

Indoor turf test a success; golf applications evolving

From Staff Reports

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Dr. John Trey Rogers

EAST LANSING, Mich. — Golf courses with heavily shaded areas that spell death to turfgrass could benefit from a new technology developed for indoor stadiums by Michigan State University researchers.

MSU scientists report success already, saying their invention survived well in Detroit's Silverdome during recent soccer play, and it will be used there again for next year's World Cup soccer tournament.

"Turfgrass science being relatively new, we've caught up a lot on our ability to maintain grass under hard conditions," said Dr. David Gilstrap, coordinator of MSU's turfgrass management program.

So how did the scientists overcome growing grass in a stadium that has no natural light, and where athletes' cleats dig and cut?

Drs. John Trey Rogers, Paul Rieke and John Stier share the accolades for the solution.

Rogers explained that they mixed three Kentucky bluegrasses — one

of which was chosen for its shade adaptability — with three perennial ryegrasses — also with one variety chosen for shade tolerance. The blues comprised 85 percent of the total mix.

The mix was grown on paper mulch at a Southern California sod farm and was put on a high-sand root zone similar to United States Golf Association greens specifications. When the sod was ready, it was transplanted to 2,000 hexagonal metal boxes filled with six inches of topsoil. The boxes,

or modules — about 40 inches on a side, 7-1/2 feet across and weighing 3,000 pounds each — were transported to the Silverdome.

The hexagonal boxes — chosen because when put down they have only three points at a corner — were laid in the Silverdome, along with a few triangular and trapezoidal boxes to square off the field. After play, the field was literally picked up and placed in the parking lot, where it now sits in the sunlight waiting for next year's World Cup.

Rogers said the soil "is a very tricky portion of the total turf system. You want soil that is easily drained but not easily compacted. You want it to resist compaction and you want a lot of pore space but it still has to have stability. If the soil is too loose, it would be difficult to grow grass on it and it would be easy to tear up."

The MSU crew is using a mix of eight parts sand, one part native sandy loam and one part Michigan peat. Rogers said the technology could also be used for indoor golf courses and driving ranges.

"There are already some that let in 40 to 50 percent of the available light," he said. "The more we can do to improve the technology, the more opportunities there will be for playing outdoor sports on a year-around basis in Northern states."

Gilstrap foresaw a golf course superintendent using the turf on heavily shaded areas. "They could rotate the modules in and out... Go in when the turf starts to thin out and swap playing surfaces. They could move the modules to an area, fertilize them and when they have recovered, rotate them back into play," he said.

Asked if there are other commercial spin-offs, Rogers said: "One possibility would be for shady fairways and greens. A number of golf courses are already using plant growth regulators on problem areas. But it's all being done on a 'best-guess' basis. We think our research should provide some answers as to how much to use under various conditions."

Rogers said the technology may first be embraced in Europe where the main sport is soccer and most stadiums could be built and maintained for that purpose only. The turf could then be permanently installed, he said.

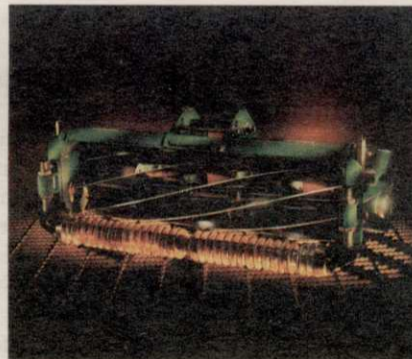
For the World Cup games the scientists expect to keep the turf in shape with:

- Supplemental light to simulate sunlight.
- Over-the-top irrigation because there's little evaporation inside the Silverdome.
- Addition of nitrogen and potash to maintain soil fertility, nitrogen being critical because it has to peak out at the exactly right time. "We don't want grass to be going into a heavy growth spurt just before a game. At the same time, the grass has to have enough nitrogen to recuperate quickly after the game," Rogers said.
- Plant growth regulators to prevent the grass cells from getting spindly under the shady conditions.

John Deere helps Prestonwood handle its own golf boom

The golf boom has definitely hit Prestonwood Country Club in Cary, North Carolina. With 27 regulation and four practice holes already in place, work began on another 18 holes in the spring of 1992.

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