

# PESTICIDE REPORTS

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



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## REQUIRED DICAMBA TRAINING SCHEDULE FOR XTENDIMAX, ENGENIA, AND FEXAPAN.

The new restricted use pesticide (RUP) dicamba formulations must be used by certified applicators and go through required training before using these products on dicamba resistant crops. XtendiMax, Engenia, and Fexapan all require this mandatory training before they can be used. Oklahoma training dates have been set and are listed below. Applicators attendance will be documented and forwarded to the Oklahoma Department of Agriculture Food and Forestry (ODAFF). Oklahoma training is accepted for applicators applying these products in Texas and Kansas by TDA and KDA.

February 7 Shawnee Grand Casino Hotel  
(Following No-Till Oklahoma Conference)

February 9 Cordell Washita County Activity Center

February 13 Enid Chisholm Trail Expo Center

February 15 Blackwell Blackwell Fairgrounds

February 20 Cherokee Alfalfa County Fairgrounds

February 23 El Reno Canadian County Fairgrounds

February 26 Warner Connors State College

February 27 Vinita Craig County Fairgrounds

March 5 Kingfisher Kingfisher County Fairgrounds

March 6 Carnegie TBD

March 22 Taloga Dewey County Fairgrounds

TBD Goodwell OPREC Conference Center

Please contact your local County Extension Office for more information on locations and times of these meeting.

All applicators must keep records of applications of these products since they are restricted use pesticides. The labels require more items be kept than standard RUP products. The OSU Pesticide Safety Education Program has produced a recordkeeping sheet to meet these requirements for applicators and producers. The recordkeeping form can be found on our webpage at the address below. (OSU PSEP)

<http://pested.okstate.edu/html/records.html>

## **TULSA FEBRUARY 22 TEST DATE CANCELLED**

Due to conflict in scheduling at Tulsa Community College (TCC) the February 22<sup>nd</sup> test date has been cancelled. Please check the testing dates for other Tulsa testing opportunities at TCC. (OSU PSEP)

## **NEW OKLAHOMA CITY TESTING LOCATION FOR 2018**

There is a new location for the Oklahoma City area testing site for 2018. Testing in the Oklahoma City area will now be conducted at the Oklahoma Food and Forestry building (ODAFF) just north of the Oklahoma state capitol building on Lincoln Blvd. The address is 2800 Lincoln Blvd. (OSU PSEP)

## **RUTGERS RESEARCH PROVIDES NEW INSIGHTS INTO COCKROACH-SANITATION LINK**

Your mom's advice on keeping a home free from cockroaches and bedbugs is reinforced by science.

To keep these pests from invading, follow the common-sense rules of cleanliness. To kill them, use traps and bait. Don't bother using foggers, sprays and aerosols, which are less effective and can contaminate food, floors and counters.

These insights were confirmed by a seven-month collaboration between Rutgers University-New Brunswick and the New Brunswick Housing and Redevelopment Authority and led by Changlu Wang, professor of entomology at the School of Environmental and Biological Sciences. The resulting study is published in the Journal of Economic Entomology.

Wang and his team did their survey in a public housing project with 258 apartments in 40 buildings. Their first step was to find out which pests, and how many of each pest, lived in those buildings. Cockroaches were present in 28 percent of the apartments; rodents in 11 percent; bedbugs in 8 percent. Surprisingly, this kind of pest data for an entire community is hard to come by, Wang said.

“The usual way to figure out how many of what pests are in a community is to count complaints,” Wang said. “And complaints are just not very reliable, because not everybody complains.”

Wang and his team visited all accessible apartments in the community and set traps in strategic spots in each apartment, which not only helped them identify pests but identify where they were coming from. They then treated those apartments using baits and traps, and reduced the number of cockroach infestations by 85 percent over seven months.

As they counted cockroaches and laid traps, Wang's team also talked to the residents about how to avoid

cockroaches in the first place and how to deal with them once they arrived.

“With cockroaches, the best way to keep them away is to keep the kitchen clean,” Wang said. “Don’t leave food around; wash the dishes often; reduce the clutter in your kitchen as much as possible.”

