



Chemically Speaking

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Latest Chlorpyrifos Court Drama Has Farm Industry in the Middle

It remains to be seen whether the federal government will appeal a decision by the 9th U.S. Circuit Court of Appeals in San Francisco, which last week has ordered the EPA to remove chlorpyrifos from sale in the U.S. within 60 days. A coalition of farmworkers and environmental groups sued last year after then-EPA Chief Scott Pruitt reversed an Obama-era effort to ban chlorpyrifos, which is widely sprayed on citrus, apples, and other crops. The attorneys general for several states joined the case against EPA, including California, New York, and Massachusetts.

According to a report by The Associated Press, in a split decision, the court said that Pruitt, a Republican forced to resign earlier this summer amid ethics scandals, violated federal law by ignoring the conclusions of agency scientists that chlorpyrifos causes brain damage in children.

“The panel held that there was no justification for the EPA’s decision in its 2017 order to maintain a tolerance for chlorpyrifos in the face of scientific evidence that its residue on food causes neurodevelopmental damage to children,” Judge Jed S. Rakoff wrote in the court’s opinion.

Michael Abboud, spokesman for acting EPA Administrator Andrew Wheeler, told the AP the agency was reviewing the decision, but it had been unable to “fully evaluate the pesticide using the best available, transparent science.”

Corteva, the maker of the chemical, issued the following statement: “Chlorpyrifos is a critical pest management tool used by growers around the world to manage a large number of pests, and regulatory bodies in 79 countries have looked at the science, carefully evaluated the product and its significant benefits, and continued to approve its use. We note that this was a split decision of the panel and we agree with the dissenting judge’s opinion. We would hope and expect that the government will consider all of its appellate options to challenge the majority’s decision. We will continue to support the growers who need this important product.”

The CEO of CropLife America (CLA), Jay Vroom, released a statement saying they’re disappointed in the decision. “We hope that after review of the decision EPA will consider all avenues of appeal,” he said. “We continue to support growers and to work with them to ensure they have the tools needed to continue producing safe and affordable food.”

Chlorpyrifos, commonly known as Lorsban among other trade names, is widely used in citrus. Joel Nelsen, President of California Citrus Mutual, said the material is so effective against Asian citrus psyllid, growers alternate crop protection tools so that the pest does not build up resistance to the one chemical. It also is used in granular form to kill ants because the ants threaten beneficial insects consuming the eggs of the pest, which spreads an incurable disease, citrus greening.

Growers also use it as a scale treatment on their trees, Nelsen noted. If not treated, Scale destroys trees and is considered a phytosanitary pest for many foreign countries.

As for his opinion of the decision, Nelsen issued the following statement: “It is unfortunate that men in robes demanding and expecting respect for decisions concerning the law have now interjected themselves into the government process and science.

They ignored the flip flops in the previous administration on this subject area yet when the EPA Administrator chooses to get the process back on track, after EPA's Science Advisory Panel disagreed with EPA changes previously; they choose to cherry pick and render a decision. It is preliminary in nature if the registrant chooses to appeal to the full court which we are seeking affirmation that this will happen." (Growing Produce, 8/14/18)

Report from Research Workshop on the Off-Target Movement of Dicamba Made Available by WSSA

Today the Weed Science Society of America (WSSA) announced that a report from a recent research workshop on the off-target movement of dicamba herbicides is available on the Society's [website](#). The workshop was designed to identify data gaps and develop research protocols that will help all stakeholders better understand and manage factors contributing to dicamba off-target movement.

Dicamba herbicide has been registered for use since the 1960s. After the introduction of dicamba-resistant crops in 2016, dicamba use increased significantly, resulting in many claims of off-site movement and injury.

