OKLAHOMA COOPERATIVE EXTENSION SERVICE

PESTICIDE REPORTS

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

April, 2022 CHEM

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UNWANTED PESTICIDE DISPOSAL COLLECTIONS SCHEDULED FOR APRIL

ODAFF has scheduled the next Unwanted Pesticide Disposal Program collection dates for April 2022. They will occur April 26 in Ada and April 28 in Hobart. The locations are the Pontotoc County Agri-Plex and the Kiowa County Fairgrounds. The Disposals will run from 8 a.m. to 1 p.m. rain or shine at both locations.

There is no charge for this program. **Limit is 2,000 pounds per entity.** ONLY PESTICIDES will be taken at the sites (no fertilizer, paint, oil, etc)!
If you have any questions, contact Charles Luper (OSU) at 405-744-5808 or Ryan Williams (ODAFF) at 405-522-5993.

April 26 Pontotoc County Agri-Plex,
1710 N Broadway Ada, OK

April 28 Kiowa County Fairgrounds
302 N Lincoln St. Hobart, OK

For more information please go to https://extension.okstate.edu/programs/pesticide-safety-education/unwanted-pesticide-disposal-program/index.html(OSU PSEP)

APRIL TEST HELP WORKSHOPS

The Oklahoma State University Pesticide Safety Education Program (PSEP) has scheduled test help workshops for April 6 in Oklahoma City and April 19 in Tulsa.

The Oklahoma City workshop will be at the Oklahoma County Extension Center at 2500 N.E. 63rd St. in Oklahoma City. The Tulsa workshop will be at the Tulsa County Extension Office at 4116 E 15th in Tulsa.

Registration cost is $50 for each location and will include a copy of Applying Pesticides Correctly. This is the study manual for the core and service technician exams.

To register for this class please go to the Pesticide Safety Education Program (PSEP) website at http://pested.okstate.edu/html/practical.htm and click on the register online link. Class information and an agenda is also at that website as well as future 2022 classes.
(OSU PSEP)

EPA EXPANDS USE OF ENLIST PRODUCTS TO 134 ADDITIONAL COUNTIES FOR THE 2022 GROWING SEASON

Following the thorough review of a proposed label amendment, the U.S. Environmental Protection Agency (EPA) has approved the use of Enlist One and Enlist Duo in 134 additional counties, providing growers with additional weed management options for the 2022 growing season. Today's action is an example of EPA's commitment to working with stakeholders when new information becomes available to make regulatory decisions that reflect the best available science and protect human health and the environment.

Enlist One and Enlist Duo, two herbicides used to control weeds in conventional and genetically-modified corn, cotton, and soybean crops, can now be used in all counties of Arkansas, Kansas, Minnesota, Missouri, Nebraska, Ohio, Oklahoma, and South Dakota. In Texas, Enlist products can now be used in Bowie, Cooke, Fannin, Grayson, Lamar, and Red River counties. Read page 16 of the new Enlist One label and page 16 of the new Enlist Duo label to see which counties remain prohibited.

In January 2022, EPA issued seven-year registrations for these Enlist products. At that time, Enlist One and Enlist Duo were not approved for use in all counties of the United States. Counties were prohibited if they were not proposed for use by the product registrant, Corteva, or if EPA expected the use of Enlist products would likely affect or jeopardize federally threatened or endangered (listed) species that live on-field in a county.

In February 2022, Corteva submitted a label amendment to propose use of Enlist One and Enlist Duo in 128 additional counties. Corteva did not propose use in these counties during the registration renewal because Enlist products were previously thought to put the American Burying Beetle, a threatened species, at risk. However, after the renewal action was complete, Corteva proposed that EPA consider use in these counties. Based on EPA's new effects determination, which included a robust analysis of updated species range maps from the U.S. Fish and Wildlife Service (FWS), EPA expects that the use of these products — with the existing label requirements in place to mitigate spray drift and pesticide runoff — will not likely jeopardize the American Burying Beetle or other listed species and their critical habitats in these counties.

