

PESTICIDE REPORTS

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



June, 2017

CHEM

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JUNE TEST HELP SESSIONS COMING UP

Don't miss the next test help sessions OSU Pesticide Safety Education Program will conduct for 2017 in June. Mark your calendars the workshops will be held June 16th in Oklahoma City and June 28th in Tulsa.

The Tulsa session will be at the Tulsa County Extension Office at 4116 E. 15th. **The Oklahoma City Test help session will at the new Oklahoma County Extension Office 2500 NE 63rd.**

The help sessions will focus on information covered in the core and service tech tests. OSU PSEP will answer any questions over other category tests during this session.

Applicators should acquire and study the manuals before coming to the help session for optimum success. Study manuals can be purchased by using the manual order form available at our website <http://pested.okstate.edu/pdf/order.pdf> or by calling University Mailing at 405-744-5385.

ODAFF Testing fees are not included in the registration fee and must be paid separately.

Register online at the Pesticide Safety Education Program (PSEP) website at <http://pested.okstate.edu/html/practical.htm>.

Registration forms can also be downloaded from the website.

Registration will start at 8:30 and the program will run from 8:45 am to 12:30 pm at both locations. Testing will begin at 1:30 pm at both locations.

NO CEU's will be given for this program!

More Test Help Workshop dates are scheduled for 2017. Please go to the website below for the 2017 dates.

<http://pested.okstate.edu/html/practical.htm>

EPA REQUESTS COMMENT ON EXTENDING THE TIMELINE FOR PESTICIDE APPLICATORS RULE

U.S. Environmental Protection Agency
Administrator Scott Pruitt today proposed a 12-month extension for implementation of the revised final. Certification and Training of Pesticide Applicators (C&T) rule. EPA received feedback from states and stakeholders that more time and resources are needed to prepare for compliance with the rule. The extended timeline would enable EPA to work with states and provide adequate compliance and training resources.

“In order to achieve both environmental protection and economic prosperity, we must give the regulated community, which includes farmers and ranchers, adequate time to come into compliance with regulations. Extending the timeline for implementation of this rule would enable EPA to consult with states, assist with education, training and guidance, and prevent unnecessary burdens from overshadowing the rule’s intended benefits,” said Administrator Pruitt.

Last month, Administrator Pruitt met with Missouri Governor Eric Greitens to discuss the C&T rule, among other issues.

"Administrator Pruitt proved today that the old way of doing business at the EPA is over and done with. We presented them with a problem, and they took quick action to begin fixing it. Missouri farmers have waited a long time for common sense government, and now it's on its way. I'm grateful for this new leadership, and look forward to continuing to work with this administration to curb regulations that are killing jobs and hurting our farmers. It's time for government to get out of the way and let our farmer's farm," said Governor Greitens.

“We would greatly appreciate EPA extending the effective date of this rule. While we are supportive of the improved final rule released in January, States are facing a range of on-going logistical, resource, and capacity challenges. These challenges are amplified as they also implement other recent EPA requirements, such as the Worker Protection Standard. Extending the certification timeline will help alleviate some of those challenges by allowing states to work with our EPA partners to ensure adequate training resources and compliance assistance activities,” said Dr. Barbara P. Glenn, CEO of the National Association of State Departments of Agriculture.

Comments on this rule can be submitted to docket #EPA-HQ-OPP-2011-0183 via:
<https://www.regulations.gov/> on or before May 19, 2017 after the Federal Register notice publishes.

Administrator Pruitt recently launched his Back-to-Basics agenda for returning EPA to its core mission: protecting the environment by engaging with state, local, and tribal partners to create sensible regulations that enhance economic growth. Today's action is the latest evidence of Administrator Pruitt's commitment to cooperative federalism and getting the EPA back to basics.

Read the Federal Register notice:

<https://www.federalregister.gov/documents/2017/05/15/2017-09386/pesticides-certification-of-pesticide-applicators-rule-extension-of-effective-date>

Read more about the C&T rule:

<https://www.epa.gov/pesticide-worker-safety/updated-certification-standards-pesticide-applicators>

*This news release has been updated to properly reflect that EPA is taking public comments to determine whether to extend the final rule, not amending a final rule. An earlier draft that used language from the Federal Register was unclear. (EPA May 12, 2017)

<https://www.epa.gov/newsreleases/updated-epa-requests-comment-extending-timeline-pesticide-applicators-rule>

WSSA SURVEY RANKS MOST COMMON AND MOST TROUBLESOME WEEDS IN BROADLEAF CROPS, FRUITS AND VEGETABLES

A survey by the Weed Science Society of America (WSSA) rates Palmer amaranth (*Amaranthus palmeri*) as the most troublesome weed in North America. The most common weed was common lambsquarters (*Chenopodium album*). The 2016 survey of nearly 200 weed scientists in the US and Canada ranked the most troublesome and most common weeds in 26 different crops and non-crop areas.

