Onion Weed Control Update

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Issues in Onion Weed Control

• Challenges
  - Yellow Nutsedge
  - Long season that spans from cool to warm season weeds
  - Crop is subject to multiple flushes of weeds
  - No effective mechanical cultivation strategies
  - Hand weeding:
    - can be very expensive
    - can cause stand loss and damage
Prior to planting:
- Metam
- Paraquat
- Roundup
- Shark
- Scythe

At planting:
- Dacthal
- Prefar
- preemergence to weeds

1st true leaf:
- Goal Tender
- Loop
- Prowl H20

2nd true leaf:
- Goal
- Buctril
- Prowl
- Outlook
- Select Max
- Poast
- Poast
- Fusilade
- Dual Magnum
Possible New Herbicide for Onions?
Zeus
Sulfentrazon – FMC Corp

• Protox inhibitor similar to Goal
• Preemergent & foliar activity
• Absorbed by roots in soil applications (not so with Goal)
• Not volatile
• There is precedent for safety with this group of herbicides on onions
  ▪ Goal and Chateau
• Has activity against yellow nutsedge
Zeus
Sulfentrazon – FMC Corp

• Registered on:
  ▪ Asparagus
  ▪ Cabbage
  ▪ Tomato
  ▪ Mint

• There are specific plant back restrictions listed on the label

• Three plant back studies were done to evaluate its safety to rotational crops: Salinas, UCD and Yuma
Zeus
Sulfentrazon – FMC Corp

• FMC wants to be assured about crop safety before moving forward with registration
## 2012 Weed Control Evaluation
Conducted at a site with Yellow Nutsedge

<table>
<thead>
<tr>
<th>Treatments</th>
<th>Rate</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Dacthal Goal Tender + Buctril</td>
<td>1.33 gals 6.0 + 16.0 oz</td>
<td>Pre Post 2(^{nd}); 3(^{rd}) leaf</td>
</tr>
<tr>
<td>Zeus Goal Tender + Buctril</td>
<td>2.0 oz 6.0 + 16.0 oz</td>
<td>Pre Post 2(^{nd}); 3(^{rd}) leaf</td>
</tr>
<tr>
<td>Dacthal Zeus</td>
<td>1.33 gals 2.0 oz</td>
<td>Pre Post 2(^{nd}) leaf</td>
</tr>
<tr>
<td>Dacthal Zeus</td>
<td>1.33 gals 3.0 oz</td>
<td>Pre Post 2(^{nd}) leaf</td>
</tr>
<tr>
<td>Dacthal Zeus</td>
<td>1.33 gals 4.0 oz</td>
<td>Pre Post 2(^{nd}) leaf</td>
</tr>
<tr>
<td>Dacthal 7-7-0-7 + Goal Tender + Outlook</td>
<td>1.33 gals 72 gal + 6.0 + 14.0 oz</td>
<td>Pre Post 2(^{nd}) leaf</td>
</tr>
<tr>
<td>Alternative treatments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dacthal Final-San-O</td>
<td>1.33 gals 20% v/v</td>
<td>Pre Post 2(^{nd}) leaf</td>
</tr>
<tr>
<td>Dacthal Scythe</td>
<td>1.33 gals 9% v/v</td>
<td>Pre Post 2(^{nd}) leaf</td>
</tr>
</tbody>
</table>
Total Weeds/A
Including the Untreated
Total Weeds/A
Excluding the Untreated

- Standard
- Zeus 2.0 pre
- Zeus 2.0 post
- Zeus 3.0 post
- Zeus 4.0 post
- Outlook
Yellow Nutsedge/A
Including the Untreated

![Bar chart showing the comparison of Yellow Nutsedge/A treatment results across different methods and post-treatment periods. The chart includes categories such as Standard, Zeus 2.0 pre, Zeus 2.0 post, Zeus 3.0 post, Zeus 4.0 post, Outlook, and Untreated.]
Weed Time Hours/A
Including the Untreated
Weed Time Hours/A
Not including the Untreated

<table>
<thead>
<tr>
<th>Product</th>
<th>Hours/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>9</td>
</tr>
<tr>
<td>Zeus 2.0 pre</td>
<td>15</td>
</tr>
<tr>
<td>Zeus 2.0 post</td>
<td>10</td>
</tr>
<tr>
<td>Zeus 3.0 post</td>
<td>7</td>
</tr>
<tr>
<td>Zeus 4.0 post</td>
<td>5</td>
</tr>
<tr>
<td>Outlook</td>
<td>2</td>
</tr>
</tbody>
</table>
Yield T/A

- Standard
- Zeus 2.0 pre
- Zeus 2.0 post
- Zeus 3.0 post
- Zeus 4.0 post
- Outlook
- Untreated
Yield Increase Comparisons
Tons/A

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Material/A</th>
<th>Yield Tons/A</th>
<th>Increase over Untreated</th>
<th>Increase over Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated*</td>
<td>----</td>
<td>45.5</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Dacthal Goal Tender+Buctril</td>
<td>1.33 gal 6.0+16.0 oz</td>
<td>53.3</td>
<td>7.8</td>
<td>----</td>
</tr>
<tr>
<td>Zeus PRE Goal Tender+Buctril</td>
<td>2.0 oz 6.0+16.0 oz</td>
<td>53.8</td>
<td>8.3</td>
<td>----</td>
</tr>
<tr>
<td>Dacthal 7-7-0-7 Goal Tender Outlook</td>
<td>1.33 gal 72 gal 6.0 oz 14.0 oz</td>
<td>61.1</td>
<td>15.6</td>
<td>7.8</td>
</tr>
</tbody>
</table>

* Weeding costs were >$2,200/A
Post Plant Preemergence Comparisons

Zeus 2.0 fl oz followed by Goal Tender/Buctril

Dacthal followed by Goal Tender/Buctril
Nutsedge Treatments

Outlook Program

Zeus 3.0 fl oz Post emergence
Comments on Final-San-O and Scythe

• Final-San-O and Scythe provided some burn back of weeds in onions
• The yield in these treatments was similar to the untreated
• This trial was probably too challenging of a test for these types of materials because the weed pressure was so severe that the weeds regrew vigorously and weeding costs were very high
2012 Onion Weed Control Trial Summary

• This trial gave us a great opportunity to evaluate Zeus under high nutsedge pressure

• Post emergent applications of Zeus are too phytotoxic to the onions

• Preemergent applications of Zeus look promising and should be further tested
Acknowledgements

- Matt Kelly, Rio Farms
- Ryan Bassetti, Integrated Control
- Wyatt Duncan, Integrated Control