Dicamba Watch - Narrative Summary

Summarizing reports of damage from dicamba drift following the introduction of dicamba-resistant crops in 2016. For more information and resources see http://cehn-healthykids.org/herbicide-use/herbicide-timelines/#dicamba or view the Dicamba Watch video at https://vimeo.com/232115660. Note: bibliographic references in parenthesis after author correspond to the items name in the online bibliography (available here: http://cehn-healthykids.org/bibliography-tag/dicamba-watch/).

November 20, 2017

Reports on the Dicamba ban on Engenia use in Missouri for 2018 after June 10 (some counties) or July 15 (all counties). Adds the detail that all applicators will be required to receive mandatory training by state Extension offices.

November 16, 2017

The Missouri Agriculture Department announces a partial ban on the use of BASF's Engenia on cotton and soybeans. Engenia applicaition will be banned after June 10, 2018 in 10 southeastern counties most affected this year, and after July 15 across the rest of the state. Further restrictions on Monsanto and DuPont's new dicamba formulations are forthcoming, the Department said. FULL TEXT

November 8, 2017

On Wednesday November 7, the Arkansas State Plant Board voted 10-3 to ban dicamba use between April 16-October 31 in 2018. Monsanto was “fiercely opposed” to this ban, which now heads to the executive committee of the Arkansas Legislative Council for final approval. Monsanto has filed a lawsuit against the plant board over the partial ban implemented this year, and submitted extensive comments against the 2018 ban. BASF’s Engenia herbicide was the only dicamba formulation approved in Arkansas in 2017 for use with the new resistant crops, and Monsanto claims that BASF told them that it sold only about enough Engenia to cover half the state’s soybean crop. This would mean that much of the dicamba sprayed in 2017 was off-label use, a claim disputed by other experts.

November 1, 2017

“Dicamba has damaged more than 3.6 million acres of soybean crops, or about 4 percent of all soybeans planted in the United States this year.” Reuben Baris, acting chief of the herbicide branch at the EPA, calls the damage “unacceptable” and suggests that the actual number of drift incidents could
be up to 5 times greater than he over 2,700 reports due to a large number of incidents going unreported. Impacts to yields are still unknown, according to the EPA. The initial approval of dicamba for over the top use expires after only 2 years. This article states that EPA officials made it clear that re-approval is in jeopardy if the companies can’t find ways to mitigate damage.

November 1, 2017


Reports on the latest on the 2017 dicamba damage crisis. This year, major soybean states such as Arkansas, Missouri, and Illinois received roughly 4 years’ worth of complaints about damaged crops. A total of 2,708 damage investigations have been initiated as of October 15th. Investigations will determine if applicators followed lengthy label instructions (up to 4,550 words). Monsanto believes this off-label application is the issue and plans to change usage instructions before the next crop season. The article points out the expense to state ag agencies to cover this surge in complaints and associated staff demands. Some states are putting off other inspections to manage dicamba complaints, and budgets are strained. In Illinois, where they received 421 complaints, the most since 1989, they expect investigations to continue through next year. The EPA has offered 35 states extra grants to help fund dicamba damage investigations, and is helping states by conducting states for low-levels of dicamba.

October 30, 2017


Final compilation of state by state dicamba damage complaints reveals:

- 2,708 dicamba related complaints across 25 states
- Approximately 3.6 million acres of soybeans injured
- Figures below show number of complaints (left) and soybean acres (right)
October 13, 2017

The EPA announced its deal with Monsanto, BASF and DuPont to allow dicamba use in 2018 with “tangible changes” that will be implemented in the upcoming growing season. Dicamba will be labeled “restricted use” and applicators will be required to get additional training and certifications, and new rules will be implemented related to time of day of application and no spraying when wings are over 10 mph. The EPA worked closely with the three companies and Monsanto praised the new label restrictions, saying they are “confident the required training and record keeping can address the main causes of off-target movement.” The EPA praises the “cooperative federalism” that brought about this agreement.

October 9, 2017

Dicamba drift is being blamed for damage to oak trees in Iowa, Illinois, and Tennessee. More than 1,000 complaints were filed in Iowa, and in Tennessee the oak trees at the state’s largest natural lake were damaged. Monsanto declined to comment, and a BASF spokesperson encourages growers who see damage to contact them but states that they “don’t believe volatility is a driving factor based on past research and experience.” The article reports that internal Monsanto emails obtained through a Freedom of Information Act request, show the company is trying to shift the blame for oak tree damage to other pesticides.

