

PESTICIDE REPORTS

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



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NEWSLETTER RENEWAL

It is time to renew your subscription to the *Pesticide Reports* newsletter. To do so, complete the instructions at the end of this edition. Either e-mail or mail your renewal to us. If you do not respond we will have to drop you from the mailing list.

OSU Extension personnel are automatically renewed and do not have to send back the renewal form.

NEW WORKER PROTECTION STANDARD RULES (WPS) NOW IN EFFECT

Most changes to the Worker Protection Standard (WPS) became effective on January 2, 2017. Some training requirements and basic pesticide safety information required will be delayed until at least January 2018.

- The major changes to the WPS rules are:
- Annual mandatory training to inform farmworkers on the required protections afforded to them.
- Expanded training includes instructions to reduce take-home exposure from pesticides on work clothing and other safety topics.(2018)

- First-time ever minimum age requirement: Children under 18 are prohibited from handling pesticides.
- Expanded mandatory posting of no-entry signs for the most hazardous pesticides. The signs prohibit entry into pesticide-treated fields until residues decline to a safe level.
- New no-entry application-exclusion zones up to 100 feet surrounding pesticide application equipment will protect workers and others from exposure to pesticide overspray.(2018)
- Requirement to provide more than one way for farmworkers and their representatives to gain access to pesticide application information and safety data sheets – centrally-posted, or by requesting records.
- Mandatory record-keeping to improve states' ability to follow up on pesticide violations and enforce compliance. Records of application-specific pesticide information, as well as farmworker training, must be kept for two years.
- Anti-retaliation provisions are comparable to Department of Labor's (DOL).
- Changes in personal protective equipment will be consistent with DOL's standards for ensuring respirators are effective, including fit test, medical evaluation and training.
- Specific amounts of water to be used for routine washing, emergency eye flushing and other decontamination, including eye wash systems for handlers at pesticide mixing/loading sites.
- Continue the exemption for farm owners and their immediate families with an expanded definition of immediate family.

Please see the websites below for more detailed information. <https://www.epa.gov/pesticide-worker-safety/revisions-worker-protection-standard>
<http://npic.orst.edu/reg/wps.html>

<http://www.extension.iastate.edu/psep/WorkerProtect.html>

If you have any questions on the new WPS rules please contact Charles Luper at the OSU Pesticide Safety Education Program at 405-744-5808.

EPA AMENDS REGISTRATION FOR ENLIST DUO HERBICIDE TO ADD GE COTTON AND ADDITIONAL STATES

Enlist Duo, a formula containing the choline salt of 2,4-D and glyphosate for use in controlling weeds in genetically engineered (GE) crops, was first registered in 2014 for use in GE corn and soybean crops. EPA is amending the registration to include GE cotton and expand the use to an additional 19 states for GE corn, soybean, and cotton and re-affirming our original decision before the remand.

EPA did a comprehensive review for the initial registration of Enlist Duo and now again in response to the application to amend the registration. EPA's protective and conservative human health and ecological risk assessments re-confirmed our 2014 safety findings. The pesticide meets the safety standard for the public, agricultural workers, and non-target plants and animal species, including a "no effects" determination for species listed as threatened or endangered under the Endangered Species Act.

Enlist Duo is a low-volatility pesticide formulation and includes the following restrictions: No application from aircraft; no application when the wind speed is over 15 mph; buffer zones to protect

sensitive areas; and application only with approved nozzles at specified pressures.

Enlist Duo was previously registered for use on GE corn and soybean crops in Arkansas, Illinois, Indiana, Iowa, Kansas, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Oklahoma, Ohio, South Dakota, and Wisconsin. This final decision to expand the use of Enlist Duo will allow use on GE cotton in those states and extend use on GE corn, soybean and cotton crops to include Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Kentucky, Maryland, Michigan, North Carolina, New Jersey, New Mexico, New York, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

To view the final decision document and other related documents, see EPA docket EPA- HQ- OPP- 2016- 0594 at www.regulations.gov.

