

PESTICIDE REPORTS

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REMINDER THAT MAY STARTS THE REQUIREMENTS FOR APPLICATIONS IN THE RESTRICTED USE AREAS IN SOME SOUTHWEST COUNTIES

May 1 is the start of the restricted herbicide areas in some counties of the state. Applications of the regulated herbicides in these areas requires a notice of intent filed with ODAFF before application of these herbicides in certain counties of the state. A report of actual application is then to be filed with ODAFF within 7 days of the date of actual application.

Applications of 2,4-D esters and dicamba products to agriculture lands in Greer, Harmon, and Kiowa counties from May 1 to October 15 have these reporting requirements under the restricted use areas.

Applications of 2,4-D ester, dicamba, picloram, triclopyer, and clopyralid products to agriculture lands in Jackson and Tillman counties from May 1 to October 15 have these reporting requirements under the restricted use areas.

A copy of the rule plus the notification forms can be on ODAFF website <https://ag.ok.gov/wp-content/uploads/2020/11/Restricted-Area-Herbicide-Application.pdf>(OSU PSEP)

EPA ADDRESSES ECOLOGICAL RISKS POSED BY AMINOPYRALID

Today, the U.S Environmental Protection Agency (EPA) is releasing for public comment the proposed interim decision (PID) for aminopyralid, a pyridine herbicide used to control broadleaf weeds and woody brush in both agricultural and non-agricultural settings. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires EPA to periodically review pesticides to ensure that risk assessments reflect the best available science. The PID is part of a multi-step process to identify risks as well as actions that can mitigate risks.

Based on the findings in the 2020 draft [ecological](#) risk assessment and feedback submitted during the public comment period, EPA is proposing new measures to reduce potential spray drift to protect non-target organisms. Additionally, the agency is proposing the following new mitigation measures to address potential residues in compost in the aminopyralid PID:

- Prohibiting off-site composting of treated plant matter and manure from grazing animals until residues have adequately declined to reduce compost contamination;
- Requiring a clean-out period of at least three days for animals fed with treated plant materials;
- Requiring pasture and turf applicators to notify the property owners/operators of the compost prohibition, and for the applicator to keep a record of this notification for two years;
- Updating compost pictogram on pesticide labels showing users when not to compost materials; and,
- Requiring registrants to participate in a stewardship program and provide educational outreach for those affected by herbicide residues in compost.

Upon publication of the Federal Register notice, public comments will be accepted for 60 days in docket ID number [EPA-HQ-OPP-2013-0749](#) at www.regulations.gov.

After a thorough review of the science and carefully considering scientific peer review and public comments, EPA will proceed with the registration review process for aminopyralid. The next step in the FIFRA registration review process is the interim decision, which finalizes any required risk mitigation measures to reduce the ecological risks.

[Additional information on the pyridine and pyrimidine herbicides proposed and interim decisions can be found on EPA's website.](#)

Background

Aminopyralid is a pyridine herbicide used to control broadleaf weeds and woody brush in both agricultural and non-agricultural settings. Agricultural use sites include wheat, corn, pasture and rangeland. Non-agricultural use sites include conservation reserve program land, forests, rights of ways, industrial areas and other non-agricultural sites.

(EPA February 23, 2021)

<https://www.epa.gov/pesticides/epa-addresses-ecological-risks-posed-aminopyralid>

EPA OPENS COMMENT PERIOD ON DRAFT BIOLOGICAL OPINION ON MALATHION

The U.S. Environmental Protection Agency (EPA) is seeking public comment on the U.S. Fish and Wildlife Service's (FWS) [draft biological opinion for the registration of malathion](#), an insecticide that is commonly used to control mosquitoes and a variety of insects that attack fruits, vegetables, landscaping plants, and shrubs. The draft biological opinion evaluates whether use of malathion is likely to jeopardize federally threatened and endangered

species or destroy or adversely modify their critical habitats.

In January 2017, EPA released the [biological evaluation for malathion](#), which found potential effects on threatened and endangered species and their designated critical habitats. Because the biological evaluation for malathion made “likely to adversely affect” determinations to some threatened and endangered species and their designated critical habitats, EPA has been consulting with FWS to ensure the registration of malathion is not likely to jeopardize the continued existence of these species or adversely modify their critical habitats.