October 7, 2017

This NPR radio story focuses on the farmer to farmer conflicts engendered by the dicamba drift crisis. Some farmers are eager for the new technology to address herbicide-resistant glyphosate, while others are devastated by drift damage. David Wildly, an Arkansas soybean farmer says "It's something that is so heartbreaking to me. I see farmers taking sides, and enemies being made.” Farmers who support dicamba-resistant technology hope everyone will soon be using them so neighbors can't be harmed.

The story then raises the issue of damage to native vegetation that pollinators rely on. Richard Coy, a beekeeper with 13,000 hives in some of the most affected states, has seen damage to vegetation impacting blooming. According to Coy, honey production across the region is down about one-third on average.

October 4, 2017

Reports on Monsanto’s rising economic fortunes. Stock prices were up recently 20 cents a share, even though analysts had estimated the company would be at a 42-cent loss. Monsanto attributes much of
this to their new dicamba-resistant Xtend soybeans, and predicts a doubling of acres planted in 2018 to 40 million.

**September 25, 2017**

This American Soybean Association (ASA) news release addresses dicamba drift damage, now an issue in 21 of the 30 soybean producing states, and reiterates their support of new formulations since "farmers need and want new technologies to help fight resistant weeds" but call out the "need to ensure that these products can be used by farmers...safely." Ron Moore, ASA president and farmer in dicamba-drift affected Illinois is extensively quoted and cites the ASA's support for independent research at university ag departments in the affected states, and calls for "additional education, applications restrictions, or other actions" to address root causes of the drift problem. While the problem is mainly stemming from soybeans, Moore recognizes the "good neighbor aspect...ASA has a duty to ensure that we are successfully coexisting with other crops."

**September 22, 2017**

The Arkansas State Plant Board reached a unanimous decision to ban dicamba use in the state from August 16 - October 31, 2018 in an attempt to mitigate damage from drift. This would allow spring and fall burndown and pre-emergence application, but not the over the top spraying on growing crops that the new formulation and dicamba resistant seeds are engineered for. Plus, the board passed a resolution commending the Arkansas weed scientists whose scientific integrity was questioned by Monsanto in their bid to persuade the board to reject the proposed ban. The story includes key new information about volatility research that was presented to the board as part of the hearing process. Herbicide industry reps continued to downplay volatility and point fingers at operator error, while independent weed scientists reported that their findings showed that while volatility was lower immediately after spraying, volatilization continued 36 to 72 hours after application, meaning that "over time the amount of volatility between old and new formulations was not statistically different." The board also rejected Monsanto's argument that drift damage appears to not have caused yield loss, and is therefore not important to address. Board members felt this is "beyond the point when you are talking about pesticide stewardship" and bristled at Monsanto's characterization of the proposed ban as "arbitrary and capricious."

**September 19, 2017**
This story reports on the EPA’s decision to allow dicamba use in 2018, although with yet to be determined additional rules to mitigate damages. The acting chief of the herbicide branch Reuben Baris is quoted that “ensuring the technology is available” is the top priority, but that the agency wants to ensure that it is “used responsibly.” This echoes Monsanto’s argument that the fault lies with applicators and not their product. While a cutoff date similar to the one proposed in Arkansas (April 15) is one of the options considered, it is considered unlikely as it would not achieve EPA’s goal of “maintaining dicamba’s usefulness.”

September 15, 2017

Weed scientists at Purdue University sought determine how many legal spray windows there were in 2017 for dicamba both under current restrictions and proposed local and federal regulations for 2018. Their findings include:

- Under current federal label requirements, growers could spray for 334 hours in June (46%) and 267 in July (36%) at their test location in Indiana.
- Under Missouri’s’ 2017 dicamba restrictions meant to reduce drift potential (spraying limited to 9am-3pm, wind speeds 3 to 10 mph) farmers could only spray for 7% of June and 14% of July. With only 13-18 ideal spray days in the key months, it becomes very difficult to treat all acres on large farms legally.

