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PROJECT 2 ABSTRACT

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The development of resistant HRSW cultivars is likely the best approach to reduce the impact of FHB on wheat production in the northern plains. Although the *Fhb1* resistance QTL is used in nearly all breeding programs in the region, the use of additional QTLs is not as extensive. To facilitate the use of new sources we have developed 82 double-cross families derived from 16 resistant experimental lines from the SDSU spring wheat breeding program containing *Fhb1* (based on UMN10 marker screening and pedigree data), 2 resistant experimental lines from the UMN spring wheat breeding program, the resistant Peruvian line Mult757, and 2 recombinant inbred lines from a cross between the resistant Japanese landrace 'Sapporo Haru Komungi Jugo' and susceptible line 'Wheaton' (these two line were originated by Dr. J. Anderson at UMN). In this project we will develop double haploid populations from progeny from selected families. These DH lines lines will be screened for FHB and genotyped using SNP markers. The project will not only provide resistant parental material that can be used in different HRSW breeding efforts around the region, but also will provide important information regarding interaction between different FHB resistance QTLs.