

Construction Changes Give Texas Good Bent Greens

By RALPH PLUMMER

Editors Note: Ralph Plummer is a golf course architect who has been doing golf construction work since 1927. For a number of years he was superintendent for the late John Bredemus who built a number of fine courses in the Southwest. In recent years Plummer has built several courses in Oklahoma, Texas and New Mexico. Today he is specializing in the construction of Bent greens. He maintains that for those who can afford the proper construction, Bent greens in the Southwest can and will be a success.

Bent greens were tried for the first time on an 18-hole course in Texas in 1936 with the completion of the Colonial CC lay-out in Fort Worth. This course was then owned by J. Marvin Leonard, who since has sold it to the members.

These greens were very good for ten months of the year, suffering only during the period between July and mid-September. It was, and still is, a problem to hold them over each summer. They require extra spiking, watering, fighting algae, spraying for brownpatch, dollar spot, web worms and the menace of Bermuda and crabgrass encroachment during the hot months when the bent is thin and weak.

Of course, these operations increased the maintenance cost so much over Bermuda greens that other clubs would not attempt the change to bent.

Only Brookhollow CC in Dallas changed over and, with better soil and sub-drainage the results were slightly better than those achieved at Colonial.

In 1945, the Dallas Athletic Club's country club in Dallas decided to revamp its course and install bent greens. Graham Ross, the club professional, and I conferred with Dr. O. J. Noer and Dr. Fred Grau in regard to the materials to be used in the new greens. The change was radical.

Where the other courses had used the native soil, mixed with blow sand, sheep

manure, peanut hay and some peat moss, we tried sharp, coarse sand, mixed with peat and loamy top soil.

The sub-drainage was done in the heringbone pattern, using four-inch perforated Orangeburg fibre pipe. We didn't have enough peat, but nevertheless the bent has done well. It has stood up under extreme heat, drying hot winds, humid nights, and heavy play the year 'round. The maintenance cost hasn't been too high, either.

In the past two years I have put in bent greens for the River Crest CC in Fort Worth, and the Dallas, CC, Lakewood CC and the new Northwood Club; the latter three, in Dallas, having been seeded with Seaside bent during February and the first part of March, 1948.

The Fort Worth-Dallas area is less than 700 ft. elevation and the clubs are in residential sections. This combination of conditions prevents proper air circulation. It is better to thin out shrubbery and trees on the side of the prevailing wind. Where



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there are large trees close to the green lateral roots must be kept from growing under the green.

The clubs for which I installed bent greens late last Winter and in the early

Spring opened the greens for play in June. The greens got through the Summer with a minimum amount of trouble. The work I have described in the preceding paragraphs constitutes the extent of the changes in construction I made on the four courses I have mentioned.

Texas Greens Construction

Texas golf courses are built on flat land and natural green sites are the exception rather than the rule. Most greens are elevated and have mounds constructed around them and the sand traps (surface) are slashed into the mounds. This is for the sake of appearance as well as inexpensive maintenance, since the long slopes of greens and mounds permit the use of power mowers.

The base of the green is constructed of the soil available near the site of the green. It is graded and compacted. The clay drain tile or fibre pipe is installed in this base so the top of the tile is 12 inches below the putting surface. Coarse rock is filled around the tile.

A mixture of limestone pea gravel and porous top soil five to six inches deep is spread over the hard pan, graded and

firmed with a light roller. Then six inches of loamy top soil, sharp sand and cultivated peat are spread over the entire putting surface and apron. This is graded, firmed with a light roller and then fine graded again.

The materials are proportioned as to the type of soil used, heavier soils requiring the use of more sharp sand. The peat is kept near the surface, in the top three inches.

The mixing can be done through a compost machine or in place with a disc harrow and rototiller. As a caution against layers, a thorough mixture is a "must".

Between the top seed bed and the gravel mixture, apply arsenate of lead to stop earthworms. Use about 50 to 60 pounds for the average green.

Potash, super-phosphate and Milorganite are stirred into the seed bed in correct amounts prior to seeding.

Three pounds of Seaside bent seed is recommended for each thousand square feet. This is raked in lightly and followed with hand watering. Continuance of hand watering is necessary until the grass is well established.

Calibration Table for Distribution of Lime or Fertilizer

Yardage to be Traveled by Distributing Machines of Various Hopper Widths to Discharge 200 Pounds Material at Various Rates Per Acre.

Width of Hopper In Feet	Rates In Pounds Per Acre									
	100	200	300	400	500	600	700	800	900	1000
5	5808	2904	1936	1452	1162	968	830	726	645	580
6	4840	2420	1613	1210	968	807	691	605	537	484
7	4148	2074	1383	1037	830	778	593	518	461	415
8	3630	1815	1210	907	726	605	519	453	403	363
9	3226	1613	1075	807	645	537	461	404	358	323
10	2904	1452	968	726	580	484	415	363	322	290
11	2640	1320	880	660	528	440	377	339	293	264
12	2416	1208	805	604	484	403	345	302	268	242

INSTRUCTIONS

1. Put 200 pounds material in hopper.
2. Set distribution controls at estimated position for desired rate.
3. Select yardage under desired rate per acre.
4. Operate spreader for the designated distance at normal speed.
5. If 200 pounds is discharged before traveling entire distance, reduce the feeding rate.
6. If 200 pounds is not discharged in designated distance, increase the rate of feed.
7. Repeat operations until 200 pounds material is discharged in the designated distance for the desired rate per acre. Always start each trial with exactly 200 pounds material in the hopper.

EXAMPLE

Width of hopper _____ 8 feet
 Desired rate of application _____ 600 pounds per acre
 Amount of material in hopper _____ 200 pounds
 Distance to travel to discharge 600 pounds _____ 1815 yards
 Distance to travel to discharge 200 pounds _____ 605 yards
 The above method may be used for the whirlwind type spreader by using width of spread as width of hopper.