Six weed species appeared on both the most troublesome and most common rankings: Palmer amaranth, common lambsquarters, horseweed/marestail (*Conyza canadensis*), morning-glory (*Ipomoea* spp), waterhemp (*Amaranthus* spp) and common ragweed (*Ambrosia artemisiifolia*).

“Weed scientists have confirmed multiple cases of herbicide resistance in all six of these weed species, except for the morning-glories where there is suspected resistance to glyphosate,” says WSSA science policy director Dr Lee Van Wychen. “While each of these species has evolved traits that make them widespread and tough competitors in broadleaf crops like soybeans and cotton, there is no question that their difficulty to control with herbicides has pushed them to the top of the list in this survey.”

Although listed as the most troublesome weed in cotton only, Palmer amaranth was ranked first in the overall survey based on the number of respondents who cited it as a problem. Common lambsquarters is widely distributed across the northern half of the United States and southern Canada. It is not surprising that it ranked as the most common weed in sugar beets, vegetable crops and pulse crops, such as dry edible beans, lentils and chickpeas.

WSSA plans to conduct habitat-specific weed surveys annually. The 2017 survey will focus on weeds in grass crops, pasture and turf, while the 2018 survey will focus on weeds in aquatic environments, natural areas and other noncrop settings.

The 2016 survey data is posted online at <http://wssa.net/wssa/weed/surveys>. For more information specific to herbicide-resistant weeds, see the International Survey of Herbicide Resistant Weeds, available at <http://weedscience.com>. (WSSA, May 23, 2017) <http://wssa.net/2017/05/wssa-survey-ranks-most-common-and-most-troublesome-weeds-in-broadleaf-crops-fruits-and-vegetables/>

FARMWORKER PROTECTION RULE PROVISIONS DELAYED BY EPA

EPA will extend the deadline to meet requirements of its new farmworker protection standard until guidance and training materials are ready to help state agencies implement the changes.

Wendy Cleland-Hamnett, acting assistant administrator for EPA's Office of Chemical Safety and Pollution Prevention, announced the extension in a May 11 letter to the National Association of State Departments of Agriculture.

"After careful evaluation, the EPA believes it appropriate to grant your request to extend the implementation of all revised provisions to the Agricultural Worker Protection Standard (WPS) until the necessary guidance and training have been completed which would allow state lead pesticide agencies to successfully implement the rule changes," Cleland-Hamnett said.

Cleland-Hamnett did not specify a new deadline for compliance, but NASDA and other farm groups have repeatedly asked for an extension until at least Jan. 2, 2018. Shortly before Donald Trump took office as president, the Obama administration denied an extension request from NASDA and the American Farm Bureau Federation.

Cleland-Hamnett said in her letter that EPA would "soon begin the regulatory process to formally extend the compliance date for all revised provisions of the WPS."

Published in November 2015, most of the rule's provisions were scheduled to go into effect Jan. 2, 2017, with the rest slated to become effective a year later.

"Protecting the health and safety of agricultural workers is a fundamental priority for NASDA

members," said NASDA CEO Barbara Glenn. However, she said that although states "have been working diligently with EPA to implement the agency's 2015 rule, the lack of needed education and training materials and other significant challenges with the rule have made the original implementation timeline unrealistic."

NASDA, numerous state agencies and AFBF said they are concerned that EPA has not clarified its requirements regarding Application Exclusion Zones (AEZ's) and "designated representatives," persons who would be authorized to receive information on behalf of farmworkers about chemicals used at farm operations.

The final rule would prohibit applications within 100 feet of workers for "aerial, air blast, fumigant, smoke, mist and fog applications" as well as applications that use very fine or fine droplet sizes. The AEZ would be 25 feet when the pesticide is sprayed using droplet sizes of medium or larger and from more than 12 inches above the plant medium, according to an EPA fact sheet.

