

PESTICIDE REPORTS



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

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CHEM

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ODAFF TEST AND LICENSE CHANGES FOR GOVERNMENT EMPLOYEES

As of November 1, 2017 there is no longer an exemption from pesticide applicator testing fees and pesticide license fees for government entities in Oklahoma. This change to the Oklahoma Combined Pesticide Law and Rules now means **all applicators must pay \$50 for each exam they take**. This also means that government entities must pay a \$50 annual non-commercial license fee per category to ODAFF. This applies to all city, county, state, and federal groups that hold certification and licenses with ODAFF.

DECEMBER TEST HELP SESSIONS

The last test help sessions the OSU Pesticide Safety Education Program will conduct for 2017 are coming up in December. The workshops will be held December 14th in Tulsa and December 15th in Oklahoma City.

The Tulsa session will be at the Tulsa County Extension Office at 4116 E. 15th. The Oklahoma City Test help session will at the 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!

Reminder that Service Technicians must recertify before December 31, 2017 to stay certified for the next cycle that starts January 1, 2018.

More workshops will be scheduled in 2018. The 2018 dates will be posted on the website below once those dates have been finalized.

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

New DICAMBA Products are now Restricted Use Pesticides (RUP)

With the agreement between EPA and Monsanto, BASF, and Dupont Xtendimax, Engenia, and FeXapan formulations of dicamba are now restricted use pesticides. These are the only formulations that can be used on dicamba tolerant soybeans and cotton.

The new RUP designation of these products will require either an Ag Plant Category 1A or Private Applicator certification in the State of Oklahoma for purchase and use for the 2018 growing season use of these products.

These new labels also have new mandated requirements for training, nozzles, and tank mix partners. These labels also have more recordkeeping requirements mandated by the label that are not required by ODAFF or USDA RUP recordkeeping requirements for 1A and private applicators. OSU Pesticide Education Program is working on a recordkeeping form just to meet these label recordkeeping requirements for these products and will be published on the <http://pested.okstate.edu> recordkeeping website when finalized.

OSU Cooperative Extension is in the planning stages with ODAFF on scheduling dicamba training meetings throughout the state for 1A Ag Plant and Private Applicators in 2018. (OSU PSEP November 29, 2017)

DRAFT BILL WOULD SMOOTH PATH FOR PESTICIDES

A draft bill circulating on Capitol Hill would exempt pesticide registrations from the Endangered Species Act consultation process, prompting supporters of the current rules and critics to rally their respective advocates.

Supporters of the current process say it's designed to ensure that the chemicals do not harm endangered species or their habitat, while critics claim that the current rules add red tape that prompts more legal challenges, makes crop protection chemicals more expensive for farmers and does little to actually protect endangered species.

The draft language, which was obtained by environmental groups and made public last week, would add a provision to the part of the Federal Insecticide, Fungicide, and Rodenticide Act that lays out conditions for pesticide registration.

A new paragraph states that, in addition to the already existing requirements in FIFRA, EPA must register a pesticide when “it is not likely to jeopardize the survival of a federally listed threatened or endangered species or directly or indirectly alter, in a manner that is likely to appreciably diminish its value, critical habitat for both the survival and recovery of the listed species.”

But EPA could make that determination without the benefit of formal consultation with either the Fish and Wildlife Service or National Marine Fisheries Service, which administer the ESA. Those agencies are currently required by the ESA to evaluate whether federal actions such as timber sales or highway construction – or pesticide registration – will jeopardize species or adversely affect their critical habitat.

The draft bill allows FWS and NMFS to submit scientific information within 30 days of the start of EPA’s endangered species review process for a pesticide. But consultation, as defined in the ESA,

would only have to take place if requested by the registration applicant.

“The pesticide industry wants to deep-six all evidence of the massive threats its products pose to our wildlife,” said Lori Ann Burd, environmental health director at the Center for Biological Diversity. “If this appalling bill passes, the EPA would have virtually no power to prevent toxic new pesticides from fueling the extinction of some of America’s imperiled birds, butterflies and fish.”

