

## **DIRECTOR OF SCIENC POLICY UPDATE**

July 25, 2017  
Lee Van Wychen

### **WSSA Will Create Special Committee for Herbicide Off-Target Movement**

The WSSA Board of Directors held their summer board meeting in Arlington, VA on July 13-14. The board also visited the EPA Office of Pesticide Programs and met with a dozen or so staff, including the acting director of the Office of Pesticide Programs, Rick Keigwin. The issue of dicamba drift was front and center for much of the discussion. The WSSA Board directed President Janis McFarland to create a special committee of experts for herbicide off-target movement. I spoke with Janis yesterday and she is in the process of putting that committee together. As you may know, there is a lot of speculation, but few facts, about the causes and impacts of the dicamba off-target movement. The goal of the special committee is to put together the facts to help everyone make the decisions needed to prevent this from happening again in the future.

### **Ag Industry, Do We Have a Problem Yet?**

[University of Missouri Integrated Pest & Crop Management](#)

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It's funny how we can be living through a situation or watch something unfold in front of our very eyes and one person can view it one way and another can see it totally different. If you think about it, this happens all the time at sporting events. Not too long ago I was watching a Cardinals game with some Cubs fans and all of a sudden they all started yelling that our player was out when I could clearly see that he was in fact, safe. How can that be? We were all watching the same thing at the same time...

I've been trying to wrap my head around this whole issue of perspective lately. I think a person's perspective is an important thing to consider when it comes to the issues we are seeing with off-target movement of dicamba in this country, and especially when it comes to the reasons that are offered for off-target movement. Never has a difference in perspective been more apparent to me than what I have seen happen for the past year, and especially for the past two months, within the agricultural industry.

I get calls daily from those who say we have a major problem with off-target movement of dicamba and something has to be done about it. Most of these calls are from soybean farmers who have had their crops drifted onto. Some are from homeowners or vegetable producers. Others are from representatives with other competing companies that don't have a stake in any dicamba product or the Xtend technology. There's that perspective thing again. More recently, most of these calls are from independent agronomists, agricultural retailers, and custom applicators who have been making applications of these approved dicamba formulations and have now decided to stop spraying these products for the rest of the season because of the off-target movement that has occurred despite their best efforts to keep these products in place.

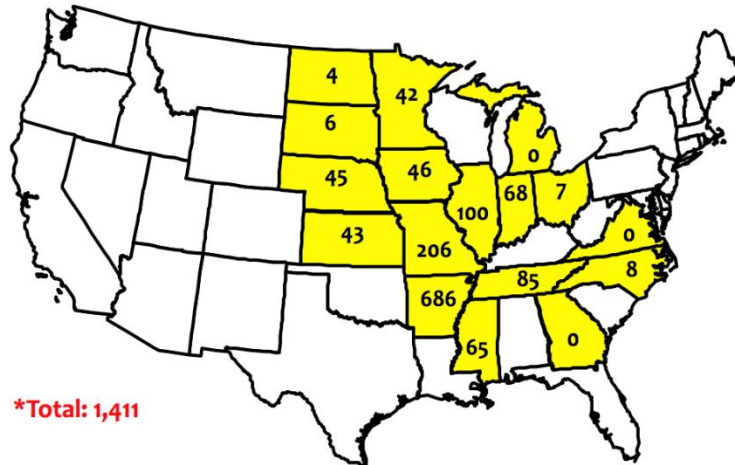
I also get calls daily (and read articles and company "position" blogs, posts, tweets, etc.) from those who say we don't have a major problem at all, and that people like me are drawing more attention to an issue that isn't really a problem, and that this is just a normal part of the "learning curve" with any new technology. Most of these calls (or articles, blogs, posts, tweets, etc.) are from company representatives that either make one of the approved dicamba products, or sell the Xtend trait. Some of these calls are also from farmers and/or farmer seed dealers who say they have sprayed one of the approved products on their Xtend soybean and have had zero problems. More perspectives I guess.

I shouldn't be surprised by all this but I must confess it is baffling to me; here we have people within the agricultural industry that are all *presumably* watching the same thing unfold in front of their eyes at the same time, yet these people have a completely different perspective as to how significant this issue really is. So I thought maybe I would try to expand all of our perspectives (mine included) outside of just what is happening in Missouri or anywhere else. I thought I would try to put a 'U.S. perspective' on this issue.

