

GRAU'S ANSWERS TO TURF QUESTIONS

Zoysia for Golf Turf

What is the role of zoysiagrass for golf turf? This discussion is intended as an impartial evaluation of zoysia in an attempt to weigh both the strong points and the weak ones. At the outset, the reader should be aware that this writer has been deeply impressed by the performance of zoysia since he first saw plots of the grass in 1931 at the Arlington Turf Gardens (now Pentagon parking and access roads). His admiration of the grass has grown steadily through the years.

Zoysia is native to the Philippines and the Orient where summers are very hot and the winters often bitterly cold. It is a grass that has existed under conditions of limited and erratic rainfall and extremely low soil fertility. In the home of zoysia all manures and fertilizers must go to produce food for people. Plant explorers collected seeds of the grass and brought them back to the U. S. around 1900. The late W. J. Morse of U.S.D.A. and soybean fame hired nearly naked natives to hand-strip the ripe seed. Frank N. Meyer, another U.S.D.A. plant explorer who lost his life in China in 1918, has been honored for his part in introducing zoysia by having Z-52, now Meyer, named for him.

Until fairly recently, zoysia has been considered largely a botanical curiosity with little practical application. Just prior to World War II some selections were made from a mixed seedling population. One of these seedlings was designated Z-52 (the 52nd selection) It is now the best-known strain of all-Meyer zoysia.

Seed Harvested

When the U.S.D.A. moved to Beltsville in 1941-42, some 50 or 60 selections of zoysia came along and were planted in plots four ft. square. In 1945 when the turf research program at Beltsville was given active support, the No. 1 project was evaluation of the 150-odd bluegrasses.



If you have questions about turf care, please send them to Fred Grau (right) c/o Golfdom.

Out of this study came Merion. The No. 2 project was zoysia. In 1946 it was found that zoysia seed could be harvested. For the next seven years the potentialities of zoysia from seed got much attention.

Seed yields from small plots of selected strains were calculated to run as high as 1800 lbs. per acre. The Z-73 strain, a seedling grown from pure Z-52 parent stock, was highest yielding. Z-73 seed has produced outstanding turf at several sites.

At Beltsville the 4 x 4 plots of zoysia were located adjacent to a hard packed earth service road (silt loam soil). From 1941 to 1945 one strain spread across both lanes of the constantly traveled road. This was without benefit of fertilizer or irrigation! Another revelation was that crabgrass couldn't invade zoysia turf. When zoysia was planted directly into solid crab, the latter always lost the struggle. Goosegrass (crowfoot or silver crab) also lost out to zoysia.

Plantings Stepped Up

In 1951 and 1952 "Operation Zoysia" was executed jointly by U.S.D.A., USGA green section and Mid-Atlantic GCSA in cooperation with the late Bill Glover at Fairfax CC. Later this project was extended nationwide. Plantings were made under existing, non-irrigated conditions into weedy fairway turf with no special attention being given to the grass. In fact, it was purposely neglected. In spite of this, the zoysia continued to spread and produce weed-free turf and provide ideal shot making turf.

It is impossible to mention everyone who is working with zoysia on courses. Here are a few who consider this grass in a highly favorable light for golf turf: James E. Thomas, Army Navy CC, Arlington, Va. (fairways); Bob Shields, Woodmont, CC, Rockville, Md. (fairways); John McCoy, Cincinnati CC (fairways, tees); Taylor Boyd, Camargo, Cincinnati (lawn areas); Don Likes, Hyde Park, Cincinnati (fairways); Chet Mendenhall, Mission Hills, CC, Kansas City (tees); and Frank Dinelli, Northmoor CC Chicago (tees).

In Miami, Fla., a few years ago we got pictures of perfect feed-free zoysia fairway turf growing in white sand. Last fall at Keokuk, Ia., and Quincy, Ill., the best tee turf we saw was zoysia. Other examples could be cited endlessly.

Some Don't Like It

Some supts. have tried zoysia and haven't liked it. Quite frankly, some of the worst turf we have seen has been zoysia — due to improper management. The worst zoysia turf for golf is that which hasn't been cut short enough nor often enough. The grass can't be blamed under the circumstances.

It must be borne in mind that zoysia will grow wherever crabgrass thrives. Zoysia is most "at home" in the "transition zone" where fescue and bluegrass do poorly because of prolonged summer heat. In Bermuda regions zoysia has a real function in providing high quality turf under soil fertility levels so low that Bermuda constantly is overrun with crabgrass and crowfoot.

