



Western Society of Weed Science Newsletter

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FALL 2017

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President's Report by Monte Anderson

It is fall and there's always a lot of change moving from summer to fall activities. Besides the seasonal changes, other changes are occurring at a faster pace. They are happening politically, socially, and in the consolidation of companies. It is hard to know what it will all look like, but what I do know is that our Anaheim meeting is approaching and we are making plans. It is not too soon to be thinking about presenting a paper or poster, fulfilling committee responsibilities, and getting ready to see everyone again at our annual meeting!

Speaking of the annual meeting, one undergraduate and two graduate students will be attending and participating with the financial assistance of being winners of the Elena Sanchez Memorial Scholarships. The Awards Committee had the largest number of applicants to date apply for one of these travel awards. All were worthy applications and it was difficult to narrow it down to the top three. Congratulations and good job to all applicants. The travel awards will go to Clint Beiermann of the University of Nebraska, Charlemagne Lim of Montana State University, and Grace Ogden of Oklahoma State University.

Additionally, there are Fellows, Honorary Members, Outstanding Weed Scientists, and Distinguished Service Awards to be recognized. I have been made aware that in particular, we are lacking Fellows nominations from both public and private sectors, and therefore the nominations directions are again in this newsletter. All of these award submissions are due December 1st, so there is still time to make those nominations and get them submitted. You can make a difference in recognizing deserving members.

Our business manager Tara Steinke is busy with the society's business. She's looking into the possibility of an interested party taking over the selling of Weeds of the West and sharing the profits. We submitted a proposal to the WSSA about what the WSSS would like to bring to a joint meeting in Hawaii. Voting is now open on the new board positions. As mentioned in the last newsletter, we are looking for a new Proceedings Editor, and this would be ideal for someone requiring additional justification in attending the annual meetings.

Joyce Lancaster, who recently retired as the WSSA executive director, has returned to weed science as Project Manager for David Krueger, whose software we use to submit titles, abstracts, and organizing the annual program. She will be coordinating with the regional societies and the WSSA to insure that everything goes smoothly with those interactions and the annual meetings.

Be safe and hope to see you all in March!

WSWS Annual Meeting March 12-15, 2018 Garden Grove, California

Garden Grove Local Arrangements — Travis Bean

The 2018 Western Society of Weed Sciences' annual meeting in Garden Grove, California, is coming on fast. Preregistration is now offered, and it will remain available until February 11, 2018. The cutoff date for registering for a hotel room at the venue is February 17th, but I would strongly encourage you to make reservations as soon as possible via the [event link with reduced prices](#). Room space is limited and because of proximity to major freeways in the greater Los Angeles area, traffic is normally very heavy even coming from hotels at close distances.



Our venue is the **Hyatt Regency Orange County**:
11999 Harbor Blvd
Garden Grove, CA 92840
(714) 750-1234

Contact the hotel directly or via a link provided through WSWs to get the group rate.

We are closest to the John Wayne Airport (JWA) if you are flying in from out of the regional areas, out of state, or international. JWA service most major airlines, and is a short drive to the venue with minimal traffic. Los Angeles International Airport (LAX) may provide lower flight costs, but you must evaluate the cost of your time getting in and out of LAX and getting to the venue, as you are likely to encounter substantial traffic. Uber and Lyft are available at all of the airports and provide efficient service to the venue.

If you are driving from southern California or another close by region, as I did for a previous meeting, parking was not difficult.

We will be working on suggestions for pre- and post- event local attractions (Disneyland is obviously available if that's your thing!), and appreciate any suggestions from locations or frequent visitors.

Please contact me with any questions.

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Student Liaison Report

Caio Brunharo

Greetings! Firstly, I would like to thank the students who submitted applications for the Elena Sanchez WSWS Outstanding Student Scholarship; I heard the Awards Committee had a hard time evaluating all the 12 applications received to select the top three students. Congratulations to our fellow students for being the recipients of this year's scholarships. I would like to encourage you all to keep up the hard work and to try again next year. As many of you may already know, the Elena Sanchez Scholarship is (tentatively) maintained by our annual silent auction. In recent years, we have been able to raise all the money necessary to cover the three scholarships awarded, and I am hoping that we will successfully meet our \$3,000 goal again this year. If you have an item (weed science-related) that you think will receive high bids, please let us know and we will make the arrangements necessary to get this item sent to California.

Secondly, as our annual meeting approaches I will be sending out more information, but I would like to start by planting a little seed in your mind. The Student Liaison position is a two-year commitment with WSWS. From my viewpoint it is a very gratifying service to the society and to our fellow students. The first year spent as Student Liaison Chair-Elect will primarily assist in learning the position. The following year involves taking the lead at this role, as well as teaching the position to the Chair-Elect to complete the cycle.

Finally, if you are interested in getting more involved in the society without a two year commitment, we will be choosing a student representative to sit in on the Student Paper and Poster Judging committees. This role is one year in length and the purpose is to interact with these two committees to bring the students' perspectives. An alternative option student members have to be involved is to sit in one of the other various committees WSWS holds. For a complete list of committees check out the WSWS website or contact the committee chair for more information.

Do not forget to like the WSWS Twitter ([@WSWSstudents](#)) and Facebook (<https://www.facebook.com/WSWSStudentSection>) pages for meeting information, updates and opportunities. If you have any questions or concerns, please let us know and we will contact the board of directors to address it in the best possible manner.

Caio Brunharo, Student Section Chair
cabrunharo@ucdavis.edu

Clint Beiermann, Student Section Chair (elect)
clint.beiermann@huskers.unl.edu

Please help us identify WSWS members who have recently or soon will be retiring. If you or someone you know fits this description, please send information to Kirk Howatt (kirk.howatt@ndsu.edu). We will find out if the rumor is true and prepare to recognize individuals at the 2018 Annual Meeting in Garden Grove, CA. That's in Orange County near Anaheim.

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Necrology

Steve Orloff

1956 - 2017

Long-time member of the California weed science community Steve Orloff passed away on October 3, 2017 after a brief fight with cancer.

Steve was born on July 11, 1956 and grew up in Lancaster, California. Steve spent several years in Central America serving in the Peace Corps, primarily in El Salvador, where he worked with marginal farmers struggling to survive in this tropical, crowded region. He met his wife-to-be in Honduras during this period.

After graduation with a MS in Crop Sciences from San Luis Obispo, Steve took the University of California Farm Advisor position at Lancaster. He spent his 33-year career as a University of California Cooperative Extension Farm Advisor, initially in the high desert of southern California and the past 20-plus years in northern California in Siskiyou County. Steve was an important contributor to the UC's weed science program, but he was perhaps even more engaged with researchers, farmers, and the agricultural industry as a forage and cereals agronomist.

