**Community-Based Management Approaches to Herbicide Resistance:  
Listening Session Results at the County Weed Board Coordinators’ Meeting in Chelan, WA**

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The [Washington State Noxious Weed Control Board](https://www.nwcb.wa.gov/) helps to advise the efforts of 38 county Noxious Weed Control Boards and districts in Washington state. The primary goals of the board are to coordinate noxious weed control, update the noxious weed list, and educate the public about noxious weeds. The board also seeks to limit the economic loss caused by noxious weed contamination in agriculture, natural resources, and human health by enforcing Washington state weed laws (Chapter 17.10 17.04 RCW). Local county weed boards and districts support these efforts by effectively communicating, and engaging with local community members, landowners, farmers, and state and local officials.

Based on research demonstrating the importance of community-based herbicide resistance management (Dentzman 2018, Ervin et al. 2019) and pilot projects experimenting with community approaches ([Arkansas Zero Tolerance Program](https://www.uaex.edu/publications/pdf/FSA2177.pdf), [Iowa Harrison County Project](https://www.ipm.iastate.edu/harrison-county-pest-resistance-management-project-overview)) a special session on community herbicide resistance management was held at the County Weed Board Meeting in Chelan, WA on Thursday, March 12th. Approximately 44 county weed board coordinators and county weed board employees from across WA attended the event.

Dr. Katherine Dentzman presented on how community-based management can be an effective tool in managing herbicide resistant weeds, and how the PNW can lay the groundwork for a successful community management initiative. According to results (n=100) from a recent survey by wheat growers from the Pacific Northwest (PNW), 80% of PNW wheat growers are concerned about herbicide-resistant (HR) weeds spreading from neighbors and 60% discuss herbicide-resistant weed problems with their neighbors. Furthermore, 67% agree that herbicide resistance must be managed cooperatively. These results can be used to help understand the PNW’s preparedness to implement community-based weed management based on farmers’ *awareness* of the effects others’ actions have on ones’ own welfare, level of *communication* between resources users, and *recognition* of the need for cooperation. As survey results suggest, there is agreement from PNW farmers that HR must be managed cooperatively. Still, 40% of respondents talk to their neighbors ‘never’ or ‘infrequently’ and 33% don’t think cooperative management is necessary.

Following the presentation, Dr. Dentzman led attendees in a listening session fostering discussion and planning of community efforts to manage herbicide resistance - the challenges, opportunities, and ways to help communities collaborate to more effectively control resistance and weeds in general. Participant responses have been grouped according to each question posed.

Participants were specifically asked to respond to the following questions, with approximately 10 minutes of in-group discussion and 5 minutes of out-sharing for each of the four main questions.

1. Is herbicide resistance a problem in your community?
   1. Why? If not, will it be in the future?
2. List strengths and opportunities within and outside of your communities for managing HR
3. List weaknesses and threats within and outside of your communities for managing HR
4. Looking towards the future, how would you want to connect as a community?
   1. What ways could our University team support a community initiative?
   2. What would you like to see happen in the next year? The next 5?

**Results from the listening session:**

**Is herbicide resistance a problem in your community?**

Results from the listening sessions show that participants are aware that HR could become problematic in the future. In general, participants discussed a range of perspectives on the severity of HR given different geographic locations, commodities produced, and user groups. Participants frequently discussed seeing HR potentially occurring along roadsides and railroads, but that it has been difficult to determine if HR is occurring or if different user groups are not complying with product label recommendations. One participant stated, “I think the other part is still getting folks to recognize and/or to be clear- is it is resistance or is it some other thing that's causing the weed control not to happen.” Despite differing perspectives on the severity of HR, listening session participants acknowledged that managing HR will require input from all user groups including, environmental groups and organizations, grower groups, landowners, chemical representatives, weed board staff, and applicant staff. Participant responses are summarized below and in Table 1.

**Strengths and opportunities:** Participants were asked to share what predominant strengths and opportunities exist within their communities that could support a community-based management approach to HR.

The predominant strengths and opportunities that participants identified included: Public relations and outreach, training and networking capacity of Cooperative Weed Management Areas (CMWA), common goals to reduce noxious weeds, informed users and farmer groups, and grower and stakeholder group meetings. Listening session participants also discussed opportunities to inform the public about HR issues at fairs, commissioner meetings, community events, and weed board training workshops. One participant stated, “The more networks you have, the more you can tap in if this is an agenda item, you can make it work.” Participants emphasized that some of their community members have a strong commitment to the environment and are willing to discuss alternative weed management strategies.

**Weaknesses and threats:** Participants were asked to share what predominant weaknesses and threats exist within their communities that would pose challenges to creating a community-based management approach to HR.

