

PESTICIDE REPORTS

Division of Agricultural Sciences and Natural Resources • Oklahoma State University

<http://pested.okstate.edu>



DECEMBER 2009

CHEM

Table of Contents

Newsletter Renewal	1
Recertification Categories for 2010	1
EPA Petitioned on Drift	1
EPA Issues PR-Notice on Drift	2
EPA's Endocrine Disruptor Screening Program	2
Monsanto Asks Supreme Court to Review Case	3
EU Ag Commissioner Warns of Livestock Industry "Disaster"	3
USGS Report on Corn Belt Streams	4
EPA National Study of Chemical Residues In Lake Fish Tissue	4
Rodent Tracker	4
NPDES Questions Continue	5
Farm Bureau Files Petition	5
Food Safety	5
Public Trusts Growers	6
Rubigan Use Deletions	6
DDVP Risk Assessment	7
Fluazinam Registration Review	7
Sulfentrazone Registration Review	7
Honey Bees	7
Chlorpyrifos Risk to Pregnant Mothers	7
Nanosilver Pesticides	8
Paper Strip Detects Pesticides	8
EPA's Focus	8
Total Release Foggers	9
Testing Dates & Locations	10
CEU's	12

NEWSLETTER RENEWAL

It's time to renew your subscription to the *Pesticide Reports* newsletter.

To do so, complete the instructions at the end of this edition. Either e-mail or mail your renewal to us.

If you do not respond we will have to drop you from the mailing list.

OSU Extension personnel do not have to renew.

2010 CATEGORY RECERTIFICATION

Categories recertifying in 2010 are:

- 4 – Seed Treatment
- 5 – Aquatic
- 7c – Fumigation

Applicators have until December 31, 2010 to obtain the appropriate number of Continuing Education Units or retest.

ODAFF will be informing applicators certified in these categories around October 2010 the number of CEUs the applicator has and whether the applicator has enough CEUs, needs more CEUs or will have to retest. (OSU PSEP)

EPA PETITIONED ON DRIFT

The United Farm Workers and other NGO groups petitioned EPA to develop and impose safety standards to protect children from pesticide drift.

The petition urges EPA to immediately impose interim no-spray buffer zones for drift-prone pesticides – including organophosphates and n-methyl carbamates – around schools, rural homes, parks, daycare facilities and other areas where children congregate. The groups want EPA

to set interim buffer zones at a minimum of 60 feet for ground applications and 300 feet for aerial applications. (Pesticide & Toxic Chemical News, Vol. 37 No 49 October 19, 2009)

EPA ISSUES PR-NOTICE ON DRIFT

EPA has released a draft Pesticide Registration Notice outlining guidance for new pesticide label language meant to reduce pesticide drift.

The new labels are intended to prohibit drift that could have adverse health and environmental effects, according to EPA pesticides and toxics Chief Steve Owens.

“The new labels will carry more uniform and specific directions on restricting spray drift while giving pesticide applicators clear and workable instructions,” Owens said.

The notice applies to non-agriculture pesticides used outdoors such as right-of-way, outdoor termicide and lawncare uses. Indoor uses, fumigants and mosquito adulticide products are not included in the notice.

Drift is defined as spray particle movement during application. It does not include volatilization or movement after application.

EPA anticipates that, in most cases, the need for product-specific drift statements will be evaluated through the agency’s registration review program,” according to the PR-Notice.

Susan Kegley with the Pesticide Action Network North America said, “Elimination of drift-prone application methods such as aerial and orchard-blaster applications must be part of the plan as well.”

State Lead Agency (state pesticide regulators) were very much involved in developing the drift language.

EPA has provided label interpretation and question and answer documents for review and clarification.

To obtain the documents go to: <http://www.epa.gov/pesticides/>. EPA is accepting comments until January 4, 2010. (Federal Register, November 4, 2009 and Pesticide & Toxic Chemical News, Vol. 37 No 52, November 9, 2009)

EPA’s ENDOCRINE DISRUPTOR SCREENING PROGRAM

EPA has published its notice for its Tier I screening program for endocrine disruptors.

Basically, they will be screening pesticides that might interact with estrogen (E), androgen (A), or thyroid (T) hormonal systems.

Additional information can be obtained at: <http://www.epa.gov/endo>.

