Corn Weed Management at Lamberton, MN in 2013.
Vollmer, Travis D., Bruce D. Potter, Jeffrey L. Gunsolus, and Thomas R. Hoverstad.

The objective of this study was to evaluate corn herbicide combinations for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 4.1% organic matter, pH 5.5 and soil test P and K levels of 52 and 348 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to soybeans in 2012 and was fall chisel plowed. The area was fertilized with 150 lbs of nitrogen as anhydrous ammonia. Due to untimely rains, the trial area was tilled with a field cultivator on May 7 and June 5. On June 6, 2013, Dekalb ‘DK 42-42’ glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 36,000 seeds/A. All treatments were applied with a tractor-mounted sprayer delivering 15 gpa at a pressure of 35 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Applications Post I, II and III were all applied on the same date, June 28, due to rainy weather and wet soil conditions. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

<table>
<thead>
<tr>
<th>Date</th>
<th>June 7</th>
<th>June 28</th>
<th>June 28</th>
<th>June 28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>PRE</td>
<td>POST I</td>
<td>POST II</td>
<td>POST III</td>
</tr>
<tr>
<td>Temperature (F)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>air</td>
<td>63</td>
<td>67</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>soil (4 inch)</td>
<td>65</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>Relative humidity (%)</td>
<td>58</td>
<td>68</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>Wind (mph)</td>
<td>NE 3</td>
<td>WNW 10</td>
<td>WNW 10</td>
<td>WNW 10</td>
</tr>
<tr>
<td>Sky</td>
<td>Cloudy</td>
<td>Clear</td>
<td>Clear</td>
<td>Clear</td>
</tr>
<tr>
<td>Soil moisture</td>
<td>Dry</td>
<td>Dry</td>
<td>Dry</td>
<td>Dry</td>
</tr>
<tr>
<td>Corn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leaf no.</td>
<td>-</td>
<td>V4</td>
<td>V4</td>
<td>V4</td>
</tr>
<tr>
<td>height (inch)</td>
<td>-</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>Green foxtail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leaf no.</td>
<td>-</td>
<td>2 to 6</td>
<td>2 to 6</td>
<td>2 to 6</td>
</tr>
<tr>
<td>height (inch)</td>
<td>-</td>
<td>1 to 8</td>
<td>1 to 8</td>
<td>1 to 8</td>
</tr>
<tr>
<td>no./ft²</td>
<td>-</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Common lambsquarters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leaf no.</td>
<td>-</td>
<td>1 to 6</td>
<td>1 to 6</td>
<td>1 to 6</td>
</tr>
<tr>
<td>height (inch)</td>
<td>-</td>
<td>1 to 10</td>
<td>1 to 10</td>
<td>1 to 10</td>
</tr>
<tr>
<td>no./ft²</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tall waterhemp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leaf no.</td>
<td>-</td>
<td>1 to 7</td>
<td>1 to 7</td>
<td>1 to 7</td>
</tr>
<tr>
<td>height (inch)</td>
<td>-</td>
<td>1 to 8</td>
<td>1 to 8</td>
<td>1 to 8</td>
</tr>
<tr>
<td>no./ft²</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Rainfall after application (inch)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>1.82</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td>2 week</td>
<td>0.14</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
</tr>
<tr>
<td>3 week</td>
<td>2.97</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
</tr>
</tbody>
</table>

(Southwest Research and Outreach Center, University of Minnesota, Lamberton).
### Table. Corn Weed Management at Lamberton, MN in 2013 (Vollmer, Potter, Gunsolus and Hoverstad).