The purpose of this article is NOT to debate whether the off-target dicamba problems are due to drift, sprayer error, volatility, contaminated glufosinate, calcium deficiency, temperature inversions, inadequate training by universities, generic dicamba, the coming solar eclipse, or any of the dozens of other explanations I've seen put forward. I've already spent plenty of my summer arguing about these reasons and based on current responses from industry, it looks as if I'll be spending most of the rest of the year doing more of the same. Regardless, several of my colleagues have written brilliantly on these topics so I've decided there is no need for me to try to re-invent the wheel and tell you something that I literally could not say any better than what has already been said. If you have not read these articles already, I would highly recommend that you do so. They are well worth the read (from my perspective): [The Dicamba Dilemma in Illinois: Facts and Speculations](#), by Aaron Hager, Associate Professor, University of Illinois; [I Can't Keep Dicamba in the Field](#) by Larry Steckel, Extension Weed Specialist, University of Tennessee; and [Thoughts on the Dicamba Dilemma](#) by Bob Hartzler, Professor of Agronomy, Iowa State University.

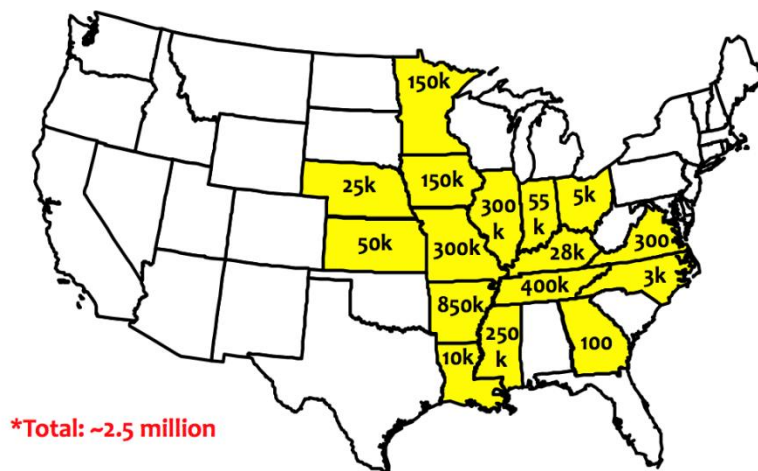
The purpose of this article is simply to broaden our view and provide a national perspective of the problem as it stands right now, in hopes that at least some in the industry can agree that this is a substantial problem that needs to be addressed. Oops, I kind of let my own perspective slip there a bit.

In order to do this, I requested information from many state Departments of Ag about the number of official dicamba-related investigations that are currently under way in 2017. This information is shown in Figure 1. If a state isn't colored in on this map, it simply means that either I did not get a response from that state, or that I never requested any info because they produce little to no cotton or soybean. However, as Dr. Hager pointed out in his recent article, to estimate the extent of the dicamba injury problem using the number of complaints filed with the state Departments of Ag as the sole metric would be to "grossly underestimate the current reality".



**Figure 1. Official dicamba-related injury investigations as reported by state departments of agriculture (as of July 19, 2017).**

Because I agree with Dr. Hager’s statement, I also polled a number of university extension weed scientists from around the country and asked them to provide me with their best estimate as to the number of soybean acres injured by dicamba in their respective states. These estimates are shown in Figure 2. I’m sure many will have problems with these numbers, but I can assure you that none of these individuals took these estimates lightly. These estimates weren’t just generated out of thin air, they were generated by polling Extension agents around the state; by personal field visits of affected areas; through emails, calls and texts from injured parties; and through various consultations with trusted ag retailers, applicators, and farmers around each state. As with Figure 1, if a state isn’t colored in on the map, it is either because there was no weed science contact in that state, or because that state produces little to no soybean.



