What You’ll Learn...

- Inbred corn lines can be sensitive to various herbicides, limiting potential weed management options.
- Need to expand upon current recommendation of Degree Xtra® (PRE) followed by a postemergence tankmix application of IMPACT® and Warrant® Herbicide.

Limited Herbicide Options for Weed Management

Weed management in seed corn production fields is challenging because inbred corn lines can be sensitive to various herbicides, which reduces the potential herbicide options for managing weeds. Additionally, seed corn does not produce a tight canopy, particularly after detasseling, allowing light to penetrate to the soil resulting in the potential for further weed flushes later in the season. Therefore, a successful weed management program includes herbicides with good soil residual characteristics. The current herbicide recommendation for seed corn producers is to use Degree Xtra® preemergence (A) followed by (fb) a postemergence (B) tankmix application of IMPACT® and Warrant® Herbicide along with ammonium sulfate (AMS) and menthylated seed oil (MSO) (Figure 1).

Additional crop-safe herbicide options in combination with Degree Xtra would be beneficial to help manage difficult weeds with different modes of action (MOA). To help determine other options, a randomized complete block trial with 3 replications of 10 different herbicide treatments, including competitive combinations, was conducted in 2015 at locations in Indiana, Iowa, and Nebraska.

Herbicide Treatments in Trial

1. Degree Xtra fb IMPACT + Warrant Herbicide + AMS + MSO
2. Balance® Flexx + Degree Xtra fb IMPACT + Warrant Herbicide + AMS + MSO
3. Degree Xtra fb IMPACT + Atrazine + AMS + MSO
4. Degree Xtra fb IMPACT + Status Herbicide + Warrant Herbicide + Atrazine + AMS + MSO
5. Degree Xtra fb Status Herbicide + Warrant Herbicide + AMS + MSO
6. TripleFLEX® II Herbicide fb IMPACT + Warrant Herbicide + AMS + MSO
7. Lexar® EZ fb Callisto® + Atrazine + AMS + COC
8. Corvus® + Atrazine fb Laudis® + Atrazine + AMS + MSO
9. Corvus + Atrazine fb Capreno® + Atrazine + AMS + MSO
10. Verdict® fb IMPACT + Atrazine + AMS + MSO

Additional Trial Guidelines

The same Monsanto seed corn inbred line was planted at each location with planting dates of May 7 (IN), May 20 (NE), and May 25 (IA). The PRE (A) applications were applied at planting and the POST (B) applications were applied at V5 corn growth stage. Crop injury evaluations were taken 2 weeks after treatment (WAT) and weed control evaluations were conducted 3 WAT (A), 3 WAT (B), and 6 WAT (B) or brown silk stage. The predominate weed species present at the locations included: common waterhemp (AMATA), velvetleaf (ABUTH), common lambsquarters (CHEAL), ivyleaf morningglory (IPOHE), green foxtail (SETVI), giant foxtail (SETFA), and yellow foxtail (SETLU).

Trial Results (Table 1)

All treatments caused some initial plant injury; however, there was no statistical difference between treatments. Plants recovered from the injuries by 6 WAT.

All treatments provided excellent broadleaf and grass control at 3 WAT (A). There were some differences in waterhemp and velvetleaf control in treatments involving Degree Xtra fb Warrant Herbicide + Status Herbicide, and TripleFLEX II Herbicide fb Warrant Herbicide and IMPACT by 3 WAT (B). Degree Xtra alone and tank mixed with Balance Flexx fb Warrant Herbicide and IMPACT provided excellent weed control compared to Corvus, Lexar EZ, and Verdict-based programs by 6 WAT (POST).

Plans are to continue this trial in 2016 to help determine additional herbicide combinations for use in seed corn production.

Figure 1. Checks (left top and bottom) and Degree Xtra® + Balance® Flexx fb IMPACT® + Warrant® Herbicide + AMS + MSO (right top and bottom) 3 WAT (top row) and 6 WAT (bottom row).
## Table 1. Percent Crop Injury and % Weed Control

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Injury (2 WAT)</th>
<th>% Weed Control (3 WAT) (A)</th>
<th>% Weed Control (3 WAT) (B)</th>
<th>% Weed Control (6 WAT) (B) (Brown Silk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree Xtra® fb IMPACT® + Warrant® Herbicide + AMS + MSO</td>
<td>4.3</td>
<td>96.7</td>
<td>99.2</td>
<td>91</td>
</tr>
<tr>
<td>Balance® Flexx + Degree Xtra fb IMPACT + Warrant Herbicide + AMS + MSO</td>
<td>8.7</td>
<td>98.3</td>
<td>99.2</td>
<td>99</td>
</tr>
<tr>
<td>Degree Xtra fb IMPACT + Atrazine + AMS + MSO</td>
<td>8.7</td>
<td>85*</td>
<td>97.5</td>
<td>96</td>
</tr>
<tr>
<td>Degree Xtra fb IMPACT + Status® Herbicide + Warrant Herbicide + Atrazine + AMS + MSO</td>
<td>5.7</td>
<td>95</td>
<td>95.8</td>
<td>97.7</td>
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<tr>
<td>Degree Xtra fb Status Herbicide + Warrant Herbicide + AMS + MSO</td>
<td>9.7</td>
<td>93.3</td>
<td>95*</td>
<td>91</td>
</tr>
<tr>
<td>TripleFLEX® II Herbicide fb IMPACT + Warrant Herbicide + AMS + MSO</td>
<td>7.7</td>
<td>100</td>
<td>99.2</td>
<td>94.5</td>
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<tr>
<td>Lexar® EZ fb Callisto® + Atrazine + AMS + COC</td>
<td>10.7</td>
<td>98.3</td>
<td>98.3</td>
<td>98.3</td>
</tr>
<tr>
<td>Corvus® + Atrazine fb Laudis® + Atrazine + AMS + MSO</td>
<td>6.7</td>
<td>100</td>
<td>100</td>
<td>99</td>
</tr>
<tr>
<td>Corvus + Atrazine fb Capreno® + Atrazine</td>
<td>9.7</td>
<td>100</td>
<td>100</td>
<td>99</td>
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<tr>
<td>Verdict® fb IMPACT + Atrazine + AMS + MSO</td>
<td>11.75</td>
<td>98.3</td>
<td>98.3</td>
<td>80*</td>
</tr>
</tbody>
</table>

*Statistically different (lower) at the 0.05 level of Least Significant Difference (LSD); WAT = Weeks after treatment; (A) = preemergence, (B) = postemergence; ABUTH = Velvetleaf, AMATA = Common Waterhemp, SETFA = Giant Foxtail, SETVI = Green Foxtail, CHEAL = Common Lambsquarters, IPOHE = Ivyleaf Morningglory

The information discussed in this report is from a three site, replicated demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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