Peter Jenkins, counsel at the Center for Food Safety, said that CropLife America is behind the bill and “we know that they’ve targeted some of the most important committees,” but he declined to go into much detail. “We wish we knew who would be a sponsor” of the bill, which at this point has not been introduced, Jenkins said.

In addition to scrapping the consultation requirement, Jenkins noted that the bill would prevent the federal government from enforcing the “incidental take” provisions of the ESA. In other words, if someone used a pesticide in a way that harmed endangered species, they could not be prosecuted.

“Where’s the protection?” Jenkins asked.

Jay Vroom, president and CEO of CropLife America, said he would not respond to the environmental groups’ press release about the draft bill’s potential impacts. He also would not say whether CropLife is pushing the legislation.

But he reiterated a point

CropLife has made for years: “The ESA is not helping species any more than it is helping agriculture.” CropLife and some of its manufacturer members have fought environmental groups in court over claims that pesticides harm ESA-listed species and need to be subject to consultation requirements. In different settlements, EPA has agreed to evaluate the effects of some commonly used pesticides such as atrazine, glyphosate, chlorpyrifos and carbaryl.

But ESA pesticide consultations take years and cost a lot of money, Vroom said. In a related matter, the National Marine Fisheries Service recently asked a federal court in Washington state to give it two more years to fully evaluate the effects of malathion, diazinon and glyphosate on fish. A settlement agreement requires NMFS to complete its Biological Opinions on the active ingredients by the end of the year. Now, NMFS says it needs until December 2019.

An appropriations bill released by the Senate Appropriations Committee on Monday urges the Fish and Wildlife Service not to enter into any court settlements involving multiple species “unless the state and local governments where the species are located are a party” to them.

Vroom said CropLife will continue to defend its members’ products in the courts and at federal agencies, and on Capitol Hill. He said the group is working now on administrative fixes with some “non-traditional allies.” He declined, however, to say who they were. (Agri-pulse November 22, 2017) <https://www.agri-pulse.com/articles/10259-draft-hill-bill-would-smooth-path-for-new-pesticides>

MISSOURI LATEST STATE TO SET CUT-OFF DICAMBA DATE FOR '18

Missouri will limit use of dicamba in 2018, citing alleged crop injury complaints filed during the 2017 growing season.

The move follows an announcement by Arkansas regulators that effectively bans the use of the herbicide next year.

In a collaborative effort to safeguard Missouri agriculture, the Missouri Department of Agriculture said it issued a 24c Special Local Need label for ENGENIA Herbicide, EPA Registration Number 7969-345 – SLN label MO-180001. The Department anticipates issuing similar labels for XTENDIMAX and FEXAPAN soon.

“Our intent in issuing the Special Local Need label is to protect this technology for the future,” Director of Agriculture Chris Chinn said. “We thoroughly reviewed the new label restrictions agreed upon by EPA and the registrants, and as much research data as possible to come to this decision that I believe will protect the product and the producers.”

According to the Special Local Need label, to apply ENGENIA to Dicamba-tolerant soybeans and Dicamba-tolerant cotton in Missouri, applicators must abide by the following restrictions:

- Restricted Use Pesticide – For sale to and use ONLY by certified applicators. Non-certified applicators are prohibited from applying this product.
- Training Requirement – Prior to the purchase and/or use of the product, certified applicators must complete mandatory Dicamba training provided by the University of Missouri Extension, which will be available soon. Training verification must be presented to the retail establishment, pesticide dealer or distributor upon taking possession of ENGENIA. For more information on training, visit the Missouri Department of Agriculture’s website at Agriculture.Mo.Gov/dicamba. Applicators are also encouraged to attend training provided by the registrants.
- Dicamba Notice of Application Form – Certified applicators must complete an online Dicamba Notice of Application form daily prior to each application. The blank Dicamba Notice of Application form can be found at Agriculture.Mo.Gov/dicamba/notice.
- Application Timing – The product cannot be applied before 7:30 a.m. or after 5:30 p.m.