Some schedules for Tier I testing are for October 2009 – atrazine, 2,4-D; for November 2009 - acephate, chlorpyrifos, cyfluthrin, cypermethrin, and permethrin; for December 2009 – metolachlor, propiconazole and tebuconazole; for January 2010 – glyphosate and imidacloprid.

However, EPA has scheduled 2,4-D, atrazine, benfluralin (Benefin), chlorthal-dimethyl (DCPA), fenbutatin oxide (Vendex), norflurazon (Solicam) and propargite (Comite/Omite) as the first to go through the process.

Twenty-one test orders have been issued to registrants. Test orders recipients will have until February 6, 2010 to submit their initial response to EPA, indicating whether they intend to:

- Generate data using the Tier I battery;
- Submit or cite existing data;
- Form or join a task force to produce required data;
- Claim they are not subject to the order;

- Voluntarily cancel the pesticide registration;
- Reformulate the product to remove the active ingredient subject to the order;
- Claim a formulator's exemption; or
- Ask EPA to reconsider some or all of the testing in the order because the chemical was used as a positive control – that is, it was used as a known endocrine disruptor – in assay validation, or it can be demonstrated that the active ingredient is or is not an endocrine disruptor, negating the need for EDSP testing.

The Agency will make a determination on the test order recipient's claim within 90 days of the receipt.

If the recipient chooses to generate data, the chemical must undergo 11 assays – the EDSP Tier I battery includes five *in vitro* and six animal-based tests to identify whether the substance interacts with the estrogen, androgen or thyroid hormone systems.

Whether relying on data generated via the Tier I battery or citing existing, relevant data, the test order requirements must be satisfied by October 29, 2011. Conducting each assay in the Tier I battery has been estimated to take from six months to 15 months, depending on the assay. (Federal Register, October 21, 2009 and Pesticide & Toxic Chemical News, Vol. 37, No 51, November 2, 2009)

MONSANTO ASKS SUPREME COURT TO REVIEW CASE

Monsanto has asked the U.S. Supreme Court to review an appellate court's decision to ban the planting of transgenic Roundup Ready alfalfa pending completion of an Environmental Impact Statement (EIS) by

USDA's Animal and Plant Health Inspection Service (APHIS).

Monsanto argues that taking RR alfalfa off the market creates an unnecessary burden for alfalfa hay and seed growers.

In a separate but related case, a federal judge in September ruled that USDA unlawfully deregulated Monsanto's Roundup Ready sugar beets. As one of the plaintiffs in the case, the Center for Food Safety is likewise seeking a ban on the planting of RR sugar beets pending completion of an EIS. (Pesticide & Toxic Chemical News, Vol. 37, No 51, November 2, 2009)

EU AG COMMISSIONER WARNS OF LIVESTOCK INDUSTRY "DISASTER"

European Agriculture Commissioner Mariann Fischer Boel is warning that the EU's livestock industry could face "disaster" caused by foot-dragging over approval of genetically engineered crops.

Fischer Boel said blocking U.S. soy imports last summer due to traces of unauthorized transgenic materials meant that traders are "talking of halting imports from the U.S. altogether. If this happens, in the current market conditions, our livestock sector faces disaster. Even if we can get the soya from elsewhere...our livestock sector would have to pay higher prices."

She accused the EU farm ministers of flouting science by ignoring European Food Safety Authority advice that numerous biotech products are safe and refusing to make decisions, leaving the commission to use time-consuming reserve powers to authorize them. "Our system for authorizing and managing GMOs is one of the most stringent in the world...It revolves around independent scientific advice from EFSA and it's full of safeguards," she said.

"Month after month, GMOs receive a clean bill of health from EFSA but then get

stuck because member states cannot reach any qualified majority, in favor or against, when it comes to the vote on a proposal for authorization. So first the relevant committee decides nothing; then the Council [of Ministers] decides nothing; and finally, the commission grants authorization, as laid down in the rules. (Pesticide & Toxic Chemical News, Vol. 37, No 51, November 2, 2009)

USGS REPORT ON CORN BELT STREAMS

USGS has released a report on pesticide levels in Corn belt streams from 1996-2002 and 2000-2006.

They assessed up to 31 stream sites for 11 pesticides (atrazine, acetochlor, metolachlor, alachlor, cyanazine, EPTC, simazine, metribuzin, prometon, chlorpyrifos, and diazinon.

