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Project ID: FY18-HW-008

ARS Agreement #: *New (59-0206-5-002 is in 4th year)*

Research Category: HWW-CP

Duration of Award: 1 Year

Project Title: Development of Montana Adapted FHB Resistant Winter Wheat Varieties

PROJECT 1 ABSTRACT

(1 Page Limit)

Involvement of Montana State University's winter wheat breeding program in the US Wheat and Barley Scab Initiative (UWBSI) was initiated in 2015 in response to the presence of FHB in the 2014 North Central and Eastern Montana winter wheat crop. Occurrence of FHB in Montana's winter wheat crop and the prevalence of FHB in Montana spring wheat and barley crops warrant the development of Montana adapted FHB resistant winter wheat varieties.

Research objectives:

- 1) Integrate FHB resistance genes from FHB resistant winter and spring wheat germplasm into MSU's winter wheat breeding program using both conventional breeding and marker assisted backcrossing (MAB) to increase FHB resistant allele frequencies in the Montana winter wheat breeding program. Two generations of MAB and one generation of conventional breeding can be achieved during 2019.
- 2) Phenotypically screen Montana adapted winter wheat experimental lines for FHB resistance during the 2019 field seasons. Experimental lines found to have FHB resistance will be considered for public release.

Deployment of FHB resistant winter wheat varieties adapted for Montana will help protect Montana's winter wheat grain producers and end-users from FHB infections and excessive deoxynivalenol (DON) levels that would prevent the sale of FHB infected winter wheat.