

Reprinted with permission from: *Proceedings of the Western Society of Weed Science*. 1987. 40:70.

Published and copyrighted by: *Western Society of Weed Science*.

<http://www.wsweedsociety.org>

---

## Evaluation of 2,4-D amine timing on leafy spurge seed production and viability

GAMAL S. HENEIDI, STEPHEN D. MILLER and MARK A. FERRELL

### Abstract:

Leafy spurge (*Euphorbia esula* L.) is a troublesome weed that infests considerable areas of range and pastureland in the western United States. The successful spread of leafy spurge is due in part to its capability to reproduce by both seeds and underground roots. Spread of leafy spurge by seed occurs naturally. Expulsion of leafy spurge seed from the capsules can propel the seed up to 15 to 20 feet from the mother plant.

The purpose of this experiment was to evaluate the effect of 2,4-D {(2,4-dichlorophenoxy)acetic acid} amine spray timing on leafy spurge seed viability. The dimethyl amine formulation of 2,4-D (2 lb ai/A) was applied initially at the pre-bud to bud stage and at seven-day intervals thereafter, until the seed started dehiscing from the seed capsules.

The experiment was conducted at Lander, Wyoming, in 1985, and consisted of six timing treatments plus a non-treated check. Seeds were collected in nylon netting which was wrapped around the top of the leafy spurge plants. Treatments were replicated ten times in a randomized complete block design.

Data collected included seed counts per plant, percent viable seed, viable seeds per plant, percent seed germination in water and GA<sub>3</sub> and number of seed with broken seedcoat.

Seed production, seed viability, seed germination, and seed abnormalities were influenced by timing of 2,4-D amine applications. 2,4-D amine applications 0 and 7 days after bud initiation were most effective in eliminating viable seed production. However, 2,4-D applications 35 days after bud initiation caused the greatest number of abnormal leafy spurge radicals when germinated in both water and GA<sub>3</sub> than in H<sub>2</sub>O regardless of 2,4-D timing.