

## RESTORATION OF RANGELAND INFESTED BY LEAFY SPURGE IN NORTH DAKOTA

by

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**Abstract.** Leafy spurge (*Euphorbia esula* L.) is a noxious weed that is believed to have been introduced into the flora of North Dakota with wheat seed brought over from Europe by early farm immigrants. Leafy spurge has since infested thousands of acres of native rangeland. Use of tillage and herbicide has helped control this weed on cropland. However, on rangeland tillage is not an option and the use of herbicide is expensive and can damage or kill associated plants. In 1939 and 1942, researchers from North Dakota State Agricultural Experiment Station reported on the control of leafy spurge by sheep grazing. Since the early 1950s, sheep have been used to control leafy spurge on rangeland with varying degrees of success. Leafy spurge costs farmers and ranchers along the Heart River of North Dakota about \$3.9 million, annually. Sheep grazing can reduce this loss by economically controlling leafy spurge. Documentation of changes in plant production, composition, and ground cover on rangelands as leafy spurge is controlled by sheep grazing is lacking. A study was recently initiated to monitor changes on leafy spurge infested rangeland in the Heart River Drainage system. Leafy spurge production on this rangeland varied from a low of 997 kg/ha to a high of 2489 kg/ha. Leafy spurge stems/ha ranged from a low of 1,059,630 to a high of 3,460,470. Exclosures were placed on several range sites across this rangeland to protect leafy spurge from sheep grazing and to serve as a control treatment. Adjacent to these exclosures, vegetation composition, production, density, and soil ground cover will be measured over time.

**Additional Key Words:** forage production, species composition, soil ground cover, plant density, sheep grazing

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