And once the little beasts show up, call the maintenance people. “Our maintenance people do a routine visit every month,” said John Clarke, the authority’s executive director. “But a lot can happen in a month. If you see a cockroach on day three, and wait until our guys come on day 28...well, let’s just say it would have been better to call us on day three.”

Wang’s team also took samples from kitchen and bedroom floors in 17 apartments to measure the presence of insecticide residue from the past use of pesticides at the beginning of the study and seven months later. They found both the numbers of insecticides present and the amount significantly reduced. The results prove that using a combination of education, baits, and traps is more effective than using foggers, sprays and aerosols.

“Sprays are less effective because cockroaches are increasingly resistant to them,” Wang said. “Plus, they can contaminate the food, the surfaces of floors and counters. They’re especially dangerous to children, because children crawl around on the floor.”

The study was funded by a \$20,000 University Community Research Partnership for New Brunswick grant, administered by Rutgers’ Department of Community Affairs. It was the second such grant for Wang, who previously worked on reducing bedbug infestation in one of the Housing Authority’s properties. “This study was a big help to our residents and our staff,” Clarke said. “My only wish is that we could have another grant like this every two or three years.” (PCT Online, January 23, 2018)

<http://www.pctonline.com/article/rutgers-cockroach-research-sanitation/>

## **JUDICIAL PANEL CONSOLIDATES US DICAMBA LAWSUITS**

A US judicial panel has decided to consolidate an array of lawsuits filed in several states against Monsanto, BASF and DuPont (part of DowDuPont) for alleged harm to non-target crops from dicamba herbicides. The class actions will be transferred to the US District Court for the Eastern District of Missouri in St Louis, according to a February 1st order by a seven-judge panel of the US Judicial Panel on Multidistrict Litigation (JPML).

The decision is a victory for plaintiffs in a dozen class actions who widely supported the move to consolidate the lawsuits.

The plaintiffs contend that the companies knew that their herbicides, intended for use on Monsanto's genetically modified dicamba-tolerant soybean and cotton crops, would volatilize and harm other crops. The companies deny the claims, arguing that any alleged damage was caused by illegal applications of older dicamba products or by individuals who had failed to follow the label instructions for their herbicides.

The JPML did not consider the merits of the complaints, but instead assessed the cause for consolidation and what would be the proper court to hear the litigation. The plaintiffs argued that the class actions, filed by farmers in four states, all presented common facts and contended that centralization would save time and money in resolving the claims. The pesticide manufacturers contested the bid, arguing that the cases were all based on different facts and circumstances.

The JPML agreed with the plaintiffs, concluding that the actions all shared "common questions of fact" including the development, testing and marketing of Monsanto's dicamba-tolerant Xtend seeds and the three dicamba herbicides -- Monsanto's XtendiMax, BASF's Engenia and DuPont's FeXapan. "Centralization will eliminate duplicative discovery, the possibility of inconsistent rulings on class certification ... and other pretrial

matters, and conserve judicial and party resources," the Panel ruled.

The arguments by the pesticide manufacturers that the cases were more different than similar and "will turn on a myriad of plaintiff-specific issues" were unpersuasive. "The existence of such issues, which is relatively commonplace in multidistrict cases, does not negate the common ones, which here are sufficiently numerous, substantial, and complex to warrant creation of an MDL," the Panel explained in its four-page ruling.

The Panel chose the Eastern District of Missouri because at least five relevant class actions were pending in that district and it was suggested by several of the plaintiffs -- and the agrochemical companies -- as the best venue for centralization.

Monsanto is also headquartered in the district and the company "represents that various relevant activities took place there", including research and development of Xtend seeds and XtendiMax, submission of relevant regulatory filings, and oversight of the commercial launch of those products.

The cases will be heard together by Judge Stephen Limbaugh, "an experienced jurist, who already is presiding over the two earliest-filed actions in this litigation", the Panel concluded.

(Pesticide & Chemical Policy/AGROW, February 5, 2018)

## **US TRUMP ADMINISTRATION TARGETS ESA CONSULTATION REFORM**

US President Donald Trump's administration says that it is keen to review and reform how the EPA and the federal wildlife agencies assess the effects of pesticides on endangered species. The Endangered Species Act (ESA) consultation process is "broken", said EPA Administrator Scott Pruitt at a January 31st meeting of the National Association of State Departments of Agriculture (NASDA).