(EPA, January 12, 2017)
<https://www.epa.gov/pesticides/epa-amends-registration-enlist-duo-herbicide-add-ge-cotton-and-additional-states>

EPA RELEASES FOUR NEONICOTINOID RISK ASSESSMENTS FOR PUBLIC COMMENT

The U.S. Environmental Protection Agency has published preliminary pollinator-only risk assessments for the neonicotinoid insecticides clothianidin, thiamethoxam, and dinotefuran and also an update to its preliminary risk assessment for imidacloprid, which we published in January 2016. The updated imidacloprid assessment looks at potential risks to aquatic species, and identifies some risks for aquatic insects.

The assessments for clothianidin, thiamethoxam, and dinotefuran, similar to the preliminary pollinator assessment for imidacloprid showed:

most approved uses do not pose significant risks to bee colonies. However, spray applications to a few crops, such as cucumbers, berries, and cotton, may pose risks to bees that come in direct contact with residue. In its preliminary pollinator-only analysis for clothianidin and thiamethoxam, the EPA has proposed a new method for accounting for pesticide exposure that may occur through pollen and nectar.

The 60-day public comment period will begin upon publication in the Federal Register, which will happen soon. The EPA invites public comment on all of these preliminary assessments, but we are especially interested in getting input from stakeholders on the new method for assessing potential exposure and risk through pollen and nectar. EPA may revise the pollinator assessment based on comments received as well as additional data that we anticipate receiving during 2017. We hope to release the final neonicotinoid risk assessments for public comment by mid-2018.

Along with the risk assessments, the EPA is also issuing an updated registration review schedule for the four neonicotinoids to reflect the data being submitted in 2017.

EPA encourages stakeholders and interested members of the public to visit the dockets for the neonicotinoid pesticides and sign up for email alerts to be automatically notified when the Agency publishes the next documents for review and comment. View the [neonicotinoid registration review](#) schedule for links to the individual dockets.

(EPA January 12, 2017)
<https://www.epa.gov/pesticides/epa-releases-four-neonicotinoid-risk-assessments-public-comment>

EPA FINALIZES STEPS TO BETTER PROTECT BEES FROM PESTICIDES

(EPA January 12, 2017)

<https://www.epa.gov/pesticides/epa-finalizes-steps-better-protect-bees-pesticides>

EPA's is releasing a final policy which describes methods for addressing acute risks to bees from pesticides. Applications of acutely toxic pesticides would be prohibited under certain conditions when bees are most likely to be present. While the restrictions focus on managed bees, EPA believes that these measures will also protect native bees and other pollinators that are in and around treatment areas. New label language will protect managed bees under contract to provide crop pollination services.

The final [Policy to Mitigate the Acute Risk to Bees from Pesticide Products](#) is more flexible and practical than the proposed policy. For example, a product that retains its toxicity to bees for a shorter time might be allowed to be applied under certain circumstances. Also, in some cases, pesticide application would be allowed when it is unlikely that pollinators will be foraging for crops that have extended bloom periods. The EPA will begin implementing this policy in 2017 by sending letters to registrants describing steps that must be taken to incorporate the new labeling.

EPA continues to encourage efforts by states and tribes to reduce pesticide exposure to bees and other insect pollinators through locally-based measures, such as through Managed Pollinator Protection Plans (MP3s). EPA will continue to assist the American Association of Pest Control Officials in developing performance measures for MP3s and will continue to monitor the progress and effectiveness of pollinator protection plans in reducing bee exposure to pesticides. EPA has also engaged the Pesticide Program Dialogue Committee in examining the best ways to measure the effectiveness of MP3s.

For more information on the proposal, its supporting documents, and comments received, please see [regulatory docket EPA-HQ-OPP-2014-0818](#)

WHAT'S TRENDING IN BED BUGS?

Are bed bugs still a hot ticket? You bet they are. "The phone is still ringing for bed bug services and in certain markets, especially those in the Southern United States, it's ringing off the hook," says Dr. Mike Potter, a researcher at the University of Kentucky who has conducted extensive research and worked with pest management professionals on bed bug issues.

