

Project Abstract

Project Title:	Integrated Strategies for Improved Management of FHB and DON in Soft Red Winter Wheat	
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Fusarium head blight (FHB) has been problematic in Alabama in recent years and farmers have become sensitive for the need to produce a disease- and DON-free wheat crop. In the humid conditions that prevail during wheat anthesis in AL production areas, there is a need for integrated strategies for better control of FHB and the vomitoxin, DON. This project proposes to evaluate the integration of fungicides applied at or near the time of anthesis (flower) with varying levels of host resistance using three soft red winter wheat (SRWW) cultivars adapted for coastal plains production areas.

One integrated study will be done in central AL (PBU) and will be under mist irrigation. Appropriate plots in the study at PBU will be inoculated. At a second site in south AL (GCREC), two cultivars of varying FHB response will be planted as main plots and fungicides at varying timings relative to anthesis will be subplots. In addition, FHB management had become largely reliant on a single class of fungicides—the Demethylation Inhibitors (DMIs). A newer fungicide, in the Succinate Dehydrogenase Inhibitor (SDI) group, MiravisAce[®], has shown good efficacy against FHB but additional evaluations are warranted. In addition, two new products are being promoted for control of FHB. These products are Prosaro Pro[®] (two DMIs—prothioconazole and tebuconazole) and Sphaerex[®] (two DMIs—metconazole and prothioconazole) whose efficacy needs to be compared to the current industry standards, Prosaro[®] and Caramba[®]. Thus, our objectives are to: 1) evaluate the integrated effects of fungicide and genetic resistance on FHB and DON in SRWW grown in AL; and 2) evaluate the efficacy of Prosaro Pro and Sphaerex compared to Miravis Ace and to standard Prosaro and Caramba treatments for FHB and DON management. Data collected from these studies will contribute to national efforts for improved FHB and DON management by: 3) quantifying the economic benefits, 4) developing more robust “*best-management practices*” guidelines, and 5) validating and advancing risk prediction models.

Results of these studies will be shared with others in the MGMT Coordinated Project to contribute to the national effort for improved management of FHB. Proposed studies have been discussed with appropriate personnel, so that early preparations for winter wheat plot establishment can begin (e.g., obtaining seed, reserving site). Studies done in Alabama will demonstrate to local extension agents, experiment station personnel and growers the effectiveness of integrated strategies for FHB management.