OKLAHOMA COOPERATIVE EXTENSION SERVICE

PESTICIDE REPORTS

Division of Agricultural Sciences and Natural Resources • Oklahoma State University
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LABEL MANDATED TRAINING

Applicators need to be aware that some pesticide product labels now require mandated training specific to that product before use.

Dicamba products that are Restricted Use Pesticides for use on dicamba resistant crops requires annual training. These products XtendiMax®, Engenia®, FeXapan™, and Tavium® all require documented dicamba training before use.

Upcoming trainings in Oklahoma for dicamba products are listed below. Questions should be directed to the County Extension Office listed.

March 10 Burns Flat contact Beckham County
March 24 Ponca City contact Kay County
March 24 Enid Contact Garfield County
March 24 Adair County
March 24 LeFlore County
March 24 Sequoyah County
March 25 Fort Cobb contact Caddo County
Video training will be an option after April 1 in all County Extension offices.

Products containing Paraquat such as Gramoxone and others now have label required training before use. This training can be done online and is good for 3 years after completion. Online training can be found at http://www.usparaquattraining.com/ and is also linked at http://pested.okstate.edu. (OSU PSEP)

EPA OFFERS WEBINARS ON POLLINATOR HEALTH AND HABITAT

Beginning in March 2020, EPA's Office of Pesticide Programs will host a series of public webinars highlighting ongoing work to promote pollinator health and habitat.

These webinars seek to increase awareness of the evolving science on pollinator health, promote efforts to improve pollinator habitat, and engage stakeholders in addressing factors associated with declines in pollinator health.

Each webinar will target different stakeholders, including the general public; homeowners; school officials; scientists; conservation groups; beekeepers; growers; and state, local and tribal governments.

EPA will hold the first webinar, Creating Monarch Habitats in Schools and Communities, on March 10. Presenters will explain the monarch butterfly's importance as an iconic species; why safeguarding monarch habitat is critical to overall ecosystem health; and how schools can create living educational environments that provide safe habitat. Participants will learn about threats to the monarch butterfly, monarch migration patterns, and the role groups and individuals can play in conserving monarch habitat by adopting integrated pest management practices.

The remaining webinars will address pesticide risks, agricultural stewardship, and pollinator protection plans:

Advancing the Science of Assessing Risks to Bees from Pesticides (July 2020) - Exploration of advancements in standardized test methods and efforts to leverage existing data through retrospective analyses with consideration of both pesticide exposure and effects. Focused on scientists and pesticide manufacturers.

Agricultural Stewardship and Best Management Practices to Reduce Pollinator Risk (August 2020) - Presentations on various agricultural stewardship and best management practices, including integrated pest management techniques, that aid in reducing pollinator risk and enhancing pollinator habitat. Geared toward growers, pesticide applicators, agricultural land managers, and stakeholders working in crop production.

Engaging Stakeholders: Development and Implementation of Pollinator Protection Plans (September 2020) - Discussion of managed pollinator protection plans as a way to engage stakeholders in improving pollinator health and efforts to coordinate research on the effectiveness of these plans. Target audience will be state, local and tribal governments; conservation groups; and the agricultural community, including beekeepers.

Visit EPA's website on Protecting Bees and Other Pollinators from Pesticides for the latest information on Agency efforts on pollinators. Registration information will be available on that webpage in advance of each webinar.(EPA February 19, 2020) https://www.epa.gov/pesticides/epa-offers-webinars-pollinator-health-and-habitat

DICAMBA BURNOUT? YOU'RE NOT ALONE.

If there's a more accurate term than "dicamba fatigue" – first mentioned in an **article** by reporter Emily Unglesbee in late 2019 to capture agriculture's current sentiment towards the technology and the associated fallout – we have yet to hear it.

"It's not a fatigue that is unique to the regulatory agencies that are having to cope with off-target movement issues," says Andrew Thostenson, Pesticide Program Specialist with North Dakota State University Extension.