In a recent consumer attitudes survey conducted by the National Pest Management Association, more than 70 percent of urban residents indicated they have encountered bed bugs in their home, office or a hotel.

"The phone is still ringing for bed bug services and in certain markets, especially those in the Southern United States, it's ringing off the hook," says Dr. Mike Potter, a researcher at the University of Kentucky who has conducted extensive research and worked with pest management professionals on bed bug issues.

Potter says that pest management professionals receiving fewer calls for bed bugs is not a sign of reduced pest pressure but rather increased competition among PMPs vying for this high ticket service.

"The major gateway cities like New York, Chicago and San Francisco experienced heavy bed bug pressure first and it is now spreading to smaller metropolitan areas with the influx of travel and the mobile nature of bed bugs," adds Potter.

Dr. Susan Jones, a researcher at the Ohio State University, says the bed bug issue is not losing strength despite some observers' claims that the market has reached a critical mass.

"The bottom line is that bed bugs are going strong and not going away anytime soon," says Jones, who says multi-family housing and hospitality accounts continue to be unwilling targets for these annoying pests.

DIFFERENT LOCATIONS. Jones says she has seen an uptick in bed bug incidents in office building complexes and the resulting reactions from property managers and human resource personnel have only added fuel to the fire.

"Property managers and HR representatives often have little or no experience dealing with bed bug complaints and the hysteria that ensues does little to solve the problem," says Jones, who has seen instances where perfectly good, pest-free furniture has been thrown out or employees scrutinized for hygiene issues unnecessarily.

An office building – unlike a high-rise apartment or condominium building or hotel – does not offer a target-rich environment for bed bugs since it lacks their main target – humans at rest for an extended period of time. Survival rates for bed bugs in this setting are low compared to other locations but that doesn't stop the overreaction from taking place.

Jones suggests PMPs set up surveillance and monitoring programs to reassure clients they are on top of the issue and ready to react.

Jones also says there is a strong need for more bed bug education in commercial accounts. Collateral material for clients and town hall meetings for residents of multi-family housing complexes that offer helpful tips on bed bug prevention strategies are some of the strategies that can be deployed.

"It is a budget issue for many property managers but it is too costly not to make the investment in the long run," adds Jones.

PREVENTIVE OFFERINGS. The interest in marketing preventive bed bug services is also on the rise among pest management professionals. These programs include regular inspections, active mattress liners, mattress encasements and preventive, targeted treatments using non-repellant residual materials directed at suspected harborage locations (i.e., bed frames, under furniture, along the room perimeter, etc.).

Preventive services, however, are proving to be a tougher sell for pest professionals due to cost and a lack of understanding of how a preventive program's elements work and the benefits.

The University of Kentucky's Potter says PMPs are finding more success marketing preventive bed bug programs to commercial clients with whom they have established service agreements for other pest services and whose businesses' brand and bottom line would suffer if an infestation was known to customers.

Bed bug litigation continues to be an issue for pest professionals and thorough documentation of service records is essential.

"Don't be reluctant to document everything during an inspection or treatment, the more detail the better," says Potter. "Bed bug services have become similar to termite treatments when it comes to litigation."

He says insurance carriers for property management companies or hotels will request a pest management company's service records to review contract structure, list of pre-service requirements, what preventive measures were recommended, what treatments were performed and the effectiveness of those treatments.

PRICING. Another trend that will likely impact the bed bug market in the future is the price it charges for services.

“Consumers want easy, cost-effective solutions for their bed bugs problems and those often are beyond their grasp,” says Jones. “Bed bugs are an expensive pest to treat for because of the labor intensive nature of the work and the fact multiple treatments are necessary. Many consumers are giving up on service or putting it off until they can afford it.”

When it comes to product technology for bed bug control monitoring and surveillance products, traditional pesticides and heat treatments continue to be the tools of choice for PMPs.

Potter says the search for the “magic monitor” continues as do questions about what is the correct number to deploy in an account and how to work around the visibility issue with customers. And while dusts are an effective tool for PMPs, the presence of white powder can be unsettling for clients.

