

SYNTHETIC GRASS FOR GOLF: THE OUTLOOK

By ROBERT SOMMERS

IMAGINE this scene:

It is maybe 20 years in the future. The golf course superintendent is briefing his crew on the day's work.

"Hennessy," he says, "clear the debris from the creek bed on No. 2, rake the bunkers on the first four holes, and you, Miss Enchantment, follow along behind and vacuum the tees and greens."

I beg your pardon: did you say "vacuum"?

"Yes, I did, and why should you beg my pardon?"

Because, for one thing, I never heard of a golf course with an upstairs maid; and for another thing, I never heard a golfer complain about dirty grass.

"Where have you been, man? That isn't grass; we haven't had real grass on our tees and greens in gosh knows how long. This is synthetic turf. No water, no fertilizer, no crabgrass, no *Poa annua*, no aerifying, no mowing and no worries. Run the vacuum over it once a week and you don't even get moth holes."

Yes, but it isn't GRASS, and golf is supposed to be played on grass.

"Now look here, Old Timer, so was football supposed to be played on grass. So was baseball and so was soccer. At least, that's what they used to say. They haven't played a real major league game on grass since . . . well, I can't remember. Of course, they still play that Hall of Fame game up at Cooperstown on real grass every year, just for old times' sake, and Princeton and Rutgers get together for a jayvee football game sort of to commemorate the days when uniforms sometimes got muddy.

"Nowadays nobody would think of playing a REAL football or baseball game on grass. For one thing, they're playing soccer in the afternoon, baseball at night and football every week-end in the same stadium. Grass just won't take that kind of punishment.

"As for golf courses, since most country clubs installed floodlights, there just isn't enough time to take care of the tees and the greens the way the superintendents used to. Too many people are

playing now, and my crew would only be in the way if they keep fooling around on tees and greens. Why, at the last Board of Directors' meeting somebody started talking about synthetic fairways.

"That's awfully expensive right now, but you'd never have to worry about a bad lie."

Apocryphal or prophetic? It could be both.

The fact remains that a sizeable evolving industry is devoted to the development of artificial grass. At present the cost of the most realistic product is quite high for golf purposes but with improved methods of manufacture it may be reduced. Whatever the cost, it is not stopping the promotion of the material.

A spokesman for one manufacturer claims it is the aim of his company to put its product "on the tees and greens of every golf course in America".

That would be expensive. His "grass" costs \$1.15 per square foot plus an additional installation charge of \$22 per square foot. A green of about 6,500 feet is average, which means that one average green would cost \$8,905.

This is just one of the difficulties faced in attempting to sell synthetic grass to golf courses. The principal obstacle is the fact that it is an unnatural substance. As the man above said, it just isn't grass. Naturally, there's no way to overcome that objection through technical means, but some of the others may be beaten.

For instance, while synthetic turf offers a uniform putting surface, artificial greens won't hold a shot nearly as well as a green of natural turf. On teeing grounds, tripod tees must be used because peg tees won't penetrate the surface without causing damage.

At the moment, the most enthusiastic developer of grass for golf course use is Monsanto. Thomas Pride Mills has developed a product called Sassygrass, which it claims can be used for putting greens. Burlington Mills Inc., of Burling-

ton, Wis., produces a felt-like material used mainly for miniature golf courses. American Biltrite Company has a material which it is promoting for use on tennis courts.

Both Sassygrass and the Burlington Mills product are composed of a carpet-like fiber called Herculon, manufactured by Hercules Incorporated. Crown Tuft Carpet, Inc., uses Herculon to produce Instant Turf. However, Instant Turf and Sassygrass are more carpet-like than grass-like.

Monsanto's AstroTurf and American Biltrite's Neo-Turf, however, are more characteristic of grass. AstroTurf is made of nylon monofilament attached to a rubber-like base. It is made in different densities and textures for different purposes. For instance, the substance that covers the floor of the Astrodome in Houston, Texas, is different from the substance that covers a teeing ground at the Decatur, Ala., Country Club. Both the stadium turf and the teeing ground turf have a built-in grain.

Synthetic turf for greens is less dense and has no grain. The strands are also longer, measuring three-eighths of an inch. Greens at the United States Open Championship are cut to three-sixteenths of an inch, but don't draw any wrong conclusions from those measurements. An Astro-Turf green such as the one at Decatur Country Club is every bit as fast as the greens at Oakmont Country Club, which are generally considered the fastest in America.

Monsanto has taken one of its offices in the Empire State Building in New York City and laid out a seven-by-15-

foot practice putting green for demonstration purposes. Executives often nip into this room for a few practice strokes. It takes a delicate touch to keep the ball on the "green" and causes one to wonder what would happen on a downhill putt.

Queries to every known manufacturer of synthetic grass have shown that no product is completely ready for golf course use. Monsanto believes it has solved the problem of relocating the cup on each green but it will continue to work on two other fundamental problems.

First, the holding properties will have to be improved. Shots hit to the present green bounce off as if from a trampoline.

Second, the height of a golf ball sitting on a tee peg is a matter of individual preference. Some players like it teed high, others low, still others medium. With the present, non-porous turf we'd have a nation of conformists—everybody just medium. Eventually the AstroTurf manufacturer expects to produce a backing to the nylon filaments that will be porous enough that a wooden peg can be stuck through it.

Both those problems are considerably more difficult to solve than the matter of moving the cup. As Monsanto sees it, each green will come equipped with about five pre-selected cup locations. Holes will be cut, and each hole will be capped and a round piece of turf stuck to the top of the cap. To move the cup, you just take the cap off one cup and put it over the old pin location. Simple.

