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Project Title: Integrated Management Strategies and Fungicide Testing for FHB and DON in Small Grains in ND.

PROJECT 1 ABSTRACT

(1 Page Limit)

Integrating multiple management tools is the best way to suppress Fusarium head blight (FHB) and deoxynivalenol (DON). Studies have shown that growing a less susceptible variety with a well-timed DMI fungicide application at anthesis in wheat and at heading in barley is the most effective way to reduce FHB and DON. Recent research has shown that the application window has widened and fungicide applications made 3-7 days post anthesis in wheat or post-heading in barley provide adequate FHB and DON suppression. To date, DMI fungicides are the only labeled class for FHB and DON suppression. Within the DMI class, fungicide efficacy differences exist with metconazole and prothioconazole being the most effective. A new non-triazole fungicide (Aeдеpidyn – SDHI) will be labeled for scab suppression in the near future. Preliminary research suggests aeдеpidyn has similar scab suppression to metconazole and prothioconazole and further testing is warranted. Given the novelty of this fungicide in FHB management, extensive testing is needed to assess fungicide efficacy and timing across small grain market classes. Small grain research trials have been established at five locations in North Dakota (Carrington, Fargo, Langdon, Nesson Valley and Prosper). A total of eight integrated management trials and five uniform fungicide trials will be conducted on either spring barley, spring durum, hard red winter wheat and hard red spring wheat. Each location will use the treatments listed in the standard protocol for each respective experiment. The integrated management trials will use at least two varieties varying in susceptibility, whereas the uniform fungicide trials will use one susceptible variety. Both fungicide efficacy and fungicide timing will be evaluated in each trial. Data will be compiled for each small grain market class and subsequently used in a meta-analysis. The results will help update current fungicide efficacy and timing recommendations for FHB and DON for small grain growers in ND and the United States.