Atrazine, metolachlor, alachlor, cyanazine, EPTC, and metribuzin showed more prevalent concentration downtrends during 1996-2002 compared to 2000-2006. The downtrends in concentrations generally correspond to regional downtrends in their use resulting from a variety of regulatory, market, and new-product forces that reduced their use in the Corn Belt during all or part of the study period. The insecticide diazinon had no clear trends during 1996-2002, but the trends were predominantly downward during 2000-2006, likely due to reductions in non-agricultural uses because of a regulatory phase out. Simazine concentrations trended upward at most sites during both 1996-2002 and 2000-2006, a pattern explained by increasing agricultural use at some sites, but also likely by nonagricultural use in some watersheds. (Trends in Pesticide Concentrations in Corn-Belt Streams, 1996-2006, USGS Scientific Investigations Report 2009-5132)

EPA NATIONAL STUDY OF CHEMICAL RESIDUES IN LAKE FISH TISSUE

EPA released its study of pesticide residues in lake fish this September.

The study was conducted over four years working with 47 states, three tribes, the National Park Service and the Tennessee Valley Authority to collected fish from 500 lakes and reservoirs selected randomly from the estimated 147,000 target population of lakes and reservoirs in the 48 states.

The primary chemicals found were mercury in 49% of the lake samples and PCB in 17% of the lake samples.

Pesticides not detected included chlorpyrifos, diazinon, disulfoton, ethion, ethyl parathion, and terbufos.

Rarely detected pesticides in predator fish at <1% were aldrin, arsenic, endrin, pendimethalin, and permethrin. Those detected between 1% and 5% of the lakes were dicofol, endosulfan, ethalfluralin, heptachlor, methoxychlor, and mirex. Pesticides detected between 5% and 15% were Dieldrin, kepone and trifluralin.

Pesticides detected in bottom dwellers at <1% of the lakes was toxaphene. Those detected in 1%-5% of the lakes were aldrin, dicofol, endosulfan, endrin, methoxychlor, pendimethalin, and permethrin. Those detected between 5%-15% of the lakes were dieldrin, ethalfluralin, heptachlor, kepone, mirex, permethrin, and trifluralin. (<http://www.epa.gov/waterscience/fish/study/overview.htm>)

RODENT TRACKER

Bell Laboratories has developed and released DETEX BLOX which is a non-toxic substance that aids in monitoring by making rodent droppings glow under black light.

It is designed to make it easier to monitor rodent movement and identify potential harborage and nesting areas. (Pest Management Professional, October 2009)

NPDES QUESTIONS CONTINUE

EPA is likely to require the use of IPM in as part of the NPDES permit. The big questions are who defines IPM and how will it be enforced/regulated? EPA's response to that is that EPA will figure that out latter. Historically, EPA has developed the regulation and then required the states to enforce the regulation.

NPDES permits, in general, include monitoring, reporting and recordkeeping. They also include technology-based and water quality-based effluent limits.

Technology-based effluent limits in such permits are based on the best available technology that is economically achievable.

But because there are no regulations that would provide information on that in the context of aquatic pesticide applications, permitting authorities will have to apply their best professional judgment as to what constitutes best available technology.

The best available technology EPA has developed in the prototype permit is IPM. "It's not an actual effluent limitation of a certain milligram per liter that's discharged...it's a narrative based on several different IPM measures that we're asking be conducted as part of good practice in applying pesticides," Allison Wiedeman, head of the rural branch in EPA's Office of Wastewater Management said.

"The provisions that we're working on in the prototype in the 'best available technology' section are drawn from our interactions with people who are currently the leaders in doing IPM, Bill Jordan, a senior adviser in EPA's Office of Pesticide Programs said.

For mosquito control, under the prototype permit, this would include removing standing water, using vegetation management and promoting biological control, for example, aquatic insects, birds and bats, among other steps. For aquatic weed control, it would include mechanical control, when practical, and biological control, among other steps.

There was much discussion whether there would be a formal definition of IPM and how IPM would be enforced and who would approve what is IPM.