Steve had a special interest in weed management. His work on the control of dodder, a major weed in alfalfa production in California, during the 1980s became the gold standard for management strategies for this important and difficult parasitic weed. More recently he conducted much of the university evaluations with Roundup-Ready alfalfa, including techniques to prevent weed shifts and resistance in this system. His sharp observations and excellent field research also indentified a novel crop injury phenomenon in the intermountain Roundup-Ready alfalfa in 2015-2017. He continued his field research right up until the time of his diagnosis in August 2017.

Steve was beloved by growers and industry representatives in California, the West, and nationwide due to his robust research program, excellent crop management knowledge, and his great ability to extend information in a fun and easy to understand style. He was a widely sought after speaker at state-wide and regional events, including the Western and California Alfalfa Symposium, Western and California Weed Science Society Conferences, and annual grower meetings in New Mexico, Utah, Nebraska, Washington, Arizona, Idaho, Oregon, and Nevada. He was a regular contributor to research presentation at the UC Intermountain Research and Extension Center, and at UC Davis. His thoughtful analysis and presentation of his own research data was always a highlight of any meeting, including his incorporation of humor that always enlivened the crowd.

Steve made his mark through his strong science, hard work, and commitment to agriculture but also through his sense of humor and fun and his genuine care for his friends, colleagues, and especially his family.

He is survived by his wife, Islia Orloff; three sons, Robert, Michael, and Danial Orloff; and two sisters, Lisa and Diane.

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WSWS ONLINE EDUCATION
<http://passel.unl.edu/pages/in dex2col.php?category=weedsci ence#>

WSSA Journals Website Online
www.WSSAJournals.org

CALENDAR OF EVENTS

71st Annual Meeting of the Canadian Weed Science Society

Nov. 20-24, 2017
Saskatoon, Canada
www.weedscience.ca

North Central Weed Science Society Annual Meeting

Dec. 4-7, 2017
St. Louis, Missouri
www.ncwss.org

Northeastern Weed Science Annual Meeting

Jan. 9-11, 2018
Philadelphia, Pennsylvania
www.newss.org

Southern Weed Science Society Annual Meeting

Jan. 22-24, 2018
Atlanta, Georgia
www.SWSS.WS

Weed Science Society of America Annual Meeting

Jan. 29 – Feb 1, 2018
Arlington, Virginia
www.wssa.net

Western Society of Weed Science Annual Meeting

March 12-15, 2018
Garden Grove, California
www.wsweedscience.org

Aquatic Plant Management Society Annual Meeting

July 15-18, 2018
Buffalo, New York
www.apms.org

21st Australasian Weed Conference

Sep. 9-12, 2018
Sydney, Australia
www.21awc.org.au

A Note from the Business Office

Tara Steinke, Business Manager/Treasurer

Registration for the 2018 WSWS meeting in Anaheim, CA (March 12-15, 2018) is now open and you can use the registration form found in this newsletter or go to our website (<http://www.wsweedscience.org/annual-meeting/>) to conveniently register on-line. The Annual Meeting page on the website also has information for making a room reservation at the Hyatt Orange County Hotel and for title and abstract submissions. Titles must be submitted before December 4th, 2017. The meeting preregistration and hotel reservation deadline is February 12, 2018. I look forward to seeing you all at the meeting in Anaheim. The Board of Directors and Local Arrangements committee are working hard to ensure a great meeting for the WSWS membership. The hotel is very excited to host WSWS and willing to work with us.

There is a change that the Board of Directors wants everyone to know about. The printed copy of the Annual Meeting Program will not be mailed out ahead of time this year. It will be available ahead of time on the website and on the Mobile Meeting App (Guidebooks). We are also asking on the registration form when you register for the Annual Meeting if you would still like a printed copy of the program, this will give us a good idea how many to print and bring to Anaheim.

As always, if you need to contact the office, please give us a call at (303) 327-8016 or e-mail at info@wsweedscience.org.

Colorado and the US Forest Service initiate a multistate Canada thistle biocontrol project – Dan Bean and Carol Randall

Canada thistle (*Cirsium arvensis*), a deep rooted long lived perennial with an extensive root system, is one of the worst weeds in Colorado and the west. Dr. Dana Berner, USDA ARS Foreign Disease-Weed Science Research, studied a naturalized Canada thistle rust fungus, *Puccinia punctiformis*, which is a host specific root parasite that eventually kills Canada thistle by killing the root system. Beginning in 2013 the Colorado Department of Agriculture (CDA) implemented and tracked the impact of a Canada thistle rust biological control program across Colorado. By 2016 data from Colorado demonstrated the Canada thistle rust was impacting Canada thistle patches. CDA applied for and received a Forest Service Biological Control of Invasive Plant (BCIP) grant to improve the production, distribution, and post-release monitoring of Canada thistle rust in the West.

In 2017 cooperators in six western states (Washington, Idaho, Utah, Nevada, Montana and Wyoming) received USDA APHIS 526 permits for movement of Canada thistle rust from Colorado. CDA provided over 1.7 kilograms of Canada thistle rust inoculum to project cooperators for distribution to landowners with Canada thistle infestations and assisted cooperators in Utah and Wyoming in setting up monitoring sites and performing inoculations of autumn rosettes.

CDA developed guidelines for site selection, inoculation techniques and monitoring protocols and produced a short video demonstrating techniques for inoculating Canada thistle patches (<https://www.colorado.gov/pacific/agconservation/canada-thistle-biocontrol>). A series of demonstrations and workshops are being planned for the 2018 field season at locations that will allow cooperators in the multistate program to attend.

Oregon recently joined the program and will initiate field work in the spring of 2018.

For more information or if you wish to participate in this program please contact Dan Bean, Colorado Department of Agriculture, (970) 464-7916, dan.bean@state.co.us or Carol Randall, US Forest Service, crandall@fs.fed.us.

STUDENT PAPER AND POSTER CONTEST INFORMATION Ryan Edwards – Chair

The Student Paper and Poster contest at the Western Society of Weed Science Annual Meeting offers students an opportunity to improve their presentation skills and increase their visibility within the Society. The top students in each division of the contest will be recognized with a plaque and receive a cash award to honor their achievement.

- All graduate students are encouraged to enter one paper **AND/OR** one poster in the contest.
- Undergraduate students may enter one poster **OR** one paper in the contest. ALL undergraduate students please notify me at RJEDWARDS@Landolakes.com with your choice of contest.
- If students entering the contest do not wish to be judged (i.e. considered for awards), but still would like to receive feedback on their presentations, please notify me ahead of the annual meeting at RJEDWARDS@Landolakes.com.

Judges Invitation

As the chair of the 2018 Student Paper and Poster contest, I am asking for non-student volunteers to participate as judges for this competition. Everyone who has been involved with the student contests will agree the volunteer judges are the foundation for a successful contest. Your assistance as judges is of great value. Volunteering your time and support helps to insure we are providing the students every opportunity to excel in Weed Science.

If you are interested in volunteering, please contact me by email or phone: (RJEDWARDS@Landolakes.com) or (651) 319-6479.