Cutoff Date –

Use of ENGENIA in Dicamba-tolerant soybeans and Dicamba-tolerant cotton is prohibited after June 1, 2018, in the following southeast Missouri counties: Dunklin, Pemiscot, New Madrid, Stoddard, Scott, Mississippi, Butler, Ripley, Bollinger and Cape Girardeau.

Use of ENGENIA in Dicamba-tolerant soybeans and Dicamba-tolerant cotton is prohibited after July 15, 2018, in all remaining Missouri counties.

These restrictions were determined based upon feedback the Department received from stakeholders and analysis of alleged crop injury complaints filed during the 2017 growing season.

“Through countless conversations and meetings, we were able to reach a compromise—one that is proactive and provides certainty for farmers as they make their decisions for 2018,” Chinn said. “The process included input from growers, researchers, industry partners and farm and commodity organizations, all of whom want to see Missouri agriculture thrive and prosper.”

To obtain a certified private applicator license, individuals must complete certified private applicator training provided by the University of Missouri Extension. Training programs are offered throughout the year by contacting your local county extension office.

If you are a pesticide applicator engaged in the business of applying pesticides for hire in exchange for a fee or other compensation, you must obtain a certified commercial applicator license through the Missouri Department of Agriculture.

To learn more about becoming a certified applicator, visit the Department’s certification and licensing web page.

More detailed information about this issue is available at Agriculture.Mo.Gov/dicamba.

(CropLife, November 20, 2017)

<http://www.croplife.com/crop-inputs/missouri-latest-state-set-cut-off-dicamba-date-18/>

UF STUDY: IF TERMITES EAT BAIT FOR ONE DAY, THEY DIE WITHIN 90

Termites that feed on a well-known bait for one day are eventually doomed, which is good news for those who want to protect their property from the destructive pest, a University of Florida entomologist says.

Within 30 days of that first day of feeding, the bait significantly weakens termite colonies, said Thomas Chouvenc, a UF/IFAS assistant professor of entomology and lead author of a new study. After 90 days, the insecticide kills the termite colonies, Chouvenc said. This process is far shorter than scientists originally thought, he said.

“Within a month after feeding on the bait, termites became sluggish and slowed their feeding activity. Therefore, even if the termites were still alive, they would not be causing much damage,” said Chouvenc. “This study supports the use of baits for control of subterranean termite colonies, especially for aggressive species such as the Formosan subterranean termite and the Asian subterranean termite.”

In the study, scientists used an insecticide called a chitin synthesis inhibitor (CSI), used in the Sentricon termite baiting system, which was invented by UF/IFAS entomology professor Nan-Yao Su. CSI has been an established termite killer for more than 20 years, but until now, scientists didn’t know how long termites had to eat the bait to be killed.

For their study, Chouvenc and Su raised colonies in their laboratory for more than four years. That way, they could expose the CSI bait to whole colonies, while monitoring the termites.

Researchers kept the termite colonies in large containers in the laboratory and let them feed on CSI baits for one day. After a day, scientists removed the bait and monitored termite deaths for 90 days. That’s when they found the dead termite colonies.

The study's findings come as helpful news to anyone who wants to protect their home or business from the pest, say UF/IFAS entomologists. Termites cause huge economic costs to society — as much as \$40 billion dollars per year worldwide, according to UF/IFAS researchers. Half the structures in South Florida will be at risk of infestation by subterranean termites by 2040, UF/IFAS entomologists estimate.

In addition to killing termite colonies in less time, scientists showed they need tiny amounts of the active ingredient in the insecticide to kill them, said Chouvinc, who along with Su, is a faculty member at the UF/IFAS Fort Lauderdale Research and Education Center.

The study by Chouvinc and Su is published in the Journal of Economic Entomology. (PCT Online, November 28, 2017)

<http://www.pctonline.com/article/uf-termite-bait-death-study/>

US AG STUDY FINDS NO LINK BETWEEN GLYPHOSATE EXPOSURE AND CANCER

A long-term study of tens of thousands of US pesticide applicators has found no statistical association between exposure to glyphosate herbicide and cancer.

