

## Viewpoint: Dicamba debacle trial forces a reevaluation: Was Monsanto a ‘bonafide bad actor’?

**A**s the developer of the first commercially successful genetically engineered crops, Monsanto has had a target on its back for decades. Its sharpest critics have maintained for years that Monsanto, which was acquired by the German conglomerate Bayer two years ago, has always put profits ahead of values. While many, if not all, of Monsanto’s reputed ‘bad’ behaviors – suing farmers for saving seeds, terminator seeds, farmer suicides in India – that contributed to its villainous reputation as a seed and agro-chemical company have turned out to be unfounded or [poorly understood](#) and [misrepresented](#), the trial over damages allegedly caused by the just-completed trial over the weedkiller dicamba suggests a reappraisal of the company’s ethics might be in order.

**[Editor’s note: On February 15, [Bayer and BASF were hit with a \\$265 million verdict for damages the jury concluded were caused by the dicamba herbicide.](#)]**

screen shot at am

Aa 2008 documentary directed by Marie-Monique Robin praised by activists and criticized for its distortions.

Critics are again circling the wagons, maintaining Monsanto may have a deeply flawed culture that lacks accountability. They say it puts profits ahead of people — not in the commonplace *cutting-corners* way we expect of most corporations in a capitalist society — but in a more profound way. This is a company that made a series of mistakes, some recklessly, around the research and release of this herbicide that would ultimately cause millions of dollars in alleged damages. Yet it refused to take responsibility for its decisions or aggressively move to ameliorate the problems when they arose.

**[Editor’s note: This is the third segment of a four-part series on the “Dicamba Debacle.” Read [part one](#), [part two](#) and [part four](#).]**

The dicamba suit was brought by the largest peach farmer in Missouri. The weedkiller, introduced in 2015, allegedly caused major damage to Bader Farms’s peach orchards. There are also credible reports, backed by extensive studies by weed scientists and numerous state agencies, that the reformulated weedkiller, rolled out in 2015, has damaged thousands of soybean farms, residential properties, and natural ecosystems. The plaintiff is seeking millions of dollars in damages. A Bayer executive has acknowledged in testimony that even before the rollout the company anticipated serious problems and expected problems could persist for years.

### Seeds of the debacle

The tensions between Monsanto and thousands of farmers began to emerge in 2015 and 2016, as Monsanto was moving to make an older herbicide the centerpiece of a new weed-killing strategy. In [part one of this series](#), we recounted a dispute over dicamba damage that resulted in the devastating damage to Bader Farms from alleged drift of the new formulation of the weedkiller dicamba manufactured by Monsanto; the murder of an Arkansas soybean farmer over the tensions introduced by what appears to be

a flawed formulation; and the overall scale of the problem with up to 3.6 million acres of soybeans damaged in 2017 and more than a million in 2018.

The trial which began at the end of January, David took on Goliath over what has become known as the Dicamba Debacle. Goliath is the German-based agro-business Bayer, which acquired Monsanto two years ago. It is accused of releasing cotton and soybeans resistant to the weedkiller dicamba in 2015 and an updated formulation in 2016, both of which are alleged to have drifted into nearby farms causing massive damages. David is a the Missouri peach grower, Bader Farms, which claims to have suffered \$1.5 million in damages to their orchards in 2015 and an estimated permanent loss of 30,000 trees in 2016.

The dicamba crisis traces back even further, more than a decade, when problems over one of Monsanto's most successful innovations—seeds tolerant to the weedkiller glyphosate—came under increasing fire. Herbicide-resistant seeds allow farmers to spray their fields with Roundup (whose active ingredient was glyphosate) to kill weeds rather than having to resort to tilling, which is expensive and results in extraordinary amounts of carbon release from the soil. Since the 1990s, Monsanto had engineered soybeans, corn, sugarbeets, alfalfa, and cotton to tolerate glyphosate, which is sold in patented form by Monsanto as Roundup and in generic form by many other manufacturers.

