Can Integrated Weed Management Technologies Match the Competition?

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Integrated Weed Management
Where’s the IWM?

Why scout? Glyphosate controls them all.
Where’s the IWM?

Corn + Soybean = 146 million acres
monoculture crop

- Corn 75 million acres
- Soybean 71 million acres
 Glyphosate-Resistant Weeds

![Plant Images]
Where’s the IWM?

Tillage:
  Seedbed tillage
  Rotary hoeing
  Row cultivation
Where’s the IWM?

One Size (and Program) Fits All

Guarantee Programs and Warranties
Consolidated Retail Infrastructure

1928 Dane Co. Farm Bureau Coop
Dane Co. Coop Farm Supply
1964 Dane Co. Farmco Cooperative
1982 Green Prairie FS Coop
Danco FS Cooperative
1997 Green Rock FS Coop
2000 Agri-Tech FS Coop
2003 Jefferson Co. Farmco
Frontier FS Cooperative
Increasing Farm Size
Corn Farms for Grain

Percent of farms by size

Percent of corn acres by farm size

NASS Census 2002
Risk of Late Herbicide Applications
Early Season Weed Competition on Corn Yield

Weed Height

Yield Loss (%)

2 inch 4 inch 6 inch 9 inch 12 inch

Average

Invisible Yield Loss?

Hartzler, ISU
Weed-Insect-Disease Management

Avoid a tank tri-mix on soybeans
**WeedSOFT Recommendations -- Treatment Rank: 1 of 56**

**Treatment:** Callisto + Steadfast + Atrazine 90DF + COC + AMS(POST)

**Rate:** 2 OZ + 0.75 OZ + 0.5 LB + 0.8 QT + 1.7 LB(POST)/Acre

**Net Gain:** $91.77

**PMY:** 89%

**Total Cost/A:** $16.98

<table>
<thead>
<tr>
<th>Treatment Name</th>
<th>Rate/Planted Acre</th>
<th>Net Gain</th>
<th>PMY</th>
<th>Crop Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Callisto + Steadfast + Atrazine 90DF + COC + AMS(POST)</td>
<td>2 OZ + 0.75 OZ + 0.5 LB + 0.8 QT + 1.7 LB(POST)/Acre</td>
<td>$91.77</td>
<td>89</td>
<td>2</td>
</tr>
<tr>
<td>[glyphosate] + AMS(POST)</td>
<td>32 OZ + 2 LB(POST)/Acre</td>
<td>$89.33</td>
<td>89</td>
<td>1</td>
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<tr>
<td>[glyphosate] + Atrazine 90DF + A...</td>
<td>32 OZ + 0.83 LB + 2 LB(POST)/Acre</td>
<td>$88.45</td>
<td>89</td>
<td>1</td>
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<tr>
<td>Callisto + Steadfast + COC + AMS...</td>
<td>3 OZ + 0.75 OZ + 0.8 QT + 1.7 LB(POST)/Acre</td>
<td>$87.58</td>
<td>89</td>
<td>2</td>
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<tr>
<td>Option + Callisto + MSO + AMS(P...</td>
<td>1.5 OZ + 3 OZ + 1.5 PT + 2 LB(POST)/Acre</td>
<td>$86.47</td>
<td>89</td>
<td>2</td>
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<tr>
<td>Ready Master ATZ + AMS(POST)</td>
<td>1.5 QT + 3 LB(POST)/Acre</td>
<td>$84.81</td>
<td>89</td>
<td>1</td>
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<tr>
<td>Steadfast ATZ + COC + 28% UAN...</td>
<td>14 OZ + 0.8 QT + 2 QT(POST)/Acre</td>
<td>$82.09</td>
<td>89</td>
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<tr>
<td>Tolymphosate + Harness + AMSIP...</td>
<td>32 OZ + 0.9 PT + 2 LB(POST)/Acre</td>
<td>$80.64</td>
<td>89</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>Weed Name and Seedbank Estimation</th>
<th>Weed Population Before</th>
<th>Weed Population After</th>
<th>Bushels Lost/A Before</th>
<th>Bushels Lost/A After</th>
<th>Dollars Lost/A Before</th>
<th>Dollars Lost/A After</th>
<th>% Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foxtail, Giant (SA)</td>
<td>200.0</td>
<td>20.0</td>
<td>20.9</td>
<td>5.7</td>
<td>$52.25</td>
<td>$14.25</td>
<td>90.0%</td>
</tr>
<tr>
<td>Lambsquarters, Common (SA)</td>
<td>200.0</td>
<td>10.0</td>
<td>31.4</td>
<td>5.5</td>
<td>$78.50</td>
<td>$13.75</td>
<td>95.0%</td>
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<tr>
<td>Ragweed, Common (SA)</td>
<td>100.0</td>
<td>5.0</td>
<td>7.9</td>
<td>5.5</td>
<td>$19.75</td>
<td>$13.75</td>
<td>95.0%</td>
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</table>

**TOTALS:**

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<tbody>
<tr>
<td>500.0</td>
<td>35.0</td>
<td>60.2</td>
<td>16.7</td>
<td>$150.50</td>
<td>$41.75</td>
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</table>
1. Can IPM practices be economically justified in a technology driven market given the current dynamics?

2. How did we get in this predicament?

3. What are the barriers to maintaining IPM in field crops?

4. Is this phenomena occurring with other commodity crops or in other regions?

5. What programs have been successful in promoting IPM or encouraging the use of non-IPM in this market?

6. What research and education is needed in the future to support field crop IPM?

7. How can we work more closely with industry to facilitate adoption and use of IPM?