Integrated Management of Kochia
Where are we and where should we be going?

Western IPM Kochia Work Group
October

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UNL - Weed Management Specialist - Scottsbluff
Where are we? Challenges and Opportunities

• What are we here to discuss?
  • A diversity of compatible tactics

What did the survey report?

Category of Response

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical</td>
<td>6</td>
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<tr>
<td>Mechanical</td>
<td>2</td>
</tr>
<tr>
<td>Biological</td>
<td>4</td>
</tr>
<tr>
<td>Cultural</td>
<td>14</td>
</tr>
<tr>
<td>Seed Management</td>
<td>9</td>
</tr>
<tr>
<td>Sanitation</td>
<td>1</td>
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<tr>
<td>New Technologies</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
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</tbody>
</table>
What did the survey report?

Identified priorities by more than one respondent.

- N=2
  - How does environmental spatial variability impact kochia fecundity and longevity?
  - Impact of pre-harvest herbicides on seed production.

- N=3
  - Multiple MOA and multiple application timings.
  - Harvest weed seed control.
  - Influence of planting date on kochia suppression
What did the survey report?

Identified priorities by more than one respondent.

- N=4
  - Targeted crop rotations.
- N=6
  - Cover crops and silage crops.
Harvest Weed Control with Herbicides

Seed destruction technology

Cover Crops and Silage Crops

Targeted Crop Rotations

Planting Dates

Beckie et al. 2012
What did the survey report?

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Recent, and not so recent, research.

Impact of pre-harvest herbicides on seed production.

Kumar & Jha 2015
Recent, and not so recent, research.

Harvest weed seed control.

Table 4. Results of weed seed shatter and (or) retention studies in western Canada at the time of swathing or direct-harvest, expressed as a percentage of total seeds produced.

<table>
<thead>
<tr>
<th>Weed species</th>
<th>Crop</th>
<th>Shatter (%)</th>
<th>Retention (%)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Swathing</td>
<td>DH</td>
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<tr>
<td>Kochia</td>
<td>Wheat-sp</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Wheat-pf</td>
<td>&lt;0.1</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Wheat-pf</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Lambsquarters</td>
<td>Wheat-pf</td>
<td>1.0</td>
<td>9.9</td>
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<td>Redroot pigweed</td>
<td>Wheat-pf</td>
<td>10.8</td>
<td>34.1</td>
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<tr>
<td>Round-leaved mallow</td>
<td>Wheat-pf</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Recent, and not so recent, research.

Identified priorities by more than one respondent.

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- N=4
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- N=6
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Recent, and not so recent, research.

- Collected seed Fall, 2013 – Lingle, WY
- Seed blend - 5% ALS-R
- Kochia seeded - May 2014
- 2,000 g/ha
- Used rotary hand spreader to seed plots

Mosqueda et al. In review
Discussion: where do we go from here?

Thank you collaborators!
• Elizabeth Mosqueda
• Andrew Kniss
• Prashant Jha
• Gustavo Sbatella
• Bob Wilson