"It's at the farmer level, it's at the custom application level, it's at the university level, and I wouldn't even be surprised if it's at the level of manufacturers. I think there's plenty of 'fatigue' going on."

Dr. Tom Mueller, Professor of Weed Science at the University of Tennessee, agrees.

"Farmers have damage (from dicamba) to their LibertyLink soybeans, and in previous years they would report it. In 2019 (and my guess will be in 2020), they did not report it, since nothing ever comes of their case," he tells *CropLife*.

We spoke with Thostenson on Valentine's Day, just after he had hung up the phone with Leo Reed, Pesticide Licensing Manager with the Office of Indiana State Chemist – whose office has burned through well over **$4 million and disproportionate staffing resources** investigating hundreds of alleged dicamba drift cases since 2017. Last year, despite tightening label restrictions and mandatory training, drift investigations in Indiana were higher than ever at 178.

Yet, Indiana's 2019 pales in comparison to the year Illinois had. The No. 1 soybean-producing state's dicamba-related complaints rocketed to 724 from 330 the prior year, and from 246 in 2017.

Initially, U.S. Environmental Protection Agency engaged readily with pesticide officials across many soybean-growing states, holding weekly conference calls to hear them out on the surging reports of injury not only to crops, but to neighboring trees, orchards, and vineyards. It made field visits to seven states to meet with growers, researchers, and regulators.

Then, in 2018, the agency checked out, so to speak, when it **renewed the label** on dicamba-resistant technologies through the end of 2020.

"The states have had numerous, ongoing conversations with EPA to talk about these things, and it's like picking up the phone and hearing, '*ah-ha, ah-ha, ah-ha*.' I don't want to say they don't care," Thostenson explains. He points out that the agency is awaiting the new data and monitoring requirements registrants will submit this fall. That data will encompass field studies of off-site movement of dicamba, studies to investigate temperature effects on volatility of dicamba, studies on ecological effects on non-target plants, and more (see the full list on **p. 23 of the EPA decision**).

After taking this information into consideration, "I would be surprised if 2021 looks the same. I have to believe there will be changes in the registration," Thostenson affirms.

In response to a *CropLife* inquiry on how it will weigh out the issues with regard to re-registration of dicamba, an EPA spokesperson said, via email, "EPA will review all pertinent information from states, pesticide manufacturers, farmers, and other stakeholders to better understand dicamba's impact on the 2019 growing season. EPA will continue to work to balance the various inputs to develop protective dicamba measures.**"**

Despite the undercurrent of fatigue and frustration with the "almost ludicrous labels" of XtendiMax products, Mueller says: "The more closely I have worked with the EPA, the more impressed I am with how this under-funded agency is producing good decisions under difficult circumstances than I thought previously. While politics still is involved in the process, the technical side, based on their statutory guidance, is followed to a good decision." He adds, "Having traveled to other countries, I can clearly share my belief that our pesticide registration process, while not perfect, is far superior to any other country or group of countries."

The 2020 crop year, we hope, will move the needle in a positive direction for all stakeholders.

In the meantime, please stay tuned over the next month for the twice-weekly edition of *Dicamba Update*. We'll do our best to keep you posted on any changes to regulations and offer diverse perspectives on relevant issues such as social impact, enforcement efforts, weed resistance, tank-mixing, and other dicamba research findings. For

reference, check out prior-year issues of ***Dicamba Update***.

(CropLife February 18,2020)
https://www.croplife.com/dicamba/dicamba-burnout-youre-not-alone/

THE FUTURE OF CHLORPYRIFOS

Production of the insecticide Lorsban is ending, but its active ingredient, chlorpyrifos, is likely to remain on the agricultural landscape in the years to come.

Corteva Agriscience took the industry by surprise when it announced in early February that it was voluntarily ending production of chlorpyrifos in 2020. As the largest manufacturer of the insecticide, primarily under the brand name Lorsban, this loss will likely shrink chlorpyrifos availability in the short term, industry experts told DTN.

