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PROJECT 1 ABSTRACT

(1 Page Limit)

Deoxynivalenol (DON) is a mycotoxin that can be produced in wheat, barley, and other small cereal grains, infected by *Fusarium* Head Blight (FHB). Plants have the ability to metabolize the mycotoxins to less toxic substances by several methods. One common method is conjugation in which mycotoxins are linked to functional groups such as sugars and amino acids. Deoxynivalenol-3-β-D-glucoside (D3G) is a product formed by conjugation of DON with glucose. These mycotoxins escape the conventional analytical detection methods due to changes in molecular structures and polarities. The overall goal of this research is to determine the effect of various processing steps on mycotoxin levels in bread baking process. Samples will be collected at various stages of baking, such as after mixing, second punch, proofing and baking and, will be analyzed in terms of DON and D3G concentrations. Milling fractions will also be collected. Our hypothesis is D3G is metabolized into DON during baking process. Statistical significance will be determined using ANOVA and mean separation will be performed using SAS software. Wheat sample for this research was provided by Langdon Research Extension Center and tested for DON levels.