2010 Cranberry Management Update: Weed Management

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2010 Weed Management Update

Hilary Sandler

Supported by:
A. Beaton, K. DeMoranville, N. DePaulo,
K. Ghantous, J. O’Connell, and T. Revell
Dodder Control

• Quinclorac via Section 18
  – Data from WI and NJ

• What happened in 2009?

• What are we doing for 2010?
Quinclorac in WI

• In 2008, Dr. J. Colquhoun reported preliminary data that indicated Q had efficacy vs dodder.

• Lacking alternatives since Kerb was withdrawn.

• No MA experience with Q other than IR-4 trials.
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate (oz/A)</th>
<th>22 DAT</th>
<th>54 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix</td>
<td>2</td>
<td>15.0 c</td>
<td>8.8 c</td>
</tr>
<tr>
<td>Matrix+Accent</td>
<td>2 + 0.67</td>
<td>18.8 c</td>
<td>11.3 b</td>
</tr>
<tr>
<td>Accent</td>
<td>0.67</td>
<td>6.3 d</td>
<td>0.0 d</td>
</tr>
<tr>
<td>Callisto</td>
<td>8</td>
<td>26.3 b</td>
<td>0.0 d</td>
</tr>
<tr>
<td>Facet</td>
<td>8 (0.38 # ai)</td>
<td>96.8 a</td>
<td>96.5 a</td>
</tr>
<tr>
<td>NIS only</td>
<td>0.25% v:v</td>
<td>0.0 e</td>
<td>0.0 d</td>
</tr>
<tr>
<td>UNT</td>
<td>n/a</td>
<td>0.0 e</td>
<td>0.0 d</td>
</tr>
</tbody>
</table>

Applied June 26, 2008 in 30 GPA water.
Quinclorac in MA 2009

- Albaugh Chemical willing to support their quinclorac product, QuinStar.
- Chose 4L for ease of chemigation.
- Received EPA permit June 10, 2009.
- According to MDAR, ~50 gal applied in 2009; ~660 A.
  - Most used 8 oz/A = 0.24 lb ai
Why didn’t it work?

- We applied the herbicide too late.
- We didn’t use high enough dose.
- Liquid not as good as Dry Flowable.
- Different products have different efficacies.
- MA dodder is resistant to Quinclorac.
# % Dodder Control NJ 2009

<table>
<thead>
<tr>
<th>Trmt</th>
<th>Date</th>
<th>Jul 22</th>
<th>Jul 30</th>
<th>Aug 6</th>
<th>Sep 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>QS 4L</td>
<td>Jun 17</td>
<td>70</td>
<td>63</td>
<td>86</td>
<td>100</td>
</tr>
<tr>
<td>QS 4L</td>
<td>Jul 22</td>
<td>0</td>
<td>0</td>
<td>37</td>
<td>100</td>
</tr>
<tr>
<td>QS 4L</td>
<td>6/17 &amp; 7/22</td>
<td>70</td>
<td>67</td>
<td>83</td>
<td>100</td>
</tr>
<tr>
<td>UNT</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

1% COC added; by the last date, dodder senescing naturally. Courtesy B. Majek.
NJ DATA 2009

• Single application did not provide full season control; 2 appl. better.
  – Dodder recovered and bloomed later

• Seed production not evaluated.

• CB have excellent tolerance.

• Only 1 site; however used QS 4L;
  – Earlier appl. was more effective
<table>
<thead>
<tr>
<th>Trmt</th>
<th>Jul 1</th>
<th>Jul 23</th>
<th>Aug 25</th>
<th>Oct 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>None sprouted</td>
<td>97 a</td>
<td>95 ab</td>
<td>92 ab</td>
<td>90 ab</td>
</tr>
<tr>
<td>Strands present</td>
<td>99 a</td>
<td>98 a</td>
<td>96 a</td>
<td>94 a</td>
</tr>
<tr>
<td>Matted, flowers</td>
<td>--</td>
<td>90 bc</td>
<td>84 bc</td>
<td>82 c</td>
</tr>
<tr>
<td>Seeds present</td>
<td>--</td>
<td>--</td>
<td>56 d</td>
<td>51 e</td>
</tr>
<tr>
<td>UNT</td>
<td>0 d</td>
<td>0 h</td>
<td>0 g</td>
<td>0 g</td>
</tr>
</tbody>
</table>

Facet 75DF, 5.3 oz/A (0.25 lb ai/A) in 30 GPA water. Only selected trts presented.
What we know now

• Earlier appl. seem more effective.

• Using 8 oz/A QS 4L provides control but 2 applications look better.
  – Must observe 30-day interval

• Permit is requesting 2 applications:
  – 4L: up to 12.5 oz; not to exceed 16 oz.
  – 75DF: up to 8; not to exceed 10.7 oz.
Spring 2010

• Requesting earlier notification from EPA for QS 4L and QS 75DF
  – NIS at 2-4 pt/A when chemigating

• If Casoron works for you, plan to use it.

• Consider using Callisto POST.