Mr Pruitt was welcoming the formation an inter-agency working group consists of the EPA, the Department of Interior and the Department of Commerce. The three agencies signed a Memorandum of Understanding (MoU) that lays out a plan for the group to study and review the issue and prepare recommendations to improve scientific and policy approaches. The document requests the USDA, the White House Council on Environmental Quality (CEQ) and the Office of Management and Budget join the working group, with the CEQ serving as the chair.

Mr Pruitt said that the inter-agency effort will "improve and accelerate" the ESA consultation process between the EPA, the Interior Department's US Fish and Wildlife Service and the Department of Commerce's National Marine Fisheries Service. "It is going to get fixed," he told attendees at the NASDA meeting.

The ESA consultation process has long been a headache for the EPA. Under the law, the Agency is required to assess the potential harms to listed species and seek formal consultation with the federal wildlife agencies if it determines that legal pesticide uses are "likely to adversely impact" listed species or their protected habitat. The wildlife agencies are then tasked with determining if a pesticide puts a listed species in jeopardy and what mitigation measures are required for legal uses.

Fundamental differences between the EPA and the wildlife agencies about how to scientifically assess the potential harms posed by pesticides to endangered species -- and how to mitigate those effects -- have plagued the consultation process for decades. Few consultations have been completed and the controversy has sparked an array of litigation by environmentalists and registrants frustrated with the process.

A National Academy of Sciences' (NAS) committee in 2013 issued a sweeping report intended to help the agencies bridge the divide. It recommended a new scientific framework for assessing pesticide risks to listed species, including detailed advice related to the methods and assumptions used to conduct the underlying ecological risk assessments

The agencies have worked through that report and developed interim approaches they have been using for ESA-reviews of three organophosphate insecticides. But draft reviews of those pesticides have found that they pose risks to a wide array of species and drawn criticism from the agrochemical industry, which remains unconvinced by the new approaches being used by the agencies.

Mr Pruitt echoed that concern and said that stakeholders deserve "regulatory certainty" about the ESA requirements. The agencies have "not worked in harmony around these issues and it has created a lot of confusion" he added. The goal of the group is to develop a partnership between the agencies that is "co-operative as opposed to adversarial", Mr Pruitt said.

Mr Pruitt noted that the working group is coming at a "critical time" as the EPA is working to complete 700 product registrations by 2020.

Agrochemical industry interests, state officials and grower groups -- and some environmentalists -- welcomed the move. Industry association CropLife America president and CEO Jay Vroom called the formation of the group "encouraging" and voiced optimism that it would benefit registrants.

"We expect the working group's recommendations will not only help to ensure that consultation works between agencies to actually protect species, but will also promote government efficiency and effectiveness," Mr Vroom said. "CLA looks forward to engaging other stakeholders to ensure that federal protection of the species is more effective and efficient while maintaining the access to safe and effective technologies for farmers."

Defenders of Wildlife president and CEO Jamie Rappaport Clark cautiously agreed that the MoA could lead to positive changes. "This is a complex challenge, but we are hopeful that the inter-agency working group can identify administrative steps to achieve greater technical accuracy, collaboration, timeliness and conservation outcomes in the pesticide consultation process," said Ms Clark. "However, any recommendations from the working group must be consistent with the Endangered Species Act and other applicable environmental

laws. This process should not lead to recommendations that undercut the ESA or any other bedrock environmental law." (Pesticide & Chemical Policy/AGROW, February 1, 2018)

## **NMSU RESEARCH: BED BUGS CAN TRANSMIT CHAGAS DISEASE PATHOGEN**

As reported by [Entomology Today](#), new research from New Mexico State University shows that bed bugs (*Cimex lectularius*) are capable of hosting the pathogen that causes Chagas disease for up to 97 days, and the pathogen can persist even through the bed bug's molting process between one nymphal stage and the next.

