Inheritance of brown patch resistance in tall fescue. (C05-simmons113038-Poster)

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Abstract:

Tall fescue (Festuca arundinacea Schreb.) is a widely grown cool-season grass in the United States and is used for general-purpose turfgrass on athletic fields, home lawns, and roadsides. Brown patch, caused by the fungal organism Rhizoctonia solani Kuhn, is a damaging disease that severely limits the growth of this species of grass. Integrated methods for control of brown patch include reducing nitrogen levels, allowing deep and infrequent irrigation, increasing air circulation, and use of fungicides. Host resistance would provide a more economical and efficient means of control of this disease. The objective of this study was to examine the inheritance of resistance to brown patch in a population of tall fescue. An F2 population of tall fescue derived from a cross between resistant 'Tarheel' and susceptible 'Coronado' was evaluated under inoculated greenhouse conditions in the spring of 2002. The population segregated for resistance to brown patch and was normally distributed. Results suggest that the disease is likely controlled by several genes. Further assessments of an F3 population will isolate additive inheritance using parent-offspring regression and will allow estimation of narrow-sense heritability.

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