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PROJECT 1 ABSTRACT

(1 Page Limit)

Fusarium head blight continues to be an important disease impacting wheat production in Illinois. In 2018, Syngenta will release a new product with activity on Fusarium head blight (FHB) named Miravis ACE. *This product contains a DMI fungicide as well as a new succinate dehydrogenase inhibitor active ingredient (SDHI; FRAC Group 7).* Miravis Ace[®] appears to provide similar to slightly better FHB activity when compared to our currently recommended triazole fungicides (DMI; FRAC group 3), Prosaro[®] and Caramba[®] in local trials. These data are encouraging, as persistent use of DMI fungicides may lead to reduced efficacy and resistance development in the FHB fungal pathogen. It has been reported that Miravis Ace will be marketed as having a larger application window than Prosaro and Caramba, thereby allowing application at heading (Feekes Growth Stage (FGS) 10.3) through FGS 10.5.1 + 6 days. At current, there are only limited data supporting these claims, and it not known if this product is as efficacious for vomitoxin reduction as Prosaro or Caramba when applied at the heading growth stage. It is essential that we evaluate Miravis ACE across grain classes and resistance levels to determine the value of this new product to wheat growers in the United States.

To address these knowledge gaps, we propose to conduct a multi-year experiment using at least two cultivars with different levels of resistance to FHB and ten fungicide x inoculation treatments: **1)** an untreated, inoculated check; **2,5,8)** Prosaro (6.5 fl. oz.) at FGS 10.3, 10.5.1, and 10.5.1+ 6 days, respectively; **3,6,9)** Caramba (13 fl. oz), inoculated; at FGS 10.3, 10.5.1, and 10.5.1+ 6 days **and 3)** Miravis Ace (11.5 fl. oz.) at FGS 10.3, 10.5.1, and 10.5.1+ 6 days. In addition, a treatment including 11) Prosaro at anthesis, non-inoculated will be included to assist in the development and refinement of the FHB prediction model. The specific **hypotheses** tested will be: **1)** Does Miravis Ace provide FHB/DON suppression equal to or better than Prosaro and Caramba when applied at FGA 10.5.1; **2)** Does application of Miravis Ace at FGS 10.3 provide FHB and DON suppression equivalent to, or better than Prosaro and Caramba applied at 10.3 or 10.5.1; **3)** Does Miravis Ace provide equivalent FHB/DON suppression as Prosaro or Caramba when applied at FGS 10.5.1+6 days?

Sites will be established at Ewing and Champaign Illinois. Both sites will be planted behind corn, and inoculated at FGS 8/9 with infested corn kernels according to established procedures. In Champaign, plots will be irrigated nightly after FGS 9 to facilitate FHB outbreaks. Data on FHB incidence, severity, and FDK will be collected at each site, and subsamples sent for vomitoxin analyses. Data will be shared as part of a multi-state analyses and results shared at future USWBSI forums. Locally, PI Kleczewski will share results on the IL Field Crop Disease blog, Twitter, and at local and regional wheat meetings for the agricultural community and industry.