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PROJECT 2 ABSTRACT

(1 Page Limit)

Due to the complexity of factors affecting Fusarium head blight (FHB) infection and development, FHB resistance must be tested and validated in multiple locations and multiple years. Selecting FHB nurseries with optimum conditions for disease development is crucial for ensuring the success of FHB resistance evaluation in breeding programs. A FHB nursery located at Jianyang, Fujian Province of China, is an excellent place for FHB evaluation because FHB epidemics occur every year under natural infection conditions. This nursery has been used to screen breeding materials for FHB resistance in wheat for more than 25 years and has greatly contributed to the success of developing FHB resistant varieties and germplasm in China. In the past two years, we have screened over 1000 lines in the nursery and the results were very good in terms of differentiating the resistant lines from the susceptible ones. The overall goal of this project is to enhance the capacity and efficiency of FHB resistance screening for the three spring wheat breeding programs at North Dakota State University (NDSU), South Dakota State University (SDSU) and University of Minnesota (UMN). Therefore, the specific objectives are to screen advanced breeding lines/ elite germplasm selected by NDSU, SDSU, and UMN for FHB resistance (Type I and II) in the naturally-infected FHB nursery located at Jianyang, China. We will collaborate with the Chinese scientists in Nanping Institute of Agricultural Sciences and plant the materials in late fall and score FHB in late April or early May next year. The additional nursery will generate more valuable and reliable data for developing breeding wheat varieties with high levels of FHB resistance.