

## **THE MICHIGAN STATE UNIVERSITY HANCOCK TURFGRASS RESEARCH CENTER**

Since breaking ground in 1979, the Hancock Turfgrass Research Center, or HTRC, has supported turfgrass culture for some of the world's most prominent sporting events and venues. Specifically, research has contributed to playing surfaces used in two FIFA World Cup tournaments, the Athens 2004 Olympic Games, the Beijing 2008 Olympic Games and the development of USGA putting green construction methods. Research and technical guidance from the center have also supported the renovation and management of major PGA tournament venues, including Oakland Hills Country Club, Medinah Country Club and Philadelphia Country Club. Today, the HTRC remains the largest turfgrass research facility in the United States, encompassing 56 acres of cool-season turfgrass research systems managed as high- and low-input home lawns, sports fields and golf course environments.

Grounds are maintained using the latest European and American turfgrass management technologies and a state-of-the-art computerized Toro Lynx and Rain Bird Cirrus irrigation systems that service approximately 90% of the research grounds. The HTRC also serves as a living laboratory supporting hands-on learning within Michigan State University's historic turfgrass teaching program and features a fully equipped on-site wet laboratory. These resources provide students with direct, practical experience in both field and laboratory turfgrass research methods conducted on the same grounds that have informed management practices for some of the most visible turf systems in the world.

Please see below for additional information about our facilities.

- Central campus location, serving as a hub for green industry collaboration.
- Annual host to several statewide organizations and foundation meetings, including:
  - The governing board of the Michigan Turfgrass Foundation
  - Michigan State University AgBioResearch and MSU Extension
  - The Michigan Golf Course Superintendents Association
  - The Michigan Sports Field Managers Association
- Annual host to several educational and outreach programs, including:
  - 4-H and National FFA Organization student groups
  - The USGA Greenkeeper Apprenticeship Program (Wee Ones)
  - Turfgrass Producers International (2024 event host)
  - The Michigan Turfgrass Foundation Field Day, which hosts more than 300 statewide stakeholders and practitioners annually.
  - Golf Course Superintendents Association of America First Green STEM education program

## Research efforts

Discover what 25 years of research reveals about how [nitrogen leaching](#) truly behaves in real-world turf systems. This long-term study delivers powerful insights that help turf managers optimize nutrition, boost performance and protect environmental quality.

This groundbreaking project showcases how [innovative temporary turf systems](#) were engineered to deliver elite, World Cup–level performance inside challenging stadium environments. This research sets a new global benchmark for consistency, safety and playability, offering solutions that helped redefine what’s possible on the world’s biggest stage.

This foundational project pioneered the development of [modern turf time domain reflectometry, or TDR](#), technology, transforming how turf managers measure and understand soil moisture. Its breakthroughs helped launch widespread global adoption of TDR tools, empowering data-driven irrigation decisions that improve turf performance and resource efficiency.

This study reveals how differences in putting-green [rootzone depth](#) directly influence moisture retention and overall playability. The findings provide turf managers with practical insight to build and manage greens that stay healthier, firmer and more consistent throughout the season.

This research explores two innovative putting-green rootzone designs — variable-depth and [capillary hydroponic](#) systems — to identify modern solutions that improve moisture management and long-term surface sustainability. The findings offer turf managers forward-thinking options to enhance playability while reducing inputs and supporting more resilient, environmentally responsible greens.

This project uncovers how sod-on-plastic production can significantly [boost efficiency and profitability for Michigan sod growers](#). The work highlights practices that accelerate harvest timing, improve product uniformity and open new opportunities for stronger margins in a competitive market.

This project demonstrates how innovative [sod-on-plastic establishment](#) methods can accelerate growth and improve uniformity in both Kentucky bluegrass and perennial ryegrass. The results give sod producers practical strategies to increase efficiency, enhance product quality and expand market opportunities.

Different putting-green management practices influence visible wear caused by modern [golf cleat and sole designs](#). The insights help turf managers reduce surface damage, extend turf quality and maintain smoother, more consistent playing conditions throughout the season.

MSU Turfgrass leverages cutting-edge genomic tools to develop rapid, highly accurate molecular diagnostics for the [turfgrass pathogen](#) *Acidovorax avenae*. The work delivers powerful new detection capabilities that help turf managers identify problems earlier, respond faster and better protect high-value turf systems from outbreaks.

This project documents how the natural establishment of *Ovavesicula popilliae* has led to a steady, statewide decline in [destructive Japanese beetle populations](#). The findings highlight a powerful biological control success story, giving turf managers long-term relief from one of Michigan's most persistent insect pests.

[Irrigation strategies](#) and bentgrass cultivar selection work together to influence dollar spot development on putting greens. The research gives turf managers practical tools to reduce disease pressure, improve turf health and make more informed water-management decisions.