This applies only to those states that do not have NPDES permitting authority. However, it is though EPA's general permit would be used as a guideline for states with NPDES permitting authority. (Pesticide & Toxic Chemical News, Vol. 37 No 49 October 19, 2009)

FARM BUREAU FILES PETITION

The American Farm Bureau Federation has filed a petition with the U.S. Supreme Court, asking the high court to review a lower court ruling that will otherwise impose Clean Water Act permitting requirements on the application of pesticides on, over or near water.

Responses to the AFBF petition, and the friend-of-the-court briefs in support of the petition, will be due in early December. The Supreme Court is expected to decide whether to hear the case by the end of this year. (Food Industry Environmental Network, November 3, 2009)

FOOD SAFETY

A July 2009 Council for Agricultural Science and Technology commentary reported on *Food Safety and Fresh Produce: An Update*.

First per capita consumption of fresh produce in the U.S. has increased 67% from 1970 to 2008.

Between 1973 and 1997, the Center for Disease Control reported 190 produce-associated outbreaks involving 16,058 illnesses and eight deaths. In the five subsequent years (1998-2002), the number of reported outbreaks increased to 279, involving 10,533 illnesses and seven deaths. Based on available data, the FDA has identified five commodity groups that are responsible for the bulk of produce-associated outbreaks: cantaloupes, lettuce and leafy greens, tomatoes, green onions, and herbs.

The median number of ill persons per outbreak increased from 21 in the 1970s to 43 in the 1990s. As a percentage of all illness outbreaks, those associated with produce increased from 0.7% in the 1970s to 6% in the 1990s. Thus, there is an increase in the frequency of food borne disease linked to consumption of contaminated produce, and these outbreaks now tend to involve larger numbers of people.

Some of the causes of this increase are due to the following factors:

- Larger and more centralized production and wider areas of product distribution
- Increase of global trade, which may involve potential exposure to exotic microbiota
- Increased consumption of fresh or minimally processed products
- Increase in the number of salad bars and in the number of meals eaten outside of the home, which increases the potential impact of an error in food handling
- A growing preference for organically cultivated produce, which may increase the risk of using improperly composted manure as fertilizer

It is useful to remember that pathogenic microorganisms found on or in fresh produce are found throughout the natural environment. (CAST Commentary, July 2009)

PUBLIC TRUSTS GROWERS

A nationwide survey conducted for the National Corn Growers Association found broad public respect and trust for family farmers and support for corn as food, feed, and fuel.

Ninety percent have a strong positive image of farmers.

The image is viewed differently by ethnicity and political party. The following indicates the percentage of respect by group:

- All voters 63
- White 68
- Black 46
- Latino 44
- Asian 36
- City 63
- Suburb 63
- Small town 61
- Rural 66
- Democrats 60
- Republicans 68
- Independents 63

Thirty-nine percent worry about too much government involvement in food choice while 40% worry there is not enough government involvement in environmental affairs.

Sixty-eight percent oppose a tax on high fat foods while 63% oppose a tax on high fructose corn syrup.

Ninety-five percent trust the family farmer on agricultural issues compared to 75% for researchers, 72% for FDA, 66% for EPA, and 58% for President Obama. (CropLife October 27, 2009)

RUBIGAN USE DELETIONS

Gowan has requested from EPA to delete all turf uses except golf course tees, greens, and fairways and turf in professional

athletic stadia from their Rubigan fungicide labels.

EPA will accept comments until December 14, 2009. These can be made at <http://www.regulations.gov> and typing in EPA-HQ-OPP-2007-0536. (Federal Register, November 12, 2009)

DDVP RISK ASSESSMENT

EPA is reviewing the registration status of DDVP/Vapona/dichlorvos. You should know that when trichlorfon (Dylox) or naled (Dibrom) breakdown DDVP is one of the breakdown components.

EPA is requiring a new immunotoxicity study, a dermal study on swine as required by the 2006 RED, data from applicator and post application occupational exposure to fogs, and supplements to the developmental neurotoxicity study. Then EPA will revisit and revise their risk assessment.

EPA is also concerned about DDVP risk to passerine birds, risk to terrestrial and aquatic plants and risk to aquatic organisms with DDVP use on beef and dairy cattle.

For the history buffs, DDVP was registered in 1948. (EPA-HQ-OPP-2009-0209 Docket)

FLUAZINAM REGISTRATION REVIEW

EPA has begun its risk assessment for fluazinam (Omega).