September 14, 2017

Reports that farmers in over 10 states are now involved in dicamba lawsuits, and “dicamba-related litigation has only just begun.” The core of the cases is that the new dicamba formulations are inherently "incapable of being routinely and safely applied to cotton and soybeans." Farmers who suffered damage allege they are victims of Monsanto and BASF putting products on the market that are unsafe. A few specific suits include:

- Bader Farms- This Missouri orchard saw dicamba damage to 7,000 peach trees in 2016 and 30,000 in 2017, with costs in the millions. Monsanto and BASF are listed in the complaint. Monsanto claims that Xtendimax is not the culprit herbicide in this case. First filed in November 2016.
- Landers et. al v. Monsanto Company- This suit is spearheaded by Steven and Dee Landers from Missouri but includes farmers from Alabama, Arkansas, Illinois, Kentucky, Minnesota, Mississippi, North Carolina, Tennessee, and Texas. Filed in January 2017.
- Bruce Farms Partnership- Six farms in Arkansas file suit in July 2017 include many similar complaints as other lawsuits but add the claim that dicamba is never safe to spray during the growing season. The complaint states that "given the well-recognized nature and patterns of cultivation in these (and other) regions, the proximity of other non-Xtend crops and plants, and the foreseeable weather patterns and timing of likely application, damage to nontarget crops and plants was inevitable and known to Defendants.” Despite the companies claims to the
contrary, farmers experience with the new formulations have shown that they are very prone to drift. "How could Monsanto not know? How did they test and where did they test?" asks attorney Paul Byrd. Monsanto claims that 99% of Xtendimax applications in 2017 have shown "wonderful results" and that 77% of off-target movements occurred due to the label not being followed (i.e., operator error).

- Smokey Alley - Also in July, a class action suit in Missouri was filed on behalf of a group of farmers. This suit includes claims of anti-trust activity by BASF, Dupont, and Monsanto. The widespread introduction of dicamba-resistant technology has forced farmers to plant the resistant crops to limit damage. "[Farmers] want to plant seeds of their choice, but due to damage potential have to consider buying dicamba-tolerant soybeans from a defensive position," Attorney Paul Lesko.

- B&L Farms - On July 20, 14 producers from Arkansas file a class action suit against Monsanto and BASF including a "litany of charges related to irresponsible marketing, product liability, breach of implied warranty, deceptive trade practices and more allegations."


September 11, 2017

The firm Morgan and Morgan filed a lawsuit on September 10th against Monsanto, BASF, and DuPont - the major producers of dicamba in the U.S.. The suit was filed in Illinois on behalf of the owner/operator of a farm in Broughton, IL where hundreds of acres of soybeans and pumpkins were allegedly damaged by dicamba drift. "Farmers across the country relied upon the defendants' assurances that these new formulations of dicamba could be used safely and without harm to others. That simply isn't true, and as a result thousands of farmers are staring down lean harvests and uncertain futures" (Rene Rocha, attorney on the case). They are seeking an permanent injunction against marketing and selling Xtend crops, Xtendimax, Engenia, and Fexapan as well as compensation for losses and legal costs. "The dangers of this herbicide have been understood for decades. Unfortunately, instead of producing safe and effective weed control options, it appears that the defendants are using the threat of harm to eliminate their competition and dictate what crops farmers can and cannot plant."

September 7, 2017

Monsanto has formally petitioned the state of Arkansas to reject the proposed ban on dicamba spraying after April 15. The task force was set up by Governor Hutchinson following thousands of complaints of crop damage from dicamba use on herbicide-resistant soybeans. Monsanto calls this an "unwarranted and misinformed" as dicamba is specifically designed for spraying in the summer over growing fields to target herbicide-resistant weeds. The company is claiming that the damage will "probably
not cause significant yield losses” and called into question the objectivity and motives of key weed scientists who are working on the issue. Monsanto threatened legal action if their petition is not granted.

**September 5, 2017**

More details on proposed EPA regulatory action ahead of 2018 growing season to address dicamba damage crisis. EPA is considering a cut-off date in spring or early summer for dicamba applications, allowing pre-emergence spraying only. The agency calls the extensive damage of this season unacceptable and warns of "significant changes" to the rules. This will impact Monsanto's bottom line: "If the EPA imposed a April 15 cut-off date for dicamba spraying, that would be catastrophic for Xtend - it invalidates the entire point of planting it." Article also notes the high cost of dicamba seed as farmers try and decide the benefit of ordering the resistant seed. "Dicamba-tolerant soybeans cost about $64 a bag, compared with about $28 a bag for Monsanto’s Roundup Ready soybeans and about $50 a bag for soybeans resistant to Bayer’s Liberty herbicide."

