

Evaluation of Osprey® Xtra for the postemergence control of rattail fescue in direct-seeded hard red winter wheat

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A field study was conducted at Wolf Farms near Uniontown, WA to evaluate Osprey Xtra for its postemergence rattail fescue control in direct-seeded hard red winter wheat. Osprey Xtra (thiencarbazone + mesosulfuron) active ingredients are both in the Mechanism of Action Group 2, which are compounds that inhibit acetolactate synthase (ALS), a key enzyme in the biosynthesis of the branched-chain amino acids isoleucine, leucine and valine. Osprey Xtra also contains mefenpyr-diethyl, which is used as a safener in combination with the active ingredients for selective weed control in wheat. Osprey Xtra was compared to the current formulation of Osprey, which only contains (mesosulfuron + mefenpyr-diethyl). Osprey Xtra is not yet registered for use in wheat. The addition of one or two broadleaf emulsifiable concentrate (EC) herbicide formulations have been shown to increase the activity of Osprey Xtra on rattail fescue, and is why those treatments were included in this study.

The soil at this site is an Athena silt loam with 3.4% organic matter and a pH of 4.7. The field was previously in field peas. On October 24, 2016, 'Rimrock/Keldin' hard red winter wheat blend was seeded at 1×10^6 seeds per acre with a Cross Slot® drill on a 10-inch row spacing. The ground was fertilized at the same time with 60 lb N: 30 lb P: 20 lb S per acre. The ground was fertilized with an additional 50 lb N per acre in the spring. From September 1 to the planting date, a weather station in Colton (approx. 6 miles north of the test site) recorded 25 days of rainfall totaling 3.33 inches, with the majority falling in October. Most likely, the majority of rattail fescue germinated in the fall. Postemergence treatments were applied on April 21, 2017 with a CO₂-powered backpack sprayer set to deliver 10 gpa at 43 psi at 2.3 mph. The applications were made under winds out of the northeast at 3 mph with an air temperature of 58°F and relative humidity of 44%. At the time of application, the majority of rattail fescue had two detectable tillers and was 0.75 inch tall and the wheat had three detectable tillers with a height ranging from 6 to 8 inches. Rattail fescue was uniformly distributed across the trial area.

Osprey Xtra provided better control of rattail fescue than the current Osprey formulation. Rattail fescue control was not improved by tank mixing one or two EC concentrate herbicide formulations with Osprey Xtra. Osprey + Huskie + Brox-M provided comparable control to Osprey Xtra. Test weight was not influenced by any treatments and the mean was 59.2 lb/bu. Yield was negatively impacted by the presence of rattail fescue. Osprey Xtra-, Osprey Xtra + Huskie-, Osprey + Huskie + Brox-M- and Osprey Xtra + Huskie + WideMatch-treated plots exhibited an increase in yield compared to the nontreated check.

Treatment	Rate	Rattail fescue control			Yield
		5/19 28 DAT	6/2 42 DAT	6/13 53 DAT	
	fl oz/A	-----0-100%-----			bu/A
Nontreated Check		--	--	--	71 c
Osprey ¹	4.75 oz	55 bc ³	50 de	44 cd	76 bc
Osprey Xtra ¹	4.75 oz	72 a	69 a-c	72 ab	87 a
Osprey + Huskie ²	4.75 oz + 13.5	57 bc	57 cd	57 bc	80 a-c
Osprey Xtra + Huskie ²	4.75 oz + 13.5	75 a	71 ab	75 ab	85 ab
Osprey + Huskie + Brox-M ²	4.75 oz + 13.5 + 16	67 ab	60 b-d	62 ab	84 ab
Osprey Xtra + Huskie + Brox-M ²	4.75 oz + 13.5 + 16	76 a	75 a	80 a	80 a-c
Osprey + Huskie + WideMatch ²	4.75 oz + 13.5 + 16	52 c	40 e	37 d	78 a-c
Osprey Xtra + Huskie + WideMatch ²	4.75 oz + 13.5 + 16	67 ab	67 a-c	70 ab	83 ab

¹ Treatments were tank mixed with 2.0 qt UAN/A + 0.5% v/v NIS

² Treatments were tank mixed with 2.0 qt UAN/A + 0.25% v/v NIS

³ Means, based on four replicates, within a column, followed by the same letter are not significantly different at P = 0.05 as determined by Fisher's protected LSD test, which means that we are not confident that the difference is the result of treatment rather than experimental error or random variation associated with the experiment.

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.