

# Bermuda-Bentgrass Mixture

## grass combination resistant to heavy pedestrian traffic sought for use in public parks and recreational areas

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The studies reported in the following article were conducted by Zaki Mahdi, a graduate student in Ornamental Horticulture, working under the direction of Professor Vernon T. Stoutemyer.

**Two mixtures of grasses**—Congressional bentgrass with U-3 bermudagrass and Old Orchard bentgrass with the U-3 bermudagrass—have proved to be resistant to wear in experimental plantings.

For further testing, these two combinations are being tried on a pitch-and-put course in one of the public parks of Los Angeles where the heavy traffic causes expense and great difficulty in maintaining turfs of bentgrass.

In southern California, where there are many lawn bowling clubs, sometimes the traffic has been too severe for bentgrass greens, and in such cases the introduction of bermudagrass has helped to solve the problem. Occasionally common bermudagrass may become an invader in turfs of Seaside bentgrass. However, the textures and colors of the two grasses do not match well and a highly objectionable effect is produced.

A series of experiments was started in the spring of 1950, when equal quantities of stolons of three strains of bermudagrass were mixed with three strains of creeping bentgrass and planted vegetatively. The grasses were mowed at putting green heights of cut, but with less than the usual regularity.

Fertilizer was used to apply nitrogen at the rate of 15 pounds per thousand square feet per year. Attempts to reduce the applications of nitrogen—particularly during the summer—always resulted in some loss of quality and density of the turf. Liberal applications of nitrogen did not unbalance the proportion of the grasses at any season of the year.

Sample plugs of the turf were taken with a one inch soil sampling tube. The plugs were removed to the laboratory where they were dissected, and the individual grass plants were identified and counted under a binocular microscope. Twelve samples were counted on each plot. The averages in August and February or May are shown for two seasons in the accompanying table. The excellent winter condition of the combination in contrast to that of the U-3 bermudagrass alone was strikingly apparent.

In all combinations, the bermudagrass increased regularly each summer and declined during the winter. The marked

dominance of the bentgrass—in a region where bermudagrass invades all turf naturally—was unexpected.

Fungicides were not applied to the turf for the protection of the bentgrasses against turf disease. During attacks of dollar spot—the most important turf disease in the locality—the infestation was greatly reduced in the mixed turf of bentgrass and bermudagrass in comparison with the same strain of bentgrass alone.

### Combinations

The all-year appearance of the mixture of Congressional bentgrass and the U-3 bermudagrass was outstanding, and color and texture seemed well matched. The combination of Old Orchard bentgrass with U-3 bermudagrass proved to be equally desirable.

The mixtures of Collins bentgrass with the Tifton 57 strain of bermudagrass and Arlington bentgrass with the Tifton No. 12 bermudagrass were not satisfactory in appearance and performance particularly at certain seasons of the year. This indicates the vital importance of matching suitable compatible strains of the two grasses.

The vigorous clonal strains of creeping bentgrass and the finer-textured bermudagrasses require similar maintenance. Close mowing should be done at reasonable intervals, preferably with the use of a rake or comb attachment on the mower. This will help to avoid the production of matted turf and will postpone the need for topdressing. An occasional vigorous raking or brushing before mowing will largely prevent the appear-

ance of grain or matted turf. Correct management is essential with this combination of grasses.

The turf of the best combinations has required so little attention and has had an excellent appearance that it is seriously suggested for permanent lawns in southern California since it is almost impossible to prevent the invasion of common bermudagrass in lawns of cool season grasses.

In the vicinity of Los Angeles, the use of a putting green mower on lawns of bermudagrass and the removal of clippings has eliminated the need for periodic, mechanical renovation of the turf.

Other combinations equal, or superior, in performance may be developed through experimentation. Bentgrasses which have survived on fairways in the Lower San Joaquin Valley are being used in an attempt to select strains with unusual heat and drought resistance for use in this type of mixture.

Results obtained thus far in the experimental plantings are sufficiently promising to encourage cautious trial where heavy traffic is a problem or where natural invasion of the turf by bermudagrass is serious.

Experience in southern California has shown that the U-3 bermudagrass will eliminate or suppress common bermudagrass.

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**Seasonal Change of the Population of Bermudagrass Plus Bentgrass Associations.**  
(Average number of plants per one inch plug)

Date	Congressional and U-3 Bermuda		Collins and Tifton #57		Arlington and Tifton #12	
	Bermuda	Bent	Bermuda	Bent	Bermuda	Bent
May 1951 . . . . .	8.0	22.6	7.3	24.0	5.2	22.1
Aug. 1951 . . . . .	11.0	30.9	11.7	35.8	11.3	33.1
Feb. 1952 . . . . .	0.8	35.0	6.4	30.0	1.6	34.2
Aug. 1952 . . . . .	9.4	33.3	13.8	30.8	11.5	22.8
Feb. 1953 . . . . .	1.2	33.3	10.7	20.1	9.0	9.7