

MSU's Turfgrass Breeding Project

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The mission of the genetics and turfgrass breeding project is to develop improved and disease resistant cultivars and, in the process, advance the science of turfgrass. The primary focus is to investigate the genetic diversity and to develop breeding methodology to improve stress tolerance and disease resistance in turfgrass. On-going studies in our lab show all the commercial bentgrass cultivars tested are highly susceptible snow mold, dollar spot, and brown patch pathogens. A limited number of fungicides are available to combat these diseases. These fungicides are very expensive to apply, have limited efficiency, and may be detrimental to the environment. In addition, some fungal pathogens have developed resistance to fungicides after years of repeated applications.

In order to develop improved turfgrass cultivars, three areas of research will be utilized: applied plant breeding, molecular marker/genomics and genetic engineering and tissue culture. Helping me with the research technician will be Frank Roggenbuck a research technician with over 20 years experience: Gina Verga, Ph.D. candidate supported by plant breeding Genetic Group at MSU: and Jainping Wang, Ph.D. candidate supported by MTF.

A visit to the Hancock Research Center will reveal several sites and activities related to the turfgrass breeding project. This includes 12.4 acres of land converted for use in the research: installation of drain tile and irrigation on the plots: development of nursery that will continue to be planted to bentgrass, tall fescue, ryegrass, and bluegrass in the summer: and lab space that will be unavailable for molecular marker/genomics research.

The progress of the turfgrass breeding project will be enhanced because of ongoing interactions with MTF and all the faculty of the Departments of Crop and Soil Sciences, Botany and Plant Pathology, and Entomology, as well as with the golf and seed industries.