Attention to all Advisors and Students:

The WSWS Student Paper and Poster contest committee will be enforcing the below policies extensively this year. Several instances have occurred in recent contests and the committee is focused on making the contest a fair and enjoyable experience for students;

- **Information presented in the WSWS Student Paper and Poster Contest is to be original and unique.** If a topic has been used by the author in another presentation at a different weed science society meeting, additional data **must** be included to constitute a unique presentation.
- Additionally, oral and poster presentations entered for competition by the same person should be substantively different from each other (not just changing the title or simply adding more data to the poster.) There should be no overlap between the data presented in the poster and oral format by the person (if entered in a competition).
- Students attending institutions in states that are not WSWS members may enter and receive evaluation but will not be considered for awards.
- All students entering the contest are required to submit an abstract not to exceed 250 words (word count in Microsoft Word). All abstracts exceeding this word total will be docked points accordingly depending on the number of words in excess.

Information regarding the scoring of papers and posters is listed in the tables below. If further clarification by students or advisors is needed, please contact me at RJEDWARDS@Landolakes.com.

Paper Contest*	Points	Criteria
Abstract	10	Format, grammar, and content
Introductions	10	Rational, hypothesis, and objectives
Methods	15	Experimental design, treatments, measurements, and statistical analysis
Results & Discussion	25	Results, interpretation, conclusions, future directions, and implications
Visual Aids	15	Easily read; uncluttered; in focus; balance to text, tables, figures, and photographs
Oration	20	Voice, confidence, enthusiasm, enunciations, and response to questions
Time	5	Allowed 2 to 4 minutes for questions (all-or-nothing points)
Total	100	

*Previous first place winners in the paper contest are ineligible for the paper contest, but may enter the poster contest.

Poster Contest*	Points	Criteria
Abstract	10	Format, grammar, and content
Introductions	10	Rational, hypothesis, and objectives
Content and Mechanics	15	Grammar, style, and quantity of information
Development	20	Rationale, hypothesis, objectives, organization, and methods
Analysis of Results	20	Results, interpretation, conclusions, future directions, and implications
Appearance	20	Easily read, uncluttered, well-designed tables and figures, clear and relevant photographs, and balanced layout
Oration	10	Voice, confidence, enthusiasm, enunciations, and response to questions
Physical Presence	5	Interaction with audience and mannerisms
Total	100	

*Previous first place winners in the poster contest are ineligible for the poster contest, but may enter the paper contest.

2018 CALL FOR NOMINATIONS: DISTINGUISHED ACHIEVEMENT AWARDS

Everyone knows of some skilled and outstanding weed scientists in the western region who have contributed a great deal over the years and deserve our recognition and appreciation. One way to recognize such persons is to nominate them for a WSWS award. Please take the time and nominate an individual for one of awards listed below.

CRITERIA USED FOR EVALUATING NOMINATIONS: Awards are based on merit and impact on weed science and weed management practices. Applicants **MUST BE** a member of WSWS. Professional achievements and their impacts are the principal criteria for receiving these awards. There is no requirement that an award be given in any or every category. Past winners are not eligible again in the same category. An award may be given each year in both the private and public sectors for Outstanding Weed Scientist and Outstanding Weed Scientist – Early Career. Only one award may be given each year for Weed Manager and Professional Staff. Within the guidelines for each category, there is flexibility to fit the nominee.

I. OUTSTANDING WEED SCIENTIST

This award recognizes outstanding achievements in weed science from individuals in both the public and private sectors. Principle criteria for this award includes innovative or unique approaches that result in learning, ability to clearly communicate ideas, motivation of the intended audience, demonstrate excellence and creativity in research accomplishments, applying results to solve problems in weed science, the impact on weed management practices and principals of weed science, and recognition of accomplishments by peers and intended audiences.

II. OUTSTANDING WEED SCIENTIST – EARLY CAREER

This award is to be given to members in the private and public sectors with no more than 10 years of service after completion of their terminal degree. This award recognizes outstanding achievements in weed science early in the individual career with the same criteria as the outstanding weed scientist above.

III. WEED MANAGER

This award recognizes outstanding and sustained contributions in support of weed science activities. This award is intended for those paid by taxpayers and that are working in the public sector, such as employees of state departments of agriculture, weed boards, public land managers, and vegetation management personnel. The nominee must have been involved in the WSWS and weed science for at least five years at the time of nomination.

IV. PROFESSIONAL STAFF

This award recognizes outstanding and sustained contributions in support of weed science activities. Nominees will be restricted to individuals that work under the direction of university, federal, or industry scientists. These individuals may have titles such as researcher, research associate, technician, support scientist, or specialist. The nominee must have been involved in the WSWS and weed science research, extension, or resident education for at least five years at the time of nomination.

NOMINATION DEADLINE: Nominations must be received by **December 1, 2017**.

NOMINATOR'S RESPONSIBILITY: The nominator will submit a nomination document following the "Instructions for Nomination" guideline. The nominator is responsible for obtaining three letters of support and including them with the nomination package. Unsuccessful nominations will remain active for three years; however, an updated nomination packet of holdover candidates is encouraged.

The nomination package, including the supporting letters, should be sent, by email, to the chair of the Awards Committee by **December 1, 2017**:

Roger Gast
Dow AgroSciences
9330 Zionsville Rd
Indianapolis, IN 46268
(317) 337-3004
regast@dow.com

REQUEST FOR WSWF FELLOW AND HONORARY MEMBER NOMINATIONS

BY

Dr. Bill Cobb, Committee Chair

Now is your chance to nominate deserving colleagues as a WSWF Fellow or Honorary Member!

WSWF FELLOW

WSWF Guidelines for Nominating Fellows

Fellows of the society are members who have given meritorious service to the Western Society of Weed Science.

The nominator must contact the member to be nominated and request them to prepare a concise [2-3 page] resume.

- a. The nominee must be involved in the process. The most pertinent information about the nominee can only be obtained from the nominee.
- b. The nominee's resume should be based on the WSWF guidelines approved by the Board of Directors (see below).
- c. Information from the resume will be used by the nominator in writing the letter of nomination.
- d. The nominator also is responsible for soliciting two letters of support for the nominee. The letters should be sent to the nominator and included in the nomination package sent to the committee.
- e. The nomination package should include the nominee's vita, the nominator's letter of nomination, and two support letters.

SERVICE TO WSWF – Please address the following points in the resume:

1. **Officer:** President; Vice-President; Secretary, Research Section Chair; Education & Regulatory Section Chair; Editor; Other.
2. **Committees:** Standing; Special; Ad Hoc.
3. **Presentations and Publications:** WSWF – Papers, Proceedings, Research Progress
4. **Service to other Weed Science Societies:** Weed Science Society of America; State Organizations.
5. **Academic Weed Science Endeavors:** Teacher; Graduate Students; Refereed Publications; Extension Publications, Books; Popular Publications; Academic Weed Science Pursuits; Other.
6. **Industry Weed Science Endeavors:** Sales and Marketing; Research and Development; Regional Manager; Product Manager.
7. **Other Meritorious Weed Science Service**

WSWF HONORARY MEMBER

WSWF Guidelines for Nominating Honorary Members

Honorary members are selected from individuals whose activities have been largely from outside the Western Society of Weed Science, but who have significantly contributed to the field of weed science.