But some state agencies have said that the AEZ provisions should not apply when worker housing is within the exclusion zone.

In August, the Association of American Pesticide Control Officials told Jack Housenger, then the chief of the EPA's Office of Pesticide Programs, that a number of states with strict standards for farmworker housing believe it makes more sense to allow workers to "shelter in place" instead of being forced to leave the AEZ and then returning soon after the application.

Oregon’s Occupational Safety and Health Administration, for example, is working on an alternative that would allow “occupants of protected spaces – including fully-enclosed housing – to remain indoors as protection from the potential hazard of spray drift.” The state is planning to propose regulations in June.

Environmental and farmworker safety groups opposed any extension, arguing that states have had ample time to comply.

In a letter to the agency May 11, groups including Farmworker Justice and Pesticide Action Network North America said that “EPA has gone to extraordinary lengths to ensure that growers are ready to implement the WPS within this timeframe and states are prepared to enforce it. Indeed, states with some of the largest agricultural production centers such as California, North Carolina and Florida are implementing the provisions of the WPS that went into effect earlier this year, demonstrating that EPA’s revisions can be implemented without meaningful loss in agricultural activity or revenue.”

In addition, they said that “farmworkers have one of the highest rates of chemically related illnesses of any occupational group, yet they are among the least protected people from occupational chemical exposures.”

NASDA and AFBF also have criticized the “designated representative” provision, claiming it would deprive farmers of a reasonable expectation of privacy for confidential business information. In December, the groups said the rule “subjects farmers to potential harassment and public criticisms for lawful use of EPA-approved pesticides.”

The WPS extension comes as EPA also is considering extending until May 2018 the effective date of a rule establishing new requirements for those who apply restricted-use pesticides. The rule

was originally scheduled to go into effect in March but has been extended until June 5 while the agency considers comments on its May 15 extension proposal. (Agri Pulse, May 31, 2017) <https://www.agri-pulse.com/articles/9303-farmworker-protection-rule-provisions-delayed-by-epa>

MOSQUITOES AND TICKS – LITTLE PESTS CARRY BIG RISKS

While researchers say it is difficult to determine whether unusual weather patterns this winter and spring will lead to larger mosquito and tick populations in the Upper Midwest this summer, one thing is certain - anyone planning to spend time outdoors should take steps to avoid the potentially dangerous pests.

“Every year we face the same risks and every year it is wise to take precautions,” said Catherine Hill, Purdue University medical entomologist. “If you’re going to be outside anytime from early spring to late summer and early fall, you need to be thinking about prevention and protection.”

Both mosquitos and ticks can carry a number of pathogens that could pose a serious threat to people and animals. Mosquitos can transmit several viruses that can cause severe encephalitis (inflammation of the brain and spinal cord), including Zika and West Nile virus, among others. Ticks are known carriers of Lyme disease, which infects about 300,000 people each year. They can also carry less common but equally dangerous conditions such as anaplasmosis, babesiosis, Powassan and Rocky Mountain spotted fever.

To avoid mosquito bites, the best advice is to stay indoors during peak biting times, which is typically dusk to dawn for the mosquitoes that transmit West Nile virus and during the day for mosquitoes that transmit Zika.

“If you have to be outside during those times, it is best to wear clothing that can help prevent bites,” Hill said. Appropriate wardrobe choices include long-sleeve shirts and long pants tucked into socks. It is also advisable to use an effective repellent, such as products containing a minimum of 20 to 30 percent of diethyltoluamide, commonly known as DEET. The Centers for Disease Control also recommends products containing picardin, lemon of eucalyptus and IR3535. More information is available on the CDC website.

Mosquitoes breed in standing water and their larvae and pupae need water to develop. Homeowners can help reduce mosquito populations in their back yard by dumping standing water out of buckets and wading pools, keeping lawns mowed and removing piles of brush or yard waste, Hill said.

Ticks can thrive in back yards as well, particularly those adjacent heavily-wooded areas, in tall grass and brush and under leaf piles. Hill said the warmer winter and wet spring could have created ideal conditions for ticks in some areas, although conditions vary significantly from region to region.

“We’ve already been getting plenty of ticks,” Hill said. “They’re certainly active.”

The best defense against ticks is to wear light-colored clothing with long sleeves and pants and to use a U.S. Environmental Protection Agency-approved repellent. It is also a good idea to check your body and clothing for ticks immediately after coming back indoors.

