

PESTICIDE REPORTS

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



June, 2015

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DRIFT PREVENTION GUIDELINES

With plenty of weeds growing after the May rains June will be a busy time to control weeds in many areas. With any herbicides or any other pesticide application drift prevention steps should be followed to prevent off target movement.

1) Select a nozzle that produces coarser (larger) droplets

Use nozzles that provide as coarse (large) droplet as practical to provide necessary coverage. Some labels may require specific droplet size for their use. Nozzle selection guides should give you a listing of droplet size provided by each nozzle. New air induction nozzles help produce larger droplets.

2) Use lower pressure on the sprayer and larger nozzles when possible

Higher pressures generate many more small droplets (less than 100 microns). Under most conditions, do not exceed 40 to 45 psi. Use larger nozzles to increase flow rate instead of higher pressure. Larger nozzles allow more volume (GPA) at lower pressures.

3) Lower boom height

Wind speed increases with height. If boom height is a few inches lower, off-target drift is reduced. Keep boom as close as possible to the crop being sprayed.

4) Spray when wind speeds are low to avoid off target movement.

More spray will move off-target as wind increases. Some labels may specify specific wind speeds to make an application. Check wind speed with a hand held anemometer or the mesonet system before spraying.

5) Spray when wind is moving away from sensitive crops

Leave a buffer zone 50 to 100 feet in width (or larger if needed) if sensitive plants are downwind. Spray the buffer zone when the wind changes direction away from the sensitive crop.

6) Do not spray when the air is very calm

Calm air, or an inversion, reduces air mixing, which means spray can move slowly downwind. Inversions generally occur in early morning or near bodies of water.

7) Avoid high volatile formulations

Avoid ester formulations of certain types of herbicides which can easily volatilize in warm temperatures (above 80 F). Amine formulations are very unlikely to volatilize but can still cause particle drift.

8) Check ODAFF's pesticide sensitive viewer for pesticide sensitive crops

<http://maps.oda.state.ok.us/pslvags/>

9) Follow label recommendations to avoid drift with pesticides.

Labels may have specific requirements or directions for use to avoid drift of those products. Labels may require certain nozzles, droplet size, or wind speed requirements be met to avoid drift.

10) Select the time when drift is less likely to occur.

Certain time periods may be best for applications. On many occasions applications may have to be delayed days or weeks for favorable conditions.

EPA RESPONDS TO CITIZEN PETITION FOR A BAN ON TRICLOSAN

EPA is responding to the Citizen Petition for a Ban on Triclosan filed by Food & Water Watch and Beyond Pesticides by granting one request and denying others. The petition requested that EPA take a variety of actions – including cancelling registered pesticide products containing triclosan and assessing risks – under the Federal Insecticide, Fungicide, and Rodenticide Act; Federal Food, Drug, and Cosmetic Act; Clean Water Act; Safe Drinking Water Act; and Endangered Species Act (ESA).

EPA has determined that the currently available information does not support cancelling registered pesticide products containing triclosan. EPA will however evaluate and conduct a biological assessment of the potential for effects on listed species under the ESA in the ongoing triclosan registration review, the process to review pesticide registrations to ensure each pesticide continues to satisfy the statutory standard for registration.

As an antimicrobial pesticide, triclosan is used as a preservative in industrial, institutional, and residential settings to protect items from odor and stain-causing bacteria, fungi, mold, and mildew. The agency has previously determined that pesticide products containing triclosan will not cause unreasonable adverse effects on human health or the environment and is currently engaged in reevaluating the risks posed by triclosan including a

review of the human health and ecological risks, endangered species assessment, and risk assessment process for biosolids. Depending on the results of these assessments, the agency may consider new regulatory action if warranted.

The petition, supporting documents, comments, EPA's decisions with respect to the petition, and response to significant public comments can be found in the docket for this action at www.regulations.gov, Docket ID # [EPA-HQ-OPP-2010-0548](http://www.epa.gov/oppfead1/cb/csb_page/updates/2015/triclosan.html). (EPA May 15, 2015) http://www.epa.gov/oppfead1/cb/csb_page/updates/2015/triclosan.html

EPA TAKES STRONG STEPS TO BETTER PROTECT BEES FROM PESTICIDES

Proposed restrictions will prohibit use where bees are present for commercial pollination

To further support President Obama's Federal Pollinator Strategy, the U.S. Environmental Protection Agency is proposing additional restrictions on the use of acutely toxic pesticides during times when bees are most likely to be present.