- The nominator must contact the person to be nominated and request them to prepare a vita.
- The nominator will then prepare a letter summarizing the nominee's contribution to the area of weed science with emphasis on how the interests of the WSWF have been served by this non-member.
- Include the vita with the letter of nomination to provide all pertinent information to the Committee.

NOMINATIONS FOR FELLOW AND HONORARY MEMBER PACKAGES ARE DUE BY **DECEMBER 1, 2017**
TO:

Dr. Bill Cobb
(509) 783-3429

wtcobb42@gmail.com

Electronic submission preferred

Western Invasive Weed Short Course

April 16-19, 2018

Save the Date



The 8th Annual Western Invasive Weed Short Course will be held April 16-19, 2018 at the Sylvan Dale Guest Ranch in Loveland, Colorado.

The continued partnership with the Sylvan Dale Guest Ranch allows us to provide some unique training opportunities. One of the truly unique features of the Short Course is the ability to have a long-term restoration plot. Sylvan Dale has worked with us to establish a fenced site where we have been able to demonstrate weed management combined with native grass establishment. A twilight weed walk on the first night is a great way to see the ranch and start learning some weeds.

The WIWSC is an intensive study of current technologies and best management practices associated with noxious and invasive weeds in the western United States. Participants gain up-to-date knowledge specific to invasive weed management with interactive sessions that include:

- Classroom lecture
- Hands-on demonstration
- Field plots
- Facilitated discussion
- Live weed and herbicide symptomology specimens
- Small group projects
- Educational games
- Time for individual interaction with instructors



The 2018 WIWSC will be similar to the previous Courses, to see agendas please visit http://www.mountainwestpest.com/Past_Courses.php. The Organizing Committee builds the final agenda based on a pre-course survey of registered participants to assess specific areas of participant interest. The pre-course survey will not be sent to participants until they have completed the registration process.



Our target participants are local, state, federal government, and other land managers throughout the western region desiring a better understanding of weed management. WIWSC is designed to benefit both those new to invasive plant management and experienced professionals seeking a comprehensive update in western invasive weeds and their management. The WIWSC instructors are members of the Western Society of Weed Science.

Registration will open this fall. Enrollment is limited and is accepted on a first-come, first-serve basis. Please contact Sandra McDonald, Course Coordinator, for additional information at 970-266-9573 or Sandra@MountainWestPest.com.

WASHINGTON REPORT

October 20, 2017

Lee Van Wychen

Dicamba-Tolerant Crop Labels Revised

On October 13, 2017, EPA announced label changes for Extendimax, Engenia, and Fexapan herbicides. These label changes impose the following additional requirements for 2018:

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

The Restricted Use classification only applies to the

labeled uses for Extendimax, Engenia, and Fexapan. Pre-existing dicamba herbicides (e.g. Clarity, Banvel) are not subject to the Restricted Use classification. For more information:

<https://www.epa.gov/ingredients-used-pesticide-products/registration-dicamba-use-genetically-engineered-crops>

The updated labels can be found at:

- Engenia Herbicide, **EPA Registration Number 7969-345**
- XtendiMax with VaporGrip Technology, **EPA Registration Number 524-617**
- DuPont FeXapan herbicide plus VaporGrip Technology, **EPA Registration Number 352-913**

The label revisions will help address dicamba off-target movement and minimize impacts to sensitive crops, but will those changes be enough to avoid a repeat of what occurred in 2017? Preliminary university research from this summer indicated that vapor drift was likely one of the factors contributing to off-target movement. Vapor drift is much harder to control than particle drift, but to what extent it contributed to off-target movement still remains unknown.

The weed science community needs to have

constructive dialogue on how to research and address issues related to herbicide off-target movement. Can we improve educational efforts for on-target applications of all herbicides? Are there times, locations, or conditions where herbicides cannot be used because off-target risks exceed the benefits? What metrics should we use to quantify those risks and benefits? We'll have a chance to address some of those questions at the upcoming weed science society meetings and hope you can join us.

Dicamba: Who's Liable? Insurance Claims Denied as Companies Grapple with Dicamba Injury
By Emily Unglesbee, DTN Staff Reporter. October 20, 2017

There was no question what was to blame for the curled soybeans on the central Illinois farm in late June. The farmer, the neighbor who made the application, even the investigator from the neighbor's insurance company, all agreed. Off-target dicamba movement was the culprit.

Yet the letter the injured farmer received months later from the insurance company was quite clear: "We do not find any negligence on the part of our insured and are

respectfully denying your claim." The company concluded that the dicamba damage had occurred from volatility -- a factor beyond the applicator's control - and that fault lay with the product, not the application of it.

DTN acquired copies of these letters, but because of the sensitivity of the situation, allowed the sources to remain anonymous.

The dicamba injury crisis of 2017 has forced many farmers and applicators to delve more deeply into the world of liability insurance, full of confusing language and important legal implications.

With Xtend soybean acreage set to swell toward 40 million acres in 2018, now is a good time to review what liability insurance does and does not cover - and how dicamba has thrown a wrench in the works.

1. How does liability insurance handle herbicide damage?
2. What is covered?
3. What is not covered?
4. What have we learned from 2017?
5. How can you prepare for 2018?

The answers to those questions and the rest of the article is at:

<https://www.dtnpf.com/agriculture/web/ag/news/article/2017/10/20/insurance-claims-denied-companies>

In Glyphosate Review, IARC Edited Out 'Non-Carcinogenic' Findings
By Kate Kelland, Reuters.
October 19, 2017

The World Health Organization's cancer agency dismissed and edited findings from a draft of its review of glyphosate that were at odds with its final conclusion that the chemical probably causes cancer. Documents seen by Reuters show how a draft of a key section of the International Agency for Research on Cancer's (IARC) assessment of glyphosate - a report that has prompted international disputes and multi-million-dollar lawsuits - underwent significant changes and deletions before the report was finalized and made public.

Reuters found 10 significant changes that were made between the draft chapter on animal studies and the published version of IARC's glyphosate assessment. In each case, a negative conclusion about glyphosate leading to tumors was either deleted or replaced with a neutral or positive one.

The full story is at:
<http://www.reuters.com/article/us-who-iarc-glyphosate-specialreport/in-glyphosate-review-who-cancer-agency-edited-out-non-carcinogenic-findings-idUSKBN1CO251>

EPA Finalizes Herbicide Resistance Management Guidance

In September, after many years of collaboration between EPA and weed scientists, EPA finalized its "Guidance for Herbicide Resistance Management Labeling, Education, Training, and Stewardship", which is referred to as Pesticide Registration Notice (PRN) 2017-2. Please see:

<https://www.epa.gov/pesticide-registration/prn-2017-2-guidance-herbicide-resistance-management-labeling-education>.

