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Herbicides and grass competition for leafy spurge control

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A series of experiments were established to compare cost and efficacy of a glyphosate plus 2,4-D application followed by herbicide retreatments of picloram, dicamba, or picloram plus 2,4-D to each herbicide retreatment alone. The initial treatments were applied late June of 1993 and evaluation taken in 1993 and 1994. Glyphosate plus 2,4-D provided 90% leafy spurge control 3 months after treatment (MAT) compared to 65% for all other treatments. When reevaluated 12 MAT the glyphosate plus 2,4-D treatment sustained >70% control compared to 35% for all other treatments. There was no significant grass injury for any treatment.

A regional research experiment was established by scientists in Colorado, Minnesota, Montana, Nebraska, Wyoming, and North Dakota to evaluate leafy spurge control with quinclorac. Leafy spurge control was >90% regardless of rate at all locations except North Dakota and Wyoming. In those states the level of control was >55% with quinclorac, which was comparable to picloram plus 2,4-D at 0.5 plus 1 lb/A.

Grass competition is one means of controlling the rate of spread of leafy spurge based on data from an experiment established in 1990 at Fargo. The three grass species that provided >70% control were 'Rebound' smooth brome, 'Rodan' western wheatgrass, and 'Bozoisky' Russian wildrye. 'Arthur' Dahurian wildrye and 'Hycrest' crested wheatgrass averaged 50% control.

A second experiment was established near Jamestown to evaluate competitive grass species on a soil type more typical of North Dakota than found at Fargo. Glyphosate plus 2,4-D at 0.4 + 0.6 lb/A was applied to all plots except the untreated control when leafy spurge was in the flowering growth stage in June and again in July. The seedbed was prepared and grass species planted August 24, 1994 except in the untreated control and glyphosate plus 2,4-D plots. Six grass species were selected from the 1990 study along with three new grass species to include: 'Rebound' smooth brome, 'Rodan' western wheatgrass, 'Bozoisky' and 'Mankota' Russian wildrye, 'Arthur' Dahurian wildrye, 'Reliant' intermediate wheatgrass, 'Hycrest' crested wheatgrass, 'Pryor' slender wheatgrass, 'Lodorm' green needlegrass, and 'Manska' pubescent wheatgrass. For evaluations taken May 1994 the three most competitive species were 'Manska' pubescent wheatgrass, 'Arthur' Dahurian wildrye, and 'Reliant' intermediate wheatgrass which provided >55% control.