar.

The list is part of a process EPA first proposed in August to identify chemicals the agency intends to review on a priority basis. Under the first step of the process, EPA would identify a group of chemicals, based on a variety of data sources, meeting one or more of six prioritization factors, such as chemicals used in children's products or persistent, bioaccumulative and toxic (PBT) chemicals. Under the second step, EPA would select chemicals

prioritized for evaluation, including possible risk assessment and management, based on additional hazard and exposure information (see *P&CP* Aug. 19, 2011, Page 1).

The agency sought input on its proposal, holding a webinar and face-to-face meeting last month, as well as providing an online discussion forum for stakeholders to comment on the prioritization factors and data sources that EPA should use in the process.

"We did get input that there were a number of things that we weren't focusing on that folk thought that we should focus on," Doa said. "Folks really thought we should consider neurotoxicity," Doa said, and while EPA "really focused on human health" in its prioritization factors, "there was general agreement we should look at environmental toxicity."

Stakeholders also believed chemicals for which hazards are well characterized but exposure data are lacking should not be ranked low priority but not necessarily high priority either. Instead, they should be put in a group where the agency would look into gathering more exposure information.

In addition, EPA was told it was focusing too much on products for children and instead should look more broadly at consumer products, in part because children are exposed to chemicals in products that aren't necessarily targeted toward them. While stakeholders also thought EPA's focus on PBTs was good, they recommended the agency focus on chemicals that aren't persistent in the environment, but present in the environment because of dispersive uses.

"We're considering all this as moving forward as we go through this prioritization process," Doa said. (Pesticide & Chemical Policy, October 21 2011, Volume: 39 Issue: 46)

In-State CEU Meetings

Date: November 1-3 2011

Title: OK Ag Expo
Location: Oklahoma City OK
Contact: Tammy Miller 580-233-9516
Course #: OK-11-098

CEU's:	Category(s):
2	All Categories
6	1A
3	7C
9	10

Date: November 2 2011

Title: Target Specialty Products
Location: Tulsa OK

Contact: Kelly Sheffield 800-522-9701
Course #: OK-11-104

CEU's:	Category(s):
5	3A
5	7A
5	10

Date: November 5 2011

Title: Winfield Solutions IVM Meeting
Location: Oklahoma City, OK
Contact: Stacy Gingrich (405) 232-2493
Course #: OK-11-109

CEU's:	Category(s):
5	3A
1	6
1	7A
6	10

Date: November 15-16 2011

Title: Annual OK Turfgrass Conf
Location: Stillwater, OK
Contact: Justin Moss (405) 744-5729
Course #: OK-11-119

Golf Course Session

CEU's:	Category(s):
3	3A
3	10

Landscape/Lawncare Session

CEU's:	Category(s):
2	3A
2	10

Sports Session

CEU's:	Category(s):
2	3A
2	10

Pesticide Applicator Session

CEU's:	Category(s):
4	3A
4	10

Date: November 16 2011

Title: OSU Tree Care Issues
Location: Stillwater, OK
Contact: Mike Schnelle (405) 744-5404
Course #: OK-11-123

CEU's:	Category(s):
3	3A
3	10

ODAFF Approved Online CEU Course Links

Wood Destroying Organism Inspection Course

www.nachi.org/wdocourse.htm

All Star Pro Training

www.allstarce.com

CTN Educational Services Inc

http://ctnedu.com/oklahoma_applicator_enroll.html

Pest Network

<http://www.pestnetwork.com/>

Univar USA

<http://www.pestweb.com/>

Southwest Farm Press Spray Drift Mgmt

<http://www.pentonag.com/nationalsdm>

SW Farm Press Weed Resistance Mgmt in Cotton

<http://www.pentonag.com/CottonWRM>

Western Farm Press ABC's of MRLs

<http://www.pentonag.com/mrl>

Western Farm Press Biopesticides Effective Use in Pest Management Programs

<http://www.pentonag.com/biopesticides>

Western Farm Press Principles & Efficient Chemigation

<http://www.pentonag.com/Valmont>

For more information and an updated list of CEU meetings, click on this link:

<http://www.state.ok.us/~okag/cps-ceuhome.htm>

ODAFF Test Information

Pesticide applicator test sessions dates and locations for November/December 2011 are as follows:

November		December	
1	Goodwell	1	Tulsa
3	Tulsa	6	Goodwell
14	OKC	7	Lawton
14	McAlester	12	OKC
16	Hobart	12	McAlester
17	Tulsa	15	Enid
28	OKC	22	Tulsa

Altus: Western OK State College
2801 N Main, Room A23

Enid: Garfield County Extension Office,
316 E. Oxford.

Goodwell: Okla. Panhandle Research &
Extension Center, Rt. 1 Box 86M

Hobart: Kiowa County Extension Center
Courthouse Annex, 302 N. Lincoln

Lawton: Great Plains Coliseum, Annex Rm.
920 S. Sheridan Road.

McAlester: Kiamichi Tech Center on
Highway 270 W of HWY 69

OKC: Oklahoma County Extension Office,
930 N. Portland.

Tulsa: NE Campus of Tulsa Community
College, (Apache & Harvard)
Large Auditorium

<h1>Pesticide Safety Education Program</h1>