When it comes to traditional pesticides Susan Jones reminds PMPs to rotate insecticides to avoid resistance issues with bed bugs, which have shown a propensity to quickly develop resistance.

Key Takeaways

- Bed bugs are still a significant pest in the United States. A recent consumer survey indicated more than 70 percent of urban residents indicated they have encountered bed bugs in their home, office or a hotel.
- More customer education is needed to help spread the prevention message.
- Bed bug litigation continues to be an issue for pest professionals and thorough documentation of service records is essential.

- Rotate insecticides to avoid resistance issues with bed bugs. (PCT Online, January 18, 2017) <http://www.pctonline.com/article/whats-trending-bed-bugs/>

HOW DOES HERBICIDE RESISTANCE EVOLVE?

Herbicide-resistant weeds have evolved in response to repeated use of herbicides with the same site of action (SOA), according to an article on [TakeActionOnWeeds.com](http://www.TakeActionOnWeeds.com).

Herbicide applications that eliminate susceptible weeds before they reproduce create a selective advantage for any rare, resistant individuals in the weed population. Reproduction by these escapees then transmits the resistance trait to their offspring, facilitating their survival when exposed to the same herbicide SOA. Sustained use of either the same herbicide or, in some cases, the same SOA, favors survival and reproduction of these resistant biotypes, leading to a weed population in which resistant plants dominate.

Repeating the same control tactics at a given timing, whether a herbicide application or a nonchemical control method, may also result in the evolution of avoidance mechanisms in a weed population by selecting for biotypes that have not emerged, or are outside the optimal growth stage, when control is implemented.

Did biotechnology cause HR weeds?

Herbicide-resistant weeds did not begin with herbicide-resistant crops; resistant weeds have been evolving in conventional crop cultivars worldwide from selection pressure placed on them from repeated use of herbicides.

A plant does not evolve resistance because herbicides cause a genetic change in the plant that makes it resistant. Rather, a few plants with natural resistance to the herbicide survive an application of the herbicide, and as those plants reproduce and each generation is exposed to the herbicide, the

number of resistant plants in the population increases until they dominate the population of susceptible plants.

The wide-scale use of any single herbicidal SOA contributes to the evolution of resistance to that SOA, and the unprecedented scale of glyphosate use in glyphosate-resistant (GR) crops has clearly contributed to the number of GR weeds identified in recent years. (CropLife January 6, 2017)

<http://www.croplife.com/crop-inputs/herbicides/how-does-herbicide-resistance-evolve/>

MONSANTO KEEN TO UPROOT US DICAMBA COMPLAINT

Monsanto has asked a US federal court to dismiss a lawsuit that alleges the company is responsible for crop damage from illegal herbicide use on its genetically modified dicamba herbicide-tolerant cotton and soybeans.

The complaint stems from lingering controversy surrounding Monsanto's decision to bring its dicamba-tolerant Xtend crops to market prior to receiving approval from the US EPA for its companion herbicide, XtendiMax (dicamba, diglycolamine salt).

Monsanto began selling its Bollgard II XtendFlex (MON88701xMON88913xMON15985) cotton to farmers in 2015 and its Roundup Ready 2 Xtend (MON87708xMON89788) soybeans the following year, but did not receive EPA approval for the XtendiMax herbicide until November 2016.

Instructions provided with the Monsanto crops told customers not to apply existing dicamba products, but over the past 18 months farmers in Missouri and ten other US states have allegedly ignored that warning and drift problems have emerged. The EPA launched a criminal investigation in October after Missouri state officials received more than 100 complaints of dicamba drift alleging damage to some 42,000 acres (17,000 ha) of soybeans, peaches, tomatoes and other crops.

Bader Farms, the plaintiff in the lawsuit and Missouri's largest peach producer, says that dicamba drift from neighboring farms caused more than \$1.5 million in damages to thousands of their peach trees in 2015 and 2016. Their complaint argues that Monsanto is liable because it knew that growers would illegally spray dicamba herbicides to protect its GM crops.

