



**WEED SCIENCE**  
**SOCIETY of AMERICA**  
RESEARCH - EDUCATION - INNOVATION  
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## WSSA Committee Report

**COMMITTEE: E-9 (E-12b) Herbicide Resistance Education**

**Date: January 24, 2026**

**BOARD LIAISON: Christy Sprague**

**Include in Consent Agenda:**  Yes (no discussion needed, just informational update)

No (items in report require discussion or action)

**Members: including subcommittees**

- Amy Asmus
- Michael Barrett
- David Ervin
- George Frisvold
- Todd Gaines
- Andrew Kniss
- Ramon Leon
- Gray Turnage
- Jill Schroeder
- Francois Tardif
- Lee VanWychen
- Muthu Bagavathiannan
- David Shaw
- Katie Dentzmann
- Ian Burke
- Aaron Hager
- Bill Chism
- Amber Pelon (student representative)
- Clint Pilcher (ESA representative)
- Mark VanGessel (EPA liaison)
- Lindsay Haines (NRCS)
- Kelly Tindall (EPA)
- Cameron Douglass (USDA-OPMP)
- Craig Alford/David Belles (HRAC)
- Bart Clewis (Public Awareness)
- Lynn Sosnoskie (Extension)
- Caio Brunharo (Herbicide Resistance)
- Emily Unglesbee (Communications Specialist)
- Neil Hoffman and/or Rebecca Fletcher (APHIS - (Ex off))

Reviewed MOP for updates:     YES                       NO

Comments re: MOP: copied below with updates/discussion

needs noted

**4.10 Herbicide Resistance Education Committee (E9) The Herbicide Resistance Education Committee shall:**

- 1. Consist of a Chair appointed to a renewable three-year term; the chairs of the Extension, Public Awareness, and Herbicide Resistant Plants Committees; the Executive Director of Science Policy, the WSSA-EPA Liaison, and members who are interested in the area of Herbicide Resistance Management and Education. The Chair also has the discretion to recruit additional members and form temporary subcommittees to meet the objectives of the committee. The Chair communicates the names and terms of any additional committee members to the VicePresident. The Board Liaison is Member-at-large B10A.**
- 2. Develop and execute a comprehensive strategy on herbicide resistance education for the WSSA.**
- 3. Develop educational materials for weed scientists, the scientific community, and all relevant stakeholders and end users regarding best management practices for preventing and mitigating herbicide resistance in plants.**
- 4. Disseminate materials in a variety of media, including presentations for training modules, press releases, video training modules, reports, briefing documents, and web-based materials.**
- ~~**5. Monitor use of and maintain Herbicide Resistance Training Modules for self-paced accredited on-line Continuing Education Courses.**~~
- 6. Sponsor symposia, workshops, and other tools for effectively promoting herbicide resistance education.**

#### **Committee Actions/Impacts/Activities:**

1. Cameron Douglass and colleagues organized a symposium for the 2026 annual meeting.  
**Title:** Re-framing the Discussion of Herbicide Resistance – Perspectives on Best Practices for Real-time Management in the Field  
**Organizers:** Charlie Cahoon (North Carolina State Univ.), Cameron Douglass (Compliance Services International), Sarah Lancaster (Kansas State Univ.)
2. Bill Chism has reached out to the APS to initiate discussions about their work on resistance management education and how we might cooperate on herbicide resistance as well as Endangered Species education.
3. Ian Burke chaired a subcommittee to develop a publication that follows up on the BMP ‘Norsworthy’ paper with a discussion on constraints and opportunities to adopting BMPs in different cropping systems. The work is in progress.
4. Schroeder organized a sub-committee meeting with David Shaw, Ian Burke, Katie Dentzman, George Frisvold, and Cameron Douglass to discuss the draft agenda for the annual meeting and potential needs in herbicide resistance education going forward.
5. Katie Dentzman sent an update including one survey and one publication.
  - a. A survey was completed of perennial crop stakeholders regarding their awareness and potential adoption of novel weed management technologies. This survey was part of an SCRI Planning grant.
  - b. Publication: Dentzman, K. & Mindes, S.C.H. (2026). Pesticide resistance and community collapse: The vicious cycle of rural disintegration and agricultural expansion.