In March 2022, Corteva also submitted a label amendment to propose use of Enlist Duo in six Minnesota counties. EPA previously prohibited use in these counties because the Agency expected that the use of Enlist Duo would likely jeopardize the Eastern Massasauga rattle snake exposed on-field. However, EPA's prior analyses were based on FWS's 2020 species range maps. EPA subsequently learned that FWS updated their species range map in 2021, which shows that the Eastern Massasauga rattle snake is no longer present in Minnesota. Therefore, EPA has now determined that the prohibition of Enlist Duo in these counties is no longer necessary. In addition, EPA evaluated whether the use of Enlist Duo would affect

other off-field listed species that live in these counties. EPA now expects that, given the current mitigations on the product labels, these products will not likely jeopardize listed species or adversely modify critical habitats. The current mitigations will also reduce unintentional harm (i.e., "take") to individuals of all listed species in these counties.

Regardless of whether Enlist One and Enlist Duo are applied in a county that contains listed species or not, all Enlist One and Enlist Duo applicators — in all 34 states where these products are registered for use — must follow label requirements that reduce pesticide spray drift and runoff. Additionally, it is important to note that Enlist One and Enlist Duo are still prohibited in several counties where EPA identified risks to other on-field listed species during earlier registrations, including prohibitions EPA recently implemented based on the Agency's 2022 effects determination.

In addition to today's action, EPA corrected an oversight on the Enlist One and Enlist Duo product labels by removing prohibitions for two counties in Massachusetts and Rhode Island. Enlist products are not registered for use in the states of Massachusetts or Rhode Island, and therefore Enlist products remain prohibited in all counties of these states.

To view the registration documents for Enlist One and Enlist Duo, go to docket EPA-HQ-OPP-2021-0957 To learn more about these products, read EPA's Q&A. (EPA, March 29, 2022)
https://www.epa.gov/pesticides/epa-expands-use-enlist-products-134-additional-counties-2022-growing-season

EPA TAKES STEPS TO PROTECT ENDANGERED AND THREATENED SPECIES FROM INSECTICIDE

The U.S. Environmental Protection Agency (EPA) will take action to protect endangered and threatened species in response to the U.S. Fish and Wildlife Service's (FWS) nationwide final biological opinion (BiOp) for the insecticide malathion. This insecticide is commonly used for wide-area mosquito control and to control insects that attack crops and ornamental plants.

Under the Endangered Species Act (ESA), EPA ensures that certain actions, including many pesticide registration actions, do not jeopardize federally threatened and endangered (i.e., listed) species or adversely modify their designated critical habitats. In January 2017, EPA released the biological evaluation for malathion, which found the registration of this pesticide is likely to adversely affect listed species and their designated critical habitats.

Because of these findings, EPA initiated formal consultation with FWS. FWS then developed a draft BiOp, which evaluates whether the use of malathion is likely to jeopardize listed species or adversely modify their critical habitats. In April 2021, EPA posted FWS's draft BiOp for public comment and then summarized the comments for FWS to consider when finalizing its BiOp.

The final BiOp is the product of a collaborative interagency effort. Working together, FWS, EPA, the U.S. Department of Agriculture, and pesticide registrants identified mitigation measures to protect listed species. Registrants involved in the consultation agreed to implement these measures by modifying their product labels.

FWS's draft BiOp identified species that could be jeopardized by how malathion was used before this consultation process. FWS determined that the new mitigation measures, once implemented, will adequately reduce the potential effects of malathion products on listed species. EPA and FWS believe these measures, which are specifically intended to minimize malathion exposure, protect listed species.

Agreed-upon mitigation measures include no spray zones, reductions in application rates and number of applications, and other changes to the labels that, once approved, pesticide users must follow. Some of these measures will be implemented via Bulletins Live! Two, an online system that describes geographically specific pesticide use limitations to protect listed species and their designated critical habitats. These measures will not only protect listed species but also reduce exposure

and ecological effects more broadly wherever malathion is used.

In addition to label changes that will reduce exposure and prevent jeopardy to listed species, the BiOp provides several reasonable and prudent measures — actions intended to minimize unintentional harm (i.e., "take") to individuals of these listed species and minimize damage to their critical habitats that could result from malathion use.

This is the first nationwide final BiOp to result from EPA's consultation with FWS for a pesticide under registration review. The BiOp thus reflects a major milestone in EPA's work with FWS to protect listed species from pesticides and will advance the agencies' broader efforts to improve the pesticide consultation process.