**August 31, 2017**

Monsanto claims they will have enough dicamba-resistant seed available for half the U.S. soybean acreage, and chief technology officer Robb Fraley described dicamba as a "tremendous success" for most farmers. EPA, however, is considering changes ahead of the 2018 season. "We don't consider this to be normal growing pains for a new technology,” says an EPA official who oversees herbicide regulations. Monsanto again claims the key is "strict adherence to instructions."

**August 29, 2017**
Caitlin Dewey, "This miracle weed killer was supposed to save farms. Instead, it's devastating them." The Washington Post, https://www.washingtonpost.com/business/economy/this-miracle-weed-killer-was-supposed-to-save-farms-instead-its-devastating-them/2017/08/29/33a21a56-88e3-11e7-961d-2f373b3977ee_story.html?utm_term=.1c08cc21570b.

*Washington Post* story reports on ongoing damage from dicamba. Important points in the article include the potential for drift- "According to a 2004 assessment, dicamba is 75 to 400 times more dangerous to off-target plants than the common weed killer glyphosate, even at very low doses. It is particularly toxic to soybeans — the very crop it was designed to protect — that haven’t been modified for resistance." Reports on latest numbers- 3.1 million acres in 16 states. “It’s really hard to get a handle on how widespread the damage is,” said Bob Hartzler, a professor of agronomy at Iowa State University. “But I’ve come to the conclusion that [dicamba] is not manageable.”"
**August 24, 2017**

In response to criticism that volatility was not adequately studied, the company releases a statement on August 23rd touting their extensive and "historic testing" of the new formulations and claim a 90% reduction in volatility.

**August 14, 2017**

University of Missouri weed scientist Kevin Bradley has updated his dicamba damage numbers, showing that numbers have almost doubled already in just a few weeks to 2,242 complaints and an estimated 3.1 million acres.

**August 10, 2017**

The Plant Board reports 876 complaints as of 8/10. An estimated 35% of the state's 3.5 million acres and 300,000 of the 400,000 acres of cotton are planted in dicamba resistant acreage that would be sprayed with the new herbicide formulations. Weed scientists with the state point out that although lab testing found that the new formulations (Engenia, Xtendimax, and FeXapanTM) were less volatile than older dicamba herbicides (i.e. Banvel and Clarity), researchers have found that under realistic, field growing conditions "differences in volatility between older dicamba products such as Clarity and newer ones including Engenia and Xtendimax are not as evident... Soybeans are so sensitive, very, very low levels of volatility can cause injury." (Tom Barber)

**August 9, 2017**

Arkansas has appointed a 21-member task force to help identify solutions for the dicamba drift damage problem, with almost 900 complaints received this year so far. "'The task force will attempt to reach consensus on a set of recommendations for the use of dicamba products in Arkansas as quickly as possible in order to provide certainty for the 2018 growing season,' said the state Agriculture Department."

**August 8, 2017**

Updated 11/30/2017
Reporting on Monsanto's plan for dealing with dicamba damage: 1) Support farmers with damage symptoms by creating a hotline to call in and report damage and arrange for a time to meet and review with Monsanto experts, 2) Research weather data this growing season to understand how unusual conditions may have played a role, 3) train additional applicators- 50,000 have been trained so far.

August 4, 2017

Reports that the dicamba ban in Missouri was lifted in Mid-July and farmers had resumed spraying. Damage reports are re-occurring. One farmer quoted in the story compares his Missouri acres where "every acre" is showing damage to his healthy soybean fields in neighboring Arkansas that has a similar dicamba ban in place. Some places showing damage are at least a mile away from any possible source of dicamba. Missouri's ban was in place for less than a week after stricter conditions rules for spraying dicamba were issued targeting wind speed and the time of application. Monsanto is based in Missouri and some questioned the role their political power played in the lifting of the ban.

