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Project ID: FY20-IM-018

ARS Agreement #: *New*

Research Category: MGMT

Duration of Award: 1 Year

Project Title: Evaluation of Fungicide Performance for FHB Management on SRW Wheat and Barley Varieties

PROJECT 2 ABSTRACT

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Overall project goal(s)

FHB has been a major challenge to small grain farmers in the state of Maryland due to several compounding factors. Maryland has wet spring seasons, which is the time of highest susceptibility to *Fusarium graminearum* infections. Farmers practice No-Tillage agriculture, and often follow corn: wheat or corn: barley rotations. Miravis Ace® is a new product and farmers still do not know: If it can be applied early to their crop and hope it works equally well as a regular application; what is the need of planting a resistant variety if Miravis Ace is really as good as the company claims. Also, they are interested in knowing how this fungicide will work on barley. The overall project goal is to provide research-based recommendations to wheat and barley farmers for managing FHB.

Project Objectives and Expected Outcomes:

- 1) Evaluate the combined effect of fungicide treatment and genetic resistance on FHB and DON in SRW wheat varieties and barley, with emphasis on Miravis Ace:
- 2) Compare the efficacy of Miravis Ace when applied at heading or at anthesis to that of standard anthesis application of Prosaro® or Caramba®.

Expected Outcomes:

Robust evaluation of fungicide performance of Miravis Ace with and without genetic resistance. Efficacy of timing of fungicide application to manage FHB.

Plans to accomplish project goal(s) within period of proposed work:

PI and CoPI conduct misted nursery at Beltsville research farm of the University of Maryland to provide evaluation of genetic resistance of popular varieties in the state, and so pipeline for planting, inoculating and disease evaluation is already in place. The experiments proposed in this project will be conducted at two locations: Beltsville and at Wye. The planting and fungicide application plans will be finalized by the team in August 2020, and 2021 for planting of the respective seasons.

Statement of Mutual Interest

Because of the humid and warm climate, Maryland small grain farmers are especially distraught by FHB. The results generated in this project will directly benefit small grain farmers and stakeholders in the Mid-Atlantic region. Due to the high disease pressure of FHB in the region, farmers are desperately looking for solutions to manage FHB and minimize crop loss and quality depletion.