“If you can remove a tick within 24 hours, you have a very good chance of catching them before they transmit,” Hill said. Ticks feed on blood and tend to attach themselves to tender areas of the skin, including around the hairline and in the armpit and groin.

To remove a tick, apply a pair of fine-tipped tweezers to the skin, grasp the tick by the mouthparts where it is attached to the skin, and pull upwards, being careful not to break the tick. Do not try to remove a tick by burning it with a match, smothering it with mayonnaise or freezing it. That could cause the tick to regurgitate back into the wound, increasing the risk of infection, Hill said.

It is also important to be aware of the symptoms of tick-borne diseases, she added. These can include headache, fever, fatigue, rash and muscle aches and pains. Anyone who has been in a tick habitat or has a tick bite should seek immediate medical attention if they experience those symptoms, Hill said.

For more information on mosquito and tick prevention, go to the Purdue medical entomology page. (PCT Online May 24, 2017)
<http://www.pctonline.com/article/protect-against-mosquitoes-ticks/>

US HOUSE OKS BILL TO UPROOT CWA PESTICIDE PERMIT

The US House of Representatives has again approved legislation to eliminate a controversial requirement that pesticide applicators obtain Clean Water Act (CWA) permits. This is the fourth time in six years that the House has passed the bill, which amends the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to nullify the CWA permitting requirement for any federally approved pesticide.

The legislation ³/₄ called the "Reducing Regulatory Burdens Act" ³/₄ easily passed the Republican-controlled House on May 18th by a vote of 256 to 131.

The House has previously approved the bill in 2011, 2015 and 2016 yet those measures failed to gain any traction in the US Senate amid veto threats from then-President Barack Obama. But with the change in administration and a larger Republican majority in the Senate, supporters may have good cause to be optimistic about the potential to finally get the bill signed into law.

Supporters say that the measure is needed to reverse the 2009 court ruling that required the US EPA to develop a CWA National Pollutant Discharge Elimination System (NPDES) permit for pesticide applications near or into federally protected waters. The decision, handed down by the US Court of Appeals for the Sixth Circuit, found that pesticides are pollutants under the CWA and must be subject to the NPDES programme. The EPA subsequently finalised the NPDES permit requirements in October 2011.

The EPA has repeatedly said that the NPDES permit has not caused any problems for farmers or pesticide applicators, but it has drawn the ire of the pesticide industry, farm groups, mosquito control officials and state officials who argue that it is unnecessary and redundant.

Requiring NPDES permits for pesticide applications is "burdensome, costly and duplicative" Representative Rodney Davis, an Illinois Republican, told colleagues. "And it provides no additional environmental or public health protection."

Other critics said that the permit requirements impede efforts to control mosquitoes that may carry infectious diseases, including Zika and West Nile Virus. "Cities that need to conduct routine mosquito abatement should not have to do it with one hand tied behind their back," said Representative Bob Gibbs, an Ohio Republican and lead sponsor of the bill.

The majority of Democrats in the House opposed the bill, arguing that the permit already provides broad latitude to allow pesticide applications needed to address public health emergencies and provides a critical means for the EPA to track pesticide usage. "The CWA in no way hinders, delays or prevents the use of approved pesticides for pest control operations," said Representative Grace Napolitano, a California Democrat.

"I support eliminating unnecessary regulatory burdens but the regulations here are far from unwarranted," added Representative Elizabeth Esty, a Connecticut Democrat. "The bottom line is limiting the amount of pesticides that are sprayed into our lakes, rivers and streams, and into our drinking water supplies is common sense." (Pesticide & Chemical Policy/AGROW, May 25, 2017)

HUGE VICTORY: COURT REVOKES EPA'S APPROVAL OF NANOSILVER PESTICIDE

The U.S. Court of Appeals for the Ninth Circuit concluded Tuesday that the U.S. Environmental Protection Agency (EPA) unlawfully allowed a novel antimicrobial pesticide product "NSPW-L30SS" (previously "Nanosilva"), made with silver nanoparticles, for use in an unknown number of textiles and plastics.

The court voided EPA's approval, preventing the product from entering the marketplace and the environment. The opinion is the first of its kind to address EPA's responsibilities in issuing conditional registrations of new pesticides such as this one.