The strategy was a win-win for Monsanto, farmers and the environment—initially. But after two decades of overexposure to glyphosate, devastating weeds such as pigweed ([Palmer amaranth](#)) developed resistance to it. So, farmers began asking for new weed-killing tools, and Monsanto obliged by engineering dicamba-tolerant seeds and new formulations of dicamba. The company tweaked the genes in soybeans and cotton to create genetically engineered varieties that can tolerate doses of dicamba which otherwise would kill them. This GMO herbicide-tolerant dicamba allowed farmers to spray the weedkiller directly on their soybean or cotton plants, killing the weeds while their crops survived.

palmer

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Pigweed (Palmer amaranth)

At first, Monsanto saw this as an opportunity to address some of the resistance issues emerging from the over use of glyphosate while replicating its wildly successful glyphosate sales strategy. But developing a product to vie with or complement its Roundup Ready crop line posed unique challenges. Unlike glyphosate, dicamba is volatile; it tends to vaporize from the soil or vegetation where it has been sprayed, creating a cloud that can spread in unpredictable directions. It happens more in hot weather, and Monsanto's new strategy inevitably would mean spraying dicamba in the heat of summer. During its development in the mid-teens, Monsanto and two other chemical companies, BASF and DuPont, announced that they had solved this problem with new "low-volatility" formulations of dicamba that don't volatilize as easily.

The new formulations were an improvement but remained fussy. The spraying equipment had to be just right. The wind conditions needed to be just right. The temperature needed to be just right. But the initial formulations, in 2015 and 2016, were plagued with problems, many farmers and state officials claimed. Damage from drift was rampant. Despite the improvements, millions of acres of neighboring farms continued to be damaged throughout the growing seasons from 2017 to 2019.

## **Damage assessment**

Much of the coverage of the Dicamba Debacle has centered on damage to soybean farms due to drift from neighboring soybean or cotton farms. But the problems with dicamba drift have not just been confined to damage to commercial crops. Dicamba drift has damaged small vegetable farms, the landscaping of homeowners, and natural ecosystems.

[Emily Unglesbee cited numerous others cases in The Progressive Farmer:](#)

In South Dakota, a vegetable farm that was destroyed by dicamba in a matter of weeks last year was hit again this June by another cocktail of herbicides, including dicamba.

An elderly Illinois homeowner has watched her carefully landscaped yard wither for two years in a row from dicamba injury.

A resort owner in Tennessee is fighting to save his gardens, plants, trees and a nearby historic state park after the second consecutive year of dicamba damage.

... In Aurora, South Dakota, John Seward runs Little Shire Farm, a farm that grows 415 varieties of vegetables. The farm sells Community Supported Agriculture (CSA) shares, wherein a customer pays a set amount each season and receives weekly deliveries of vegetables.

Starting in early August last year, Seward noticed his eggplants looked odd. Then the sunflowers and tomato plants started to curl and wilt. Lettuce crinkled up, and sweet pea pods became deformed and inedible.

Samples taken by the South Dakota Department of Agriculture confirmed that his vegetables had been hit by dicamba.

GetStoredImage

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Soybeans damaged by dicamba

Dicamba drift isn't limited to commercial properties either. It has impacted natural ecosystems in ways that won't necessarily be easy to bounce back from over the course of a few years. [NPR's Dan Charles interviewed](#) the owner of a lake Tennessee resort that has seen damage to the 200-year-old cypress trees that line the lake. He then turned his reporting to other parts of the state. After speaking with a farmer who'd begun noticing damage to trees in his neighbor's yards and then starting to see damage in more and more places, Charles enlists Greg Allen, an agricultural extension agent with the University of Tennessee, to give him a little tour near Reelfoot Lake.

We passed a big field of soybeans on our right. On our left was woodland.

I didn't really know what to look for. I asked Allen what caught his eye. He rolled down his window and gestured toward a nearby tree. "Well, one thing that would've caught my eye is that sycamore, and them itty-bitty leaves," he says.

Normal sycamore leaves are big and flat; these are curved into the shape of small cups, a sign

of exposure to dicamba. “And you can see it goes all the way to the top,” he says. “That’s a 30- or 40-foot tree.”

I realize that the leaves of almost every sycamore tree nearby show similar symptoms. Other trees, though, do not. Dicamba affects various plant species very differently. Based on what scientists have observed this past year, the tree species that seem most sensitive to dicamba include sycamore, cypress, Bradford pear, and white oak.

## Did they know what was coming?

In [part two of this series](#), we recounted that what started as a regulatory snafu turned into a problem that went well beyond the illegal use of older versions of dicamba in the first year after dicamba-tolerant crops were released commercially. We detailed the legal tactics that Monsanto deployed when the Arkansas Plant Board moved in 2017 to ban the use of dicamba, suing [each member of the board individually](#) and even challenging the [board’s right to exist at all](#). We heard from public university weed scientists who complained that they had not been able to test the new dicamba formulations prior to their commercial release and that their credibility with regulators had been attacked by Monsanto and their supervisors pressured by the company to get them to back off of their criticisms of Monsanto’s version of dicamba.