New Mexico State University researchers have investigated the ability of bed bugs to carry *Trypanosoma cruzi*, the protozoan that causes Chagas disease, and report their findings in a new article published Friday in the [Journal of Medical Entomology](#). In a lab experiment, the researchers found that nearly all bed bugs they fed with *T. cruzi*-infected blood later showed live forms of the pathogen in their guts and that *T. cruzi* frequently survived through its hosts' molting.

That latter finding, known as transstadial persistence, is notable because bed bug nymphs typically molt after each blood meal, which they do five times before reaching their adult stage, says Alvaro Romero, Ph.D., assistant professor of urban entomology at NMSU and senior researcher on the study. "If *T. cruzi* could not persist throughout the molting process, nymphs would be less effective as vectors since they would have to feed on an infected host to reacquire the parasite in their guts after each molting," says Romero.

[Click here](#) to read the entire article.

(PCT Online, February 2, 2018)  
<http://www.pctonline.com/article/nmsu-research-bed-bugs-chagas/>

## **CUSTOM APPLICATORS AND PAPERWORK: THE NEW NORMAL**

“Custom applicators everywhere will need to have paperwork tracking their work when it comes to dicamba,” said Erick Springer, a representative for Ohio Spray Center, a John Deere equipment dealer in the Buckeye state, speaking at the 2018 Ohio AgriBusiness Association annual meeting. “This will be the new normal moving forward.”

In most states, applicators using dicamba in 2018 will have 14 days to fill in the necessary paperwork noting such factors as the amount sprayed, wind speed at the time of application (both start and finish), and how many acres were applied. However, in a few places such as Ohio, this initial paperwork must be completed on the day of application, with additional documents with even more details being finished within 14 days of the work.

But the paperwork goes beyond even this. According to BASF Representative Don Schneider, paperwork needs to be kept that details how sprayers were cleaned between dicamba and other herbicide application work. In other cases, speakers reported that some Ag retailers are even keeping paperwork on hand detailing what products are being transported to customer fields in their tender trucks, just in case any issues come up later.

Schneider explained why keeping all this paperwork could be important for custom applicators and Ag retailers, especially after the fact. “One of the things that throws people off is dicamba drift won’t show up with cupped leaves for a few weeks after the application was done,” he said. “It won’t affect older leaves. But it does show up once the new leaves start to appear. That’s why keeping track of everything done when using dicamba is important.”

(CropLife, February 5, 2018)  
<http://www.croplife.com/crop-inputs/custom-applicators-paperwork-new-normal/>

## **HERBICIDE PARAQUAT AGAIN LINKED TO PARKINSON’S SYMPTOMS IN BRAIN**

Scientists at the European Institute for the Biology of Aging are finding new information about how Parkinson’s disease manifests itself after exposure to the herbicide paraquat, in hopes of finding ways to prevent the progression of the disease. Despite a well-established body of scientific literature linking the paraquat to Parkinson’s, and a ban on the use of the chemical in the European Union that dates back to 2007, its use is still permitted in the U.S. Many health groups, including Beyond Pesticides and organizations like the Michael J Fox Foundation are calling on the U.S. Environmental Protection Agency stop the use of paraquat by denying its upcoming reregistration.

Published in the journal Cell Reports, this new research on Parkinson’s investigates the impact of “senescent” cells in the body. Senescent cells are those which, despite being able to divide, stop doing so in response to stress. This is an anti-cancer mechanism, as stress would otherwise cause the cells to multiply unchecked and create malignancies. Researchers suspected that despite the benefit of stopping cancer, senescent cells may be causing other problems in the body. Rather than dying, these cells can cause inflammation in the area around where the cell became senescent. Scientists focused in on one particular type of senescent cell, the astrocyte, which is, essentially cells that send and receive neurons in the brain. It was hypothesized that senescent astrocytes could be causing localized inflammation that harms the neurons associated Parkinson’s disease. Parkinson’s is characterized by the death of neurons associated with dopamine production. While paraquat has long been associated with the direct death of these neurons, this new research shows that additional neurological impacts may be at play.

