

NCWSS • News

North Central Weed Science Society

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Greg Dahl President's Message

Greetings. Thank you for the opportunity to serve as your NCWSS President this year. I hope that your weed management season has been easier than mine. This year has presented many challenges. It has demonstrated that we have much work left to do. Thank you for your hard work and commitment to solving the weed management

issues that continue to confront us. Preemergent herbicides very much demonstrated their value in Minnesota and Wisconsin. We had moisture to activate the herbicides and the fields were manageable. Many fields that relied on post only programs were pretty ugly looking. If you were fighting drought or flooded conditions you were not alone.

This year will be remembered as the year we had the introduction of dicamba tolerant soybean traits (Roundup Ready 2 Xtend® soybean), and subsequently the new dicamba herbicide formulations XtendiMax™ with Vaporgrip™ (Monsanto), FeXapan™ plus Vaporgrip™ (DuPont), and Engenia® (BASF). These technologies involved years of effort by many of our members conducting research and training. The tolerance of the Xtend soybean to dicamba was amazing. The activity of small amounts of dicamba on sensitive plants, both weeds and unfortunately neighboring crops in some cases, was also amazing. The industry has needed new tools to combat resistant weeds for several years now, and while some found this new technology a wonderful tool to do just that, the new technologies presented many issues for others. Clearly, many of our society members will continue to be busy investigating positive and negative sides of the issue moving forward as we clearly need to work for more solutions to confront herbicide resistant weeds. We need additional Modes of Action and we need more cultural, mechanical and other innovative solutions to manage weeds.

I enjoyed seeing many of you at our recent NCWSS Collegiate Weed Science Contest held July 26 and 27, 2017 at the Iowa State University Field Extension Educational Laboratory (FEEL) near Ames, IA. I thought this was a great event and a great success.



North Central
Weed Science Society

If you are a member of the NCWSS and have material you would like to submit to the Newsletter, please send it to:

Vince Davis at
Vince.davis@basf.com

Message from President

continued

Thanks to Warren Pierson, John Hinz and Angela Rieck-Hinz and the entire Contest Committee for conducted a great contest. This was an excellent event for the students in the NCWSS region for professional development and networking opportunities. I would like to thank the Resident Education Committee for all their work in updating contest rules and support of the contest. Thank you to all the volunteers that made the Weed Science Contest such a success. Congratulations to all the Contest winners.

The NCWSS Board of Directors held our summer board meeting on Wednesday, July 26 at the Iowa State University FEEL location. We summarized activities since the last annual meeting, discussed new initiatives, and reviewed plans for the upcoming annual meeting. As always, I invite you to contact me, anyone on the Board, or a specific committee member, if you have any questions or suggestions that will continue to make the NCWSS a great organization.

Christy Sprague, 2017 President Elect and Program Chair, and Greg Elmore, Local Arrangements Chair, are busy preparing for our 72nd Annual Meeting at the Hyatt Regency St. Louis at the Arch in St. Louis, MO on December 4 to 7, 2017. Please find detailed information in this newsletter about submitting your paper or poster titles and abstracts. I am really looking forward to this years annual meeting and learning about the exciting weed science work that is going on in the north central region.

As your NCWSS President and representative to the WSSA Science Policy Committee, I have been asked to review, comment, support and endorse several letters and comments initiated by the WSSA, the Science Policy committee, and Lee Van Wychen, the Director of Science Policy. There are many issues being raised in Washington that influence the weed science and management activities that we are involved in. I really appreciate the thoughtful feedback from the NCWSS Board of Directors and other experts to respond to these issues.

Sincerely, Greg Dahl; President
dgkdahl@landolakes.com, 651-261-1817

Message from the 2017 Program Chair

Christy Sprague



The NCWSS Annual Meeting is just around the corner

We are excited to announce that program planning is underway for the 2017 Annual Meeting of the North Central Weed Science Society at the Hyatt Regency at the Arch in St. Louis, MO. One of the things that makes this meeting a huge success is the posters and papers presented by you, the attendees. With that being said, I would like to invite each of you to submit a poster and/or paper for the annual meeting. This **Call for Papers and Posters** will be the only notice you will receive, so mark your calendars and submit titles for your presentations by **Wednesday, September 13, 2017**. Submissions received after September 13th may be placed in alternative sections, switched to the poster session or rejected depending on the availability of space in the sections. **Title and abstract submissions are to be made through the web-based submission site hosted through WSSA and located at <http://wssaabstracts.com>. The submission site is open now, SUBMIT TITLES NOW.**

The NCWSS Annual Meeting begins on Monday, December 4 and concludes on Thursday,

Message from the 2017 Program Chair

continued

December 7, 2017. The program committee is working on putting together another exciting program. The general session will feature the Presidential Address by NCWSS President Greg Dahl, a speaker from the National Park Service that will highlight flora and fauna discovered on the Lewis and Clark Expedition as we convene at the Gateway to the West, and a summary of the Lessons Learned from the Regional Herbicide Resistance Listening Sessions. Half-day symposia are being developed covering a range of topics from Interviewing for Careers in Weed Science for graduate students to addressing current and future weed management challenges. We are looking at positioning the ever popular “What’s New in Industry” session after the Industry Symposia Breakfast on Thursday morning.

