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Evaluation of spring vs. fall original/retreatment combinations as affecting leafy spurge live shoot growth

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This experiment located near Lander, Wyoming was established for accumulation of original/retreatment and fall vs. spring application data. Five successive years of data have been collected since the experiment was established in the spring of 1980.

Original treatments were made May 23 and September 14, 1980. Liquid formulations were applied with a 13-nozzle truck mounted spray unit delivering 25 gpa water. The granular formulations were applied with a hand operated centrifugal granular spreader. Retreatments were made May 29 and September 12, 1981; May 24 and September 17, 1982; May 29 and September 15, 1983; and May 31 and September 18, 1984. The re-treatments of picloram at 0.5 and 1.0 lb ai/A were terminated with the 1981 treatment. The leafy spurge was in bud to flowering stage-of-growth and 4 to 18 inches in height during the spring retreatments and had shed most of its seed when fall retreatments were made. Plots were 22.5 by 22.5 feet arranged in a split block design with two replications. Soil was a sandy loam (73% sand, 15% silt, and 12% clay) with 1.3% organic matter and 7.6 pH.

The area has been flood irrigated following application of original treatments. There was thin grass cover when plots were established. By September 1981 grass was 20 to 24 inches in height and green in treated areas. Good grass cover has been maintained in treated areas since 1981.

Percent shoot control is based on reduction of live leafy spurge shoots in treated plots as compared to the untreated (check) plots.

The picloram original treatment at 2.0-lb ai/A provided the most effective long-term leafy spurge shoot control. The picloram original treatment at 1.0 lb ai/A was more effective for long-term leafy spurge shoot control than was the original dicamba treatment at 4.0 or 8.0 lb ai/A. Retreatments have been more effective for controlling leafy spurge shoot growth than a one time single treatment. There has been a reduction in shoot control in the picloram retreatment plots since the retreatments were terminated with the 1981 application. However, picloram retreatments have generally been the most effective followed by dicamba, 2,4-D (S & F) and 2,4-D. Leafy spurge shoot control has decreased in most of the original treatment plots over the last five years, however, there seems to be little difference in the effectiveness of the original treatments whether spring or fall applied.

Leafy spurge shoot control.

Original[1] lb ai/A		Percent Shoot Control [2] Retreatment lb. ai/A																								
		dicamba 4L 2.0				picloram (K salt) 0.5				2,4-D amine (S&F) 2.0				Check					Picloram (K salt) 1.0				2,4-D amine 2.0			
		'82	'83	'84	'85	'82	'83	'84	'85	'82	'83	'84	'85	'81	'82	'83	'84	'85	'82	'83	'84	'85	'82	'83	'84	'85
(Spring)																										
dicamba 4L	6.0	94	85	89	87	100	91	85	91	88	95	93	96	92	64	29	60	56	100	99	96	83	80	70	69	78
dicamba 4L	8.0	88	90	89	85	100	95	95	94	99	100	100	100	95	81	34	26	41	99	82	75	66	90	78	63	91
dicamba 5G	6.0	89	69	81	83	100	95	80	92	87	98	97	97	92	73	86	34	44	100	100	87	58	99	97	83	90
dicamba 5G	8.0	92	78	92	93	100	94	93	96	100	99	94	97	95	89	75	32	41	100	89	79	81	93	94	94	96
picloram (K salt)	1.0	97	74	93	96	100	97	85	89	99	100	96	95	96	98	80	84	80	100	77	92	59	100	96	89	95
picloram (K salt)	2.0	100	79	96	93	100	100	96	96	100	100	100	100	99	100	91	88	81	100	75	67	66	100	94	99	99
Picloram (2% beads)	1.0	98	67	93	86	100	68	85	82	93	84	88	94	93	79	95	74	71	100	81	18	18	100	89	89	98
Picloram (2% beads)	2.0	100	69	89	90	100	77	86	88	100	88	97	99	95	100	93	78	83	100	24	15	0	100	95	95	98
Check	---	92	91	89	89	100	83	56	81	93	54	50	93	0	0	0	0	0	100	100	99	98	55	33	14	46
Shoots/sq ft														*20*	*18*	*17*	*11*	*12*								
(Fall)																										
dicamba 4L	6.0	76	81	75	78	100	94	81	76	90	99	92	97	70	57	61	40	51	100	93	83	81	82	70	55	84
dicamba 4L	8.0	87	88	80	93	100	92	86	77	90	95	87	98	83	44	50	44	42	100	95	83	94	89	66	67	85
dicamba 5G	6.0	99	81	91	91	100	90	81	73	97	98	98	99	89	52	39	17	52	100	97	90	98	98	79	95	95
dicamba 5G	8.0	99	93	92	97	100	93	87	89	98	98	97	96	93	85	61	30	57	100	100	99	99	97	84	71	85
picloram (K salt)	1.0	99	87	89	95	100	92	83	91	99	99	99	99	95	90	81	64	73	100	99	95	96	96	74	56	86
picloram (K salt)	2.0	100	96	97	99	100	97	93	94	100	100	100	99	99	99	93	79	79	100	100	100	99	99	93	92	94
picloram (2% beads)	1.0	100	91	98	96	100	96	83	86	100	100	99	98	99	100	96	88	88	100	97	89	87	100	86	96	95
picloram (2% beads)	2.0	100	86	95	99	100	86	73	81	100	100	100	99	99	100	94	88	82	100	91	66	84	100	85	95	86
Check	---	70	67	69	75	100	85	82	84	23	57	72	86	0	0	0	0	0	100	97	82	89	0	31	31	51
Shoots/sq ft														*19*	*24*	27	*15*	*20*								

[1] Original treatments made May 23 and Sept. 14, 1980; retreatments made May 29 and Sept. 12, 1981; May 24 and Sept. 17, 1982; May 29 and Sept. 15, 1983; and May 31 and Sept. 18, 1984. The retreatments of picloram (K salt) at 0.5 and 1.0 lb ai/A were terminated with the 1981 retreatments.

[2] Shoot counts May 27, 1981; May 24, 1982; May 29, 1983; May 30, 1984; and May 21, 1985. S & F = Spring and Fall.