The draft biological opinion includes FWS’s preliminary findings that 78 listed species could be jeopardized, and 23 critical habitats could be adversely modified by the use of malathion. The biological opinion also provides several categories of potential reasonable and prudent alternatives (RPAs), actions that could be taken or refined to a species-specific level to prevent jeopardy to the species or adverse modification of critical habitat. FWS will work with EPA and the registrants prior to issuing a final biological opinion to develop technologically and economically feasible RPAs tailored to the needs of the species and critical habitats.

Before the biological opinion is finalized, EPA, FWS, and registrants will also discuss reasonable and prudent measures (RPMs), actions that can be taken to minimize the potential harm that could result from the use of this pesticide to listed species.

EPA encourages input on the RPAs and potential RPMs from pesticide users, registrants, public interest organizations, other interested parties, and state, tribal, and local governments. EPA will provide the comments to FWS for their consideration before they finalize the biological opinion.

The public comment period will be open for 60 days and will close on June 19, 2021. The draft biological opinion is included in docket EPA-HQ-OPP-2021-0231 at www.regulations.gov.

To view the biological evaluation for malathion, visit [our webpage](#). (EPA, April 20, 2021)

<https://www.epa.gov/pesticides/epa-opens-comment-period-draft-biological-opinion-malathion>

US EPA AGAIN ASKS COURT TO REMAND SULFOXAFLOR REGISTRATION

The US Biden administration has asked the Court of Appeals for the Ninth Circuit to remand the EPA’s approval of sulfoxaflor so that the Agency can address alleged shortcomings with the registration. The administration argues that pulling the insecticide from the market would hurt farmers and prompt some to opt for more toxic pesticides.

The request marks a shift in strategy from the EPA, which under the Trump administration had asked the Court to remand only the Endangered Species Act (ESA) claims related to the registration. The new filing with the Ninth Circuit asks for the entire registration to be remanded so that the EPA can “correct the ESA error” and provide “additional detail” as to why it satisfied the standard under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

“Vacatur would be inequitable because it would render sale and distribution of sulfoxaflor for the uses permitted in the 2019 amendments unlawful under FIFRA, thereby removing a pesticide with reduced toxicity from the market and very likely increasing the use of older, generally more toxic alternatives,” according to the EPA. “In fact, increased use of these alternatives could pose greater risk to the very species that petitioners seek to protect as well as to other species and humans.”

Legal dispute since 2013

It is unclear if the petitioners in the case – or the Court – will back the EPA’s new request. The legal dispute stretches back to 2013 when the EPA granted Corteva legacy company Dow

AgroSciences an unconditional registration for sulfoxaflor, allowing its use on an array of crops.

Led by the Center for Food Safety, a coalition of environmentalists and beekeepers challenged the registration, alleging that the EPA had failed to adequately assess the risks from the insecticide and ignored evidence of harm to honeybees.

The Ninth Circuit in September 2015 found that the EPA had relied on “flawed and limited data” when it issued the approval and ordered the Agency to vacate the registration and obtain further studies and data regarding the effects of sulfoxaflor on bees.

The Agency subsequently revoked Dow’s registration in November 2015 and then granted an amended approval in October 2016 for uses on crops that are not attractive to bees. The new license imposed several restrictions, including buffer zones and prohibitions on tank mixing.

In July 2019, the EPA issued the now-contested registration, scrapping those mitigation measures and reinstating approvals for use on bee attractive crops – namely citrus, cotton, cucumbers, soybeans, squash, strawberries and watermelons. The registration order also permitted new uses on several grains, including millet and oats, as well as on alfalfa, cacao, maize, pineapples, sorghum, and tree plantations.

Agency officials said that the benefits to growers far outweighed the risks and pointed to more than a dozen new industry studies that found little potential harm to pollinators and no need for the past restrictions.

New product labels include warnings that the insecticide is “highly toxic to bees and other pollinating insects” and instructions to minimize drift, notify nearby beekeepers of planned applications and time limits on when to spray. The EPA has also required additional restrictions on citrus, flowers and some fruits to further protect bees and other pollinators.