The report focuses on the reported off-target dicamba issues from 2016 and 2017. It also highlights the state of science-based information and research gaps shared by weed scientists, state and federal regulators, application technology specialists and dicamba registrants who gathered for the workshop to discuss actions that can be taken to promote better understanding and management of the herbicide. Examples include:

- Track areas planted in dicamba-resistant crop cultivars, as well as the quantities of dicamba used
- Relate dicamba damage complaints to terrain and weather conditions
- Improve herbicide labels to address:
 - uniformity in label organization
 - finding and interpreting use instructions
 - listing of dicamba-sensitive crops, landscape and native plants, and trees
 - "neighboring distance" information for dicamba-sensitive plant species
 - conditions leading to atmospheric inversions
 - Coordinate applicator training so that all trainers present the same detailed information
 - Perform research to better characterize the potential volatility of new herbicide formulations and to better determine:
 - dose vs. damage relationships for key crops
 - how to protect growers, property owners and the public from off-target movement
 - modes of dicamba movement that are not currently accounted for

"Our intent with this research workshop was to identify the major data gaps that need to be filled as technologies are being brought into production fields," says Scott Senseman, Ph.D., president of WSSA. "We are clearly facing a need for more publicly funded research to identify new and more integrated approaches to weed control." (WSSA, 7/20/18)

The Ultimate Weed Management Checklist

Keep weeds out of your fields. Prevent herbicide resistance. Use these tips.

1. **Make a plan** – Think long-term. Strategize to delay the evolution of herbicide resistance and reduce weed seeds.
2. **Go full-rate** – Apply full rates of effective pre- and postemergent herbicides with multiple modes of action (MOAs). Dead plants can't produce resistant progeny.
3. **Get 'em when they're little** – Spray weeds when they're shorter than 4 inches. Don't wait.
4. **Spice things up** – Don't stick with the same old single MOA. Use multiple, effective MOAs everywhere, every time.
5. **Scout it out** – Correctly ID weeds by species. Kill weeds that escape an herbicide application.
6. **Zero tolerance policy** – Destroy uncontrolled weeds, which might mean you have to pull them by hand. Seed from escaped weeds will contribute to the weed seedbank.
7. **Don't ditch your ditches** – Weeds aren't limited to your fields. Don't let them thrive in forgotten field edges, fence lines and waterways.
8. **Keep it clean** – Don't let weed seeds hitch a ride. Clean tillage and harvest equipment.
9. **Do more than spray** – Consider using mechanical and/or cultural control practices, like tillage or cover crops.
10. **Re-evaluate and repeat** – Review your weed-management results at the end of each season and revise to improve next year.

[Click here](#) for more information on managing herbicide-resistant weeds. (United Soybean Board, 5/11/18)

French Assembly Rejects Glyphosate Ban for Second Time

The National Assembly has rejected a move to legally ban the herbicide glyphosate completely, for the second time this year.

The new vote, which took place on Saturday September 15, means that the controversial herbicide - which has been linked to health conditions including cancer, and eye issues - will not be legally banned in France within the next three years.

This is despite continued support of a legal ban by 2021 from President Emmanuel Macron.

The minister for agriculture, Stéphane Travert, is against such a ban - and was against it earlier this year too.

Mr. Travert has questioned the government's "method", suggesting that instead of a ban on the current herbicide, there should be further research on eco-friendly solutions.

The MP is not against a total ban forever, but has argued that it should be postponed until better alternatives are available.

He said: “The position of France is now known. We would like to be present in three years...to respond to the President’s objective, and that of the wider population.”

Earlier in the year, many MPs had unsuccessfully demanded that a ban on glyphosate be enshrined in law.

This motion had been supported by former ecology minister, Nicolas Hulot, with many MPs on the left asking that the government give a “strong signal” on the subject.

This time, amendments to the motion had been brought by MPs including François-Michel Lambert (Bouches-du-Rhône) of La République en Marche (LRM). His amendment to the bill was rejected 42 votes to 35.

Another LRM MP, Jean-Baptiste Moreau, said that banning glyphosate “would not achieve anything.”

The motion will come back into the chamber for debate on September 25.

Glyphosate - often known commercially under its most common brand name “Roundup by Monsanto” - has come in for global criticism in recent years.

In August, US company Monsanto was ordered to pay \$289 million to a gardener who was ruled to have contracted incurable cancer due to using glyphosate over many years.

Similarly, over five million people in France have downloaded an app named “Yuka,” which allows users to search for different foods, and offers information not only on calories, sugar, protein and fiber levels; but also the presence of potentially-damaging additives, herbicides and pesticides. (The Connexion, 9/16/18)

Guidance highlights fragile nature of pyrethroids - Guidelines for the management of insecticide resistance in several key UK crops have been updated by the Insecticide Resistance Action Group (IRAG)

The guidance has been issued following restrictions on the use of pesticides, which make it even more critical to protect the remaining products on the market.

