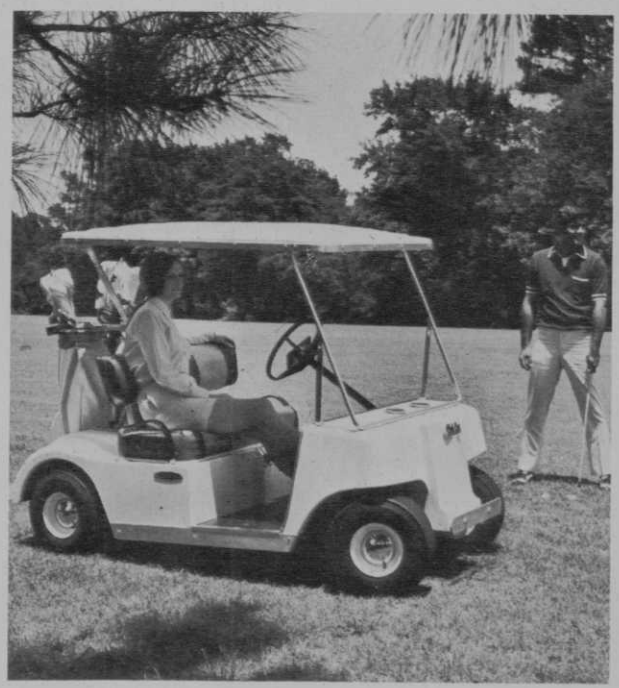
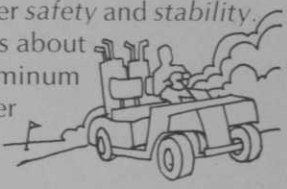
The Golf Car of 1975 NOW!



The Best DRIVE You'll Ever Make
The Best MAKE You'll Ever Drive

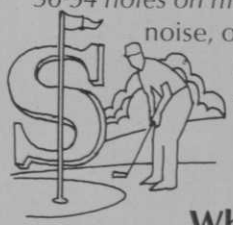
Why is it a 4-Wheeler?

A leading insurance authority predicts an end to the 3-wheel golf car by 1975. The 4-wheel CAROCHE outperforms a 3-wheeler, with greater *safety* and *stability*. Lighter than most 3-wheelers, it costs about the same. And its sturdy aluminum frame and fiberglass body will never rust, corrode or need painting.



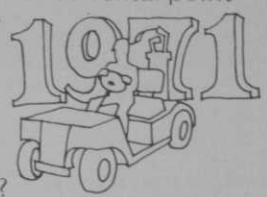
Why is it electric?

Congress has set 1975 as the deadline for eliminating harmful exhaust from cars. The electric CAROCHE *will go 36-54 holes on hilly courses*, without the pollution, smoke, noise, odor or fire hazard of gas cars. In addition, independent studies have proven electric vehicles cost considerably less to operate and maintain than those powered by gasoline engines.

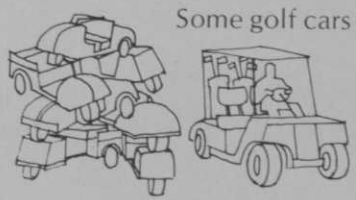


Why is CAROCHE ahead of its time?

When CAROCHE was introduced in 1970, it caught the golf car industry by surprise. For instance, it was the first golf car to employ both automotive type hydraulic wheel brakes and a mechanical braking system on both rear wheels. It was the only golf car available with supplementary bag racks—easily attached or detached at rental point—enabling it to carry either three or four bags. Its combination of light weight, compact size and easy serviceability made it an instant winner with fleet owners. And how do you make the best even better? That's the story for CAROCHE in 1971.



Why don't you at least ask for a demonstration?



Some golf cars will have obsoleted themselves by 1975. CAROCHE may be as much as a decade ahead of its time. Write or call today for a free demonstration of the golf car of the future —CAROCHE.

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GRAFFIS *from page 10*

event when the collegiate competition was taken over from the USGA, which had sponsored it since 1897.