The petitioners say that the 2019 registration suffers from many of the same flaws of the original approval, arguing that the EPA has violated the ESA and the FIFRA.

Remand request

The EPA moved to shift the debate in October 2020, acknowledging that it had failed to complete the required ESA review and asking the court to remand the registration to allow it to carry out its ESA obligations. But the Agency called on the Court not to remand the FIFRA claims. The petitioners balked at the request, arguing that the EPA was trying to delay resolution of the alleged violations of the pesticide law. The Court agreed and rejected the Agency’s request in January. The EPA is asking for the entire registration to be remanded.

“EPA recognizes that the Agency failed to comply with the ESA’s requirement of issuing an effects determination prior to issuing the 2019 registration amendments for sulfoxaflor,” the Agency said in its April 15th filing. “EPA further recognizes that the Agency’s rationale describing why the amendments satisfy the FIFRA standard could be more robust.”

“Accordingly, EPA respectfully requests that this Court remand the challenged registration amendments to the Agency to allow EPA to correct the ESA error and also to provide additional detail on why the FIFRA standard is satisfied on this record.”

The EPA is still arguing that vacating the registration would have harmful consequences for farmers and the environment.

“The nature of the legal error does not mandate vacatur, and vacatur could further cause sweeping environmental damage – including damage to the species that petitioners seek to protect,” the Agency explains. “Specifically, EPA’s ESA error does not warrant vacatur because in issuing the 2019 registration amendments EPA expressly determined that the pesticide’s ecological effects compared favorably against those of alternative pesticides in that growers would likely use if the registration amendments were vacated.”

The EPA says that its plan to provide “additional explanation of the FIFRA rationale” does not undermine the adequacy of the FIFRA record as a whole.

“Moreover, leaving sulfoxaflor on the market for the uses authorized in the 2019 registration amendments results in environmental benefits because sulfoxaflor is less toxic to non-target species than the most widely used alternatives,” the Agency concludes. “Vacating the 2019 amendments would almost certainly cause economic harm to the farmers who rely on sulfoxaflor to address pesticide-resistant insects.”

(Connect AGRIBUSINESS, April 21, 2021)

PURDUE RESEARCH SHOWS HOW ESSENTIAL OILS RESTORE INSECTICIDE EFFECTIVENESS AGAINST BED BUGS

Bed bugs tuck themselves away into dark, unseen spaces and multiply rapidly, making them difficult to control. That job has gotten even harder in recent years as the pests have developed resistance to the insecticides long used to eradicate them from homes, hotel rooms and other spaces.

Plant-based essential oils are generally lethal to bed bugs, but it’s been unclear how to use them most effectively. Now, Purdue University entomologist Ameya Gondhalekar and his former Ph.D. student, Sudip Gaire, have discovered how essential oil compounds act on bed bug physiology and showed how they can improve the lethality of pyrethroids.

Their findings were published in two papers in the journal *Pesticide Biochemistry and Physiology* — [one released last year](#) and another [out this March](#).

“We’ve seen that we can kill resistant bed bugs with traditional pyrethroid insecticides, but we have to use increasingly larger amounts. Applying them at those levels is a problem,” said Gondhalekar, a research associate professor in entomology. “Our findings show that essential oils can kill bed bugs, but the combination of essential oils and pyrethroid insecticides has a synergistic effect.”

Gaire and Gondhalekar first tested the pyrethroid insecticide deltamethrin and a series of essential oil compounds on non-resistant bed bugs and a resistant Knoxville strain of bed bugs. A single dose of deltamethrin meant to kill 25% of bugs killed that many non-resistant bed bugs, but it took 70,000 times more to kill 25% of the Knoxville strain.

“Deltamethrin is so ineffective in the Knoxville strain of bed bugs that if you’re using it in the field even in large doses, you’ll get almost no control,” Gaire said.

The active ingredients in essential oils — thymol from thyme, carvacrol from oregano and thyme, eugenol from clove, and others — worked equally against resistant and non-resistant bugs. A dose meant to kill 25% killed that many of each type.

Gondhalekar said bugs’ nervous systems normally open and close sodium channels to pass signals through neurons. Deltamethrin binds to those sodium channels and keeps them open so that neurons cannot stop firing. That repeated firing quickly uses up the bug’s energy and kills it.