Our Q & A often must deal with the very practical consideration of making recommendations for growing quality fairway turf in the "Twilight Zone" under soil poverty conditions. Common zoysia seed is recommended because of good performance and economy of establishment and maintenance. It is known that zoysia turf from seed remains singularly free from mat and thatch. Cool season grasses invade it easily to provide green color in late winter and spring.

Shots Not Made From Color

Perhaps the greatest objection voiced against zoysia has been, "I don't like its straw color in the winter". Significantly, most of the objections have not come from the golfers. We have yet to find any grass that provides as many days of perfect weed-free, shotmaking turf as zoysia. Shots aren't made from color—they are made from dense, firm closecut turf. Zoy-



At the conclusion of his South American tour last month, Dwight D. Eisenhower, the Burning Tree CC traveler, slipped into Puerto Rico to play Dorado Beach GC. He's shown on the way to an 87, chipping onto the 9th green.

sia provides the best color with minimum irrigation during the heaviest season.

Zoysia usually turns green in spring two to four weeks earlier than Bermuda. Color holds somewhat later in the fall. Excellent turf is produced with both grasses but Zoysia will thrive on about half the nitrogen that Bermuda demands. Zoysia will invade traps and putting greens. It invades more slowly than Bermuda and is easier to control. Zoysia heals scars and divots more slowly than Bermuda but it will respond very well to extra nitrogen.

Some early attempts to grow zoysia turf from seed met with failure. Part of it came from lack of understanding, part from lack of patience. Poor techniques had much to do with the poor results. Chances for success are infinitely greater today.

Zoysia turf from seed is not necessarily superior to turf from improved strains or other types of vegetative increase. Fairfax Country Club has some excellent Zoysia matrella fairways. The disadvantage of this strain is its cost of establishment, limited climatic range and susceptibility to cold. In Japan most greens are zoysia.

This Q & A dept. welcomes letters from supts. who are using zoysia successfully for golf turf. It would be extremely helpful also to receive information on management factors that help to create satisfactory zoysia golf turf. Just as helpful will be letters describing failures and disappointments, and the reasons.

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Grau's Answers

(Continued from page 54)

Q: Our greens committee and myself are trying to determine how to improve fairways and tees. Fairways have not received the proper amount of food for growth. They have received little fertilizer in years. The only thing that has been used is lime, except on the approaches. We aerify fairways and tees each year, but have not fed the fairways much. Existing grass is chewing fescue and Kentucky blue and rye. Even with improper feeding, the fairways are "fair." They are thin as opposed to lush, and there is much silver crab and crowfoot in them and around greens.

Another club near us is changing to Bermuda fairways and is keeping its bent greens. We have thought about this but are hesitant because of fear of the Bermuda crowding out our greens.

I have noticed that you and O. J. Noer have endorsed Merion and K-31 for fairways with Merion on the tees. Also, you have mentioned other grasses, depending on location. If we were to go into a program of seeding and feeding our fairways, what would you suggest as best grass for this area? Our tees will not hold up during heavy play because of poor turf. Have Bermuda

fairways and bent greens been proven compatible partners on the same course? Would you recommend them in this location?

If you recommend a fairway grass, will you please give us your plan for such a transition including lbs. per acre, time of year to begin, preparation and feeding?

Another question concerns weeds. We spend a lot for removing weeds from greens. Can you tell us if it has been proved that there is a chemical that can safely be applied to bent greens that will control crabgrass and not harm the bent.

We are located in western North Carolina; Elevation 2200 ft.; Greens — Mixture of Sea-side, Colonial and Highland bent; Fairways and Tees — Red Top, Ky. Blue and annual Rye; No Fairway Water; Rainfall usually adequate, 12 months — 59.86 ins.; Heavy play during June, July and Aug.; Soil is heavy as opposed to sandy.

A: It is tremendously encouraging to have your frank admission concerning lack of plant food. The first step is to draw soil samples from all tees and fairways and have them tested for pH, Ca, Mg, P, and K. Do not request a test for N — it would tell you nothing of value. Send me a pH copy of the test results.

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The first step in fertilization, until we have knowledge of P and K, is to apply straight nitrogen in a non-leaching, long-lasting form. As soon as possible this spring apply to tees and fairways 4 lbs. of N in one application. If you were to use one of the 38% N materials, for example, it would require 450 lbs. to the acre (or about 10 lbs. of material to 1,000 sq. ft. This treatment will be the start of a longtime program and is basic to anything you intend to do in the line of seeding or sprigging.