This guidance applies to herbicide products applied in pretty much every crop and non-crop area, except for those applied in residential settings (i.e. lawns). One use category that we asked EPA to exclude from this guidance was herbicides applied for aquatic weed control due to the very different nature in how aquatic weeds are managed. However, aquatic use herbicides will also have to follow this guidance.

All new herbicide products will be required to have this labeling guidance as well as existing herbicides that go through registration review.

The herbicide resistance management guidance is simplified into 3 categories (pg. 10).

1. Label requirements
2. Terms of registration
3. Education, training, and stewardship.

Herbicide registrants will be responsible for the first 2 categories, which include

guidance elements like MOA labeling, crop scouting, and reporting suspected and confirmed cases of herbicide resistance. The weed management stakeholder community (crop advisors, university extension, commodity groups, registrants, etc...) will be responsible for the 3rd category, which is basically providing educational and training materials to growers at the local level. EPA states “the most successful strategies for herbicide resistance management will be tailored for local conditions” and that the stakeholder community “work collaboratively” to design effective material. Guidance for developing resistance management plans and remedial action plans are provided in Appendix 1 at the end of PRN 2017-2.

Steve Censky Confirmed as USDA Deputy Secretary



Action to fill vacancies in USDA leadership positions contin-

ues to move slowly. On October 3, 2017, Stephen Censky, USDA Deputy Secretary, and Ted McKinney, USDA Under Secretary for Trade and Foreign Ag were confirmed by the Senate. Censky and McKinney are the first USDA political appointees to get a confirmation hearing since USDA

Secretary Sonny Perdue went before the Senate Ag committee in March.

Steve Censky has been CEO of the American Soybean Association for 21 years. Prior to that he held several appointments at USDA, including administrator of the Foreign Agriculture Service. Steve was raised on a corn and soybean farm in Jackson, MN and received his B.S. in agriculture from South Dakota State. He also has a postgraduate diploma in agricultural science from the University of Melbourne in Australia.

Ted McKinney worked in corporate affairs at Elanco and then Dow AgroSciences for 33 years before becoming director of the Indiana State Department of Agriculture in 2014. McKinney grew up on a family farm in Tipton, IN and was active in both 4-H and FFA. He received his B.S. in ag economics from Purdue in 1981.

Other USDA leadership positions are in various stages of the confirmation process. On October 19, the Senate Agriculture Committee approved by voice vote the confirmation of Greg Ibach, Nebraska’s Director of Agriculture, for USDA Under Secretary for Marketing and Regulatory Programs, and Bill Northey, Iowa’s Secretary of Agriculture, for USDA Under Secretary of Farm Production and Conservation. Both are awaiting final Senate confirmation.

Other USDA nominees awaiting a hearing by the Senate Ag Committee include Sam Clovis for USDA Under Secretary for Research, Education, and Economics, and Stephen Vaden as USDA General Counsel.

USDA Moves OPMP to the Office of the Chief Economist

WSSA applauds Secretary Perdue’s decision to move USDA’s Office of Pest Management Policy (OPMP) from the Agricultural Research Service (ARS) to the Office of the Chief Economist, which advises the Secretary of Agriculture on the economic implications of policies and programs affecting the U.S. food and fiber system and rural areas. OPMP’s focus does not match up well with the mission of ARS and will be better situated in the Office of the Chief Economist.

OPMP was established in September 1997, with the mandate to:

- Integrate USDA’s strategic planning and activities related to pest management
- Coordinate USDA’s role in the pesticide regulatory process and related interagency affairs, primarily with the EPA
- Strengthen USDA’s support for agriculture by promoting the development of new pest management approaches that meet the needs of an evolving

and sustainable U.S. agricultural system

OPMP is directed by Dr. Sheryl Kunickis and currently has a staff of eight pest management specialists, including Dr. Jill Schroeder, a past president of both WSSA and WSWS.

John Deere Buys Blue River's Precision Weeding Technology

On September 6, John Deere announced it was spending \$305 million to acquire **Blue River Technology**, a developer of crop-spraying equipment that relies on machine learning. The acquisition also gives John Deere a 60-person team in the heart of Silicon Valley where it just opened an office to focus on high tech agricultural solutions.

Blue River Technology was founded in 2011 by Jorge Heraud, the former head of precision agriculture at Trimble, and Lee Redden, a Stanford PhD student and roboticist who grew up in Nebraska detasseling corn on his father's and grandfather's farms. Together, they built and tested their idea in California's Central Valley - proving the applicability of machine learning, computer vision, and robotics to the field of agriculture. With an idea, support from friends & family, and a grant from the National Science Foundation's (NSF) Small Business Innovation Research (SBIR) program, Blue River Technology was born.

On a side note, **William Patzoldt, Senior Agronomist (and Weed Scientist) with Blue River**, will be speaking at the upcoming WSSA annual meeting in Arlington, VA as part of Steve Fennimore's symposium titled "The State of the Weed Control Industry In 2018."

Blue River Technology's products have integrated computer vision and machine learning software that enables "See & Spray", a real time precision spot treatment of weeds. Blue River's first smart machine was "LettuceBot", which was developed for precision lettuce thinning. Blue River is also developing an unmanned aerial system that can survey a field of crops and sense various plant and environmental characteristics. Through using a drone, this technology can enable their See & Spray technology to be more accurate - measuring and learning every step of the way.

Blue River has been conducting See & Spray demos in cotton the past couple of years and has developed a labeled image database of plants and weeds. The Blue River system brings together a great deal of computing power into a single system that not only sprays precisely within a crop row, but essentially checks its work on the way by and autocorrects to be even more precise.

This level of precision is growing for the industry as

lower cost sensor technology becomes available. And once mated to machine learning systems that can take in the information to make decisions, more precision tools are possible.

FFAR Contributes \$15 Million Towards Photosynthetic Efficiency Research

The Foundation for Food and Agriculture Research (FFAR), along with the Bill & Melinda Gates Foundation and the U.K. Department for International Development (DFID) announced on September 15 they are co-funding a five-year, \$45-million research project that will continue the work of Realizing Increased Photosynthetic Efficiency (RIPE) for sustainable increases in crop yield.

RIPE, <http://ripe.illinois.edu/>, was formed in 2012 and built on 50 years of photosynthesis research. RIPE is led by the University of Illinois in partnership with the USDA-ARS, University of Essex, Lancaster University, Australian National University, Chinese Academy of Sciences, Commonwealth Scientific and Industrial Research Organization, University of California, Berkeley, and Louisiana State University.

RIPE has simulated the 170-step process of photosynthesis from the inner workings of enzymes to interactions between

neighboring plants in the field. RIPE has used these models to identify seven potential pipelines to improve photosynthesis and turn their ideas into sustainable yield increases. Last year, RIPE published work in *Science* that described how these pipelines could increase crop productivity by 20 percent - a dramatic increase compared to typical annual yield gains of just one percent or less. Two other RIPE pipelines have now shown even greater yield improvements in greenhouse and preliminary field trials. Researchers anticipate commercial seeds benefiting from this research will be available to farmers within approximately 15 years.