EPA's Health Effects Division (HED) classified fluazinam as having "Suggestive evidence of carcinogenicity, but not sufficient to assess human carcinogenic potential." They determined that quantification of human cancer risk was not required.

An immunotoxicity study is required to meet new data requirements. EPA is also concerned about fluazinam's ecological

affect on aquatic environments. (EPA docket EPA-HQ-OPP-2009-0039)

SULFENTRAZONE REREGISTRATION REVIEW

EPA is concerned about sulfentrazone (Spartan/Authority) leaching, being very persistent in sandy loam and silty clay loam soils and be mobile in soils. Thus, EPA believes this herbicide is likely to result in contamination of ground and surface water.

EPA also requires an updated ecological risk assessment along with revised occupational, residential, and aggregate portions of the human health risk assessment. (EPA docket EPA-HQ-OPP-2009-0624)

HONEY BEES

Francis Ratnieks with Sussex University in the United Kingdom said "My focus is on diseases and flowers. It is easy for the key issues to be submerged under the popular ones put forward by NGOs."

There was no scientific evidence that correct use of pesticides had contributed to the decline in honeybee numbers, he said.

Habitat destruction and loss of forage resources were an under-rated factor in honeybee survival, David Aston from the British Beekeepers' Association agreed. (Farmers Weekly Interactive, November 10, 2009)

CHLORPYRIFOS RISK TO PREGNANT MOTHERS

A new animal study accentuates the risk of ultra-low levels of chlorpyrifos to cause long-lasting birth defects in female mice offspring of exposed mothers. The daughters of mice exhibited learning delays, disturbed brain function and altered thyroid levels.

Significantly, these symptoms resulted from low toxicity exposure during late gestation—an impact route not part of current regulatory pesticide testing.

Damage at these doses highlights vulnerability during gestation from toxins even at the parts per billion levels.

The study of pregnant female mice exposed to minute levels of chlorpyrifos late in gestation was published in the *Reproductive Toxicology* journal. (Rodale Institute, November 12, 2009)

NANOSILVER PESTICIDES

Companies seeking to register a nanosilver-based antimicrobial product should count on EPA wanting more data than applicants say are needed, if FIFRA Scientific Advisory Panel is any indication of the agency's future regulatory plans.

The applicants have told EPA their products only release silver ions – positively charged silver atoms responsible for the products' antimicrobial activity. No nanoparticles are leached, they claim, negating the need for extensive new data as the products' exposure and hazard profiles are the same as currently registered silver-based pesticide products that release silver ions.

“We agree that to the extent there is exposure to silver ions, the hazards will be the same. There may be different levels of exposure, either more or less, but we think we have enough information to assess the hazards of silver ions,” Bill Jordan, senior advisor to the OPP directors, said.

“But the question that keeps coming up for us is whether we have an adequate basis for assessing the potential exposure to the nanosilver particles themselves. And from what we've seen from the available leaching data, we can't tell whether what's coming off of treated articles are nanosilver particles, nanosilver composites or silver

ions. Some studies indicate it might be nanosilver particles,” Jordan said.

That's potentially problematic as nanoparticles may pose different risks to human health and the environment than their normal-scale counterparts because of their different physical and chemical properties like size, shape and surface area. (*Pesticide & Toxic Chemical News*, Vol. 37 No 52, November 9, 2009)

PAPER STRIP DETECTS PESTICIDES IN FOOD

Scientists from Ontario, Canada's McMaster University have developed paper strips that can detect trace levels of certain organophosphate and carbamate pesticides in food and beverages.

In less than five minutes, the four inch long strips turn a certain color depending on the amount of pesticides present.

These could be used for testing imported produced. (*Pesticide & Toxic Chemical News*, Vol. 37 No 52, November 9, 2009)

EPA FOCUS

EPA Office of Pesticide Programs Director Debbie Edwards said their top three priorities are endangered species, Clean Water Act permits and registration review.

Other priorities include:

- Endocrine disruptor screening
- Developing a strategic plan to help determine if EPA needs to do anything differently regarding the mass bee disappearance known as Colony Collapse Disorder
- Looking to develop a consistent human health assessment framework for all people exposed to pesticides
- Expanding resistance management efforts to ensure the continued availability of reduced risk products
- Looking to develop a more consistent pesticide enforcement

process. Steve Owens, assistant administrator of EPA's Office of Prevention, Pesticides and Toxic Substances, has made it clear there should be an agency-wide plan for pesticide enforcement, she said, adding that officials from EPA's regional offices and the Office of Enforcement Compliance and Assurance had met to discuss the matter.