Published on November 9th in the peer-reviewed Journal of the National Cancer Institute, the study examined the cancer rates among 54,251 licensed pesticide applicators in the US states of Iowa and North Carolina, including 44,932 who had used the popular herbicide.

"Glyphosate was not statistically significantly associated with cancer at any site," the researchers concluded.

Although there were slightly higher rates of one form of leukemia, the association was "not statistically significant", according to the research team.

The study is part of the far-reaching US research project called the Agricultural Health Study, which was launched in 1993 to evaluate the role of agricultural exposures in the development of cancer and other diseases in members of the farming community.

The research project is a collaborative effort between scientists at the US National Cancer Institute, the National Institute of Environmental Health Sciences, the US EPA and the National Institute for Occupational Safety and Health.

Monsanto's vice president of strategy Scott Partridge hailed the study, telling Reuters news agency that it "definitively demonstrates in a real-world environment that glyphosate doesn't cause cancer".

The findings come amid fierce debate about the safety of the world's most widely-used herbicide. Controversy over the possible link between glyphosate and cancer has upended the EU's effort to renew approval of the herbicide and prompted hundreds of lawsuits in the US brought by cancer victims who allege exposure to glyphosate caused their illnesses and that Monsanto is liable.

(Pesticide & Chemical Policy/AGROW, November 10, 2017)

US EPA SEARCHING FOR "GREATER CERTAINTY" ABOUT CHLORPYRIFOS SAFETY

US EPA pesticide officials have defended the decision to abandon a 2016 plan to ban chlorpyrifos insecticide. They suggest that the science about the potential harms from the insecticide is unresolved.

The Agency is looking for "greater certainty as to whether the potential exists for adverse neuro-developmental effects to occur from current human exposures" to chlorpyrifos, officials with the EPA's Office of Pesticide Programs (OPP) have explained.

“EPA has therefore concluded that it will not complete the human health portion of the registration review or any associated tolerance revocation of chlorpyrifos without first attempting to come to a clearer scientific resolution on those issues,” according to an OPP presentation to the Agency’s Pesticide Program Dialogue Committee.

The explanation did little to satisfy environmentalists on the PPDC who remain furious with EPA Administrator Scott Pruitt's decision not to proceed with the plan to revoke food tolerances for chlorpyrifos, a move that would have effectively banned agricultural uses of the organophosphate insecticide.

The science is “not unresolved”, said Amy Liebman, director of environmental and occupational health at the Migrant Clinicians Network. “The process regarding this is really disturbing and problematic. I don't understand how all of a sudden, the Agency thinks that the science remains unresolved. This is probably one chemical where we have the most science to underscore the impact that [it] has on children’s brains.”

There is also ample evidence that workers are also “continually exposed” to potentially harmful levels of chlorpyrifos, Ms Liebman said. Abandoning the plan to revoke food tolerances “is very dangerous ... and goes against the mission of the EPA to protect human health”, she told OPP officials at the November 1st meeting of the PPDC.

At issue is Mr Pruitt’s March 29th order denying a 2007 petition brought by the Natural Resources Defense Council and the Pesticide Action Network North America that called on the EPA to revoke food tolerances for chlorpyrifos because of evidence of neurological harm to children. After years of legal wrangling and scientific review, the EPA in November 2016 appeared to agree. The agency said that cumulative exposures to chlorpyrifos exceeded the safety standard as defined by federal food safety law and proposed granting the petition.

But the EPA has since faced strong pressure to reverse course from grower groups, the pesticide industry and the USDA. Critics of the proposed ban questioned the scientific integrity of the Agency’s

review and the availability of affordable and effective alternatives. US farmers annually use an estimated 5-6 million lbs (2,270-2,720 tons) of chlorpyrifos on some 50 crops, including almonds, apples, citrus fruit, maize and strawberries.