The final BiOp is the last step in EPA's formal ESA consultation process with FWS. EPA is responsible for implementing the BiOp. By April 29, 2022, EPA will request that registrants submit amended labels to EPA. Registrants will then have 60 days to submit these amended labels. EPA will approve the amended labels and develop Endangered Species Protection Bulletins per registrant commitment letters within 18 months of the final BiOp issuance.

See the comments on FWS's draft BiOp for malathion in docket EPA-HQ-OPP-2021-0231

(EPA, March, 8,2022)
https://www.epa.gov/pesticides/epa-takes-steps-protect-endangered-and-threatened-species-insecticide

JUDGE WANTS EPA'S DICAMBA PLAN

Confused about EPA's intentions toward over-the-top dicamba use?

So is the federal judge tasked with deciding its future in the U.S. District Court for the District of Arizona, where environmental groups led by the Center for Food Safety and Center for Biological Diversity have asked the court to vacate the registration of three dicamba herbicides: XtendiMax (Bayer), Engenia (BASF) and Tavium (Syngenta).

U.S. District Judge David C. Bury recently issued an order in that case, declining to restart that lawsuit but asking for more information from EPA, after the agency's uncertain and sometimes contradictory comments on the future of dicamba use on dicamba-tolerant crops in the past year.

"It is ordered that ... the EPA shall file a report on the status of its ongoing evaluation of its options for addressing future dicamba-related incidents relevant to any potential regulatory action related to the 2020 dicamba registrations," the judge's order stated, giving a deadline of May 15, 2022.

"The EPA shall describe its schedule and explain how it fits into the 2022, 2023, etc. growing season(s)."

In the meantime, the case remains "stayed," or paused, while another court -- the D.C. Circuit Court of Appeals -- decides a jurisdictional question of whether lawsuits over the 2020 dicamba registrations belong in federal appeals courts, instead of federal district courts.

The plaintiffs initially asked Bury to lift the stay after EPA released a document in December 2021, detailing widespread off-target dicamba injury allegations, despite the 2020 label changes. (See more here: https://www.dtnpf.com/….) In court filings, EPA, along with dicamba registrants Bayer, Syngenta and BASF, have argued that the agency is still "reviewing options for addressing future dicamba-related incidents," and pointed to EPA's recent decision to modify the federal label to add cut-off dates for Minnesota and Iowa farmers. (See more on that here: https://www.dtnpf.com/….) But EPA officials have also stated repeatedly that the agency is uncertain that it can continue to defend over-the-top dicamba use, particularly in regard to risks posed to endangered species and critical habitats. (See more on that here: https://www.dtnpf.com/….)

In his order, Bury acknowledged the environmental groups' claim that "egregious ramifications" could occur if the 2020 dicamba registrations remain in place and expressed confusion about when and how EPA might

proceed with regulatory changes to address ongoing dicamba injury complaints -- and how the timing might affect farmers.

"... both the EPA and Intervenors [Bayer, Syngenta and BASF] seem to suggest this review must be undertaken in the context of the growing seasons because of the delicacy needed to make changes so as to not upset growing seasons once they are underway," Bury wrote. "The Court does not know what this means for the actual time frame the EPA anticipates moving forward with the potential future regulatory action it has now initiated."

Ultimately, "The Court would like a clearer picture of the relevant growing seasons in relation to the timing of this ongoing review and the D.C. [lawsuit's] briefing schedule," Bury concluded.

The request pushes any possible court-related impacts on dicamba use deeper into the season, as EPA has until May 15 to fulfill this order.

(Progressive Farmer, March 29, 2022)
https://www.dtnpf.com/agriculture/web/ag/crops/article/2022/03/29/court-asks-epa-agencys-long-term

PREEMPTION BILL INTRODUCED IN CONGRESS

On March 29, Rep. Rodney Davis (R-IL) introduced in Congress a bill that would codify federal pesticide preemption as the national standard, ensuring that the Environmental Protection Agency (EPA) and the state lead agency jointly regulate pesticide usage.

The National Pest Management Association (NPMA) announced its full support of the bill, which it says ensures uniform protection of the public's health, food supply, and property, from pests by stating that oversight of pest control is handled jointly by the lead agency in each state and the U.S Environmental Protection Agency (EPA), the entities that have the technical expertise and resources to best evaluate whether a product is safe and effective.