In the absence of a sound, generous feeding program, annual aerifying may help to keep weeds and weedy grasses active. There is no need to think about chemical weed control until you plant the right grass and feed it adequately.

Your course is known to me. So is the other course which plans Bermuda fairways. Yours is not considered a proper candidate for Bermuda fairways. It is not because the Bermuda would crowd out your greens but because there is another grass that will be much more economical in every way. I refer to zoysia.

You could grow Merion - Ky 31 fairways and Merion tees but in your area the maintenance costs would be much higher than for zoysia. Merion demands at least twice as much fertilization.

Here is a plan for your fairways. Fertilize soon this spring, as suggested immediately after spring aerifying. Secure zoysia japonica seed so that you can plant the selected areas at 20 lbs. to the acre soon after aerifying. Mix 20 lbs. of zoysia seed with 100 lbs. of the same nitrogen fertilizer that you will have used previously. Broadcast uniformly over fairway areas. You will not need to mulch the seeding nor will you need to change your mowing schedule. You will not see much Zoysia turf the first year - only small seedlings. You will see real improvement during the second year. Virtually all summer weeds gradually will be choked. It is significant that goosegrass will not grow in zoysia turf. No chemical weed control will be necessary. No irrigation will be required. Bluegrass, fescue and poa annua will crowd in and provide much green color during winter and early spring. During June, July and August, you will have outstanding turf - but no better than during the other 9 months.

Either zoysia or Bermuda will try to crowd bent greens. Don't let them in! Weekly power edging keeps the greens free from invasion.

Your present greens can be invaded much more easily than greens of Penncross bent, for example. Penncross is your bent. Seed it after thorough spiking (sow at ½ lb. to 1,000 sq. ft. mixed with 5 lbs. of granular, non-burning nitrogen fertilizer). This bent is economical and will gradually replace the weak bents which you now have. Also, it will help to keep out weedy grasses.

If you decide in favor of zoysia fairways, your feeding program will be one application a year to supply between 175 and 220 lbs. of N per acre per year.

There are two ways in which you can approach the weed problem in your greens. First set up and follow a PMA (mercurial) schedule

of treatments (as recommended by the manufacturer). Second, sterilize all of your topdressing with methyl bromide under a cover. See your dealer for assistance in setting it up. By using weed-free topdressing you will cover the weed seeds now present and they will have difficulty becoming re-established.

We have said nothing so far about tees. For them you can grow zoysia sod (or U-3 Bermuda, if you prefer) in a nursery. When it is solid you can re-turf the tees with good ready-to-play sod. Also, you can grow a Merion sod nursery for those tees which are too shady for Bermuda or zoysia. Zoysia will thrive in shade where Bermuda will die for lack of sun. Some tees may be split down the middle, using Merion on one side for winter play, and a warm-season grass on the other side for summer play. Tees have to be large to permit this plan to work.

115 Attend Seminar Held by Mid-Atlantic PGA

Mid-Atlantic section of the PGA held its annual education seminar at Cole Field House, University of Maryland, Feb. 29-Mar. 1, with 115 pros in attendance. Max Elbin of Burning Tree CC and Roger Peacock of Sligo CC, Silver Spring, Md., were co-chmn. of the two-day program. It covered advertising, merchandising, accounting, teaching, psychology of learning and other subjects of interest to pro operators.

Speakers at the first day's gathering included George P. Lamb, attorney, author and lecturer, who spoke on the place of golf in business; Bill Ford of the MacGregor Golf Co. advertising dept. who discussed marketing and advertising; and Steve Comings, Southeastern University accounting professor, who told the pros how to install and operate a simplified accounting system.

The first day's teaching program was conducted by Al Houghton, Princes George CC, George Bird of Richmond, Va., and Leo Fraser of Atlantic City CC.

Eddie Ault, golf architect of Washington, D. C., was the leadoff speaker on Mar. 1. He talked on the interrelationship of the work of the professional, supt. and architect. Dr. Warren Johnson spoke on the psychology of learning and Prof. Alfred A. Crowell of the University of Maryland journalism dept., described methods of setting up a pro public relations program.

Roger Peacock and Al Jamison handled the second day's teaching program. Peacock's subject was "Tips for Beginners and Comments on the Swing." Jamison summarized the techniques of teaching.



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