Under an order from the US Court of Appeals for the Ninth Circuit to act by March 31st, Mr Pruitt denied the petition and withdrew the proposed ban. The EPA Administrator in June told members of a House appropriations subcommittee that the USDA’s criticism was central to his decision to change course.

OPP officials at the PPDC meeting said they intend to complete the registration review of chlorpyrifos by 2022 and downplayed the controversy about Mr Pruitt’s order.

The Agency’s proposal to ban the insecticide, first released in 2015, was “what the EPA was thinking at the time”, said Yu-Ting Guilaran, director of OPP’s pesticide re-evaluation division.

The Agency had subsequently received more than 200 comments “on both sides” about its revised human health risk assessment, she said.

“That is why the science is still unclear on whether or not what we were proposing is really the path forward for the Agency,” Ms Guilaran explained. “That is where things are.”

When pressed on what is needed to resolve any lingering uncertainty, EPA officials said that the Agency is still wrestling with how to incorporate epidemiological studies conducted by researchers at Columbia University concerning pre-natal exposure to chlorpyrifos.

The studies focused on inner city mothers and children accidentally exposed to the insecticide, which was registered for household use until 2001, and raised concerns about neurological harms.

Critics of the EPA’s proposal to ban chlorpyrifos questioned the small sample size of the studies, suggesting the outcomes can’t be extrapolated to the general population. They also argued that the EPA was giving the research too much weight and thus

overstating the risks from chlorpyrifos within its revised human health risk assessment.

The EPA has received “a lot of comments” on its use of the epidemiological studies and there is “great uncertainty” about the approach the Agency has taken, said Dana Freidman, senior regulatory advisor in OPP’s pesticide re-evaluation division.

OPP director Rick Keigwin also suggested the court order requiring the Agency to make a final decision on the petition by March 2017 had not afforded the EPA adequate time to complete its work.

“The scientists in the OPP did a yeoman’s effort, in my personal opinion ... understanding that it was the best that we could do in the time that we had,” he said. “As great a job as we do ... we don’t always get it right and there is great value to us in getting feedback on the assessments that we do.”

The OPP is committing to reviewing the “200 plus substantive comments” it has received and will make the “best decision we can with the best available science before us”, Mr Keigwin said.

Environmentalists on the PPDC said that the decision not to ban chlorpyrifos was based on politics, not science.

The decision to abandon the proposal “was out of the hands” of the EPA’s career staff and scientists, said Lori Ann Burd, environmental health director with the Center for Biological Diversity.

“There is no such thing as scientific certainty but we are pretty certain about what chlorpyrifos will do and why this ban would have been well-substantiated,” she said.

Critics say that the EPA administrator has failed to identify any new science that countered the Agency's previous conclusions that the insecticide can cause neurological harm and that aggregate exposures exceed federal safety standards.

“The science on smoking has likewise been very complex and yet when you look at the message and the weight of the evidence, it is rather clear cut that smoking is bad for you,” said Cynthia Palmer,

director of pesticides science and regulation at the American Bird Conservancy. “And I think there are parallels.”

The fate of chlorpyrifos is back in the Ninth Circuit, which is considering a lawsuit brought by environmentalists and farmworker advocates who want the Court to force the EPA to impose the ban. (Pesticide & Chemical Policy/AGROW, November 15, 2017)

MAKING MOSQUITOES SELF-DESTRUCT

Researchers at the University of California, Riverside have developed transgenic mosquitoes that stably express the Cas9 enzyme in their germline. The addition of Cas9 will enable the use of the CRISPR gene editing tool to make efficient, targeted changes to the mosquitoes’ DNA. (Download the study).

As proof of concept, the researchers used the system to disrupt cuticle, wing, and eye development, producing completely yellow, three-eyed and wingless mosquitoes. Their long-term goal is to use Cas9-expressing mosquitoes together with another technology — called gene drives — to insert and spread genes that suppress the insects while avoiding the resistance that evolution would typically favor. *Aedes aegypti* are major carriers of dengue, chikungunya, yellow fever, and zika viruses, and are rapidly becoming resistant to commonly used pesticides.

