



Selecting Bentgrasses for Golf Greens

M. Ali Harivandi, Ph.D. and Bill Hagan, Ph.D.
University of California Cooperative Extension

In the past 5-10 years, many new, and reported improved, creeping bentgrasses (*Agrostis palustris* Huds.) have been introduced to the market. However, independent research data on comparative performance in varying climates and under intensively managed putting green conditions have not been available. Increased demand by golf course superintendents for such information led in 1997 to a joint research project on 13 golf courses across the United States. A set of evaluation trials was sponsored by the United States Golf Association (USGA), the Golf Course Superintendents Association of America (GCSAA), and the National Turfgrass Evaluation Program (NTEP). Trial sites are all located on golf courses near a land grant University with a turfgrass research program, or in a major metropolitan area which is readily accessible to a University turfgrass scientist. At all these sites eighteen (18) creeping bentgrass varieties are planted on a new putting or chipping green, built according to the USGA specifications. This research differs from evaluations traditionally conducted at University research stations because the greens are maintained similar to other greens at the golf course and are used by golfers for practice putting and/or chipping.

The site chosen for the Northern California evaluation, is located at the Crystal Springs Golf Course (CSGC) in Millbrae on the San Mateo peninsula. In addition to Corsco Inc., the CSGC operating group, the Golf Course Superintendents Association of Northern

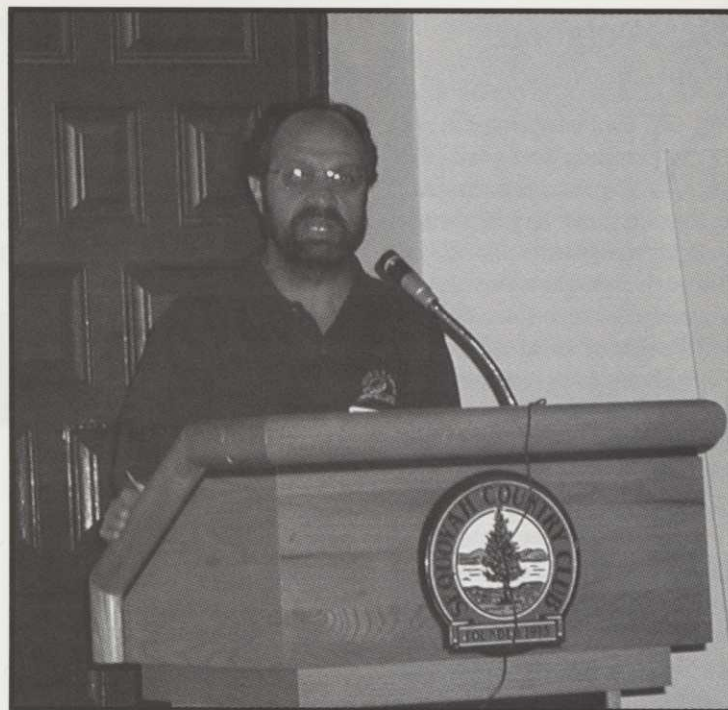
California, has also joined the University of California Cooperative Extension, as the co-sponsors of this local research project.

The 18 creeping bentgrasses were seeded in September of 1997 on the newly built practice green at CSGC. The USGA green and its surround, was designed and donated to the project by the Robert Trent Jones Jr's group of Palo Alto, California. All varieties, supplied by NTEP, were planted at the rate of 1.1 lb/1000 ft² in a randomized complete block design, 10 ft x 5 ft² plots with 3 replications. Seeds were planted carefully by hand to prevent contamination of adjacent plots, and then were lightly raked in. A complete fertilizer, providing 2 lbs phosphorus plus 2 lb potassium plus 1 lb nitrogen per 100 ft² was also applied at this time. The area of the green, outside the research plots was seeded with "Cobra" creeping bentgrass, and then the irrigation was turned on. The green was maintained for 6 months until grasses were well established and in spring 1998, the green was opened to use by the golfers. This maintenance regiment of the green since its opening in 1998 is as follows:

Mowing: Three times weekly at 5/32 inch, with a walk-behind mower. No rollers or groomers are used.

Cultivation/Topdressing: Spiking and 1/4" hollow time aeration is done several times during the year. No verticutting is practiced, but the grass is occasionally topdressed with sand.

Fertilization: Both inorganic and organic fertilizers (Milogamite) are used to provide an average of 6 pounds



of nitrogen per 1000 ft². Pesticide use: Fungicides are occasionally as creative applications. Brandleaf hulicides have been used twice. No insecticide or other pesticides have ever been applied. The green is open all year for putting and chipping. The use of soft spiked shoes is encouraged.

Starting January of 1998, various data on each plot, overall quality on a scale of 1-9 (9=best), is taken on a monthly basis. Color ratings on a scale of 1-9 (9=darkest green) are taken one time a year during October, when the least amount of environmental stress is present and the full genetic color for any variety could be expressed. Variety density on a scale of 1-9 (9=narrowest leaf blade) are taken annually during the autumn. Two to three times per year, the stimpmeter readings for each plot is also recorded, using a modified stimpmeter, specifically designed for use on small research plots. This modified stimpmeter has its ball release notch located at 15 inches, rather than at 30 inches from the beveled end, as is in the typical

USGA stimpmeter. The accompanying table, summarizes the result of the data collected during the year 2000, the third year of evaluation. This trial is a 5-year project and will not be completed until the end of 2002, at which time the entire 5 year data will be analyzed and final recommendations on selecting among these varieties will be made available. The data presented in accompanying table should, therefore, be viewed as preliminary and are presented here only as a guide to those superintendents presently in need of such information.

