Several experiments were established to evaluate various formulations of picloram for leafy spurge control. The compounds evaluated were XRM-5255 (picloram acid water-soluble powder), XRM-5173 (potassium salt water-soluble powder), Tordon 101 [picloram triisopropanol-amine plus 2,4-D triisopropanol-amine (1:4)], and a picloram iso-octyl ester plus triclopyr butoxyethyl ester (1:2) (Access). The various formulations were compared to picloram K-salt (Tordon 22K). Leafy spurge control with XRM-5255 and XRM-5173 alone was less than picloram (Tordon 22K) 1 and 3 months after treatment (MAT) but similar 12 MAT. XRM-5255 and XRM-5173 applied with a methylated seed oil (Scoil) provided similar control to picloram (Tordon 22K). Leafy spurge control with picloram TIPA and picloram ester was similar to picloram (Tordon 22K).

An experiment to evaluate grass injury and leafy spurge control with glyphosate applied in late June was established at two locations. Glyphosate plus 2,4-D (Landmaster BW) was applied alone or with picloram in late June provided 74% or more control 12 MAT compared to 39% for picloram plus 2,4-D at 4 plus 16 oz/A. There was no grass injury 12 MAT with any treatment.

A regional experiment was established in 1992 to compare various formulations of 2,4-D to picloram for leafy spurge control. Leafy spurge control evaluated visually 12 MAT averaged 13% regardless of 2,4-D formulation. There was a slight increase in stem density when the 2,4-D amine formulation was applied compared to a slight decrease with the esters 12 MAT. The picloram treatment averaged 65% visible control and 72% decline in stem density.

A study was established in 1990 to evaluate the competitiveness of several grass species with leafy spurge. The most competitive species evaluated were ‘Rebound’ smooth brome, ‘Rodan’ western wheatgrass, and ‘Bozoisky’ Russian wildrye and which averaged 63% leafy spurge reduction in 1993. One species ‘Killdeer’ side oats grama never established. The total grass production increased each year and averaged 1550 lb/A with the three most competitive species.

An experiment was established to evaluate leafy spurge control with goat grazing alone or combined with herbicides. Stem counts and changes in root carbohydrate and protein were used to evaluate control. There were two locations with either season-long grazing or rotational grazing management. Overall there was a reduction in stem density when chemical treatment was combined with grazing. Season-long grazing alone reduced leafy spurge stand 12 MAT while rotational grazing resulted in a stem density increase.