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Research Category: MGMT

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Project Title: Integrated Management of Fusarium Head Blight in Wheat in Pennsylvania

PROJECT 1 ABSTRACT

(1 Page Limit)

In Pennsylvania, winter wheat is produced on approximately 150,000 to 200,000 acres, with yields of 65 bu/ac, on average, providing \$40,000,000 to \$70,000,000 to the local economy annually. In 2018 and 2019, Pennsylvania experienced favorable conditions for Fusarium head blight (FHB) and results from our trials in these years indicated a difference from 10-20 bushels per acre with well-timed fungicide applications, as well as a reduction in deoxynivalenol levels. Nonetheless, questions remain regarding the efficacy of foliar fungicides in an integrated program, as many producers in PA apply fungicides based on growth stage without necessarily quantifying the agronomic, biological or economic efficacy of those applications. Continued research, as part of the Integrated Management (IM)-Coordinated Project and the Uniform Fungicide Trial (UFT) Project, will help provide important local data to quantify efficacy and improve management recommendations for control of FHB, as well as contributing to national efforts on both best management practices and disease forecasting.

IM and UFT trials will be conducted at the Russell E. Larson Agricultural Research Center at Rock Springs and the Southeast Agricultural Research & Extension Center at Landisville, PA, respectfully. A split plot experimental design will be used for the IM trial, while a randomized completed block design will be used for the UFT. Plot size for both trials will be 7 rows by 18 feet, with a harvested length of 14 feet. For the IM trial, the whole plot factor will be winter wheat variety (susceptible, moderately susceptible, and resistant), and the subplot will be foliar fungicide treatment. For the UFT the treatments are different foliar fungicide products and application timing. A susceptible winter wheat variety will be used. Plots will be established and maintained following local recommendations. FHB incidence and severity will be rated on 60-100 spikes per plot at the soft dough growth stage (Feekes 11.2), as well as the presence and flag leaf severity (as a percentage) of foliar diseases. Two subsamples of grain from each plot will be obtained, with one used to determine the percentage of damaged kernels and the other that will be submitted for DON analysis at one of the USWBSI-fungicide laboratories.

Over the past two years data generated from Pennsylvania studies has been used in approximately 32 extension activities that reached 1,646 participants. We will continue our efforts to present up-to-date and new scab-management information in field days, grower meetings, workshops, newsletters, and fact sheets and incorporate new findings in the next edition of the PSU Agronomy Guide.