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Project ID: FY12-NW-003

ARS Agreement #: NA

Research Category: VDHR-NWW

Duration of Award: 1 Year

Project Title: Regional Multi-QTL Populations.

PROJECT 1 ABSTRACT

(1 Page Limit)

The objective of this project is to create regional populations segregating for FHB resistance QTL, generate doubled haploid (DH) lines and distribute them to all participating breeding programs. Potential regional populations are: LA-AR, NC-GA, VA-MD, KY-MO-IL-IN, MI-OH-NY. Germplasm line 11-3-10, a McCormick backcross derivative into which have been backcrossed 3 QTL, will be used as a common parent in all crosses. The three QTL are Fhb1, Qfhs.Nau-2DL, and 5A. Other parents of these populations will likely be regionally adapted breeding lines from relevant programs, or scab resistant varieties with other known resistance QTL or with non-exotic QTL native resistance.

F1 seed will be sent from the Eastern Regional Genotyping Laboratory (<http://www.ars.usda.gov/Main/docs.htm?docid=19522>) to Heartland Plant Innovations (<http://www.heartlandinnovations.com/>). F1 plants will be pollinated with maize to generate haploid plants. Haploid tissue will be returned to the Eastern Regional Genotyping Laboratory for genotyping. Genotyping will involve 96 SNP chips. Only haploids carrying ≥ 3 QTL will be subjected to chromosome doubling to generate DH lines.