

Weed Control in Established Alfalfa Following the First Cutting at Scottsbluff, Nebraska During the 2008 Growing Season.

Robert Wilson

A field study was conducted at Scottsbluff, Nebraska during the 2008 growing season to compare different herbicides applied after the first cutting of alfalfa was removed for later season weed control. The experimental design was a randomized complete block with four replications. Plots were 11 feet wide by 40 feet long and were located on a sandy loam soil with 1.3% organic matter and a pH of 8. Roundup Ready alfalfa was seeded in the plot area in the spring of 2006. Herbicides were applied immediately following the removal of the first cutting of alfalfa; the crop height was 2 inches. Herbicides were applied with a tractor-mounted sprayer calibrated to deliver 20 gallons of water per acre at 32-psi pressure with Spraying Systems 11002 VS nozzles. Environmental conditions at the time of spraying are given in Table 1.

Alfalfa injury was evaluated on June 30 and July 8 (Table 2). Prowl H₂O applied at 3.8 lb/acre caused minor stunting of alfalfa 10 days after treatment. No crop injury was evident on July 8. Second cutting forage yield was not influenced by herbicide treatments. Prowl H₂O at 3.8 lb/acre provided excellent control of broadleaf and grasses following the first cutting of alfalfa.

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

Date	Air temperature (F)	Humidity (%)	Wind speed & direction (mph)	Time of day	Alfalfa	Weed height				
						Colq	Grif	Rrpw	Copu	Stgr
June 20	63	75	4 W	9:00 am	cut at 2 inches	1	0.5	0.5	0.5	1

Rainfall and irrigation before and after herbicide application

Date	Amount - (inches) -	Date	Amount - (inches) -
June 20	0.36	June 26	0.01

Table 2. Weed Control in Established Roundup Ready Alfalfa at Scottsbluff, Nebraska during the 2008 Growing Season.

Herbicide treatment ¹	Rate (lb/acre)	Time of application ²	Alfalfa		Forage yield 7/22 (tons/acre)	Percent weed control 7/18 ⁴						
			Visual injury ³			Cutting 2	Colq	Grft	Rrpw	Copu	Stgr	Avg
			6/30	7/8								
			---- (%) ----		----- (%) -----							
Nontreated	—	—	0	0	1.5	0	0	0	0	0	0	
Roundup WeatherMax + AMS	1.12	After 1st cutting	0	0	1.3	73	46	25	12	74	46	
Prowl H ₂ O	1.9	After 1st cutting	0	0	1.4	97	74	74	86	74	81	
Prowl H ₂ O	3.8	After 1st cutting	4	0	1.6	97	93	99	99	99	97	
Prowl H ₂ O + Raptor + MSO + UAN	1.9 + 0.031	After 1st cutting	2	0	1.4	97	93	99	99	86	95	
Prowl H ₂ O + Butyrac + X77	1.9 + 0.5	After 1st cutting	2	0	1.4	99	93	99	99	99	98	
Prowl H ₂ O + Roundup WeatherMax + X77 + AMS	1.9 0.75	After 1st cutting After 1st cutting	0	0	1.4	99	69	99	99	99	93	
LSD at 5%	—	—	3	0	NS	27	45	38	21	41	22	

¹ Spray additives were combined with the spray solution at the following rates: surfactant X77 at 0.25%, liquid nitrogen 33-0-0 (UAN) at 2.5%, methylated seed oil (MSO) at 1%, and ammonium sulfate (AMS) at 17lbs/100 gal.

² Time of application: after the first cutting of alfalfa on June 20.

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 July 18. Weed abbreviations: common lambsquarters (Colq), green foxtail (Grft), redroot pigweed (Rrpw), common purslane (Copu), and stinkgrass (Stgr).