Published by AHDB, the updates cover brassica, cereals, oilseed rape and potatoes. A new publication outlining the general principles of resistance management has also been issued.

A common thread across all guidelines is the threat to pyrethroid-based insecticides, to which several UK crop pests have already developed resistance.

Sue Cowgill, AHDB senior crop protection scientist for pests, said: “AHDB supports the UK resistance action groups in their efforts to promote resistance management advice.

“The most effective way to manage resistance is to minimize insecticide use through integrated pest management (IPM). AHDB’s website contains a wealth of pest management information, which can be used to identify, monitor and manage pests.”

One example of the mounting pressures on pyrethroid chemistry is associated with the European Commission’s decision to ban outdoor use of the neonicotinoids imidacloprid, clothianidin and thiamethoxam.

The affected products, which will be withdrawn from the market by 19 September 2018, include insecticide seed treatments (clothianidin) that protect cereal crops from viruses transmitted by the bird cherry–oat aphid and the grain aphid.

Sue said: “Affected seed treatments must be used up by 19 December 2018. This means cereals will be protected this autumn. Farmers should use this time, however, to consider how management will need to change next year. The temptation will be to turn to pyrethroids but resistance monitoring shows this class of chemistry should be a last resort.”

Although there is no evidence of insecticide resistance in bird cherry-oat aphid or rose-grain aphid, the story is different for grain aphids – as moderate levels of resistance to pyrethroids have been detected in laboratory assays. In practice, this means sprays may not be effective against this pest unless used at their full label rate.

Several other key crop species are also associated with pyrethroid resistance - including cabbage stem flea beetle, cabbage whitefly, diamond-back moth, onion thrips, peach-potato aphid and pollen beetle.

Where a pyrethroid spray is deemed necessary, people are urged to ensure good crop coverage is achieved, as the chemistry only has contact activity. The guidance also asks people to think carefully about the use of tank mixes, as it can result in suboptimal control of targets and drive the development of resistance.

If an insecticide has been applied correctly and has failed to control the target pest as expected, IRAG says further applications of any insecticide from the affected mode of action should not be made.

Any resistance concerns should be reported to a BASIS-qualified adviser or to AHDB’s lead researcher on resistance monitoring work – Dr. Steve Foster, stephen.foster@rothamsted.ac.uk

The full set of insecticide resistance management guidance can be accessed via ahdb.org.uk/knowledge-library/IRAG.

AHDB is also asking people to guide investment in pest monitoring services over the next five years by completing a short survey. The survey, which closes on 30 November 2018, can be accessed via cereals.ahdb.org.uk/pestsurvey. (SeedQuest, 9/13/18)

Researchers Recommend New Herbicide Registration for Weed Control in Watermelon Crops

Research featured in the latest edition of the journal *Weed Technology* recommends that the herbicide bicyclopyrone, now used in corn, be registered for weed management in watermelon crops as well.

Weeds are a major issue in watermelon production. One contributing factor is the wide spacing required around seedlings. When large areas of the field are bare early in the growing season, weeds can become established and outcompete the crop. Studies have confirmed yield losses of up to 82 percent.

A team of researchers recently set out to determine whether bicyclopyrone, an HPPD inhibitor, could be used in watermelon. If so, it would provide an alternative for extended residual weed control via a new site of action, allowing growers to rotate herbicides and reduce selection pressure for resistance.

A two-year field study evaluated the impact of bicyclopyrone on watermelon plants and the yields produced. Treatments were applied to crop beds one day before transplanting and two weeks after. Additional directed treatments were applied at the two-week mark to row middles, avoiding contact with watermelon vines and the surrounding polyethylene mulch.

Researchers found that a small percentage of watermelon plants treated with bicyclopyrone exhibited foliar bleaching and crop stunting, but the symptoms subsided over time. Watermelon yields, marketability and fruit size were unaffected.

"Our research shows that registration of bicyclopyrone for use in watermelon would provide growers a safe alternative for chemical control of many common and troublesome broadleaf and grass weed species," says Matthew Bertucci of North Carolina State University.