But resistant bed bugs possess multiple mechanisms to resist pyrethroids, including overactive levels of an enzyme called cytochrome P450, which degrades deltamethrin. The essential oil compounds, Gaire and Gondhalekar reported, bind to and deactivate

that enzyme and allow deltamethrin to do its job on the bed bug's nervous system.

Gaire and Gondhalekar combined a single dose of deltamethrin with a single dose of essential oil compounds that would be expected to kill 25 percent to 50 percent of the resistant bed bugs. Instead, it killed more than 90 percent of the resistant bed bugs.

"When we treated the resistant Knoxville bed bugs with different essential oils and tested for cytochrome P450, we found these enzymes were inhibited," Gaire said. "The essential oil compounds were able to neutralize those enzymes, allowing the deltamethrin to do its job."

Gondhalekar's lab will continue researching potential formulations of essential oils with pyrethroid insecticides and test them in the lab and the field to maximize pest control. The Purdue University AgSEED program, the Center for Urban and Industrial Pest Management and the Bilsland Dissertation Fellowship supported this research as a part of Gaire's dissertation. (PCT Online April 19, 2021) <https://www.pctonline.com/article/purdue-essential-oils-bed-bugs/>

WAITING ON AG CHEMICALS

Some agricultural chemicals such as herbicides and fungicides are in tight supply this spring as shipping backlogs and pandemic-related delays have run headlong into higher demand from increased row-crop acres this year.

Farmers from Arkansas, Colorado, Kansas, Maryland, Michigan, Missouri, Nebraska, Ohio and Oklahoma told DTN in emails they are hearing of higher prices, delays and shortages for herbicides, particularly glyphosate (Roundup) and glufosinate (Liberty), as well as some fungicides.

"We secured most of our needs in advance, but I have had some calls from suppliers the past several weeks basically saying that we should secure our glufosinate because they know they'll run out," said Charles Williams, who farms near Crawfordsville, Arkansas, and was counting on using glufosinate this year on his soybean acres to help control herbicide-resistant weeds.

"There is some discussion of a shortage looming for some popular products like Status (dicamba), however glyphosate is easily the most talked about shortage in eastern Colorado," added Marc Arnusch, who farms near Keenesburg.

Farmers may be forced to use unfamiliar generic herbicides, which can come with mixing and quality issues depending on their age, pest experts told DTN. Others may have to hunt down substitute pesticides, which will require studying efficacy charts.

Those who depend on custom application should be working closely with retailers this year, said Kevin "KJ" Johnson, Illinois Fertilizer and Chemical Association interim president. "The speed at which we can put in this crop if we get a good planting window compresses the spray window, and that gets even more stressful if supplies tighten," Johnson told DTN.

PANDEMIC AND FREIGHT ISSUES AT PLAY

Several factors are working together to create this situation this spring, noted Sam Taylor, a Rabobank analyst focused on the ag inputs sector. First, the Ag industry is experiencing the long-expected production backlogs stemming from those abrupt, emergency shutdowns of factories in China at the beginning of the COVID-19 pandemic last year.

"Almost all these Ag chemical products have supply chain exposure to China," Taylor explained.

Glufosinate production in particular is heavily concentrated in China. Glyphosate is in slightly better shape, with 33% of global production

capacity stationed in North America; but even then, some ingredients may still be sourced overseas, Taylor noted. "Also, a lot of these active ingredients are very concentrated within the supply chain," he added. "So, if you see one or two factories shut down, that can cause level of scarcity very quickly."

The speed with which factories were shuttered to slow the pandemic also means processes within them may not have been wound down properly, and ramping back up takes more time than normal, Taylor said. And given that Chinese chemical production will feed first into the country's own domestic demand, American farmers may find themselves last in line for some Ag chemicals, even as commodity prices soar and acres expand this spring.

Add shipping and freight delays into the mix, Taylor said. "The price of shipping containers has gone up fivefold or tenfold, from the Chinese market through the North American market, largely demand driven," he said. "It will take a long time to get from production systems in China into retail channels in North America."