Even if a turf can be made that meets the test of holding a shot and taking a wooden peg tee, it still must pass a few

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others before it will be welcomed with enthusiasm universally.

How long will it last? A green that costs \$9,000 should last a good long time, you'd think. As the situation stands now, it will take a good long time to find out; the stuff just isn't that old. Monsanto, for instance, began developing its product in 1961.

But some synthetics have passed rather intriguing tests. For instance, Evergrass, a French import marketed in the United States through Pegasus International Corporation, is a polyethylene product. Since 1962 a segment of Evergrass has been subjected to "fadeometer" tests in a place guaranteed to fade anything that's not fade resistant—the Sahara Desert. Pegasus literature claims it is still "fresh and green in spite of sun, wind, and sand".

How well it would wear as a putting green is still open to speculation.

Monsanto is studying the results of traffic on the green and tee at the Decatur Country Club and a similar green installed on the grounds of its textiles division in Decatur.

Again working with average figures, it costs about \$1 a square foot to install a regular grass green according to specifications recommended by the USGA Green Section. This would mean that a 6,500-square-foot green would cost \$6,500, which is \$2,405 less than a synthetic green of AstroTurf. It is estimated that maintenance of greens costs about 22 per cent of a golf course budget.

The accounting firm of Harris, Kerr, Forster and Company conducted a statistical review of the operations of 100 selected clubs and published those figures

in *Clubs in Town and Country*, 1965-1966. According to the survey, the budget for an average 18-hole golf course is in the neighborhood of \$71,526, and 22 per cent of that is \$15,734, or about \$875 per green per year.

If an AstroTurf green would last three years with little or no maintenance costs, it would reach a state of parity, cost-wise, with real grass. Other materials cost considerably less. Herculon materials for instance, are priced from \$.65 to \$.75 per square foot.

The development of these synthetics has not gone wholly unnoticed among agronomists and others concerned with golf course grass. As may be expected in response to such seemingly revolutionary approaches to turf problems, opinions are divided.

Dr Marvin H. Ferguson, Mid-Continent Director and National Research Coordinator of the USGA Green Section, takes a dim view.

"The future of synthetics now available," he predicts, "would appear to be almost nil on the golf course. However," he adds, holding out a hand of hope, "we're just starting with synthetic turf materials and they are certain to be improved". With this improvement, Dr Ferguson sees some benefits. "Future benefits would be that of uniformity of the surfaces of tees or greens."

Alexander M. Radko, Eastern Region Director of the USGA Green Section, believes synthetic grass can be a definite asset "in areas where plant material will not grow. Synthetics will never take the place of turf in areas where it is possible to maintain good turf, but they may be satisfactory for problem areas."

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Radko then proposes that synthetics could be used for another specific purpose. "On Northern courses, for example, synthetics may make very good winter greens."

William H. Bengeyfield, Western Director of the USGA Green Section, raises some questions that still must be considered:

"When used under actual playing conditions outdoors, the synthetic material must also be able to resist the eroding qualities of water, sunshine, smog, chemicals, vandalism and, unquestionably, other factors that haven't come to mind yet. For example, how will a synthetic cover behave in the outdoors over a 12-month period which includes high summer temperatures as well as the effects of thawing and freezing during the winter months? Will it really stand up under all types of weathering effects?"

Bengeyfield raises two other points, one that may have adverse effects on architecture, and another that may affect putting and be welcomed by golfers. He says:—

"The use of synthetic grass on putting greens will place some restriction on the golf course architect in designing and contouring a green. Even on grass greens, good surface drainage is extremely important and would be critical on a synthetic green."

Synthetics as they are now made rely on run-off drainage; water doesn't seep through those most suitable for greens. Therefore, if a puddle collects on a low spot, it could stay there until it evaporates.

Bengeyfield also believes that with cup locations standardized on each green, putting would become relatively more easy for the member who plays frequently:

"I would imagine a one-putt green would become more common, not because of improved putting skills but because the player has learned all of the breaks in a standardized cup location."

Manufacturers interested in the development of synthetic turf for golf course use are aware of these faults and plan further tests, not only for golf courses but also for other areas at country clubs and sports arenas.

For instance, Ohio State University has three seven-by-15-foot "greens"; a country club in New York State installed a synthetic grass path; a club in New

Jersey installed tees; Brown University has conducted tests with tennis courts, a golf green, plus using the material on baseball and soccer fields; the Moses Brown School in Providence, R.I., installed synthetic grass in its field house.

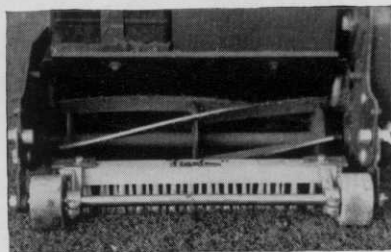
Thus far synthetics have been accepted much more readily for tennis courts. The Vanderbilt Athletic Club, located in Grand Central Terminal in New York City, has two courts made of NeoTurf, a vinyl compound. Cost again is relatively high—almost \$7,000 per court. A tennis court of Sassygrass is about \$2,850 unlaidd.

Then there's the Houston Astrodome. To carpet the floor of that arena cost about \$340,000.

In golf, the immediate future of the synthetics seems to be as an auxiliary: practice greens, home putting greens, greens at hotels and motels. They probably will be accepted for teeing grounds if the proper backing can be developed, allowing a peg tee to penetrate.

But two things about it are frightening: the price and a downhill putt!

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