

Environmental Law

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The dicamba herbicide duels: When law, politics, and science collide

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It is doubtful that many Illinoisans took their eyes off the two leading candidates for Illinois Governor throughout the grueling and incredibly expensive primary election that concluded on March 20.

Maybe they should have. One of the several also-rans on the Democratic side, Bob Dauber, a downstate farmer [according to one publication] who also happens to be regional superintendent of schools in Madison County and holder of four degrees from Illinois colleges [including a doctorate of education from Southern Illinois University], was urging the state of Illinois to ban dicamba, like Arkansas and Missouri have done already.

Wait, dicamba? What's that? Well, dicamba is actually a chemical compound, a synthetic version of a plant hormone, auxin, and a benzoic acid herbicide. It's been known to farmers for decades and over the years has been marketed as Metambane, Dianat, Banfel, and Banvel, among others. Nowadays it is the key element of a "new" family of herbicides, commonly marketed as Xtendimax, Engenia, and Fexapan. And it has spawned a firestorm of political fury, scientific debate, regulatory oversight, environmental concern, and of course, litigation.

If you live south of I-80 in Illinois, you

have heard the expression "Roundup" on your TV a few hundred times by now. "Roundup" is the name given by chemical giant Monsanto to its formulation of Glyphosate, a herbicide. Even homeowners in the Chicago Metro region probably have seen "Roundup" in the gardening section of the local hardware store or Wal-Mart. It kills weeds, really well. So well that farmers flocked to use the stuff in their fields, especially after scientists at Monsanto and elsewhere developed what came to be called "Roundup Ready" seeds for crops like soybeans. These seeds produce crops that are unaffected by the weed-killing properties of Roundup. The attraction of "Roundup Ready" crops to farmers is obvious: they can douse their fields with Roundup and not have to worry about its effects on their "Roundup Ready" crops. Sales boomed, for both ends of the financial spectrum [the weed killer silver bullet on one hand and the bullet-proof seed on the other].

But times have changed. For one thing, Monsanto's Roundup-related patents are mostly expired. For another, as might be expected, Roundup-resistant weeds are emerging and rapidly becoming a problem for farmers and their suppliers. These problem were not just Monsanto's problem but posed a challenge to the

entire industry, including Monsanto's heavyweight competitors, BASF and DuPont.

Monsanto's response to these developments was to take another look at venerable old dicamba. Like Roundup/Glyphosate, dicamba is a powerful herbicide. Unlike Roundup, though, dicamba is highly volatile, meaning it turns into a vapor under proper conditions of heat and humidity; farmers refer to this tendency as "drift." Dicamba's "drift" problem probably helps accounts for the rise of Roundup/Glyphosate to its level of dominance in the industry. When "drift" occurs, the herbicide floats away from its intended target and ends up on [and may inflict damage to] the crops, trees, gardens, and other vegetation belonging to a neighbor.

Note that there are two flavors of "drift": the first occurs when the herbicide is improperly applied, for instance, by spraying a field with herbicide from too great a height, or under windy conditions. The second occurs when the herbicide itself won't stay in place, even when it hits its target. Dicamba can experience both types of "drift" since, under the right conditions, dicamba can form a gas and float off, even weeks after application, often falling back to earth – and crops – miles away from its first application. That is a problem if you are a farmer growing crops

that are vulnerable to dicamba. It is also a problem if your property has trees, or if you're a gardener or if you're a commercial beekeeper and your bees gather their nectar from wildflowers and weeds.

So Monsanto went to work, and collaborated with BASF and DuPont to develop new varieties of dicamba that are less volatile and thus, at least theoretically, less prone to "drift." Simultaneously, it was developing a new generation of GMO seeds that were – you guessed it – dicamba ready. The new dicamba formulations [Xtendimax, Engenia, and Fexapan, *etc.*] hit the market in 2016, followed by the new dicamba-ready soybean seeds in 2017. In 2017, soybean farmers armed with both the new dicamba-ready seeds and the new dicamba formulations went to work, applying Xtendimax, Engenia, or Fexapan to their bean fields while the plants were in their middle-stages of development. The new configuration of dicamba and dicamba-resistant seeds allowed and encouraged a departure from prior practice: whereas dicamba was formerly used primarily either in the earliest stages of the growing season, when soybeans were least affected by the stuff, or for "burn down" purposes after the growing season, now it was being applied "top side" during the critical post-emergent stages of soybean development.

