

FY21 USWBSI Project Abstract

PI: Paul Schwarz

PI's E-mail: paul.schwarz@ndsu.edu

Project ID: FY20-SC-039

ARS Agreement #: 59-0206-0-124

Research Category: PBG

Duration of Award: 1 Year

Project Title: Localization of Fungi and Toxin Production within FHB Infected Grains

PROJECT 2 ABSTRACT

(1 Page Limit)

The presence of the mycotoxin deoxynivalenol (DON) on barley, and its development during the malting process is a major food safety concern for the malting and brewing industries. This is, as the DON can carry over into the finished beer. Practical experience has been shown that *Fusarium* Head Blight (FHB) infected barley with low DON levels can be used in malting as DON declines during steeping and remains lower on malt. However, a dilemma is that germination of low DON grains sometimes results in malt with higher DON levels. The overall goal of the project is to address causes of deoxynivalenol (DON) increases during the malting of barley and wheat, which occurs occasionally, but is of considerable importance in both economic and food safety terms. Specifically, this project is to examine the distribution of DON concentration on single kernels of grain and malt, determine the physical localization of *Fusarium* within the kernel, and finally to evaluate infection parameters and grain storage conditions on the viability and growth of *Fusarium* during. The study will utilize both advanced microscopy and molecular techniques.