

NATIONAL BENTGRASS VARIETY TRIALS

(Preliminary First Year Results)

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A "Field Day" for the National Bentgrass Trials was held at the Sunnyvale Municipal Golf course on August 27, 1992. This golf course is under the supervision of Mr. Curtis Black and the variety trials are under the direction of Ali Harivandi, University of California, Cooperative Extension. This location is one of sixteen locations in the U.S. for National Bentgrass Variety Trials. The collection of commercial and new experimental varieties for these trials is under the direction of U.S.D.A. Varieties for evaluation are submitted by private seed companies and public institutions to U.S.D. A. which then distributes seeds to cooperators for evaluation trials.

Two bentgrass species are used for turf on greens and tees. These are creeping bentgrass (*Agrostis palustris* Huds.) and colonial bentgrass (*Agrostis tenuis* Sibth.). Both of these species have low tolerance to drought, heat and wear, and are highly susceptible to diseases and thatch build up. Stolons of creeping bentgrass develop roots and shoots at their nodes, giving rise to the nickname "creeping". Colonial bentgrass by contrast has minimal creeping tendencies since stolons, or runner, growth from the crown of the plant is reduced or absent. Various bentgrass cultivars produce a broad range of colors, from greenish-yellow to dark green and dark greenish-

blue. Golf greens planted with creeping bentgrass are mostly cut to a height of less than 1/4 in. and tees are cut at a height of 1/2 in. Golf greens cut very closely may need 12-18 pounds of nitrogen per 1000 ft.² per year; cut slightly higher, nitrogen requirements is reduced considerably. Bentgrasses are extremely susceptible to most diseases such as Pythium blight, Fusarium blight, Fusarium patch, brownpatch, Helminthosporium spp. diseases and dollar spot. Varieties Penncross, Seaside and Emerald are common creeping bentgrass cultivars used on golf greens in California.

Materials and Methods

Preparation of the sites at the Sunnyvale Golf Course began in 1989. Two of the three sites were prepared by mixing 2 inches of organic matter into 6 inches of top soil with a rototiller. One of these sites is managed as a golf tee/fairway and the other site is managed as a golf green. The third site was prepared by replacing the native soil with 1 foot of pure sand. The sand was low in calcium and phosphorous. This was corrected by adding the appropriate amounts of gypsum and single superphosphate. The sand base site is also managed as a golf green. Varieties were planted (1/2 lb/1000 ft²) in March, 1990 in a randomized complete block design, in 10 ft x 10 ft plots and 3 replications. Fertilization and irrigation is done as needed. The tee site on the soil is mowed at 5/8 in. on Mondays and Fridays. Greens are mowed at 5/32 in. on Saturdays, Tuesdays and Thursdays. Twenty varieties were entered in each replication for each soil. Three of the varieties are colonial bentgrass, one dryland bentgrass (*Agrostis castellana*) one browntop bentgrass (*Agrostis cappilaris*) and the rest are creeping bentgrass. Not all of the same varieties were used on each of the soils. This National Bentgrass Trial will be completed in 1994 after three years of investigation.

Starting in January 1991 various data are taken on each plot. Overall quality on a scale of 1-9 (9 best) are taken on a monthly basis. Density on a scale of 1-9 (9 best) and percent (%) ground cover are taken on a quarterly basis. Color ratings are taken one time per year during October or November when the least amount of environmental stress is present and the full genetic potential for any given variety can be expressed. The first color rating was taken when the plantings were more than one year old in order to eliminate false color expression of juvenile plants. Thatch development is taken one time per year during July or August. Annual bluegrass (*Poa annua*) invasion estimates (percent of stand) is taken on a quarterly basis. Evaluation for diseases, insects, or environmental stresses are recorded if they appear and are widespread.

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