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Research Category: BAR-CP

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Project Title: Fusarium Head Blight Resistance for Montana Barley.

PROJECT 1 ABSTRACT

(1 Page Limit)

For the last several years, grain has been rejected in different regions of Montana due to high levels of deoxynivalenol (DON) caused by Fusarium head blight (FHB). Although FHB is not a regular problem in Montana, increased corn acreage, no-till practices, increased irrigation and a changing environment have led to an increase in epidemics. One important tool for growers to control FHB and avoid DON is the development of resistant cultivars. To continue the advancement of Montana adapted FHB resistant barley varieties, we will continue to make crosses of barley varieties that have shown resistance with high performing Montana varieties (Objective 1). Progeny from new crosses along with progeny developed from 2015-2017 and the 2-row NAM population will be screened at the MSU Eastern Ag Research Center, which has sufficient field and greenhouse space to evaluate a large number of barley lines (Objective 2). This should improve the likelihood of identifying resistance and developing cultivars adapted to local weather and cultivation practices. This screening will involve the collection and use of *Fusarium graminearum* isolates from Montana barley fields (Objective 3). These fungal communities may differ to those found in other areas due to the rotation and cultivation practices unique to the region. This includes rotations with pulses and sugar beets, both of which are potential hosts of *F. graminearum* and other species of *Fusarium* involved in the FHB disease complex.