

Bent Greens O.K. in South*

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IN TENNESSEE for several years, it has been my privilege to convert Bermuda greens to Bent. We have had wonderful success with our bent grass greens in spite of adverse weather. During 1952, we experienced a total of 19 days within a temperature range of 102 F. to 107 F. Ten of these days were consecutive.

We also experienced some flash storms which, coupled with high temperatures, often means death to bent greens. Yet we had only minor troubles on three greens, while all other greens came through the summer unmarred. I never expected bent grass to come through so long a period of hot, sometimes rainy, days. It was a tough year for bent grass.

Since the greens fared so well in 1952, I am ever so much more optimistic about the future of bent grass putting greens in the South. They should be no baffling problem in Nashville, Atlanta, Chattanooga, or Knoxville. The greens came through 1953 in fine condition.

Experience has taught me that good subsurface drainage is one of the most important factors in keeping bent grass putting greens in the South. Subsurface drainage is vital during excessive rainfall. I use the herringbone system of tile drainage, with drains spaced not more than 15 ft. apart, and a fall of not less than 1½ percent. The tile is placed to a depth of approximately 20 in. from the bottom of the ditch to the surface of the green. Between the tile lines, I taper the subsurface soil or clay from the center to the drainage lines on either side to insure against pockets, and to direct water into the tile system. Over the tile is placed 1½ in. rock, or rough gravel, or cinders. Then in spreading topsoil, I placed my boards on the peaks formed by the subsurface grading. In the area directly over the tile lines there is a depth of topsoil, of from 12 to 14 in., while at the subsurface peaks the depth of topsoil is never less than 8 in.

Built to Withstand Worst

All topsoil is mixed off the green in a cement mixer with a capacity of at least four wheelbarrows full per mix. The prepared soil is then hauled onto the green by

wheelbarrow. This phase of putting green construction is done carefully and exactly.

Greens have to be built to withstand the excessive heat of June, July, August, and September. All my efforts are directed toward seeing us through these trying months. Under our conditions, greens which are drained improperly will suffer. Surface drainage is another very important construction factor. Where it is possible to do so, I try to provide surface drainage in two or three different directions. It is most important to remove surface water off the green as well as from the subsurface areas.

Bent grass putting greens in the South must be checked carefully for signs of wilt during the hot summer months. During the torrid summer of 1952, we had to watch our greens very closely, working most of the time until 6:30 p.m. to hand spray our greens to keep the grass from wilting.

I feel that the practice of hand spraying, which supplements our usual early morning watering, means the difference between life and death of bent grass. A good preventative fungicide program is important, especially in the maintenance of bent grass putting greens in the South. I feel that anything I can do to prevent spore formation is of decided value in combating disease.

Also I apply PMAS weekly for the control of crabgrass and dollar spot, etc., on my greens. By using PMAS all winter, when conditions permit, we have been successful in keeping out *Poa annua*.

Conversion Methods

My methods of construction are not too complicated. First, I remove Bermuda sod from the green with sod cutter. The sod is then hauled to tees or wherever needed on the golf course. Second operation: the topsoil is removed from the green. The depth of soil removed depends on how deep the Bermuda roots have penetrated. I have never found Bermuda roots in the clay, which is the base of most greens in Tennessee.

When soil has been removed from green, I immediately start screening soil, using two rotary screens of ¼ in. mesh. It takes two days to screen enough soil for one green, approximately 80 yds.

(*1954 GCSA conference address)

While screening is going on, another crew is putting drains and tile in subsurface of green.

When the draining is finished, the screened soil is then mixed with 50 to 60 percent sharp sand. The mixing is done in a cement mixer, then wheeled onto the greens between boards not less than 8 in. deep. A straight edge reaching from board to board is then pulled the length of the boards, making a level surface and assuring you of not less than 8 in. of soil on any part of the green.

The green is then watered to settle the soil. When green is dry enough, it is rolled both ways. After the rolling, peat moss and fertilizer are spread over the green and raked in. I use 5 bales of peat to a green of 5000 sq. ft. Then fertilizer is spread over the green and raked in, using 400 lbs. of Milorganite, 150 lbs. of 5-10-5, 50 lbs. of phosphate, 25 lbs. of potash. This is all raked in together, then the green is watered.

When the green is dry enough, I spray it with a solution of 1½ gals. of PMAS and 1 pint of 2,4-D. The green is then watered again. PMAS and 2,4-D are most important because they keep crabgrass and other weeds out of green until bent grass is established. I have planted stolons a few hours after fertilizer and PMAS have been applied to greens, with excellent results.

This method of building greens has been

most successful. Golfers of the South who thought, and said, that it could not be done, now enjoy putting on good bent greens.

Iowa Holds First Club Operations Clinic

Iowa golf club operating problems were brought before 80 department heads and officials of the state's golf clubs at a clinic held at Sunnyside GC, Waterloo, Ia., April 26.

The meeting was patterned after the Northeastern Wisconsin Golf Assn. annual operating clinic. Ray Cary, mgr., Elmwood CC, Marshalltown, Ia., headed the group of managers who originated the conference which brought together Iowa supts. headed by Herb Klontz, pres. of their association; pros headed by Dave Bonella of Ottumwa CC, regional vp of the PGA; and golf club officials headed by Pres. Robt. B. Nelson and Green chmn. Fred Hagy of the home club.

Understanding and cooperation between department heads and officials for more efficient operation of the clubs was the theme of each address. Prof. Harvey Lantz of Iowa State College talked on course problems needing particular attention in Iowa, Sy Graham of the Milwaukee Sewerage Commission spoke on the trends in course maintenance, and "Plug" Osborne



GREENS DIAGRAM MAKES INSTRUCTIONS CLEAR

Norman Johnson, supt. San Jose CC, Jacksonville, Fla., and pres., Golf Course Supts.' Assn. of America, has in his shop greens diagrams that enable him to plainly explain to workmen exactly what work he wants done of a routine nature on the course. Johnson says these diagrams make certain the jobs are done right and save a lot of his time needed in personal supervision of certain labor performances.