At this year’s meeting we will be forgoing voice recordings of the presentations, but authors are encouraged to allow their poster and/or Power-Point presentations to be uploaded to the NCWSS website as PDF files for member viewing for those who are unable to attend the annual meeting. Submission of posters and Power-Point slides as PDFs is **strictly voluntary** and submitters of titles will be asked if they wish to participate in this feature. Directions for on-line submission of papers and posters can be found in the following article.

The 2017 program will feature the traditional graduate student paper and poster contests and the undergraduate student poster contest. Guidelines for these contests can be found on the NCWSS website (<http://ncwss.org/>) under Society/About NCWSS – link to NCWSS Operating Procedures. The guidelines are found on pages 26-30.

Once the program has been finalized we will be posting it on the NCWSS website and will be uploading the program to the Guidebook App. Hard copies of the NCWSS program booklet will be given out at the registration

desk at the conference. After submitting a title the next important date is the abstract submission deadline on Friday, November 17, 2017. We are asking that all oral presentation authors upload their slides to the submission website at least one (1) week / seven (7) days prior to the meeting by Monday, November 27, 2017. This allows section chairs to preload the presentations on their computer and make sure that all presentations are working adequately. By using the submission website we can ensure that the section chairs receive your slides. If you are unable to meet this deadline, please contact your section chair one week prior to the meeting to make other arrangements.

We are looking forward to hearing about your research and seeing you at the 72nd Annual Meeting of the North Central Weed Science Society. Please encourage others to submit papers, posters and participate in the NCWSS and our annual conference. We have a great discipline and society and look forward to welcoming others. Also, please pass along any suggestions on how we can make the meeting more valuable to you and for others.

Christy Sprague, Program Chair
sprague1@msu.edu, 517-353-0224



Process for On-line Submission of Papers and Posters

Christy Sprague, 2017 Program Chair

Please follow the directions below, closely heed to the deadlines, and please contact Christy Sprague at sprague1@msu.edu or 517-353-0224 if you have any questions.

SIGN-IN to Title/Abstract Submission Site (opened Monday, August 14, 2017):

Go to the title/abstract submission website (<http://wssaabstracts.com>) hosted through WSSA.

You will need your login and password for your account or create your own new account if you have not done so previously.

Select the Enter button for the 2017 NCWSS link under upcoming conferences.

SUBMIT TITLE (deadline Wednesday, September 13, 2017):

Create or edit your profile.

Proceed to the My Titles and Abstracts link.

Follow the site's instructions for submission.

Enter the title in the space provided.

Capitalize only major words in the title as indicated in the instructions. Do not include any quotation marks or punctuation in the title.

Use the dropdown menu to answer the question, "**Are you a student?**". If you are please continue to answer the questions regarding participation in the student contest. **It is critical that we know which papers and posters will be competing in the student contest.**

Presentation Type: Use the dropdown menu to indicate what type of presentation you will be giving: Oral paper, Poster, Symposium, or General Session.

Topic Sections: Use the dropdown menu to select the top two choices for your topic section.

Authors: Use the dropdown menu to select authors from the prepopulated list. This is a new feature. If an author does not appear on the list, please use the new author function. You will be able to



reorder the authors and select the presenting author from this section.

Save and Submit: Once you are done entering your title, please hit the Save and Submit button. From there you will be taken the Permission to Post the Presentation page.

Permission to Post the Presentation:

Please indicate if you are willing to allow a PDF version of your poster or oral presentation slides to be posted to the NCWSS website and hit submit. The default setting is set to no.

All titles need to be submitted by

Wednesday, September 13, 2017.

SUBMIT ABSTRACT (deadline Friday, November 17, 2017):

Sign into your account as you did previously for the title submission. Click on the link to submit an abstract.

Scroll down to the abstract part of the window and click anywhere in the area designated to hold the abstract.