Australia's "WeedSmart" Program Helping to Stem Herbicide Resistance Tide

In an August 30 [article in Seed Quest](#), Australian agricultural consultant and WeedSmart representative Peter Newman discusses how Australia is succeeding in stemming the tide of herbicide resistance. This success, he says, is partly attributable to an industry-wide education initiative called WeedSmart (<https://weedsmart.org.au/>).

WeedSmart was established by Australia's agricultural sector about 5 years ago after surveys showed a serious lack of awareness among Australian growers about herbicide resistance, in

particular glyphosate resistance. The goal is to enhance on-farm weed management practices and promote the long term sustainability of herbicide use. WeedSmart is guided by an advisory committee and supports the work of three staff members who conduct an ongoing communication program targeted at growers. WeedSmart includes an online resource hub with research and practical solutions for growers on herbicide resistance, webinars, podcasts, social media presence, visits to field days and most recently, WeedSmart Week. WeedSmart is also backed by university research and thus helps researchers communicate directly to growers about the latest findings.

National Cover Crop Survey Results Indicate Weed Control Benefits

Results from the 5th annual cover crop survey conducted by the Conservation Technology Information Center (CTIC) with help from Purdue University and funding from the American Seed Trade Association (ASTA) and USDA's Sustainable Agriculture Research & Education (SARE) are now available. The surveys and results are at www.sare.org/covercropsurvey.

The 2016-2017 survey received results back from 2,102 farmers, of which 88% used cover crops while 12% of the respondents did

not. About 80% of the farmers who participated were commodity producers, while 20% are involved in some form of horticulture or produce production. The average volume of cover-crop acres has steadily risen from 217 acres in 2012 to 451 acres in 2017.

Cereal rye remained the top choice of farmers for cover cropping, followed by oats and radish. Sixty-five percent of the cover crop users reported planting mixes of cover crops in 2016. Questions got more detailed on topics such as "planting green," meaning farmers drilled their cash crops into a standing cover crop. The survey showed 39% had done so. Of that group, 61% of those farmers who planted into a standing cover crop considered their weed control had improved. Just 8% stated that weed control was more challenging with that practice.

Another 25% said cover crops always help improve control of herbicide-resistant weeds for those farmers that use cereal rye as a cover. An additional 44% said they sometimes saw benefits controlling herbicide-resistant weeds. About 31% said they saw no benefit from that practice.

And, yet, among farmers who do not use cover crops, another 42% of respondents said one reason they don't use cover crops is their concern over

the possible spread of resistant weeds.

Public Stakeholder Sessions Underway for New WOTUS Definition

In step two of President Trump's Executive Order regarding waters of the United States (WOTUS), the EPA and Army Corp of Engineers are pursuing notice-and-comment rulemaking in which the agencies are conducting a substantive re-evaluation of the definition of "waters of the United States".

The agencies are holding 11 stakeholder input sessions on the proposed revised definition of WOTUS. Nine sessions are two-hour long teleconferences that are tailored for specific sectors, one will be open to the general public and one was an in-person session for small entities.

The stakeholder sessions began on Sept. 19 and are being held on a weekly basis through Nov. 21. Each will run from 1 to 3 p.m. eastern time. Information on how to register for these meetings is available at <https://www.epa.gov/wotus-rule/outreach-meetings>.

Registration for each webinar will close a week prior. Those wishing to provide verbal recommendations during the teleconference will be selected on a first-come, first-serve basis. Due to the expected volume of participants, individuals will be asked to limit their oral

presentation to three minutes.

Stakeholder Sessions Schedule:

- Sept. 19, 2017 – small entities (small businesses, small organizations and small governmental jurisdictions)
- Sept. 26, 2017 – environment and public advocacy
- Oct. 3, 2017 – conservation, e.g., hunters and anglers
- Oct. 10, 2017 – construction and transportation
- Oct. 17, 2017 – agriculture
- Oct. 24, 2017 – industry
- Oct. 31, 2017 – mining
- Nov. 7, 2017 – scientific organizations and academia
- Nov. 14, 2017 – stormwater, wastewater management and drinking water agencies
- Nov. 21, 2017 – general public

The agencies will be accepting written recommendations on the step two rulemaking effort through a non-regulatory docket at <https://www.regulations.gov/docket?D=EPA-HQ-OW-2017-0480>. The agencies ask that this information be submitted on or **before Nov. 28, 2017**.

U.S. FWS Provides Update On Assessing Monarch Butterfly Status

In August, the U.S. Fish and Wildlife Service (FWS) provided an update via a webinar on its Species Status Assessment (SSA) framework for the monarch butterfly. The FWS is developing a status review using the SSA framework as the scientific foundation for their decision on whether the monarch butterfly should be listed under the Endangered Species Act, which is due June of 2019.

[Watch the species status assessment update webinar](#) - August 2017 (24 minutes)

For more info on the monarch butterfly assessment process: <https://www.fws.gov/save/themonarch/SSA.html>

During the webinar, the U.S. FWS discussed their initial work in creating their Monarch Conservation Efforts Database (MCED). Their goal is to capture all monarch conservation efforts that are ongoing and planned. One of the key components of the MCED is milkweed and blooming nectar plant metrics. U.S. FWS will continue to provide updates and webinars on the MCED through June 2018 when they expect the MCED will be open for data entry.

Lee Van Wychen, Ph.D. Science Policy Director – National and Regional Weed Science Societies Lee.VanWychen@wssa.net Phone: (202) 746-4686 www.wssa.net

CALL FOR 2018 RESEARCH PROGRESS REPORTS

The WSWS Research Progress Report is published to make significant new weed science research in the West available with the least possible delay. Early dissemination of weed research data is an important aid in formulating recommendations and in planning research. We encourage members of WSWS to submit pertinent new research data for publication in the Research Progress Report.

The Research Progress Report is produced on a very tight schedule. In order to expedite publication, all reports must be submitted in a “camera ready” condition. The report must be prepared according to the specific directions outlined below. Reports that do not strictly adhere to the requirements will be returned to the author. The report will be rejected if there is not time to make the necessary changes.