Monsanto's filing with the US District Court for the Eastern District of Missouri rejects the claim as unreasonable and counter to state and federal laws. Any harm to Bader Farms from illegal pesticide applications was caused by "independent human action," Monsanto says, and assigning the company responsibility would stretch the legal definition of causation "beyond recognition".

"No court anywhere has adopted plaintiffs' expansive theory of causation, and the federal agency responsible for regulating the dissemination of genetically modified seeds has expressly rejected it," according to Monsanto. "This court should do the same."

The motion to dismiss was filed on December 30th. Bader Farms originally brought the case in state court, but it was transferred to federal court last month at Monsanto's request. (Pesticide & Chemical Policy/AGROW, January 5, 2017)

COCKROACH BAIT ALONE IMPROVES ASTHMA OUTCOMES, NEW STUDY SHOWS

A study in [The Journal of Allergy and Clinical Immunology](#) found that just by putting cockroach bait in homes, it reduced the amount of pests significantly and children had almost 50 fewer days with asthma symptoms a year.

The study followed 102 children with moderate to severe asthma living in the greater New Orleans area for a year. Most families (92%) had a household income of less than \$25,000. In homes

that were being treated with cockroach bait, technicians would visit every two to three months and place traps in the kitchen, living room and the child's bedroom. Insecticidal bait is inexpensive and exposes families to a relatively small amount of pesticides compared to other forms of pest control.

“Cockroach exposure is an important contributor to asthma disparities which, despite an overall trend for stabilization in prevalence, continues to rise among the poor,” said Felicia Rabito, PhD, Associate Professor of Epidemiology at Tulane School of Public Health and Tropical Medicine. “Identifying interventions that result in clinical benefits and that are affordable and feasible for low-income families are urgently needed.”

Three months into the study there was a noticeable difference in the number of bugs between houses with cockroach bait and homes with no intervention. At 12 months, no homes treated with bait had a cockroach infestation compared to 22% of control homes that were not treated with insect bait.

Children in homes being treated had better health outcomes. On average, they had 47 fewer days with asthma symptoms over the course of a year. Conversely, children with a cockroach allergy in untreated homes were significantly more likely to miss school and have unscheduled emergency department visits.

To learn more, access the study “[Single Component intervention for cockroach control reduces cockroach exposure and asthma morbidity in children.](http://www.pctonline.com/article/cockroach-bait-improves-asthma-outcomes/)”

(PCT Online, January 18, 2017)

<http://www.pctonline.com/article/cockroach-bait-improves-asthma-outcomes/>

BED BUGS AS VECTORS: WHAT WE DON'T KNOW COULD HURT US

Are bed bugs vectors? Do they cause more harm than nuisance — and can they spread disease? A

significant tie between bed bugs and trench fever was discovered and recently published in the journal PLOS Neglected Tropical Diseases.

Bacterium that causes trench fever is typically transmitted by lice feces. But following a laboratory study where bed bugs were fed three consecutive human blood meals inoculated with *Bartonella quintana* bacterium, bed bug feces showed detectable bacterium three days post-infection and during the following 18 days of observation.

Further research showed that the bacterium survives in the “bed bug gut,” says Susan Jones, professor in the Department of Entomology at The Ohio State University. “The research is basically saying, we don't really know all that much about bed bugs and their ability to harbor and potentially transmit pathogens,” Jones says. “The competency of bed bugs as a vector is unclear.”

Bed bugs are a costly and even painful nuisance to commercial and residential sites that face an infestation (and to the people within who are bitten). But there's more to it. “Bed bugs are a pest of significant public health importance,” Jones emphasizes. “To call them simply a nuisance pest is to do a grave disservice to those suffering from bed bugs as these ectoparasites cause itchy bites in the majority of humans. Those who are extremely allergic to the bites can experience blood-filled blisters and long-term scarring.”

Vector potential. We aren't sure about bed bugs' true role in transmitting disease, but this study helps us understand their potential as vectors. The research is a good reminder about how much we don't know about bed bugs.

“The things we don't know can come back to hurt us,” Jones says.

What we do know: Tropical bed bugs can harbor *B. quintana* (the causative agent of trench fever) as cases in Rwanda have indicated, Jones says.

