Rattail Fescue Control with Zidua® and Everest® 2.0 Herbicides

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A field study to evaluate the control of rattail fescue with Axiom (flufenacet + metribuzin) and Everest 2.0 (flucarbazone) herbicides was established at the Palouse Conservation Field Station near Pullman, WA. The soil is a silt loam with 3.4% organic matter and a pH of 4.7. The experimental design was a randomized complete block with four replications. Treatments containing Zidua (pyroxasulfone) herbicide were applied prior to planting (PP) on October 22, 2013 using a CO_2 backpack sprayer set to deliver 10 gpa at 35 psi and 3 mph. The following day, 'AP 700CL' winter wheat was direct seeded into spring wheat stubble at a rate of 117 lbs per acre using a Horsch drill with 12-inch row spacing. The fall postemergence (fallPOST) treatments were applied on November 16, 2012 using the same CO_2 backpack sprayer and settings. Wheat plants were about 2" tall and rattail fescue was about 0.5" tall at the time of this application. Spring postemergence (spPOST) treatments were applied with the same backpack sprayer and settings on April 16, 2013 when wheat had 2 tillers and rattail fescue was about 1" tall.

Winter wheat stands were highly variable, so this study was not harvested for grain yield. Rattail fescue densities were variable, ranging from light to very heavy. This resulted in some large LSD values, which made small treatment differences difficult to identify. However, even given the large LSD values, certain things were evident. Zidua applied alone at 1.68 oz/a provided good control of rattail fescue. Everest 2.0 applied in the fall provided poor control of rattail fescue, but when applied in the spring, with or without Zidua at 0.84 oz/a, good control of rattail fescue was obtained. PowerFlex (pyroxsulam) provided only poor-fair control of rattail fescue when applied in the fall and poor control when applied in the spring. Following a preplant application of Zidua with a spring application of Everest 2.0 may improve rattail fescue control and be a smart herbicide resistance strategy by combining two mechanisms of action with activity on rattail fescue. Pyroxasulfone, the active ingredient in Zidua, is a Group 14 herbicide and flucarbazone, the active ingredient in Everest 2.0, is a Group 2 herbicide.

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			17-Apr-13	31-May-13
Treatment	Rate	Timing	Rattail fescue control	
	oz/a		----------%----------	
Zidua	1.68	PP	80	83
Everest 2.0	0.98	fallPOST	53	15
NIS	0.5% v/v	fallPOST		
AMS	16	fallPOST		
Everest 2.0	0.98	fallPOST	58	15
ARY-0547-001	0.167	fallPOST		
NIS	0.5% v/v	fallPOST		
AMS	16	fallPOST		
PowerFlex	3.5	fallPOST	75	60
NIS	0.5% v/v	fallPOST		
AMS	16	fallPOST		
Zidua	0.84	PP	65	75
Everest 2.0	0.75	spPOST		
NIS	0.5% v/v	spPOST		
AMS	16	spPOST		
Zidua	0.84	PP	44	85
Everest 2.0	0.98	spPOST		
NIS	0.5% v/v	spPOST		
AMS	16	spPOST		
Everest 2.0	0.98	spPOST	25	80
NIS	0.5% v/v	spPOST		
AMS	16	spPOST		
Everest 2.0	0.98	spPOST	25	80
ARY-0547-001	0.167	spPOST		
NIS	0.5% v/v	spPOST		
AMS	16	spPOST		
PowerFlex	3.5	spPOST	13	30
NIS	0.5% v/v	spPOST		
AMS	16	spPOST		
Nontreated check			0	0
LSD (5%)*			35	43

*Treatment differences less than the LSD value are not considered significant because we do not feel confident that the difference is due to the treatment rather than to experimental error or random variation associated with the experiment.