Canada Thistle Control in USA Rangeland and Pasture with Aminopyralid

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Aminopyralid formulations for U.S. Range & Pasture

- **Milestone™**
  - Aminopyralid
  - 240 g ae/L (2 lb ae/gal)
  - Label rate range = 52.5 to 120 g ae/ha
    - 3-7 fl oz product/acre

- **ForeFront™**
  - Aminopyralid + 2,4-D amine
  - 40 g ae + 320 g ae/L (3 lb ae/gal)
  - Maximum rate = 120 + 960 g ae/ha
    - 2.6 pt product/acre

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Overview of trials: Materials and Methods

• Summary of multiple trials, years, and locations.

• Colorado, Minnesota, Montana, North Dakota, Nebraska, Iowa, Oregon, Virginia, South Dakota, Washington and Wyoming

• 3-4 replications, Randomized Complete Block

• Non-ionic surfactant at 0.25% v/v

• Comparisons with commercial standards
Frequency of 90-100% control of Canada thistle at various growth stages at 1 YAT with spring applications of Milestone™

![Graph showing the frequency of 90-100% control at various growth stages with different treatments.](image)

- **Frequency of 90-100% control at 1 YAT**
- **Treatment (g ae/ha):**
  - Aminopyralid
  - Picloram
- **Scales:**
  - Frequency: 0 to 100%
  - Treatment: 70, 88, 105, 120, 420 g ae/ha

**Legend:**
- rosette
- bolt
- prebud
- bud

**28 trials**

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Canada Thistle Control
Summer Applications at Prebud

Evaluations at 1 year after treatment. Average of 7 to 14 sites (MN, MT, ND, NE, OR, VA, SD, WA, and WY).

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Canada Thistle Control
1 Year After Treatment

Non-treated

Aminopyralid 88 g ae/ha
(Milestone™ @ 5 fl oz/a)

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Canada thistle (*Cirsium arvense*)

Aminopyralid
120 g ae/ha (Milestone™ @ 7 fl oz/a)  
(1 YAT)
Canada Thistle Control – pre-bud
Average of 3 sites (Nebraska, Washington, and Wyoming)

Percent control

<table>
<thead>
<tr>
<th>Treatment</th>
<th>65 to 124 days</th>
<th>364 to 457 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aminopyralid 52</td>
<td>90%</td>
<td>70%</td>
</tr>
<tr>
<td>Aminopyralid 70</td>
<td>88%</td>
<td>90%</td>
</tr>
<tr>
<td>Aminopyralid 88</td>
<td>88%</td>
<td>80%</td>
</tr>
<tr>
<td>Picloram 420</td>
<td>60%</td>
<td>90%</td>
</tr>
<tr>
<td>Dicamba 1120</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

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What is the best timing for treating Canada thistle? Spring vs. Fall Application

- Spring pre-bud/bud or
- Fall regrowth (rosette)
Canada Thistle Control with Fall Applications

Average of 5 sites North Dakota (2), Nebraska, Virginia, and Washington
Spring vs. fall applied after 1\textsuperscript{st} frost (NE)

- Spring - 365 days after treatment
- Fall - 265 days after treatment

Treatment (g ae/ha):
- 70
- 88
- 105
- Picloram 420
- Clopyralid 420
- Dicamba 1120
- Chlorsulfuron 79

\textit{Aminopyralid}
Milestone™ at 5 fl oz/ac
365 DAT Applied 6/10/03
Picture 10/1/04

Clarity at 1 qt/ac
365 DAT Applied 6/10/03
Picture 10/1/04

OverDrive at 6 oz/ac
365 DAT Applied 6/10/03
Picture 10/1/04

Telar at 1.5 oz/ac
365 DAT Applied 6/10/03
Picture 10/1/04

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Spring vs. fall herbicide application on Canada thistle, 2 years after treatment

% Control

<table>
<thead>
<tr>
<th>Treatment (g ae/ha)</th>
<th>Spring</th>
<th>Fall</th>
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</thead>
<tbody>
<tr>
<td>88</td>
<td></td>
<td></td>
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<tr>
<td>105</td>
<td></td>
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<tr>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dicamba 1120</td>
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<td></td>
</tr>
</tbody>
</table>

Legend:
- Spring
- Fall

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Canada Thistle Control Across Five Locations and Two Application Timings

% Control 12 MAT

- Dicamba+2,4-D (1pt+1qt/A)
- Dicamba+dflu 6 oz/A
- Dicamba+Dflu 8 oz/A
- Dicamba 2qt/A
- Dicamba+2,4-D (1qt+1qt)
- Clopyralid+2,4-D 3 qt/A
- Clopyralid 1 pt/A
- Pic+2,4-D (1pt+1qt/A)
- Aminopyralid 5 oz/A
- Aminopyralid 6 oz/A
- Aminopyralid 7 oz/A
- Picloram 1.5 pt/A
Summary and Conclusions

• Aminopyralid (Milestone™) at a rate as low as 88 g ae/ha (5 fl oz/acre) can provide excellent control of Canada thistle up to 2 years after treatment compared to other commonly used herbicides which typically utilize higher rates of active ingredients per unit area.

• Milestone applied in the fall provided better long term Canada thistle control than when applied in the spring compared to other commonly used herbicides.
Questions?