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Project Title: Determination of the Relationship between FHB and Spring Wheat Quality.

PROJECT 1 ABSTRACT

(1 Page Limit)

Total primary and secondary economic losses due to FHB have been estimated about \$10 billion for North Dakota and its surrounding regions over the past 15 years. Yield and quality losses to producers are the primary losses; the secondary losses are those experienced throughout the entire marketing chain for domestic and international buyers of HRS wheat. The effects of FHB on wheat quality are as follows: limited marketability of *Fusarium*-damaged grain; low test weight; mycotoxin contamination; reduced milling quality; reduced end-product quality; reduced germination; refusal of or reduced feed consumption by livestock. The effects of DON on the processing quality of HRS wheat have not received much attention. Following the severe outbreak of FHB in the USA, there were reports from international and domestic processors that HRS wheat from the USA containing FDK exhibited weaker dough properties than in previous years. The previous studies looked at effects of the infection on wheat quality: this study will help to determine the extent to which DON content as a result of *F. graminearum* infection influences the processing performance of US HRS wheat. Our research hypothesis is that the end-use quality of HRS wheat is related to the DON level in wheat. Our specific objectives are i) to determine the effect DON on physiochemical properties of HRS wheat in relation to end-product quality ii) to determine the effect DON on rheological properties of HRS wheat dough.