"As long-time proponents of pesticide preemption, we applaud Congressman Davis and the introduction of this bill. Preemption is critical to ensuring safe, consistent, and science-based use of pest control products and is in alignment with NPMA's overall commitment to public health," said Ashley Amidon, NPMA's Vice President of Public Policy.

If passed, the bill reinforces the intention of FIFRA that only the state lead agency act as a coregulator in the state with EPA, ensuring that the highly technical work of determining how pest control products and services are used are made by those with scientific expertise. In states with preemption (currently 46) the state lead agency already works with the EPA on any and all pesticide usage, sale, or distribution. Alaska, Maine, Maryland, and Nevada do not have a pesticide preemption law, meaning that localities in these states may regulate pesticides differently. This creates unequal protection for citizens based on their zip code. NPMA supports science-based decision making, and therefore believes that state lead agencies and the EPA are the best regulators of pesticides.

"Pesticides are already rigorously regulated at the federal and state levels to ensure safety. That's why I've introduced legislation to ensure states maintain their status as the sole co-regulator with the federal government to prevent liberal cities and towns from creating a patchwork of regulations that are confusing and burdensome to users, and ultimately do not contribute to health or safety in any positive way. I look forward to working with industry advocates and my colleagues in Congress to move this bill forward as we look to the next Farm Bill," said Davis.

NPMA strongly believes that by passing pesticide preemption at the federal level, the EPA and the state lead agency should be the only regulatory entities responsible for registration, sale, and use of pest control products. This bill clarifies the exclusive role of state lead agencies, preventing localities from imposing a patchwork of conflicting regulatory restrictions without scientific assessment, economic analysis, consideration of the rights of property owners to control pests, or responsibility of public health agencies to control disease vectors. (PCT Online March 29, 2022)
https://www.pctonline.com/article/npma-supports-rep-davis-pre-emption-bill/

BOTANICAL BRINGS NEW HERBICIDE MODE OF ACTION

Talk to any weed scientist, and they'll tell you the industry needs more modes of action. A North Carolina startup — Harpe Bioherbicide Solutions Inc. — is working on that challenge and has a platform of products in development that shows promise even against resistant weeds.

"We wanted to do this from the beginning," says Chad Brommer, co-founder and chief technology officer, Harpe. "We wanted to find some products, some pathways that we could develop into herbicides, but would come from natural sources."

Biologicals have been discovered and used for insect and disease control, but the big potential benefit is stopping weeds. And that's what Brommer and his team discovered, a series of plant-based chemical compounds effective against weeds. Harpe bioherbicide is a nonselective herbicide showing quick action when applied on a wide spectrum of broadleaf and grass weeds, and it exhibits equal efficacy when used during preemergent applications.

In fact, it was that quick action that pulled veteran business leader Bill Buckner in as CEO for the company. "I got a call about this new technology and invited them to my farm in North Carolina to demonstrate the product," Buckner says.

That demonstration convinced him that Harpe was onto something, and he was interested in being a part of it. A look at the leadership for the company includes familiar names from the crop protection industry, including Buckner and Daniel Pepitone, a co-founder and chief operating officer. The board of directors has familiar names as well.

Those industry veterans bring something many startups lack — understanding of how the crop protection business works. Buckner was with Bayer, but also the Noble Foundation before "retiring." His insight into the industry has helped with connections. He explains that major crop protection companies are following along with development of the Harpe products. “We have developed this company and product line to be divested when it's ready for market," Buckner says. That means Harpe won't come from the startup — but from a familiar major name in the industry yet to be determined.

Plants and chemicals

Stepping back, it's important to note that nature is quite complex. Plants and animals have developed their own defenses against pests and diseases. And for plants, that even includes weeds. There are other examples of natural products that became popular in their original form, or later in a synthetic version.

Pyrethroid insecticides were developed from natural compounds found in chrysanthemums. Mesotrione was derived from a warm-climate plant that exuded a compound that controlled weeds.

For Harpe's founders, the key was to identify tech that could be patented and was highly effective. "We have developed a series of products we feel are very close to being deployable in terms of putting it out on the market," Brommer says.

There are two versions of Harpe technology. The first is on its own as an organic product to serve an industry that could benefit from improved weed control. The other is a version premixed with postpatent products in a way that gives the legacy product improved efficacy, including a boost against resistant weeds.