However, EPA has vowed to continue its re-registration of the active ingredient, ensuring that generic formulations of the chemical will remain legal to use in the years to come, the agency informed DTN. The EPA has recently defended the chemical against legal challenges based on concerns around the neurodevelopmental effects it can have on people, particularly infants. In recent years, some states and countries have initiated bans on chlorpyrifos, such as Hawaii, California, New York, the UK and the EU. See more here: https://www.dtnpf.com/….

EPA characterized Corteva's decision to drop chlorpyrifos production as a "strategic business decision" and said it will not affect the chemical's current registration review, which the agency has fast-tracked.

"EPA still expects to release the revised risk assessment for chlorpyrifos this fall using the best available science," an agency spokesperson wrote in an email. "Also, Corteva's decision will not affect other chemical manufacturers' ability to produce chlorpyrifos or farmers' ability to obtain the product."

The agency expects to release updated risk assessments and a proposed interim decision this year, with a final decision slated for 2022.

Corteva told DTN in an email that "We will continue to defend registrations of the product to allow existing product to be used by growers where registered."

"There are many other producers of chlorpyrifos around the world," the company added. Generic manufacturers of chlorpyrifos include companies such as FMC/Cheminova and Adama (formerly Makhteshim Agan).

However, sales of chlorpyrifos have declined steadily in the past two decades, Corteva noted. The U.S. Geological Survey shows that, in 2016, chlorpyrifos use had dropped below 5 million pounds annually, down from a peak of roughly 13 million pounds in 1994.

University entomologists agreed that it is no longer the first product growers reach for when fighting certain insect outbreaks.

As a broad-spectrum organophosphate insecticide, the chemical provides good control of many insect pests such as soybean aphids, noted University of Minnesota integrated pest management specialist Bruce Potter and Michigan State University entomologist Chris DiFonzo. It is also used to control a range of pests in cotton, alfalfa, citrus and tree nut production.

Use surged briefly during soybean aphid outbreaks in 2003 and 2005, DiFonzo recalled. "During the 2005 mega-outbreak, Lorsban supplies actually ran out in Michigan," she said in an emailed newsletter.

But, since then, other insecticides have emerged to replace the chemical in control of aphids and other insects, she added. "Less-risky alternatives became available," DiFonzo explained. "For the most part,

[organophosphate] use in Michigan field crops has been replaced by Bt corn, neonicotinoid seed treatments and foliar pyrethroids."

However, Lorsban remained a valuable rotational chemical for many northern Midwest growers, especially those facing pyrethroid-resistant aphid populations in Minnesota, Potter said.

He said he expects Minnesota farmers to continue to rotate generic formulations of chlorpyrifos with these other tools in the future. "There is quite a bit of generic use already," he said.

DiFonzo cautioned that the loss of Lorsban on the market should alert the industry to the growing need to steward the chemicals that remain.

"The loss of Lorsban, disappearance of [organophosphates] in general, and insecticide resistance all highlight the need to manage insects like soybean aphid in an integrated way, exposing them to insecticides only as the last resort," she said.

(Progressive Farmer, February 20, 2020)
https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/02/20/corteva-drops-lorsban-epa-will-keep-2

US EPA ASKED TO REIN IN EMERGENCY PESTICIDE USES

Environmentalists are calling on the US EPA to restrict its approvals of emergency exemptions for unapproved pesticides uses, arguing that the existing regime is too lax and needs reform.

Environmentalists are calling on the US EPA to restrict its approvals of emergency exemptions for unapproved pesticides uses, arguing that the existing regime is too lax and needs reform.

The Center for Biological Diversity (CBD) made its request via a petition filed on Thursday (February 20th) with the EPA, suggesting that the Agency establish a rule restricting specific pesticide emergency exemptions to no more than two years within any ten-year period.