Which was when the feathers hit the fan. Reports of massive damages to nearby non-dicamba crops, fruit trees, bee populations, and hardwood trees spread like wildfire. Over the strenuous opposition of Monsanto and others, in September of 2017, the Arkansas State Plant Board, reacting to reports of hundreds of thousands of acres damaged by drifting dicamba, voted unanimously to ban its use for most of the 2018 growing season, from mid-April until November. This amounted to a ban on the use of dicamba in combination with genetically engineered crops. Monsanto fought the regulation, then filed suit to overturn it; it lost. As noted by gubernatorial candidate Dauber, other states, including Missouri and Tennessee, have followed suit.

The furor did not escape the notice of the USEPA. In July of 2017, it issued a "Compliance Advisory" titled "Crop

Damage Complaints Related to Dicamba Herbicides Raising Concerns" and advising that "By early July, we already had reports of hundreds of complaints received by state agencies in Arkansas, Missouri and Tennessee (a significant increase from last year). Both physical drift and volatilization of dicamba from the target application site have been reported. The underlying causes of the various damage reports are still being investigated." It went on to remind farmers to follow label restrictions including "very specific and rigorous drift mitigation measures to further reduce the potential for exposure from spray drift including:

- no application from aircraft;
- no application when wind speed is over 15 mph;
- application only with approved nozzles at specified pressures; and
- buffer zones to protect sensitive areas when the wind is blowing toward them."

Still the complaints continued and magnified, as more states and more farmers reported more problems. The USEPA reportedly was considering banning dicamba altogether but instead in October 2017 announced that "EPA has reached an agreement with Monsanto, BASF and DuPont on measures to further minimize the potential for drift to damage neighboring crops from the use of dicamba formulations used to control weeds in genetically modified cotton and soybeans. New requirements for the use of dicamba "over the top" (application to growing plants) will allow farmers to make informed choices for seed purchases for the 2018 growing season."

EPA Director Scott Pruitt hailed the new requirements:

"Today's actions are the result of intensive, collaborative efforts, working side by side with the states and university scientists from across the nation who have first-hand knowledge of the problem and workable solutions. Our collective efforts with our state partners ensure we are relying on the best, on-the-ground, information."

EPA's new agreed label changes impose additional requirements for "over the top" use of the new dicamba products in 2018,

including:

1. Classifying the new dicamba products as "restricted use," permitting only certified applicators with special training, and those under their supervision, to apply them;
2. Dicamba-specific training for all certified applicators to reinforce proper use;
3. Requiring farmers to maintain specific records regarding the use of these products to improve compliance with label restrictions;
4. Limiting applications to when maximum wind speeds are below 10 mph (down from 15 mph) to reduce potential spray drift;
5. Reducing the times during the day when applications can occur;
6. Including tank clean-out language to prevent cross contamination; and
7. Enhancing susceptible crop language and record keeping with sensitive crop registries to increase awareness of risk to especially sensitive crops nearby.

Many states, including Illinois, have adopted the federal approach. In Illinois, the Department of Agriculture expressly incorporated the USEPA approach, and announced special dicamba training events for applicators. The Department's announcement advised that "If you plan to apply these products to soybeans in 2018, the Illinois Department of Agriculture will require all users of these products to adhere to all label requirements including completion of a training program that utilizes training materials developed by the registrants of the products, namely Monsanto, BASF or DuPont."

The new requirements are already gathering skeptics. Although they address particle drift and spray tank contamination, Iowa State University Extension weed scientist Mike Owen complained that "[T]hey summarily ignored the volatilization issue that we believe exists with dicamba products." Fellow ISU Extension weed specialist Bob Hartzler agrees and throws shade on the efficacy or practicality of the revised application requirements as

well: “My contention is that, due to the label changes, it is nearly impossible for applicators to use the product legally,” he said. Larry Steckel, a University of Tennessee Extension weed specialist piles on: “We hear from the captains at Monsanto that we can easily fix this (off-target dicamba movement) with increased training. I don’t think we can. I will do my best, but I think we are fighting a losing battle.”

Anecdotal evidence from farmers gathered at hearings before state agencies generally concur with this assessment. When Indiana state regulators (Specifically, the Indiana Pesticide Review Board) held hearings to consider adoption of the new USEPA approach as state rules many of the generally supportive commenters were nevertheless concerned at least as much about volatility as about application problems, making comments like:

“The registration of this chemistry needs to be reviewed and re-evaluated in light of all the evidence of crop injury coming in from all over the soybean growing states. It would not be a bad thing for the registration to be pulled until there is a formulation that doesn’t drift or VOLATILIZE [sic]. (That’s the bigger problem).” and “I know the new technology has slowed drift, but we are talking about an extremely volatile chemical. I do not appreciate my crops being damaged and I do not appreciate the loss of income.” and, “We were told by chemical reps. [sic] That this new formulation of dicamba would not drift as bad or would not volatilize, I can show you where it moved .75 to 1 mile from targeted field . *** I am proud graduate from Purdue so I have non ag people ask me about issues they hear regarding agriculture. One of the toughest questions this summer has been. [sic] If dicamba can volatilize into the air and drift up to, or more than a mile away and cup bean leaves What does that do to my lungs? I would like a good answer to that myself.”

