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Plateau (imazapic) for leafy spurge control in Wyoming

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Abstract:

Leafy spurge continues to be a major problem in Wyoming. Its spread has been limited but has not decreased. There are infestations in every county. However, major infestations occur in the northeast corner of the state. The objective of these studies was to compare the efficacy of imazapic (Plateau) for leafy spurge control at two locations. One study was located in Crook County, Wyoming miles south of Devils Tower. The other in Cheyenne, Wyoming on Warren Air Force Base. The studies were a randomized complete block design with four replications. Crook County leafy spurge was 16 to 24 inches tall and Cheyenne leafy spurge was approximately 20 inches tall.

In Crook County imazapic regardless of rate provided excellent leafy spurge control 297 days after treatment (dat) (Table 1). Picloram at 0.5 lb/A also provided excellent control. Grass damage was severe especially at the higher rates of imazapic. The addition of methylated seed oil seemed to increase grass damage.

In Cheyenne leafy spurge control 288 (dat) found imazapic providing little or no control, however there was considerable shoot suppression at the 0.25 lb/A rate (Table 2). No other treatment was effective. Leafy spurge control 590 dat found imazapic providing little or no control, or shoot suppression. Grass damage 288 dat was severe where 0.25 lb/A of imazapic were applied. Grass damage 590 dat was not as evident but was still very noticeable where 0.25 lb/A of imazapic had been applied. The addition of BAS-662 did not increase control. It appears that more research is needed in order to make more accurate predications for control of leafy spurge with imazapic as well as timing of application to reduce grass damage.

Table 1. Leafy spurge control and grass damage in Crook County.

Treatment ^a	Rate	Shoot control ^b	Grass dam ^b
	lb/A	%	%
Imazapic	0.125	84	13
Imazapic+mso ^c	0.125	95	35
Imazapic	0.1875	95	23
Imazapic+mso	0.1875	99	31
Imazapic	0.25	100	43
Imazapic+mso	0.25	100	53
Picloram	0.5	98	0
LSD (P=0.05)		7	19
Cv		5	44

^aTreatments applied Sept. 3, 1997.^bEvaluated June 27, 1998.^cmso = methylated seed oil at 0.25% v/v**Table 2. Leafy spurge control, suppression and grass damage in Cheyenne, WY.**

Treatment ^a	Rate	Shoot control ^b		Shoot suppression ^b		Grass damage ^b	
		1998	1999	1998	1999	1998	1999
	lb/A	%		%		%	
Imazapic+mso ^c	0.125	0	0	46	3	21	3
Imazapic+mso	0.1875	5	0	55	4	31	3
Imazapic+mso	0.25	11	30	78	40	60	35
BAS-662	0.25	0	0	4	0	13	0
Picloram + 2,4-D amine	0.25+1.0	20	5	45	20	18	0
Imazapic+BAS-662+mso	0.125+0.25	0	0	46	10	53	5
Imazapic+BAS-662+mso	0.1875+0.25	0	0	46	15	39	10
Imazapic+BAS-662+mso	0.25+0.25	13	20	80	48	66	41
Picloram + 2,4-D amine+BAS-662+mso	0.25+1.0+0.25	0	0	18	5	0	0
LSD (P=0.05)		12	10	23	22	35	21
CV		169	130	39	106	79	148

^a Treatments applied October 22, 1997.^b Evaluated August 6, 1998 and June 4, 1999.^c mso = methylated seed oil at 0.25% v/v