Scientists carried out different investigations to test the impact of senescent astrocytes on the development of Parkinson’s. First, they compared human brain tissue between Parkinson’s patients and those without the disease. Compared to those that never contracted Parkinson’s, individuals with

the disease showed biomarkers associated with higher levels of senesced astrocytes. Researchers then looked at whether paraquat could cause senescence in a lab-cultured human astrocyte. Not only did paraquat stop astrocyte cell proliferation, it did better at inducing senescence than hydrogen peroxide and other traditional medical methods of inducing astrocyte senescence. Scientists found that, in line with epidemiological data that shows greater risk for Parkinson's from chronic, low dose exposure than acute, one-time exposure, exposing the cultured astrocytes to paraquat for a longer time at a lower dose resulted in a greater number of senesced cells.

A final test was conducted on laboratory mice. After exposing mice to levels of paraquat indicated in the literature to result in Parkinson's disease symptoms, results traced a very similar response to the human astrocyte cell culture. Senescent astrocytes increased after paraquat exposure, and mice displayed increased difficulties in movement and motor function. However, when researchers used a drug to flush senescent cells from the substantia nigra, the area of the brain where dopamine-producing cells are located, the Parkinson's-like symptoms of paraquat exposure subsided. "They are almost indistinguishable from the healthy mice," said Marco Demaria, PhD, to The Guardian.

"As far as we know, this is the first time it's been demonstrated in any neurodegeneration model that ablating [removing] senescent cells actually has an effect on disease progression," said study co-author Julie Anderson, PhD to The Scientist. However, Dr. Anderson also noted to The Scientist that, "right now, we don't know specifically what it is about paraquat that is inducing the senescence within the astrocytes."

This complex study provides a route to potentially treat not only Parkinson's but other diseases where senescent cells may play a role, such as ALS and Alzheimer's. Future research will need to uncover how to flush out specific senescent cells while leaving others, which may be valuable in other areas, such as healing wounds, alone. "We know the cells we want to target, but at the moment we don't have the therapeutics to do that," said Dr. Demaria

to The Guardian. "We cannot yet only target the bad cells."

While the treatment developed by researchers in this study is promising, a better approach to reducing and eliminating the spread of pesticide-related diseases is to simply take the chemical off the market. Any products linked to devastating diseases such as ALS, Alzheimer's, and Parkinson's have no place in our environment. While paraquat's use is restricted to certified applicators in the U.S., it can still be applied to agricultural land. Despite a ban on the chemical in Europe and a planned phase-out of use in China, over seven million lbs of paraquat were applied to 15 million acres of American farmland in 2015. (Beyond Pesticides, February 1, 2018)

<https://beyondpesticides.org/dailynewsblog/2018/02/herbicide-paraquat-linked-parkinsons-symptoms-brain/>

## **TEACHERS UNION FILES GRIEVANCE OVER BED BUGS AT SCHOOL**

As reported by WIVB, the Buffalo Teachers Federation (BTF) filed a grievance against the district for exposing teachers to unsafe and unhealthy working conditions. At issue is an ongoing bed bug problem at Buffalo Public School 37, WIVB reported.

Parents received a letter from the district last week that stated an individual in the building had possible bug bites, WIVB reported.

The Buffalo Teachers Federation (BTF) says school officials aren't doing enough to handle the problem.

A Buffalo parent, Michelle Eggleston, says her 7 year-old son goes to School 37. Eggleston told WIVB she pulled him out of school last Friday because the issue wasn't resolved. "I'm not sending my son to school and I bring home these bugs, because they're not going to pay for my house to be fumigated, and I can't afford it. Thursday, I went in, and there's stuff everywhere. People are throwing

out their classroom stuff, you know people are just- their hair's all tied up, they say they put rubbing alcohol on the kids, there's kids still missing from school, it's not taken care of," said Eggleston.

The teachers union says the issue should have been dealt with quickly and decisively.

(PCT Online, February 5, 2018)

<http://www.pctonline.com/article/buffalo-bed-bug-teachers-union-grievance/>

## **MISSOURI ORGANIC FAMILY FARM FACES RUIN AFTER HERBICIDE DRIFT**

Herbicide drift has been a major problem last year damaging millions of acres of crops in the U.S.

