

Integrated Weed Control for Cereal Grain Cropping System

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Needs and Desired Impacts

Weeds and herbicide resistant weeds are the single greatest barrier farmers in the dryland cereal grain cropping region of the Inland Pacific Northwest face in today’s agriculture and is a large threat to conservation tillage moving forward. Research and outreach have focused using a show-and-tell approach to weed control where research is being conducted and summarized and is being implemented and showcased at the WSU Wilke Research and Extension Farm. Outreach is mostly grower meetings across the region and field day demonstrations. Impacts are focused on grower implementing a more diverse cropping system and herbicide rotation with the incorporation of soil applied herbicides.

Introduction

Herbicide resistant weeds are one of the greatest challenges farmers face in today’s agriculture and is a large threat to conservation tillage moving forward. Downy brome (*Bromus tectorum*) is quickly becoming resistant to Group 2 and Group 9 herbicides.



Outreach Materials

Outreach is focused on University research, large scale multi-year on-farm trials, and a show-and-tell demonstrations at the WSU Wilke Research and Extension Farm near Davenport, WA.

Photos from a large-on-farm trial south of Ritzville, WA showing a no-till fallow plot that did not have residual herbicides applied (Left) and a no-till fallow plot with the application of a Group 14 residual herbicide applied (Right).



Outreach Methods

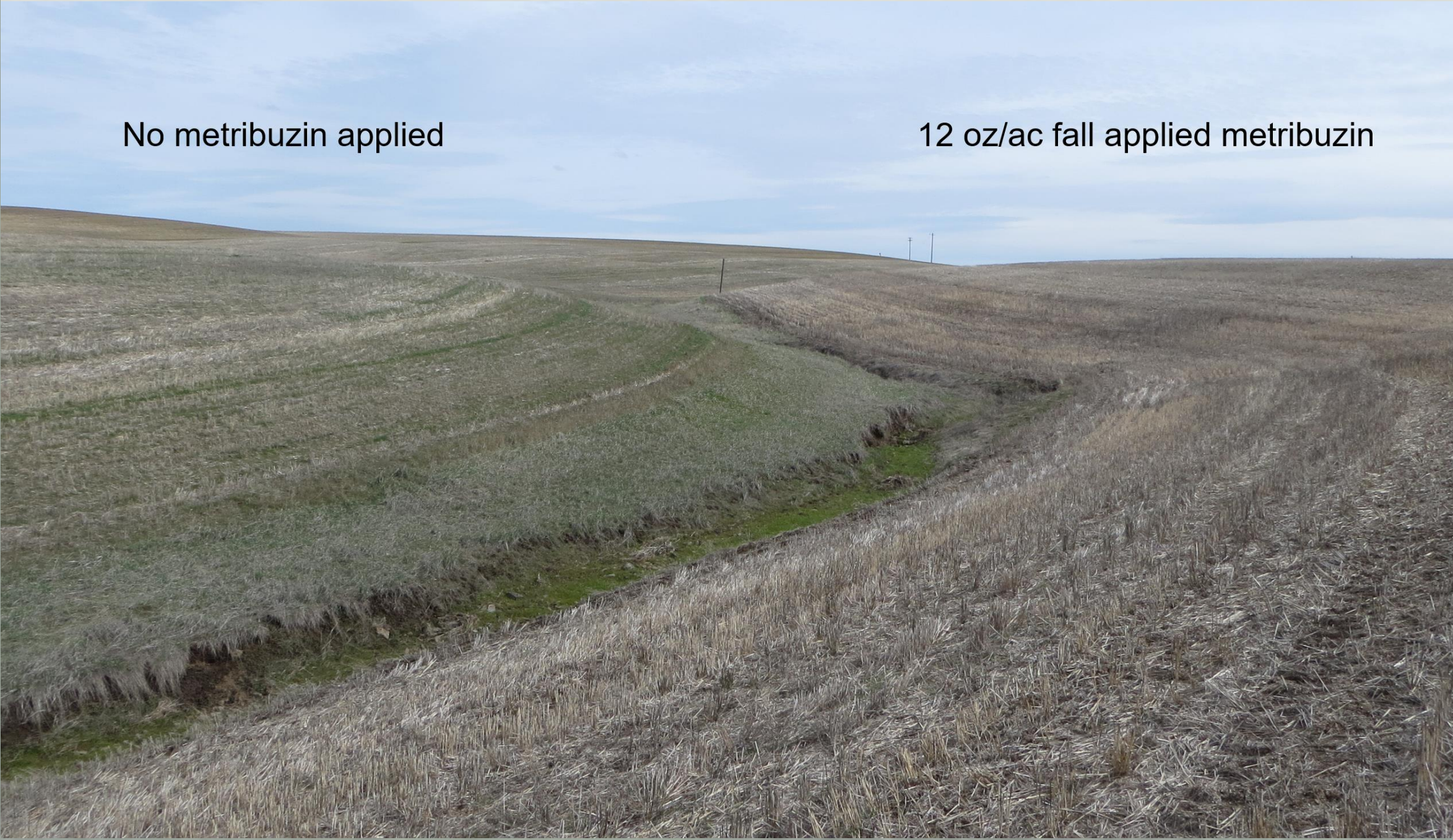
Outreach methods consist of a combination of field days and local, statewide, and regional grower meeting event presentations focused on many aspects of integrated weed control for cereal grain cropping systems. Presentations are different as new information is made available and often have some kind of hands-on involvement. Dice and showing a numbers game regarding seed production and herbicide resistance has been key.



