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Fluroxypyr for leafy spurge control

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Fluroxypyr is a picolinic acid herbicide similar to picloram but with less soil residual and a different weed control spectrum. The purpose of this experiment was to evaluate fluroxypyr for leafy spurge control as a single application treatment, applied with auxin herbicides, and in a repetitive treatment program.

The experiment was established on a dense stand of leafy spurge near Dickinson, ND, on July 14, 1986. Previous research had indicated the optimum application time for leafy spurge control with fluroxypyr was post seed-set. The herbicides were applied using a tractor-mounted sprayer delivery 8.5 gpa at 35 psi. The retreatments were applied as a split-block treatment. The original whole plots were 15 × 56 ft and the retreatment subplots were 10 x 15 ft with three replications. Evaluations were based on percent stand reduction as compared to the control.

Fluroxypyr at 0.5 and 1 lb/A provided an average of 90 and 41% leafy spurge control 2 and 11 months after treatment (MAT), respectively (Table). Control was similar when fluroxypyr at 0.25 or 0.5 lb/A was applied alone or with dicamba, picloram, or 2,4-D. Picloram at 1 lb/A provided 73% leafy spurge control 11 MAT which was the expected level of control from this treatment based on long-term evaluations at North Dakota State University. No single treatment provided satisfactory control 14 MAT.

Leafy spurge control, when averaged over retreatments, increased to an average of 73% regardless of the original fluroxypyr treatment and was similar to the picloram treatments (Table). The best retreatments were picloram alone at 0.5 lb/A, picloram + fluroxypyr at 0.25 + 0.25 lb/A, and + picloram + 2,4-D at 0.25 + 1 lb/A which averaged 94, 89, and 86% control, respectively. In comparsion, fluroxypyr at 0.5 lb/A applied as a retreatment averaged only 69% control.

In general, fluroxypyr alone and applied with dicamba, picloram, and 2,4-D provided similar control to picloram + 2,4-D at 0.25 + 1 lb/A both in the year of treatment and following various retreatments (Table). For example, fluroxypyr at 0.5 lb/A applied twice provided 83% leafy spurge control compared to 89% with picloram + 2,4-D at 0.25 + 1 lb/A applied twice. The picloram + 2,4-D treatment was the most cost-effective treatment in a long-term leafy spurge research program conducted in North Dakota. Thus fluroxypyr applied once provided less leafy spurge control than picloram at similar rates, but fluroxypyr may be useful in a retreatment program especially in areas where picloram cannot be used. (Published with approval of the Agric. Exp. Stn., North Dakota State Univ., Fargo 58105).

Table. Leafy spurge control with fluroxypyr alone and in combination with auxin herbicides (Lym and Messersmith).

		Retreatment/rate (lb/A)/evaluated Sept 87									
		Evaluation date					Fluro.+ Pic.	Fluro.+ Pic.	Pic.+2.4-D		
Treatment	Rate	Sept 86	June 87	Fluro. 0.5	Pic. 0.25	Pic. 0.5	0.25+ 0.25	0.5+.25	0.25+1	Control	Mean
	(lb/A)	(% control)									
Fluroxypyr	0.5	88	34	83	78	98	96	85	89	0	75
Fluroxypyr	1	92	47	70	88	89	87	78	86	13	73
Fluroxypyr+picloram	0.25+0.25	95	27	64	84	96	91	78	93	10	74
Fluroxypyr+picloram	0.5+0.25	98	40	63	71	98	93	87	94	16	74
Fluroxypyr+2,4-D	0.5+1	94	27	72	72	93	80	77	84	5	69
Fluroxypyr+dicamba	0.25+0.25	96	13	64	88	94	86	88	70	8	71
Picloram+2,4-D	0.25+1	99	25	79	91	97	85	77	89	3	75
Picloram	1	81	73	74	76	87	89	60	81	17	69
Control		0	0	51	68	96	90	56	86	0	64
Mean				69	80	94	89	76	86	8	
LSD (0.05)		13	28	whole plot = NS; subplots = 8; whole plot × subplot = 32							