6. Update from Emily Unglesbee on the GROW program:  
The GROW (Getting Rid of Weeds) Network and the USB-funded Take Action (Herbicide-Resistance Management) program had a productive first full year of partnership in 2025! Of the hundreds of resources we produced, nearly 50 specifically focused on herbicide management and herbicide-resistance education (that includes news stories, videos, factsheets, charts, educational webpages and social media posts). The rest focused on integrated weed management tactics and research, which also aim to have an impact on resistance management. We also distributed 26,000 Herbicide Classification posters (updated annually by Christy Sprague, MSU) to farmers, crop consultants, retailers, researchers and other ag industry stakeholders, showing a robust interest in herbicide-resistance management via rotating and mixing herbicide modes of action. The groups' outreach team hosted educational booths and/or did presentations at four national ag-focused trade shows (Commodity Classic, Farm Progress Show, Ag Media Summit and NAICC) and six regional meetings/workshops/field days, all focused on promoting and distributing the team's herbicide-resistance and integrated weed management resources. Finally, the new combined GROW - Take Action website brought in a record 200,000 pageviews in the 2025 calendar year.
7. Jill Schroeder had a wide-ranging discussion with Aaron Hager (committee member who cannot attend the committee meeting at WSSA) about the changes and new challenges with resistance and messaging. He pointed out that previous messaging revolved mostly around how to manage target site resistance; however, many growers in the mid-west are dealing with increasing evolution of metabolic resistance, particularly in the Amaranth species (waterhemp). The approach to management and to messaging is changing as a result. Herbicides are still needed to manage other species in the field; however, his message is that the only way to address Amaranth sp. resistance is by eliminating seed return to the field. The solutions are likely different for each location/field, but the message of zero tolerance is important. He spoke of the differences in waterhemp and Palmer amaranth, which drove management changes because infestations resulted in zero yield in many cases. The messaging is challenging due to the complex social and economic challenges faced by growers. He felt that the entire industry must be involved in developing education and incentive strategies to assist growers, particularly in this economically challenging time.

**Committee Meeting Schedule\*: (Include all planned meeting dates and times):**

1. Pre-meeting for agenda development was held by Zoom on December 19, 2025. See above for information.
2. **Agenda for the 2026 full committee meeting February 9, 2026:**
  1. Introductions
  2. Updates from committee members
    - a. What are the successes in 2025?
  3. Discussion about future direction for this committee – some thoughts for consideration follow to help start the discussion.
    - a. Weed science messages about herbicide resistance are largely unchanged, although the problem continues to expand, and our understanding of the biology/ecology of the situation is much deeper.
    - b. Where is the innovation in herbicide resistance management/education? What is the role of this committee in documenting new approaches?
    - c. Where is there effective collaboration within regions/across regions? If none, how can this committee facilitate collaboration/communication?
    - d. What are the challenges going forward for resistance management education?
    - e. Should this committee work more closely with the Endangered Species Committee? How does mitigation for ESA compliance impact growers' ability to manage herbicide resistance?
    - f. What is our path forward?
  4. Discussion about committee membership and who needs to be involved to address future directions.
  5. Volunteers to step in as Chair of this committee in 2026 are needed.

## **The meeting of the HRE committee occurred on February 9, 2026 at 8:00 a.m.**

Attending members and interest in being on committee::

Christy Sprague - board liaison

Kelly Tindall – yes

Keith Burnell – yes

Cameron Douglass – yes

Katie Dentzman – yes

Emily Unglesbee- yes

Ian Burke – yes

Andrew Kniss – yes (meh)

Bill Chism – yes

Sachin Dhand- yes

Greg Dahl - ?

Janis McFarland – yes

Ramon Leon – yes

Johnny Gressel – no

Phil Banks - no

Jill Schroeder – yes

David Shaw – not present, but stated that he will keep serving on the committee

**Wes Everman – not present, but he agreed to serve as the next chair**

### **Discussion Highlights**

1. **New chair of the committee will be Wes Everman**
2. Challenges for HR education:
  - a. Emily – The GROW network saw a record year in web views, despite a marked reduction in web education traffic from organic web searches, due to AI search summaries not providing links to original sources. The group is working to make sure Extension-vetted information reaches these AI summaries and chatbots by providing more information in print form (example is duplicating video content in print form so bots ‘see’ it) and cooperating with ExtensionBot, from the Extension Foundation. Also working to reach more crop advisors and media outlets, and they have seen an increase in subscribers from these groups in addition to farmers.
  - b. Andrew – AI is a challenge, as is collaboration with the other pest disciplines APS and ESA (entomology). Their recommendations to address resistance differ from WS. WSSA must point out and articulate these differences – we must clarify the differences in the biology of these pests that leads to the different management approaches for insect, disease, and weed pests. **Consistent messaging within WS is critical.**
3. Communication Challenges:
  - a. Consistent messaging: **We must have a shared vision for HR in messaging!**
    - i. Providing education in formats where AI will ‘find’ the information.
    - ii. Within WSSA messaging, how do we acknowledge the differences in HR approaches across cropping systems and regions?
    - iii. ESA (Endangered Species) – Bill pointed out that the ESA committee is addressing the same target audience. The committee has reached out to APS and E(ntomology)SA groups and made positive connections to find synergy across disciplines.

Emily said that GROW and Take Action have developed a webpage on ESA to share information on the herbicides that currently have ESA requirements on the label and to direct users to other resources ([www.growiwm.org/Take-Action-ESA](http://www.growiwm.org/Take-Action-ESA)). Kelly shared that EPA-ESA requirements for pesticides may include reduced annual rates of application.