**Figure 2. Estimates of dicamba-injured soybean acreage as reported by state extension weed scientists (as of July 19, 2017).**

I didn’t know what kind of responses I would get when I set out to make these maps. After looking through the official responses and estimates I would say that this exercise has broadened

my perspective but hasn't really changed it. For everyone who reads this article and sees these maps I leave you with the two questions:

First, 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? I guess it depends on your perspective but my answer is an emphatic yes. If you think so as well, let others know how you feel and let's stop the standard denial routine that I have heard so often this season. Instead, let's put our time and effort into figuring out where we go from here as an industry and what's going to be different about next season.

Second, I said previously that the purpose of this article is NOT to debate about the reasons for off target movement. And it isn't. And I'm not. But the reasons for off-target movement of dicamba are the number one thing we are going to have to discuss if you agree that there is a problem. So my last question is this; can you look at the scale and the magnitude of the problem on these maps and really believe that all of this can collectively be explained by some combination of physical drift, sprayer error, failure to follow guidelines, temperature inversions, generic dicamba usage, contaminated glufosinate products, and improper sprayer clean out, but that volatility is not also a factor? I know what my perspective is, what's yours?

### **FY 2018 Federal Budget**

Work on the FY 2018 federal budget began in May when the President released his FY 2018 “skinny” budget, which proposed an overall cut of 21 percent to USDA. Most programs in USDA’s Research, Education, and Economics mission area did not fare as badly in the President’s budget request with NIFA facing an 8 percent cut, the Economic Research Service (ERS) an 11 percent cut, and ARS a 15 percent cut compared to FY 2017. The National Agricultural Statistics Service (NASS) is proposed for a \$14 million increase to conduct the 2017 Census of Agriculture. The Administration did propose to maintain near level funding for the Hatch Act that provides capacity funds for the state ag experiment stations and for the Smith-Lever 3(b) & (c) capacity funds for ag extension activities.

The House and Senate have recently marked up their FY 2018 appropriations bills for agriculture and provided much more favorable numbers than the President’s budget request. The Senate numbers are particularly favorable with increases in FY 2018 funding for NIFA, ARS, ERS, NASS, APHIS, and NRCS compared to FY 2017. The final endgame for the FY 2018 appropriations process is still a big question mark, but given the House and Senate numbers for USDA programs important to weed science, we should be ok.

*Selected USDA Discretionary Appropriations Accounts*

Program	2015 Final	2016 Final	2017 Final	2018 President	2018 House	2018 Senate
	----- Millions of Dollars -----					
NIFA	1289	1326	<b>1362</b>	1253	1341	1373
Hatch Act	244	244	<b>244</b>	243	244	244
Smith-Lever 3b & c	300	300	<b>300</b>	299	300	300
AFRI grants	325	350	<b>375</b>	349	375	375

IR-4	11.9	11.9	<b>11.9</b>	11.9	11.9	11.9
CPPM*	17.2	17.2	<b>20</b>	14	20	20
ARS**	1132	1143	<b>1170</b>	993	1133	1182
ERS	85	85	<b>86</b>	77	77	86
NASS	172	168	<b>171</b>	186	184	192
APHIS	871	894	<b>946</b>	810	906	953
NRCS	846	850	<b>864</b>	766	859	874

\* Crop Protection and Pest Management (CPPM): Addresses high priority pest issues using IPM.

\*\* House and Senate Appropriators rejected the White House proposal to close 17 of ARS's 112 research facilities, estimated to be at least \$1 billion behind in deferred maintenance needs.

### **ID'ing Palmer Amaranth Seed in Conservation Seed Mixes**

A great example of the value of USDA capacity funds return on investment is the work done by Pat Tranel's lab at the University of Illinois that was supported by Hatch Act funds. They developed and validated a qPCR assay for distinguishing Palmer amaranth from 12 other Amaranthus species. The assay can consistently detect a single Palmer amaranth seed when present in a pool of 100 Amaranthus species' seeds. The key is to make sure every seed is ground up during the extraction process. [The 100 seed test only costs \\$50](#). The only option available prior to that was a California company that tests individual seeds using DNA sequencing that costs \$100 per seed. Tranel said the qPCR assay is available to other testing labs for free. The testing protocol is published in Pest Mang Sci: [A quantitative assay for Amaranthus palmeri identification](#).