Published recently in the Proceedings of the National Academy of Sciences (PNAS), the study was led by Omar Akbari, an assistant professor of entomology in UCR’s College of Natural and Agricultural Sciences and a member of the university’s Institute for Integrative Genome Biology.

Previous efforts to use genome editing to prevent mosquitoes from spreading pathogens have been hampered by low mutation rates, poor survival of edited mosquitoes, and inefficient transmission of

disrupted genes to offspring. Akbari and colleagues developed transgenic mosquitoes that stably express a bacterial Cas9 enzyme in the germline, enabling highly efficient genome editing using the CRISPR system. CRISPR works like a pair of molecular scissors, cutting out and replacing specific DNA sequences based on a ribonucleic acid (RNA) guide. In the paper, the team used the system to disrupt genes that control vision, flight and feeding, resulting in mosquitoes with an extra eye, malformed wings, and defects in eye and cuticle color, among other changes.

Akbari said these strains represent the first step toward using gene drive systems to control mosquito populations and reduce the diseases they spread.

Read the full release here:

<https://ucrtoday.ucr.edu/49986> (PCT Online, November 15, 2017)

<http://www.pctonline.com/article/mosquitos-self-destruct/>

US STATE OF NORTH DAKOTA IMPOSES NEW DICAMBA RESTRICTIONS

The US state of North Dakota has set a June 30th cut-off date for spraying of dicamba herbicides on genetically modified soybeans and is banning applications when the air temperature exceeds or is forecasted to exceed 85°F (29.4°C).

The state rules are in addition to new restrictions imposed by the US EPA for the three dicamba herbicides -- BASF's Engenia, DowDuPont's FeXapan and Monsanto's XtendiMax -- that have been registered for use on Monsanto's Xtend dicamba-tolerant soybeans.

The EPA revised the labels, with help from the registrants, to try and quell lingering controversy about dicamba drift related to use of the herbicide on the new GM soybeans.

Twenty-three states are investigating more than 2,700 complaints that the herbicide has damaged an array of non-target crops, including an estimated 3.6 million acres (1.5 million ha) of soybeans.

Officials with the North Dakota Department of Agriculture (NDDA) say that the EPA rules are a good first step, but contend that the additional restrictions are needed to limit drift problems that plagued use of dicamba this summer. "We applaud the work done by the EPA and the registrants to develop the new label, but believe that a one-size-fits-all approach does not adequately address some of the unique conditions we face in our state," Agriculture Commissioner Doug Goehring says. "To address this, we developed additional use restrictions for these products to minimise off-target movement of product."

The North Dakota rules ban spraying after June 30th or after the first bloom, whichever comes first. State officials say that the temperature cut-off is needed because of North Dakota's unique climate. The application season typically has low humidity, according to the NDDA, and the dry and less humid environment "can significantly increase product evaporation" and the potential for off-target movement.

The North Dakota rules also require applications to be made from one hour after sunrise to one hour before sunset, establish new application standards and mandate new notification and training requirements.

The move by North Dakota comes in the wake of a similar decision made by agriculture officials in Missouri to impose restrictions on dicamba spraying that are more stringent than the EPA rules.

Officials in Tennessee are also considering additional restrictions and Arkansas looks poised to ban use of dicamba from April 16th until October 31st, a move that would undermine much of the appeal of the dicamba-tolerant crops. Earlier this month, the Arkansas State Plant Board approved the ban, which will soon be voted on by a state legislative committee. Monsanto has threatened to sue if the Arkansas ban is approved.

Soybean growers in Minnesota have also asked state officials to consider additional restrictions. A task force of the Minnesota Soybean Growers Association (MSGA) last week recommended a cut-off date for applications as well as a temperature cut-off of 85°F.

In a November 21st letter to the Minnesota Department of Agriculture (MDA), the task force says that dicamba is needed to help address weeds that have become resistant to other herbicides, but notes that its use on the dicamba-tolerant soybeans is "not a solution without risk".

