PI: Halley, Scott **PI's E-mail: Scott.Halley@ndsu.edu**

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PROJECT 2 ABSTRACT

(1 Page Limit)

Current available fungicide chemistry has been shown to reduce the effects of Fusarium head blight and deoxynivalenol (DON) accumulation in the barley and hard red spring wheat seed by about 50 to 60%. Unfortunately when disease pressure is great these reductions are not adequate to produce a barley grain acceptable to the brewing industry or to minimize the price discounts growers receive on barley when DON exceeds the acceptable standard of <0.5 ppm. This research study will examine the benefits of making a sequential fungicide application about 7 days after the initial application. The study will compare this management strategy on a barley cultivar 'Tradition' currently being produced on major acreages and a line being evaluated by the brewing industry as a replacement for 'Tradition'. The new line 'ND200448' has much greater tolerance to DON accumulation in the seed. Differences in management strategies will be determined by measuring yield, test weight, plump and DON accumulation on the entire plot and by determining DON accumulation in grain heads that would be in both the boot and heading growth stages during the initial fungicide timing of main stem heading. Previous unpublished research has shown limited benefit by a fungicide application to barley tillers that was in boot growth stage when the main stem was at heading growth stage when a fungicide was applied. Fungicide treatments will include the tebuconazole and prothioconazole fungicide chemistries as single and/ or sequential application timings compared to an untreated. The study will be conducted in two environments with supplemental water and inoculum applied to enhance chances of research trial success. Mean separation will be made using analysis of variance and Fischer's protected least significant difference.