Applications of acutely toxic pesticides would be prohibited when flowers are in bloom when bees are brought to farms for pollination services. While the proposed 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.

EPA is also encouraging states and tribes to reduce pesticide exposure by developing pollinator protection plans. The purpose of these plans is to support pollinator health by facilitating local communication among beekeepers, growers and others and to put into place tailored measures to protect pollinators.

Growers routinely contract with honey bee keepers to bring in bees to pollinate their crops that require insect pollination. Bees are typically present during the period the crops are in bloom. Application of pesticides during this period can significantly affect the health of bees.

EPA invites comments on the proposal for thirty-day comment period at www.regulations.gov in docket EPA-HQ-OPP-2014-0818.

EPA will accept public comments on the proposal starting May 29, 2015. (EPA May 28, 2015) http://www.epa.gov/oppfead1/cb/csb_page/updates/2015/protect-bees.html

DOW TO SELL SULFURYL FLUORIDE TO DOUGLAS PRODUCTS

The Dow Chemical Company has signed a definitive agreement to sell its Dow AgroSciences post-harvest and structural fumigant business, sulfuryl fluoride, to Douglas Products. This transaction is expected to close in the second quarter of 2015. The divestment includes fumigants sold under the brand names Vikane and ProFume. The transaction also includes associated technology, business know-how, certain intellectual property, customer lists and contracts.

In an emailed response from a Dow spokesperson, the company noted that it "believes that this business segment has a greater opportunity to reach its full potential under a different owner and the transaction aligns to the company's rigorous focus on streamlining our portfolio aligned to our market segment driven strategy in pursuit of rewarding shareholders."

The Dow Chemical company developed Vikane in the late 1950s and began commercially selling the gas fumigant in 1961. The product has been used to protect more than 2 million buildings in the Gulf States, California and Hawaii. ProFume, registered by EPA in 2004, was introduced as a replacement

for methyl bromide, with tolerances for dried fruits, tree nuts, cereals/small grains and small grain processed products. In 2005, ProFume's label was expanded to include uses for food processing facilities, pet food facilities, warehouses, shipping containers and more.

Dow AgroSciences also has developed a stellar industry-wide reputation for its support and stewardship of Vikane and ProFume. Recently, Dow AgroSciences worked with NPMA and its members (and other non-industry groups) to block an EPA proposal that would have phased out of food tolerances for sulfuryl fluoride. The industry backed an amendment to last year's Farm Bill that directed the Administrator of the EPA to exclude non-pesticidal sources of fluoride from aggregate exposure assessments required under section 408 of the Federal Food, Drug and Cosmetic Act (FFDCA) when assessing tolerances associated with residues from the pesticide.

Russ Ives, president of Troy, Mich.-based Rose Pest Solutions, whose company is involved in commodity fumigations, said he "greatly appreciated over the years the product stewardship support that Dow has provided with sulfuryl fluoride. They have been a great resource for us. I am hopeful that Douglas will demonstrate that same type of product support and user support in this market that is not only important to us – as a service provider – but is really very critical to food supply and also to the protection of business and residential structures."

Douglas Products, based out of Liberty, Mo., is a leading manufacturer of specialty chemical products for agricultural, sanitary sewer, and thermal fluid applications.

A Dow spokesperson told PCT that approximately 10 Dow employees are expected to transition to Douglas Products at close, and that until the transaction closes, "Dow employees will remain committed to our high product stewardship standards, and the industry can count on us to operate our business as usual. Additionally, our team is working closely with Douglas Products to achieve a smooth transition for our customers. Our top priority is maintaining a consistently high level

of service and stewardship to avoid any disruption to quality, customer service, safety or product delivery as a result of this transaction."