Cut and paste your abstract into the box provided. Develop an abstract in a word processing program. There is no need to include the title or authors in the "cut and paste" portion since the correct information has been already entered. We recommend that you make all changes prior to pasting into the submission form. NOTE: If you make any changes to the title or authors, please email both the section chair and program chair (sprague1@msu.edu) to alert us about the change.

Continued on Next Page

Process for On-line Submission of Papers and Posters continued

ACTION SUMMARY:

- ⇒ Titles will be due on **Wednesday, September 13, 2017**. By this date, please enter the site and complete the title submission portion for your presentation.
- ⇒ Abstracts will be due on **Friday, November 17, 2017**. By this date, please enter the author information as indicated to access to your oral or poster or presentation, cut and paste abstract, and submit.
- ⇒ Oral presentation PowerPoints should be uploaded by **Monday, November 27, 2017**.



Paper and Poster Section Chairs

Agronomic Crops I - Corn

Mark Waddington, (618) 334-6789
mark.waddington@bayer.com

Agronomic Crops II - Soybean

Mike Weber, (515) 962-9214
michael.weber3@bayer.com

Agronomic and Specialty Crops (All other agronomic and horticultural crops)

Colin Phillippo, (517) 355-5191x1415
phill394@msu.edu

Equipment and Application Methods

Ryan Edwards, (651) 319-6479
rjedwards@landolakes.com

Extension

Chris Proctor, (402) 472-5411
caproctor@unl.edu

Herbicide Physiology

Nick Harre, (618) 314-0581
nharre@purdue.edu

Invasive weeds, rangeland, pasture, and vegetation management

Mark Renz, (608) 263-7437
mrenz@wisc.edu

Weed Biology, Ecology and Management

Rodrigo Werle, (308) 696-6712
rodrigo.werle@unl.edu

Poster Session

Paul Marquardt, (514) 602-0905
paul.marquardt@dupont.com

Program Chair

Christy Sprague, (517) 353-0224
sprague1@msu.edu

Paper Presentations and Presentation Format

All papers will be presented with PowerPoint files through an LCD projector. Electronic presentations will be limited to Power Point programs and need to be uploaded to the Submission website 1 week / 7 days prior to the meeting. Presentations are approximately 12 minutes long followed by one to two minutes for questions or comments to fit a 15 minute schedule. Contact the Program Chair if more time is needed. Abstracts of the paper and poster presentations will be published on the NCWSS website (www.ncwss.org). Abstracts should be submitted electronically via the Title/Abstract Submission website prior to the meeting (by **November 17**). A Call for Abstracts and Instructions for Submitting the Abstracts will be sent to the corresponding authors by the Proceedings Editor after titles are submitted.

Poster Presentation Format

Posters will be set up on Monday and available for viewing on Tuesday and Wednesday. All posters should be removed by 5:00 p.m. on Wednesday. One poster mounting board, approximately 48 by 48 inches, supported on an easel will be provided by the NCWSS. Posters will be arranged according to subject, so please indicate your section preference in the Title/Abstract Submission system linked to the NCWSS website. Additional details will be mailed to each poster session participant following title submission.

Call for Sustaining Member and Sustaining Member Displays

Contact the chair of the Industry Committee, Joe Wuerffel, (618) 363-6231, Joe.wuerffel@syngenta.com for information on how to become a Sustaining Member of the NCWSS. Sustaining member displays can be set up Monday afternoon and should be removed by 4:00 p.m. Wednesday.



Calling all Students

2017 Graduate Student Chair
Tommy Butts
Resident Education Chair
Mayank Malik

NCWSS Student Tour – Monsanto Technology Research Center

Monsanto will host NCWSS students for a tour of Monsanto's Technology Research Center in Chesterfield, MO on Monday, December 3. The tour will include several stops that will showcase Monsanto's state of art research facility. There will also be speakers talking about Monsanto's current and future product pipeline. More details on the tour will be posted in Fall newsletter. Those interested will need to arrive at the Hyatt Regency St. Louis at the Arch hotel on Sunday, December 2 for the tour on Monday morning, December 3. Monsanto will cover the cost of the extra night for tour participants. For questions contact Tommy Butts (608) 214-4215, tbutts@huskers.unl.edu or Mayank Malik (662) 402-9030, mayank.s.malik@monsanto.com.

Call for Distinguished Achievement Awards

Past President — Anita Dille



Distinguished Achievement Awards

We have many outstanding members of the North Central Weed Science Society that deserve to be recognized for their contributions and dedication to the NCWSS and to the weed science discipline. Each year at the Annual Meeting Awards Banquet, we recognized some of these outstanding members as recipients of Distinguished Achievement Awards. The nomination process is relatively simple and would only take a few minutes of your time to nominate a deserving individual.

