

Evaluating Osprey® Xtra for downy brome and tumble mustard control in winter wheat

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A field study was conducted at the Wilke Farm near Davenport, WA to evaluate spring applications of Osprey Xtra for the control of downy brome and tumble mustard in winter wheat. Osprey Xtra contains mesosulfuron, the active ingredient in Osprey, plus thien carbazole. This herbicide is not yet registered for use in wheat. Both of these active ingredients are in 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. Delayed preemergence applications of Anthem® Flex (carfentrazone + pyroxasulfone), Axiom® DF (metribuzin + flufenacet) and Zidua® (pyroxasulfone) were applied alone and in combination with spring postemergence applications of Osprey Xtra (thien carbazole + mesosulfuron) and PowerFlex® HL (pyroxasulfam) in winter wheat.

The soil for this site is a Broadax silt loam with 2.9% organic matter and a pH of 5.4. On September 20, 2016, 'Jasper' winter wheat was planted into chemical fallowed ground using a no-till drill with a 7.5-inch row spacing. Seeding rate was 65 lb/acre and seed was planted at a depth of 1.5-inch. Starter fertilizer was applied below the seed at planting at a rate of 100, 8 and 10 lb/acre of N:P:S. Delayed preemergence treatments were applied on September 25th using a CO₂ backpack sprayer set to deliver 10 gpa at 30 psi. Conditions were an air temperature of 60°F, relative humidity of 45% and the wind out of the southwest at 7 mph. Spring treatments were applied on May 3rd using a CO₂ backpack sprayer set to deliver 10 gpa at 30 psi. Downy brome was 4 inches tall and tumble mustard rosettes had an average diameter of 4 inches at the time of application. Conditions were an air temperature of 58°F, relative humidity of 50% and the wind out of the southwest at 7 mph. The plots were harvested on August 9 using a Kincaid 8XP plot combine.

No significant crop injury was observed in this study (data not shown). Fall applied Anthem Flex, Axiom or Zidua provided excellent control of downy brome. Spring applied sequential applications of Osprey Xtra or PowerFlex HL following fall treatments did not improve downy brome control, suggesting that the majority of the downy brome emerged in the fall. Spring applications of Osprey Xtra or PowerFlex HL alone provided fair control of downy brome and was similar to the fall application of Maverick. Spring applied sequential applications of Osprey Xtra or PowerFlex HL to the fall applications of Anthem Flex, Axiom and Zidua significantly improved tumble mustard control when compared to the fall application of Anthem Flex, Axiom or Zidua alone. Spring applied Osprey Xtra or PowerFlex HL alone provided fair to good control of tumble mustard. Overall yield and test weight means were 98 bu/A and 53.3 lb/bu, respectively. Reduced yield in the Axiom- and Maverick-treated plots may have been due to the lack of tumble mustard control. Reduced yield in the nontreated check plots was likely due to the lack of control of either of the weed species. Even though delayed preemergence applications of

Anthem Flex, Axiom DF and Zidua provided season long control of downy brome in this study, a planned spring application of a Group 2 herbicide is advisable for years when soil-applied herbicides may not work as well as in this study and as a wise herbicide resistance management strategy. The spring postemergence treatments were also needed for acceptable tumble mustard control.

Treatment	Rate (fl oz/A)	Application date(s)	6/6/17		8/9/17 Yield (bu/A)
			Downy brome control	Tumble mustard control	
Nontreated Check	--		--	--	82 de
Axiom DF	10 oz	9/25/16	93 a ²	3 g	69 e
Zidua	1.5 oz	9/25/16	86 ab	40 e	104 ab
Anthem Flex	3.5	9/25/16	92 a	60 d	95 b-d
Axiom DF fb Osprey Xtra ¹	10 oz fb 4.75 oz	9/25/16 fb 5/3/17	85 ab	88 ab	100 a-c
Zidua fb Osprey Xtra ¹	1.5 oz fb 4.75 oz	9/25/16 fb 5/3/17	90 a	89 ab	111 a
Anthem Flex fb Osprey Xtra ¹	3.5 fb 4.75 oz	9/25/16 fb 5/3/17	94 a	95 a	106 ab
Osprey Xtra ¹	4.75 oz	5/3/17	72 c	80 bc	101 ab
Axiom DF fb PowerFlex HL ¹	10 oz fb 2.0 oz	9/25/16 fb 5/3/17	91 a	83 b	106 ab
Zidua fb PowerFlex HL ¹	1.5 oz fb 2.0 oz	9/25/16 fb 5/3/17	94 a	89 ab	103 ab
Anthem Flex fb PowerFlex HL ¹	3.5 fb 2.0 oz	9/25/16 fb 5/3/17	95 a	89 ab	111 a
PowerFlex HL ¹	2.0 oz	5/3/17	75 bc	73 c	107 ab
Maverick	0.67 oz	9/25/16	78 bc	10 f	85 cd

¹ Spring applied treatments containing Osprey Xtra or PowerFlex HL were tank mixed with 0.5% NIS and 2.0 qt UAN/a

² 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.