

Evaluation of Osprey® Xtra for the control of jointed goatgrass in winter wheat

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A field study was conducted at Wolf Farms near Johnson, WA to evaluate Osprey Xtra for its postemergence jointed goatgrass control in direct-seeded 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 grassy weeds, and is why those treatments were included in this study.



The soil at this site is a Latah silt loam with 4.9% organic matter and a pH of 5.3. The field was previously in chickpeas. On October 4, 2017, ‘Trooper (a blend of WB1529, SY Ovation and SY107)’ soft white winter wheat blend was seeded at 1×10^6 seeds per acre with a Cross Slot® drill on a 10-inch row spacing at a depth of 1.5 inches. 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 35 lb N per acre in the spring. Postemergence treatments were applied on April 19, 2018 with a CO₂-powered backpack sprayer set to deliver 10 gpa at 44 psi at 2.3 mph. The applications were made with winds out of the west at 6 mph, air temperature of 57°F and relative humidity of 44%. At the time of application, wheat was at the 2-tiller stage and was 6 inches tall. Jointed goatgrass had 4 tillers and was 2.75 inches tall. The trial was not taken to harvest due to the high density of jointed goatgrass.

Fourteen days after treatment (DAT), all treatments showed a low level of jointed goatgrass control. At 27 DAT, treatments that contained Osprey Xtra or Osprey exhibited a higher level of jointed goatgrass control. At this time, jointed goatgrass plants treated with Osprey Xtra or Osprey were stunted, twisted and darker green than plants in the nontreated check plots. PowerFlex® HL did not control of jointed goatgrass. Osprey Xtra and Osprey provided a similar level of jointed goatgrass control. The addition of one or two emulsifiable concentrate broadleaf herbicides to Osprey Xtra or Osprey did not significantly improve control of jointed goatgrass. At 40 DAT, plants that were treated with Osprey Xtra or Osprey and in combination with various broadleaf herbicides, were beginning to recover from the application.

Treatment	rate fl oz/A	Jointed goatgrass control		
		5/3 14 DAT	5/16 27 DAT	5/29 40 DAT
Nontreated Check	--	--	--	--
Osprey Xtra ¹	4.75 oz	50 a ³	68 a	55 ab
Osprey Xtra + Huskie ^{®2}	4.75 oz + 13.5	44 ab	70 a	60 ab
Osprey Xtra + Huskie + Starane [®] Flex ²	4.75 oz + 13.5 + 13.5	43 ab	70 a	60 ab
Osprey Xtra + Huskie + Brox [®] -M ²	4.75 oz + 13.5 + 16	40 b	64 a	65 a
Osprey Xtra + Huskie + Quelex ^{®2}	4.75 oz + 13.5 + 0.75 oz	45 ab	66 a	58 ab
Osprey Xtra + Talinor [™] + CoAct ⁺²	4.75 oz + 16 + 3.2	43 ab	63 a	53 b
Osprey + Huskie + Brox-M ²	4.75 oz + 13.5 + 16	48 ab	69 a	60 ab
PowerFlex HL + Huskie + Brox-M ²	2.0 oz + 13.5 + 16	21 c	0 b	0 c
PowerFlex HL ¹	2.0 oz	29 c	3 b	0 c
Osprey ¹	4.75 oz	48 ab	69 a	55 ab

¹ Treatments were tank mixed with 0.50% v/v NIS + 4.0 pt/A UAN

² Treatments were tank mixed with 0.25% v/v NIS + 4.0 pt/A UAN

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.