Each year we can present up to 5 awards in the following categories: Research, Young Scientist, Industry, Service, Education, Professional Staff. If you are unsure if a person has already received an award in one of these categories, please look up the list of past winners on our website (www.ncwss.org/about).

Nomination guidelines for all categories are similar, and can be found on our website (www.ncwss.org/about). Scroll down to “Achievements and Honors Lists and Instructions” to find details. Please use the format listed on pages 4 and 5 of the instructions to prepare a nomination. Don’t delay! Start identifying nominees and gathering support letters to meet the deadline.

Nominations due Saturday, September 30, 2017.

Outstanding Graduate Student Award

Exceptional students can be nominated for the NCWSS Outstanding Graduate Student Award. The qualifications and eligibility requirements for this award can be found at our web site (www.ncwss.org/about). The awards committee will review the applications to identify the graduate student who has been most actively involved in the society, and provides the greatest contribution to the field of weed science through research, extension and/or teaching, and through other activities.

Nominations are due Saturday, September 30, 2017. Please e-mail the nomination package as a single PDF document to Anita Dille (dieleman@ksu.edu) Please e-mail or call 785-532-7240 with questions.

Graduate Student Travel Awards

The NCWSS sponsors travel for up to six (6) graduate students that will be attending the annual meeting for the first time early in their career as a weed scientist. The travel award includes \$500 plus complementary registration for the meeting. Application details are available at our web site (www.ncwss.org/about). Complete applications should be e-mailed as a single PDF document, submitted by the graduate student, to Anita Dille (dieleman@ksu.edu). **Applications are due Saturday, September 30, 2017.**

NCWSS Fellow Award

There are many in the NSWSS who have given many years of service and have distinguished themselves in the weed science discipline. Please consider nominating those in the society that are deserving of the Fellow Award. Nominees must have been active in the NCWSS and should have made substantial contributions in more than one of the following areas: 1) Service to NCWSS, 2) Presentations and publications in the NCWSS, 3) Service to other Weed Science societies, 4) Academic Weed Science endeavors, 5) Industry Weed Science endeavors, and 6) Other meritorious Weed Science service. Instructions for nomination are found on NCWSS web site under “Society” (top tab) then under “About NCWSS”. The instruction tab is about half way down the page. Questions, contact Rich Zollinger, r.zollinger@ndsu.edu

BACK by POPULAR DEMAND

Student Video Contest



The North Central Weed Science Society will sponsor a video contest to provide students with an opportunity to showcase their research or extension projects. **Videos should be submitted to one of two categories: 1) Research or 2) Extension.**

Submissions in the research category should provide a synopsis of student's weed science research. Extension submissions should present applied research based information that is relevant to an agriculture or horticulture professional audience. Videos will be limited to 5 minutes and will be judged based on criteria similar to oral and poster presentations. Judging criteria will include Purpose/Introduction, visual quality, audio quality, flow/transition, voice quality/grammar, physical mannerisms, use of visual aids, conclusion/summary, creativity, and educational quality.

Videos should be submitted to the Chair of Extension Committee, Chris Proctor, by November 1, 2017. Please submit videos via file-sharing program (e.g. dropbox) and notify the chair of your submission via email (caproctor@unl.edu). Videos will be judged by a committee and winners will be recognized at the NCWSS annual meeting in December.

NCWSS Meeting Registration Information



Are you an early bird?

Go ahead and register.

We are looking forward to a great Annual Meeting in St. Louis. The actual meeting registration is done through the NCWSS website. This is a DIFFERENT username and password from the Title/Abstract Site. Please know that if you submit a Paper or a Poster this does not register you for the meeting. Everyone must register for the meeting in addition to submitting a Title for a Paper or a Poster. Please visit the Annual Meeting page at <http://ncwss.org/annual-meeting/> to register for the Annual Meeting and make a hotel reservation.

If you have any questions about the meeting registration process please do not hesitate to contact Tara Steinke, NCWSS Executive Secretary, at tara@imigroup.org or 303-327-8016.



Washington Report

Lee Van Wychen



Off-Target Movement of Dicamba in Missouri. Where Do We Go From Here?

