

Project FY22-BA-008: Screening Winter NABSEN at a High-performance North Carolina Barley FHB Nursery

1. What are the major goals and objectives of the research project?

The goal is to screen the winter NABSEN under FHB pressure for resistance to FHB.

2. What was accomplished under these goals or objectives? (For each major goal/objective, address these three items below.)

What were the major activities?

The 2023-24 Winter NABSEN was screened by planting three replicates of randomized two-row plots in October 2023. Inoculations were performed in March 2024 with Fusarium-infected corn spawn, in three batches at one-week intervals to ensure that all maturities were equally inoculated. Mist irrigation was provided.

Notes were taken on heading date and FHB symptoms (incidence and severity). Index was calculated along with mean, CV and LSD. Entire plots were hand-harvested and will be hand-threshed and debarbed, and a 100-g subsample of the grain from each plot will be collected and ground for mycotoxin testing at U. Minnesota.

What were the significant results?

DON data have yet to be collected; this work is in progress.

List key outcomes or other achievements.

Disease and DON data are being provided to breeders on a large set of advanced experimental barley lines, so that susceptible lines can be excluded.

3. What opportunities for training and professional development has the project provided?

Our graduate student Pete Oppenheimer has learned about screening germplasm under artificial FHB pressure. Our technician John Banask has also learned about growing and screening winter barley.

4. How have the results been disseminated to communities of interest?

Results of the previous 2022-23 nursery, including symptom and DON data, were distributed to all the breeders with entries in the nursery.

5. What do you plan to do during the next reporting period to accomplish the goals and objectives?

This nursery is an annual nursery, providing a pipeline for breeding programs, and it will be repeated in the coming crop year.