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**Project Title:** Evaluation of Fungicide Application Technologies to Optimize FHB Control.

## PROJECT 1 ABSTRACT

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Improvements in application techniques for fungicidal control of FHB are necessary for consistent and positive response to fungicides. Information on nozzle angle, gallonage, pressure, adjuvants, and timing of application for fungicides has been provided to producers and adopted by many for their conventional ground sprayers. Although gains in knowledge about application techniques have occurred, the improvements often are not adequate for maximum disease control under severe epidemics or when more susceptible lines or grain classes are grown. Our goal in this project is to further identify optimum application procedures that are easily and economically adapted and adopted by producers for their equipment used. Some techniques identified may be most appropriate for ground application, but others, such as appropriate timing or split rates and use of adjuvants may be adaptable to air application as well.

In the past two years, experiments examining timing of application and use of split rates of Folicur have indicated that one application of fungicide at early flowering is still the optimal timing for application of Folicur fungicide to hard red spring wheat and durum wheat. However, in barley, multiple applications are necessary to provide control under multiple infection conditions. Experiments will be established in the greenhouse to further evaluate timing and use of multiple applications for control of FHB in barley, and enough plants will be grown to do appropriate DON analyses, as well. The intent of this study will be to answer the questions: will a late infection event result in high DON content, despite kernel yield and plumpness, and will reduced rates of fungicides applied to prevent this late infection result in disease control and DON reduction, or are higher rates necessary for control in barley?

Greenhouse and field tests in 2004 indicated that some adjuvants provided some slight improvement in FHB control when combined with Folicur fungicide. Placement plus Preference adjuvant or Preference alone were two promising adjuvants. Placement is a deposition and retention agent that micro-encapsulates the fungicide prior to mixing with water and prevents drift enhances movement of the droplet to the target (Young, 2002). Preference is a non-petroleum based non-ionic surfactant, and its addition allows the product to stick to the plant surface once the droplet reaches the target. Additional data showing efficacy of adjuvants with Folicur, and also with the very promising experimental fungicides JAU6476 and V-10116, will determine if adjuvants act equally on different fungicide products, and will help get these products to the market for producers. Modest changes such as improved adjuvants can be a very cost effective tool for producers.