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Research Area: **CBC** **Duration of Award: 1 Year**

Project Title: Uniform Fungicide and Biocontrol Trials Across Multiple ND Sites and Grain Classes.

PROJECT 1 ABSTRACT
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A collaborative effort among four research/extension centers in North Dakota will evaluate advanced fungicides and biological control agents for effectiveness and consistency in performance against FHB in hard red spring wheat, durum wheat and/or barley. These uniform trials will be part of a cooperative effort among multiple states in spring grain regions and in winter wheat regions of the United States. The establishment of a core set of uniform treatments across a number of states allows evaluation of products and methods for consistency in performance over a wide number of environments and across grain types affected by FHB. Also, because FHB does not occur every year in every location, regardless of attempts to ensure infection through added inoculum or misting systems, having the trials across multiple environments increases the chance of favorable disease levels for evaluation across sites. In North Dakota, the uniform treatment trial will be established at Fargo in the southeast, at Carrington in the central region, at Minot in the north central region, and at Langdon in the northeast. These regions have variable weather patterns and different classes of small grains and varieties adapted to these areas. They also have had varied intensities of scab depending on year, but the disease has been severe in one or more locations in recent years. In 2002, disease levels were particularly high at Fargo, Carrington, and Langdon, while Minot was drier, just the opposite of wheat occurred in 2001. In 2003, FHB was most common in the Northeast portion of the state, although overall severity levels were low compared to previous years.

Fungicides tested in the core treatment will include a standard triazole treatment, several experimental compounds that showed very good results in 2002 and 2003, plus possibly one or more promising biological agents. Final treatments will be decided during the 2003 Scab Forum in Minneapolis. Further testing with experimental products that may soon be on the market must be done again across different environments, to get additional information on their efficacy and performance consistency. This information is critical for getting federal or special registrations. This proposal is relevant to the US wheat and Barley Scab Initiative because it addresses immediate concerns about control of the disease and evaluates the efficacy and economics of one important management tool. Data provided by these trials also is critical for registration requests and decisions about further development of biological agents.