August 2, 2017

Reports on 142 cases of "pesticide misuse" to the Iowa Department of Agriculture and Land Stewardship as of July 20, when in a normal year the total by this time would be 58-85, 46 were dicamba related. By August 2, there were now 74 dicamba damage complaints. Reports on EPA teleconference with weed scientists, who "reported that many applicators experienced problems while doing everything right." The author's main concern is dicamba volatility: "While Xtendimax and Engenia have reduced volatilization compared to older formulations, the combination of relatively high dicamba rates and applications during high temperatures can result in significant dicamba concentrations leaving treated fields."

August 1, 2017,

Bloomberg reports on the dicamba damage numbers. Article includes key information from Monsanto about number of acres planted in dicamba-resistant soybeans (20 million) and cotton (5 million) in 2017. This represents about 25% percent of the national soybean crop and about half of the cotton crop, very significant numbers.

July 25, 2017
Kevin Bradley, "Ag Industry, Do we have a problem yet?," Integrated Pest and Crop Management, https://ipm.missouri.edu/IPCM/2017/7/Ag_Industry_Do_we_have_a_problem_yet/.
Article summarizes the total number of dicamba-related drift complaints as 1,411 as of July 19, 2017 as the map to the left shows. Arkansas leads with 686 complaints, while Missouri has over 200.

Estimates of acres damaged are up to 2.5 million. See article for this map. The author asks: "does 1,411 official dicamba-related injury investigations and/or approximately 2.5 million acres of dicamba-injured soybean constitute a problem for U.S. agriculture? ...[M]y answer is an emphatic yes."

**July 25, 2017**

Weed scientists at research institutions who were contracted by Monsanto to measure the effectiveness of the new dicamba formulations claim that they were not allowed to study the volatility of the herbicide and the potential for drift. After the products hit the market, Kevin Bradley with the University of Missouri and Tom Mueller at the University of Tennessee conducted independent research on the new herbicide, and their research about dicamba volatility is cited in the class-action lawsuit filed the previous week in Missouri. The lawsuit "argues that the companies didn't tell farmers that volatility of the dicamba products could develop over several days, carrying the chemical from one field to the next. Temperature inversions, which trap air in specific locations, can serve as a conduit for dicamba to remain at ground level and eventually travel miles away from a pesticide sprayer's fields, according to the lawsuit." The article reports that damage complaints are up to over 700 in Arkansas and almost 200 in Missouri.

**July 23, 2017**

This article reports on the class action lawsuit filed July 18th in federal court in Monsanto's home state of Missouri. The lawsuit claims that despite public statements urging farmers to wait for the new, low-volatility dicamba formulations, Monsanto privately assured farmers that off-label use wouldn't be harmful. “This was Monsanto’s real plan: publicly appear as if it were complying, while allowing its seed representatives to tell farmers the opposite in person,” the suit alleges, based on farmer testimony. “Their sales pitch: assure purchasers that off-label and illegal uses of dicamba would ‘be just fine.”’ The suit names Monsanto, BASF, DuPont, and Pioneer as the defendants, and the plaintiffs currently include seven farms in Arkansas, though many more are expected to join. In reviewing the 2017 batch of dicamba damage complaints, the article claims that as well as Arkansas and Missouri, "Tennessee, Mississippi, Kansas, Illinois and Indiana" have all seen problems from dicamba use. A University of Tennessee weed management expert is quoted: “Following (the label instructions) as they are now is a

Updated 11/30/2017
Herculean task. Talk about threading the needle — you can’t spray when it’s too windy. You can’t spray under 3 miles per hour. You got to keep the boom down — there are so many things... It looks good on paper, but when a farmer or applicator is trying to actually execute that over thousands of acres covering several counties, it’s almost impossible.”

July 20, 2017

Reports on about 2 dozen complaints received by the Minnesota Department of Agriculture about damage from dicamba. The debate continues over what’s to blame- farmers spraying improperly or on the wrong weather days, the use of generic formulations that lack the additives to reduce volatility, or Monsanto’s product itself. Lab tests are being conducted on the affected crops to determine if dicamba is to blame. Estimates are that thousands of acres of soybeans across MN have been damaged.

