

## **Anthem Flex and Outrider for Crop Safety and Grass Control in Kentucky Bluegrass**

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In the fall of 2021, an herbicide trial was conducted to evaluate Kentucky bluegrass tolerance to Anthem Flex (pyroxasulfone + carfentrazone-ethyl) and Outrider (sulfosulfuron). Annual grass weeds are difficult to manage in grass seed fields due to similarities in physiology and lifecycles, and infestations can reduce stand longevity and productivity.

The study was conducted in an established Kentucky bluegrass field near Colton, WA. Treatment A was applied in the fall before the Kentucky bluegrass emerged and treatment B was applied when the Kentucky bluegrass was 3 to 5 tillers and actively growing. 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 5 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 6 ft by 60 ft long. Treatments were assessed for crop response at 1, 3, and 6 weeks after treatment. Data were subject to ANOVA using the Agricultural Research Manager software (Ver. 8.5).

**Table 1.** Treatment application details

Study Application		
Treatment	A	B
Date	September 15, 2021	May 17, 2022
Application volume (GPA)	15	15
Timing	Preemergence	Postemergence
Crop Stage	-	3 to 5 tillers
Air temperature (°F)	61	54
Wind velocity (mph, direction)	11, W	3, E

### **Results**

No observed crop response occurred throughout the trial to any treatments. Anthem Flex and Anthem Flex combined with Outrider do not appear to have deleterious effects on Kentucky bluegrass. Anthem Flex controls Italian ryegrass and rattail fescue, and Outrider controls ventenata. When used as a system, the two herbicide products controls annual grass weeds. Outrider can carry over to rotational crops depending on soil pH. Both Anthem Flex and Outrider are potential new tools for annual grass and broadleaf weed control in Kentucky bluegrass.

**Table 2.** Kentucky Bluegrass injury in response to increasing doses of Anthem Flex, or Anthem Flex applied with Prowl H2O or Outrider in a field trial near Uniontown, WA in 2022.

Treatment	Timing			Injury (%)	Injury (%)	Injury (%)
		Rate		6/1/2022	6/15/2022	6/29/2022
Anthem Flex	Fall	2.75	oz/A	0	0	0
Anthem Flex	Fall	3	oz/A	0	0	0
Anthem Flex	Fall	2.75	oz/A	0	0	0
Anthem Flex	Spring	1	oz/A			
Anthem Flex	Fall	6	oz/A	0	0	0
Anthem Flex	Fall	2.75	oz/A	0	0	0
Prowl H2O	Spring	64	oz/A			
Prowl H2O	Fall	64	oz/A	0	0	0
Anthem Flex	Fall	2.75	oz/A	0	0	0
Anthem Flex	Spring	2.75	oz/A			
Outrider	Fall	0.38	oz/A	0	0	0
Anthem Flex	Fall	2.75	oz/A	0	0	0
Outrider	Fall	0.38	oz/A			

\*Injury was not different among treatments within each day of assessment ( $\alpha=0.5$ ).

## 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.