

Downy Brome Control with PowerFlex® in Winter Wheat

A field study was initiated at the High Plains Agricultural Laboratory near Sidney, NE to evaluate the efficacy of PowerFlex herbicide for downy brome control in winter wheat. The experimental design was a randomized complete block with four replications. Winter wheat 'Pronghorn' was no-till seeded into oat/pea stubble on September 15, 2009 at a rate of 55 pounds/acre. Treatments were applied with an ATV-mounted sprayer set to deliver 12 gallons/acre at 3 miles/hour and 15 psi. Fall treatments were applied on October 18, 2009 when downy brome plants had 1 to 3 leaves present and were 1 to 3 inches in height. Downy brome plant density was moderate to high, with very high densities in strips running perpendicular to the plot lengths that corresponded to the combine windrows. Winter wheat plants had from 2 to 3 leaves, with the first tiller emerging and an extended leaf height of 2 to 3 inches. Spring treatments were applied on March 30, 2010. Downy brome plants were starting to green up along with the winter wheat and both species were starting to show drought symptoms as the result of a very dry winter. Both winter wheat and downy brome were at a similar stage of growth as when the fall treatments were applied. The study was located on an Alliance loam soil with an organic matter content of 2.3% and a pH of 6.7.



Downy brome pressure in the nontreated check.

No crop injury was observed in this study. PowerFlex provided downy brome control similar to that provided by Maverick®, which is the standard downy brome control product for winter wheat in the region. Downy brome control was best with Fall applications. Spring applications resulted in commercially unacceptable control of downy brome. Winter wheat grain yields were increased approximately four-fold with Fall herbicide applications compared to the nontreated check. Grain yield was slightly greater for the Fall-applied Maverick treatment than the Fall-applied PowerFlex treatment. Grain yields with Spring treatments were less than two-fold compared to the nontreated check.

These results largely agree with a slightly larger study conducted in 2008-2009. Although in the previous study, no winter wheat yield differences were observed between herbicides treatments applied at the same time. PowerFlex appears to provide similar control of downy brome in winter wheat to that achieved with Maverick herbicide. The main advantage of PowerFlex over Maverick is the reduced length of most recrop intervals with PowerFlex compared to Maverick, with the exception of millet, where Maverick has a 3-month rotation restriction and PowerFlex has a 9-month rotation restriction.

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Treatment ^a	Rate	Timing	Downy brome control		Yield
			April 14	May 27	
	oz prod/A		————— % —————		bu/A
PowerFlex AMS	3.5 24	Fall	80	74	37.6
Maverick	0.67	Fall	75	76	44.3
PowerFlex AMS	3.5 24	Spring	33	33	18.3
Maverick	0.67	Spring	30	25	16.9
Nontreated check			0	0	10.3
LSD (5%)			10	10	5.7

^aAll treatments included NIS at 0.5% v/v.