Michigan Turfgrass Foundation
2006 Research Grant Request
By

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The sports turf management program at Michigan State University remains one of the largest and most recognized such programs in the United States. It is unique in that several acres and personnel are dedicated to the research and management issues of turf for sports fields. Earlier research efforts produced alternative uses for used tires on high traffic areas as well as methods to maintain turfgrass under shaded conditions. More recently, supina bluegrass was introduced as a suitable grass for Michigan sports fields and golf courses. While these efforts were initiated on behalf of sports turf related problems, they contribute to knowledge in all aspects of turfgrass management, as the problems of traffic and shade are ever present. One consistent thread that has run through this program since 1988 has been the enduring and substantial support of the Michigan Turfgrass Foundation, MTF. In 1993, a 14,400 ft^2 area was constructed (including a 3600 ft^2 Prescription Athletic Turf, PAT, field) as part of the expansion of the Hancock Center funded by the MTF and dedicated to sport and high traffic turf research. This area has been used for research involving species, establishment, and traffic studies.

Organic Matter Accumulation in Sand Root zones – Tim Vanloo

Researchers in the turfgrass management field have been trying to better understand how organic matter accumulates in sand based athletic fields. Athletic fields have shown that within a few growing seasons macro pore space quickly fills with organic matter. Unlike crop land soils, organic matter accumulation quickly decreases the quality of the athletic fields surface. Many problems stem from organic layers within the root zone profile. These layers can cause an increase in water holding capabilities. This causes the infiltration rate of water to reduce, producing a moist playing surface. The increased moisture at the surface also yields to an increase in shallow rooting. The shallow roots cause a problem for field wear tolerance and playability. Core cultivation and topdressing are normal practices to help control organic matter accumulation. Researchers at Michigan State want to better understand the factors that possibly contribute to excess organic matter. Clippings returned to the playing surface are a possible way for organic matter to accumulate at fast rates. Athletic fields are often heavily fertilized to increase recuperative ability and plant density. This yields many clipping that are often returned to the playing surface during the mowing process. When constructing a sandy root zone silt and clay are often added in small amounts (less than 15%) to the root zone. It is unknown if the silt and clay helps or hinders the breakdown of organic matter within the soil profile. This research

project was initiated in June of 2004 at the Hancock Turfgrass Research Center. Factor A is looking at clippings returned versus clippings being removed. During the mowing operation designated plots have the clippings mulched and the others have the clippings bagged and removed. Factor B compares two types of root zones. The first root zone is 100% sand and the second is 90% sand and 10% silt and clay. The treatments where arranged in a complete randomized block design. The objective of this study is to determine how clippings and silt and clay within sand affect the accumulation of organic matter in sand based athletic fields.

Funding Request and Sources

The following table details funding sources for our research program. MTF funds will act as matching or complimenting for these projects.

Funding agency	Years	$/year	$Total	Purpose
Dept. Int. Ath.	2004-6	27,000	81,000	Athletic Field Studies

Request Justification

Funding request for 2006 from the MTF centers around support for the Organic Matter Accumulation project in our Sports Turf Management Research Program. The monies will support research personnel, student labor, and data collection and testing. Support will also be used to support travel for research paper presentations. This study will continue into 2007.

2006 Budget

Project	Research $	Support $	Total Funding
OM Accumulation Study			
Graduate Assistantship	5,000		
Student Labor	3,000		
Travel		1,000	
Data collection and Testing	1,000		
Total	**$9,000**	**$1,000**	**$10,000**