Payseur was secretary of the NCAA golf section. He had great admiration for golf coaches at colleges and universities, many of whom he knew personally and knew what little cash, if anything, they were getting for developing golf teams. Payseur and *Leslie Rollins*, then dean of men at Northwestern and the man who set the pattern for the Western GA and other association caddie scholarships, primarily accounted for putting golf scholarships in a good position among the athletic grant schedules of many schools.

A $10,000 pro-am was played at Tulsa honoring *Labron Harris* sr., Oklahoma State golf coach. He's developed steady, if not brilliant, circuit stars, including his son, and has successfully guided the golf education of hundreds of that state's good amateur players.

Everett J. Woxberg, now manager North Shore CC, Glenview, Ill., Among previous appointments in the Chicago district, he was manager of Evanston GC... *N. Gwynn Fletcher* now manager Shaker Heights (Ohio) CC. He had managed Dayton (Ohio) CC and Faculty Club of Ohio State University . . . *Joseph H. Cartwright,* manager of the new Palmbrook CC, Sun City, Ariz., a Del Webb $2.5 million private club.

D. Stephen Pal now manager Columbus (Ohio) CC, moving there from Brown's Run CC, Middletown, Ohio . . . *Frank J. Rotunno* now general manager Willow Ridge CC, Harrison, N.Y.

Golf's Tribute to Ike got $54,185, as half of the receipts from ticket sales at the 19th annual World Cup tournament played last November at the PGA National course. The other half went to local charities.

Blair Hillard Hahn, recently teed up in the cradle as the first-born of Mr. and Mrs. Paul Hahn jr. The new star has Paul sr., the famed trick shop artist and his friend, Bob Hope, tied as the youngest looking grandpappies in golf show business. Hahn jr. is playing a heavy schedule of trick shot dates. □

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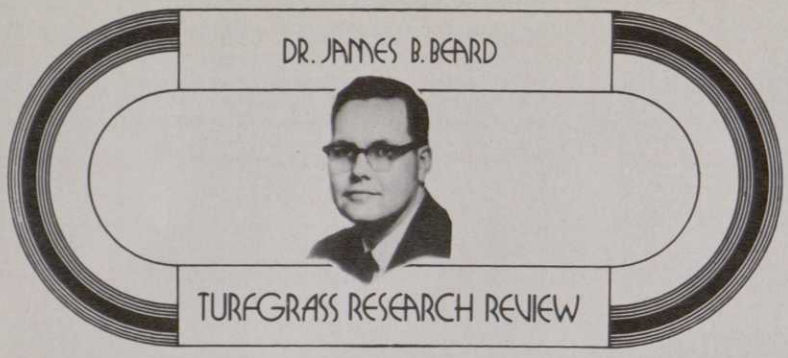


HOW QUICKLY CAN SOD TAKE ROOT?

Post-harvest cultural practices affecting the rooting of Kentucky bluegrass sods grown on organic and mineral soils. *J.W. King and J.B. Beard. 1972. Agronomy Journal. 64(3):259-262. (from the Department of Crop and Soil Sciences, Michigan State University, East Lansing, Mich. 48823).*

The effects of sod harvesting depth, underlying soil type, soil moisture, fertilizer placement and post-harvest irrigation rate on the transplant rooting capability of Merion Kentucky bluegrass sod were investigated in this study. The experiments were conducted under outdoor summer conditions utilizing root observation boxes, which had inside dimensions of 10 by 10 inches square and were 18 inches high. Each box had a glass face front that sloped inward from the top front edge to the base of the box. The box was filled with the appropriate textured soil and a 10-inch-square sod piece transplanted onto the top after the soil was permitted to settle. Subsequently, the sods were irrigated daily and the turf cut at weekly intervals at a height of 1.5 inches.