(Pesticide & Toxic Chemical News, Vol. 32, No 52, November 9, 2009)

methoprene (8%). (The New York Times, November 2, 2009 and Morbidity & Mortality Weekly Report, Vol. 57 No 41, October 17, 2008)



Jim T Criswell
Pesticide Coordinator

INDOOR FOGGERS

New York City Department of Health and Mental Hygiene are working to get all indoor total release foggers either canceled or classified as Restricted Use.

There have been numerous incidents in NYC where the use of these foggers has resulted in insecticide exposures. Almost all these are the result of improper use of the foggers.

In South Carolina a 10-month old boy was killed and his two year old brother was critically injured by the improper use of a fogger. The parents used seven foggers where one was required.

CDC reported in its MMWR in 2008 a summary of TRF cases for the period 2001-2006.

Eighty-five percent were from private residencies. Eighty percent were classified as "low" severity of illness or injury but 2% resulted in death.

Louisiana and New York had the most reported incidents.

Factors contributing to the exposures were, unable to evacuate before TRF discharged (23%), early reentry (14%), failure to evacuate (12%), unintentional discharge (11%), and too many TRFs for space and failure to notify other (10% each).

The primary insecticides involved were pyrethrins (29%), cypermethrin (19%), permethrin (15%), tetramethrin.(12%), and

PESTICIDE APPLICATOR TEST SESSIONS

JANUARY 2010 - DECEMBER 2010

All 23 exams will be available at each session. PLEASE MAKE SURE you know in advance which specific exam(s) you need to take (e.g. Service Tech, Ornamental & Turf, Core, Right-of-way, General Pest, etc.).

RESERVATIONS ARE NOT REQUIRED FOR THESE TEST SESSIONS; they are all open to anyone wishing to test for certification. Tests are \$50.00 each; please bring check, money order or the exact amount of cash needed for testing, along with a form of photo ID. There is no fee for government employees in the discharge of their official duties.

Unless otherwise noted, sessions are located as follows:

ALTUS	WESTERN OK STATE COLLEGE 2801 N MAIN, RM A23
ENID	GARFIELD CO. EXT OFFICE 316 E. Oxford
GOODWELL	OKLA PANHANDLE RESEARCH & EXT CENTER Rt. 1 Box 86M
HOBART	KIOWA CO. FAIRGROUNDS Exhibit Building
LAWTON	GREAT PLAINS COLISEUM Annex Rm 920 S. Sheridan Rd.
McALESTER	KIAMICHI TECH CENTER on HWY 270 W of HWY 69
OKC	OKLA CO. EXT 930 N. Portland, Auditorium - <u>Park & enter</u> from the North side
TULSA	NE CAMPUS OF TCC 3727 E. Apache (Apache & Harvard) Engineering Tech Rm. 127

If you have any questions, please call (405) 522-5950 or e-mail
eva.landeros@oda.state.ok.us

Testing will begin at 9:00 am. NO NEW APPLICANTS WILL BE ACCEPTED AFTER
11 AM.

ALL TESTS must be completed by 1:00 pm

	December 2009	
	3	Tulsa
	7	OKC
	8	Goodwell
	10	Enid
	17	Tulsa
	17	McAlester
	28	OKC

2010 Test Sessions

JANUARY 12 OKC 14 TULSA 25 MCALESTER 25 OKC 28 TULSA	MAY 6 TULSA 10 OKC 20 ENID 24 OKC 27 TULSA	SEPTEMBER 1 ALTUS 2 ENID 9 TULSA 13 OKC 27 OKC 30 TULSA
FEBRUARY 8 OKC 10 LAWTON 11 TULSA 23 OKC 25 TULSA 25 ENID	JUNE 1 GOODWELL 7 OKC 10 TULSA 24 TULSA	OCTOBER 4 OKC 6 HOBART 13 ALTUS 14 TULSA 25 OKC 28 TULSA
MARCH 2 GOODWELL 4 TULSA 10 OKC 22 MCALESTER 24 OKC 25 TULSA	JULY 8 TULSA 12 OKC 22 TULSA 26 OKC	NOVEMBER 2 GOODWELL 4 TULSA 8 OKC 10 HOBART 18 TULSA 22 OKC
APRIL 8 TULSA 12 OKC 14 LAWTON 22 TULSA 26 OKC	AUGUST 9 OKC 12 TULSA 23 OKC 26 TULSA	DECEMBER 1 LAWTON 2 TULSA 7 GOODWELL 9 ENID 13 OKC 16 TULSA 28 OKC