Numerous reports of damage to soybeans across the state are "disturbing" and demonstrate the need for revised labels, according to the MSGA task force. New EPA labels should be adopted and, if implemented, should control "off-target movement from physical drift" but do not sufficiently address vapour drift, the task force says.

"Vapour drift is concerning because once dicamba vaporises, we can't predict where it'll go," says MSGA secretary Bob Worth, chair of the task force. "In order to protect Minnesota soybean producers, our recommendation to the Department of Ag addresses vapour drift. We feel this needs to be addressed at the state level."

The letter does not recommend a specific cut-off date for spraying, but calls on one to be determined with collaboration from the MDA, industry and the University of Minnesota. The task force has also asked state officials to immediately initiate educational opportunities for proper use and stewardship of dicamba herbicides. (Pesticide & Chemical Policy/AGROW, November 30, 2017)

STUDY FINDS PESTICIDES TAKE THE BUZZ OUT OF BUMBLEBEES

Bumblebees exposed to field-realistic levels of neonicotinoid insecticides have problems with "buzz pollination" that results in reduced pollen

collection, according to new research published in Scientific Reports. This is the latest science to tease out the complex ways in which neonicotinoids interfere with these important pollinators, providing yet another reason to eliminate these highly toxic, systemic insecticides from the environment.

Flowers that bumblebees pollinate require the insects to emit soundwaves, or 'sonicate' to release their pollen, and bumblebees must perfect their techniques over time in order to maximize the pollen they are able to collect. Researchers tested the effect of neonicotinoids on bumblebees' sonication abilities by exposing them to field realistic doses of the insecticide thiamethoxam at rates of 2 parts per billion (ppb) and 10 ppb, and observing their ability to successfully collect pollen. A control group that never came in contact with thiamethoxam was also used to compare the progress of the exposed group.

Lead author of the study, Penelope Whitehorn, PhD, indicated, "We found that control bees, who were not exposed to the pesticide, improved their pollen collection as they gained experience, which we interpreted as an ability to learn to buzz pollinate better."

Dr. Whitehorn continued, "However, bees that came into contact with pesticide did not collect more pollen as they gained more experience, and by the end of the experiment collected between 47 percent [in the 2 ppb group] and 56 percent less pollen [in the 10 ppb group] compared to the control bees."

Bumblebees exposed to the insecticide had a buzz that was shorter than control bees, and they displayed less effort in their attempts to sonicate. "Our result is the first to demonstrate quantitative changes in the type of buzzes produced by bees exposed to field-realistic levels of neonicotinoid," Dr. Whitehorn said.

While this research is the first to quantify changes in buzzing, it is not the first to show these notorious chemicals inhibit bumblebees' pollination skills. Research in early 2017 found that realistic exposure to the neonicotinoid imidacloprid resulted in worker bees spending less time caring for young and

pollinating flowers. This research is consistent with other studies that link neonicotinoid use to reduced learning in bees, as well as other impacts, such as those on colony size, and reproductive success.

When this study was presented preliminarily at the British Ecological Society's annual meeting in 2016, the chemical company Syngenta, a major manufacturer of neonicotinoids (along with Bayer), argued that exposure to thiamethoxam in the field was usually closer to 3 ppb than 10 ppb, as researchers had only observed the impacts of 10 ppb exposure. Researchers took that suggestion, and indeed found similar effects at an even lower level of 2 ppb, which, as Dr. Whitehorn noted, decreased pollination collection by 47% compared to unexposed bees. (Beyond Pesticides, November 28, 2017)

<http://beyondpesticides.org/dailynewsblog/2017/11/study-finds-pesticides-take-buzz-bumblebees/>

DISNEY SUED BY COUPLE OVER ALLEGED BED BUG INFESTATION

A New York couple is suing Disney Vacation Development Inc. after a stay at a Disney resort in Florida, during which the pair said a bed bug infestation ruined their vacation and caused subsequent physical and emotional distress, USA Today reported.