An organic farmer in Missouri has seen firsthand how destructive herbicide drift can be as it destroys his crops and threatens his livelihood and farm.

Mike Brabo and his wife Carol own Vesterbrook Farm in Clarksville, Missouri, about an hour north of St. Louis near the Mississippi River. The farm has been in Carol's family for nearly a century. The couple and their two children have worked the farm since 2008 after Mike survived thyroid cancer.

At that time Mike gained an appreciation for organic foods but found it difficult to afford them. "It's expensive to buy organic fruits and vegetables at Whole Foods," he said.

Mike and Carol decided to grow their own. It wasn't difficult to convert the farm to organic since no chemicals had been used on the land.

"There had been nothing grown on the farm but grass for 15 years," Mike said.

### **Sell Crops to 150-Member CSA**

Over the years, the Brabos have grown their organic farm. A lot of vegetables can be grown on 24 acres, and the Brabos have planted more than 60 including

lettuce, spinach, beets, kale, broccoli, cauliflower, asparagus, peppers, squash and tomatoes, among others. Some vegetables are grown in four high tunnel greenhouses. They also planted an orchard with apple, peach, plum and cherry trees and fruit bushes such as raspberries. They also grow herbs such as sage, parsley and cilantro.

They sell the fruits of their labor to 150 members of their community supported agriculture (CSA) program. Ironically, some of the CSA members are employees of a large, well-known multi-national agribusiness company in St. Louis.

Mike says his customers appreciate getting fresh organic produce. "Some people have a tough time finding organic food. There are not a lot of organic farms in our area."

Vesterbrook Farm uses organic practices but is not certified through the U.S. Department of Agriculture's National Organic Program. Instead, Mike chose Certified Naturally Grown (CNG) as their certifier.

"Their standards meet or exceed the USDA's," he said. "CNG has a much greater emphasis on sustainability with planting areas that bring in wildlife and beneficial insects."

The Brabos have seen growing success with their organic farm and CSA with sales increasing 10 percent per year.

Herbicides Damaged Crops, Loss of \$300,000, that is until this year. In June, a conventional farmer neighbor sprayed his soybean field with herbicides. Wind blew the herbicides over the Brabos' land.

This happened despite Mike having signs that say "Organic Farm, No Spray" signs and registering his farm with DriftWatch, a communication tool that enables farmers and pesticide applicators to work together to protect specialty crops using mapping programs.

The damage from the herbicide drift was total. "We found damage across our farm, which is 500 yards wide, including on the far north side of the property," Mike said.

Crops damaged included peppers, potatoes, tomatoes, basil; fruit trees were also damaged. "Everything on the farm, even ornamental trees, was damaged," Mike said.

The herbicides also killed half of the farm's bees, an estimated loss of \$12,000. Mike estimates the total loss at \$300,000.

Tests revealed that the herbicides responsible for the damage were glufosinate, clethodim and metolachlor.

Their Certified Naturally Grown certification was suspended, and the Brabos must essentially start over to remove the herbicide contamination from their farm. It will take three years at an estimated cost of \$1.6 million to remediate the damage and regain CNG certification. According to Mike, they will have to plant cover crops and replenish the soil with beneficial bacteria and mycorrhizal fungi.

### **"Worst Case Scenario is We Lose the Farm"**

Mike could grow vegetables and sell them as conventional but he refuses for fear that a customer would become sick because of the herbicide contamination.

"As a cancer survivor I'm not going to be complicit in putting something in the food supply that could make someone sick," he said.

For now, the Brabos are out of business for three years. "We aren't sure what we are going to do," Mike said. "The worst case scenario is we lose the family farm."

The Brabos are working with attorneys to reach a settlement with their neighbor's insurance company.

"We just want to be rightly compensated to grow healthy food for ourselves and repairing the soil and ecosystem so we can grow food for the St. Louis community," Mike said.

While the Brabos' farm wasn't damaged by dicamba, their ruined crops demonstrate the destruction it and other pesticides can cause to small family farms.

