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**Project ID: FY07-HO-124**

**FY06 ARS Agreement #: 59-0790-4-106**

**Research Area: VDUN**

**Duration of Award: 1 Year**

**Project Title: Development of Scab Resistant Two-Rowed Barley Varieties for North Dakota.**

#### **PROJECT 4 ABSTRACT**

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The overall goal of our project is to develop two-rowed malting barley cultivars that are resistant to Fusarium head blight (FHB) and accumulate less deoxynivalenol (DON). These cultivars must be acceptable to producers in North Dakota and adjacent states, and acceptable to those who use and process barley. In FY07, our goals will be: 1) continued development and screening of two-rowed barley lines in our breeding program for reduced FHB and DON and 2) collect FHB and DON data on cultivars and advanced breeding lines that can be used by growers for making decisions on which cultivar(s) to grow. Our approach for development of FHB-resistant cultivars with low DON includes use of a modified pedigree breeding methodology, an off-season FHB screening nursery in China, and off-season nurseries for seed increase in New Zealand and Arizona. Sources of FHB resistance used in our project come from two sources; unadapted FHB-resistant accessions incorporated into Midwest malting barley germplasm using pre-breeding activities by our project and adapted germplasm from Midwest barley improvement programs. FHB and DON data are collected on cultivars and advanced breeding lines grown in mist irrigated FHB nurseries in Langdon and Osnabrock. Data from these nurseries are made available to growers and researchers. Our project specifically addresses the research priorities of the Variety Development and Uniform Nurseries research program of i) breeding and release of FHB-resistant barley cultivars and germplasm adapted to FHB-threatened states and ii) collecting FHB and DON data on current cultivars and advanced breeding lines that can be used by growers.