MSU Bermudagrass: What are We Waiting for? – Funding

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Bermudagrass is the superior turfgrass species for sports fields in the warm-season zones throughout the world. It has excellent recuperative ability because it has both stolons AND rhizomes, a characteristic lacking in all cool-season grasses. It's wear tolerance is excelled only by zoyziagrass, which also has stolons and rhizomes but has a much slower growth rate, and consequently, much lower recuperative ability.

Commercially available cultivars lack cold-hardiness and are not adapted to the cool-season zones. Southern California, Kansas, Tennessee, and Maryland are generally northernmost limits. Recently, several bermudagrass cultivars were shown to perform well when planted as summer annuals on football-practice fields in Nebraska and Iowa. However, none of the cultivars survived the winter.

Michigan Agricultural College (now MSU) Professor W. J. Beal introduced bermudagrass to the campus in the 1880s. The plant material probably came from its native home in Africa. Since Beal was the first scientist to perform grass research, this could have well been the first intentional importation of bermudagrass to the new world. His interest in grasses was primarily as a forage, but Beal evaluated several for lawn use, as well, thus enabling MSU to claim the right as the birthplace of turfgrass research. Dr. James Beard has theorized that the bermudagrass first survived the winters above campus heating tunnels after having escaped from Beal's plots, but later investigations of the MSU archives by Gilstrap, Cookingham, and Telewski revealed that Beal reported that the perennial exhibited winter hardiness from the onset.

The descendents of Beal's imports thrive throughout the MSU campus where they compete best in warmer microclimates such as above heating tunnels, along sidewalks, and sunny exposures along the south side of buildings. In addition, bermudagrass is also prevalent in many open areas, especially on the intramural fields where its wear tolerance and recuperative ability has given it a competitive edge over any cool-season species. It can be readily located when dormant and yellow, or from autumn frosts until late spring. Samples have been taken to a few other universities by their turfgrass breeders. Extensive evaluations have been conducted by Dr. Charles Taliaferro at Oklahoma State University. Dr. Taliaferro classifies the MSU material as being far superior in cold tolerance to other known bermudagrasses.

In 1991, MSU Professor Joe Vargas directed the collection of visually appealing selections that were transplanted from the campus to this plot area here at MSU's Hancock Turf Research Center. When I first viewed them in 1993, bermudagrass covered about one-third of this 3600 square-feet area. In 1997, over half was covered, and I began aggressively managing this area applying five or six pounds of nitrogen per thousand square feet during each summer. The total, dense turf cover observed here has persisted since 2000.

Last year, I halted mowing in hopes of later harvesting viable seeds. Abundant inflorescences were quickly extended and abundant pollen was produced, but no seeds were found. Taliaferro was not surprised at this news since he recalled his MSU bermudagrass selections as producing very few seed, if any. Therefore, preliminary, inconclusive evidence suggests that the MSU bermudagrass is self-sterile, and what is present on campus is one or more clones spread largely by mowers and other mechanical means. This question could be answered by a DNA based, population-genetics study that would require substantial funding.

Other investigations needed concern the management, production, and marketability of MSU bermudagrass. Last year, I submitted a grant proposal to the Michigan Department of Agriculture's Grown-In-Michigan program to research answers to the above questions. These funds would have been matched jointly by the Michigan Turfgrass Foundation, Michigan Sports Turf Managers Association, and the Sod Growers Association of Michigan. The program was eliminated with the first round of state-government-budget cuts shortly after the proposal was received.