The Manitoba Forage Seeds Association (MFSA) began a 3 year project analyzing the effects of fungicides in grasses during the growing season of 2014. Results from the 2014 season are available in past issues of forage seed news. This study examines the fungicides ability to prevent and control the spread of leaf/spot complex, as well as the effect of the fungicide on seed yield.

The 3 fungicides being tested include Quilt, Priaxor, and Twinline. Headline is currently registered to be used on perennial ryegrass in Manitoba. Priaxor and Twinline both contain the active ingredient pyraclostrobin, found in Headline, as well as the actives fluxapyroxad, and metconazole respectively. Having 2 modes of action is very valuable in controlling a broad range of diseases, as well as reducing disease resistance. Quilt fungicide also contains 2 modes of action: propiconazole (Tilt) and azoxystrobin (Quadris). Tilt is currently registered for the control of leaf disease in grass seed crops.

3 sites were used, with a different product tested at each site. These were replicated field scale trials, with the product applied by the growers, and the yield data collected by the growers. Leaf disease ratings were taken by the MFSA. 60 plants were analyzed in each plot to determine the leaf disease. 3 leaves were analyzed on each plant based upon the percentage of leaf area infected. The 3 leaves were F1, or the flag leaf, F2, the leaf below F1, and F3, the leaf below F2. All weather data was obtained from the MAFRD weather reports.

**Dauphin - Quilt**

The Dauphin region had 110% of normal accumulated GDD over the growing season. Rainfall was less than average, at 70% of normal. However, spring soil moisture was good, matching the PRG’s moisture demand. Quilt was applied by the grower on June 22, 2015, with the crop at a late flag leaf stage. Leaf disease ratings were taken on July 2, 2015, then again on July 13, 2015.

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<td>F1</td>
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<td>F2</td>
<td>12 a</td>
<td>18 a</td>
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<td>F3</td>
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<td>25 a</td>
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Table 1: Leaf Disease Ratings and Yield Data from the Dauphin Site

No difference was noticed in the leaf disease ratings that were taken on July 2, 2015. During the second rating, it was noticed that overall disease pressure had increased, and leaf disease was reduced with the use of Quilt. While no difference in leaf disease was observed on F1, both F2 and F3 leaves had significantly less infection. With the Quilt treatment, seed yield was 39 lbs/A greater, but this was not a statistically significant difference. Further, considering product and
application costs, the yield increase would need to be more than 39 lbs/A for the application to be economical.

**Meadows - Priaxor**

This region received 108% of normal accumulated GDD over the growing season. Rainfall was approximately 120% of normal, resulting in good moisture levels for the PRG crop. Priaxor was applied by the grower with a high clearance sprayer on June 19, 2015 with the crop at a late flag leaf stage. Leaf disease ratings were taken on July 6, 2015, then again on July 15, 2015.

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<td>Treated</td>
<td>11 a</td>
<td>17 b</td>
<td>24 a</td>
<td>15 b</td>
<td>26 b</td>
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<td>Untreated</td>
<td>16 a</td>
<td>34 a</td>
<td>48 a</td>
<td>44 a</td>
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<td>LSD P= 0.10</td>
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<td>23.68</td>
<td>13.63</td>
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Table 2: Leaf Disease Ratings and Yield Data from the Meadows Site

Early in the season disease pressure appears to have been low, and no differences in leaf disease were observed between the treatments. During the second rating disease pressure had increased, and leaf disease was reduced with the use of Priaxor. This is evidence of the protective ability of the fungicide, multiple weeks after application. With the Priaxor treatment, seed yield was 147 lbs/A greater than the untreated. This was a statistically significant yield increase, and in this trial the application is economically viable.

**Morris - Twinline**

This region received 108% of normal accumulated GDD over the growing season. This site received the most rainfall, at 150% of normal accumulated rainfall, resulting in excessive moisture levels for the PRG crop. Twinline was applied by the grower with a high clearance sprayer on June 27, 2015. This application was later than planned, but the moisture prevented an earlier application. Leaf disease ratings were taken on July 7, 2015, then again on July 17, 2015. Due to the unevenness in the crop the grower decided not to collect harvest data.

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<td>Untreated</td>
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<td>LSD P=.10</td>
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Table 3: Leaf Disease Ratings from the Morris Site

Leaf disease levels were high throughout the season. On all leaves, at both ratings there was a statistical difference between the treated and untreated. Most likely the high levels of precipitation contributed to the high disease levels at this site.