At issue is a provision of federal pesticide law that allows state and federal agencies to request unregistered uses of pesticides if needed to address a "serious pest problem" that jeopardizes production of agricultural goods or puts public health at risk. The Agency can grant such requests under Section 18 of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) after it confirms that the situation meets the statutory definition of "emergency condition" and has completed a risk assessment.

Recent Section 18 exemptions have included use of the insecticide, bifenthrin, to combat stink bugs on apples, peaches, and nectarines, as well as application of the neonicotinoid insecticide, clothianidin, and use of the antibiotic, oxytetracycline, on citrus trees to fight citrus greening disease.

The EPA has long faced criticism that it is too quick to issue exemptions and is in effect a rubber stamp for requests for predictable and chronic problems that occur over many consecutive years. Critics also worry that the EPA often fails to provide any public notice or opportunity for input before approving the exemptions and relies largely on the applicants as the primary source of information about the pesticide’s risks.

The Agency’s inspector general in September 2018 issued an assessment that largely echoed that view, finding that the EPA’s framework fails to adequately measure the risks to human health or the environment.

The new petition from the CBD contends that the two-year restriction on granting exemptions is needed to “end ongoing, significant abuses of Section 18,” noting that the provision is “not intended to substitute or act as an alternative to a pesticide” going through a full registration review prior to that pesticide being approved for use.

"Yet, despite the clearly limited scope of Section 18, EPA continues to provide emergency exemptions for chronic, long-term uses of pesticide products, and has been doing so since at least the 1970s," according to the petition. "This practice undermines FIFRA's Section 3 new use registration process by allowing for long-term uses without first demonstrating that the use can meet statutory safety standards. Further, without having any measures in place to monitor or describe the human health or environmental impacts of its emergency exemptions, EPA cannot be sure that its Section 18 approvals result in minimal negative impact to public health and the environment."

The 262-page petition hones in on the EPA's decisions to grant dozens of emergency exemptions over the past decade for the neonicotinoid insecticide, sulfoxaflor, which was briefly pulled from the market in 2015 due to its potential to harm pollinators. The EPA has issued multi-year exemptions for use of the pesticide on cotton and sorghum despite concerns about pollinator health.

"Given the recent, long-term specific emergency exemptions granted by EPA, it appears that Section 18 currently functions as a means to facilitate the widespread use of pesticides that have not completed the Section 3 registration review," the petitioners say. "This establishes a system in which pesticides that are 'indefinitely stalled' in the registration process can be sold and distributed freely without any incentive to make progress towards registration."

"By establishing a finite amount of time that Section 18 specific exemptions will be granted, EPA will be giving greater regulatory certainty to growers and state agencies," according to the CBD. "The Agency will also cut down on abuse of the emergency exemption process and ensure a greater number of pesticides are being used in accordance with the safety standards outlined in Section 3 of FIFRA." (AGROW, February 27, 2020)

CORONAVIRUS VIRUS: DO MOSQUITOES SPREAD IT?

Editor's note: Mosquito expert Stan Cope, vice president, technical products and services, AP&G, wrote the following information paper on coronavirus and mosquitoes for his "Captain Stan The Mosquito Man" blog.

The Novel Coronavirus, known as 2019-nCoV, was first identified in Wuhan, China and has since spread rapidly, killing hundreds and sickening thousands. This virus is newly identified and is not the same as the coronaviruses that circulate among humans and cause mild disease, such as the common cold. Coronaviruses are a large family of viruses, some of which cause illness in humans while others circulate among animals such as cattle, cats, camels and bats. SARS, a coronavirus that emerged to infect people, came from civet cats while another coronavirus, MERS, infected people from camels.

