

Downy Brome Control with Axiom® and/or Olympus™ Herbicides

A field study was established at the WSU Wilke Research Farm near Davenport, WA to evaluate the efficacy of Axiom (flufenacet + metribuzin) and Olympus (propoxycarbazone) for downy brome control in winter wheat. The soil was a Mondovi silt loam. The experimental design was a randomized complete block with four replications. 'Xerpha' winter wheat was planted on September 27, 2012 at a seeding rate of 80 pounds/acre. A Great Plains no-till drill, with a row spacing of 7.5 inches, was used to seed into chemical fallow. N-P-S fertilizer was applied after planting at the rate of 80,



10, and 10 pounds/acre, respectively, using a spoke wheel injector. Fall preemergence (PRE) treatments were applied on October 2, 2012 using a CO₂ backpack sprayer set to apply 10 gpa at 35 psi and 3 mph. Fall postemergence (fallPOST) herbicides were applied on November 22, 2012 with the same CO₂ backpack sprayer calibrated as before. Downy brome plants were approximately one inch tall and winter wheat plants were only an inch taller. Spring (spPOST) treatments were applied on April 3, 2013 using the same CO₂ backpack sprayer calibrated as before.

This site was previously a weedy fallow field that was allowed to go to seed. This resulted in heavy downy brome pressure, but low soil moisture, particularly in areas where weed densities were heavy prior to wheat seeding. The dry and uneven soil conditions resulted in a shallow seeding depth (approximately 1"), some uneven germination, and uneven drought stress in both the winter wheat and downy brome in the spring. Consequently, it was decided not to harvest these plots for grain yield.

The uneven drought stress in the wheat and downy brome likely contributed to the large LSD values for the visual weed control data, particularly at the June 3 rating date, when downy brome was headed. Despite this variability, when considering both rating dates, three treatments stood out as providing the best downy brome control. These treatments were Zidua (pyroxasulfone) applied alone PRE and the two Axiom PRE treatments that included Olympus either as split fall and spring applications or a single spring application. No treatment in this study provided good to excellent control of downy brome, which may be explained by both the dry conditions at this site as well as the cold fall and spring temperatures when POST applications were made. The results of this study do not agree well with previous research and should be used with caution and with an understanding of the field conditions under which this study was conducted.

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Treatment	Rate oz/a	Timing	30-Apr-13		3-Jun-13	
			Crop injury	Downy brome control	Crop injury	Downy brome control
			----- % -----			
Axiom	10	PRE	0	58	3	28
Zidua	1.68	PRE	1	80	5	73
Axiom	8	PRE	3	80	4	76
Olympus	0.6					
NIS	0.5% v/v	PRE				
Olympus	0.6	spPOST				
NIS	0.5% v/v	spPOST				
Huskie	13.5	spPOST				
Axiom	10	PRE	8	84	3	71
Olympus	0.9	spPOST				
NIS	0.5% v/v	spPOST				
Huskie	13.5	spPOST				
Olympus	0.9	fallPOST	0	39	6	58
NIS	0.5% v/v	fallPOST				
Olympus	0.9	spPOST	0	39	1	18
NIS	0.5% v/v	spPOST				
Huskie	13.5	spPOST				
Nontreated check			0	0	0	0
LSD (5%)*			5	15	9	29

*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.

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.