The remainder of the Dow AgroSciences global pest control business is not in the scope of this transaction, and the Dow spokesperson told PCT that company will continue to actively support and engage in the T&O and Pest Management industries. "In fact, we will continue to invest in and innovate for our T&O and subterranean termite businesses. We are eager to introduce our new and novel business platform to the pest management industry, which we expect to pilot in the next 12 months." (PCT Online May 8, 2015)

<http://www.pctonline.com/dow-sells-sulfuryl-fluoride.aspx>

STUDY: WEED DIVERSITY PRIMARILY INFLUENCED BY GEOGRAPHY

The potential long-term impacts of glyphosate-resistant crops on biodiversity of the agricultural landscape have been the subject of controversy.

A new article in the journal *Weed Science* describes a large-scale study analyzing the effects of glyphosate-resistant crops on the diversity of agricultural weeds. This study examined 156 field sites with at least a 3-year history of growing glyphosate-resistant crops in six states: Illinois, Indiana, Iowa, Mississippi, Nebraska, and North Carolina. Researchers analyzed the effects on weed communities of cropping system and crop rotation, including frequency of planting glyphosate-resistant crop

In total, 139 weed species were identified across all sites. Three species were common to all states, 79 were unique to one state, and 46 were unique to a single site. Diversity of the weed flora and weed soil seedbank was more strongly influenced by geographic location and hardiness zone than by any

other factor. The previous year's crops and cropping systems also affected weed community composition, but deployment of the glyphosate-resistant crop trait did not.

"A primary conclusion from this research," author Bryan G. Young said, "is that the diversity of weed communities is not driven solely by the glyphosate-resistant crop trait. Rather, the overall crop production management system and geography in which the glyphosate-resistant crop is integrated will have a greater impact on the diversity of agricultural weeds in the soil seedbank."

Full text of the article in Weed Science can be accessed at

<http://wssajournals.org/doi/full/10.1614/WS-D-14-00089.1>

(CropLife May 27, 2015)

<http://www.croplife.com/crop-inputs/herbicides/study-weed-diversity-primarily-influenced-by-geography>

US JUDGE DISMISSES ENVIRO CHALLENGE TO CYAZYPYR APPROVAL

A federal judge has dismissed a challenge to the US EPA's registration of DuPont's insecticide, cyantraniliprole (trade-marked as Cyazypyr), ruling that environmentalist groups filed their complaint in the wrong court. At issue is a lawsuit filed last June by the Center for Biological Diversity (CBD) and several other groups, which alleged that the EPA fell short of its responsibility to ensure that approved uses of the insecticide do not pose undue harm to endangered species.

The EPA registered cyantraniliprole in February 2014 for a wide array of agricultural and residential uses. The Agency said that the risks from the pesticide were not unreasonable compared to the

benefits. It noted that cyantraniliprole was an alternative to a number of other insecticides that posed greater potential risks to human health and the environment, including organophosphates, carbamates, pyrethroids and some neonicotinoids.

But the CBD, along with the Center for Food Safety and Defenders of Wildlife, says that the EPA ran afoul of the Endangered Species Act's (ESA) consultation obligations. Their complaint argued that the Agency found that the use of cyantraniliprole might affect hundreds of listed species or adversely modify critical habitat, but failed to initiate formal consultation with the wildlife agencies to consider mitigation measures to ensure that the listed species are protected. The plaintiffs said that the case belonged in a district court because they were challenging the EPA's alleged failure to comply with the ESA, a failure they contend merits the court blocking the Agency's registration of cyantraniliprole. The groups brought the challenge under the citizen suit provision of the ESA, which they contend gives jurisdiction to the district court.

But the EPA took a different view, arguing that the complaint is essentially a challenge of an action carried out under the authority of the Federal, Insecticide, Fungicide and Rodenticide Act (FIFRA). The statute "specifically" dictates that the court of appeals has "exclusive jurisdiction" over challenges to FIFRA registrations, the Agency said in its motion.

US District Court Judge Gladys Kessler sided with the EPA, noting that the Agency's alleged failure to consult was "inextricably intertwined" with its registration decision and thus the complaint was governed by the FIFRA. "Specifically with respect to FIFRA registration, the DC Circuit has held that plaintiffs must bring all challenges to an order's validity before the courts of appeals, even when a separate statutory scheme grants jurisdiction to the district courts," Judge Kessler wrote in the May 14th ruling.

