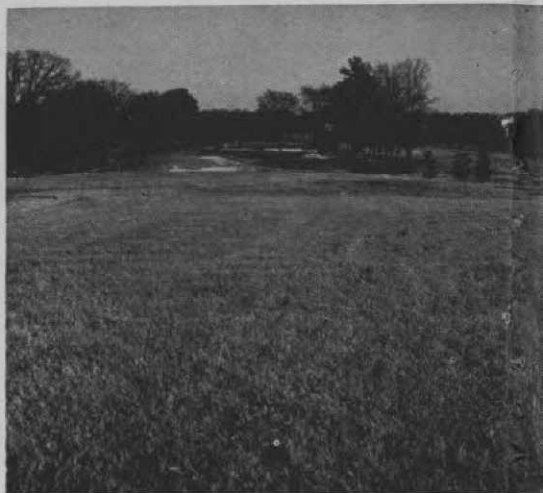




Tifton 57 Bermudagrass sod was shredded in Wichita Grinder for fairway planting at Fernandina, Fla.



Dense Bermuda rough came fast at East Lake after liming, fertilization, and periodic spraying with arsenicals to check crab.

NOER'S TURF ROUNDUP—II **Bermuda Overseeding**



Noer photos

Bent on 2,4,5-TP fairway plots was hurt at $\frac{3}{4}$ lb. rate and permanently injured at $1\frac{1}{2}$ and 3 lbs. actual per acre.

With Proper Preparation and Strong Fertilization It Can Give Good Temporary Cover

By O. J. NOER

OVERSEEDING with Bermuda might be a good temporary summer cover on some course areas, especially on poor tees and on steep *Poa annua* approaches. It provided exceptional playing turf for the Army-Navy games in Philadelphia in 1958 and again in 1959. Overseeding with Bermuda has been going on even longer on the practice fields at West Point Military Academy. In 1958 overseeded Bermuda was tried on part of the practice field at Iowa State and was used more extensively in 1959. Turfwise, this part of the field was considered best by the coaching staff and players. In 1960 Beryl Taylor plans to overseed the center of the Iowa State Stadium with Bermuda if the bluegrass turf is thin upon completion of spring practice.

Those who test seeded Bermuda as a temporary summer cover should start in a small way. They should remember that Bermuda is a sun loving grass. June seeding should give good cover by early July.

Part I of Noer's Turf Roundup appeared in October, 1959, Golfdom, p. 48.



The secret of good Bermuda tees is close cutting with heavy duty mower with grass catcher as at Thunderbird in Palm Springs.



Yarrow control after one application of 2,4,5-TP on plot in rough at Milwaukee CC.

Pregerminated seed has been used in Iowa, Philadelphia, and at West Point. The method is simple. The seed is mixed with two to three times its volume of Vermiculite and kept moist for from four to five days at a constant room temperature of 70 deg. F. The test area should be aerified and cross-disc'd often enough to prepare a good seedbed. The moist seed mixture should be dried by mixing with an equal volume of Vermiculite or sewage sludge. The seeding rate of 80 lbs. per acre (2 lbs. per 1,000 sq. ft.) may seem liberal. Carl Bloomfield uses 100 lbs. per acre of Bermuda seed in the Rose Bowl every year. The Bowl is used fourteen to sixteen times every fall. There is a month after that to prepare for the New Year Day Game. Turf on the field has been good all fall and perfect always on New Years Day.

Liberal Fertilization

Liberal fertilization before seeding and afterwards is important. A ton per acre (50 lbs. per 1,000) of dried activated sludge or other good organic fertilizer along with 400 lbs. (10 lbs. per 1,000) of

10-10-10 is not too much before seeding. Matting and slight rolling immediately after seeding is desirable. Bermuda does best when planted at a depth of $\frac{1}{4}$ to $\frac{1}{2}$ in. The surface soil should be watered lightly several times daily when necessary to keep it damp. This can be stopped after the seedling Bermuda becomes well rooted.

Another ton of sludge in July and again in early Sept. is about right. This adds up to almost 400 lbs. actual N per acre for the season.

The use of selected strains of Bermuda on fairways is becoming popular in the far South. Ormond is a favorite in south Fla. Some of the older courses are changing to it. They burn the common Bermuda turf with sodium arsenite at heavy rates. Fairways are aerified and cross-disc'd several times. Then the Ormond sprigs are broadcast and cut into the soil with a straight disc. Fertilization and light rolling complete the task. Sea Island planted fairways on its new 9-hole course with a new, promising selection. There are several promising new ones on the plots at Tifton.

