Project FY22-DU-007: Developing FHB Resistant Durum Varieties for Montana

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1. **What are the major goals and objectives of the research project?**

   Create durum varieties with FHB resistance. Achieved through crossing and integration of known and new FHB resistance genes.

2. **What was accomplished under these goals or objectives?** *(For each major goal/objective, address these three items below.)*

   What were the major activities?
   Advance populations, created new segregating populations, plant field trials. Measure FHB, DON, identify best lines to advance.

   What were the significant results?
   Determined lines with reasonable agronomics that have reduced FHB since they carry one of three known FHB resistance genes in durum. Advanced isolines in the field contain a new FHB resistance gene. Will have FHB and DON values for the new lines this fall.

   List key outcomes or other achievements.
   Moving toward varietal release of lines containing different FHB resistance genes. Demonstrated that FHB1 and FHB2 reduce DON and FHB infection levels in durum. FHB7 tested as isolines in a MT adapted variety. New segregating pouplations are being developed.

3. **What opportunities for training and professional development has the project provided?**
   One PhD student trained along with several undergraduates. All learned field techniques, how to inoculate plants with FHB and measure infection.

4. **How have the results been disseminated to communities of interest?**
   Reported at 4 field days in the state of Montana so distributed to growers, farmers, wheat breeders, plant scientists, and other interested parties.

5. **What do you plan to do during the next reporting period to accomplish the goals and objectives?**
   Harvest populations, measure yield, FHB, DON and advance best lines toward release.