Other inputs are getting caught up in the shipping backlog, as well. In Blair, Nebraska, Ashley Andersen's farm was waiting on soybeans and she was hearing of neighbors struggling to get dry fertilizer shipped in time for the planting season. In Ashville, Ohio, with the planting clock ticking, Keith Peters finally abandoned hope of getting his planter parts ordered by his local dealer. "I had to order off-brand parts to get ready," he said.

HOW TO HANDLE SHORTAGES THIS SEASON

So, what does this mean for farmers? Higher prices and spotty shortages in some places, most likely.

Internationally, wholesale prices for glufosinate and glyphosate have increased 50% in the last year, with atrazine rising 40%, Taylor said. Those costs are getting passed on to farmers.

"I think there is some real risk that farmers will incur some higher active ingredient costs on the big names -- glyphosate, glufosinate and atrazine in particular," Taylor warned. "They're getting a double whammy of increased freight and increased active ingredient prices."

Production will increase and backlogs will clear, but farmers might face some local, spotty shortages of needed chemicals throughout the season.

University of Tennessee weed scientist Larry Steckel has already seen that play out among the state's wheat growers, who are often the first to apply fertilizer and herbicide in the spring. Many couldn't find a popular two-ingredient mix of pinoxaden and fenoxaprop-p-ethyl (Axial Bold), Steckel recalled. Some farmers resorted to hunting it down across state lines, but others simply went without it and relied on substitutes, he said.

"A lot of them went to a Plan B, with varying amounts of success," he said. "But mostly they're just living with a few more weeds because of it."

Now, corn and soybean growers in his state are facing shortages of pyroxasulfone-based products such as Zidua and Anthem Maxx, he said. "They are what we use for residual control of grasses and pigweeds," he said. "So, people will need to be looking at premixes out there with s-metolachlor and metribuzin, to fill that residual hole."

Growers facing glyphosate shortages can usually turn to products like clethodim, which appear to be in more plentiful supply, he added. But glufosinate shortages will be harder to address.

Every herbicide-tolerant soybean technology on the market this year -- Enlist E3, RR2 Xtend, Xtendflex, and LibertyLink GT27 -- has tolerance to glufosinate, and the herbicide will be in high demand, Steckel warned.

"People are going to want to use it a lot, and if they didn't get it ahead of time, they might be in trouble," he said.

Agrichemical companies such as BASF are aware of the problem, and trying to accommodate their growers, said BASF spokesperson Odessa Hines.

"While no one specific event has impacted BASF's glufosinate supply, the combination of multiple events and dynamics over the last year has tightened our supply," she told DTN in an email. "All industries, including agriculture, are working through short-term challenges to balance supply with demand."

BASF has turned to air freight for chemical and other input shipments, in an effort to bypass the shipping backlogs, as well as "securing multiple new sources" for some materials, Hines added.

"We are confident that these adjustments will help us meet the needs of our customers who have come to rely on our herbicide solutions for effective weed control," she wrote.

Farmers who find themselves substituting with generic herbicides they aren't familiar with should proceed carefully, Steckel said. "Some of these generic products may be made with different surfactants," he said. "Some may have been sitting around for several years and been frozen and thawed multiple times."

Before spraying with them, do a jar test to see how the different ingredients mix together, he advised. "Your water source and pH can also have a big impact on how well things mix; if you get the mixture acidified early on, that helps a lot." If labels permit, try adding AMS or similar products to accomplish that, he said.

Growers who face fungicide shortages later in the season should use the Crop Protection Network's fungicide efficacy guides to see if they can find alternate options, said University of Kentucky Extension plant pathologist Carl Bradley. "There are fortunately a lot of options usually," he said. "If there is a specific disease they're trying to manage, they can use those guides and see what other options are available." See them

here: <https://cropprotectionnetwork.org/...> and here: <https://cropprotectionnetwork.org/...>

(Progressive Farmer, April 23, 2021)

<https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/04/23/farmers-retailers-face-tight-supply>

US EPA MULLS RESIDENTIAL OUTDOOR USE FOR CYCLANILIPROLE AND FLONICAMID

The US EPA has **proposed** to register Ishihara Sangyo Kaisha's US subsidiary ISK Biosciences' insecticides, cyclaniliprole and flonicamid, for residential outdoor uses on roses, flowers, shrubs and small non-fruit bearing trees. The proposal covers one product each for the two active ingredients intended for manufacturing use, and one end-use formulation derived from both a.i.s. It marks the first attempt at commercializing the substances for residential outdoor application, with the Agency proposing their approval after citing no adverse effects on humans or the environment.

