

# Outrider Crop Safety and Efficacy in Kentucky Bluegrass

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## Introduction

In fall of 2022, an herbicide trial was established to evaluate Kentucky bluegrass tolerance to Outrider (sulfosulfuron). Annual grass weeds are difficult to manage in grass seed fields, and infestations can reduce stand longevity and productivity. Of particular concern is ventenata, a winter annual weed closely related to wild oat that has now been classified as a noxious weed in certain western states. Ventenata completes its lifecycle well ahead of Kentucky bluegrass and other grass seed crops. Outrider is known to have activity on ventenata and other winter annual grass weeds, but crop safety in Kentucky bluegrass in eastern Washington is still unknown. Therefore, the objective of the trial was to evaluate Kentucky bluegrass response to increasing rates of Outrider applied alone and in mixture with another common herbicide and a fungicide.

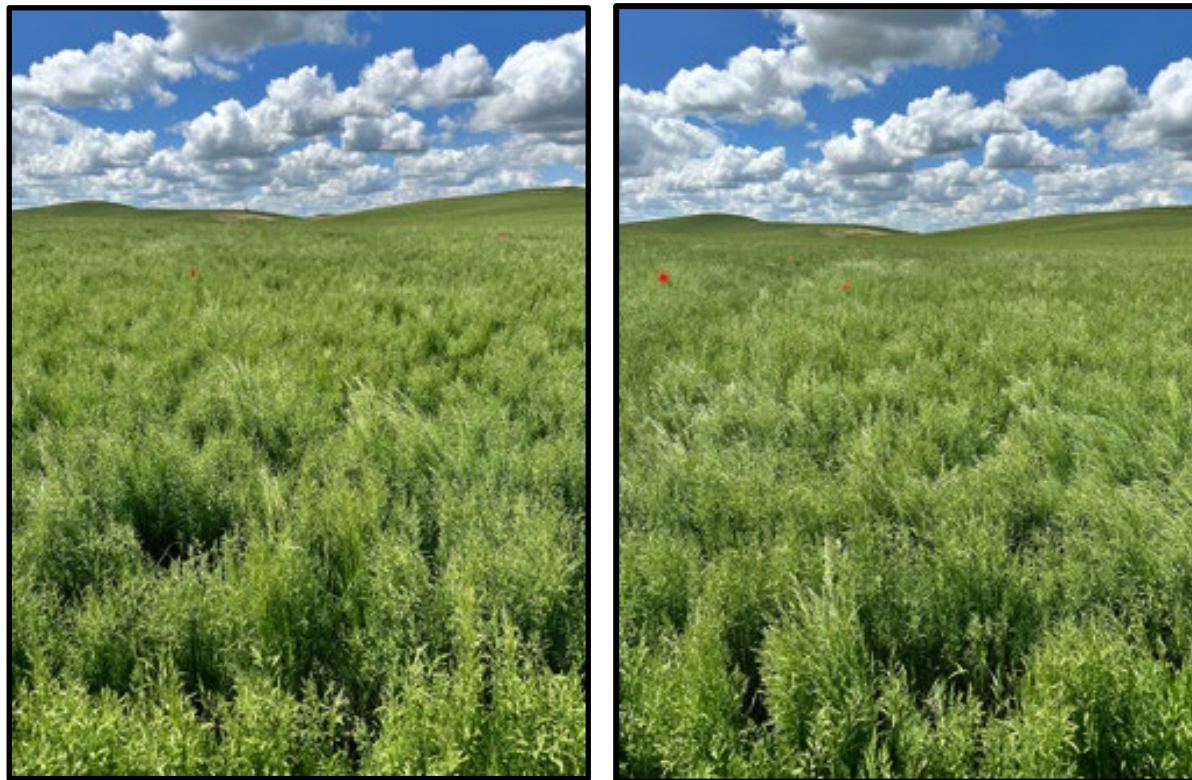
## Methods

The study was established in a newly seeded Kentucky bluegrass field near Rockford, WA. Treatments were applied when the Kentucky bluegrass was 3 to 5 tiller and actively growing in the fall of 2022. Treatments were applied with a CO<sub>2</sub> powered backpack sprayer and a 5 ft boom with 3 Teejet 11002VS nozzles with an effective spray pattern of 8 ft and calibrated to deliver 15 gallons per acre (GPA). The study was conducted in a randomized complete block design with 4 replications. Plots were 10 ft by 25 ft long. Treatments were assessed for crop response and weed control in the spring, 6 months after treatment. Two ½ m<sup>2</sup> subsamples were harvested from each plot. Samples were dried, threshed, and cleaned to provide yield data for each treatment. Data were subject to ANOVA using the Agricultural Research Manager software (Ver. 8.5).

**Table 1.** Treatment application details.

Study Application	
Date	10/12/2022
Application volume (GPA)	15
Timing	Postemergence
Crop Stage	3 to 5 Tiller
Air temperature (°F)	62
Soil temperature (°F)	54
Wind velocity (mph, direction)	7, NE
Cloud Cover (%)	90

*Figure 1. Nontreated plot (left) and Outrider + Callisto + Trivapro plot (right).*



## **Results**

There was no observable crop injury as a result of any treatments applied to newly seeded Kentucky bluegrass. Grass weed control was variable but ultimately only different between treatments on 6/5/2023 (Figure 1, Table 2). Outrider applied at the highest rate of 0.76 oz/A had the highest control at 90%. The treatment that included both the Trivapro fungicide and Callisto herbicide mixed with the Outrider consistently had lower weed control, suggesting that there is antagonism with that particular tank mix. Yield was not different between herbicide treatments (Table 2). Results from this study indicate that Outrider is safe to use on Kentucky bluegrass while still controlling grass weeds, making it a potentially useful tool for bluegrass grown for seed.

**Table 2.** Weed control and Kentucky bluegrass yield in response to increasing doses of Outrider or Outrider applied with Callisto or Trivapro fungicide in a field trial near Rockford, WA in 2023. Means with the same letter are not statistically different ( $\alpha=0.5$ ).

Treatment	Timing	Rate		Italian ryegrass control (%) <sup>2</sup>		Yield (lbs/A) <sup>2</sup>
				5/23/2023	6/5/2023	
Outrider <sup>1</sup>	Fall	0.25	oz/A	97	82 ab	1024
Outrider <sup>1</sup>	Fall	0.38	oz/A	97	90 ab	1113
Outrider <sup>1</sup>	Fall	0.76	oz/A	97	95 a	1117
Outrider	Fall	0.38	oz/A	95	90 ab	1039
Callisto	Fall	3	oz/A			
Outrider	Fall	0.38	oz/A	95	87 ab	1244
Trivapro	Fall	13.7	oz/A			
Outrider	Fall	0.38	oz/A	87	70 b	1022
Callisto	Fall	3	oz/A			
Trivapro	Fall	13.7	oz/A			

<sup>1</sup>Treatments also had NIS (0.5% v/v) and AMS (3lb/100 gal) added to the tank mix.

<sup>2</sup>Weed control on 5/23/2023 and yield were not different among treatments ( $\alpha=0.5$ ).

### Off-label or Experimental-Use Disclaimer

Some of the pesticides discussed in this presentation were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance.