

Sand vs. Grass

by LEE RECORD, Agronomist, USGA Green Section

Increased play and rising labor costs have led to havoc on many courses. The omission of cultural and daily maintenance is a serious problem. One of the most serious problems facing the golf course superintendent is the maintenance of his sand bunkers. There is no doubt that they are costly to maintain. One golf course in the Midwest spends over \$5,000 each year to maintain about 80 sand bunkers, a cost that will undoubtedly continue to rise.

Many club officials and course superintendents will be faced with the choice of either continuing to meet the high cost of daily sand bunker maintenance, or gradually establishing grass hollows in their place.

Selecting the sand which is to be used in the bunker is of utmost importance. Uniform systems of classification can be used as a guide for sand selection; the National Bureau of Standards (U.S. No.) and American Standard for Testing Materials (Tyler Scale) are two systems of classification based on particle size.

The best particle size for sand traps is a very coarse sand, (1 mm. in size). From an economic standpoint it may be quite costly to obtain sand of this uniform size because of the special screening that would be required. Sand of any particle size may easily be obtained in some localities. However, individual grains should be examined. Rounded grains will leave the sand too loose and golf balls will be buried too deeply. Angular grains rather than rounded ones are preferred.

Particle size, too, affects the speed of play. Any sand over 1 mm. in size can cause damage to mowing equipment if it is left on the green after the golfer plays an explosion shot.

Sand in bunkers cannot be packed hard. Normally, a golfer should have the option of either picking the ball clean or playing an explosion shot.

Sand that is packed hard prevents the explosion, the shot most often used. A normal sand wedge has a flange at its base; this flange is thick and it must have soft sand to execute the explosion shot. A wedge used on hard sand will bounce off the sand and all ball control will be lost.

The condition of bunkers around greens

should contain soft, coarse, uniformly-raked sand. The depth of sand should be between four and six inches. A uniform, coarse sand of the 1 mm. particle size will take several months to settle properly while silica sand, a by-product of the glass industry, will take a year or more.

Sand should offer a hazard. The ball should bury up to about one-half its depth, but it should not sit up on top and provide a clean shot. The sand bunker should be a fair hazard, and sand should add to, not minimize the hazard.

Should a club convert to grass hollows? Grass would require less maintenance time than sand. It might also speed play because footprints or steps would not have to be raked. Paths would not necessarily be worn around greens as they are now.

Grass hollows, however, are not as attractive as sand bunkers. Sand acts as a visual aid for the golfer and outlines the target area. Grass would be more difficult to play from if it were cut between two and four inches.

A panel of golf course architects, superintendents, golf professionals, amateurs, and Green Section agronomists participated in a symposium conducted for the "USGA Golf Journal" in 1964. Quotations from this article, "The Case of Sand vs. Grass," are listed below:

"I think a reasonable combination of both sand and grass traps is the best arrangement for any golf course, both for beauty and playability."

"Unless a sand bunker is maintained to perfection, it becomes an irritation to all golfers and is a most unfair hazard."

"It is our feeling that grass hollows should be used more, especially in areas below the natural level or grade of the surrounding terrain. Sand should not be used in such a location; it catches run-off water and soil and is very difficult to maintain."

"Most courses have the majority of their traps misplaced and the wrong kind of sand is used."

"Grass hollows will not erode due to wind or water; sand of course will. Rough grass will be 'playable' sooner after irrigation than will sand areas. Wet sand causes miserable golfing con-

ditions. However, sand bunkers do highlight a green by the color contrast provided.”

“The tendency in our area is to remove sand traps from the fairways, but to keep them around the greens and perhaps add more.”

“Rough grass will take the place of the sand bunker only in the case of economic necessity.”

The rough hollow will undoubtedly come into increased use.

Bunker Renovation

by EDWARD J. CASEY, Superintendent, Baltusrol Golf Club, Springfield, N. J.

Renovation of bunkers is a recurring item in maintenance operations. The turfgrasses deteriorate and the sand becomes old and dirty; we accept this as normal. Beyond that are three factors which strongly influence overall deterioration of bunkers:

1. Location and design: These are controlled by the requirements of the game. The more difficult the location, the more critical the design.
2. The isolation of bunkers relative to maintenance: Bunkers are individual and isolated maintenance problems. They cannot be quickly and efficiently mowed by gang units.
3. The isolation of bunkers with regard to irrigation: They cannot be efficiently irrigated individually with the present systems which water everything in the general green area. Presently the putting green, apron, traps, bunkers, and rough adjacent to green are all watered when sprinklers are turned on.

Experience taught that irrigation in and around bunkers was necessary if the job was to last. Therefore, pop-up sprinkler heads delivering 1½ gallons per minute were installed 12 to 14 feet apart throughout the bunker, conforming with design. **We now know that this system irrigates without wetting the sand.** Baltusrol's lower course has 126 bunkers. Of these, 100 were irrigated by an average of 10 heads per bunker. The largest required 82 heads.

In preparing the bunkers for improvement, the old sod was stripped off and the area was cultivated with grub hoes, thereby removing a thick rootbound layer. Topsoil was added and then limed, fertilized, and sodded. Two bunkers were redesigned, one of them a monstrous bunker which crosses No. 17 fairway. Of the 126 bunkers on the lower course, the site of the 1967 United States Open Championship, 105 were renovated.

Improving the bunkers further, 700 to 800 tons of sand was removed and replaced with 1,500 tons of new sand. This is a lot of material to handle!

Small sprinklers around the edge of bunkers keep turf healthy without wetting sand.