While cyclaniliprole is a broad-spectrum insecticide, flonicamid targets insects that damage crops, or have populations with documented insecticide resistance issues. Both the a.i.s are registered in the US, with the former **approved** for use on a range of fruits and vegetables, and the latter **cleared** for use on cotton, fruits, vegetables and commercial ornamentals, among others. The EPA notes that the insecticides are "reduced-risk alternatives" to products employed for similar levels of insect control.

The Agency highlights that its evaluation of the a.i.s has concluded that neither of the substances pose any risks to human health or renders necessary the use of personal protective equipment by workers. On the environmental front, the EPA suggests that end-use product labels carry a pollinator advisory statement, besides specific advisories on ground and

surface water, and environmental hazard for cyclaniliprole-based formulations.

Public comments on the matter will be accepted for 30 days from April 8th via separate portals for [cyclaniliprole](#) and [flonicamid](#).

Cyclaniliprole is approved in countries such as [Canada](#) and [Australia](#), while flonicamid is widely used in [China](#), [Italy](#), [Croatia](#), Canada, [India](#), Australia and [New Zealand](#), among others.

(Connect AGRIBUSINESS, April 13, 2021)

LAWSUITS MOUNT FOR SYNGENTA/CHEMCHINA OVER CLAIMS PARAQUAT HERBICIDE CAUSING PARKINSON'S DISEASE

Litigation on the highly toxic herbicide paraquat may soon move into its next phase as lawyers representing victims recently requested cases be consolidated in the federal district court of Northern California. Over a dozen lawsuits have been filed against the Swiss-based agrichemical corporation Syngenta in several states throughout the U.S. The complaints allege that exposure to Syngenta herbicides containing paraquat resulted in their diagnosis of Parkinson's Disease.

Paraquat dichloride (paraquat) is a highly toxic herbicide that has been registered for use in the United States since 1964. Although not permitted for residential use, the product is registered on a wide range of agricultural land, from row crops to vegetables and trees, and on non-farm areas, including airports, certain industrial sites and commercial buildings. It can be used as a pre-emergent, post-emergent, and post-harvest as a desiccant or harvest aid in the field.

The lawsuits target both Syngenta and Chevron corporation, which previously held the rights to sell paraquat in the 1960s under an agreement with a

company that was eventually purchased by Syngenta. Syngenta itself, while still headquartered in Switzerland, is now owned by the Chinese National Chemical Corporation (ChemChina) after a 2016 merger. Despite significant ongoing use in the U.S., concentrated in the South, Central U.S., and California's central valley, the pesticide has been banned in many other countries, including the EU in 2007 and Brazil in 2020. Switzerland banned the chemical as far back as 1989, and China's ban came into effect last year.

Paraquat presents a range of health concerns. Recent research shows that inhalation of low doses can disrupt one's sense of smell, and past research has found the chemical may result in adverse respiratory health among farmers that apply it. However, there are two primary concerns related to this hazardous chemical. The first concern is the rampant poisonings and suicides that have occurred as a result of the fast action and high toxicity of paraquat. Less than a shot glass of the pesticide is enough to kill a grown adult, and there have been far too many instances of accidental poisonings. A recent report from The Intercept, in coordination with French newspaper Le Monde and Unearthed, reveal the Paraquat Papers and insider information on how the company worked to cover up its failure to deter these avoidable poisonings.

The second primary concern with paraquat is strong evidence linking the use of paraquat to the development of Parkinson's disease. Research finds that cumulative exposures over one's life increases risk of developing Parkinson's disease, and other factors such as genetics, exposure to other chemicals further elevate the threat. Recent studies show that one's zip code and proximity to paraquat use in agriculture likely plays an important role in an individual's risk of developing Parkinson's. "The data is overwhelming" regarding the link between paraquat and Parkinson's, said Samuel M. Goldman, MD, an epidemiologist in the San Francisco Veterans Affairs health system to the New York Times in 2016. Another expert interviewed by the New York Times, Freya Kamel, PhD, with the National Institutes of Health said the connection was "about as persuasive as these things get."