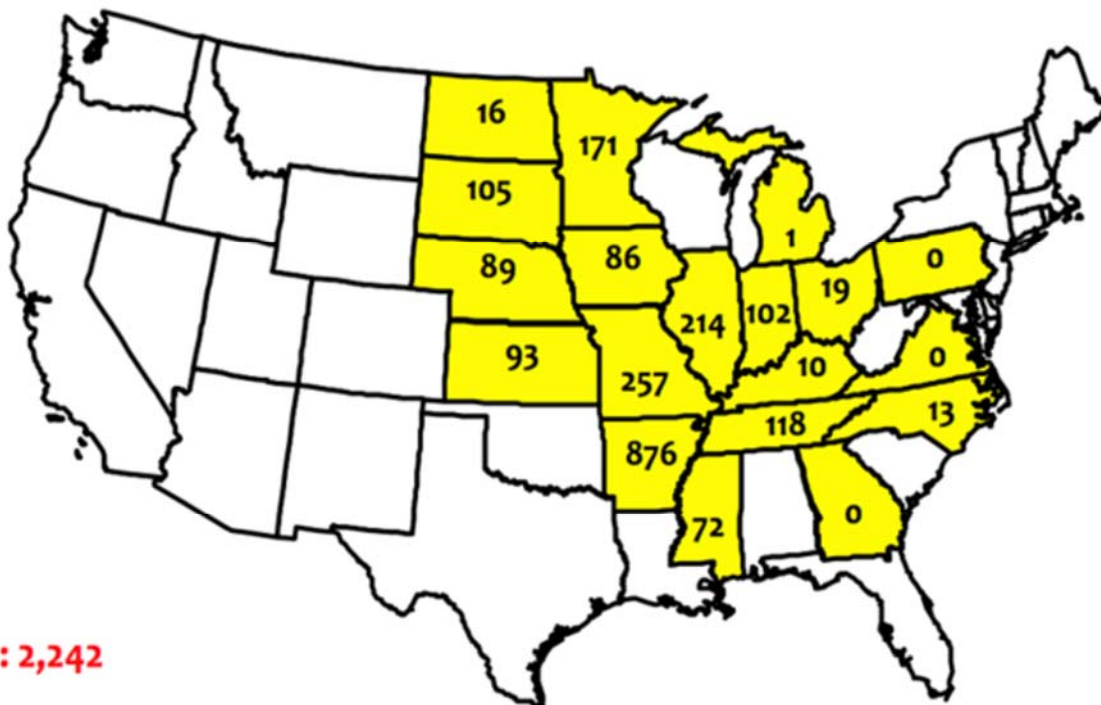
[University of Missouri Integrated Pest & Crop Management](#)

Author: **Kevin Bradley**

Published: **August 21, 2017**

The situation. In 2017, there have been numerous instances of off-target movement of dicamba throughout the state of Missouri and beyond. The Missouri Department of Agriculture is currently investigating over 280 dicamba-related injury cases, and based on University of Missouri Extension field visits, we estimate 325,000 acres of soybean injured by dicamba across 54 counties in Missouri.

On a national scale, there are now more than 2,200 dicamba-related injury investigations being conducted by various state Departments of Agriculture (Figure 1), and more than 3.1 million acres of soybean estimated with dicamba injury (Figure 2). In my opinion, we have **never** seen anything like this before; this is not like the introduction of Roundup Ready or any other new trait or technology in our agricultural history.



