

**PI: Alyssa Collins**

**PI's E-mail: collins@psu.edu**

**Project ID: FY15-IM-019**

**ARS Agreement #: New**

**Research Category: MGMT**

**Duration of Award: 1 Year**

**Project Title: Evaluation of Spring and Winter Barley Varieties Adapted to the Mid-Atlantic for Resistance to Scab.**

### **PROJECT 1 ABSTRACT**

(1 Page Limit)

Field experiments will be conducted to evaluate barley varieties for competitive grain yield, quality and scab resistance that can be part of an integrated program for the control of scab in the Mid-Atlantic and Northeastern United States. Spring barley will be trialed in Centre County, PA and winter barley will be trialed in both Centre County and Lancaster County, PA. Commercially available barley varieties will be selected for evaluation based on results from previous trials and under the advisement of regional barley growers and maltsters. Small plots will be established and each variety will receive no fungicide, fungicide at recommended timing (heading), and fungicide 2-6 days after recommended timing. Varieties will be grouped into two estimated maturity groups (early and late) to accommodate fungicide treatment according to recommended timing. Inoculation, misting, evaluation and harvest will take place in order to accommodate heading of each group. Field nurseries will be inoculated using the corn grain spawn method at a rate of 30g per square foot. Evaluations will be made for crop yield, test weight, heading date, height, lodging, spring stand rating (for winter barley), and early season growth. The varieties will be visually evaluated for scab incidence and severity 21 days following heading. Plots will be harvested using a plot combine. *Fusarium*-damaged kernels (FDK) as a percentage of total harvested yield and DON will also be evaluated. Data will be analyzed using SAS to generate means, LSDs, and CVs.