The Judge only focused on the jurisdictional question and did not consider the merits of the plaintiffs' allegations. DuPont, Syngenta and CropLife America intervened in the case in support

of the EPA. The controversy is, however, likely not to be over. The plaintiffs also filed a petition for review with the US Court of Appeals for the DC Circuit and look set to pursue the lawsuit with that Court.

(Pesticide & Chemical Policy/AGROW, May 19, 2015)

USDA STUDY: GLYPHOSATE APPLICATION MORE PREVALENT IN SOYBEANS THAN CORN

Glyphosate—known by many trade names, including Roundup—has been the most widely used pesticide in the United States since 2001. It effectively controls many weed species, and it generally costs less than the herbicides it replaced. Crop producers can spray entire fields planted with genetically engineered, glyphosate-tolerant (GT) varieties of corn, cotton, soybeans, and other crops, killing the weeds but not the crops. This practice makes it easier to manage weeds using less tillage, which can help reduce soil erosion as well as improve soil quality and water conservation.

However, glyphosate is becoming less effective as weed resistance mounts—14 glyphosate-resistant (GR) weed species have been documented in U.S. crop-production areas. GR weeds can reduce crop yields and increase weed-control costs, and recent surveys suggest that the amount of affected cropland is increasing.

Sole reliance on glyphosate by many producers is believed to be the primary factor in the evolution of weed resistance to glyphosate. Using glyphosate as the only weed control tactic can select for resistance to this herbicide by controlling susceptible weeds while allowing more resistant weeds to survive, propagate, and spread. Using herbicides with different mechanisms of action, however, and rotating their use over time can result in fewer herbicide-resistant weeds. This feature discusses the role of current herbicide use patterns in the evolution of glyphosate-resistant weeds, the effects of glyphosate-resistant weeds and resistance

management on returns to corn and soybean production, and incentives to encourage resistance management.

Glyphosate Use Is More Widespread in Soybean Production Than in Corn Production

Since the commercial introduction of GT crops in 1996, U.S. producers have planted GT varieties and applied glyphosate on more soybean acres than corn acres. The proportion of acreage planted with herbicide-tolerant (primarily GT) varieties reached 93% for soybeans and 85% for corn in 2013. The share of soybean acres treated with glyphosate (alone or with other herbicides) increased from 25% in 1996 to more than 90% in 2006-2012, while the share of corn acres treated increased steadily from 4% of acres in 1996 to 73% in 2010, as the use of other herbicides decreased. While a greater quantity of herbicide active ingredient was applied to corn than to soybeans, herbicides other than glyphosate accounted for the majority of the herbicide applied to corn. As a result of these differences in herbicide use patterns, more glyphosate (in pounds of active ingredient) was applied to soybean fields than to corn fields. Further tillage—which controls weeds without promoting herbicide resistance—was used on a greater percentage of corn than soybean acreage, whereas no-till was used on a greater percentage of soybean acreage.

Read the full story on the USDA ERS site here. <http://www.ers.usda.gov/amber-waves/2015-may/managing-glyphosate-resistance-may-sustain-its-efficacy-and-increase-long-term-returns-to-corn-and-soybean-production.aspx#.VWyElcLbLvU>

(CropLife, May 13, 2015) <http://www.croplife.com/crop-inputs/herbicides/usda-study-glyphosate-resistance-more-prevalent-in-soybeans-than-corn/>

CALL FOR PROBE INTO ALLEGED HARASSMENT OF USDA SCIENTISTS

USDA scientists researching pesticides, notably glyphosate herbicide as well as neonicotinoid insecticides, are being “harassed” by management and finding their work “censored or suppressed,” environmentalist groups say in a letter asking for an official investigation. Sent to USDA Inspector General Phyllis Fong and the leaders of the White House Task Force on Pollinator Health, the letter references allegations published in March by the Public Employees for Environmental Responsibility (PEER).

The organization says that more than ten USDA scientists researching agricultural chemicals have faced consequences or investigations when their work has questioned the health and safety of pesticides. These scientists have been "ordered to retract studies, water down findings, remove their name from authorship and endure long indefinite delays in approving publication of papers that may be controversial", according to the PEER. The group also says that scientists targeted by industry complaints "find themselves subjected to disruptive investigations, disapprovals of formerly routine requests, disciplinary actions over petty matters and intimidation from supervisors focused on pleasing 'stakeholders.'"