July 17, 2017

This AP article sheds light on Mike Wallace, the Arkansas farmer who was shot and killed in October 2016 by the manager of the neighboring farm during a confrontation over damage to Wallace's farm from dicamba drift. Mike's sister said that he "did not want to hurt his neighbor, and he could not understand why people would spray things that would hurt others." The article reports that as of mid July, 630 complaints have been received so far at the Plant Board, far surpassing the 250 or so that or usually submitted each year. Herbicide manufactures continue to insist the problem is with application error, and not their products. "I've never seen anything like this," quotes one long-time soybean farmer.

July 12, 2017

The Tennessee Department of Agriculture responded to increased farmer-to-farmer complaints of damage from dicamba drift by enacting new rules on dicamba use in the state. The rules include requiring special licensing and record keeping for applicators, banning the use of older formulations for the rest of the season, and limiting the timing that it can be applied, and will be effective through October 1, 2017.

July 11, 2017

This article reports on dicamba drift in Missouri, where damage to date is tallied at 203,045 acres on soybeans, as well as over 6,500 acres of other crops and gardens, including certified organic vegetable farms. The damage appears to be caused both by known problems with how and when dicamba is sprayed, and also by greater than expected damage from legal and correct dicamba spraying of the...
newest varieties that are supposed to be low volatility: BASF’s Engenia, Dupont FeXapan Plus Vapor Grip Technology, and Monsanto’s Xtendimax with Vapor Grip Technology. In response the Missouri Department of Agriculture voted on July 7, 2017 to temporarily suspend all sales and applications of dicamba.

**July 10, 2017**

Effective just after midnight on July 11, Arkansas finalizes a 120-day emergency ban on dicamba sales and use. Missouri also banned dicamba the week before, with the intent of re-opening sales once the investigation into complaints of damage from dicamba drift is complete. The Missouri Soybean Association is quoted as saying that more than 200,000 acres of soybeans are affected in the state. In a statement, Monsanto stressed the importance of "following label and local requirements" for their Roundup Ready Xtend Crop System of dicamba-resistant soybeans. The article lists the number of complaints of dicamba damage in Arkansas as "nearly 600," up from the 500 reported on July 6th. See the article link above for maps of the affected areas in Arkansas (excerpt to left) and Missouri.

**July 6, 2017**

Here we learn more about the symptoms of dicamba damage - cupped and wrinkled soybean leaves - and other culprits that could be the cause such as other herbicide damage, pests such as aphids and various plant diseases. It can take 7 to 21 days for dicamba damage to appear, and it will only be evident on new leaves, not those present when the drift occurs. Percentages as low as 0.06 to 1.9% can cause damage resulting in yield loss.

**July 6, 2017**

*NPR* Morning Edition radio piece reports that dicamba-related complaints in Arkansas are up from 250 at the end of June to 550 by July 6th. Estimates of potential damaged soybeans are up to 2 million acres. The new Monsanto dicamba resistant cotton and soybean is being blamed for this damage from an herbicide that has been in use for over 50 years. As one farmer quoted in the story puts it, "This technology cannot be allowed to exist. It cannot co-exist with other crops." On the other side of the debate, farmers using the GE crops claim that dicamba is working great.
against the herbicide-resistant Palmer amaranth that is plaguing their fields, and Monsanto's head of crop protection sees all this as "just part of the learning curve."

July 6, 2017
Chris Hickey, "Legislative Panel Delays Decision On Arkansas Dicamba Ban," NPR, 
http://ualrpublicradio.org/post/legislative-panel-delays-decision-arkansas-dicamba-ban#stream/0.

Reports that the subcommittee of the Arkansas Legislative Council deferred a decision on whether to ban use and sale of dicamba. Governor Asa Hutchinson referred the decision to the committee following approval of a 120-day emergency ban proposed by the Arkansas Plant Board. The subcommittee did approve an emergency rule to increase fines up to $25,000 for misuse of dicamba. All this follows the approval in December of BASF's Engenia dicamba-based herbicide. The board will reconvene to continue the debate the following week.

July 2, 2017
Associated Press, "Farm chemical linked to oak damage," Quad-City Times, 

Reports that almost 1,000 residents of Iowa have contacted the state Department of Natural Resources about damaged leaves on oak trees (photo, right) that looked like insect damage. Research from the University of Illinois in 2004 showed that herbicide drift was likely linked to the condition, known as leaf tatters, due to exposure to chloroacetanilide herbicides like dicamba. Exposure occurs from direct drift but also through atmospheric volubility in areas not close to where the herbicide was applied. White oaks are particularly susceptible, and trees can die if damage to the leaves occurs over multiple years. Complaints of damage are up this year but not yet at record numbers.

