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Project Title: Evaluation of Integrated Management Services for Fusarium Head Blight in SD.

PROJECT 2 ABSTRACT

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As a part of a multi-site study across the wheat and barley production areas of the US, a site will be established in Brookings, SD to examine the combined influences of cultivar, fungicide use, and crop residue in the potential for Fusarium Head Blight severity. It has been well established in the literature that each of these factors can influence risk of disease development; however, it is poorly understood how these factors interact in less than additive, additive, or synergistic relation to one another.

Trials will be established on winter wheat (hard red and hard white), hard red spring wheat and barley at one site in South Dakota. A multi-location trial across a number of states allows evaluation of interactions over a wide number of environments and across grain types affected by FHB. Also, because FHB does not occur every year in every location, having the trials across environments increases the chance of favorable disease levels for evaluation across multiple sites. The SD site will not be inoculated or mist irrigated to ensure that correlations can be made to the forecasting model.

Factors to be measured will include fungicide treated vs. untreated. Prosaro, a new fungicide containing tebuconazole and prothioconazole and expected for full EPA Section 3 registration during the winter months will be used across main plots of varieties with untreated comparisons in each cultivar. This chemistry combination was commercially available in 2007 as a tank mix called Proline 3+3. Two barley cultivars will be compared while three winter wheat and four spring wheat cultivars will be trialed. All sites will be planted on a common residue type and sites will be prepared for 2007-2008 planting on one residue type (soybean).

This project serves a significant purpose for the US Wheat and Barley Scab Initiative. Little is known about how combined control methods can reduce FHB and the associated mycotoxin deoxynivalenol (DON).