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Tebuthiuron applied spring and fall for leafy spurge control

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An experiment was established near Valley City, ND to evaluate tebuthiuron for leafy spurge control. Tebuthiuron as 10 or 20% pellets was applied by hand as spring or fall treatments. The fall treatments were applied on 25 Sept. 1980 when the leafy spurge had vigorous fall growth from previous fall rains. The summer had been very dry and the plants had been drought stressed for most of the growing season. The spring application was made on 18 May 1981 when the soil was very dry, the leafy spurge was 2 to 4 inches tall and emerged stems were sparse. The experimental plots were 10 by 20 ft and replicated twice in a randomized complete block design. The plots were evaluated on 2 Sept. 1981 and data are shown in the table.

| Time of application | Tebuthiuron pellet formulation | Rate (lb/A) | Control |
|---------------------|--------------------------------|-------------|---------|
| | % | | (%) |
| Fall | 19 | 0.5 | 0 |
| Fall | 16 | 1.0 | 35 |
| Fall | 10 | 1.5 | 10 |
| Fall | 20 | 0.5 | 30 |
| Fall | 20 | 1.0 | 95 |
| Fall | 20 | 1.5 | 58 |
| Spring | 10 | 0.5 | 0 |
| Spring | 10 | 1.0 | 0 |
| Spring | 10 | 1.5 | 0 |
| Spring | 20 | 0.5 | 35 |
| Spring | 20 | 1.0 | 10 |
| Spring | 20 | 1.5 | 73 |
| LSD (0.05) | | | 56 |

Leafy spurge control with tebuthiuron varied widely within most treatments. The only treatment that provided good leafy spurge control consistently was tebuthiuron 20%G at 1 lb/A fall applied which gave 95% control. Other treatments did provide over 90% control in one replication, but nearly zero in the other. Tebuthiuron at 1 and 1.5 lb/A severely damaged the grasses regardless of formulation.

The large variation in leafy spurge control by tebuthiuron could be due to the dryness the year in which the experiment was established. However, the severe damage to the native grasses probably makes tebuthiuron unsuitable for leafy spurge control in most situations.