

Project Title and Principal Investigator. FY2022 Mycotoxin Testing Services for Virginia Wheat and Barley. Dr. David G. Schmale III, Professor, 403 Latham Hall, Virginia Tech, Blacksburg, VA, 24061

Objectives and Relevance. The specific objective of the proposed research was to provide mycotoxin testing services for Virginia wheat and barley samples. We proposed to provide mycotoxin testing services for wheat and barley samples from a number of investigators at Virginia Tech. Our ultimate goals are to reduce mycotoxin contamination in Virginia wheat and barley and to provide growers and producers in Virginia with new and improved varieties. Mycotoxin testing is vital to the development of FHB-resistant varieties of wheat and barley. The Santantonio Lab prioritized wheat and barley entries in FY2022 that demanded sensitive, accurate, and timely mycotoxin testing services. Many of these entries have never been tested for mycotoxins. Knowledge of the mycotoxin potential in Virginia wheat and barley is essential for providing growers and producers with new and improved varieties.

Results. During the performance period, we analyzed a total of 1,074 wheat and barley samples for deoxynivalenol (DON). All of these samples were from the Santantonio Lab. Another 320 samples are still being processed, and should be completed by the end of this coming July. Kernel samples were collected from FHB field trials, separated into lots, and ground to a fine powder using commercial mills. Mycotoxins were extracted, derivatized, and quantified with a GC/MS. Data were analyzed alongside FHB incidence and severity data collected from field trials. Wheat and barley varieties with reduced mycotoxin potential have been selected for further development, and have been prioritized for DON testing in FY2023.