The PEER filed a citizen petition with the USDA calling for a revamp of its scientific integrity policy, calling on the agency to prevent political suppression or alteration of studies and to lay out clear procedures for investigating allegations of scientific misconduct and protecting whistleblowers. The group argues that the USDA's existing scientific integrity policy "actively enables" Department managers to suppress and alter scientific work for their policy implications, regardless of their technical merit.

"It also appears clear that agribusiness interests, such as the Monsanto Corporation, have access to top agency managers and are invited to lodge complaints and concerns about the published work of agency scientists," according to the PEER petition.

The USDA says that the allegations are unwarranted, but the coalition of environmental groups is unconvinced. The PEER's report is "extremely troubling", according to the May 5th letter, sent by Beyond Pesticides, the Center for Biological Diversity, Friends of the Earth and other environmental, farmworker and beekeeping groups. "We urge you to conduct a thorough investigation into this matter, make its investigation publicly available once it's complete and take necessary steps to ensure that USDA maintains scientific integrity and never allows industry to interfere with the work of the agency and the interests, health and safety of the American public," the groups say in their letter to Inspector General Fong.

The letter is the latest bid by environmentalists to pressure the USDA, the EPA and the White House to restrict pesticide use as part of the federal strategy to increase protection for pollinators. The Obama administration created the task force last June. Among a host of recommendations, it specifically called on the EPA to expedite its efforts to assess the effects of neonicotinoids and other pesticides on bees, highlighting the view that pesticide exposure is one of "several stressors" that are causing pollinator declines.

The task force is expected to release its final report later this month. (Pesticide & Chemical Policy/AGROW, May 8, 2015)

US EPA PROPOSES NEW PESTICIDE LIMITS TO SAFEGUARD BEES

The US EPA has proposed new restrictions on a lengthy list of widely used pesticides as part of its effort to protect commercial honey bees. The Agency says that it wants to prohibit foliar applications of pesticides when crops are in bloom and commercial bees have been brought in for pollination services.

The proposal would impact 76 pesticides, including several neonicotinoid insecticides that the EPA has concluded are "highly toxic to bees." The only exemption for the restrictions would be a "government-declared public health response", according to the Agency.

If finalized, the plan would require registrants of the listed pesticides to change label language to reflect the new restrictions. "These restrictions are expected to reduce the likelihood of high levels of pesticide exposure and mortality for bees providing pollination services," the Agency says. "Moreover, EPA believes these additional measures to protect bees providing pollination services will protect other pollinators as well."

The proposal is one part of the EPA's revamped effort to improve protections for pollinators, a plan that was clearly laid out last week by a White House task force.

Commercial beekeepers lost about 40% of their hives last year, the second-highest annual loss in eight years. The worry is not just for beekeepers and honey producers. Bees are critical pollinators for nearly a third of US crops.

The EPA will take comments on the new proposal until the end of June and is bracing for a lot of input from stakeholders. The Agency expects "a robust comment period," according to Marietta Echeverria, chief of the invertebrate-vertebrate branch of the

EPA Office of Pesticide Programs registration division. Ms. Echeverria discussed the broad outlines of the proposal at a May 14th meeting of the EPA's Pesticide Program Dialogue Committee and heard some skepticism of the plan.

Environmentalists and beekeepers at the meeting said that the proposal does not go far enough, arguing that it fails to protect wild pollinators, does not address neonicotinoid seed treatments and ignores the threats to bees not under contract for pollination services. "I don't understand why there is a distinction between a contracted crop label and a non-contracted crop label," said Steve Coy, a Mississippi beekeeper and board member of the Pollinator Stewardship Council.

Ms. Echeverria suggested that the EPA is addressing the primary threat of exposure for commercial honey bees. "The distinction between the two scenarios is knowing that the bees are there and they are going to be exposed," she said. (Pesticide & Chemical Policy/AGROW, May 29, 2015)

NICOTINOID AND FUNGAL DISEASE TEAM UP TO BREAK DOWN TERMITES' TOUGH DEFENSES

Purdue University research shows that a small amount of nicotinoid pesticide substantially weakens termites' ability to fight off fungal diseases, a finding that could lead to more effective methods of pest control.