The organic product is already being tested and showing promise in weed control, either as a preemerge product or as a post. The premix version is being tested with such active ingredients as glyphosate, glufosinate and pedimethalin.

Brommer notes that plants are fighting each other all the time. "We just listened in on them a little bit, and we were able to put some of these pieces together," he says.

Source of a herbicide

A series of unique genus and species plant extracts were identified by Brommer. Each has a set of natural compounds that serve as the active ingredients in Harpe formulations, one of which is the *Mentha* plant species

— mint, to be exact. There are a wide range of varieties of this plant around the world, and Brommer sees more opportunity there.

Interesting fact about a plant extract acting as a herbicide is that the product is not a single molecule doing the work. Brommer explains that it is a complex of molecules that take down these weeds, which helps mitigate the development of resistance.

The key is having enough mint to mass-produce the product. Buckner notes the company will be looking at global suppliers. "A lot of mint is grown in India," he says. "And we see an opportunity there to expand the market. We also have the option of sourcing synbio versions of the necessary molecules."

Whether organic or synthetic, having a new mode of action to take on major resistant weeds will be welcome news for farmers. Buckner explains that the product is in development and should come to market in 2024 or soon after.

You can learn more at harpebio.com.

(Southwest FarmPress, February 25, 2022)
https://www.farmprogress.com/herbicide/botanical-brings-new-herbicide-mode-action

TEXAS A&M RESEARCH CONTINUES TO COMBAT MOSQUITOES AND TICKS

Applied research has played an important role in the Western Gulf Center of Excellence for Vector-Borne Diseases as the institution spearheads efforts to combat mosquitoes, ticks and other vectors of human and zoonotic diseases.

After five years of research, Phillip Kaufman, Ph.D., head of the Texas A&M Department of Entomology, said projects have built a foundation for the center and its public health mission. Research by Texas A&M AgriLife Research and Department of Entomology scientists has been critical to the efforts to develop insect and disease control methods and forecasting tools for Texas communities.

“The center has made tremendous strides within its research, outreach and education mission, but research is a foundational element to long-term success when it comes to vector control and disease prevention,” Kaufman said. “Science focused on understanding vectors and providing novel methods to protect public health is the tip of the spear for this entire effort.”

Building research partnership. Disease outbreaks from viruses like dengue, chikungunya, West Nile and Zika in areas of the U.S. led to the creation of five regional Centers for Excellence in Vector-Borne Diseases.

The Western Gulf Center of Excellence for Vector-Borne Diseases is based at the University of Texas Medical Branch and includes partnerships with AgriLife Research and the Texas A&M AgriLife Extension Service along with other universities and public health agencies. The Center has four counterparts that represent a $50 million, five-year grant program funded by the Center for Disease Control and Prevention, CDC, designed to bolster research, education and outreach efforts aimed at preventing vector-borne diseases.

Kaufman said the College of Agricultural and Life Sciences, the Department of Entomology and AgriLife Research have all played important roles in the university’s collective efforts for scientific progress against vectors and vector-borne diseases.

“The cooperative and complementary efforts by our scientists for the Western Gulf Center is indicative of the overall mission to improve our understanding of vectors like mosquitoes and how we can control them more effectively,” he said. “The past five years have created a strong foundation for future strides in this field that ultimately supports more robust research, education and outreach in support of regional public health.”

Evaluating mosquito control. Over the past five years, scientists have conducted applied research projects designed to examine mosquito resistance to insecticides and to evaluate vector intervention programs around the state, among others.

Gabriel Hamer, Ph.D., AgriLife Research entomologist, Bryan-College Station, said much of the research performed by Texas A&M scientists aimed to improve integrated mosquito management in the region. Creation of the center has helped focus research efforts on locally relevant challenges that offer potential for translation into improved public health practices.

Hamer's work has been instrumental in the assessment of mosquito surveillance and control practices in cities and counties scattered across Texas. The collaboration of a local mosquito control program with an academic lab allows for access to additional tools or capacity that are often not possible in isolation.

He and his team of students and staff worked with the City of Brownsville, Harris County Public Health and other agencies in the state to address this need.

"Evaluating how vector-control tools work is often the most neglected aspect of integrated mosquito management," he said.

