

Weed Control in Pastures and Forages

Dormant treatments for weed control in alfalfa. Peterson, Dallas E. and Stewart R. Duncan. An experiment was conducted near Great Bend, KS in established alfalfa growing on a Naron sandy loam soil with 1.5% organic matter and a pH of 6.3 to evaluate several dormant season herbicide treatments for winter and summer annual weed control. Herbicide treatments were applied to dormant alfalfa and 1- to 3-inch diameter flixweed and shepherdspurse rosettes on March 6, 2002 with 60 F, 25% relative humidity, and mostly cloudy skies. Treatments were applied with a CO₂ back-pack sprayer delivering 20 gpa at 25 psi through XR8002 flat fan spray tips to the center 6.3 ft of 10- by 30-ft plots. The experiment was a randomized complete block design with three replications. Crop response and weed control were visually evaluated on May 3, July 26, and August 15.

None of the herbicide treatments caused any visible injury to alfalfa throughout the season (data not shown). Treatments with hexazinone, flumioxazin plus surfactant, imazethapyr, or imazamox gave excellent flixweed control. Many treatments gave good shepherdspurse control. Trifluralin or paraquat did not provide good control of either flixweed or shepherdspurse. The addition of nonionic surfactant greatly enhanced flixweed and shepherdspurse control with flumioxazin, and probably also would have enhanced control with sulfentrazone. Palmer amaranth populations were light and variable. Flumioxazin and sulfentrazone tended to give the best residual Palmer amaranth control among the treatments evaluated. Imazethapyr also gave good Palmer amaranth control, indicating the Palmer amaranth in the field was still an ALS susceptible population. Flumioxazin and sulfentrazone appear to have good potential for winter annual broadleaf and residual *Amaranthus* control in alfalfa. (Dept. of Agronomy, Kansas State University, Manhattan)

Table. Dormant treatments for weed control in established alfalfa (Peterson and Duncan).

Treatment ^a	Application Rate ^b (lb/A)	Flixweed	Shepherdspurse	Palmer amaranth	
				July 26	August 15
		-----(% control)-----			
Diuron	0.8	67	93	83	73
Diuron	1.6	80	100	87	73
Hexazinone	0.25	98	98	73	53
Hexazinone	0.5	97	100	90	73
Diuron + hexazinone	0.8 + 0.25	100	100	92	70
Metribuzin	0.38	70	100	0	0
Diuron + metribuzin	0.8 + 0.38	97	100	100	80
Trifluralin	2	0	0	80	70
Sulfentrazone	0.25	60	70	100	100
Sulfentrazone	0.34	77	87	100	99
Flumioxazin	0.094	37	60	100	90
Flumioxazin	0.13	67	90	95	93
Flumioxazin + NIS	0.13 + 0.25%	97	98	100	95
Flumioxazin + NIS	0.25 + 0.25%	100	100	100	98
Flumioxazin + 2,4-DB	0.13 + 0.5	67	97	100	97
2,4-DB	0.5	53	100	0	0
Paraquat + NIS	0.46 + 0.25	67	47	0	0
Imazethapyr + NIS + 28% N	0.063 + 0.25% + 2Q	100	93	87	87
Imazethapyr + NIS + 28% N	0.092 + 0.25% + 2Q	100	100	90	87
Imazamox + NIS + 28% N	0.031 + 0.25% + 2Q	100	93	43	23
Imazamox + NIS + 28% N	0.039 + 0.25% + 2Q	100	97	77	63
LSD (5%)		17	11	16	17

^a NIS = Activate Plus nonionic surfactant from Agrilience; 28% N = 28% UAN liquid nitrogen fertilizer.

^b % = % v/v; Q = quarts per acre.