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Research Category: MGMT

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Project Title: Integrated Management of FHB and DON of Soft Winter Wheat in Michigan.

PROJECT 1 ABSTRACT

(1 Page Limit)

The objectives of this study are to 1) evaluate the integrated effects of fungicide treatment and genetic resistance on FHB, FDK, and DON and 2) evaluate the effects of postanthesis fungicide treatments of FHB and DON as influenced by cultivar resistance and disease intensity. Two trials will be conducted, one under rainfed conditions in Sanilac county Michigan, the other will be conducted under a mist irrigation system in East Lansing, Michigan. The rainfed trial will use six cultivars (four soft red and two soft white cultivars) possessing differing levels of susceptibility to FHB, the mist irrigated trial will be composed of 4 varieties (four soft white varieties). The treatments will be inoculated and non-inoculated untreated checks, application of Prosaro® (6.5 fl oz/A + 0.125% Induce) at 50% anthesis (Feekes 10.5.1), and three post-anthesis applications (2, 4, and 6 days after anthesis). In addition, we will include a pre-anthesis (10.5) application and a treatment where Prosaro is used 10.51 followed by an application of Caramba® or Proline® six days post-anthesis. The trial will have a split plot design and four replications. Individual plots would measure approximately 14 x 50 feet or 5 x 15 feet, respectively. FHB intensity will be assessed in each plot at the soft dough growth stage, Feekes 11.2. At each assessment, FHB severity will be determined visually on 60-100 spikes per plot, and incidence, diseased head severity, and index calculated. The presence and flag leaf severity (as a percentage) of any foliar diseases may also be determined. An IH 2144 combine equipped with a Juniper HarvestMaster system will be used to determine grain yield, moisture and test weight. Grain from all plots will be rated to determine the percentage of Fusarium damaged kernels (FDK). Grain samples from each plot will be sent to one of the USWBSI-funded DON Testing Laboratories for DON analysis. Once the results are summarized and melded with other that of other state investigators, they will be shared with MI growers and industry representatives through the use of public meetings and news articles.