Buckbrush Control in Rangeland with Chaparral near Rushville, Nebraska.

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A field study was conducted north of Rushville, NE to compare the performance of Chaparral (aminopyralid + metsulfuron) applied in late spring or early summer for buckbrush control. The experimental design was a randomized complete block with four replications, plot size was 11 feet wide by 25 feet long. Herbicides were applied in late spring (May 20, 2008) and in early summer (June 18, 2008) when buckbrush was fully leafed out and actively growing. Herbicides were applied with a backpack sprayer calibrated to deliver 20 gallons of spray solution per acre at 36-psi pressure using Spraying Systems 11002 VS nozzles. Environmental conditions at the time of herbicide application are given in Table 1.

Buckbrush stand was uniform across all plots. Evaluations taken on July 10, 2008 indicated that Chaparral at 0.077 or 0.096 lb/acre were more effective in controlling buckbrush when applied on June 18 compared to May 10 (Table 2). Higher rates of Chaparral performed similarly when applied either in late spring or early summer. Treatments that included Chaparral at lower rates combined with 2, 4 -D ester, Cimarron combined with Weedmaster, and 2, 4 -D ester alone, performed better when applied on May 10 compared to June 18. In general all treatments were effective in releasing the competition of buckbrush with native grasses. All herbicide treatments provided excellent buckbrush control on September 3, 2008.

Buckbrush control was evaluated on May 22, June 19, and August 20, 2009. Buckbrush control of 98 to 99% was observed on June 19 in plots treated on May 20, 2008 with Chaparral plus 2,4-D ester, 2,4-D ester alone or Cimarron plus Weedmaster (Table 2). However, if herbicides were applied on June 18, only Chaparral plus 2,4-D provided 97% buckbrush control the following year.

Biomass of buckbrush and perennial grasses was measured on August 20, 2009 (Figure 1). No alive buckbrush biomass was harvested in areas treated on May 20, 2008 with Chaparral alone at 0.116 lb/acre, Chaparral plus 2,4-D, 2,4-D alone, or Cimarron plus Weedmaster. If treatment was delayed until June 18 only Chaparral plus 2,4-D at 0.077 plus 1 lb/acre reduced buckbrush biomass to zero. Perennial grass biomass in the nontreated was 9.5 grams/sq ft. A May 20 treatment of Cimarron plus Weedmaster increased perennial grass biomass to 24.1 grams/sq ft. Chaparral applied on June 18 at 0.096 lb/acre resulted in perennial grass biomass of 27.4 grams/sq ft. The optimum rate of Chaparral for buckbrush control was 0.096 lb/acre (2.5 oz of product/acre) applied either in mid May or mid June. On the June 18 treatment date there was a trend for a reduction of grass biomass at the 0.116 lb/acre (3 oz of product/acre) rate of Chaparral even though buckbrush control was excellent.

Table 1 Environmental Conditions at the Time of Herbicide Application.

Date	Air temperature	Humidity	Wind speed & direction	Time of day	Buckbrush Height
	(F)	(%)	(mph)		(inches)
May 20	65	28	3	1:00 PM	20
June 18	75	82	2	10:00 AM	20

Table 2. Buckbrush Control with Chaparral.

Treatment [1]	Rate	Time of application	Visual evaluations of buckbrush control[2]				
			6/18/08	7/10/08	9/3/08	5/22/09	6/19/09
	(lb/acre)		---------- (%) ----------				
Control	—	—	0	0	25	0	0
Chaparral + Activator 90	0.077	May 20	48	44	99	64	58
Chaparral + Activator 90	0.096	May 20	59	66	99	80	73
Chaparral + Activator 90	0.116	May 20	82	90	99	89	86
Chaparral + 2,4-D ester + Activator 90	0.058 1	May 20	99	99	99	99	99
Chaparral + 2,4-D ester + Activator 90	0.077 1	May 20	99	99	99	99	99
2,4-D ester + Activator 90	2	May 20	96	99	99	99	99
Cimarron + Weedmaster + Activator 90	0.009 0.487	May 20	99	99	99	98	98
Chaparral + Activator 90	0.077	June 18	0	98	99	90	89
Chaparral + Activator 90	0.096	June 18	0	99	99	79	75
Chaparral + Activator 90	0.116	June 18	0	99	99	90	88
Chaparral + 2,4-D ester + Activator 90	0.058 1	June 18	0	74	99	98	97
Chaparral + 2,4-D ester + Activator 90	0.077 1	June 18	0	99	99	97	97
2,4-D ester + Activator 90	2	June 18	0	58	99	71	67
Cimarron + Weedmaster + Activator 90	0.009 0.487	June 18	0	74	99	73	74
LSD (P=.05)	—	—	10	25	18	16	18

[1] Spray additives were combined with the spray solution at the following rates: surfactant activator 90 at 0.25%.
[2] Visual injury evaluated on a scale from 0 to 100 with 0 equal to no injury and 100 equal to death of the plant.

