

Reprinted with permission from: 1991 Leafy Spurge Symposium, Final Program and Abstracts. Minneapolis, MN. July 10-12, 1991. p. 17.

Published by: Great Plains Agricultural Council - 14. Crops and Soils Committee.

Economic impact of leafy spurge infestations on North Dakota grasslands

F. LARRY LEISTRITZ, FLINT THOMPSON, and JAY A. LEITCH

Department of Agricultural Economics, North Dakota State University; Fargo, ND 58105.

The objectives were (1) to develop a function that relates the increase in leafy spurge infestation to the decrease in livestock carrying capacity for North Dakota pasture and rangeland, (2) to estimate the economic effects of leafy spurge infestation on landowners, and (3) to estimate the impacts of leafy spurge infestation on the regional economy. The carrying capacity function was developed through literature review and consultation with agronomists and range scientists involved in leafy spurge research. Two alternative measures of the value of lost carrying capacity (measured in animal unit months or AUMs) were developed using (1) an analysis of historical rental rates for pasture and (2) a ranch budget analysis. Statewide, the present leafy spurge infestation is estimated to cause a reduction of 577,000 AUMs, valued at \$8.6 million. The secondary impacts of leafy spurge infestations, on the state's economy arise from two sources: (1) the reduction in income of ranch operators and land owners (\$8.6 million annually) and (2) decreases in production expenditures, which are also decreases in revenues for input suppliers (\$14.4 million annually). The secondary and total impacts were estimated using an input-output model. The total impact of the present level of leafy spurge infestation includes a reduction in personal income of \$25 million, or about \$44 per lost AUM. Substantial impacts were also shown for the retail trade sector (\$19 million) and the agriculture-crops sector (\$11 million). The total reduction in business activity for all sectors was almost \$75 million. When the initial reduction in livestock sales of about \$30 million that induced the subsequent economic changes is added, the total economic impact of leafy spurge on the state economy exceeds \$100 million annually.