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PROJECT 1 ABSTRACT

(1 Page Limit)

This project addresses several objectives of the Barley Coordinated Project (CP). The breeding component of this project falls under objective #2 of the Barley CP, **Develop new barley varieties with enhanced resistance to FHB and lower DON.** We will assist others in the CP working to achieve this goal by growing the North American Barley Scab Evaluation Nursery (NABSEN) at one location, growing and evaluating advanced breeding lines from the University of Minnesota and Busch Agricultural Resources, Inc. (BARI) breeding programs in yield trial experiments at seven sites in ND and eastern MT, collecting data on cultivars and advanced breeding lines grown in FHB nurseries in Langdon and Osnabrock; and collecting data on lines from the ICARDA barley breeding in one FHB nursery. Data from these yield trials and nurseries will be made available to growers and researchers. Coordination of the off-season FHB nursery in Hangzhou, China also falls under multiple CP objectives. These include CP objective #2 mentioned previously and CP objective #1, **Discover and determine the function of host genes that can reduce disease and/or DON levels in barley.** The validation of QTL *Qrgz-2H-8* from CIho 4196 falls under CP objective #2, sub-category **Validation, fine-mapping, cloning.** Two validation populations will be genotyped using a set of molecular markers agreed upon by Drs. Smith and me. This coordination will facilitate the comparing and utilization of the validation work of *Qrgz-2H-8* proposed by Drs. Smith and me.