Although 2019-nCoV likely came from an animal, it now appears to be spreading person-to-person. **There is no evidence whatsoever that any coronavirus is spread by mosquito bite**. But what, exactly, is 'person-to-person' transmission? This occurs mainly via respiratory droplets produced when an infected person coughs or sneezes, similar to how influenza and common colds are spread. These droplets can land in the mouths or noses of people who are nearby or may even be inhaled into the lungs. Usually this happens within about 6 feet. Also, note that some viruses are highly contagious (such as measles) while others are less so. We still have much to learn about just how contagious 2019-nCoV is as well as many other aspects of its epidemiology.

Now, if a mosquito bites a person who has Zika virus in the bloodstream, that mosquito may then be able to transmit the virus to another person in about 10 days or so. However, this is NOT considered 'person-to-person' transmission.

In this case, the virus is 'vector borne', meaning transmitted by a biting arthropod such as a mosquito or tick.

Here are just a few other things to know about 2019-nCoV:

CDC does not recommend that people who are well wear a facemask to protect themselves from respiratory viruses.

- Coronaviruses are poor survivors on exposed surfaces. Therefore, there is likely a very low risk of spread from products or packaging that are shipped over a period of days or weeks at ambient temperatures.
- There is no reason to think that any animals or pets in the United States might be a source of infection for 2019-nCoV.
- There is currently no vaccine for 2019-nCoV and no specific antiviral treatment.
- One of the most effective preventive measures is to wash your hands often, with soap, for at least 20 seconds especially after using the bathroom, before eating, and after blowing your nose, coughing, or sneezing.

This information was adapted primarily from www.cdc.gov, the official website of the Centers For Disease Control And Prevention. The 2019-nCoV situation is changing daily so visit this site frequently, Cope advised.

Cope holds a PhD in Public Health, with emphasis in Tropical Medicine and Infectious Diseases.

(PCT Online, February 14, 2020)
https://www.pctonline.com/article/coronavirus-virus-mosquitoes-cope/

THOUSANDS OF FARMERS EXPECTED TO JOIN DICAMBA LAWSUITS

Farmer interest in seeking retribution for crops damaged by the controversial dicamba herbicide from Monsanto/Bayer and BASF could reach 2,000 farmers in the wake of in the wake of the Feb. 14 decision by a Missouri jury awarding a $15 million verdict for compensatory damages and $250 million in punitive damages on Feb. 15, according to the law firm Peiffer Wolf Carr & Kane (Peiffer Wolf).

Joseph Peiffer, managing partner, Peiffer Wolf, made that estimate public during a news event Wednesday featuring three farmers from Missouri, Arkansas and North Carolina who have been victimized by dicamba. Peiffer said that estimate could be conservative and is based on more than 5,000 complaints filed through different agricultural state boards and federal agencies, including the Environmental Protection Agency.

"From my experience, not everyone who had damages file complaints," Peiffer said. Before the recent verdict in Missouri peach farmer Bill Bader's case, 75 farmers had inquired about being part of dicamba legal challenges. He said since then, the phones have been "ringing off the hook," and he expects interest to grow for the many law firms offering advice to farmers who have faced damage.

In 2017, 3.6 million acres of soybeans on 2,708 farms nationwide were damaged by dicamba, according to the estimate of University of Missouri crop science professor Kevin Bradley.

The Illinois Department of Agriculture found a five-fold increase in complaints — from less than 130 total complaints for all pesticides in 2016 to more than 700 for dicamba alone in 2019.

Biochemist Paul Lesko, an attorney at Peiffer Wolf, said he's a "lawyer who knows science." He disagreed with the assessment that the Bader case is unique or that this is a one-off situation for Monsanto.

"The science is well established that dicamba is extremely damaging to other crops. There are very few scientific question marks. When it comes to harm done by dicamba, the science is very clear," Lesko said.

Lesko said the current lawsuits have targeted manufacturers and not the applicators. If a farmer or applicator follows the application instructions to the label requirements, there is still a high volatility risk that it could blow away. "This is not an applicant error; this is a design defect," he said.

