

# 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<sup>®</sup> 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. Preliminary results indicate that aminocyclopyrachlor, when combined with a sulfonyleurea or 2, 4-D, has the potential to effectively control Canada thistle. High levels of thistle control were observed for all treatments, with values of 94 percent and up.

## 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 it gets established on a site because it is capable 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<sup>®</sup> 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 feet wide by 30 feet 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<sup>®</sup> nozzles. Application date, environmental conditions, and weed growth stage are detailed in Table 1. Herbicides used in the study included aminocyclopyrachlor + chlorsulfuron (Perspective<sup>®</sup>), aminocyclopyrachlor + 2, 4-D ester, and aminopyralid (Milestone<sup>®</sup>) as the comparison standard. Herbicide rates and spray adjuvants are detailed in Table 2. Herbicide efficacy was evaluated 30, 60, and 90 days after treatment (DAT).

## Results and Discussion

High levels of thistle control were observed for all treatments with values of 94 percent and up (Table 2). No significant differences were observed between treatments with the exception of Perspective<sup>®</sup> applied at a rate of 2.5 ounces per acre when evaluated 30 DAT. The 90 DAT evaluations showed thistle control with Perspective<sup>®</sup> or aminocyclopyrachlor with 2, 4-D ester applied at the highest rate performed similarly to Milestone<sup>®</sup>, which was used as the standard. All treatments will be further evaluated in the spring of 2013 to determine thistle control one year after the application. These preliminary results suggest that aminocyclopyrachlor, when combined with a sulfonylurea or 2, 4-D ester has the potential to effectively control Canada thistle.

## Acknowledgments

The authors would like to thank Norm McKinley from DuPont Crop Protection for his support and Floyd Paye for his collaboration on the project.

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

|                       | A         |
|-----------------------|-----------|
| Application Date      | 6/21/12   |
| 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, 30, 60 and 90 days after treatment.

| Treatment <sup>123</sup>                    | Product Rate                            | 30 DAT | 60 DAT | 90 DAT |
|---|---|--------|--------|--------|
| 1 Perspective®<br>NIS                       | 2.5 oz/acre<br>0.25 % v/v               | 94 b   | 93 a   | 92 a   |
| 2 Perspective®<br>NIS                       | 4.5 oz/acre<br>0.25 % v/v               | 96 ab  | 97 a   | 97 a   |
| 3 Aminocyclopyrachlor<br>2,4-D Ester<br>NIS | 4 fl oz/acre<br>1 pt/acre<br>0.25 % v/v | 97 ab  | 93 a   | 94 a   |
| 4 Aminocyclopyrachlor<br>2,4-D Ester<br>NIS | 8 fl oz/acre<br>2 pt/a<br>0.25 % v/v    | 97 ab  | 96 a   | 96 a   |
| 5 Milestone®<br>NIS                         | 7 fl oz/acre<br>0.25 % v/v              | 98 a   | 98 a   | 98 a   |
| 6 Untreated Check                           |   | 0 c    | 0 b    | 0 b    |
| LSD (P=.05)                                 |   | 2      | 5      | 6      |

<sup>1</sup>Some 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

<sup>2</sup>Abbreviations: DAT - Days After Treatment; NIS - Non Ionic Surfactant

<sup>3</sup>Means among columns followed by the same letter are not different at P=0.05

