Part 3 of 3

ORDP Report No. 2: In-Season Management of Perennial Sow Thistle with Stinger

Christy Hoepting and Elizabeth Buck
Cornell Cooperative Extension Vegetable Program

Empire Produce Expo, Syracuse, NY: January 21, 2014
# In-Season Management of Perennial Sow Thistle (Bud-Stage)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>Crop Stage</th>
<th>Weed Stage</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Untreated Weedy Check</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5B. Bud 4 + 8 Stinger</td>
<td>4 fl oz</td>
<td>7-8 leaf</td>
<td>EB to MB Oldest in flower</td>
<td>Jul-5 Jul-17</td>
</tr>
<tr>
<td></td>
<td>8 fl oz</td>
<td>8-9 leaf 1-2” bulb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Bud 8 + 8: Stinger</td>
<td>8 fl oz</td>
<td>7-8 leaf</td>
<td>EB to MB Oldest in flower</td>
<td>Jul-Jul-17</td>
</tr>
<tr>
<td></td>
<td>8 fl oz</td>
<td>8-9 leaf 1-2” bulb</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Location: Big O, Elba
In-Season Management of Perennial Sow Thistle (Bud-Stage)

In-Season Management of Perennial Sow Thistle at Bud-Stage:
% Control of Weed Density and Biomass

Poor control overall

% weed control

5B. Bud 4 + 8
34.4
31

13. Bud 8 + 8
20.3
45

% weed control (ground cover) Jul-30
% control (fresh weight) Aug-13
In-Season Management of Perennial Sow Thistle (Bud-Stage)

5B. Stinger 4 fl oz Ebud/Mbud + 8 fl oz 2 weeks later

- Killed 80% buds < pencil diameter.
- Larger buds, flowers & seed pods unaffected.
- ER to MB dead
- Stunted compared to untreated.

Jul-17-2013
In-Season Management of Perennial Sow Thistle (Bud-Stage)

13. Stinger 8 fl oz Ebud/Mbud + 8 fl oz 2 weeks later

- Killed 95% buds < pencil diameter; all buds in Mbud plants (3 feet tall).
- Parent rhizomes injured and scarred
- Stunted

[Images showing untreated and treated thistles, labeled “untreated” and “Stinger 8 fl oz.”]

Jul-17-2013
• Stinger 4 fl oz was able to kill perennial sow thistle in mid-bolt stage when it was applied after the summer solstice
  – After summer solstice, energy in plant begins to move downward

• Bud-stage apps may be useful for preventing perennial sow thistle from shedding seed in ditch banks or hedgerows (phyto to willows?)
## In-Season Management of Perennial Sow Thistle (Novel herbicides)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>Crop Stage</th>
<th>Weed Stage</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Untreated Weedy Check</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>13. Nortron SC:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nortron SC</td>
<td>16 fl oz</td>
<td>4.5 leaf</td>
<td>rosette</td>
<td>Jun-20</td>
</tr>
<tr>
<td>Nortron SC</td>
<td>16 fl oz</td>
<td>7 leaf</td>
<td>2 weeks late</td>
<td>Jul-5</td>
</tr>
<tr>
<td>Nortron SC</td>
<td>16 fl oz</td>
<td>8 leaf start bulb</td>
<td>2 weeks later</td>
<td>Jul-17</td>
</tr>
<tr>
<td>Nortron SC</td>
<td>16 fl oz</td>
<td>7 leaf 1” bulb</td>
<td>2 weeks later</td>
<td>Jul-31</td>
</tr>
<tr>
<td><strong>13. Chateau-Stinger:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chateau</td>
<td>2.0 oz</td>
<td>4.5 leaf</td>
<td>rosette</td>
<td>Jun-20</td>
</tr>
<tr>
<td>Stinger</td>
<td>4 fl oz</td>
<td>7 leaf</td>
<td>When regrow</td>
<td>Jul-5</td>
</tr>
<tr>
<td><strong>15. Garlon 4</strong></td>
<td>2 qt</td>
<td>7 leaf 1” bulb</td>
<td>Rosette to flower</td>
<td>Jul-31</td>
</tr>
</tbody>
</table>

Location: Mortellaro & Sons, Elba
In-Season Management of Perennial Sow Thistle (Novel herbicides)

14. Chateau 2.0 oz @ rosette + Stinger 4 fl oz when regrow

Chateau 2.0 oz burns back SONAR
Re-growth prior to Stinger 4 fl oz
In-Season Management of Perennial Sow Thistle (Novel herbicides)

untreated

Chateau 2.0 oz @ rosette + Stinger 4 fl oz regrow

Nortron 16 fl oz 4x every 2 weeks

Aug-21, 2013
In-Season Management of Perennial Sow Thistle (Novel herbicides)

14. Garlon 2 qt rosette to flower

Garlon has activity on perennial sow thistle

Aug-21, 2013
Future Research Plans:

• Investigate 6 fl oz and 12 fl oz
• Trial Starane and Garlon for feasibility of controlling perennial sow thistle in onions including efficacy and crop tolerance
• Investigate strategies to align susceptible weed stage with crop tolerance of growth regulator herbicides.