Each contributor must:

1. Follow instructions carefully and completely.
2. Obtain two additional reviews of each report and have each reviewer *print their name* at the bottom of the index outline. The two reviewers can be anyone other than the senior author of the report. The two reviews are a requirement for publication.
3. Send the report(s) via e-mail with an index outline for each report. An index outline form will be available on the website. Remember, the report will be printed as received.
4. Adhere strictly to the submission **deadline of January 8, 2018. Send an electronic copy** as a Microsoft Word file (doc or xdoc) or as an Acrobat file (pdf) attached via e-mail to trauch@uidaho.edu. **After submission, a reply will be sent upon receipt of a report. No reply means no report was received.**

Questions? Please contact: Traci Rauch
(208) 885-9709
trauch@uidaho.edu

GUIDELINES FOR RESEARCH PROGRESS REPORTS

WSWS will not retype or make typographical corrections on papers submitted for the WSWS Research Progress Report. It is the responsibility of the author to submit each report in a ready for publication condition following these guidelines:

FORMAT: Paper must be white 8.5 by 11 inch. Margins must be one inch on all sides. Please use **full justification** (this means both right and left margins are aligned). Type all text using **10 pt (Times New Roman)** font. All text should be single spaced. Either English or metric units are acceptable. However, do not mix English and metric units (Some exceptions may apply – e.g., CEC is expressed best in metric units as meq/100g). Do not type page numbers. Reports will be printed as received.

TITLE: Begin title at the left margin. Capitalize only the first letter of the first word. Underline the entire title. End the title with a period.

AUTHORS: Begin the authors name (first, middle initial, last) following the title of the paper. End list of authors with a period. Briefly list the author’s affiliation and mailing address in parentheses - e.g. (Weed Research Laboratory, Colorado State University, Fort Collins, CO 80523)

BODY OF TEXT: The report should clearly present the objectives of the research, methods, and results. Double space or indent between paragraphs.

Abbreviations: Use abbreviations as shown in the Scientific Style and Format: The *CBE Manual for Authors, Editors, and Publishers* and as commonly used in *Weed Science* or *Weed Technology*. Abbreviations for weeds can be used in the tables. **Do not abbreviate the word inch.** Do not place a period after the abbreviation unless its omission could cause confusion. Abbreviations not shown in the *CBE Manual* (**including Bayer codes**) should be introduced in parentheses immediately after their first use in the text or footnoted if used in a table.

Numbers: Use Arabic numerals for numbers with two or more digits and for measurements of time, weight, and degrees, except when the number is the first word of a sentence. Spell out numbers less than 10 or when they are the first word of a sentence, except when they constitute a series in which one number has two or more digits. Write 10 by 20 rather than 10 x 20 and 1 to 5 rather than 1-5 except in tables where space is limited. Use decimals instead of fractions (0.5, not ½). Place zero at left of decimal (0.5, not .5).

Plant names: Weeds can be appropriately identified in the text by using the WSSA-accepted common names [*Weed Science*, 32 (Supplement 2): 1984 with *Weed Science* 36:850-851, 1988; Composite List of Weeds, available from WSSA; or WSSA.net].

Chemical names: Herbicides can be properly identified by the WSSA-accepted common name (appears in the back of *Weed Science* Vol. 54 issue No. 6). Other herbicides may be identified by giving the code number followed by the chemical name in parentheses. Do not use trade names in the title of the paper. If the trade name of a chemical (herbicide or adjuvant) appears in the paper, the author must supply a suitable justification statement for using the trade name; this statement is to be given on the index outline.

Herbicide rates: Express rates as active ingredient (ai) or acid equivalent (ae) (whichever applies), not as formulated material. When necessary, it is appropriate to mention a specific formulation, such as the specific ester or salt utilized in the research.

TABLES AND FIGURES: Use **10 pt (Times New Roman)** font. If space is limiting, font size may be reduced to as low as 8 pt. Single-space all tables. **Table width should be the size of the paper with margins one inch on all sides.** Tables may be landscape or portrait. Type the word "Table" with an uppercase "T" at the top of the table and follow it with a period. Do not use a table number unless the report has more than one table. Please note the following in the example table at the end of the guidelines: a) the unit designation for each column is below the line; b) only the first letter in each column heading and treatment is capitalized; c) a zero precedes each decimal (0.5, not .5); d) herbicide common names are written out when possible and necessary herbicide abbreviations are spelled out in a footnote; and e) use + to indicate herbicide tank mixtures and / to indicate herbicide premixtures. Use superscript numbers (^{1,2,3}, etc.) to indicate footnotes for tables. Begin the word "Figure", **below the Figure**, with a capital "F" and follow it with a period. Do not number the figure unless the paper has more than one figure. Figures that will reproduce well are acceptable.

INDEX OUTLINE: To enhance the publishing procedure, an index outline for each paper must be prepared by the author and submitted to the editors. The outline will include: Title of paper, author(s), Project, list of crops, list of weeds, list of herbicides, keywords, and reviewers' names. Choose the appropriate Project for your report. Projects are: 1. Range and Forest; 2. Horticultural Crops; 3. Agronomic Crops; 4. Teaching and Technology Transfer; 5. Wetlands and Wildlands; and 6. Basic Sciences. Authors must identify **weeds and crops by common and scientific binomial name and authority on the index outline.** Chemicals (herbicide and adjuvant) must be listed by common name **and trade name** or code number. Papers submitted without a **current** index outline will be returned. Attach the completed electronic index outline to the e-mail.

REJECTED REPORTS: Any report submitted that does not conform to the guidelines will not be published. Editors may, at their discretion, work with the author to correct the report if time permits.

INDEX OUTLINE FOR WSWs RESEARCH PROGRESS REPORTS
Complete one for each report.

1. TITLE:

2. AUTHOR'S NAMES:

3. CORRESPONDING AUTHOR:

Email

Phone number

Address

4. PROJECT (see choices under **INDEX OUTLINE**):

5. CROP(S) INVESTIGATED (List alphabetically by common name. **Include scientific binomial name plus authority**):

6. WEED(S) INVESTIGATED [List alphabetically by WSSA-approved common name. **Include scientific binomial name plus authority**. Many weeds can be found in COMPOSITE LIST OF WEEDS, Weed Science 32 (Supplement 2): Revised 1989 or at WSSA.net]:

7. HERBICIDES AND **ADJUVANTS** INVESTIGATED (List alphabetically by common name or code number AND include **trade name**):

8. KEYWORDS (examples biocontrol, direct-seed, herbicide resistant). Do not include words listed above in crop, weed, herbicide or adjuvant:

REVIEWS BY TWO PERSONS IN ADDITION TO SENIOR AUTHOR: I have reviewed the attached report and find the content to be appropriate and presented in the proper style for publications in the WSWs Research Progress Report.

Name _____

Name _____

Title _____

Title _____

Affiliation _____

Affiliation _____

EXAMPLE: RESEARCH PROGRESS REPORT

Weed control in imidazolinone-resistant winter wheat with imazamox. Traci A. Rauch and Joan Campbell. (Plant Science Division, University of Idaho, Moscow, ID 83844-2339) A study was established in 'Fidel' imidazolinone-resistant winter wheat to examine weed control in 2001 and herbicide soil persistence in 2002 with imazamox. Wheat was seeded on October 3, 2000. Plots were 16 by 32 ft arranged in a randomized complete block design with four replications. All herbicide treatments were applied using a CO₂ pressurized backpack sprayer calibrated to deliver 10 gpa at 30 psi and 3 mph (Table 1). Wheat injury and weed control were evaluated visually on June 7, 2001. Wheat seed was harvested with a small plot combine on August 7, 2001. In spring 2002, each plot will be planted to spring barley and yellow mustard to evaluate soil persistence of imazamox.