Tifton 57 Thrives Here

The fairway soil on the municipal course at Fernandino Beach in north Fla. is sand of the dune or beach variety. The much maligned Tifton 57 strain of Bermuda is doing well there without showing any of its matty characteristics. Maybe this grass is the answer on this type soil where it is impossible to improve its physical qualities with suitable amendments.

One of the new courses in the Palm Springs, Calif. area has planted tees, fairways, and greens with Tifgreen (Tifton 328) Bermuda. It has gotten off to a good start.

U-3 Bermuda continues to be the favorite in the transition belt from Kansas City across to Philadelphia and Washington. It is being used on tees in the open, and is being tried on fairways. Several methods of fairway planting are employed. Some do it by setting plugs into existing turf. This is the slowest method because of competition of cool season grasses and crabgrass. Two to three years may elapse before coverage is complete. Others burn existing vegetation with sodium arsenite at heavy rates and plant U-3 Bermuda grass sprigs in rows spaced 18 to 24 ins. apart. June plantings have produced turf by Aug. with generous fertilization supplemented sometimes by light spraying with sodium arsenite to hold cool season grasses and the crabgrass in check.

In some places winterkill of Bermuda has been bad on localized spots every winter. Some think cool season grasses the answer for these areas, others are turning to Zoysia — usually the Meyer strain. At Pine Valley, Zoysia has done well on some fairway areas. Golfers have liked its playing qualities and have not objected to walking on it. The answers to both will come when there are several complete Zoysia fairways on the course. Zoysia spread is slower than Bermuda and its ability to renew itself after being damaged is poor. Until better strains of Zoysia are developed, Bermuda will continue as first choice.

U-3 Tees Stand Up

In the transition belt, U-3 Bermuda seems like the answer to summertime tees devoid of heavy shade. Dormant Bermuda does not withstand heavy wintertime play. This problem can be solved easiest by placing the markers up front during the winter. Then the damage should be repaired in late spring with nursery sod. The other, but more expensive way, is to have an alternate tee of cool season grass for use from Sept. until May.

Tees of U-3 Bermuda grass have done well in Okla. Southern Hills in Tulsa has several and plans to change the rest from its new nursery. Good Bermuda selections make a tighter turf than common Bermuda. Golfers prefer them in tees provided turf is kept tight by close cutting. On such turf their stance is firm. They are sure of a clean shot. Even on the iron shot, short holes the divot is small. A fairway gang or triplex mower does not keep the turf tight. A greens mower, the Toro Park Special with a six-bladed reel and catcher, or a similar mower of other make, is best.

Effective Fairway Program

The experience of a Tucson, Ariz., club exemplifies the kind of fairway program which will eliminate crab and develop a good stand of Bermuda. Here were made generous periodic applications of nitrogenous fertilizers throughout the growing season, beginning when Bermuda started spring growth. On impoverished soil 300 to 400 lbs. per acre of actual N for the season is not excessive. Then they held crab in check with periodic applications of sodium arsenite at 3 to 5 lbs. per acre each time. They used it rather than one of the arsonates because of cost. Ordinarily there is less discoloration with the arsonates but this advantage is lost where there is considerable crab. Anything that inhibits its growth will cause discoloration. When there are tap-rooted weeds

O. J. Noer Foundation

Friends of O. J. Noer of the Milwaukee Sewerage Commission have incorporated the O. J. Noer Research Foundation in honor of his long and outstanding service in the turf field. The foundation will be a perpetual fund, the income from which will be devoted to continuing Noer's work. During 1959, contributions and commitments to the fund exceeded \$50,000. Dirs. voted the first grant, on Noer's recommendation, to the University of Wisconsin. It will be devoted to quartz culture studies of the nutritional requirements of fine turf. A student who is working his way thru the university will work on the project.

All friends of O. J. Noer, who wish to join in this project, may send contributions to C. O. Borgmeier, secy.-treas., the O. J. Noer Research Foundation, Inc., 5440 Northwest Hwy., Chicago 30, Ill.

in the fairways, prior spraying in early spring with 2,4-D only, or 2,4-D plus 2,4,5-T is justified to eliminate them.

How About Roughs?

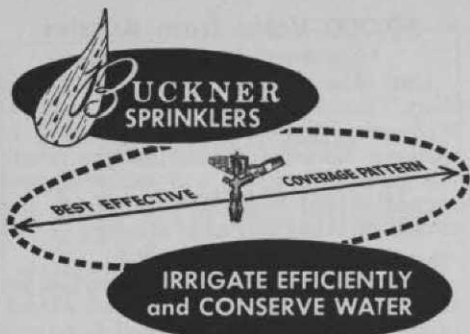
Most clubs have given scant attention to the vegetation in the roughs. East Lake in Atlanta and Milwaukee CC were exceptions in 1959. Crab grass has been the basic ground cover at East Lake. At Milwaukee players have trouble finding balls and playing out of yarrow.

The topsoil at East Lake had been lost by erosion during the winters. The exposed subsoil had no organic matter. It was strongly acid, low in calcium and magnesium. Preemergence control of crab did not seem logical. There would have been no ground cover and germination of Bermuda seed might not have occurred. It was decided to lime in late winter or early spring and to use fertilizer in late spring. Arsenicals were to be used on crab but not until growth was well advanced. Then it was planned to reseed with Bermuda if necessary and try Kentucky 31 tall fescue in shaded areas. The program was most effective. Almost no seed was needed. Bermuda seemed to come from nowhere and respond to the lime and fertilizer.

Control of Yarrow

It may seem strange when the only golfer complaint is yarrow in the rough. That has been the case at Milwaukee CC. Yarrow control was tried with sodium arsenite.

(Continued on page 80)



**IRRIGATE EFFICIENTLY
and CONSERVE WATER**



**ADJUSTABLE
GEAR-DRIVEN, ROTARY
POP-UP SPRINKLERS**

Buckner's exclusive adjustable feature gives full water utilization for best irrigation. Designed for automatic or manual systems. Three full and three part circle sizes.

**NEW
SUPER CAPACITY
ONE-PIECE
QUICK-COUPLING
VALVE**
reduces water hammer

Extra large water capacity gives better flow control of water while less pressure loss means a more efficient system. Only fool-proof, one-piece valve on the market.



**SPEED
REGULATOR**
gives best single
line turf irrigation

Another Buckner exclusive for tailor-made water coverage. Fingertip adjustment puts more water where sprinklers do not overlap, less where they do.

**See Your Local Buckner Dealer
He's listed in the yellow pages.**



MANUFACTURING CO. INC.

P. O. Box 232

Fresno 8, California

Bermuda Overseeding

(Continued from page 48)

The plan was to deplete underground stems of carbohydrate reserves (the source of energy for growth) by repeated defoliation of new leaves before they could produce surplus carbohydrate for underground storage. Four sprayings in the fall of 1958, and two more in the spring of 1959 killed most of the yarrow in roughs alongside the second fairway.

At a winter conference mention was made of 2,4,5-TP for yarrow control at a suggested rate of 1½ lbs. actual per acre. It was tried first on small plots in the rough at Milwaukee. The rates used were ¼, 1½, and 3 lbs. per acre. Promising results justified larger scale trials. The rough alongside the seventh fairway was sprayed at 1½ and at 3 lbs. per acre. Besides yarrow, 2,4,5-TP controlled clover and broad-leaf weeds. There was damage to bluegrass, but seemingly not permanent. There was permanent kill of bent in the fairways on small size plots at all three rates, especially at 1½ and 3 lbs. More trials are needed before one can justify recommending the general use of this promising herbicide.

Kikuyu A Menace

Kikuyu is spreading in fairways and roughs in S. Calif. but courses there seem to have found the answer to the control of this grassy weed. They have been using Dalapon in accordance with the findings of research workers at UCLA. Dalapon has no effect upon the seed so it is necessary to watch treated spots for re-growth and then kill the young seedlings.

Currently pre-emergence control of Poa and annual weeds is being advocated. Many new materials are being tested and some will be offered for sale. Their greatest usefulness will be in areas where the turf grass cover is good. On heavily infested areas the first problem is to secure a uniform cover of turf and then rely on preemergence materials to prevent reinfestation.

Too Much Sand?

Topsoil on some new greens contains up to 85 percent of sand, based on the investigations in Calif. and Tex. Almost everybody concedes that too little sand has been used in the past, but some think 85 percent too much. Organic matter is needed to overcome surface crusting and more soil to provide an adequate exchange complex. A mix in the range of 60 percent sand, 20 percent loam soil, and 20 percent of good quality organic matter may be