Bayer defends the chemisty. "Bayer stands behind the company's Roundup Ready® Xtend® Crop System and Xtendimax® herbicide with VaporGrip® technology. These are valuable tools for growers who need effective options to increase yields and combat resistant weeds and do not pose any unreasonable risk of off-target movement when used according to label directions."

Peiffer said he has talked with dozens of lawyers who represent farmers in an effort to team together on future legal challenges. He's hopeful that more will be known by this fall on the decision regarding a class action lawsuit, as the judge has not decided yet on the many challenges. The Missouri Bootheel and Arkansas region represents ground zero, but the impacts have continued to spread with additional use.

Peiffer said he's hopeful that the Bader verdict "speeds up justice," because the case originated in 2016. Lesko added that as Bader has gone through trial, the discovery is still open, but most has been completed already.

Recently, interest in dicamba spiked as a potential way to deal with pigweed, a weed that plagues many farmers. Because pigweed and other weeds have developed resistance to glyphosate, Monsanto has been working to make seeds that are resistant to both glyphosate and dicamba. Theoretically, farmers using seeds resistant to both herbicides could spray both glyphosate and dicamba and kill weeds like pigweed without damaging their crops. At the same time, Monsanto and chemical companies like BASF were working to get low-volatility versions of dicamba approved by EPA so farmers who wanted to use the herbicide during the growing season would not have to worry about harming neighboring farms that may not use genetically modified seeds.

Dicamba is an herbicide designed to kill broad-leaf plants, sold under names Vanquish, Oracle, Diablo and Banvel, among others. Lesko said these products are still on the market. "Manufacturers knows there's a risk, and they're still putting out the product." He said as the companies sell more seeds resistant to dicamba, there are still going to be other crops that aren't resistant. "This is not an issue that's going to disappear and will continue as long as this product stays on the market."

Marty Harper, a farmer south of Greenville, N.C., plans to be included in a complaint Peiffer Wolf filed in St. Louis, Mo. He grows peanuts, cotton, corn, soybeans, wheat, sweet potatoes and tobacco on 4,000 acres, with a majority of his crop profits coming from tobacco and most of his other crops grown mostly for rotation. He estimates the dicamba-related damage to his tobacco fields at more than $200,000. Tobacco is extremely sensitive to dicamba, and any signs of damage make the entire crop unsellable.

Harper farms with his two sons and said dicamba makes him nervous every year. "Dicamba is throwing a wrench into everything. I hope all this works out. We don't need something like dicamba drift to determine if we farm in the future or not," he said.

In a statement Feb. 17, Bayer said it disagrees with the jury's verdict and plans to "swiftly appeal the decision."

In an emailed statement Feb. 26, a spokesman for Bayer noted, "While we have empathy for Mr. Bader, Monsanto's products were not responsible for the losses sought in this lawsuit and we look forward to appealing the decision,"

Bayer noted in a statement following the verdict, "Without weed management the world would face massive yield loss, resulting in less grain, significantly smaller harvests and ultimately less food for people and animals. In addition, weed management ensures that farmers can make the best use of limited natural resources, avoid waste and can help promote carbon sequestration, an important element of sustainable farming that benefits all of society."

Bayer added, "Despite the verdict, Bayer stands behind Xtend seed and XtendiMax herbicide products, which enjoy a 95% weed-control satisfaction rate from the farmers who use them. We want our customers to know that, as this legal matter continues, we remain steadfast in our commitment to delivering them the effective and sustainable tools they need in the field." (Southwest FarmPress, February 26, 2020) https://www.farmprogress.com/crops/thousands-farmers-expected-join-dicamba-lawsuits

RISE PROMOTES INTEGRATED APPROACH TO MANAGE INVASIVE SPECIES

RISE (Responsible Industry for a Sound Environment) is participating in the national effort to raise awareness about the environmental damage caused by non-native species during National Invasive Species Awareness Week, recognized February 24-28, 2020. Invasive species are plants, animals, insects and even fungus or bacteria that are not native to the local ecosystem and can cause harm to that ecosystem. Bodies of water are particularly susceptible to the spread of non-native plants, making it important to raise awareness about aquatic invasive species.

