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Project Title: Integration of Tactics for Fusarium Head Blight and Vomitoxin Reduction in MD.

PROJECT 1 ABSTRACT

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Fusarium head blight continues to have the potential to make a soft red winter wheat crop in Maryland completely unmarketable. Although advances have been made in development of more resistant cultivars and more effective fungicides, neither tactic alone has proved to be sufficient to reduce yield losses and vomitoxin (DON) levels to acceptable levels when the weather is highly conducive for disease development. Initial advances in breeding for resistance concentrated on transferring resistance genes that limit spread of the pathogen in a wheat head. This type of resistance could be overcome by multiple infections that can occur on individual heads in a severe epidemic. In integrated management trials conducted in Maryland to date only a combination of rotation, resistance and fungicides produced a crop that had vomitoxin levels below 1ppm in a severe epidemic year. As cultivars with improved agronomic performance and different combinations of resistance genes become available the contributions of the fungicide and rotation components to successful and acceptable disease management levels needs to be assessed. This project is part of the uniform management trial examining Fusarium head blight management through integration of available cultivar resistance, crop rotations and currently registered fungicides.