The specific treatments compared in this study included (a) sod harvesting depths of 0.75 and 0.4 inches, (b) transplanting the sod onto a clay loam subsoil versus a sandy loam topsoil, (c) sod transplanting onto a soil having a moisture content near field capacity versus one in an air dry condition, (d) fertilizer placement involving either incorporation throughout the upper three inches of the soil (soil fertilization) or application over the surface of the sod immediately after transplanting (surface fertilization), and (e) irrigation rates of 0.8, 1.6, 2.4 and 3.2 inches of water per week.

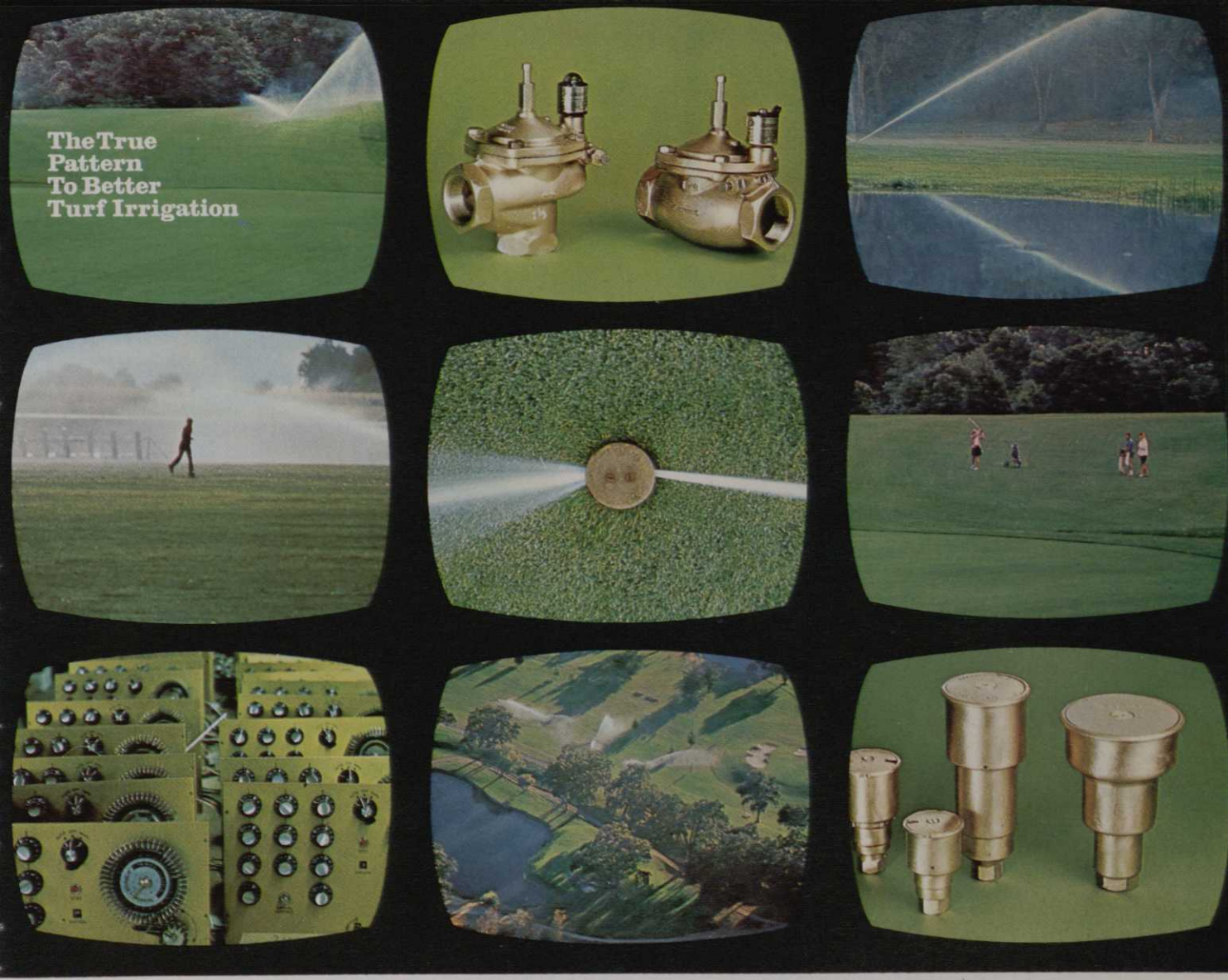
Data collected during these experiments included a determination of the number of roots visible on the glass face at two and five-inch soil depths 7, 10, 14, and 21 days after transplanting. The experiments were terminated after three weeks, and the total root production determined by washing the soil from the root system, collecting the roots and determining the root organic matter content by an ashing technique. Six experiments were conducted over a period of two summer growing seasons.

