# 2012 foliar fungicide application on hard red spring wheat, Bowman, ND

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'Glenn' hard red spring wheat was no-till seeded on 2 Apr 2012 in a field that had grown sunflower in 2011. Prior to 2011 spring wheat was grown the previous two years. On 11 May temperatures fell to an estimated 19°F at this location delaying applications of herbicide and early season fungicide. Wolverine herbicide (fenoxaprop + bromoxynil + pyrasulfotole) was applied to all treatments on 31 May. Where an early season application of Stratego was to be applied, this product was tank mixed with the herbicide and then applied. The flag leaf application of fungicide Prosaro 421,was made on 8 Jun and the flowering application of Prosaro 421 was made on 25 Jun. A non-ionic surfactant (NIS) at the rate of 0.125% v/v was included in the fungicide applications of Prosaro 421. Weather conditions at the time of application on 31 May was air temperature = 60°F, relative humidity at 62% with a wind from the northwest at 12 mph. During the flag leaf application on 8 Jun air temperature was 70°F, relative humidity at 59% with wind from the north east at 15 mph. The flowering application was made on 25 Jun air temperature was 75°F relative humidity of 87% with a wind from the southeast at 5 mph. Crop injury was observed only after the early season application of herbicide or herbicide + fungicide. No crop injury was observed following any of the other fungicide application timings. Precipitation was 77% of normal for the season. Evaluations for crop disease occurred on 8 Jun, 26 Jun and 3 Jul. With the dry conditions along with following sunflower, a non-host crop for foliar diseases of wheat, disease pressure was very light. No lesions or disease plants were detected on the 8 Jun evaluation while a very low percentage, 5% or less, plants exhibited lesions and severity was less than 2% for the 26 Jun and 3 Jul evaluations. Scab was not detected and only traces of strip rust were found on the leaves during the 3 Jul evaluation. Harvest occurred on 2 Aug. Grain samples from the untreated check were submitted to the NDSU Diagnostic Laboratory. DON was not detected in any of these samples. No significant differences were detected among treatments. Effective crop rotation with sunflower along with dry weather kept foliar diseases of wheat in check. Bayer CropScience provided financial support for this trial. Thanks to Miles Hansen for the use of this plot area on his farm.

| | | | 4-Jun | 26-Jun | | 3-Jul | | ---------- Grain[6] ---------- | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Treatment[1] | Rate | Timing[2] | CI[3] | I[4] | S[5] | I[4] | S[5] | Yield | Test Wt | Protein |
| | fl oz/a | | | | | | | bu/a | lb/bu | % |
| Untreated Check | | | 0.00 | 2.25 | 1.50 | 1.00 | 1.00 | 31.6 | 55.9 | 16.5 |
| Stratego | 4.0 | A | 1.00 | 4.50 | 1.25 | 1.50 | 1.00 | 30.4 | 55.4 | 16.7 |
| Prosaro 421 + NIS | 5.0 | B | 0.25 | 3.50 | 2.00 | 1.00 | 0.50 | 30.4 | 55.9 | 17.0 |
| Stratego/Prosaro 421 + NIS | 4.0 / 6.5 | A/C | 2.00 | 5.00 | 1.00 | 1.75 | 0.75 | 29.3 | 54.9 | 16.7 |
| Mean | | | 0.81 | 3.81 | 1.44 | 1.31 | 0.81 | 30.4 | 55.5 | 16.7 |
| CV% | | | 151 | 52.5 | 43.8 | 113 | 42.3 | 5.5 | 13.9 | 3.6 |
| LSD 0.05 | | | NS | NS | NS | NS | NS | NS | NS | NS |

[1] Treatment listed is foliar applied fungicide. In addition to fungicide, Wolverine herbicide was applied on 1 Jun. Where a foliar fungicide treatment occurred on 1 Jun (Timing = A) the fungicide and herbicide were tank mixed and applied. Other treatments only the herbicide was applied.

[2] Timing refers to the growth stage of wheat when the fungicide was applied. A = 5 to 6 leaf stage (31 May); B = Flag leaf (8 Jun); C = Flowering (25 Jun).

[3] CI = crop injury noted on 4 Jun from application of herbicide or herbicide + fungicide on 1 Jun. Crop injury was not observed after the flag leaf and flowering applications.

[4] I = Incidence or percent of plants infected with at least one lesion.

[5] S = Severity is the percentage of the leaf infected with a leaf disease

[6] Reported grain yield, test weight, and protein are adjusted to a 12% moisture basis.