"Our wetlands, waterways and natural habitats are lifelines for how we live, work and play. It's important that we continue to have a thriving rivers, lakes, and beaches to enjoy for many years to come," shares Megan Provost, President of RISE. "Unfortunately, invasive plants and other species have spread in many of our wetlands and waterways and they can out-compete native species, burden the economy and threaten public health. Addressing this challenge requires an integrated approach."

The negative impact of invasive species on wildlife and public health can yield high costs, including:

• Preventing oxygen from reaching fish and other wildlife.

• Completely blocking waterways and attaching to boat motors.

• Entangling swimmers, pets, paddlers and boaters.

• Damaging critical habitat for rare, threatened and endangered species.

• Creating areas that welcome mosquito growth, which leads to an increased risk of mosquito-borne illnesses like West Nile Virus and the Zika virus.

Florida, with its subtropical climate, faces significant pressure from invasive species. Hydrilla is considered the worst invasive aquatic plant in the United States and, in Florida, state agencies have spent approximately $250 million to manage hydrilla over a 30-year period. Water hyacinth and water lettuce are additional examples of the many aquatic invasive weeds threatening Florida waterways. Non-native invasive plants impact approximately 1.5 million acres in Florida (the equivalent of more than 1.14 million football fields). Controlling these invasive plants, however, can have significant benefits – one estimate from 2007 concluded that regular invasive plant management on lakes in central Florida provided a net benefit valued at $60 million.

It's imperative that communities control aquatic invasive weeds to allow native vegetation the opportunity to grow and thrive and to support aquatic recreation, such as fishing and swimming. Methods to managing invasive species include:

• Adopt an integrated vegetation management (IVM) approach to effectively manage aquatic invasive species. IVM considers all control and prevention options – biological, cultural, mechanical, and chemical means – and follows a process to observe, identify, solve and prevent invasive plant problems.

• Learn more about what your community is doing to prevent invasive species and how to spot common invaders in your area.

• Maintain access to pesticide products approved by the U.S. Environmental Protection Agency that prevent invasive species from harming local, state and national ecosystems.

Provost adds, "National Invasive Species Awareness Week is an ideal time to remember that we can all play a part in preserving our local ecosystems and protecting against the spread of non-native species. Do your part to protect natural habitats by encouraging local leaders to adopt an IVM approach and by familiarizing yourself with common invasive species in your area."

RISE is the national association leading the way in meaningful conversations about specialty pesticides and fertilizers. Learn more about invasive species and how to stop their spread on www.DebugtheMyths.com/Environment/Invasive-Species/.

(PCT Online, February 24, 2020)
https://www.pctonline.com/article/rise-integrated-approach-manage-invasive-species/

PIGWEED PUNCHES BACK

University of Tennessee weed scientist Larry Steckel has spent the past two months coaxing Palmer amaranth weeds to grow from seed collected in 2019 -- so he could try to kill them.

But after a labeled rate of the dicamba herbicide XtendiMax on two-inch tall weeds, in the well-controlled environment of a greenhouse, a lot of that pigweed did not die.

This week, Steckel made a series of grim phone calls he had been bracing for all winter.

"I called the farmers and retailers who found some of these and I told them -- dicamba isn't going to control Palmer amaranth in these fields anymore," he said. "They were not surprised at all."

His colleague, University of Arkansas weed scientist Jason Norsworthy has found the same thing in his greenhouses with samples of Palmer amaranth from Tennessee, which saw widespread reports of dicamba performance failures in 2019.

Norsworthy said some of the Tennessee pigweed populations start to recover four to five days after an application of a half-pound-rate of dicamba. "They resume active growth, and 14 to 21 days after application, there appears to be little symptomology present from auxin herbicide," he explained.

