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PROJECT 1 ABSTRACT

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Breeding for resistance to hemi-biotrophic disease organisms has been a slow incremental process. To accelerate the process and develop novel genetic modification efforts, we need to understand the resistance genes and mechanisms involved. This has been difficult due to the lack of identified single strong resistance genes. The Chromosome 2H bin 10 QTL identified in CI4196 is one of the strongest FHB resistance QTL known and therefore presents a desirable target for cloning and characterization. Sequencing will allow us to identify potential candidate genes, develop improved markers and extend the BAC contigs to fill in gaps.

Line CI4196 carries good to excellent FHB resistance, but it is a poor breeding parent. To rapidly facilitate the breeding effort, we will identify mutants that convert the (a) 2-rowed plant to 6-rowed (one line already available and widely distributed to breeders), (b) tall plant to semi-dwarf, and (c) late maturing plant to early or moderate maturity.