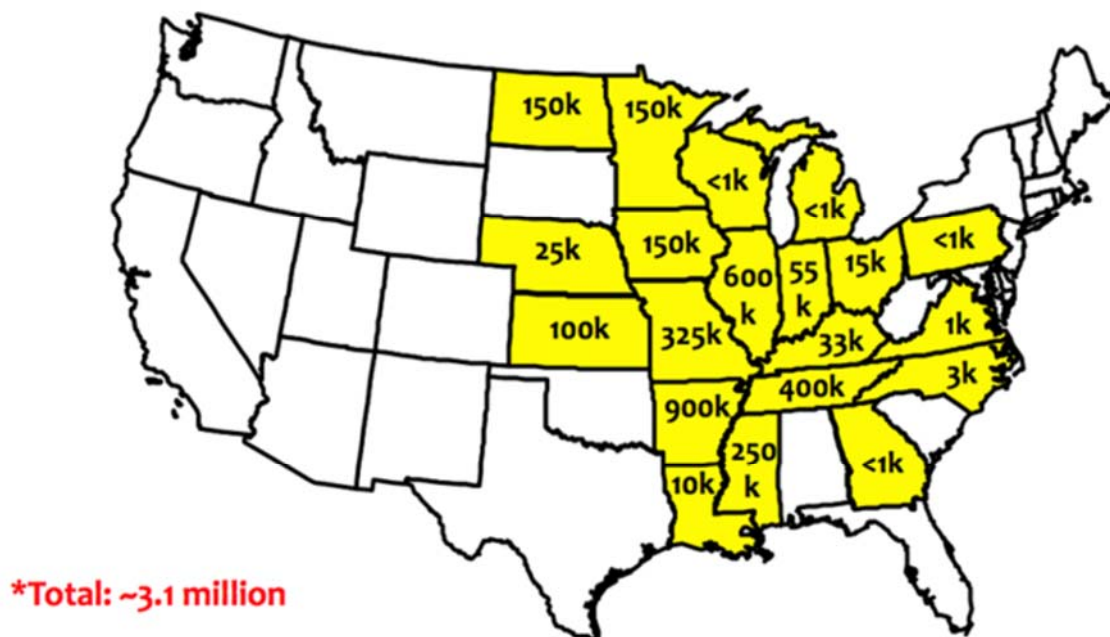
***Total: 2,242**

Figure 1. Official dicamba-related injury investigations as reported by state departments of agriculture (as of August 10, 2017).

Continued on Next Page

Washington Report Continued

Figure 2. Estimates of dicamba-injured soybean acreage as reported by state extension weed scientists (as of August 10, 2017).



Reasons. In my opinion, there are basically four routes by which dicamba can move away from its intended target, and we have experienced every one of these in 2017. The real debate seems to be about what percent of the total off-target movement should be placed into each one of these categories.

First, dicamba can move off-target by way of physical drift at the time of application. This can occur due to spraying when wind speeds are too high, use of improper nozzles that produce fine droplets, or to a host of other factors that we can just chalk up to "bad sprayer decisions or set-up at the time of application." There's no doubt that physical drift of dicamba has occurred this season and that this is one of the major reasons for off-target movement of dicamba. But it isn't the only reason. I have visited and talked with many farmers and applicators who have done it right and still experienced movement of dicamba away from the direction of the prevailing winds at application.

A second way that dicamba can move off-target is through tank contamination. This usually occurs due to improper spray tank cleanout. Unfortunately, many have learned the hard way that it takes very, very little dicamba in the tank to cause problems on non-Xtend soybean that are sprayed after a dicamba application. There's no doubt that some portion of our issues with off-target movement of dicamba have been due to improper sprayer cleanout and tank contamination. However, many growers with injured soybean fields didn't even plant any Xtend soybean or spray a dicamba product through their sprayers. Some retailers also have dedicated sprayers for dicamba products only.

Another way that tank contamination can occur is through contamination of an actual herbicide product, such as what Monsanto says has occurred with a certain generic glufosinate product. I'm not aware that any trade names of glufosinate products have been put forth

Washington Report Continued

or of any actual data presented about this potential problem at the time of this writing, but of course contaminated glufosinate could not explain any of the injury we have seen on Roundup Ready or conventional soybean, or any of the other vegetable or ornamental crops or trees that have been injured by dicamba.

A third way that dicamba can move away from its intended target is through temperature inversions. Temperature inversions usually occur in the evening hours around sunset when the air nearest the earth's surface becomes cooler than the air above it. This cooler air forms a stable mass that can be moved horizontally along the earth's surface and then can deposit anything that may have been in it once it dissipates. So for example, if an application of an approved dicamba product is made at 7 or 8 PM into a temperature inversion, any fine droplets that may have been part of this application may not land on the intended target, but instead may be redistributed some distance away once the temperature inversion dissipates the next morning. As a result of our work on temperature inversions over the past several years, our data indicates that we usually experience a temperature inversion at least one-half to two-thirds of the days in June and July, and that these inversions typically start around 6 to 8 PM and persist for 8 to 10 hours. Also as a result of funding from Missouri soybean growers, we now have a [network of weather stations](#) in Missouri that are able to tell users whether or not an inversion is occurring. There is some off-target movement of dicamba that occurred in 2017 that can be explained by spraying directly into a temperature inversion, but in my opinion most of our applicators are now very aware of this possibility and have

avoided these evening or nighttime applications. However, another possible way that dicamba droplets could end up in an inversion is through volatilization, which brings me to the fourth point.

The final way that dicamba can move away from its intended target is through volatility. Dicamba is an inherently volatile herbicide. We know that the older formulations of dicamba are more volatile and are illegal to apply. So if illegal applications of the older generic dicamba products have been applied, I have no doubt that dicamba has moved off-site in those applications through volatility. But in my experiences and discussions with farmers and retailers throughout the state, it does not seem that illegal applications of these older formulations have occurred on a wide scale with any regularity. I do not believe that the scope and scale of this issue can be explained away by illegal applications of older dicamba formulations.

