

# Using Aminopyralid Preemergent in Pastures for Western Ragweed Control

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NF-SO-14-01

Western ragweed (*Ambrosia psilostachya*) is considered one of the most common weeds in pastures and rangeland in the Southern Great Plains. It is an aggressive competitor with grasses and is generally considered unpalatable to cattle (Vermeire et al., 2013). It is found in abundance in at least 30 of the United States, Canada and Mexico (Pavek, 1992).

Western ragweed is easily controlled in pastures and range with labeled herbicides applied post-emergent when the plants are 2-4 inches tall and actively growing. However, many producers find themselves in a situation where postemergent herbicides may not be a good option due to urban encroachment or sensitive crops nearby. A rancher whose fields are surrounded by houses and high-value horticultural crops may be hesitant to spray his property for weed control due to risk of herbicide drift onto the surrounding crops that could result in monetary damages. A common recommendation to avoid drift injury

to non-targeted plants is to spray at a time of year when the surrounding crops are not actively growing (Rhodes et al., 2005). The most logical way to do this is to spray in late winter with a preemergent herbicide before the flowers, gardens and horticultural crops are actively growing. However, there are currently no labeled herbicides for preemergent use to control western ragweed in pastures or range.

Aminopyralid (sold under the trade name Milestone® or as a formulated mixture with 2,4-D as GrazonNext®) is labeled for western ragweed control in pastures and rangeland, and is known to have soil activity on some plants for at least 215 days after treatment (Mikkelsen and Lym, 2011). It has been used preemergent to control medusahead in the western U.S (Keyser et al., 2012). We set up a study to determine if aminopyralid could control western ragweed in pastures and rangeland in Oklahoma when applied preemergent in late winter. ►



*A severe western ragweed infestation of a bermudagrass pasture in southern Oklahoma*



Note the lack of grass in the picture on the left under intensive western ragweed pressure, while the bermudagrass is abundant in the picture on the right. These pictures are of an untreated check plot and an adjacent treated plot.

The study was conducted on four sites near Ardmore, Oklahoma, in 2012 and 2013. The herbicide used in the study was Milestone® at rates of 0, 3, 6 and 9 ounces per acre. Treatments were replicated four times. The herbicide was applied in late February or early March of each year, long before western ragweed had emerged. Bermudagrass was the base forage at each location. In order to determine if the height of the grass in the pasture at time of application affected the results, the plots were mown to heights of 1, 3 and 5 inches before application. The height of the grass in the pasture did not affect the efficacy of the aminopyralid treatment, so those data

are not included in this document.

The study was rated in three different ways. First, the amount of control was estimated visually at different times throughout the growing season. This was recorded as percent control, based on comparing the amount of injury, mortality and growth of western ragweed plants in the treated plots to an untreated control in the replication. Second, the number of live plants was counted in a 46-square-foot area in the center of each plot. Third, the height of western ragweeds was measured as the minimum, maximum and average heights in each plot at the same time the plants were counted.

Table 1. Effectiveness of aminopyralid applied preemergent on western ragweed control when at least 0.5 inches of rainfall occurred within 18 days of treatment

Herbicide	Rate (oz/acre)	Visual Rating 76 DAT*	Number of Live Plants Per 46 Sq Ft 83 DAT	Visual Rating 160 DAT	Number of Live Plants Per 46 Sq Ft 160 DAT	Average Plant Height (Inches)
		% Control	% Control			
Untreated	0	0	195	0	159	15
Milestone	3	97	3	98	3	5
Milestone	6	98	3	99	3	2
Milestone	9	99	1	100	0	0

\*Days after treatment

The results of the study showed that aminopyralid can provide season-long control of western ragweed when used as a preemergent treatment. However, the number of days before a rainfall event of at least 0.5 inches to incorporate the herbicide into the soil affected the rate of aminopyralid needed to give acceptable weed control. At three sites, a rainfall of at least 0.5 inches occurred within 18 days of applica-

tion. The data from those three sites are pooled and reported in Table 1. At the fourth site, a rainfall of at least 0.5 inches did not occur until 28 days after application. Those data are reported in Table 2. In the instance where the time required to receive at least 0.5 inches of rainfall was longer, acceptable weed control was still achieved, but a higher herbicide rate was needed.

Table 2. Effectiveness of aminopyralid applied preemergent on western ragweed control when at least 0.5 inches of rainfall occurred 28 days after treatment

Herbicide	Rate	Visual Rating 76 DAT*	Number of Live Plants Per 46 Sq Ft	Visual Rating 160 DAT	Number of Live Plants Per 46 Sq Ft	Average Plant Height (Inches)
	(oz/acre)	% Control	83 DAT	% Control	160 DAT	
Untreated	0	0	159	0	184	18
Milestone	3	75	67	71	78	16
Milestone	6	89	22	91	25	12
Milestone	9	94	8	95	11	12

\*Days after treatment

This study shows that:

1. Aminopyralid can be used preemergent to control western ragweed in pastures and rangeland in Oklahoma.
2. When a rainfall event of 0.5 inches occurs within 18 days of treatment, a rate of 3 ounces of Milestone per acre gives excellent control. This amount of Milestone contains the same amount of aminopyralid as is contained in 15 ounces (slightly less than 1 pint) of GrazonNext HL per acre.
3. When a rainfall event of 0.5 inches does not occur for 28 days after treatment, a rate of 6-7 ounces of Milestone must be applied to give excellent control. The maximum labeled rate of Milestone is 7 ounces per acre. This amount of Milestone contains the same amount of aminopyralid as 30-35 ounces of GrazonNext HL per acre. The maximum annual rate of GrazonNext HL allowed on the label is 34 ounces, so no more than that amount can be applied in a single year.
4. Our plots contained large numbers of western ragweed and very small numbers of any other weeds. Therefore, we cannot state what other weeds this treatment may or may not control.

If you are interested in more complete and detailed information on the study, it is published in *Weed Technology* 2014 28:395-400. ■

## References

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