"This whole drift issue is so huge. How many farmers and vegetable growers have chemically drifted vegetables?" Mike said. (EcoWatch February 5, 2018) <https://www.ecowatch.com/organic-farm-herbicide-drift-2531606198.html>

## CEU Meetings

Date: February 6, 2018

Title: Oklahoma No-Till Conference  
Location: Grand Casino Hotel and Resort  
Contact: Josh Lofton (405) 744-3389  
www.croppingsystems.okstate.edu

CEU's:                   Category(s):  
1                           1a

Date: February 8-9, 2018

Title: DBi Services 2018 Annual Training  
Location: Hilton Garden Inn & Edmond Conference Center  
Contact: Jeri Richards (405) 478-1100  
www.dbiservices.com

CEU's:                   Category(s):  
10                           6

Date: February 9, 2018

Title: Avitrol Bird Management Certification  
Location: Hampton Inn Tulsa  
Contact: Deb Chambers (918) 630-3222  
www.vannetus.com

CEU's:                   Category(s):  
6                           10  
6                           11a

Date: February 15, 2018

Title: BWI Turf Seminar  
Location: Reed Conference Center  
Midwest City OK  
Contact: Tim Ruminer (405) 227-2985  
www.bwicompanies.com

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

Date: February 15, 2018

Title: BWI Pest Seminar  
Location: Reed Conference Center Midwest City  
OK  
Contact: Tim Ruminer (405) 227-2985  
www.bwicompanies.com

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

Date: February 21, 2018

Title: 2018 Ensystem CEU Workshop  
Location: Holiday Inn Express Durant OK  
Contact: Donald Stetler Jr. (281) 217-2965  
www.ceuworkshop.com

CEU's:                   Category(s):  
2                           3A  
2                           7A  
1                           7B  
1                           8  
6                           10

Date: February 21, 2018

Title: Target OKC Workshop 2018  
Location: Reed Conference Center Midwest City  
OK  
Contact: Jenifer Gonzalez (800) 352-3870  
www.target-specialty.com

CEU's:                   Category(s):  
2                           3A  
3                           7A  
2                           7B  
2                           8  
5                           10  
1                           All

Date: March 9, 2018

Title: Simplot Turf and Horticulture Seminar 2018

Location: Will Rogers Gardens Oklahoma City

Contact: Suzy Stevenson (405) 948-1084

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

Date: March 15, 2018

Title: Univar 2018 Annual CEU Training

Location: Clarion Hotel Broken Arrow OK

Contact: Deb Chambers (918) 630-3222

[www.vannetus.com](http://www.vannetus.com)

CEU's:	Category(s):
3	3A
2	7A
2	7B
1	8
6	10

Date: September 18, 2018

Title: 2018 Ensystem CEU Workshop

Location: Hampton Inn & Suites 85<sup>th</sup> Ave Tulsa OK

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

[www.ceuworkshop.com](http://www.ceuworkshop.com)

CEU's:	Category(s):
2	3A
2	7A
1	7B
1	8
6	10

Date: September 19, 2018

Title: 2018 Ensystem CEU Workshop

Location: Hampton Inn, 300 Meline Dr.,

Edmond OK

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

[www.ceuworkshop.com](http://www.ceuworkshop.com)

CEU's:	Category(s):
2	3A
2	7A
1	7B
1	8
6	10

## 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](http://www.allstarce.com)

Wood Destroying Organism Inspection Course

[www.nachi.org/wdocourse.htm](http://www.nachi.org/wdocourse.htm)

CTN Educational Services Inc

[http://ctnedu.com/oklahoma\\_applicator\\_enroll.html](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-ceu.htm>

## ODAFF Test Information

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

February 2018		March	
1	Enid	5	OKC
5	OKC	6	Goodwell
6	McAlester	8	Tulsa
8	Tulsa	13	Hobart
13	Altus	19	OKC
20	Ardmore	22	Tulsa
20	OKC		
22	Tulsa Cancelled		

Altus: SW Research & Extension Center  
16721 US HWY 283

Ardmore: Carter County Extension Office  
107 1<sup>st</sup> Ave Ardmore OK

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, Prairie Bldg

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

OKC: ODAFF Building 2800 N Lincoln  
BLVD Oklahoma City OK (**New Location**)

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

**Pesticide Safety  
Education Program**