All of this overwhelming, persuasive data, did not change the US Environmental Protection Agency's decision last year to give paraquat another 15 year lease for use on American soil. But, like the ongoing Roundup lawsuits, it is looking increasingly unlikely that EPA's failure to act will weigh heavily on court cases.

According to reporting in Environmental Health News (EHN), plaintiff lawyers are upbeat about the case. "We are confident that science strongly supports the causal connection between paraquat and the devastation of Parkinson's disease," said Mike Miller, lead attorney of the Miller Firm, which also led much of the Roundup litigation. "The Northern District of California is well equipped to handle these cases." Syngenta/ChemChina and Chevron deny any connection between paraquat and Parkinson's and are vowing to vigorously defend their products.

EHN reports that some plaintiffs have uncovered important evidence from internal Syngenta documents indicating that, like its foreknowledge of problems from suicides and accidental poisonings, the company may have likewise known for years that paraquat caused Parkinson's disease.

With another potentially large monetary loss for the agrichemical industry on the horizon, many industry watchdogs are wondering what the game plan is. Notwithstanding the immense human suffering created by the use of paraquat, as the Roundup litigation with Bayer/Monsanto show, short-term, profit motivated thinking can result in significant economic losses down the road. With EPA unable to provide effective cover, and under the new administration likely changing its approach to industry oversight, many are looking to significant reforms on the horizon. (Beyond Pesticides, April 14, 2021)

<https://beyondpesticides.org/dailynewsblog/2021/04/lawsuits-mount-for-syngenta-chemchina-over-claims-paraquat-herbicide-causing-parkinsons-disease/>

CORTEVA SHEDS DICAMBA HERBICIDES

Corteva Agriscience has pulled the plug on a new developmental dicamba product, the last in a series of moves over the past year to divest itself of controversial pesticides.

The company opted to end the EPA registration process underway for a novel dicamba herbicide containing a dicamba choline salt -- a different form of dicamba salt from any past or currently marketed dicamba herbicides.

"Corteva Agriscience has made a business decision to withdraw its developmental dicamba product from EPA consideration for registration," company Media Relations Manager Kacey Birchmier told DTN in an email. "The EPA registration process has not yet been completed for this submission."

The dicamba-choline product was an attempt to create a less-volatile formulation of dicamba, which continues to be implicated in widespread reports of off-target injury that have resulted in three EPA label revisions and many lawsuits against dicamba manufacturers Bayer and BASF. Corteva was moving ahead with the product's development last year, which included submitting it to EPA for registration -- a process the company has now voluntarily ended, Birchmier said. This appears to be the end of the road for the dicamba choline herbicide, without a clear buyer on the horizon.

"While Corteva routinely collaborates with third parties to commercialize products for the benefit of farmers and the market in general, this product concept has not received regulatory approval, nor has Corteva identified an interested licensee or collaborator," Birchmier said.

This marks the second move by the company to distance itself from the dicamba-tolerant Xtend cropping system. In February, Corteva announced it would be voluntarily discontinuing its sales of FeXapan, another dicamba herbicide based on Bayer's XtendiMax product, but marketed by Corteva. The company first sold the product in

2017, and even attempted to defend it in court after the Ninth Circuit Court of Appeals vacated its registration, along with two other dicamba herbicides, in June 2020. See more here: <https://www.dtnpf.com/...>

Corteva representatives have framed these decisions as a necessary pivot toward their own herbicide-tolerant platform, Enlist crops, which tolerate over-the-top applications of 2,4-D-choline, glyphosate and glufosinate and -- like many other herbicide-tolerant crops -- are susceptible to dicamba injury, particularly in soybeans.

"We made a strictly business decision to discontinue the sales of our own branded version of dicamba [FeXapan]," Corteva CEO Jim Collins told DTN in a previous interview. "There are a number of other really great brands out there. When we initially launched that product, we thought we needed it in our lineup to have a total package around the grower. But as we start to pivot and see continued very strong demand for the Enlist technology, we decided it was best to just focus there."

