

PI: Ward, Richard W.

Project ID: 0304-WA-128

Research Area: VDUN

Project Title: Development of FHB Resistant Soft White Wheat Varieties for Michigan and Similar Environments.

PI's E-mail: wardri@msu.edu

ARS Agreement #: 59-0790-9-74

Duration of Award: 1 Year

PROJECT 2 ABSTRACT

(1 Page Limit)

Over 500,000 acres of soft winter wheat are planted annually in Michigan. Approximately 50% of that is soft white winter wheat (SWWW), which makes Michigan the primary producer of that market class in the eastern U.S. In 1996, Fusarium head blight (FHB) was sufficiently widespread and severe that the cereal industry refused to buy wheat and wheat products derived from Michigan grown wheat. There was widespread DON contamination in the 2001 crop. The Michigan white wheat market exists because of demand for white bran that is used by the cereal industry. DON is most heavily concentrated in the bran, which renders Michigan's soft white market particularly sensitive to DON.

FHB resistant varieties that cannot compete in the realm of grain quality and yield, general agronomic characters, and mainstream disease resistances will not be adopted. Conversely, superior general performance without FHB resistance places the entire wheat industry at risk of another episode like the 1996 or 2001 crop years. The support requested here enables MSU's wheat breeding program to target FHB resistance without dramatic reduction in rates of progress for improvement of the 'traditional' agronomic, disease, and quality traits. This proposal targets: 1) elimination of highly susceptible lines from the breeding program; 2) increased average FHB resistance in advanced lines, and; 3) creation of one or more market-competent SWWW lines that carry and exhibit the Sumai 3 or W14 type resistance.