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*Published by: University of Wyoming Cooperative Extension Service and Wyoming Weed and Pest Council.*

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## **Evaluation of AC 263,222 for leafy spurge control**

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### **Abstract:**

AC 263,222, formerly known as imazameth, has shown promise for leafy spurge control in North Dakota. However, grass injury has been observed, especially to cool season species. The AC 263,222 labeled rate for optimal leafy spurge control is 2 oz ai/A applied with a methylated seed oil and nitrogen two weeks before a killing frost. The objective of this research was to evaluate leafy spurge control from AC 263,222 applied with and without adjuvants and applied in the spring or fall to maximize leafy spurge control and minimize grass injury.

The first experiment evaluated leafy spurge control from AC 263,222 applied in the spring or fall. The flowering stage of leafy spurge was treated in the spring and regrowth was treated in September, but plots were only treated once. The treatments included AC 263,222 at 2 or 4 oz/A; AC 263,222 plus methylated seed oil (MSO) at 1 or 2 oz/A plus 1 quart applied in spring or fall; and picloram plus 2,4-D at 4 plus 16 oz/A in the spring or at 8 plus 16 oz/A in the fall.

In general, leafy spurge control was better with fall applied AC 263,222 than spring applied at comparable rates, control averaged 70% and 100%, respectively. Control increased with spring applied AC 263,222 from an average of 7% at 3 months after treatment (MAT) to 70% at 12 MAT. The average grass injury was 2% at 3 MAT and increased only to 9% at 12 MAT with spring applied AC 263,222. Grass injury ranged from 10 to 35% with fall applied AC 263,222. Grass injury increased an average of 10% and leafy spurge control increased an average of 50% at 12 MAT when the AC 263,222 application rate increased from 2 to 4 oz/A. Grass injury also increased an average of 10% and leafy spurge control increased an average of 40% at 12 MAT when MSO was added to spring applied AC 263,222.

The second experiment evaluated AC 263,222 applied with or without adjuvants. The treatments were AC 263,222 at 1 or 2 oz/A alone, with 1 quart MSO, with 1 quart 28% N, or with 1 quart MSO plus 1 quart 28% N; and picloram plus 2,4-D at 8 plus 16 oz/A. Treatments were applied September 4, 1996 at the leafy spurge fall regrowth stage.

AC 263,222 at 1 oz/A plus MSO provided 96% leafy spurge control, similar to 2 oz/A alone at 9 MAT. AC 263,222 at 1 oz/A plus MSO gave leafy spurge control and grass injury similar to picloram plus 2,4-D at 8 plus 16 oz/A, which averaged 97% leafy spurge control and 5% grass injury. Adding nitrogen to AC 263,222 and AC 263,222 plus MSO did not affect control.

Research is in progress to evaluate the effect of fall application timing with AC 263,222 on leafy spurge control and grass injury. Application times range from August 15 through October 15. The effect of various adjuvants combined with AC 263,222 on grass injury is also being evaluated.