"The court's decision recognizes the need for EPA to ensure that any pesticide approvals are in the public interest and in so doing protect our communities and environment," Sylvia Wu, staff attorney for Center for Food Safety (CFS) and counsel in the case hailed the decision, said.

Nanotechnology is a powerful new platform technology for taking apart and reconstructing nature at the atomic and molecular level.

Nanomaterials are rapidly entering the consumer marketplace, including the food industry. Particles at the nano scale—1/100,000th the width of a human hair—already can be found in items ranging from sandwich bags and cutting boards to paints and sunscreens. The same unique properties that make nanomaterials desirable to industry also raise unique health and environmental risks.

The court's opinion recognized this, noting that nanosilver may present significantly new risks to human health and the environment due to its smaller particle size. The opinion pointed out that EPA's own Scientific Advisory Panel had found that nanomaterials may enter "specific tissues, cell membranes or inside cells," and its size means it can also act as a "carrier for other toxic chemicals."

"We applaud the court for recognizing that these novel nanomaterials have different properties and can create novel risks compared to conventional materials," said Jaydee Hanson, policy director at International Center for Technology Assessment (ICTA), CFS's sister organization and party to the case. "This important decision will improve regulation of pesticides and nanomaterials."

In its ruling, the court ruled that EPA had failed to show that "conditional approval" of NSPW-L30SS as a new pesticide "failed to support that [public interest] finding with substantial evidence." EPA had conditionally registered the controversial pesticide back in 2015. Under the Federal Insecticide, Fungicide, and Rodenticide Act, EPA can only conditionally register new active ingredients such as nanosilver particles if EPA determines that the registration is "in the public interest."

In the case of NSPW-L30SS, EPA stated that the registration could "potentially" reduce the amount of silver released into the environment, if all users of conventional silver pesticide products switched

to nanosilver and no new users started using nanosilver. The Ninth Circuit rejected these assumptions, holding that merely stating that a pesticide "has the 'potential' to be in the public interest" falls short of what the law requires. The court therefore revoked the conditional registration of the pesticide in whole.

CFS and ICTA have long sought greater oversight of nanomaterials, starting with a 2008 legal petition to EPA and lawsuit that led to more regulatory oversight of the new technology. Nanosilver products are the most incorporated nanomaterial in consumer products, commonly used as a powerful antimicrobial agent. CFS has identified more than 400 nanosilver products on the market today. Because there are no labeling requirements for nano-scale products, many more likely have been commercialized without going through registration. In July 2015, shortly after EPA's approval, CFS and ICTA challenged EPA's conditional registration of the antimicrobial nanosilver pesticide product. The petition for review was consolidated with a similar challenge filed by the Natural Resources Defense Council.

EPA's approval of NSPW-L30SS was another example of the agency's reliance on conditional registration to allow products into the market without sufficient and legally required data. In August, 2013, the U.S. Government Accountability Office issued a report, concluding that "EPA does not have a reliable system to track key information related to conditional registrations, including whether companies have submitted additional data within required timeframes." Without this court decision, this deficiency would allow conditionally registered pesticides that have not been fully evaluated, such as NSPW-L30SS, to remain on the market for years without EPA's receipt and review of the data registration is conditioned upon. (EcoWatch, May 31, 2017)

<https://www.ecowatch.com/epa-nanotechnology-ruling-2427800980.html>

MONSANTO URGES US COURT TO DISMISS GLYPHOSATE LABEL SUIT

Monsanto has called on a US court to dismiss a lawsuit alleging that the company's labels for its Roundup (glyphosate) herbicide products are misleading and deceptive. The company contends that the allegations, brought by the Organic Consumers Association and Beyond Pesticides, are baseless and pre-empted by federal pesticide law.

The complaint at issue focuses on Monsanto's use of the phrase that glyphosate "targets an enzyme found in plants but not in people or pets". The plaintiffs argue that the label claim is false because the enzyme in question is found in "beneficial bacteria" within the digestive systems of humans and animals. They contend that the Roundup labels are misleading as they imply that glyphosate will not harm human health and allege that Monsanto is violating consumer protection laws.

Monsanto removed the case from the Washington DC Superior Court to the US District Court for the District of Columbia and on May 18th filed a motion to dismiss the case. The company says that the claims are pre-empted by the US EPA's regulation of pesticide labels under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Monsanto also argues that the allegations that the Roundup label is "false" are based on an "absurd misinterpretation" of the label. The label makes the "undisputedly accurate claim" that Roundup works by targeting a plant enzyme and "says nothing" about gut bacteria, the company says in its motion. The plaintiffs fail to "plausibly suggest" that any "reasonable consumer" would misinterpret the Roundup label and do not allege how glyphosate would target "gut bacteria" if the product is used in accordance with the label.

