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**Project Title: Integrated Management of FHB and DON in Wheat in South Dakota.**

### **PROJECT 1 ABSTRACT**

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Fusarium head blight (FHB) remains one of the major production constraints for both hard red winter and spring wheat in South Dakota. The main management approaches for FHB and DON are cultivar selection and fungicide application at anthesis. While the recommended window for applying a triazole fungicide is at anthesis, often this timing can be hampered by rainy weather, or uneven flowering in the field especially in winter wheat. The main objective of this proposal is to determine the effect of post-anthesis fungicide application following anthesis treatment on FHB index and DON level.

To achieve the stated objective, three cultivars with varying levels of FHB resistance (resistant, moderate and susceptible) for each of the two classes of hard red wheat (spring and winter wheat) will be planted at two locations. At one location, inoculation with infested corn kernels and misting will be done to increase disease pressure. Treatments will include untreated, Prosaro® alone at anthesis, Prosaro at anthesis + Caramba®, after 4 days, Caramba at anthesis + Folicur® after four days, and Proline® at anthesis + Folicur after four days.

FHB index, grain yield, and DON will be determined and subjected to analysis of variance using mixed model. Expected results include elucidation of additional post-anthesis fungicide treatment in further reducing FHB and DON and return of investment of such practice. Data generated from this study will help producers manage FHB and DON more effectively and will also help in refining the FHB forecasting tool. Outputs from this study will be communicated to the producers through extension publications, field days, research tours, and other outreach avenues.