OPPORTUNITIES TO EARN CEU'S

DECEMBER 8, 2009

CATEGORY: 2 – FORESTRY
CEU'S: 2
CATEGORY: 6 – RIGHT-OF-WAY
CEU'S: 2
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 2
CATEGORY: AERIAL
CEU'S: 1
SPONSOR: STEPHEN F. AUSTIN UNIVERSITY
TOPIC: FOREST HERBICIDES; RESEARCH & DEMONSTRATION VII
CONFERENCE
PLACE: NACOGDOCHES, TX
CONTACT: FRANK SHOCKLEY
936.468.3301
FEE: YES

DECEMBER 9, 2009

CATEGORY: ALL
CEU'S: 2
CATEGORY: 3a – ORNAMENTAL & TUF
CEU'S: 4
CATEGORY: 3b – INTERIORSCAPE
CEU'S: 4
CATEGORY: 3c – NURSERY/GREENHOUSE
CEU'S: 4
CATEGORY: 6 – RIGHT-OF-WAY
CEU'S: 4
CATEGORY: 7a – GENERAL PEST
CEU'S: 4
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 4
SPONSOR: OSU PESTICIDE SAFETY EDUCATION PROGRAM
TOPIC: RECERTIFICATION PROGRAM
PLACE: CLARION CONFENCTION CNETER
737 S MERIDIAN
OKLAHOMA CITY, OK
CONTACT: JIM CRISWELL FOR PROGRAM INFORMATION
405.744.5531
AG CONFERENCE FOR REGISTRATION INFORMATION
405.744.6489
FEE: YES

DECEMBER 15-16, 2009

CATEGORY: 1a – AGRICULTURAL PLANT
CEU'S: 7
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 7
SPONSOR: OSU EXTENSION
TOPIC: WINTER CROP SCHOOL
PLACE: WES WATKINS BUILDING
STILLWATER, OK
CONTACT: JEFF EDWARDS
405.744.6130
FEE: YES

DECEMBER 17, 2009

CATEGORY: ALL
CEU'S: 2
CATEGORY: 3a – ORNAMENTAL & TUF
CEU'S: 4
CATEGORY: 3b – INTERIORSCAPE
CEU'S: 4
CATEGORY: 3c – NURSERY/GREENHOUSE
CEU'S: 4
CATEGORY: 6 – RIGHT-OF-WAY
CEU'S: 4
CATEGORY: 7a – GENERAL PEST
CEU'S: 4
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 4
SPONSOR: OSU PESTICIDE SAFETY EDUCATION PROGRAM
TOPIC: RECERTIFICATION PROGRAM
PLACE: MARRIOTT SOUTHERN HILLS
1902 EAST 71ST
TULSA, OK
CONTACT: JIM CRISWELL FOR PROGRAM INFORMATION
405.744.5531
AG CONFERENCE FOR REGISTRATION INFORMATION
405.744.6489
FEE: YES

JANUARY 18-20, 2010

CATEGORY: 1a – AGRICULTURAL PLANT
CEU'S: PENDING
CATEGORY: AERIAL
CEU'S: PENDING
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: PENDING
SPONSOR: OAAA
TOPIC: ANNUAL CONFERENCE
PLACE: CLARION CONVENTION CENTER
737 S MERIDIAN
OKLAHOMA CITY, OK
CONTACT: SANDY WELLS
405.341.3548
FEE: YES

ONGOING

CATEGORY: 3a – ORNAMENTAL & TURF
CEU'S: 4
CATEGORY: 10 - DEMONSTRATION & RESEARCH
CEU'S: 4
SPONSOR: UNIVERSITY OF GEORGIA
TOPIC: PRINCIPLES OF TURFGRASS MANAGEMENT
PLACE: CORRESPONDENCE COURSE
CONTACT: PHYLISS BREWER
706.542.6692
FEE: YES

