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**Project Title: Management of Fusarium Head Blight on Barley in the Mid-Atlantic.**

### **PROJECT 1 ABSTRACT**

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As interest in barley production in the MidAtlantic and Northeast US increases, maltsters, brewers, and distillers face the growing challenge of sourcing high-quality, disease and toxin-free grain locally. In response, growers are demanding new management approaches for Fusarium Head Blight (FHB) and toxin reduction. While studies have shown an approach combining the use of resistant varieties, fungicides and residue management will be valuable in answering the problem, more information is needed in order to determine the most economical and effective combinations of approaches and their practicality.

We propose a one-year study for winter barley in two locations (Lancaster County and Centre County) in Pennsylvania. In both locations multiple barley varieties will be tested under four different fungicide programs as well as an untreated check: Prosaro® at heading; Prosaro at heading followed by Caramba® 4 days later; Caramba at heading followed by Folicur® 4 days later; Proline® at heading followed by Folicur 4 days later. Plots will be inoculated with grain spawn in order to increase FHB pressure, and misting will be used at the Lancaster County site. Varieties will include known susceptible and moderately resistant varieties, but also select varieties for which susceptibility is not well determined. These varieties will be selected based upon previous agronomic performance in PA statewide variety trials and under the advisement of growers and maltsters.

By combining the two management approaches of planting barley varieties with genetic resistance to the head scab pathogen (and subsequent production of toxin) with the use of fungicides at different timings, we hope to identify cost effective ways of satisfactorily controlling the yield and quality issues associated with this disease. The information gained as a result of this work will be shared with stakeholders via meetings, publications and during onsite field days, and will be available for analysis to other workers in barley disease management.