Allyson L. Masciotti-Hamedl and Kevin Hamedl, of Poughquag, N.Y., in Dutchess County, N.Y., are seeking damages of between \$100,000 and \$1 million in their lawsuit, which claims Disney failed to “exercise reasonable care and breached its duty” to properly manage, operate and maintain Disney's Vero Beach Resort by keeping it free from hazardous conditions.

According to the lawsuit, which was originally filed in Dutchess County (N.Y.) Court in June and will be decided in the Southern District Court of New York, Masciotti-Hamedl awoke during her stay at the resort in September 2016 to “bugs crawling all over the bed, linens, and surrounding walls of her

room.”(PCT Online, November 16, 2017)
<http://www.pctonline.com/article/couple-sues-disney-alleged-bed-bug-infestation/>

Happy Holidays the OSU Pesticide Safety Education Program office will be closed during the University holiday period from December 22 through January 1.

CEU Meetings

Date: December 4, 2017

Title: Chemical Weed Control Training
Location: The Veranda Bryan Texas
Contact: Kay Dippel (979) 966-7067
Course #: OK-

CEU's: Category(s):
4 6

Date: December 6-7, 2017

Title: Winfield United 2017 Regional Conference
Location: Waterford Hotel Oklahoma City OK
Contact: Dennis Christie (405) 203-1751
Course #: OK-

CEU's: Category(s):
3 1A
1 4
4 10

Date: December 11, 2017

Title: Chemical Weed Control Training
Location: Coleman Party House Brownfield Texas
Contact: Kay Dippel (979) 966-7067
Course #: OK-

CEU's: Category(s):
4 6

Date: December 12, 2017

Title: Chemical Weed Control Training
Location: Texas Star Ranch Weatherford Texas
Contact: Kay Dippel (979) 966-7067
Course #: OK-

CEU's: Category(s):
4 6

Date: January 10, 2018

Title: 2018 Professional Applicator Training
Location: Redlands Community College El Reno
OK
Contact: Tammy Ford-Miller (580) 233-9516
Course #: OK- OK-17-148 A-F

CEU's: Category(s):
6 1A
6 10

Date: February 3, 2018

Title: Integrated Pest Management for the Food
Environment
Location: Holiday Inn Express Denton TX
Contact: FISA Deborah Murphy (913) 397-1185
Course #: OK-17

CEU's: Category(s):
4 7A
2 7C
5 10

Date: February 3-8, 2018

Title: 2018 Golf Industry Show and Education
Conference
Location: Henry B. Gonzalez Convention Center
San Antonio TX
Contact: Katie Schuster (800) 472-7878
Course #: OK-

CEU's: Category(s):
47* 3A
*OK Applicators can only earn 10 CEUs in 3A in a
year.

Date: February 14, 2018

Title: 2018 Ensystem CEU Workshop

Location: Holiday Inn Express Durant OK

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

www.ceuworkshop.com

Course #: OK-

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

Date: September 18, 2018

Title: 2018 Ensystem CEU Workshop

Location: Hampton Inn & Suites 85th Ave Tulsa OK

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

www.ceuworkshop.com

Course #: OK-

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

Date: September 19, 2018

Title: 2018 Ensystem CEU Workshop

Location: Holiday Inn Express Durant OK

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

www.ceuworkshop.com

Course #: OK-

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

ODAFF Approved Online CEU Course Links

PestED.com

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

CEU School

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

Technical Learning College

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

Green Applicator Training

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

All Star Pro Training

www.allstarce.com

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-ceu.htm>

ODAFF Test Information

Pesticide applicator test sessions dates and locations for December 2017/January 2018 are as follows:

December 2017		January 2018	
5	OKC	8	OKC
5	Goodwell	9	Goodwell
5	McAlester	9	McAlester
7	Tulsa	10	Lawton
11	OKC	11	Tulsa
12	Ardmore	16	Ardmore
13	Lawton	22	OKC
14	Enid	25	Tulsa
18	OKC		
21	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

<h1>Pesticide Safety Education Program</h1>
