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Research Area: VDUN

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Duration of Award: 1 Year

Project Title: Screening barley lines for scab resistance in uniform nurseries.

PROJECT 1 ABSTRACT
(1 Page Limit)

The objective of this project is to co-ordinate the screening of elite barley germplasm for resistance to *Fusarium* head blight (FHB) in uniform screening nurseries in Minnesota, North Dakota, Canada and Mexico. A mist irrigated uniform FHB screening nursery, recently renamed the NABSEN Uniform Fusarium Head Blight Screening Nursery, has been grown at two sites in Minnesota and two sites in North Dakota the past seven growing seasons. In 2000 three dryland nursery sites were added to compliment the mist-irrigated sites and in 2002 sites in Canada and a Busch Ag Resources Inc. site in Park River ND were added. In 2003 sites will be included in CIMMYT/ICARDA trials in Mexico.

The project will also establish, maintain, inoculate and record disease and physiological characteristics of nurseries at Langdon and Fargo in North Dakota. Mist-irrigated nurseries that are inoculated with *Fusarium graminearum* are needed so data can be collected in years when environmental conditions are not conducive for natural infection and under a range of disease pressures. Uninoculated dryland nurseries are grown so that lines can be grown under conditions similar to those experienced by producers.

The expanded nursery includes breeding lines with putative FHB resistance from the four upper Midwest barley-breeding programs, the Canadian breeding program and the CIMMYT/ICARDA breeding program, and includes susceptible and resistant checks. *Fusarium* head blight severity and deoxynivalenol (DON) accumulation are determined for each entry, and each entry is replicated at least twice per location.

Results from the NABSEN nursery are circulated to all barley researchers who desire them in the form of a report that is posted on the web and an oral presentation at the annual U.S. Wheat & Barley Scab Initiative meeting.