"Just as we expected, further research is confirming that dicamba is in the initial stages of failure against Palmer amaranth," Norsworthy concluded.

The scientists stopped short of calling it official resistance, as more testing lies ahead.

"Before I can say the "r" word, we have to run dose response tests to show how these populations differ in sensitivity compared to susceptible weeds," Norsworthy said. "But when you spray one population with dicamba and everything is dead, and you spray another with the same thing and 50% are still alive -- I think we know what we're looking at."

Dicamba-resistant Palmer amaranth isn't entirely new. Kansas State scientists confirmed dicamba-

and 2,4-D-resistant populations in the spring of 2019. But those were from long-term conservation tillage plots, where weeds had been regularly exposed to dicamba and 2,4-D for 45 years.

These new performance failures represent the first cases of likely dicamba resistance resulting from the dicamba-tolerant Xtend cropping system that topped out at 60 million acres last year.

That rapid scale-up from 2 million acres in 2016 meant the risk of dicamba-resistant weeds was always going to be high, scientists noted. "We've been almost 100% Xtend [cotton and soybean] acreage for a couple years now, so this isn't a surprise," Steckel said of Tennessee growers.

The United Soybean Board is funding a multi-state effort to test various species of weeds for resistance to the new herbicide-tolerant platforms emerging, including glufosinate and dicamba. Missouri scientists are testing waterhemp for resistance and Indiana scientists are testing marestail. Norsworthy is in charge of testing suspected resistant Palmer amaranth plants and he is working through samples from many states such as Arkansas, Illinois, Missouri, Mississippi and Tennessee.

Steckel said he will advise Tennessee growers this summer not to expect full control of Palmer amaranth weeds in all their Xtend fields.

In Xtend cotton fields, growers will have the option to use glufosinate to knock back dicamba weed escapes, but Xtend soybean growers may need to brace for a second round of dicamba, he said. Enlist E3 soybean fields, which are expected to join the landscape in greater number in 2020, will have the secondary option of glufosinate, as well as 2,4-D, he added.

Weed scientists will need to conduct more tests to see if the populations they are seeing survive dicamba will also tolerate 2,4-D, which is from the same class of chemicals and behaves very similarly, Steckel said.

"That is something we have to test this summer -- if pigweed is resistant to dicamba, will 2,4-D still be effective?" he said. (Progressive Farmer, February 17, 2020)
https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/02/27/dicamba-controlling-tennessee-palmer

CEU Meetings

Date: March 4, 2020
Title: OKVMA SPRING CONFERENCE & TRADE SHOW
Location: Grand Casino Shawnee, OK
Contact: Kathy Markham (918) 256-9302
http://www.okvma.com/

CEU's:	Category(s):
2	A
3	3A
4	5
5	6
5	10

Date: March 4-5, 2020
Title: Kansas Pest Control Association Spring Conference
Location: Wichita, KS
Contact: Spencer Duncan (785) 271-9220
https://kpcapestworld.com/

CEU's:	Category(s):
7	7A
6	7B

Date: March 26, 2020
Title: Noble Research Institute Managing Weeds and Insects in Your Pastures
Location: TBD
Contact: Eddie Funderburg (580) 224-1215

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

Date: March 26, 2020
Title: Canadian County Cotton Production Seminar
Location: Canadian Co. Fairgrounds El Reno, OK
Contact: Kyle Worthington (405) 262-0155

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

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/

Univar USA
http://www.pestweb.com/

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

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

NEW ODAFF Test Information

New computerized testing began October 1, 2019. 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 http://pested.okstate.edu/html/new-odaff-testing-procedure or the PSI exam information website www.psiexams.com/.

Reservation must be made in advance at www.psiexams.com/ or call (800) 733-9267

PSI locations.

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

Oklahoma City II NW 23rd St and Villa Avenue, Suite 60, Shepherd Mall Office Complex, Oklahoma City, OK 73107

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

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