The study also provides clues into termites' robust defense systems and how nicotinoids affect social insects.

A team led by Michael Scharf, the O.W. Rollins/Orkin Chair and professor of entomology, found that a sublethal dose of imidacloprid knocked out key microbes in the termite gut and suppressed the social hygiene habits that help keep a termite

colony healthy. Their defenses weakened, the termites became vulnerable to a fungal pathogen that normally poses little threat. The combination of pesticide and pathogen wiped out laboratory colonies in seven days.

"A termite colony can tolerate this dose of imidacloprid and fungal pathogen independently, but put them together, and they really have deleterious effects," Scharf said. "Understanding how to cripple termite defenses could lead us to new, safer control technologies."

Termites rarely get sick, despite living in moist, underground environments and in close contact with thousands of fellow colony members - conditions that are ideal for disease development.

While termites contain the disease defense genes common among all insects, they also have unique, non-genetic ways of protecting themselves from pathogenic bacteria and fungi, Scharf said.

Termites build up "social immunity" by grooming pathogens off of one another and transfer disease resistance throughout the colony by feeding on each other's secretions, said study co-author Drion Boucias, a professor of insect pathology at the University of Florida who has been researching termite immunity and response to disease for several decades.

"Social cleaning and grooming are critical," he said. "A solitary termite is susceptible to anything."

Termites also protect themselves by cultivating mutually beneficial relationships with microorganisms. The termite gut houses what Boucias called a "microbial garden" - a rich community of thousands of beneficial bacteria and protists, simple microorganisms whose symbiotic relationship coevolved with termites over millions of years. These microbes allow termites to digest cellulose, the tough material that gives plants their ability to stand upright. But they also appear to play an important role in disease defense.

Previous research suggests that some of these protists produce an enzyme that fatally punctures the cell wall of pathogenic invaders.

When Scharf and Boucias's team treated termite colonies with a small dose of imidacloprid, the protists began to die. The pesticide also had a druglike effect on termites, suppressing the grooming behaviors necessary to keep colony members from being infected with a fungal disease.

Applying a sublethal amount of a fungal pathogen quickly destroyed the imidacloprid-treated colonies. The pathogen penetrated the termites' outer cuticle and dissolved their muscles and organs.

"The termites became little fuzzy piles of mush," Scharf said. "We don't typically see this in colonies in the wild unless they are severely stressed."

The researchers studied the termites' gut metatranscriptome - all termite and microbe genes that are being expressed at a given moment - to measure the decline of the gut microbes and better understand which genes are involved in termite defense.

Unexpectedly, the pesticide and fungus did not trigger the "stereotypical" immunity genes that they do in other insect species such as bees, Scharf said. The finding could indicate that termites rely almost exclusively on their gut microbes and social immunity to protect their health.

Future control measures may target these defenses, opening the door for termites' natural enemies to finish the job, Boucias said.

The paper was published in PloS One and is available at <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0123391>

(PCT Online, May 22, 2015)
<http://www.pctonline.com/Nicotinoid-Fungal-Disease-Purdue-findings.aspx>

CEU Meetings

Date: June 11, 2015

Title: Current Challenges in Floriculture
Location: Wes Watkins Center OSU Stillwater OK
Contact: Dr. Mike Schnelle (405) 744-9709
www.hortla.okstate.edu
Course #: OK-15-071

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

Date: July 11-14, 2015

Title: Cultivate 15
Location: Columbus OH
Contact: Michelle Gaston (614) 884-1142
www.americanhort.org/cultivate
Course #: OK-15-067

CEU's:	Category(s):
3	3A
1	3B
12	3C

ODAFF Approved Online CEU Course Links

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.state.ok.us/~okag/cps-ceuhome.htm>

ODAFF Test Information

Pesticide applicator test sessions dates and locations for June/July 2015 are as follows:

June		July	
2	Goodwell	9	Tulsa
11	Tulsa	10	OKC
12	OKC	23	Tulsa
25	Tulsa	24	OKC
26	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: OSU OKC Room ARC 196,
400 N. Portland. (New Location)
- Tulsa: NE Campus of Tulsa Community
College, (Apache & Harvard)
Large Auditorium

**Pesticide Safety
Education Program**