

SAMPLE ABSTRACT

Evaluating Fungicide Efficacy and Timing for Management of Fusarium Head Blight in Spring Barley in North Dakota

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ABSTRACT

The use of a well-timed fungicide is an important management tool when suppressing Fusarium head blight (scab) in barley production. With funding from the U.S. Wheat and Barley Scab Initiative, four fungicide trials were conducted on spring barley at two locations in North Dakota in 2014 and 2015. Two additional fungicide trials were conducted at another location. The primary objective at all three locations was to evaluate fungicide efficacy and timing on reducing disease and protecting yield in spring barley. Research sites were established at the Carrington Research and Extension Center (Carrington), North Dakota State University (Fargo) and Langdon Research and Extension Center (Langdon). Trials were conducted in a randomized complete block design with four replications. All plots were sown with the susceptible six-row barley variety Tradition. Trials were inoculated with *Fusarium* infested corn spawn at Fargo and Langdon; Carrington trials were seeded into wheat residue. Several fungicides and/or fungicide programs were evaluated and all trials included prothioconazole + tebuconazole (Prosaro, Bayer CropScience) and metconazole (Caramba, BASF). Other fungicides and fungicide rates evaluated varied among locations. All locations evaluated the application timing of Feekes 10.5 (fully-headed). Other timings evaluated were Feekes 9 (flag leaf), Feekes 10.3 (1/2 head emergence) and Feekes 10.5 + 4-5 days. Disease evaluations for foliar diseases and Fusarium head blight were conducted on all plots. DON levels were obtained from samples submitted to the NDSU Veterinary Toxicology Lab. Preliminary analysis indicates adequate disease pressure was achieved in five of the six trials as significantly lower DON levels were observed in fungicide treatments when compared to the non-treated control. Prothioconazole + tebuconazole and metconazole applied at Feekes 10.5 and at Feekes 10.5 + 4-5 days tended to have lower DON levels than all other treatment combinations. Future research to evaluate post-heading fungicide applications is needed to help strengthen current fungicide recommendations for scab management in barley.

ACKNOWLEDGEMENT AND DISCLAIMER

This material is based upon work supported by the U.S. Department of Agriculture, under Agreement No. 59-0206-9-064. This is a cooperative project with the U.S. Wheat & Barley Scab Initiative. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.