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**Project ID: FY06-HA-070**

**FY05 ARS Agreement #: 59-0790-3-079**

**Research Area: CBCC**

**Duration of Award: 1 Year**

**Project Title: Aerial Spray Application Technology for Enhanced Fungicide Efficacy for Control of FHB.**

### **PROJECT 1 ABSTRACT**

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Aerial spray type application is as a primary mode for fungicide application on small grain crops in the northern plains. The percent acreage applied with aerial spray equipment of the total fungicide acreage averages about 50% but can be the only means of application available to growers when field conditions do not permit the use of ground type equipment. Research is necessary to maximize efficacy from the limited quantity of fungicide chemistries available. Previous research has shown advantage to specific spray volumes and a medium drop size on hard red spring wheat (HRSW) but limited research has been conducted on barley. Barley's unique plant architecture makes it unlikely that findings from the HRSW research will translate directly to barley. Price discounts on barley by the brewing industry are more restrictive than HRSW discounts by the milling industry. Only 0.5 ppm of deoxynivalenol (DON) in the grain sample is accepted on barley without discount. Discounts sometimes exceed \$1 per bushel to the grower. In addition the industry has increasingly relied on imports from Canada to meet quality requirements. This project will evaluate spray volumes of 3, 5, and 7 gpa and fine and medium size drops to enhance tebuconazole fungicide efficacy on barley. A commercial aerial spray applicator will apply the fungicide to a commercial producer's barley field. The trial will be designed as a randomized complete block with replication. Yield, test weight, and DON will be used to compare treatments. Differences between treatments will be determined by analysis of variance and mean separation with Fisher's LSD.