A paper published in a 2013 edition of the *American Journal of Tropical Medicine and Hygiene* reported molecular identification of the trench fever bacterium in tropical bed bugs

collected from a prison in Rwanda. The researchers detected the pathogen's DNA in the bugs but they were unable to culture the bacteria. Unfortunately, no human blood samples were obtained when the bugs were collected so it's not known if the bugs had fed on humans carrying the disease organism.

So, it makes sense that lab studies in common bed bugs — like this most recent study — show their competency of carrying the disease organism. But, because the research was conducted in a lab, we can't be sure of bed bugs' role as vectors in the natural environment. This leaves the question about bed bugs' ability to spread disease unanswered, Jones says.

'Mechanical' Vectors. More researchers are focused on how bed bugs could act as "mechanical" vectors that can infect humans because of what they leave behind — feces. Bed bugs feed and defecate a lot. "If there is a disease organism alive in the feces and you scratch it into an open wound, then can you potentially get an infection?" Jones asks.

She adds we should dig more into the possibility of bed bugs as mechanical vectors because of their behavior, the impact they have on humans — leaving behind bites that prompt scratching and open wounds — and their defecation activity, which is frequent.

Jones hopes this prompts curiosity among pest management professionals and the research community. We need more information, she said.

The bottom line: We're not sure about the biological role of bed bugs in natural conditions, outside of the lab. We know tropical bed bugs do spread bacteria, including the pathogen responsible for trench fever. So, be diligent about safety and public health protection while treating for bed bugs, Jones says. "I take great caution to prevent myself from getting bitten by bed bugs when I'm working with them."

As we learn more about bed bugs' vector potential, Jones suggests PMPs use best practices in the field when treating them. After controlling an infestation, clean up all evidence, preferably while wearing personal protection equipment such as gloves and a

dust mask, she says. Vacuum shed skins. Ensure that all feces are removed. "Weeks after [infection of the bacteria in the lab], this organism was still found in the fecal material," Jones reminds.

And PMPs should push for more research. Jones says, "It's misleading to say that bed bugs are not vectors of disease. This has yet to be confirmed or ruled out." (PCT Online, January 18, 2017) <http://www.pctonline.com/article/bed-bugs-vectors-hidden-threats/>

US JUDGE REJECTS MONSANTO EFFORT TO BLOCK CALIFORNIA GLYPHOSATE LISTING

A US state of California judge says that state officials have the authority to add glyphosate to the state's Proposition 65 list of known carcinogens and to require warning labels on products that contain the herbicide.

The tentative ruling by Fresno Superior Court Judge Kristi Kapetan is a blow to Monsanto's bid to derail the state's plan to list glyphosate but the legal fight is far from over.

California's Office of Environmental Health Hazard Assessment (OEHHA) decided to add glyphosate to the Prop. 65 list in September 2015. State officials said that the listing was warranted in light of the UN WHO's International Agency for Research on Cancer's (IARC) declaration in March 2015 that glyphosate was a probable human carcinogen.

The OEHHA contends that the IARC's conclusion triggers listing under the law that created Prop. 65. Approved by California voters in 1986, the statute requires the state to inform consumers about products that contain chemicals known to cause cancer or reproductive harm. The IARC is one of the "authoritative bodies" that can be relied upon for listing a chemical under Prop. 65's Labor Code listing mechanism and the OEHHA says that the

statute effectively requires them to add glyphosate to the list.

Monsanto disagrees and notes that regulators all across the world, including the US EPA and the OEHHA, have found that glyphosate does not cause cancer. The company filed suit in January 2016 to block the OEHHA from finalizing its decision. The complaint said that relying solely on the IARC declaration was unreasonable and unlawful.

But Judge Kapetan is siding with the OEHHA. Her January 26th ruling rejected Monsanto's argument that its reliance on the IARC is "an unconstitutional delegation of authority" to an unelected international agency. "There is no delegation of lawmaking authority where the legislature or agency simply uses an outside entity's expertise to fill in factual findings necessary to implement the underlying legislative policy," Judge Kapetan wrote in the nine-page ruling. "This is exactly what the OEHHA did here, and what the voters and the legislature authorized when they adopted Proposition 65."