*Problems for HR management may include restrictions on what herbicides are available for specific locations (PULAs) which may limit options, drift reduction requirements, and rate reductions among other ESA requirements.*

- iv. The GROW network reaches mostly the corn/soybean growing areas with some materials relevant to wheat, cotton, peanuts and rice. Messaging that is relevant to the specialty crop, noncrop, and natural/rangeland industries is lacking.
- v. Christy – we can't make the information/message too complicated.  
Ramon – we shouldn't underestimate farmers when developing messaging.  
Greg - the key audience is retailers and advisors.  
Johnny – We need to educate the industry that they must focus on discovery of new methods to make crops resistant and on products that are more recalcitrant to selection for resistance.

**This discussion showed that we have conflicting thoughts about how to approach messaging!**

- vi. Ramon – are we spinning our wheels because other issues dictate what growers decide to do, including regulation, issues of crop insurance, financing... Basically, logistics beats agronomics every time!
- vii. Cameron shared that a USDA mapping project is continuing, which will provide information where specific cases of resistance are occurring to assist with decisions.
- viii. WSSA needs to pay more attention to messaging around metabolic HR; we have largely lost the battle around target site resistance and metabolic resistance poses a greater challenge yet!

Emily – GROW has developed a large section of new material on metabolic resistance. **What other materials and messaging are readily available to growers and advisors? What do educators need?**

- ix. Keith pointed out that communication and coordination across the public and private sectors are key, but the challenge is to find a way to head in the same direction. There is a need to understand the economic challenges faced by all agricultural sectors that influence management decisions.
  - 1. Coordination within states, within regions, between industry and extension, and among other groups is not effective in many cases.

4. Should the focus be on education or on other issues?

- a. Katie – Growers and their advisors are well aware of herbicide resistance. We don't really need to think about education when what we really want is behavior change.
  - i. Our approach should shift to an understanding of the limiting factors that growers face. What are their shared values and beliefs?
  - ii. **How do we shift the system in which growers are working to one that will allow them to change their approach to managing weeds?**
  - iii. Ian – the PNW Herbicide Resistance Initiative is a functioning network of engaged scientists working with the grower communities to develop research that will address the needs of the community. What are the system changes needed to enable farmers to change management?
  - iv. Katie shared lessons learned from the Iowa Pest Resistance Program which started strong but has largely failed due to many factors including retirements, etc. of

project leaders.

- b. Should we be thinking about other factors that affect grower decisions? **Is this within WSSA bandwidth to address?**
  - i. Crop insurance – public crop insurance programs are dictated by congress/legislation. Private insurance programs are not – is that an opportunity to effect change?
  - ii. Financial institutions are another major influencer that affect the amount of funding available each year for production.
  - iii. Other aspects of the system that affect growers? So much of the system is geared for yearly management when HR management requires a longer term approach.

5. What is WSSA's role?

- a. What of the many challenges can WSSA influence – what are the pieces that we can tackle while recognizing that grower/community values, weed management/HR problems and decisions, and grower needs are a local not a national issue?
  - i. How do we share resources to tackle these challenges?
- b. WSSA members lack a shared vision.
  - i. Where are our strengths and how do we use them to provide value?
  - ii. We need to create a shared vision and think about how to consider the system changes needed to more effectively address HR.
  - iii. Andrew – WSSA is a science society. We need a set of shared facts (consistent message) around what is different about HR compared to FR and IR, and why the approaches among the disciplines are different. How is IWM different from insect and disease IPM?
- c. Who else needs to be engaged (organizations, groups, etc.)? What other audiences need to be reached with our shared vision?
- d. Why should we care? What external groups may influence availability of tools needed for effective weed management?

6. **The group recommended a targeted meeting with a diverse group to discuss how to move forward.** Who should be involved? – A subgroup of the committee should convene and bring recommendations to the whole committee. A second goal would be to update the MOP once the path forward is decided.

- a. The group discussed whether the committee name should be changed to the Herbicide Resistance Strategy committee to better reflect the path forward; **however**, the point was made that changing the name of the committee to reflect 'strategy' would result in losing the participation of our federal partners. Their voices on the committee are critical to understanding the challenges and opportunities going forward so, as current chair, I am reluctant to recommend this change.

**Areas for improvement/concerns: The group recommended a targeted meeting with a diverse group to discuss how to move forward.** Who should be involved? – it should be a subgroup of the committee to bring recommendations to the whole committee. A second goal would be to update the MOP once the path forward is decided.

**Opportunities for future (symposia, speakers, communication, general):** TBD – the committee needs to continue to meet annually at WSSA and invite all interested members to participate. Other proposals will come from the committee once the new chair has a chance to initiate discussion within the committee.

\*This will be visible to all members for engagement.