

Canada Thistle Control with Herbicides Containing Aminocyclopyrachlor

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Abstract

Canada thistle (*Cirsium arvense*) plants can grow 10 to 12 feet in a season, spreading fast in circular patches and reducing forage for animals. Aminocyclopyrachlor is a growth regulator herbicide developed by DuPont Crop Protection[®] that has shown to be effective at controlling a broad range of annual and perennial broadleaf weeds. A field study was conducted near Madras, Oregon to evaluate the efficacy of using aminocyclopyrachlor when combined with a sulfonyleurea or other growth regulator to control Canada thistle. Final evaluations performed 365 days after the application indicate that aminocyclopyrachlor, when combined with a sulfonyleurea or 2, 4-D, can effectively control Canada thistle, providing a new alternative for control in central Oregon.

Introduction

Canada thistle is a noxious perennial weed that can be found infesting crops, pastures, rangeland, roadsides and non-crop areas. Canada thistle is difficult to control once established because of its capability of reproducing by seeds or by rhizomes. Thistle plants can grow 10 to 12 feet in one season, in fast spreading circular patches. In pastures and rangelands, Canada thistle reduces forage available for animals. Aminocyclopyrachlor is a growth regulator herbicide developed by DuPont Crop Protection[®] that has shown to be effective at controlling a broad range of annual and perennial broadleaf weeds. The objective of this study was to evaluate the Canada thistle control efficacy of aminocyclopyrachlor when combined with a sulfonyleurea or other growth regulator.

Materials and Methods

A field study was initiated six miles northwest of Madras, Oregon during 2012, on non-crop land infested with Canada thistle. The study design was a randomized complete block with four replications. Plot size was 10 ft wide by 30 ft long. Herbicides were applied at thistle bolting, with a backpack sprayer calibrated to deliver 20 gallons of spray solution per acre at 40 psi pressure using XR 8002 Teejet[®] nozzles. Application date, environmental conditions, and weed growth stage are detailed in Table 1. Herbicides used in the study included aminocyclopyrachlor + chlorsulfuron (Perspective[®]), aminocyclopyrachlor + 2, 4-D ester, and aminopyralid (Milestone[®]) as the comparison standard. Herbicide rates and spray adjuvants are detailed in Table 2. Herbicide efficacy was evaluated 60, 90, and 365 days after treatment (DAT).

Results and Discussion

High levels of thistle control were observed for all treatments with values of 92 percent and up to 60 and 90 DAT (Table 2). The 90 DAT evaluations showed thistle control with Perspective[®] or aminocyclopyrachlor with 2, 4-D ester applied at the highest rate performed similarly to Milestone[®], which was used as the standard. Canada thistle control 365 DAT remained high and was excellent with all treatments. The minor differences in control recorded the previous year between rates were no longer evident in 2013. These study suggest that aminocyclopyrachlor, when combined with a sulfonylurea or 2, 4-D ester has the potential to effectively control Canada thistle in central Oregon.

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Table 1. Application dates, environmental conditions, and thistle growth stage at time of application.

Application Date	6/21/2012
Time of Day	9:00 am
Air Temperature (F)	63
Relative Humidity (%)	50
Wind Speed (MPH)	3
Wind Direction	NNW
Weed Growth Stage	Bud Stage

Table 2. Canada thistle percent control compared to the untreated check, 60, 90 and 365 days after treatment.

Treatment ¹²³		Rate	60 DAT	90 DAT	365 DAT
1	Perspective® NIS	2.5 0.25	oz/acre % v/v	93 a 92 a	97 a
2	Perspective® NIS	4.5 0.25	oz/acre % v/v	97 a 97 a	98 a
3	Aminocyclopyrachlor 2,4-D Ester NIS	4 1 0.25	fl oz/acre pt/acre % v/v	93 a 94 a	98 a
4	Aminocyclopyrachlor 2,4-D Ester NIS	8 2 0.25	fl oz/acre pt/a % v/v	96 a 96 a	98 a
5	Milestone® NIS	7 0.25	fl oz/acre % v/v	98 a 98 a	98 a
6	Untreated Check		0 b	0 b	0 b
LSD (P=.05)			5	6	0.7

¹Some treatments included in the study were used for experimental purposes and are NOT currently labeled for public use. Before using an herbicide, make certain it is properly labeled for the intended use.

²Abbreviations: DAT - Days After Treatment; NIS - Non Ionic Surfactant.

³Means among columns followed by the same letter are not different at P=0.05.