Figure 1. Influence of Herbicides and Timing on Buckbrush and Perennial Grass Biomass.

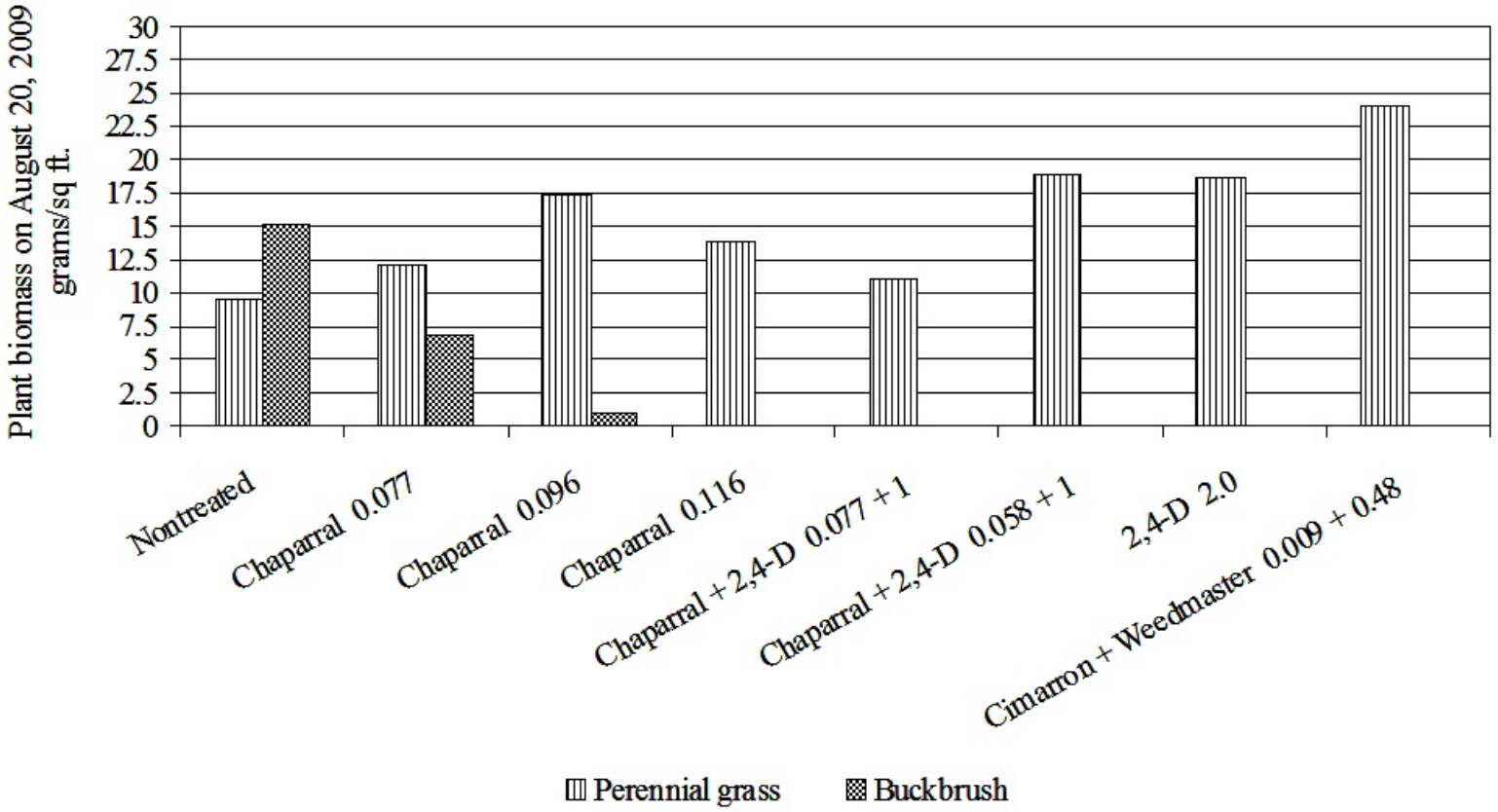

Figure 1. Influence of Herbicides and Timing on Buckbrush and Perennial Grass Biomass – Continued.