Monsanto will contest the ruling. "The agency's flawed and baseless proposal to list glyphosate under Proposition 65 not only contradicts California's own scientific assessment, but it also violates the California and US Constitutions," the company told Agrow. "Monsanto will continue to challenge this unfounded proposed ruling on the basis of science and the law." (Pesticide & Chemical Policy/AGROW, January 31, 2017)

CEU Meetings

Date: February 14, 2017

Title: Ensystem 2017 OK CEU Workshop

Location: La Quinta Paris TX

Contact: Donald Stetler Jr. (281) 217-2965

Course #: OK-16-205

www.ensystem.com

CEU's:	Category(s):
2	3A
3	7A
1	7B

Date: February 21, 2017

Title: BWI 2017 Seminar OKC

Location: Reed Center Midwest City OK

Contact: Tim Ruminer. (405) 227-2985

Course #: OK-

www.bwicompanies.com

CEU's:	Category(s):
TBA	3A
TBA	7A
TBA	8

Date: March 14, 2017

Title: 2017 Univar South OK Annual CEU Training

Location: Noble Foundation Ardmore OK

Contact: Deb Chambers (918) 622-2048

Course #: OK-

www.univarusa.com

CEU's:	Category(s):
TBA	TBA
TBA	TBA
TBA	TBA

Date: March 16, 2017

Title: 2017 Univar Annual CEU Training

Location: Clarion Hotel Broken Arrow OK

Contact: Deb Chambers (918) 622-2048

Course #: OK-

www.univarusa.com

CEU's:	Category(s):
TBA	TBA
TBA	TBA
TBA	TBA

Date: March 28, 2017

Title: Ensystem 2017 OK CEU Workshop

Location: Holiday Inn Express 102 St Tulsa

Contact: Donald Stetler Jr. (281) 217-2965

Course #: OK-16-205

www.ensystem.com

CEU's:	Category(s):
2	3A
3	7A
1	7B

Date: March 29, 2017

Title: Ensystem 2017 OK CEU Workshop

Location: Holiday Inn Express Midwest City Ok

Contact: Donald Stetler Jr. (281) 217-2965

Course #: OK-16-205

www.ensystem.com

CEU's:	Category(s):
2	3A
3	7A
1	7B

ODAFF Approved Online CEU Course Links

PestED.com

<https://www.pested.com/>

CEU School

<http://www.ceuschool.org/>

Technical Learning College

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

Green Applicator Training

<http://www.greenapplicator.com/training.asp>

All Star Pro Training

www.allstarce.com

Wood Destroying Organism Inspection Course

www.nachi.org/wdocourse.htm

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.oda.state.ok.us/cps-ceuhome1.htm>

ODAFF Test Information

Pesticide applicator test sessions dates and locations for February/March are as follows:

February		March	
2	Enid	7	Goodwell
7	McAlester	9	Tulsa
7	OKC	13	OKC
9	Tulsa	14	Hobart
14	Altus	23	Tulsa
21	Ardmore	27	OKC
23	Tulsa		
27	OKC		

Altus: SW Research & Extension Center
16721 US HWY 283

Atoka: KIAMICHI TECH CENTER 1301
W Liberty Rd, Seminar Center

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,
920 S. Sheridan Road.

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

OKC: Arcadia Conservation Education
Building 7201 E 33rd St. Edmond
OK (**New Location**)

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

Pesticide Safety Education Program

**RENEWAL FORM TO REMAIN ON OR BE ADDED TO
PESTICIDE REPORT's MAILING LIST**

PLEASE PRINT - THANK YOU!

Name _____

Company/Business Name _____

Address _____

City _____ **State** _____ **Zip Code** _____

E-Mail _____

Please send to: Charles Luper or Kevin Shelton
Pesticide Safety Education Program
127 NRC
Oklahoma State University
Stillwater, OK 74078-3033

or E-mail us at: Sharon.hillock@okstate.edu. Please type Pesticide Report in the subject box.

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