In reviewing the Table, please note the values given for LSD (Least Significant Difference). This statistical term is used to determine the statistically significant differences among the cultivation for each evaluated parameter. To determine statistical differences among varieties, subtract one variety's mean rating from another variety's mean rating. Statistical differences occur when the value is larger than the corresponding LSD value. If the

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Limited Budget Outreach Update

By Bruce Olson, Emerald Hills Golf Course

The Limited Budget Outreach Program was initiated by GCSAA Past President David W. Fearis, CGCS almost two years ago. The program is to provide advice and assistance to golf facilities with limited resources, those facilities with a golf course maintenance budget of approximately \$100,000 or less. This definition varies by geographic area. These facilities may or may not employ a full-time superintendent. The mission is "to help superintendents enhance course conditions in order to help grow the game of golf". The primary goal is to match experienced superintendents (active or retired) with the individuals charged with the maintenance at these limited budget facilities in order to provide technical advice and support. As David noted in his President's message of October 2000, many superintendents started playing or working at these smaller facilities. He stressed that this is not a GCSAA membership drive. This is an organized program to bring assistance to limited budget golf courses. The hope was to identify 500 limited-budget courses by June of 2001.

Jim Irvine and I were asked to be the GCSANC's representatives for this program. The Limited Budget Resource Group met by conference call on March 28, 2001. The following is provided as a short summary of the conference call and the Member Group discussions.

* The Limited Budget Resource Group members agreed to help oversee the program and have been assigned a list of chapter liaisons to contact. Roger Martinez of Twin Creeks Golf Course is our

Resource Group leader. The Group members are to promote the program (motivate the liaisons like me!) and provide information back to the Resource Group Chairman. Adjustments and improvements to the program can then be made.

* The GCSAA is developing a "hold harmless" letter that advising superintendents may use if there is a liability concern.

The first requirement is to develop a list of limited budget facilities. I have developed a database of all California Golf Courses (gleaned from a book remarkably with the same title!) This database will be shared with the other California sections, which are all under Roger's Membership Group.

With this list we can take the first step of the program, (1) identify limited budget facilities within your chapter. We will now (2) develop a list of volunteer superintendents within each chapter. Get ready! Then (3) we are to develop and maintain an inventory list of low-cost equipment that can be purchased by limited budget facilities. Next (4) we are requested to publicize the program at most meetings and encourage participation of volunteers. Get ready again! Finally (5) we are to encourage meeting attendance by those superintendents employed by limited budget facilities.

The GCSAA has supplied all forms and information to get the program started. They will provide two free GCSAA memberships for limited budget superintendents. They promise to publicize the program and track/recognize the success/failures of the program and make necessary corrections. I

spoke with Don Bretthauer at GCSAA headquarters who stressed the individual approach Chapters must take to assist. There is no single or set way we must try to help these facilities as a Chapter. The purpose is just to help in meaningful ways.

This may not be the most exciting program developed, but it is certainly a worthwhile one. The assistance, information and encouragement from the GCSANC and from many of

you as individuals have helped tremendously at Emerald Hills. We no longer qualify as a limited-budget facility. We have "grown the game" here and are quite proud of the conditions we maintain. We could not have done it without the help of the GCSANC, the GCSAA, and most importantly many individual superintendents. I hope you will embrace this program and provide your assistance. We welcome your ideas. /

Naumann's NorCal News

Jess Pifferini has accepted the Supt. position at Shoreline Golf Links for the City of Mountain View. Jess was at Coyote Creek Golf Course prior to his move....**Barry Mueller** has left Mountain Shadows GC and is the new Supt. at Franklin Canyon GC in Rodeo. As of June, CourseCo will take over the management of Mountain Shadows which is owned by the City of Rohnert Park. **Jose Aguilera** was the previous Supt. at Franklin Canyon

At Lahinch Golf Club in Lahinch Ireland, there is a sign in the Pro shop that says for a weather forecast, check out the goats. For decades there have been goats on the property and as forecasters, they were perfect. If the weather was to be good, the goats would be out near the 10th hole. If the weather was going to be bad, they were close to the clubhouse. It was a tradition to see where they were to determine what kind of weather the golfers would enjoy that day. This was another fine example of golfers totally losing a sense of reality when they play. Unfortunately, the fine weather forecasters at Lahinch recently met their demise due to Europe's Foot and Mouth disease.

Bentgrasses (Cont'd)

difference between the mean value for two varieties within the same column is not greater than the corresponding LSD, then the two varieties are statistically the same for that specific quality component.

For example, considering the LSD value of 0.7 given for mean turf quality ratings, there is no significant differences between

the 12 top performing varieties (L-93 down to Providence), since their mean differences are smaller than 0.7.

Author's Note: The data presented in this article is preliminary. No part of this article, and the accompanying Table, may be re-printed without the written permission of the author. /