Table 1. It’s often easy for University Faculty to talk to growers about rotating herbicides but this showcases an example of herbicide rotation across a 10-year span at WSU Wilke Research and Extension Farm.

Year	Field 2	Field 5	Field 7
2025		(14)/	
2024	[(1)/(6 27)] [(1)] (22)	(2)(9) (4 2,4) (22)	(5)/(9)(9)(9,14)(9,14)(22)
2023	(14)/(9)(9)(9)(22)	[(2, 6 27)] [(1)/(1)] (22)	(9) (4 6) (22)
2022	(9) (6 4, 1) (22)	(14)(9)(9)(9)(9)(22)	(2, 6 27)
2021	(2)/(2)(Beyond) (9)	(9) (6 4) (9)	(14)/ (9) (9) (9)
2020	(9,14)/ (9) (9) (9)	[(2, 2 2)] (9)] [(1) (9)]	(9)/ (9) (6 27, 4)
2019	(9) (6 27)	(9) (9 4) (9) (9)	(2 2 , 4)
2018	(2, 4)	(9) (6 27, 4)	(9) (9)
2017	(9,14) (9) (9) (22)	(27 6) SE (2)	(9) (2 4, 4 6)
2016	(9) (9) (2 2, 4)	(9) (9) (9) (22)	(4 6)
2015	(2, 6 27, 4 6)	(9) (4)	(9, 14) (9, 14) (9)

Photo from no-till fallow in in the spring of 2024 showing where residual herbicides were not applied (Left) and where Group 5 residual herbicide were applied (Right).



Outreach Numbers and Impacts

Over the course of the last 2-years, I have participated in 37 educational events with an estimated 2,340 participants talking about integrated weed control for cereal grain cropping systems.

Weed Control Outreach		
Year	Events	Participants
2023	12	880
2024	19	1,100
2025	6	360
Total	37	2,340

Impacts

- Growers across the region are exploring the use of residual herbicides in no-till fallow management across their farms.
- Growers are increasing the use of Group 14-15 residual herbicides for downy brome control in cereal systems .
- Area ag retailers reported an increase in sales of residual herbicides including Group 5, Group 14 and Group 14-15.

Conclusion

We are not playing with house money!