### **Davis and Panetta Launch House Ag Research Caucus**

House Agriculture Committee members Jimmy Panetta (D-CA) and Rodney Davis (R-IL) have launched the Congressional Agriculture Research Caucus to promote research needs in advance of the 2018 farm bill. Davis and Panetta are both members of the House Ag Subcommittee on Biotechnology, Horticulture and Research, with Davis serving as Chair.

Rep. Panetta: *“As a representative of the Salad Bowl of the World, I believe it is of the utmost importance to equip our growers, shippers, and farmworkers with the most effective tools possible. Strategic investments in research for plant breeding, crop protections, and mechanization will support the future success of the agriculture industry while also helping to address major concerns relating to resource conservation and labor shortages. I look forward to working with Congressman Davis and our colleagues on both sides of the aisle to further support our nation’s agriculture industry.”*

Rep. Davis: *“By investing in agricultural research today, we will ensure U.S. agriculture remains competitive globally and continues to lead the way in food and agriculture innovation. My district is home to several major universities that are at the forefront of agricultural research critical to our state and national economies. Additionally, the potential for public-private partnership between industry and academia allows us to expand our horizon and reach new goals. I look forward to joining my colleagues on both sides of the aisle to make agriculture research a priority.”*

Other Ag Research Caucus members include: Newhouse (R-WA), Schrader (D-OR), Yoho (R-FL), Grisham (D-NM), Rooney (R-FL), Loeb sack (D-IA), Blum (R-IA), Pingree (D-ME), Hice (R-GA), Carbajal (D-CA), Kelly (R-MS), Nolan (D-MN), Marshall (R-KS), Maloney (D-NY), Thompson (R-PA), Takano (D-CA), Jayapal (D-WA), Shea-Porter (D-NH), and Garamendi (D-CA).

### **Farm Bill Hearings in Full Swing by House and Senate**

There have been several hearings already on the Research Title of the Farm Bill where we have [emphasized a balanced portfolio](#) of the entire USDA research, extension, and education (REE) mission area. The House Ag Committee recently held two Farm Bill hearings on how to foster technological innovations for producers, which I believe is great opportunity for weed science (see next story). I've also been trying to get weed science interests represented at the field hearings. The House Ag Committee will be conducting "open mic" listening sessions on Farm Bill programs on: July 31, 2017 in San Angelo, Texas; on Aug. 3, 2017 in Morgan, Minnesota; and on **Aug. 5, 2017 in Modesto, California**. Anyone can step up to the mic for 2 minutes and talk about their concerns. I'm also working with some invasive species groups to get "noxious weeds" included as part of the many "plant pest" programs that are funded in the various Titles of the Farm Bill (i.e. conservation, trade, forestry, research).

### **Fennimore Presents 'Robotic Weed Wars' Seminar On Capitol Hill on May 22**

On May 22, 2017, Dr. Steve Fennimore from UC-Davis presented a seminar on Capitol Hill titled "Robotic Weed Wars: A New Game, New Players and New Rules". The seminar was part of the National Coalition for Food and Agricultural Research (NC-FAR) Lunch-n-Learn seminar series. WSSA is a member of NC-FAR and a sponsor of the seminar series. NC-FAR is a consensus-based and customer-led coalition that serves as a forum and a unified voice in support of sustaining and increasing public investment at the national level in food and agricultural research, extension and education.

*Abstract: U.S. vegetable growers are mainly dependent on hand weeding to achieve acceptable weed control since there are relatively few herbicides registered for use in these small acreage crops due to the nearly \$300 million cost of researching, developing, and testing a new herbicide that would meet today's regulatory requirements. Labor shortages have led to higher hand-weeding costs that run \$150 to \$300 per acre, thus vegetable growers have begun to adopt automated robotic weeders. Machine vision technology, together with data processors, have been developed to enable commercial machines to recognize crop row patterns and control automated devices that perform tasks such as removal of intra-row weeds, as well as to thin crops to desired stands. However, it is doubtful that private funding alone from small startup companies will be adequate to develop automated robotic weeders custom-designed for U.S. crops. Public funding is needed to help train students in the multidisciplinary fields of science, technology, and engineering needed to advance the development of automated robotic weeders. Research is needed on more challenging precision weed control technologies, such as lasers or sand abrasives to remove weeds. These public investments would be a win-win for everyone as it generates higher paying jobs in the crop protection industry, leads to the use of lower risk weed control tactics, and maintains a safe and affordable food supply.*