As most on all sides of this issue are well aware, both BASF and Monsanto have taken steps and invested a lot of money to make these newly approved formulations less volatile. And they are less volatile. But as many have said, less volatile does not mean not volatile. We have been in the process of gathering volatility data on these newly approved dicamba products for several months. All of our results thus far indicate that we can detect dicamba in the air following an application of Engenia or XtendiMax/Fexapan for as many as 3 or 4 days following the application. University weed scientists in surrounding states are seeing similar results in their research. And so we come to the crux of the matter. I have yet to hear any manufacturer of the approved dicamba products say that volatility is one of the possible ways that dicamba has moved away from its

Washington Report Continued

intended target in 2017. But yet many university weed scientists like myself believe this is one of the major routes by which off-target movement of dicamba has occurred, because our air sampling data, field volatility studies, and field visits indicate that to be the case. To say that all of these problems have occurred due to physical drift, tank contamination, or temperature inversions but not volatility is, in my opinion, disingenuous at best.

My recommendation. We are in the process of trying to understand how or if these cases can be correlated back to any particular environmental condition such as air or soil temperature, moisture, humidity, etc. That process isn't easy and it can't be done quickly, and any conclusions we can make will only be as good as the data we can get. I'm not sure what that process will yield, but from where I sit right now the only conclusions I can make are that the areas in Missouri that planted the most of the Xtend trait and sprayed the most Engenia, XtendiMax, or Fexapan are the areas where we saw the greatest amount of off-target movement and damage.

I know farmers are looking for answers and will soon be making decisions about their traits and weed management programs for next year. So my recommendation for those growers who wish to plant the Xtend technology is to go back to using dicamba at a timeframe and in a manner when it has been used "successfully" in the past. Based on our history of dicamba use in corn in April and May, and even on our experiences this year using these approved dicamba products in pre-plant burndown applications prior to June, we have seen far fewer problems with off-target movement of dicamba in that timeframe than what we experienced in June, July,

and August. Even this season I was not notified of any problems with off-target movement of dicamba until early June, and the Missouri Department of Agriculture didn't receive their first dicamba complaint until June 13th. It seems that almost all of the problems with off-target movement occurred once in-crop, post-emergence applications started to be made for waterhemp and Palmer amaranth. Most of those occurred in June and July this season. I wish I had some definite date for a cutoff but at this time I do not; we will be conducting more weather analyses in the coming weeks and hopefully this process will help us understand which factors lead to more risk when applying these herbicides.

So for the sake of neighboring non-Xtend soybean fields, trees, vegetable crops, gardens, ornamentals, and our industry as a whole, my recommendation for those who want to plant the Xtend trait in 2018 is to use the approved dicamba products for the control of resistant horseweed (a.k.a. marestalk), ragweed species and winter annuals in the pre-plant burndown where these products have a great fit, but to abstain from applying these products later in the season. In Xtend soybean, resistant waterhemp will have to be managed using an integrated approach that includes cultural practices like cover crops, narrow row spacings, etc. along with an overlapping residual herbicide program. For more information on managing waterhemp in different soybean system, see this multi-state publication: [Waterhemp Management in Soybean](#).

FY 2018 Federal Budget

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.

Washington Report Continued

The Senate numbers are particularly favorable with increases in FY 2018 funding for USDA's National Institute of Food and Agriculture (NIFA), Agricultural Research Service (ARS), Economic Research Service (ERS), National Agricultural Statistics Service (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	1362	1253	1341	1373
Hatch Act	244	244	244	243	244	244
Smith-Lever 3b & c	300	300	300	299	300	300
AFRI grants	325	350	375	349	375	375
IR-4	11.9	11.9	11.9	11.9	11.9	11.9
CPPM*	17.2	17.2	20	14	20	20
ARS**	1132	1143	1170	993	1133	1182
ERS	85	85	86	77	77	86
NASS	172	168	171	186	184	192
APHIS	871	894	946	810	906	953
NRCS	846	850	864	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.

Washington Report Continued

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. Davis (R-IL): *“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.”*

Rep. Panetta (D-CA): *“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.”*

Current Ag Research Caucus members include: Newhouse (R-WA), Schrader (D-OR), Yoho (R-FL), Grisham (D-NM), Rooney (R-FL), Loebbeck (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).

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 Dr. Patrick 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](#).

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 funding for the entire USDA research, extension, and education (REE) mission area. On June 15, the Senate Ag Committee held a hearing titled “Agricultural Research: Perspectives on Past and Future Successes for the 2018 Farm Bill.” During the week of July 10, the House Ag Committee 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).

During the week of July 31, the House Ag Committee conducted “open mic” listening sessions titled “Conversations in the Field” at San Angelo, TX, Morgan, MN, and Modesto, CA. Another field hearing is scheduled for August 30, 2017 at the Farm Progress Show in Decatur, IL. Anyone can step up to the mic for 2 minutes and talk about their concerns.