Building a community of practice. Through the Centers of Excellence, the CDC encourages "communities of practice," defined as a group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise by interacting on an ongoing basis.

Supporting the concept through research was a priority because communities of practice provide a collaborative framework for public health professionals to work with partners in academia and elsewhere to identify and leverage best practices and standards related to vector-borne diseases.

"The communities of practice aspect is one of the most exciting parts of our Center of Excellence," Hamer said. "I think everyone is proud of how the center has spurred communication and collaboration."

The many participants of the Center of Excellence scattered at multiple universities are publishing research results with university, local and state health agency personnel as co-authors. These products are testament to the effective networks that have been developed to reduce the perpetual challenges of siloed research activities not in touch with local needs, Hamer said.

One of Hamer's research projects involving many local and state partners was a survey of Texas residents in Harris, Tarrant and Hidalgo counties regarding their acceptance and willingness to pay for mosquito control.

Many city and county vector control agencies are severely underfunded and lack resources for effective integrated mosquito management, and the results of this survey suggest an unmet demand for mosquito control in Texas.

"We started this project given the observation that the region has very few area-wide vector control programs at the city or county level, funded by local taxes," he said.

Currently, the average amount of tax funding for vector control in these three counties is 78 cents per person per year, but the survey discovered that participants were willing to pay $53.15 in annual fees. Participants were also asked which control methods, including adulticides, larvicides, lethal traps and mass releases of modified mosquitoes, they were willing to support.

The survey found that most participants were overall supportive for all control methods, with the highest support for lethal traps and lowest support for genetically modified mosquitoes. This study was recently published in the CDC's journal Emerging Infectious Diseases.

Developing disease control, forecasting tools. Additional AgriLife Research entomologists have been conducting applied research to evaluate efficacy of current control practices or to develop new disease forecasting tools.

Patricia Pietrantonio, Ph.D., an AgriLife Research Fellow and professor in the Department of Entomology, worked with the Harris County Mosquito and Vector Control Division to investigate mosquito resistance to organophosphates and pyrethroids, the only two adulticide chemicals approved for control applications.

Research looked to determine the type of molecular-resistance mechanisms present and their frequency in known vector mosquito populations. Better understanding the susceptibility of wild populations of mosquitoes to control products will improve decision making to ensure efficacy is being achieved and to reduce the additional development of resistance.

The assays determined two mutations in the pyrethroid target, the sodium channel, are associated with resistance for Aedes aegypti populations in Harris County. The work was published in the journal PLOS

Neglected Tropical Diseases. Female Aedes and Culex species mosquitoes were collected in Harris County and exposed to different pesticides including malathion and permethrin to estimate the percentage of resistant mosquitoes. For Culex quinquefasciatus, the main mosquito that transmits West Nile virus in this region, the mutation conferring resistance to pyrethroids is widespread in Harris County. The published research is now guiding control measures in these regions.

The study has also identified genotypes within mosquito populations that produce metabolic resistance to traditional pesticides when expressed.

Kevin Myles, Ph.D., professor, and Zach Adelman, Ph.D., professor and AgriLife Research Fellow, both in the Department of Entomology, investigated how temperature and humidity levels are coupled with mosquito immune responses to pathogens to predict transmission risk.

This work was accomplished by partnering with the Harris County Mosquito and Vector Control Division to deploy microhabitat sensors, which then informed the environmental conditions of mosquitoes reared in College Station insectaries. Mosquitoes receiving different larval conditions, which influences their immune system, were then evaluated for their ability to transmit Zika virus.

Kaufman said this type of research could help forecast outbreaks based on environmental conditions.

"Understanding the environmental factors that could fuel an outbreak by different mosquito-borne viruses is important," he said. "Using disease forecasting tools that adapt to different microhabitat conditions experienced by the mosquitoes which inform transmission risk could be a promising approach."

Investment fuels innovation, protection. The first five-year round of funded research within the Western Gulf Center faced some obstacles due to the COVID-19 pandemic, including suspension of lab and fieldwork at times. But Hamer said the center continued to facilitate dialogue among academic and public health partners as they juggled attention on the pandemic concurrent with vector-borne diseases.