<table>
<thead>
<tr>
<th>Treatment / POST IV (4-collar corn)</th>
<th>Rate (pt/A, oz/A, qt/A, or % v/v)</th>
<th>Green foxtail</th>
<th>Common lambsquarters</th>
<th>Tall waterhemp</th>
<th>Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preemergence / POST IV (4-collar corn)</td>
<td>(pt/A, oz/A, qt/A, or % v/v)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zemax / Halex GT + NIS + AMS</td>
<td>1 qt / 3.6 pt + 0.25% + 3 qt</td>
<td>79 bcd</td>
<td>100 a</td>
<td>100 a</td>
<td>100 a</td>
</tr>
<tr>
<td>Harness / Laudis + Destiny HC + AMS</td>
<td>1.75 pt / 3 oz + 0.5% + 2 qt</td>
<td>87 a-d</td>
<td>100 a</td>
<td>99 b</td>
<td>95 ab</td>
</tr>
<tr>
<td>Corvis / Laudis + Roundup Powermax + Destiny HC + AMS</td>
<td>5.6 oz / 3 oz + 5 oz + 0.5% + 2 qt</td>
<td>93 ab</td>
<td>100 a</td>
<td>100 a</td>
<td>100 a</td>
</tr>
<tr>
<td>Breakfree / Realm Q + Abundit Extra + NIS + AMS</td>
<td>1.5 pt / 4 oz + 3 oz + 0.5% + 3 qt</td>
<td>96 ab</td>
<td>100 a</td>
<td>99 b</td>
<td>75 ab</td>
</tr>
<tr>
<td>Breakfree / Realm Q + Abundit Extra + NIS + AMS</td>
<td>2.5 pt / 4 oz + 3 oz + 0.5% + 3 qt</td>
<td>96 ab</td>
<td>100 a</td>
<td>100 a</td>
<td>73 b</td>
</tr>
<tr>
<td>Breakfree / Instigate + Breakfree ATZ Lite + Abundit Extra + AMS</td>
<td>1.5 pt / 5.25 oz + 1.5 pt + 3 oz + 3 qt</td>
<td>71 d</td>
<td>100 a</td>
<td>100 a</td>
<td>75 ab</td>
</tr>
<tr>
<td>Harness / Roundup Weathermax + AMS</td>
<td>1.25 pt / 3 oz + 3 qt</td>
<td>89 a-d</td>
<td>100 a</td>
<td>100 a</td>
<td>98 ab</td>
</tr>
<tr>
<td>Zemax / Touchdown Total + AMS</td>
<td>1.6 qt / 28 oz + 3 qt</td>
<td>91 abc</td>
<td>100 a</td>
<td>100 a</td>
<td>100 a</td>
</tr>
<tr>
<td>SureStart / Durango + AMS</td>
<td>2 pt / 24 oz + 3 qt</td>
<td>81 a-d</td>
<td>100 a</td>
<td>100 a</td>
<td>100 a</td>
</tr>
<tr>
<td>SureStart / Durango + AMS</td>
<td>2.5 pt / 24 oz + 3 qt</td>
<td>80 bcd</td>
<td>100 a</td>
<td>100 ab</td>
<td>98 ab</td>
</tr>
<tr>
<td>SureStart / SureStart + Durango + AMS</td>
<td>2 pt / 1.5 pt + 24 oz + 3 qt</td>
<td>91 abc</td>
<td>100 a</td>
<td>100 a</td>
<td>100 a</td>
</tr>
<tr>
<td>Verdict / Roundup Powermax + NIS + AMS</td>
<td>18 oz / 22 oz + 0.25% + 3 qt</td>
<td>74 cd</td>
<td>100 a</td>
<td>100 a</td>
<td>75 ab</td>
</tr>
<tr>
<td>Verdict / Roundup Powermax + Status + NIS + AMS</td>
<td>16 oz / 32 oz + 2.5 oz + 0.5% + 3 qt</td>
<td>99 a</td>
<td>100 a</td>
<td>100 a</td>
<td>100 a</td>
</tr>
<tr>
<td>Anthem / F9387 + Roundup Powermax + AMS</td>
<td>10 oz / 3 oz + 3 oz + 0.5% + 3 qt</td>
<td>93 ab</td>
<td>100 a</td>
<td>100 ab</td>
<td>100 a</td>
</tr>
<tr>
<td>Harness / Impact + Roundup Powermax + Destiny HC + AMS</td>
<td>1.25 pt / 0.75 oz + 3 oz + 0.5% + 3 qt</td>
<td>93 ab</td>
<td>100 a</td>
<td>100 a</td>
<td>73 b</td>
</tr>
</tbody>
</table>

#### POST I (1" Weeds) / POST V (4" regrowth)

- Roundup Weathermax + AMS / Roundup Weathermax + AMS | 32 oz + 3 qt / 32 oz + 3 qt | - | 100 a | 100 a | - | 100 b | 100 a | - | 100 b | 100 ab | 199 a

#### POST II (2-4" Weeds) / POST IV (4-collar corn)

- Capreno + Roundup Powermax + AMS / Laudis + Destiny HC + AMS | 3 oz + 18 oz + 2 qt / 3 oz + 0.5% + 2 qt | - | 100 a | 100 ab | - | 100 b | 100 a | - | 100 a | 100 a | 184 b c

#### POST III (3-collar corn)

- Warrant + Impact + Roundup Powermax + Destiny HC + AMS | 3 pt + 0.75 oz + 3 oz + 0.5% + 3 qt | - | 100 a | 100 ab | - | 100 a | 100 a | - | 100 a | 100 a | 189 b c
- F9387 + Roundup Powermax + NIS + AMS | 3 oz + 32 oz + 0.25% + 3 qt | - | 78 b | 100 b | - | 100 a | 100 a | - | 100 a | 100 a | 190 b c
- Halex GT + Atrazine + NIS + AMS | 3.6 pt + 1 pt + 0.25% + 3 qt | - | 100 a | 100 b | - | 100 a | 100 a | - | 100 a | 100 a | 186 b c
- SureStart + Durango + AMS | 2 pt + 24 oz + 3 qt | - | 100 a | 100 a | - | 100 a | 100 a | - | 100 a | 99 c | 184 b c
- Realm Q + Abundit + NIS + AMS | 4 oz + 32 oz + 0.25% + 3 qt | - | 100 a | 99 b | - | 100 b | 100 a | - | 100 a | 100 a | 191 ab

#### Checks

- Weedy check | 0 e 0 c 0 c 0 c 0 c 0 c 0 c 0 c 173 d |
- Weed-free | 100 a 100 a 100 a 100 a 100 a 100 a 100 a 100 a 100 a 184 bc |

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| LSD (0.10) | 18.1 10.9 0.6 26.9 0.2 ns 16.8 0.1 0.6 8.3 |
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*NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.*

*Yield adjusted to 15.5% moisture.*