

than 20 mg L⁻¹. In 2003 the high N rate was reduced to 198 kg N ha⁻¹ but the concentration of NO₃-N leaching from the high N rate treatment did not decline from the previous years. Since 2004, the average concentration of NO₃-N in leachate for the high N rate is 7 mg L⁻¹, which was a significant decline from the average concentrations observed for the high N rate from 2000 through 2003. This research indicates that leaching potential from continually fertilized turfgrass sites changes due to the age of turfgrass and nitrogen rate. In addition to Michigan Turfgrass Foundation funding, this research has been funded by the United States Golf Association since 1998.

Pesticide Application Risk Reduction Technology for Golf Course and Athletic Field Turfgrass Using Treated Sand Topdressing Technology

Dr. J.M. Vargas, Jr., Ron Detweiler, and Nancy Dykema

Research at M.S.U. suggests that it may be possible to combine the routine golf course maintenance operations of sand topdressing and pesticide application into one efficient operation, using a combination sprayer/topdresser machine. This novel technology should reduce the cost, play disruption, and the environmental impact (fuel use, CO₂ emissions) of these maintenance operations by reducing the number of trips over the turf, especially greens and tees. The potential for operator and bystander exposure to spray drift and volatilization should also be reduced, since the sprays will be applied to the sand in a wind-protected environment on the topdresser, prior to expulsion of the sand to the turf. “Proof of concept” research is underway for the control of turfgrass diseases such as dollar spot and anthracnose, and to expand the utility of this technology beyond fungicides, to fertilizers and other sprayable turfgrass maintenance products

Michigan Turfgrass Environmental Stewardship Program

Dr. Kevin W. Frank

The Michigan Turfgrass Environmental Stewardship Program (MTESP) uses a series of self-assessment modules to help golf courses, lawn care companies, parks, and schools evaluate their level of surface and groundwater protection on their entire property. The program, established in 1998, has helped nearly 300 properties create an environmental action plan that prioritizes environmental protection activities for their property. Over 100 properties have completed their action plans and achieved certification in the program. There are now 11 modules in the program, with two additional modules currently under development.