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North Dakota: Research plans for 1983

Low volume herbicide application methods for leafy spurge control

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The wick applicator will continue to be evaluated and modified for leafy spurge control in relatively even terrain. The controlled droplet applicator (CDA) will be evaluated in wooded areas using several types of dyes and paint pigments as possible marking guides. A problem with the CDA has been the inability of the operator to determine the areas treated and skipped during application. A carpet-wiper applicator will be evaluated further using various solution concentrations, heights and time of treatment as variables.

All field experiments established in 1982 will be continued in 1983, and many experiments started in 1980 and 1981 will be continued. The overall objective is to identify herbicide and application method combinations that are economical for leafy spurge control. In 1982, the long term management experiments started in 1980 were divided into spring and fall treatment regimes. The experiments will be retreated in the spring or fall of 1983 and all plots will be harvested for forage production. Effective treatments will be evaluated on the basis of net economic return and leafy spurge control. The effectiveness of annual applications of picloram alone or in combination with 2,4-D for leafy spurge control will be evaluated and the plots retreated.

New field experiments will include evaluation of new herbicide treatments, and the most effective treatments will be considered for possible application with the low volume applicators. Grazing studies are being proposed on the Sheyenne National Grassland in connection with the U.S. Forest Service and the local cattlemen's association to further evaluate forage gain from leafy spurge control.

Greenhouse and laboratory investigations will center on ^{14}C-picloram translocation in the root tissue of leafy spurge. Experiments will attempt to quantify the picloram exudation from different parts of the leafy spurge root and to identify ways to minimize the exudation.