Fennimore Presents ‘Robotic Weed Wars’

Washington Report Continued

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.

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.

WOTUS Rule Rescinded. Rewrite is Next Step.

On July 27, the EPA and Army Corps of Engineers published their proposed rule, "Definition of "Waters of the United States (WOTUS)" - Recodification of Pre-Existing Rules." This is the first step of a two-step process intended to review and revise the definition of "waters of the United States" consistent with President Trump's Executive Order of February 28, 2017.

This first step proposes to rescind the WOTUS rule that was issued by EPA and the Army Corp in 2015. That rule is in judicial limbo as it was stayed by the 6th Circuit Court

Washington Report Continued

in a lawsuit brought by many states that opposed it.

Proposing to re-codify the regulations that existed before the 2015 Clean Water Rule will provide continuity and certainty for regulated entities, the States, agency staff and the public. Nothing in the proposed rule issued on July 27 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.

The EPA and Army Corp will issue a second notice and comment period on a new proposed rule later this year or next year 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.

Comments on the first step dealing with the reinstatement of the pre-existing WOTUS rule are **due on September 27, 2017**. Comments should be limited to the appropriateness of the rescission and not on the scope of the definition of WOTUS. Comments can be submitted at: <https://www.regulations.gov/docket?D=EPA-HQ-OW-2017-0203>

“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.

CABI Invasive Species Compendium Training Available

The CABI (Centre for Agriculture and Biosciences International) Invasive Species Compendium, <http://www.cabi.org/isc/>, is an encyclopedic resource for 10,000+ invasive species in all taxa that brings together a wide range of different types of science-based information to support decision-making in invasive species management worldwide. It comprises detailed datasheets that have been written by experts, edited by an independent scientific organization, peer reviewed and enhanced with data from specialist organizations, images, maps, and a bibliographic database of abstracts and full text articles. New datasheets and data sets continue to be added on a weekly basis. During any given month the CABI Invasive Species Compendium is accessed by 81,000 users from 220 countries.

During the July 2017 public meeting of the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW - my most favorite acronym in all of DC), long-serving invasive species professional Hilda Diaz-Soltero from USDA APHIS provided an overview and training on how to most effectively use and search the ISC for meeting attendees. Hilda’s recorded presentation and training is available at: <https://my.usgs.gov/confluence/display/FICMNEW/Presentation+Recordings>.

Her powerpoint slides (as well as other presentations from previous FICMNEW meetings) are available at: <https://my.usgs.gov/confluence/display/FICMNEW/Presentations>.

For questions about the CABI Invasive Species Compendium, please contact Hilda Díaz-Soltero, Caribbean Advisor to the APHIS Administrator: Hilda.Diaz-Soltero@aphis.usda.gov or cell (202) 412-0478.

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Meetings of the National and Regional Weed Science Societies

Dec. 4 - 7, 2017 North Central Weed Science Society (NCWSS), St. Louis, MO www.ncwss.org

Jan. 9 - 11, 2018 Northeastern Weed Science Society (NEWSS), Philadelphia, PA www.newss.org

Jan. 22 - 24, 2018 Southern Weed Science Society (SWSS), Atlanta, GA www.swss.ws

Jan. 29 - Feb. 1, 2018 Weed Science Society of America (WSSA), Arlington, VA www.wssa.net

Mar. 12-15, 2018 Western Society of Weed Science (WSWS), Garden Grove, CA www.wsweedscience.org

Jul. 15 - 18, 2018 Aquatic Plant Management Society (APMS), Buffalo, NY www.apms.org

Necrology

NCWSS extends our thoughts to our friends in the WSWS whom unexpectedly lost a weed scientist currently serving as a WSWS board member and current University of Wyoming faculty member. Gustavo Sbatella of Powell, WY died in a motorcycle crash near Valley of Fire State Park in southeastern Nevada, according to the Nevada Highway Patrol, which said heavy rain contributed to the crash.

Sbatella, 52, was an assistant professor in the Department of Plant Sciences in the College of Agriculture and Natural Resources and was based at the Powell Research and Extension Center.

Sbatella also taught courses and mentored graduate students. He cared deeply about his students and making sure they were successful. Sbatella, a native of Argentina, received his bachelor's degree in agronomy at the Universidad de Nacional de Buenos Aires in 1990 and his master's degree in 2004 and Ph.D. in 2006 in agronomy at UW. He was a postdoctoral research associate in Scottsbluff, Neb., with the University of Nebraska from 2007-11 and an assistant professor with Oregon State University, Madras, from 2011-14. Sbatella joined UW in 2014. [Click here for more info from the University of Wyoming Extension.](#)