Enlist crops are widely viewed as a major competitor to Bayer's dicamba-tolerant Xtend crops. While Corteva seed brands still offer dicamba-tolerant Xtend crop traits, the company is focused on ramping up its Enlist offerings, particularly its soybeans, Birchmier said. Corteva is aiming for Enlist E3 soybeans to account for 30% of U.S. soybean market share this year, with a long-term goal of 50% market share.

Dicamba is not the only controversial chemical Corteva has voluntarily discontinued recently. In February 2020, the company took the industry by surprise with an announcement that it would stop selling its chlorpyrifos insecticide, marketed as Lorsban and currently undergoing a registration review by the EPA. The insecticide is used primarily in soybeans, corn, wheat, cotton and orchard crops to control biting and sucking pests, such as aphids.

The company cited falling demand for chlorpyrifos, whose use had declined from heights of 13 million pounds per year in the late 1990s, down to 5 to 7 million pounds per year starting around 2010, according to the U.S. Geological Survey. But part of that fall was driven by chlorpyrifos' long history of legal issues, starting with EPA fining its original registrant, Dow Chemical, nearly \$1 million in 1995 for not disclosing reports of human health problems from the chemical's use over the previous decade. The EPA reached an agreement with Dow to end all household uses of chlorpyrifos in 2000, but the legal challenges continued, especially after research showed a link between the pesticide's use and neurological problems in children. By 2015, the Obama EPA had decided to revoke all food residue tolerances for the insecticide, which would effectively end most, if not all, uses. But that decision was suddenly reversed in 2017 by then-EPA administrator Scott Pruitt, and EPA forged ahead with its work on a renewed registration of chlorpyrifos.

As a result, Corteva's 2020 announcement that the company -- the primary registrant of chlorpyrifos and the chemical's largest producer -- would be voluntarily discontinuing the product led to a remarkable situation: An agrichemical company ditching a contentious product, despite its governing regulatory body -- the EPA -- insisting on keeping it on the market. See more here: <https://www.dtnpf.com/...>

Corteva's decision increasingly looks like a prudent one, however, in light of the Biden EPA's renewed scrutiny of chlorpyrifos. The agency's new leadership has vowed to re-examine controversial Trump-era regulatory decisions, including the sudden reversal on chlorpyrifos. See more here: <https://www.dtnpf.com/...>

The recent decisions regarding dicamba and chlorpyrifos also set Corteva apart from its fellow agrichemical giants, many of which are embroiled in multiple legal challenges over pesticides. Bayer and BASF, for example, are forging ahead with newly registered dicamba products, even as both companies are also actively appealing a jury verdict

that awarded \$265 million (later reduced to \$75 million) to a Missouri peach orchard injured by dicamba. Bayer is also actively working to disperse a \$300-million settlement to soybean farmers whose crops were injured by the herbicide in the past five years, and both companies face at least two major legal challenges against their newly registered dicamba herbicides in federal courts. See more here: <https://www.dtnpf.com/...> Bayer is also working to develop and register dicamba-tolerant corn, as well as continuing to defend its glyphosate herbicide, Roundup, against legal claims and judgements alleging its link to certain cancers.

But for now, Corteva has washed its hands of its most legally troubled pesticides, clearing the way to focus on its biggest growth area: Enlist crops.

"All of our resources, all of our energy can be focused on customers, applicator training, sales and distribution to make sure that the Enlist system is positioned properly going forward," Collins said in his previous DTN interview.

See it here: <https://www.dtnpf.com/...>

(Progressive Farmer, April 8, 2021)

<https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/04/08/corteva-drops-second-dicamba-product>

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 May 20, 2021

Title: McClain County OSU Extension Virtual Forage College

Location: Virtual

Contact: Justin McDaniel (405)-527-2174

CEU's: Category(s):

1 1A

Date September 7-9, 2021

Title: ENSYSTEX - 2021 CEU Workshop

Location: TBA

Contact: Don Stetler (281) 217-2965

CEU's: Category(s):

2 7A

6 7B

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>

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 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

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

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Pesticide Safety
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