HERBICIDE APPLICATION MATTERS:
EXTRACTING THE MOST OUT OF YOUR HERBICIDE DOLLAR BY OPTIMIZING EACH APPLICATION

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2016 - Midwest Women in Agriculture Conference

Herbicide-Resistant Weed Era
Challenging, Fragile, Expensive

Current/Future Soybean Traits

Droplet Size and Surface Coverage

Comparison of microns to various items:

<table>
<thead>
<tr>
<th>Item</th>
<th>Micron Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil lead</td>
<td>2000 (µm)</td>
</tr>
<tr>
<td>Paper clip</td>
<td>850 (µm)</td>
</tr>
<tr>
<td>Staple</td>
<td>420 (µm)</td>
</tr>
<tr>
<td>Toothbrush bristle</td>
<td>300 (µm)</td>
</tr>
<tr>
<td>Sewing thread</td>
<td>150 (µm)</td>
</tr>
<tr>
<td>Human hair</td>
<td>100 (µm)</td>
</tr>
</tbody>
</table>
Spray Challenge!

Drift Reduction

- Larger spray droplets less susceptible to drift
- Nozzles with Pre-Orifice and Venturi Air Induction designs produce coarse to ultra coarse droplets

Distance below nozzle

<table>
<thead>
<tr>
<th>Distance below nozzle</th>
<th>XR 11003 @ 50 PSI</th>
<th>TT 11003 @ 35 PSI</th>
<th>TT 11003 @ 35 PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot;</td>
<td>45% 664 droplets</td>
<td>45% 1,381 droplets</td>
<td>70% 671 droplets</td>
</tr>
<tr>
<td>20&quot;</td>
<td>62% 1,137 droplets</td>
<td>63% 1,743 droplets</td>
<td>49% 1,413 droplets</td>
</tr>
<tr>
<td>30&quot;</td>
<td>62% 1,384 droplets</td>
<td>52% 1,936 droplets</td>
<td>45% 1,774 droplets</td>
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Distance below nozzle

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<tr>
<th>Distance below nozzle</th>
<th>TT 11003 @ 40 PSI</th>
<th>TT 11003 @ 35 PSI</th>
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</tr>
</thead>
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<tr>
<td>10&quot;</td>
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<td>45% 1,381 droplets</td>
<td>70% 673 droplets</td>
</tr>
<tr>
<td>20&quot;</td>
<td>62% 1,177 droplets</td>
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Weed Science

Herbicide Resistance?

Weed Science

Liberty 29oz/A
15 GPA

AMS Replacement

AMS Replacement + DCA (PA)

AMS Replacement + DCA (HPG)

AMS Replacement + DCA (NVA)

AMS Replacement

Palmer Amaranth Control
40% difference due to application method

Liberty Good Application

Liberty Poor Application

Liberty Label:
“Minimum 15 GPA”
“Medium droplets (250-350 microns)”
No mention of AMS in LL soybeans.

Spray Drift Reduction Technology

What is our greatest herbicide application failure over the past few decades?
Spraying Tall Weeds is Our Greatest Failure!

Thank You!

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