For example, the Texas Department of State Health Services, in concert with the Western Gulf Center, started the Texas Tick Working Group in 2019 with quarterly conference calls to discuss tick research and public health priorities. These well-attended video conference calls continued during the pandemic and have provided communities of practice that never existed before regarding the threat of ticks to public health in the region.

Hamer hopes the next round of CDC funding for the Centers of Excellence around the U.S. will continue to build on the foundation gained in the last five years and sustain the capacity to address the threats of tomorrow.

"It is an excellent fit for a land-grant university to be a partner in the Center of Excellence in Vector-Borne Diseases so that locally relevant applied research receives funding to address regional societal needs," he said. "Partnerships among academia, public health agencies, pest professionals, and industry are all needed to manage the changing threats posed by insect vectors that impact human and animal health."

(PCT Online March 24, 2022)
https://www.pctonline.com/article/texas-am-mosquito-research-update/

CEU Meetings

Please note that many of these meetings are now being done virtual. Please contact the meeting host directly if you have any questions.

Date: April 6, 2022
Title: Pest Management Update (Including Dicamba Training)
Location: TBA
Contact: Todd Baughman (580) 224-0623

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

Date: April 7, 2022
Title: Farmers Coop Seed Treatment Update
Location: Farmers Cooperative Association Ponca City, OK
Contact: Kody Leonard (918) 244-8250

CEU's:	Category(s):
1	4

Date: April 7, 2022
Title: Cotton & Peanut Weed Management and Sprayer Technology
Location: Caddo Kiowa Technology Center Fort Cobb, OK
Contact: Heath Hull (405) 668-0108

CEU's:	Category(s):
2	1A

Date: April 7, 2022
Title: Pesticide Record Keeping & Drift Control in Crop Sensetive Areas
Location: McClain County OSU Extension Purcell, OK
Contact: Justin McDaniel (405) 527-2174

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

Date: April 8, 2022
Title: Pesticide Applicator Meeting
Location: Lincoln County Chandler, OK
Contact: Cody Linker (405) 258-0560

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

Date: April 19, 2022
Title: Grady County Ag Producer's Meeting
Location: Chickasha, OK
Contact: Ally Minor(405) 224-2216

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

Date: April 19, 2022
Title: OSU Chickasha Wheat Field Day
Location: South Central Research Stations Chickasha, OK
Contact: Ally Minor(405) 224-2216

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

Date: April 21, 2022
Title: Veseris 2022 Annual CEU Workshop
Location: Stoney Creek Hotel & Conference Center Broken Arrow, OK
Contact: Deb Chambers (918) 622-2048
https://www.ok-pca.com/uploads/forms_11_325371235.pdf

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

Date: May 5, 2022
Title: Payne County Improving Forages and Crops with Herbicides
Location: Payne County Stillwater, OK
Contact: Nathan Anderson (405) 747-8320

CEU's:	Category(s):
2	1A

Date: September 28, 2022
Title: ENSYSTEX 2022 CEU Workshop
Location: Hilton Garden Inn· Oklahoma City OK
Contact: Don Stetler (281) 217-2965
https://ceuworkshop.com/

CEU's:	Category(s):
4	7A
2	7B
1	8

ODAFF Approved Online CEU Course Links

Online Pest Control Courses
https://www.onlinepestcontrolcourses.com/

PestED.com
https://www.pested.com/

Certified Training Institute
https://www.certifiedtraininginstitute.com/

WSU URBAN IPM AND PESTICIDE SAFETY EDUCATION PROGRAM
https://pep.wsu.edu/rct/recertonline/

CEU University
http://www.ceuschool.org/

Technical Learning College
http://www.abctlc.com/

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/

Veseris
http://www.pestweb.com/

AG CEU Online
https://agceuonline.com/courses/state/37

Target Specialty Products Online Training
https://www.target-specialty.com/training/online-training

For more information and an updated list of CEU meetings, click on this link:
http://www.kellysolutions.com/OK/applicators/courses/searchCourseTitle.asp

ODAFF Test Information

Testing will be done at testing centers in multiple locations around the state by PSI Services LLC.

For more information and instructions, please go to https://bit.ly/3sF4y0x.

Reservation must be made in advance at www.psiexams.com/ or call **855-579-4643**

PSI locations.