ONGOING

CATEGORY: 3a – ORNAMENTAL & TURF
CEU'S: 2
CATEGORY: 7a – GENERAL PEST
CEU'S: 1
CATEGORY: 7b - STRUCTURAL
CEU'S: 1
CATEGORY: 10 - DEMONSTRATION & RESEARCH
CEU'S: 6
CATEGORY: ALL CATEGORIES
CEU'S: 2
SPONSOR: CHRYSALIS EDUCATION & CONSULTING
TOPIC: O&T, GENERAL PEST & STRUCTURAL
PLACE: HOLIDAY INN
CONTACT: 3101 N. DALLAS PKW
PLANO, TX
DENNIS MALONEY
806.468.8583
FEE: YES

ELECTRONIC PROGRAMS

CATEGORY: VARIOUS
CEU'S: 1
SPONSOR: UNIVAR
TOPIC: VARIOUS
PLACE: INTERNET – WWW.PESTWEB.COM
CONTACT: JEFF SMITH
916.371.7602
FEE: NO

ONGOING

CATEGORY: 3a – ORNAMENTAL & TURF
CEU'S: 1
CATEGORY: 8 – PUBLIC HEALTH
CEU'S: 1
CATEGORY: 10 - DEMONSTRATION & RESEARCH
CEU'S: 1
SPONSOR: UNIVAR
TOPIC: A QUIET TICKING
PLACE: PESTWEB WWW.PESTWEB.COM
CONTACT: JEFF SMITH
JEFF.SMITH@UNIVARUSA.COM
FEE: NO

ELECTRONIC PROGRAMS

CATEGORY: 3a – ORNAMENTAL & TURF
CEU'S: 1
SPONSOR: UNIVAR
TOPIC: WEED CONTROL – THE HERBICIDES #604
PLACE: INTERNET – WWW.PESTWEB.COM
CONTACT: JEFF SMITH
916.371.7602
FEE: NO

ELECTRONIC PROGRAMS

CATEGORY: 7a – GENERAL PEST
CEU'S: 1
SPONSOR: UNIVAR
TOPIC: GOING GREEN & ORGANIC #207
PLACE: INTERNET – WWW.PESTWEB.COM
CONTACT: JEFF SMITH
916.371.7602
FEE: NO

ELECTRONIC PROGRAMS

CATEGORY: 7a – GENERAL PEST
CEU'S: 3
CATEGORY: 7b - STRUCTURAL
CEU'S: 1
SPONSOR: WHITMIRE MICRO-GEN
TOPIC: PRESCRIPTION TREATMENT UNIVERSITY
PLACE: WHITMIRE WEB SITE
CONTACT: JODI WILSON
880.777.8570
FEE: YES

ELECTRONIC PROGRAMS

CATEGORY: VARIOUS
CEU'S: VARIOUS
SPONSOR: PEST NETWORK
TOPIC: VARIOUS
PLACE: PESTNETWORK.COM
CONTACT: MEL YELL
512.626.1645 CELL
FEE: YES

ELECTRONIC PROGRAMS

CATEGORY: 1a – AGRICULTURAL PLANT
CEU'S: 1
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 1
SPONSOR: Pest Network
TOPIC: GREENBUG MANAGEMENT
PLACE: www.pestnetwork.com
CONTACT: CHARLES COLE
979.732.0501
FEE: YES

ELECTRONIC PROGRAMS

CATEGORY: 1a – AGRICULTURAL PLANT
CEU'S: 1
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 1
SPONSOR: SOUTHWEST FARM PRESS
TOPIC: WEED RESISTANCE MANAGEMENT IN COTTON
PLACE: INTERNET – WWW.SOUTHWESTFARMPRESS.COM
CONTACT: CHERYL OGLE
559.322.6558
FEE: NO

ELECTRONIC PROGRAMS

CATEGORY: 1a – AGRICLUTURAL PLANT
CEU'S: 1
CATEGORY: 10 – DEMONSTRATION & RESEARCH
CEU'S: 1
SPONSOR: SOUTHWEST FARM PRESS
TOPIC: SPRAY DRIFT MANAGEMENT
PLACE: WWW.SOUTHWESTFARMPRESS.COM
CONTACT: HARRY CLINE
512.288.8288
FEE: YES

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