

*Reprinted with permission from: Leafy Spurge Symposium and Proceedings.
Lincoln, NE. July 22-24, 1992. 2:21.*

*Sponsored by: United States Department of Agriculture, Agriculture Research Service,
University of Nebraska, Lincoln, NE, DowElanco, Nebraska Leafy Spurge Working Task
Force.*

Leafy spurge control in North Dakota - 1992

K. M. CHRISTIANSON, R. G. LYM, and C. G. MESSERSMITH

Crop and Weed Sciences Department, North Dakota State University, Fargo, ND 58105-5051

Imazethapyr, imazaquin, nicosulfuron, and quinclorac: have been evaluated for leafy spurge control since 1989 at North Dakota State University. All four herbicides provided the highest leafy spurge control and the least grass injury when fall-applied, but control varied by location. The herbicides were applied with additives that included, X-77 at 0.5% (v/v), Scoil at 1 qt/A, and BAS-090 at 1 qt/A.

Imazethapyr was applied at 2 and 4 oz/A with Scoil and X-77 and control averaged 40 to 60% 9 months after treatment (MAT), respectively. Control increased 10 to 15% when Scoil was the adjuvant with imazethapyr at 2 oz/A but not at 4 oz/A.

Imazaquin was applied at 2 and 4 oz/A with Scoil and X-77 and leafy spurge control averaged 90% regardless of rate or additive at Chaffee. At Hunter, control by imazethapyr at 2 and 4 oz/A with X-77 was 34 and 38%, respectively, and with Scoil increased to 84 and 87%, respectively.

Nicosulfuron was applied at 1 and 2 oz/A with X-77 and Scoil. At Chaffee, control averaged 75% regardless of rate or additive. At Hunter, control averaged 60% when nicosulfuron was applied at 1 oz/A with Scoil, but declined when applied at 2 oz/A.

Quinclorac was applied at 16 and 24 oz/A with Scoil and BAS-090. Control 12 MAT was greater than 90% regardless of application rate and additive which was similar to picloram plus 2,4-D at 8 plus 16 oz/A at all locations. Control increased from 49 to 82% when quinclorac at 16 oz/A was applied for 2 years consecutively. Quinclorac at 16 oz/A plus picloram at 8 oz/A alone or with BAS-090 provided greater than 90% control after 2 years of sequential treatments.

Two other compounds were evaluated alone and with various herbicides for leafy spurge control. These compounds were XRM-5255 (picloram acid formulated as a water soluble powder) and picloram isooctyl ester plus triclopyr butoxyethyl ester (1:2) (Access, commercial formulation). XRM-5255 was applied alone at 4, 8, and 16 oz/A or with 2,4-D at 16 oz/A. Leafy spurge control was lower with XRM-5255 compared to picloram potassium salt (Tordon 22K) whether applied alone or with 2,4-D. Picloram ester applied alone or with other compounds did not control leafy spurge as well as picloram potassium salt.

Several additives and 2,4-D formulations to increase leafy spurge control with picloram have been evaluated. The additives include MAPEG 400 MO, X-77, Silwett L-77, Li-700, Tetronic 1504, GAFAC RS610, Scoil, and BAS-090. In general, control was similar regardless of additive or 2,4-D formulation. Two 2,4-D formulations, 2,4-D mixed amine and 2,4-D alkanolamine, were evaluated alone and with picloram for leafy spurge control.