July 1, 2017

Reports that on June 31, Arkansas Governor Asa Hutchinson submitted a letter that approved the Arkansas Plant Board's proposed 120-emergency ban on dicamba sale and use in the state. He wrote that "the volume of complaints do justify emergency action;" 507 complaints had been received as of June 31st. The proposed ban next goes to a subcommittee of the Arkansas Legislative Council for review, although their approval is not required for the ban to take effect. The article reports that complaints in neighboring states are also up, with 100 in Missouri and 48 in Mississippi as of the end of June.

June 26, 2017
Chris Bennett (Bennett, 2017b), "Arkansas Dicamba Ban Passes, Heads to Governor's Desk," AgPro, 
Report on the vote of the Arkansas plant board on June 23 for a 120-day emergency ban on dicamba use after 242 complaints of damage from drift were received. The article points out the huge problem of herbicide-resistant Palmer amaranth in Arkansas fields, and the issue of seed availability, estimating that in 2018 70-80% of the seed available will be of the Xtend GE-variety, creating a greater need for dicamba.

June 26, 2017

Reports that as of June 26, Tennessee Department of Agriculture has open investigations on 27 dicamba drift complaints, compared to only 3 in the same time period last year.

June 23, 2017

NPR story focusing on the farmer-vs-farmer conflicts arising in Arkansas due to dicamba damage. By press date, 242 complaints had been received by state regulators. On June 23, 2017 the Arkansas Plant Board voted to ban any spraying of dicamba on crops, other than pasture land, for 120 days. The ban would take effect as soon as signed by the governor.

January 4, 2017

Reports that Gov. Hutchinson has approved the Arkansas State Plant Board's proposal to limit when and where dicamba can be sprayed in the upcoming planting season. It includes a requirement for a 1 mile buffer zone before spraying dicamba, except on pasture or rangeland.

January 2, 2017

The governor of Arkansas Asa Hutchinson is pondering whether to accept recommendations by the state Plant Board to limit dicamba use in the coming growing season. The debate stems from the advent of dicamba-tolerant GE crops.

December 21, 2016
BASF press release about EPA approval of Engenia herbicide for dicamba-tolerant soybean and cotton. Includes claims of a 70% reduction in volatility.

**November 8, 2016**

The EPA approves dicamba for use on herbicide-resistant crops. The formulation approved is for use with Monsanto's new Xtendimax with Vapor Grip Technology, which contains additives intended to decrease volubility and reduce drift.

**November 7, 2016**

A mess was created in 2016 when Monsanto began selling its dicamba-tolerant Xtend soybeans before the herbicide designed to use with the GE seeds was approved by the EPA. Farmers bought the seed anyway because of its high yield. Some farmers sprayed dicamba anyways, an illegal off-label use, resulting in 40,000 acres of damage from drift in Missouri alone.

**October 28, 2016**

In a shocking turn of events, farmer-to-farmer conflict over dicamba drift from off-label herbicide use ended in murder when a man was shot during a meeting about damaged crops.

**August 1, 2016**

NPR story describes the illegal spraying of dicamba on soybean fields in Arkansas where Monsanto began selling its Xtend dicamba-resistant soybeans before the EPA had approved the new dicamba herbicide formulation for use with the GE seeds. Monsanto said farmers wanted the seed anyway because of higher yields, but many chose to illegally spray older dicamba formulations that were prone to drift.

**July 7, 2016**

Tom Barber, an Extension Weed Scientist at the University of Arkansas, posts a chilling overview of what he has observed in soybean fields in several parts of the state. His piece "Dicamba Drift and Potential
Effects on Soybean Yield” contains an ominous warning – “We have observed a 10% [soybean] yield loss from dicamba at rates as low as 1/1024X of the labeled rate” – a very low level of drift and/or movement following volatilization. Barber also warns that low rates of dicamba drift/movement onto soybeans, especially later in the crop’s growth cycle (i.e. R3-R5) can result in carryover of dicamba in the seed...triggering problems if the soybeans are used for seed in the next year and increasing dietary exposure levels.