

PI: Ruth Dill-Macky

PI's E-mail: ruthdm@umn.edu

Project ID: FY11-DI-027

FY10 ARS Agreement #: 59-0206-9-069

Research Category: GDER

Duration of Award: 1 Year

Project Title: A Field Nursery for Testing Transgenic Spring Wheat, Barley and Durum from the USWBSI.

PROJECT 1 ABSTRACT

(1 Page Limit)

This proposal has the single objective of establishing an annual nursery to provide a central field testing site for transgenic spring wheat, barley and durum lines developed by researchers in the USWBSI.

The proposed nursery will be located in Rosemount Minnesota and will be inoculated (macroconidia) and mist-irrigated and conducted so as to conform to the Minnesota state and US federal regulations for the field testing of transgenic materials. My lab has gained considerable experience with conducting field nurseries to screen both wheat and barley for their reaction to Fusarium head blight, having been involved in the field screening of breeding material since 1994 with annual nurseries for wheat of greater than 9,000 rows and barley of greater than 14,000 rows. We have been testing transgenic materials since 1997 thus we also have considerable experience in running these specialized nurseries and anticipate no problems conducting the nursery or meeting the necessary regulations. In 2008 and 2009 the trial passed site inspections conducted by APHIS.

Collaborators and anticipated entry numbers to be submitted in both 2011 and 2012 are:

Tilahun Abebe, University of Northern Iowa, Cedar Falls IA - 13 barley entries.

Lynn Dahleen, USDA-ARS, Fargo ND - 19 barley entries.

Gary Muehlbauer, University of Minnesota, St. Paul MN - 5-10 wheat lines.

Jyoti Shah, University of Northern Texas, Denton TX - 7 wheat lines.

Additional entries (space being the only limiting factor) could also be accommodated from these or other USWBSI-funded researchers as necessary.

This research is needed because increasing the efficiency of individual breeding programs to develop FHB resistant varieties and developing effective FHB resistance through transgenics are major strategies of the USWBSI for reducing the impact of FHB in wheat and barley. The proposed research addresses the following research needs in the Action Plan by providing a centralized facility for field testing transgenic wheat and barley (GDER, goal 2) in addition the project will help identify novel sources of FHB resistance and aid their introgression into variety development programs (VDHR, goal 3).