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## Variability among 12 leafy spurge (*Euphorbia* esula) ecotypes

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## Abstract:

Leafy spurge is among the most troublesome weeds in Montana and infests more than 500,000 acres of rangeland. Experiments were established to measure the amount of genetic diversity among twelve leafy spurge strains.

Root cuttings were collected from locations in Montana, Colorado, Idaho, North and South Dakota, Wyoming, and Canada. The root cuttings were established in the greenhouse and later transplanted to the field. Field experiments were conducted 15 months after transplanting.

Measurements of leaf shape, bracts, plant height, and date of flowering indicate that a number of ecotypes exist in the collected material. The strains differed in plant vigor and root dry matter production. Differential tolerance to several herbicides was observed (Table 1). The variability among leafy spurge ecotypes may have important implications for biological control research being conducted at the present time.

Strain	Herbicide		
	2,4-D	Picloram	Aminotriazole
Canada 1	7 <sup>1</sup>	4	9
Canada 2	10	10	5
Colorado	1	5	2
Wyoming	9	3	7
Idaho	2	2	4
South Dakota	8	11	3
North Dakota 1	11	12	12
North Dakota 2	4	9	8
Montana 1	5	6	11
Montana 2	12	7	6
Montana 3	6	8	10
Montana 4	3	1	1

## Table 1. Order of herbicide tolerance among 12 leafy spurge strains.

<sup>1</sup>Order of increasing tolerance to herbicide treatment