

Downy Brome Control in Perennial Grass During the 2008 Growing Season at Melbeta, Nebraska.

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A field study was initiated near Melbeta, Nebraska during the spring of 2008 to compare the effectiveness of different herbicides for downy brome control. The experimental design was a randomized complete block with three replications. Plots were 11 feet wide by 25 feet long and were located on a sandy loam soil with a pH of 7.9 and 2.5% organic matter. On March 21 herbicides were applied to downy brome and mustard plants that were breaking dormancy and starting spring growth. Herbicides were applied with a backpack sprayer calibrated to deliver 20 gallons of water per acre at 36-psi pressure with Spraying Systems 11002 VS nozzles. Environmental conditions at the time of herbicide application are given in Table 1.

On April 21, 2008 downy brome control with Olympus was 65%, on May 21 had declined to 51%, and by June 9 declined to 38% (Table 2). Tansy and tumble mustard control was excellent with Olympus. Olympus plus Sencor provided excellent downy brome, mustard, and kochia control. Plateau and Olympus controlled moderate amounts of downy brome but in doing so allowed space for kochia to germinate. Kochia was able to utilize surface soil moisture and germinate. Where downy brome was not controlled soil moisture and space limited the development of kochia. Adding Sencor to Olympus controlled downy brome then the residual Sencor in the soil controlled kochia and provided moisture for perennial grasses to develop.

Table 1. Environmental conditions at the time of herbicide application.

Date	Air temperature (F)	Humidity (%)	Wind speed & direction (mph)	Time of day	Perennial grass	Weed heights			
						Dobr	Tamu	Tumu	Kocz
March 21	45	54	2 NW	10:00 am	dormant	1	1	1	none

Rainfall and irrigation before herbicide application

Date	Amount
	- (inches) -
March 31	0.06

Table 2. Olympus for Control of Downy Brome in Rangeland 2008.

Treatment ¹	Rate (lbs/acre)	Time of application ²	Visual Injury ³									Percent weed control 6/27 ⁴			
			April 21, 2008				May 21, 2008			June 9, 2008		Dobr	Kocz	Tamu	
			Dobr	Tamu	Kocz	Tumu	Dobr	Tamu	Kocz	Dobr	Tamu				Kocz
			----- (%) -----				----- (%) -----			----- (%) -----					
Nontreated	—	—	0	0	0	0	0	0	0	0	0	0	0	0	0
Olympus + X77	0.053	Spring	65	97	0	97	51	73	0	38	99	0	34	0	95
Olympus + X77 + UAN	0.053	Spring	63	98	0	98	55	99	0	39	99	0	26	0	97
Plateau + X77	0.093	Spring	75	98	0	98	86	99	0	80	99	5	82	0	99
Olympus + Sencor DF + X77	0.053 + 0.187	Spring	92	98	97	98	99	99	98	97	99	95	99	78	93
LSD at 5%	—	—	14	1	1	1	12	34	1	14	0	7	21	18	7

¹ Spray additives were combined with the spray solution at the following rate: surfactant X77 at 0.25% v/v, and liquid nitrogen (UAN) at 1% per volume carrier.

² Herbicides applied on March 21, 2008 (Spring).

³ Visual crop injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.

⁴ Percent weed control calculated from weed counts taken on June 12. Weed abbreviations: downy brome (Dobr), tansy mustard (Tamu), and kochia (Kocz).