

## Evaluation of Aggressor™ herbicide for the control of downy brome in the CoAXium™ wheat production system

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The CoAXium™ wheat production system was recently developed by the Colorado Wheat Research Foundation, Inc., Limagrain Cereal Seeds, LLC and Albaugh, LLC. AXigen™ is the non-GMO trait in wheat that confers tolerance to the ACCase inhibitor (Group 1) herbicide Aggressor™ (quizalofop-P-ethyl). The AXigen trait will be made available to both private



and public breeders and was one of the reasons we were interested in evaluating the system. Aggressor is labelled to control annual grassy weeds, such as downy brome, jointed goatgrass and feral rye that are problematic in the low to intermediate rainfall zones of eastern WA.

LCS Fusion AX winter wheat was direct seeded at the Cochran Farm near Walla Walla, WA. The soil at this site is a Ritzville silt loam. Postemergence treatments were applied on April 4<sup>th</sup> with a CO<sub>2</sub>-powered backpack sprayer set to deliver 15 gpa at 47 psi at 1.5 mph. The air temperature was 59°F, relative humidity was 36% and the wind was out of the southwest at 2 mph. The wheat growth stage was from 3 to 8 tiller and beginning to grow upright. Downy brome pressure was very high, with an average of 430 plants per square meter, and most of the plants were tillered.

The level of downy brome control between the three rates of Aggressor evaluated was not significantly different. Downy brome control with Aggressor was not influenced by the addition of NIS, MVO or UAN. On the April 30<sup>th</sup> rating date, 26 days after application, all Aggressor treatments were providing greater than 95% control of downy brome. On the same rating date, Osprey and PowerFlex HL were providing approximately 50% control. On the final rating date, June 6<sup>th</sup>, all Aggressor treatments were providing outstanding control of downy brome, whereas Osprey and PowerFlex HL essentially were providing no control. Downy brome resistance to Group 2 herbicides like Osprey, PowerFlex HL, Beyond, and Outrider is common in the Walla Walla area. This trial demonstrated the effectiveness of the CoAXium Wheat Production System for the control of downy brome. However, overuse of this new technology is likely to quickly result in selection of downy brome biotypes resistant to the active ingredient, quizalofop-P.

		4/19	4/30	6/6
Treatment	Rate	Downy brome control		
	fl oz/A	-----0 to 100%-----		
Aggressor + NIS	8 + 0.25% v/v	73 a <sup>1</sup>	96 ab	98 a
Aggressor + NIS	10 + 0.25% v/v	73 a	100 a	100 a
Aggressor + NIS	12 + 0.25% v/v	73 a	99 ab	100 a
Aggressor + MVO	8 + 1.0 v/v	73 a	98 ab	99 a
Aggressor + NIS + MVO	8 + 0.5% v/v + 0.5% v/v	68 a	95 b	99 a
Aggressor + NIS + MVO	10 + 0.5% v/v + 0.5% v/v	75 a	100 a	100 a
Aggressor + NIS + UAN	10 + 0.25% v/v + 3 gal/A	75 a	100 a	100 a
Osprey + NIS + UAN	4.75 oz + 0.5% v/v + 0.5 gal/A	58 b	53 c	20 b
PowerFlex HL + NIS + UAN	2.0 oz + 0.5% v/v + 0.5 gal/A	58 b	48 c	18 b
Nontreated Check	--	--	--	--

<sup>1</sup> 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.