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**Research Category: FSTU**

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**Project Title: Formation of Deoxynivalenol-3-Glucoside during Malting.**

## **PROJECT 2 ABSTRACT**

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Fusarium Head Blight (FHB) of barley produces deoxynivalenol (DON) that in turn can contaminate malt and beer. The industry has acted proactively by routinely testing barley, and self-imposing acceptance limits. However, there have been recent reports of DON-glucoside (DON-3-G) on barley and malt, and in beer. This has raised concern as DON-3-G is a masked mycotoxin, which by definition may not be detected by routine methodology. Research has demonstrated that several types of cereal grains are able to transform deoxynivalenol (DON) to DON-3-glucoside (DON-3-G) during seed germination. DON-3G has been reported in wheat, barley and maize samples that have been naturally infected with *Fusarium*. Levels of DON3G in grain are generally much lower than those of DON, often accounting for 5-20 of the total DON. However, preliminary experiments in our laboratory using inoculated barley have shown that DON-3-G can increase dramatically during malting (n=24, 15 to 340-fold increase) and is sometimes present at much higher concentrations than the DON.. The objectives of this research are to (a) determine the development of DON3G during malting in samples that would be found in commercial use, (b) determine if there are genetic differences between plants in their ability to convert DON to DON-3-G