Full text of the article, "[Effect of Bicyclopyrone on Triploid Watermelon in Plasticulture](#)" is now available in [Weed Technology](#) Vol. 32, Issue 4. (Cambridge University Press, 8/29/18)

Canada to Phase Out Crop Chemicals Linked to Bee Deaths

The Canadian government said on Wednesday it would move to restrict use of two types of crop chemicals that have been linked to deaths of aquatic insects and bees, in a victory for environmentalists and the latest setback for companies that sell the pesticides.

Health Canada's Pest Management Regulatory Agency (PMRA) said it would phase out, over three to five years, the outdoor use of thiamethoxam, made by Syngenta AG, and clothianidin, produced by Bayer AG.

A review found the chemicals at levels in water bodies high enough to harm aquatic insects that are food for fish and birds.

The widely used chemicals protect corn, soybean and canola crops from insect damage.

Health Canada's move is subject to a 90-day consultation period, followed by final decisions in late 2019.

Neonicotinoids, also called neonics, are a class of pesticides applied as a seed treatment or sprayed on leaves. Neonics have drawn scrutiny after research pointed to risks for honey bees, which have been in decline in North America, possibly due to pesticides, loss of habitat and climate change.

Health Canada also plans a final decision by the end of this year whether to phase out a third neonic, Bayer's imidacloprid.

Canada's moves come after European Union countries in April backed a proposal to ban all outdoor use of neonics.

The United States has not taken similar action, but is reviewing neonics and plans to seek public comment on proposed action next spring, a spokesperson for the U.S. Environmental Protection Agency said.

Ontario beekeepers blame overuse of neonics for devastating honey bees, after an estimated 46 percent of colonies in the province did not survive winter.

"I'm thankful we're going to see a phase-out. I'd like it to happen sooner," said Jim Coneybeare, president of the Ontario Beekeepers' Association.

Alberta beekeeper David Tharle, however, said neonic use on canola fields has not harmed his hives, and he worries farmers will turn to harsher chemicals.

"I haven't seen (neonics) affect the bees one iota."

Neonics are an "important tool" for farmers, with few alternatives, said Barry Senft, CEO of Grain Farmers of Ontario.

Syngenta is disappointed with the decision and believes the PMRA did not consider all relevant information, said Chris Davidson, spokesman for the company's Canadian unit.

Bayer believes clothianidin has a "favorable environmental profile," said Paul Thiel, vice-president of innovation and public affairs at Bayer CropScience. (Reuters, 8/15/18)

Pesticide Registrations and Actions

- On June 12, FDACS authorized the distribution and experimental use of *Wolbachia pipientis*, wAlbB Strain and ZAP Strain for the effectiveness in suppressing and eliminating *Aedes aegypti* and *Aedes albopictus* mosquitoes at particular sites in Lee, Miami-Dade, Monroe, and St. John's counties. The permit has been assigned EUP No. 89668-EUP-3 and is authorized for use through December 31, 2018 for *Wolbachia pipientis*, wAlbB Strain and through December 31, 2019 for *Wolbachia pipientis*, ZAP Strain. (FDACS letter, 6/12/18)
- On July 18, FDACS authorized the distribution and experimental use of Zequanox CS, active ingredient *Pseudomonas fluorescens* CL 145 A, (EPA Reg. No. 84059-15) for use in closed

systems to control zebra and quagga mussels, to be evaluated in the control of Conrad mussels in Bokeelia, FL. The permit has been assigned EUP NO. FL18-EUP-01 and is authorized through December 31, 2018. (FDACS letter, 7/18/18)

- The revised special local need registration label for the use of Gowan Malathion 8 Flowable (EPA Reg. No. 10163-21) for control of exotic (non-established, quarantinable) fruit fly members of the family *Tephritidae* was approved on June 11 by FDACS. EPA SLN FL-150007 has been assigned as the special local need registration number and must appear on the label. The word quarantine has been replaced with quarantinable and the statement “For use only in regulated areas under quarantine” has been removed. (FDACS letter, 6/11/18)
- The special local need registration for the use of pinoxaden (Manuscript) was approved on May 22 for the control of tropical signalgrass and other grass weeds on Bermudagrass and Zoysiagrass golf courses and Bermudagrass, Zoysiagrass and St. Augustinegrass sod farms in Florida (SLN FL-180003). (FDACS letter, 5/22/18)