**Evaluation of PRE Soybean Herbicides for Waterhemp Control**  
*(Fon du Lac, WI 2019)*

**Trial Information**

<table>
<thead>
<tr>
<th>Trial Sponsors:</th>
<th>BASF, Bayer, FMC, Syngenta, Valent, Wisconsin Soybean Marketing Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective:</td>
<td>Evaluate and demonstrate the effectiveness of multiple PRE-emergence soybean herbicides</td>
</tr>
<tr>
<td>Crop:</td>
<td>Soybean</td>
</tr>
<tr>
<td>Variety:</td>
<td>NK S20-J5X</td>
</tr>
<tr>
<td>Weed species (pressure):</td>
<td>Glyphosate-resistant waterhemp (moderate-high)</td>
</tr>
<tr>
<td>Herbicide Application(s):</td>
<td>PRE – 6/11</td>
</tr>
</tbody>
</table>

For the full report see the [2019 Wisconsin Weed Science Research Report](#)
Key Take Home Points from 2019 Data:

- Higher OM% soil than other waterhemp locations (5.2% vs ~2%)
- Several PRE-emergence soybean herbicides provided good levels of waterhemp 27-42 days after application.
- Group 2 herbicides (e.g., Pursuit, Classic, First Rate) applied alone were NOT effective on waterhemp.
- Half rates were included in addition to full rates of Group 15 herbicides as some may look to reduce rates to save on overall herbicide costs. The results from these experiments indicate the importance of using full rates as the full rates often improved the overall residual control compared to half rates.
- Soil properties including soil texture, percent organic matter, pH, and geographic restrictions should be considered when selecting products and determining rates as these can have an impact on the efficacy of herbicides with residual activity and potential carryover into subsequent crops.
- PRE-emergence herbicide programs containing multiple effective sites of action are recommended to broaden weed control spectrum and to lower selection for additional herbicide resistance.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>27 DAT</th>
<th>42 DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursuit</td>
<td>4 fl oz</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>FirstRate</td>
<td>0.75 oz</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Tricor DF</td>
<td>1 lb</td>
<td>93</td>
<td>89</td>
</tr>
<tr>
<td>Spartan</td>
<td>12 fl oz</td>
<td>98</td>
<td>95</td>
</tr>
<tr>
<td>Valor SX</td>
<td>3 oz</td>
<td>76</td>
<td>68</td>
</tr>
<tr>
<td>Sharpen</td>
<td>1 fl oz</td>
<td>68</td>
<td>54</td>
</tr>
<tr>
<td>Warrant (half)</td>
<td>24 fl oz</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Warrant (full)</td>
<td>48 fl oz</td>
<td>68</td>
<td>49</td>
</tr>
<tr>
<td>Dual II Magnum (half)</td>
<td>0.84 pt</td>
<td>57</td>
<td>36</td>
</tr>
<tr>
<td>Dual II Magnum (full)</td>
<td>1.67 pt</td>
<td>86</td>
<td>71</td>
</tr>
<tr>
<td>Outlook (half)</td>
<td>9 fl oz</td>
<td>71</td>
<td>61</td>
</tr>
<tr>
<td>Outlook (full)</td>
<td>18 fl oz</td>
<td>89</td>
<td>70</td>
</tr>
<tr>
<td>Zidua (half)</td>
<td>1.5 oz</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>Zidua (full)</td>
<td>3 oz</td>
<td>89</td>
<td>81</td>
</tr>
<tr>
<td>Authority Assist</td>
<td>12 fl oz</td>
<td>98</td>
<td>94</td>
</tr>
<tr>
<td>Sonic</td>
<td>6.45 oz</td>
<td>99</td>
<td>96</td>
</tr>
<tr>
<td>Surveil</td>
<td>3.5 oz</td>
<td>72</td>
<td>57</td>
</tr>
<tr>
<td>BroadAxe XC</td>
<td>30 fl oz</td>
<td>98</td>
<td>93</td>
</tr>
<tr>
<td>Authority MTZ</td>
<td>18 oz</td>
<td>99</td>
<td>96</td>
</tr>
<tr>
<td>Authority Supreme</td>
<td>10 fl oz</td>
<td>99</td>
<td>96</td>
</tr>
<tr>
<td>Verdict</td>
<td>5 fl oz</td>
<td>82</td>
<td>68</td>
</tr>
<tr>
<td>Prefix</td>
<td>2 pt</td>
<td>92</td>
<td>83</td>
</tr>
<tr>
<td>Fierce</td>
<td>3.75 oz</td>
<td>82</td>
<td>80</td>
</tr>
<tr>
<td>Boundary</td>
<td>1.8 pt</td>
<td>91</td>
<td>79</td>
</tr>
<tr>
<td>Afforia</td>
<td>2.5 oz</td>
<td>74</td>
<td>71</td>
</tr>
<tr>
<td>Zidua PRO</td>
<td>6 fl oz</td>
<td>93</td>
<td>87</td>
</tr>
<tr>
<td>Fierce MTZ</td>
<td>1.25 pt</td>
<td>82</td>
<td>84</td>
</tr>
</tbody>
</table>
Plot pictures taken on 7/8
27 days after the PRE application

The number in the upper right-hand corner is the average % waterhemp control of 4 replications

There was also common lambsquarters and velvetleaf present in the plots

Waterhemp pressure was variable among replications so the picture shown may not be entirely representative of the average control %
27 days after PRE (7/8)
Untreated Check
0%
27 days after PRE (7/8)
FirstRate – 0.75 oz
27 days after PRE (7/8)
Tricor DF – 1 lb

93%
27 days after PRE (7/8)
Spartan – 12 fl oz
98%
27 days after PRE (7/8)
Valor SX – 3 oz
76%
27 days after PRE (7/8)
Sharpen – 1 fl oz
27 days after PRE (7/8)
Warrant – 24 fl oz 34%
27 days after PRE (7/8)
Warrant – 48 fl oz

68%
27 days after PRE (7/8)
Dual II Magnum – 0.84 pt
57%
27 days after PRE (7/8)
Dual II Magnum – 1.67 pt
86%
27 days after PRE (7/8)
Outlook – 9 fl oz

71%
27 days after PRE (7/8)
Outlook – 18 fl oz

89%
27 days after PRE (7/8)
Zidua – 1.5 oz

63%
27 days after PRE (7/8)
Authority Assist – 12 fl oz

98%
27 days after PRE (7/8)
Sonic – 6.45 oz
99%
27 days after PRE (7/8)
Surveil – 3.5 oz

72%
27 days after PRE (7/8)
BroadAxe XC – 30 fl oz
98%
27 days after PRE (7/8)
Authority MTZ – 18 oz
99%
27 days after PRE (7/8)
Authority Supreme – 10 fl oz

Wisconsin Cropping Systems Weed Science
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27 days after PRE (7/8)
Verdict – 5 fl oz
82%
27 days after PRE (7/8)
Fierce – 3.75 oz
82%
27 days after PRE (7/8)
Afforia – 2.5 oz
74%
27 days after PRE (7/8)
Zidua PRO – 6 fl oz

93%
27 days after PRE (7/8)
Fierce MTZ – 1.25 pt

82%