The trial took a consequential turn when documents emerged that showed that Monsanto had suspected long before the new formulations were released to market that dicamba could cause major drift issues, at least for a few years. Bayer executives testified that in their roles at Monsanto thousands of complaints were expected following the release of dicamba-tolerant soybeans and cotton, which they had reason to believe would result in serious crop damage. Which appears to be exactly what happened.

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Reporting on the trial, [The St. Louis Post-Dispatch detailed the testimony and evidence](#) introduced by the Bader Farms legal team showing that Monsanto was aware that the new formulations of dicamba wouldn’t adequately solve the volatility and drift issues. They expected thousands of complaints as a result of increased dicamba use:

In an October 2015 document, Monsanto projected that farmers would file thousands of complaints in each of the next five years... Monsanto projected 2,765 complaints about dicamba in 2017. In fact, the company received 3,101 complaints, Carey testified.

[At least 3.6 million acres of soybeans](#) were damaged in 2017. The complaints continued in 2018 and 2019. Billy Randles, lead attorney for Bader Farms, pointed out that in the five years preceding 2015, farmers never filed more than 40 claims on dicamba drift.

## RRSoybeansExtend

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Bayer, which argued on behalf of its Monsanto subsidiary, claims the damage to Bader Farms was caused not by drift, but by a soil fungus. In a statement [provided](#) to the Midwest Center for Investigative Reporting, the company said it “took many steps” to warn farmers and suppliers that dicamba herbicides had not been approved for use in the 2015 and 2016 growing seasons:

Monsanto included a prominent warning with all bags of Xtend seed sold and provided extensive training with all our teams that the use of a dicamba herbicide over Xtend cotton and soybean seeds was not permitted and would be illegal.

Meanwhile, another perverse outcome is that farmers who may not need dicamba to control the weeds in their fields have ended up purchasing the dicamba-tolerant seeds as a hedge against drift from their neighbors. That’s quite the business model.

While it is cold comfort [to have your soybean crops damaged by your neighbor](#), there is something more insidious when the damage drifts outside of the community of soybean or cotton farmers to a specialty crop farm like Bader’s peach operation. That it appears that Monsanto expected the problems to be widespread must seem like a double kick in the teeth for farms with weaker ties to Monsanto, Bayer, Dupont, or BASF.

### Where does responsibility lie?

Over the course of this affair, we’ve also learned disconcerting things about Monsanto’s handling of its dicamba launch: The company wouldn’t allow public scientists to test the new formulations before they hit

the market; it pressured public weed scientists to withhold inconvenient findings and analysis; and it objected to new regulations proposed by the Arkansas State Plant Board, limiting use to to five weeks in April and May during the growing season and buffer zone requirements in certain cases, in response to initial problems. Then we discovered during the trial that Monsanto had anticipated these problems —

and 

expected them to continue for at least the first five years of

its new dicamba-tolerant seeds.

The toll on farmers is infuriating enough—the damage it did to farms and how it frayed relationships between the farmers, sometimes to the breaking point (and in one case, as we discussed in [part one of this series](#), resulting in a death). But now we are seeing that there could be widespread damage to the environment as well — both what is documented now and what’s still unknown.

This evolving story raises many unanswered questions: What does the Dicamba Debacle say about the seed and chemical giants involved in bringing a flawed product to market; does it raise questions about the ethics of farmers who chose to use dicamba after it became clear that it could cause problems for their neighbors and surrounding ecosystems; and what does it say about ‘industrial farming’ writ large, as serious questions mount as the years have passed. We’ll sort this out in the [final installment of this series](#).

[Next: Part Four](#)

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**Part One:** [Farmer vs farmer: After tens of thousands of acres of crop damage, what are we to make of the ‘dicamba debacle’?](#)

**Part Two:** [‘Monsanto on the attack’: How an aggressive defense contributed to the ‘dicamba debacle’](#)

**Part Three:** [Viewpoint: Dicamba debacle trial forces a reevaluation: Is Monsanto a ‘bonafide bad actor’?](#)

**Part Four:** [Viewpoint: ‘Dicamba Debacle’ stirs questions about the future shape of ‘industrial, intensive agriculture’](#)

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