To nobody’s surprise, the hundreds of thousands of acres of damage have spawned nine federal suits directed against Monsanto, BASF and DuPont in four states [Arkansas (2), Missouri (5-in two districts), Illinois (1), and Kansas (1)], not to mention

individual disputes between adjacent landowners and reportedly, one murder. These federal suits have just recently [February 1, 2018] been consolidated into the U.S. District Court for the Eastern District of Missouri.

Typical of the allegations against Monsanto, BASF and/or DuPont are the allegations leveled against them in the Amended Complaint by Plaintiffs Brian Warren and Warren Farms of Illinois.

That Complaint contains counts for:

1. Strict Liability-Defective Design. The underlying allegation, as to all three products, is that the manufacturers marketed the formulations while knowing that their products were defective and unsafe in that they caused severe crop injuries as a result of volatility and off target movement, but suppressed that knowledge from the public.
2. Strict Liability-Failure to Warn. The underlying allegation, as to all three products, is that the manufacturers knowingly marketed the formulations while failing to adequately warn consumers, regulators, and innocent bystanders that [the dicamba product at issue] could cause severe crop injuries through volatility, temperature inversions, and spray drift.
3. Negligence. The underlying allegation, as to all three products, is that the manufacturers breached their respective duty of care by negligently and carelessly manufacturing, designing, formulating, distributing, [etc.], while failing to adequately test and warn of the risks and dangers of the likelihood of crop injuries through the off-target movement of [the dicamba product at issue].
4. Continuing Nuisance. The underlying allegation, as to all three products, is that the manufacturers created a nuisance and caused widespread damage by encouraging post-emergence applications of [the dicamba product at issue].
5. Civil Conspiracy. The underlying

allegation, as to Monsanto and BASF only, is that those two companies agreed to market Xtendimax and Engenia as low-volatility herbicides, as described above, despite knowing that Xtendimax and Engenia are not in fact low volatility herbicides, and were likely to cause widespread injury to non-target vegetation.

6. Punitive Damages. The underlying allegation, as against all Defendants, is that their acts, acting through their officers, directors, managers and agents, were willful and malicious, and so “despicable and so contemptible that they would be looked down upon and despised by ordinary decent people..”

The plaintiffs seek, besides injunctive relief and compensatory damages, both punitive & exemplary damages, restitution, disgorgement of profits and attorney fees.

One need not accept as true what the complaints allege, nor need one agree with what the plaintiffs seek in relief. However, it is not difficult to sense that regulators, both state and federal, were generally more comfortable framing the issue in terms acceptable to the regulated community than in terms more scientifically rigorous. With the exception of Arkansas, regulators fell in line with an approach that addresses application problems but gives short shrift to the historically established and scientifically acknowledged problems of volatility. The 2017 experience dramatically suggests that this *other flavor* of dicamba “drift” has likely not been remedied by the new formulations. The new regulations essentially kick the “volatility” can down the road for at least one more crop year. This leaves farmers in the unenviable position of joining in litigation against the big agrichemical companies and/or filing suit against their neighbors, and/or caving to the necessity of purchasing “protection” from their tormentors worthy of a scene out of “The Godfather.” As one commenter to the Indiana Pesticide Review Board put it:

I am deeply troubled with Monsanto, BASF, and the EPA. To allow companies to register a label for such a radicle [sic]

compound as Dicamba, and then Exclude themselves from any performance issues is very disturbing. This tells me they knew there would be issues with this product. Every article I read that instructs a farmer like myself on how to gain compensation for the damage only recommends talking to the “applicator”. Nowhere are Monsanto or BASF held accountable. So now I am going to ask a farmer neighbor to write me a check for thousands of dollars to cover my loss. I predict he will say “go jump in a lake”. I will be forced to sue him for damages. Then, in the future, I will be at odds with a neighbor for the rest of our lives while the Chemical companies pocket profits from the chemical sales and, in Monsanto’s case, the ROYALTIES for their Xtend trait that I don’t want but have to use!!!!”

Eventually, the dicamba duels, political

and legal, will end. Eventually, the rule of law will prevail at the end. Hopefully, science will be fully engaged well before that end. ■

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