

0203-JO-003 Development of Scab Resistant Wheat Cultivars Adapted to the Southeast.

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PROJECT ABSTRACT

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Broadly adapted cultivars are grown in areas where the potential exists for high incidence of scab. Therefore, the development of cultivars with some scab resistance is essential to prevent severe economic losses. Presently, most sources of resistance to scab are found in Chinese and Mexican lines, and these lines are not well adapted to the Southeast

The goal of the project is to develop soft red winter wheat cultivars with scab resistance and improved yield potential for commercial use in the lower Southeastern United States. Wheat scab or FHB, a potentially devastating wheat disease caused by *Gibberella zeae* (sxhw.), is emerging as a significant threat to wheat production and utilization in the Southeast. Millers in the Southeast are extremely concerned with the potential of grains contaminated with *Fusarium* mycotoxins.

Segregating populations from crosses of scab resistant germplasm with adapted cultivars and elite lines will be evaluated for scab resistance. Resistant sources to scab from China, Yugoslavia, CIMMYT, Indiana, and Virginia will be crossed and backcrossed to elite lines adapted to the southeast which have excellent leaf rust and powdery mildew resistance, agronomic or milling and baking traits for soft red winter wheat. Cultivars, Roane, Ernie and Freedom, with Type V (yield loss) resistance will be further backcrossed to our elite material. Scab resistant sources will also be evaluated for their level of resistance to other diseases and insects. Reliable and efficient screening protocol for evaluation in the field will be used for disease assessment. Infection type for evasion resistance (Type II) and scab severity (Type I) resistance will be assessed once a week after inoculation.