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PROJECT 4 ABSTRACT

(1 Page Limit)

Fusarium Head Blight (FHB) of wheat caused by the fungus *Fusarium graminearum* causes extensive yield and quality losses. The fungus produces a toxin called DON. Growing wheat cultivars that are resistant to FHB is the primary control mechanism. Our objective in this research project is to identify molecular markers associated with gene for FHB resistance in a source that does not trace back to a Chinese source of FHB resistance. The FHB resistant parent in this population, IL97-1828, has a very high level of FHB resistance (See Table 1 below). IL97-1828 has good plant type, good Type I and Type II resistance, low percentage of FDK and low DON levels. The pedigree of IL97-1828 is P8113I-16-2-1-2-3-3 / IL90-4813. IL90-4813 = Pioneer brand 9021L / P79404G1-26-2. IL97-1828 was evaluated in the Northern Uniform Winter Wheat Scab Nursery in 2000-2001 and 2001-2002, and was among the most FHB resistant lines in the nursery both years. Clark was chosen as the recurrent parent primarily because it was used as a susceptible parent in the Ning 7840 RIL population that was studied. Also, Clark is an early, winter hardy, short, adapted soft red winter wheat variety. The RIL population was developed by single seed descent, and the 303 lines in the population are $F_{5:6}$. The population will be phenotyped in Illinois and Ohio and the data used in a QTL analysis toidentify the FHB resistant genes from IL97-1828.