Table 1. Application and soil data.

Location	Moscow, Idaho	
Application date	November 2, 2000	April 24, 2001
Wheat growth stage	1 leaf	3 to 5 tiller
Volunteer barley growth stage	2 leaf	2 to 3 tiller
Air temperature (F)	50	50
Relative humidity (%)	73	86
Wind (mph, direction)	2, E	4, E
Cloud cover (%)	30	10
Soil temperature at 2 in (F)	44	40
pH		4.7
OM (%)		2.8
Texture		loam

No treatment visibly injured wheat on June 7, 2001 (data not shown). All treatments controlled volunteer barley 98% or better (Table 2). Wheat grain yield (89 to 99 bu/A) was better with all treatments compared to the untreated check. Test weight (56 to 60 lb/bu) did not differ among treatments or from the untreated check.

Table 2. Weed control, wheat yield and test weight with imazamox near Moscow, Idaho in 2001.

Treatment ¹	Rate lb ai/A	Application timing	Volunteer barley control %	Wheat	
				Yield bu/A	Test weight lb/bu
Imazamox	0.04	fall	99	96	60
Imazamox	0.08	fall	98	95	60
Imazamox	0.04	spring	99	99	59
Imazamox	0.08	spring	99	99	56
Imazamox + MCPA amine	0.04 + 0.25 ²	spring	99	95	59
Imazamox + thifensulfuron/tribenuron	0.04 0.016	spring	98	97	59
Untreated check			--	89	59
LSD (0.05)			NS	5	NS
Density (plants/ft ²)			1		

¹All treatments were applied with 90% nonionic surfactant (R-11) at 0.25 % v/v and 32% urea ammonium nitrate (URAN) at 1qt/A.

²MCPA amine rate is expressed as lb ae/A.

(EXAMPLE)

INDEX OUTLINE FOR WSWs RESEARCH PROGRESS REPORTS
Complete one for each report.

1. TITLE: Weed control in imidazolinone-resistant winter wheat with imazamox

2. AUTHOR'S NAMES: Traci Rauch and Joan Campbell

3. CORRESPONDING AUTHOR:

Email trauch@uidaho.edu
Phone number (208) 885-9709
Address University of Idaho
PSES Dept.
PO Box 442339
Moscow, ID 28244-2339

4. PROJECT (see choices under **INDEX OUTLINE**): 3. Agronomic Crops

5. CROP(S) INVESTIGATED (List alphabetically by common name. **Include scientific binomial name plus authority**):

wheat, winter (*Triticum aestivum* L.)

6. WEED(S) INVESTIGATED [List alphabetically by WSSA-approved common name. **Include scientific binomial name plus authority**. Many weeds can be found in COMPOSITE LIST OF WEEDS, Weed Science 32 (Supplement 2): Revised 1989 or at WSSA.net]:

barley, volunteer (*Hordeum vulgare* L.)

7. HERBICIDES AND **ADJUVANTS** INVESTIGATED (List alphabetically by common name or code number AND include **trade name**):

imazamox (Beyond)	thifensulfuron (Harmony Extra XP)
MCPA (MCPA 4 Amine)	tribenuron (Harmony Extra XP)
non-ionic surfactant (R-11)	urea ammonium nitrate (URAN)

8. KEYWORDS (examples biocontrol, direct-seed, herbicide resistant). Do not include words listed above in crop, weed, herbicide or adjuvant:

persistence
plantback

REVIEWS BY TWO PERSONS IN ADDITION TO SENIOR AUTHOR: I have reviewed the attached report and find the content to be appropriate and presented in the proper style for publications in the WSWs Research Progress Report.

Name _____

Name _____

Title _____

Title _____

Affiliation _____

Affiliation _____

71st Western Society of Weed Science Annual Meeting

Hyatt Regency Orange County

Anaheim, CA

March 11-15, 2018

Visit the WSWs website (www.wsweedscience.org) for hotel room booking details

Registration Form

Registration	Before 2/12/18	After 2/12/18	Total
Regular Meeting (includes symposium)	<input type="checkbox"/> \$250.00	<input type="checkbox"/> \$350.00	
Student	<input type="checkbox"/> \$125.00	<input type="checkbox"/> \$125.00	
Spouse/Guest	<input type="checkbox"/> \$50.00	<input type="checkbox"/> \$50.00	
Dues Only (not attending the meeting)	<input type="checkbox"/> \$30.00	<input type="checkbox"/> \$30.00	
Total			

Registration Questions:

Do you want to participate in Student Night out? Yes No

The Student Night Out Program matches students with weed science professionals for an evening out to dinner during the Annual Meeting. If you checked Yes, someone will follow-up with you before the meeting.

Are you interested in serving on the Board of Directors? Yes No

Are you interested in serving on a Committee? Awards Fellows and Honorary Members Finance Herbicide Resistant Plants Publications Student Paper Judging Legislative Necrology Local Arrangements Nominations Poster Public Relations Site Selection Sustaining Membership

Would you like a printed copy of the program? Yes No

**WSWS will be utilizing a Mobile Program App this year, printed programs will still be available at the meeting if requested above. Please note that the printed program will not be mailed out ahead of time this year, but will be available before the meeting on the website and through the Mobile App.*

If you are not attending the annual meeting, but want to remain a member, fill out the information below and send \$30.00 for dues.

Last Name _____ First Name _____ Affiliation _____

Mailing Address _____ City _____ State _____ Zip _____

Email Address _____ Phone Number _____

Spouse/Guest Name _____

Classification: Student University Federal Agency State Agency Industry Industry Consulting
 Unemployed Retired Other _____

Payment Type: Credit Card (Online Only) Check Number _____

Send to:

WSWS/Tara Steinke
 12011 Tejon St., Suite 700
 Westminster, CO 80234



Deadline: Mail-in registration must be postmarked by February 12, 2018. PAYMENT MUST ACCOMPANY REGISTRATION-NO EXCEPTIONS. Check or Money Order (U.S. Dollars) Only. Credit card payments may be made with online registration. Visit: www.wsweedscience.org. No refunds after March 1, 2018. Questions? 303-327-8016 or tara@imigroup.org Note: Onsite registration at the meeting is at the higher rates noted below. The full program will be posted at the website in mid January.

Publications Available from the Western Society of Weed Science

(All prices include shipping and handling; bulk orders may be discounted, see below)

_____ Aquatic and Riparian Weeds of the West.....	\$45.00
_____ Weeds of California and Other Western States.....	\$85.00
_____ Weed Control in Natural Areas in the Western United States	\$40.00
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- ❖ To support legislation governing weed control programs and weed research and education programs.
- ❖ To support the Weed Science Society of America and foster state and regional organizations and agencies interested in weed control.



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