"The product and use at issue, for which plaintiffs seek relief, is a consumer's use of Roundup in spraying weeds around his or her home," Monsanto explains. "Because the enzyme that Roundup targets in plants does not exist in mammals, if one were to

accidentally spray Roundup on one's hand while using it, one's hand would not wither and die like a broadleaf weed. Plaintiffs do not claim otherwise."

Legal precedent may be on Monsanto's side. A similar suit was rejected last year by the US District Court for the Central District of California, which agreed that the false advertising claims made by the plaintiffs about the Roundup labels were pre-empted by the FIFRA. (Pesticide & Chemical Policy/AGROW, May 24, 2017)

UF STUDY: 'PRETTY' TERMITES DO THE MOST DAMAGE

Termites may be "pretty" in the eyes of a scientist, but don't let good looks fool you: The prettier termites are more destructive than their uglier counterparts, a University of Florida researcher says.

Scientists who deem subterranean termites as "pretty" say they sport symmetrical traits and are more likely to come from mature colonies, said Thomas Chouvenc, a research assistant in entomology. So-called "ugly" termites have asymmetrical traits, he said. They generally come from young colonies. Such "ugly" termites developed under stressful conditions, are short-lived and not very efficient at maintaining the colony.

Thus, the older and larger the colony is, the prettier the termites are. And mature colonies can cause a lot more damage, said Chouvenc, a researcher with the UF Institute of Food and Agricultural Sciences.

"If you have a mature colony with a million termites at 100 percent of their capacity, your house may be in trouble," Chouvenc said. "If the colony is very young, with just a few hundred termites in poor shape, then it would take more time for them to damage a structure. In the end, mature termite colonies are the ones doing the most economic damage."

Plenty of economic damage, in fact. Asian subterranean termites are among the most damaging termites in the world, especially in the tropics, and represent a significant part of the \$40 billion annual cost worldwide, Chouvenc said. This species was recently introduced in Florida and is spreading fast.

In their quest to discover more about how the Asian subterranean termite brings up its young and how that impacts larval development, Chouvenc and UF/IFAS entomology professor Nan-Yao Su conducted a study in which they examined the symmetry of the soldier caste of the Asian subterranean termite. They studied 459 soldiers from 73 six-month-old colonies to see how well they nurtured the young termites.

Younger colonies produced less-symmetrical termites, while more mature ones produced more symmetrical ones, the study showed. That's because younger colonies are under more stress. They only have a king and queen to find food and groom the larvae, said Chouvenc, an entomologist at the Fort Lauderdale Research and Education Center. Once the larvae grow into workers, they can provide brood care to the newly laid eggs, so as the colony grows, the investment in caring for "baby" termites improves over time.

"A termite with poor symmetrical traits looks all messed up, like it was hit by a car," said Chouvenc. "On the opposite end, termites raised in a mature colony in great conditions develop smoothly and are good-looking specimens."

Here's how baby termites can grow into "good looking" or "ugly" adults: The more worker termites in a colony, the better off the larvae – or "babies" – will be. Chouvenc compared the situation to nursing care in most animal societies, including humans.

If you have only two nurses for 10 baby termites, they don't receive much attention, food and bath time, and the babies will develop in stressful conditions, resulting in asymmetrical babies, Chouvenc said. As the colony grows, you have 10 nurses for 10 babies, making better conditions to grow.

Because young colonies have small numbers of poorly efficient termites, compared to mature colonies, there is an incentive to eliminate such young colonies before they grow too big, to prevent the damage from occurring in the first place.

The latest UF/IFAS study is published in the journal *Insectes Sociaux*

CEU Meetings

Date: July 27, 2017

Title: BWI Tulsa Summer Seminar

Location: Bass Pro Shoppes Broken Arrow OK

Contact: Kelly Keech (918) 693-6461

Course #: OK-17

CEU's:	Category(s):
2	3C
2	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

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 June/July are as follows:

June		July	
6	Goodwell	10	OKC
6	OKC	13	Tulsa
8	Tulsa	24	OKC
19	OKC	27	Tulsa
22	Tulsa		

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**