Results of the sod harvesting experiments revealed that root organic matter production was superior when the sod was cut at a 0.8 inch depth in comparison to a thinner (0.4 inch) depth. Sod harvested at the thinner depth was very prone to desiccation effects, which probably contributed to the reduced rooting.

No difference in root organic matter production was observed between soil fertilization and surface fertilization of the sod. Thus, the authors concluded that fertilizer placement at the rates utilized in the study and with sods having adequate nutritional levels was not a significant factor in sod rooting during the first three weeks after transplanting.

The beneficial effects from incorporating topsoil into construction site subsoils prior to sod transplanting was supported by these investigations. The incorporation of sandy loam topsoil into the upper three inches of a clay loam subsoil resulted in a 45 per cent increase in root organic matter production and visible root

continued on page 16



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BEARD *from page 14*

counts compared to transplanting onto a clay loam subsoil. In addition, root production was twice as great when the sod was transplanted onto a sandy loam topsoil as onto a clay loam subsoil.

The soil moisture content at the time of sod transplanting was found to be very important. Transplant rooting was delayed substantially when the sod was transplanted onto an air dry soil, even though the sod and underlying soil were irrigated intensely immediately after transplanting. A delay in rooting of as much as 11 days was observed in certain experiments when transplanted onto an air dry soil. This delayed rooting increases the time that the sod is prone to desiccation and thinning.

Comparisons among the four irrigation rates showed that root organic matter production usually increased with the irrigation rate. This was particularly true when the sod was transplanted onto a dry soil. A weekly irrigation rate of two inches or 0.3 inch per day appeared adequate for rooting of transplanted Kentucky bluegrass sod under the climatic conditions in southern Michigan.

Finally, seasonal observations of transplant sod rooting revealed that rooting was impaired during the May to June period of extensive seed head development.

Comments: Although sodding can be done at any time during the growing season, provided an adequate moisture level can be maintained through irrigation, late August and early September are particularly favorable periods for sodding due to the optimum temperature and moisture conditions normally occurring during the fall period. The primary objective in sod transplanting is to ensure its rapid rooting into the underlying soil.

Soil preparation prior to sodding should be the same as for seeding. The steps in soil preparation for sodding include (a) eradication of persistent, difficult to control weeds, (b) ensuring adequate surface and subsurface drainage, (c) partial or complete soil modification, if needed on intensively trafficked areas, (d) removal of rocks and debris, (e) deep cultivation, (f)

incorporation of fertilizer and lime at rates indicated by soil tests and (g) final soil preparation to a moisture, granular, firm state with the desired surface contours.

The experiments previously described reveal the importance of the proper sod harvesting depth in transplant rooting. An excessively shallow sod harvesting depth increases the proneness to desiccation and reduces the rooting capability. Earlier studies have indicated that the transplant rooting rate decreases as the harvesting depth is increased above 0.8 inch. Although the thicker harvesting depths are less prone to moisture stress injury, the rate of rooting is also decreased because of the reduced number of rhizomes that are severed during harvesting. Thus, the optimum harvesting depth of Kentucky bluegrass sod, in terms of subsequent transplant rooting, is in the range of 0.8 inch.

Soil conditions at the time of sod transplanting can significantly influence subsequent sod rooting, as has been demonstrated in this study. Loam soils are definitely preferred in terms of transplant rooting compared to finer textured subsoils having a high clay content. In addition, the moisture content of the underlying soil is particularly important. The significance of this factor in transplant sod rooting has not been recognized previously. Thus, it would be preferable to cultivate and prepare the final seedbed immediately prior to sodding in order to ensure a favorable soil moisture level for rapid transplant rooting.