### **National Academies Seek Input on Future of Food and Agriculture Research**

[\*Science Breakthroughs 2030: A Strategy for Food and Agricultural Research\*](#) is a new National Academies of Science study to identify ambitious scientific opportunities in food and agriculture research. They are asking for input from scientists to identify emerging opportunities. You can submit your ideas on [IdeaBuzz](#) and “vote” and comment on ideas that have already been submitted. They are also inviting people to participate in-person or online in a Town Hall meeting on August 8th in the National Academy of Sciences Auditorium in Washington DC. Learn more and [register for the Town Hall here](#).

### **Weed Science Societies Comment on APHIS Revision of its Biotechnology Regulations.**

The National and Regional Weed Science Societies [submitted comments](#) on APHIS’s proposed rule regarding the importation, interstate movement, and environmental release of certain genetically engineered (GE) organisms. While we complimented APHIS on the many positive aspects of the proposal (i.e. moving from a “regulate first, then analyze” approach to an “analyze first, then regulate only if necessary”), we encouraged APHIS to re-propose a rule that minimizes regulatory uncertainty related to their weed risk assessment model. We expressed our willingness to partner with APHIS in identifying specific, risk-based criteria for assessing GE crops for potential ‘weediness,’ but stressed that federal noxious weed authority in the Plant Protection Act should not be used to regulate GE crops.

### **Pesticide Registration Improvement Bill Awaits Final Vote in Senate**

H.R. 1029, the Pesticide Registration Improvement Act (PRIA), passed the House in March on a voice vote and was marked up and passed by unanimous consent by the Senate Ag Committee on June 29. Final passage in the Senate is expected this summer. The current version of PRIA expires on Sep. 30, 2017. It sets fees for pesticide registrants seeking to get products registered in return for regular approval schedules. The law has bipartisan support because a proportion of the registrant user fees support farmworker safety and environmental programs. Registrant user fees would increase from \$27.8 million/year to \$31 million/year for FY 2018 through 2020.

### **\$75 Million Available from APHIS for Pest Detection, Surveillance, and Identification**

APHIS issued a call for “suggestions” (i.e. proposals) for its “[Plant Pest and Disease Management and Disaster Prevention Program](#).” The FY 2018 open period is **July 10, 2017, through August 18, 2017**. In FY 2017, APHIS received 720 proposals and [funded 480 of them](#), a 66% success rate. There were only a few related to weeds, but only because there were not that many applications (i.e. “suggestions”) for weed and weed seed surveillance, identification, and threat mitigation.

### **WOTUS Rule Rescinded. Rewrite is Next Step.**

The EPA and the Army Corps of Engineers released a pre-publication notice on June 27 to rescind the 2015 Waters of the United States (WOTUS) rule and replace it with a recodification of the regulatory text that governed the legal regime prior to the 2015 WOTUS Rule. Nothing in the proposed rule restricts the ability of States to protect waters within their boundaries by defining the scope of “navigable waters” regulated under State law more broadly than the federal law definition. There will be a 30-day comment period. Comments should be limited to the appropriateness of the rescission and not on the scope of the definition of WOTUS.

The EPA and Army Corp will issue a second notice and comment period on a new proposed rule that interprets “navigable waters” that is consistent with Justice Scalia’s opinion in [\*Rapanos v. United States \(2006\)\*](#). In that opinion, Scalia argued that federal jurisdiction of the Clean Water Act extends only to water bodies with a permanent flow or non-navigable waterways that connect via surface water with areas with permanent flow.

### **“NPDES Fix” Legislation**

On May 24, the House passed the Reducing Regulatory Burdens Act (HR 953) by a vote of 256-165. The Senate has not acted on its companion measure (S 340). This is the fourth time this legislation has been up for a vote in the past 7 years, each time passing the House, but ending up stalled in the Senate. The National and Regional Weed Science Societies have supported the NPDES-fix legislation from the start and endorsed [a letter](#) to Congress urging passage of H.R. 953, along with more than 100 other organizations. There are talks of trying to get the bill text inserted in the “major infrastructure bill” that will soon be drafted with hopes that will come up on the Senate floor in late 2017.