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Research Area: VDUN

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Project Title: Accelerated Development of Scab Resistant Barley Varieties.

PROJECT 2 ABSTRACT

(1 Page Limit)

The goal of this project is to develop six-rowed malting barley cultivars resistant to Fusarium head blight (FHB) that are acceptable to producers in North Dakota and adjacent states, and acceptable to those who use and process barley. An accelerated approach for development of FHB resistant cultivars is being used. This approach includes use of doubled-haploid breeding, off-season FHB screening nurseries in China, off-season nurseries for seed increase in New Zealand and Arizona, and the use of molecular marker assisted selection. Use of doubled-haploid breeding is justified because there are no FHB resistant malting barley cultivars in the U.S. Until a resistant cultivar is developed that is acceptable to growers, maltsters, and brewers, this method is necessary because it can reduce the length of time needed to develop a cultivar by up to three years. Sources of FHB resistance used in this project come from two sources; unadapted accessions identified in barley germplasm collections and adapted germplasm from Midwest barley improvement programs. This project specifically addresses the research priorities of the Variety Development and Uniform Nurseries research program. During the past three years, partially resistant six-rowed barley lines with acceptable maturity and plant height have been developed. Some of these lines were entered in the 2004 North American Barley Scab Evaluation Nursery (NABSEN).