• Consider using short-term floods.
Callisto Dodder 2008

- Plots set out at 2 farms.
- Callisto applied before or after dodder was flowering; 5 reps.
- Evaluated for dodder injury, seed production, and cranberry yield.
- Repeated study in 2009; data are being processed now.
## Dodder Injury Rating

<table>
<thead>
<tr>
<th></th>
<th>15 DAT</th>
<th>49 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Callisto</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 oz, Jul 10</td>
<td>1.3 a</td>
<td>1.8 a</td>
</tr>
<tr>
<td>8 oz, Jul 10</td>
<td>1.6 a</td>
<td>1.6 a</td>
</tr>
<tr>
<td>4 oz, 7/10 &amp; 30</td>
<td>1.2 a</td>
<td>1.8 a</td>
</tr>
<tr>
<td>8 oz, 7/10 &amp; 30</td>
<td>1.3 a</td>
<td>1.9 a</td>
</tr>
<tr>
<td>4 oz AF (7/30)</td>
<td>n/a</td>
<td>1.0 b</td>
</tr>
<tr>
<td>8 oz AF (7/30)</td>
<td>n/a</td>
<td>1.0 b</td>
</tr>
<tr>
<td>UNT</td>
<td>0.0 b</td>
<td>0.0 c</td>
</tr>
</tbody>
</table>

0= healthy and 4= dead or gone. Values mean of 10 rep (2 farms). 2008 data. Applied to plots at ca. 30 GPA water with NIS 0.25% v:v.
## Dodder Seed Production

<table>
<thead>
<tr>
<th>Callisto</th>
<th>No. Healthy seed (6”ring)</th>
<th>Germination %</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 oz, Jul 10</td>
<td>112 ab</td>
<td>42 a</td>
</tr>
<tr>
<td>8 oz, Jul 10</td>
<td>51 b</td>
<td>11 b</td>
</tr>
<tr>
<td>4 oz, 7/10 &amp; 30</td>
<td>70 b</td>
<td>31 ab</td>
</tr>
<tr>
<td>8 oz, 7/10 &amp; 30</td>
<td>29 b</td>
<td>19 b</td>
</tr>
<tr>
<td>4 oz AF (7/30)</td>
<td>73 b</td>
<td>12 b</td>
</tr>
<tr>
<td>8 oz AF (7/30)</td>
<td>72 b</td>
<td>16 b</td>
</tr>
<tr>
<td>UNT</td>
<td>224 a</td>
<td>48 a</td>
</tr>
</tbody>
</table>
Chemigating with Callisto

• Currently, label reads 0.25% v:v but was developed for other application methods, not chemigation.

• Distributed survey will help me work with Syngenta to get label change.
Survey

• **Which adjuvant did you use?** (List product type and/or name)_____________

• **How much PER ACRE?**
  - None  
  - 1 qt  
  - 1-2 qt  
  - 2-3 qt  
  - 4 qt  
  - Other

• **Amt Callisto used PER ACRE_______**
  **Target weed(s)__________**

• **Were you pleased with the weed control?**
  Circle one.
  - Great job  
  - It was good  
  - It was ok  
  - It was marginal  
  - It didn’t work
Survey

• TOP 5 most problematic weeds? Please rank wrt HOW MUCH OF A PROBLEM THEY ARE. Please estimate the % of farm infested with each weed.

• Rank the weed % acreage infested?
  • ___Annual grasses
  • ___Asters
  • ___Chokeberry
  • ___Cinquefoil (five-finger)
  • ___Dewberry
  • ___Dodder
  • ___Maples
Survey

- Rank the weeds % acreage infested?
  5__ Annual grasses 50%
  4__ Asters 5%
  ___ Chokeberry 0%
  ___ Cinquefoil (five-finger) 0%
  1__ Dewberry 10%
  2__ Dodder 35%
  3__ Maples 8%
Phragmites

• Clonal, invasive wetlands grass.

• Can grow more than 15’ tall; flowers mid-summer.

• Can reproduce by seed, but spreads vegetatively by rhizomes, which can be 6 - 12’ long.
  – Can produce 200 stems / m².
Phragmites

• Treat with Roundup mid-summer.
• Mow 4-8 weeks later.
• Repeat yearly as needed.
• Control populations off-site, too.
Rhizome
Pineweed (orangegrass)

• Bushy plant: wiry, green stems.
  – Small leaves (less than 1.4”)
  – neither a pine nor a grass;

it’s a St. Johnswort.
• Casoron - high rates.
  – Be cautious if using on new plantings.

• Hand pull small patches
Purple Loosestrife

- **Invasive** wetlands plant, 2-4’ tall, flowers Jun-Sep.
- Treat with Roundup.
- Hand-pull small patches.
- Control early!!

- **Not** related to Yellow LS.
Late Applications of Casoron

• To see if the window of low-rate applications could be extended.

• Injury? Effect on yield??

• BL, ST, EB, and Howes
  – Weekly treatments of 40 or 60 lb/A starting May 10 and ending June 23.
Late Applications of Casoron

- Only 1 year of data.
- Tracking effect on next year’s growth and yield.
- Hope to re-do the entire expt to get another year of data.
## Injury (yellow vine)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>1.4 bc</td>
</tr>
<tr>
<td>Week 2</td>
<td>1.8 a</td>
</tr>
<tr>
<td>Week 3</td>
<td>1.6 ab</td>
</tr>
<tr>
<td>Week 4</td>
<td>1.8 a</td>
</tr>
<tr>
<td>Week 5</td>
<td>1.4 bc</td>
</tr>
<tr>
<td>Week 6</td>
<td>1.1 cd</td>
</tr>
<tr>
<td>Unt</td>
<td>0.7 d</td>
</tr>
</tbody>
</table>

0 = healthy
3 = widespread injury
<table>
<thead>
<tr>
<th>Variety</th>
<th>Injury rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben Lear</td>
<td>2.2 a</td>
</tr>
<tr>
<td>Howes</td>
<td>1.7 b</td>
</tr>
<tr>
<td>Early Black</td>
<td>1.3 c</td>
</tr>
<tr>
<td>Stevens</td>
<td>0.7 d</td>
</tr>
</tbody>
</table>
Ben Lear treated with Casoron
Howes treated June 2, 2009 with 40 lb/A