Following transplanting, the sod should be rolled to eliminate air pockets under the sod and to ensure good moisture exchange with the underlying soil. In addition, the sod should be irrigated sufficiently to ensure adequate moisture levels throughout the upper six inches of the soil root zone. Subsequently, the sodded area should be irrigated lightly every day at noon to maintain an adequate moisture level in the sod until rooting into the underlying soil occurs. The actual quantity of water applied should be adjusted in relation to the evapo-transpiration rates occurring at the specific time and location. □

COMING EVENTS

RUTGERS TURFGRASS RESEARCH DAY, College of Agriculture, Rutgers University, New Brunswick, N.J., August 10.

TURFGRASS FIELD DAY, College of Agriculture, University of Illinois, Urbana, Ill., August 15.

RHODE ISLAND FIELD DAYS, University of Rhode Island, Kingston, R.I., August 23 (Golf Superintendents); August 24 (Lawn and Utility Turf Field Days).

13TH TURFGRASS SHORT COURSE, Department of Agronomy and Soils, Auburn University, Auburn, Ala., September 7-8.

TURF AND LANDSCAPE DAY, Ohio Agriculture Research and Development Center, Wooster, Ohio, September 12.

NORTHERN MICHIGAN TURFGRASS FIELD DAY, Traverse City CC, Traverse City, Mich., September 13.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY FIELD DAYS, VPI, Blacksburg, Va., September 13-14.

PANHANDLE TURFGRASS ASSN. FIELD DAY, Lubbock CC, Lubbock Tex., September 19.

MIDWEST TURF FIELD DAY, Purdue University, Lafayette, Ind., September 25.

ANNUAL NORTHWEST TURFGRASS CONFERENCE, The Canterbury Inn, Ocean Shores, Wash., September 26-29.

SOUTHWEST TURFGRASS CONFERENCE. New Mexico State University, Las Cruces, October 12-13.

Goodyear's new golf car tire treads lightly

Puts less pressure on the turf than your heel.

It's a new golf car tire with a soft touch. The Goodyear Rib Terra-Tire low pressure tire. It has a wide tread to spread the load evenly. This means less turf damage. For even with a fully loaded car, pressure is only 10 pounds per square inch compared to the 24 pounds a man's heel can exert.

The new tread design also gives you positive traction. Carcass flexibility and low inflation pressure make this tire an easy roller on soft surfaces—which equals more miles per battery charge.

For full information on the new Rib Terra-Tire low pressure tire, write: Terra-Tire Dept., The Goodyear Tire & Rubber Company, Akron, Ohio 44316. TERRA-TIRE—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

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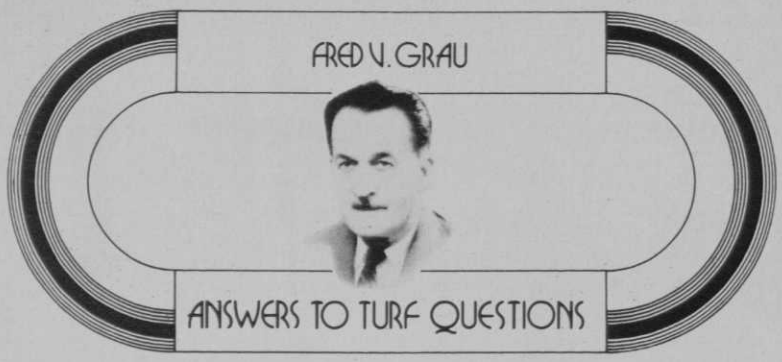

A VOICE OF EXPERIENCE

The name Clarence Yarn evokes memories of the rich soils of Iowa, of pioneering with Arlington (C-1) bent and of plain homespun humor and philosophy. Imagine my surprise when recently a call came to me at my home from Des Moines. The caller was none other than Clarence Yarn, now 83 years old, still vigorous of mind and purpose, speaking forcefully to me of many things over 1,000 miles of wire.