Participants also identified challenges to mitigating HR using a community-based management approach. Expanding agri-business, high cost of commodities[[1]](#footnote-1) and rigid conservation tillage programs for farmers may limit farmers’ ability to make adjustments to their current management practices. Agronomic challenges may be compounded by a lack of financially viable chemical alternatives, limiting farmers’ ability to diversify herbicide modes of action (MOAs). Given the expansion of agri-business and decrease in small farms, weed board officials discussed how small, rural farmers may lack access to resources like equipment, chemical alternatives, and labor. Weed board officials also discussed how perspectives about herbicide use differs amongst community members. Some community members may be staunchly against herbicide use, unwilling to change their current MOA, or lack access to information and resources about correct application procedures. The range of perspectives may lead to group polarization and weaken a community-based initiative. One participant stated, “It’s hard to develop a solution if there’s a lack of trust in the community.” In addition, some community members, like absentee landowners, may fail to manage the weeds on their property or be unaware that they are contributing to HR.

Lastly, weed board officials acknowledged that increased regulation, policies or laws could be a “double edged sword” for managing HR. For example, regulatory authorities or city officials may limit herbicide use and dictate when, where, and who can use the product. While participants acknowledged that increased regulation “could be a strength, [it] could also be a weakness” to managing HR.

**What would it take to create a community-based approach to HR?**

To support a community-based approach to HR, participants discussed the need for increased community partnership and education, targeted research, and additional financial resources. Participants emphasized the need to partner with diverse stakeholders to provide easily accessible information about HR. Participants suggested creating a program for community members about what HR is and how to identify it. One group suggested modifying product labels to warn users about HR and advise them on management strategies.

Participants discussed potential areas to focus future research efforts that included; research on new MOAs, integrated weed management strategies, and mapping technology to track weed prevalence. Additional financial resources are needed to incentivize participation in community events and provide additional support for existing cost-share and equipment loan programs. Some County Weed Boards have limited [cost-sharing programs](https://extension.wsu.edu/columbia/county-weed-board/) for specific weeds (i.e. Columbia County Weed Board for Mediterranean Sage, Yellow Starthistle, Japanese/Bohemian Knotweed and Leafy Spurge) that could be expanded. One group suggested raising revenues through companies that produce herbicides.

Table 1: The most important points from each group broken down by question. Responses have been kept as close as possible to participants’ original words and responses.

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| **Perspectives on herbicide resistance: is it a problem in your community?** | * There are a range of perspectives on HR due to different geographic locations and commodities produced. * Different geographic regions produce different commodities and differ in their perspective of HR. * Need to determine if HR is occurring or if it is improper user compliance and usage (hurried application, rate, timing) or continuous use of one chemical type. * Different commodity groups may be directed to use certain chemicals (e.g. grape growers). * State agency recommendations may differ from industry representatives’ suggestions. * Everyone who uses herbicides is responsible for managing HR as it’s a mobile issue that can spread from one region to another. |
| **What are the primary strengths and opportunities in the community?** | Existing resources:   * Fertilizer companies and weed boards have grower meetings. * Informed users and educated farmers can act as leaders and advocates for best management practices in their respective communities. * Farmers’ share common goals: “no one likes noxious weeds.” * CWMA: knowledge base and networking potential through conferences. * Weed board employee trainings and strong public relations and outreach. |
| **What are the biggest weaknesses and threats to managing HR?**  **(Top weakness)** | * Large cooperate farm resources versus small farms – shifting access to social networks and neighbors. * Lack of awareness about the issue, different cultural perspectives-including anti-regulatory mindset, and absentee landowners that may be unaware of HR occurring on their properties. * Financial challenges: volatile markets, lack of access to equipment, high rate of turn over for employees and high cost of commodities. * Preserving the no-till option-current programs may limit farmers’ ability to mechanically reduce weeds. |
| **What are potential next steps for a community-based approach to HR?** | * Research- new modes of action, mapping to determine weed “hot spots”, better recommendations for IPM or best management strategies. * Financial assistance: raising revenues through companies that produce herbicides, education * Provide incentives to bring people together and increase incentives for cost-share or equipment loan programs. * Create a program that includes objective experts that defines how to identify herbicide resistance. * Provide incentives for community members to participate. * Provide educational opportunities for producers. * Modify product labels to warn about resistance and monitoring * Partner with community groups, and include environmental organization, growers, and local clubs. * Weed board can provide assistance * Coordinate a local task force that would work to foster communication and education * Community support for an initiative to manage HR- community members need to be a part of the conversation. Hosting “weed-up” meetings at a local venue may encourage participation. |

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References:

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1. Language taken directly from listening session participants; the definition of this and other broad terms is fluid and based on participant meaning/experience [↑](#footnote-ref-1)