Oklahoma City 3800 N Classen Blvd, Ste C-20, Oklahoma City, OK 73118

Tulsa 2816 East 51St Street, Suite 101, Tulsa, OK 74105

McAlester 21 East Carl Albert Parkway (US Hwy 270), McAlester, Oklahoma 74501

Woodward 1915 Oklahoma Ave, Suite 3, Woodward, OK 73801

Lawton Great Plains Technology Center, 4500 West Lee Blvd Building 300- RM 308, Lawton, OK 73505

Enid Autry Technology Center, 1201 W. Willow Rd, Enid, OK 73703

Ponca City Pioneer Technology Center, 2101 N Ash, Ponca City, OK 74601

Norman Moore Norman Technology Center, 4701 12th Ave NW, Norman, Oklahoma,73070

If you have questions on pesticide certification. Please email or call:

Kevin Shelton
405-744-1060 kevin.shelton@okstate.edu or

Charles Luper
405-744-5808 charles.luper@okstate.edu

Find us on Twitter at @OkstatePestEd

Pesticide Safety Education Program

PESTICIDE SAFETY EDUCATION PROGRAM
OSU Extension

Oklahoma Unwanted Pesticide Disposal Program

https://bit.ly/3pF9K2p

April 2022

When & Where?

8:00 am to 1:00 pm

DATE **April 26, 2022**
COUNTY **Pontotoc County**
CITY **Ada**
LOCATION **Pontotoc County Agri-Plex, 1710 N Broadway Ada, OK 74820**

What is the Oklahoma Unwanted Pesticide Disposal program?

The Oklahoma Department of Agriculture, Food and Forestry is funding a program to help collect and properly dispose of unwanted pesticides that homeowners, farmers, ranchers, commercial applicators, or dealers may have. For future locations and dates check the website listed above.

What are unwanted pesticides?

Unwanted pesticides are pesticides that are unusable as originally intended for various reasons. Unwanted pesticides are leftover pesticides, pesticides that are no longer registered in the state of Oklahoma, pesticides that no longer have labels and pesticides that are no longer identifiable.

Who is eligible to participate and what does it cost?

Oklahoma commercial and non-commercial applicators and pesticide dealers may participate. Oklahoma farmers and ranchers and homeowners can use the program as well. **There is no cost for the first 2,000 pounds of pesticides brought in by a participant.**

- Liquid pesticide weighs about 10 pounds per gallon.

Will someone pick up my pesticides for me?

No it is the owner's responsibility to transport the pesticides to the site. Some transportation tips can be found at **https://bit.ly/3pF9K2p**

What are the steps to participate in the collection program?

Applicators, homeowners, farmers, and ranchers are not required to pre-register. Dealers are asked to voluntarily pre-register through the OSU Pesticide Safety Education Program. After completing pre-registration requirements, if required, bring unwanted pesticides safely to one of the collection sites.

Why are dealers asked to pre-register?

Dealers are asked to pre-register due to the potential of large quantities coming from multiple dealers and/or multiple locations. This allows the contractor to plan the appropriate resources to handle the quantity of pesticides that comes into the collections. Visit the OSU Pesticide Safety Education Program for information and how to register at https://bit.ly/3pF9K2p

Will the department use my participation in the program as a means to prosecute for illegal management of pesticides?

No, the disposal program is a service program designed to remove unusable pesticides from storage and reduce the potential threat to public health and the environment. Those disposing of pesticides will not be required to provide their names or details on their chemicals. The disposal service is free up to 2,000 pounds.

Contact Information:

PESTICIDE SAFETY EDUCATION PROGRAM
OSU Extension

Charles Luper
Oklahoma State University
Pesticide Safety Education Program
405.744.5808
charles.luper@okstate.edu

Ryan Williams
Oklahoma Department of Agriculture
Consumer Protection Services
405.522.5993
ryan.williams@ag.ok.gov

PESTICIDE SAFETY EDUCATION PROGRAM
OSU Extension

Oklahoma Unwanted Pesticide Disposal Program

https://bit.ly/3pF9K2p

April 2022

When & Where?

8:00 am to 1:00 pm

DATE	**April 28, 2022**
COUNTY	**Kiowa County**
CITY	**Hobart**
LOCATION	**Kiowa County Fairgrounds, 302 N Lincoln St. Hobart, OK 73651**

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