Clarence is proud to be an Iowan where 25 per cent of the A-1 agricultural land in the United States is to be found. (I learned something.)

On his new golf course he developed the fairways from native sod just by mowing! He keeps his turf so clean that there are no lost balls. Also, he welcomes the fifth player to a foursome; he says that he has made many friends that way.

No one knows how many native sons have gone to college because of Yarn's urging. My life has been made richer because Clarence Yarn has been a part of it. I am proud to write this bit for all to read. The turfgrass world owes him a deep debt of gratitude for his pioneering. Should anyone want to send greetings to Clarence Yarn, call him at (515) 289-1471.

Q—*In considering a combination golf course-residential complex in the Eastern Shore region of Maryland, the members of our group cannot agree on the selection of grasses for the various sites. We will have some shaded areas, much open sun, many lawns and the usual tee, fairway and putting green areas. There seem to be so many choices that we are confused and have no basis for selecting those grasses that will best serve our purpose. Can you help us? (Maryland)*

A—By coincidence, very recently I had the chance to travel with Tom Harris of the G.L. Cornell Company to the Princeton Turf Farms at Centerville, Md., which are managed by Parker Shirling. During the day we examined every one of the "57 varieties" of turf that are grown in various plots and fields. On the basis of these observations and my past experiences I can give you some guidance.

For shaded lawns, A-34 bluegrass seems to be tops, but don't discount a mixed turf, which contains Pennlawn creeping red fescue. A-34 turf is the "good feeling" kind that is springy and ideal for home lawns and for children.

Three other bluegrasses share the spotlight for professional use. They are Pennstar, Fylking and A-20. A-20 is vegetatively propagated only; the other two can be seeded. The turf they produce is firm, almost stiff, resistant to wear, capable of good recovery from injuries and highly resistant to most bluegrass diseases.

For roughs, there seems to be no rival to Kentucky 31 fescue with common bluegrass.

Three bermudagrasses do well in open sun where good summer turf is desired. They are Tifton 419, Tifgreen 328 and Tufcote. Don't count on these for year-round use.

Common bluegrasses were severely hit with leafspot. Merion develops rust in late summer. Some of the newer varieties have not yet proven themselves.

For putting greens the majority seem to go with Penncross. Its genetic variability gives it the unique ability to adapt to varying conditions and management.

The two outstanding elite fineleafed perennial ryegrasses are Pennfine and Manhattan. They can be used as companion grasses for the slower developing bluegrasses or they can be scarified—seeded into thin unsatisfactory turf. It is difficult to tell these ryegrasses from the good bluegrasses.

Q—*We have mixed fairway turf made up of just ordinary grasses that are thin and sparse. Do you think we would have any success overseeding with some quick-growing grass to give us a thicker turf that would hold a ball up better? (Delaware)*

A—Yes, I predict success in thickening your sparse mixed turf if you follow certain guidelines. First, the grass. My first choice is Pennfine ryegrass. If that grass is hard to find, plant Palo Mora ryegrass, which is a blend of Pennfine, Manhattan and Palo (designed to extend the supply of the elite fine-bladed turf-type ryegrasses). A good rate of seeding is 30 to 40 pounds an acre. Second, the method of seeding. If you can't locate a scarifier-seeder (seed placed in contact with soil in grooves) save your money. This is the best method we know of to date. Third, fertilization. To thicken the turf apply before seeding a 2-1-1 fertilizer made with slow-release nitrogen (at least 50 per cent; better, 75 per cent), so as to supply two pounds of N to 1,000 square feet (80 pounds an acre). You can do all this nearly anytime and without unduly disturbing play.

Q—*About how thick should sod be cut? (Iowa)*

A—The thinner the better. Thinly cut sod rolls more easily, a square yard is lighter in weight, it unrolls better and knits faster. □