

*Reprinted with permission from: Proceedings of Western Society of Weed Science, March, 2000. Vol. 53:49-50.*

*Published by: Western Society of Weed Science. <http://www.wsweedscience.org>*

---

## **Imazapic as a tool for leafy spurge management**

DENISE M. MARKLE and RODNEY G. LYM

*Graduate Research Assistant and Professor, Plant Sciences Department, North Dakota State University, Fargo, ND 58105.*

### **Abstract:**

Imazapic is an ALS inhibiting herbicide recently labeled for leafy spurge control in non-cropland. Research at North Dakota State University has shown that occasionally imazapic will injure certain grass species. The purpose of this research was to evaluate imazapic applied alone, in rotation with picloram, plus 2,4-D, or the three herbicides applied together for long-term leafy spurge control and minimal grass injury.

---

Imazapic applied alone or with various adjuvants injured grasses in greenhouse studies; however, imazapic did not decrease herbage production in field studies. In the greenhouse, crested, western, and pubescent wheatgrasses, and smooth brome grass production was reduced to an average of 12, 3, 30 and 27%, respectively, compared to the control. Production from the warm season species big bluestem and blue grama was not reduced as greatly as the cool-season grasses in a separate experiment. However, imazapic at 2 oz/A applied alone reduced production of sideoats grama and switchgrass to 66 and 51%, respectively, compared to the control. Grass production following treatment by imazapic applied with a methylated seed oil (MSO) and 28% N ranged from 66%, compared to the untreated control, for big bluestem to zero production with switchgrass.

Imazapic provided similar or better leafy spurge control than the standard treatment of picloram plus 2,4-D in the field. Imazapic at 2 oz/A applied with a MSO alone or with 28% N averaged 72% leafy spurge control 12 months after treatment (MAT) compared to 40% control with picloram plus 2,4-D at 8 + 16 oz/A. Imazapic at 2 oz/A applied with a MSO in mid-September provided the best leafy spurge control 12 MAT compared to applied in August or October.

In general, imazapic applied in the fall provided better leafy spurge control than the mid-summer treatment and control was improved when the herbicide was applied with a MSO compared to imazapic applied alone. Grass injury to cool season species tended to

be higher when imazapic was applied in July compared to fall-applied, but the grasses recovered by 12 MAT.

A three herbicide mixture of picloram plus 2,4-D plus imazapic applied once in the spring provided excellent long-term leafy spurge control. Control averaged across locations was 98% in September 1999, 15 MAT. This high level of control was unexpected and is similar to picloram applied alone at 32 oz/A. The same three-herbicide treatment applied in the fall only averaged 61% control 12 MAT. The best split treatments were picloram plus 2,4-D applied in the spring followed by imazapic in the fall and imazapic fall-applied followed by picloram plus 2,4-D in the spring which averaged 82 and 97% control, respectively, 12 and 3 months after the last treatment, respectively.

In general, imazapic applied with a MSO provided better long-term leafy spurge control than the present standard treatment of picloram plus 2,4-D. Imazapic occasionally stunted both cool and warm season grasses, but the grasses recovered by 12 MAT. Imazapic will be a useful addition to long-term leafy spurge management.