

0203-WA-118 Development of FHB Resistant Soft White Wheat Varieties for Michigan and Similar Environments.

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PROJECT ABSTRACT

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Over 600,000 acres of soft winter wheat are planted annually in Michigan. Over 600,000 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. Soft white wheat is grown in the eastern U.S. primarily as a source of high quality bran and bran based products for the cereal industry. 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 makes the white wheat market particularly sensitive to DON. FHB has therefore once again caused major economic damage to Michigan's wheat crop.

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 2000 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