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# **ON-SITE TESTING OF BENTGRASS AND BERMUDAGRASS CULTIVARS FOR GOLF COURSE PUTTING GREENS**

## **INTRODUCTION**

There is growing interest within the golfing industry to develop on-site testing of turfgrass cultivars. This concept is not new, but has not been a common practice in recent years. Therefore, the Golf Course Superintendents Association of America (GCSAA), United States Golf Association Green Section (USGA), and the National Turfgrass Evaluation Program (NTEP) have agreed to revitalize on-site testing of turfgrass cultivars on golf courses, particularly on putting greens. This project conducts evaluations of new bentgrass and bermudagrass cultivars on USGA specification putting greens constructed at golf courses across the country. This on-site testing program is designed to provide scientific information of a more applied nature about putting green turfgrass cultivar performance.

Information from this project is valuable to the golfing industry. These studies will determine the adaptation of grasses for golf course use. In addition, information obtained from on-site testing will be of particular value to plant breeders, researchers, extension educators, USGA agronomists, golf course architects, and superintendents, who need to select the best adapted putting green cultivars for a particular regional climate.

A five-person committee composed of Dr. Jeff Nus, GCSAA Research Director; Dr. Mike Kenna, USGA Research Director; Mr. James Moore, USGA Construction Education Coordinator, Mr. Kevin Morris, NTEP Executive Director; and Dr. Bob Shearman, NTEP Special Projects Coordinator determined the trial site locations and the trial specifics. Input from golf course superintendents, USGA agronomists and turfgrass researchers assisted the committee members' decision making process.

### **Location & Number of Trial Sites**

These cultivar evaluation trials are jointly sponsored and supported by the GCSAA, USGA-Green Section, and NTEP. The USGA funded the construction of USGA specification greens for the trials. Trial sites are 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. Sixteen (16) regional evaluation trial sites have been established. Trials are located in: a) northern locations for bentgrasses, b) southern locations for bermudagrass, and c) transition zone locations for both species. Trials are located where golfers practice putting and/or chipping. Host clubs provide daily maintenance of the putting green site at their own expense.

### **Trial Specifics**

The NTEP functions as the coordinating agent for the cultivar trials. These trials are five years in duration. Trials are conducted under mutually agreed upon guidelines, procedures, and funding outlined in a research agreement agreed to and signed by the appropriate representatives of GCSAA, USGA, and NTEP and each research cooperator (i.e. university turfgrass researcher). Trials are conducted at each location under the leadership of the assigned research cooperator. These persons are responsible for establishing and conducting the trial, and collecting and transferring the data to NTEP according to the research agreement.

Trials are maintained by the golf course superintendent at each location using management procedures common to their golf course, the geographical area and in consultation with the research cooperator. No special management practices are prescribed as these trials are intended to receive real-world golf course conditions and stresses.

## **ON-SITE TESTING (continued)**

These trials are conducted principally with commercially available, named cultivars. Experimental lines that will be commercially available in the near future (i.e. before the end of the test cycle) were also included in these trials at the sponsoring company's discretion.

The NTEP administers the program and its funding, sets the advisory committee and gathers their input and recommendations for each species trial. The NTEP organizes and distributes the seed and vegetative materials which constitute the entries for each trial location. The NTEP provides the maintenance and data collection protocols to each site; collects, analyzes and disseminates the performance data in annual and final reports; and conducts an annual site visit for each trial.

For more information or additional copies of reports, please contact:

Kevin Morris, Executive Director  
National Turfgrass Evaluation Program  
Beltsville Agricultural Research Center-West  
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Beltsville, Maryland 20705 USA

*NTEP reports can also be found on the World Wide Web at <http://www.ntep.org>.*

## ON-SITE PUTTING GREEN TEST LOCATIONS

Golf Course	Location	Superintendent	Research Cooperator
<i>Bentgrass only</i>			
Crystal Springs Golf Course	Burlingame, California	Ray Davies	Dr. Ali Harivandi, California Cooperative Extension
Fox Hollow at Lakewood	Lakewood, Colorado	Bruce Nelson	Dr. Tony Koski, Colorado State University
Lassing Pointe Golf Course	Florence, Kentucky	Jerry Coldiron	Dr. A. J. Powell, University of Kentucky
North Shore Country Club	Glenview, Illinois	Dan Dinelli	Dr. Tom Voigt, University of Illinois
Purdue University Kampen Course	West Lafayette, Indiana	Jim Scott	Dr. Zac Reicher, Purdue University
Snoqualmie Ridge C. C.	Snoqualmie, Washington	Tom Wolff	Dr. Gwen Stahnke, Washington State University
Westchester Country Club	Rye, New York	Joe Alonzi	Dr. James Murphy, Rutgers University
Westwood Golf Course	Vienna, Virginia	Walter Montross	Dr. David Chalmers, Virginia Tech University
<i>Bentgrass and Bermudagrass</i>			
Bent Tree Country Club	Dallas, Texas	Keith Ihms	Dr. Milt Engelke, Texas A&M University
Country Club of Birmingham	Birmingham, Alabama	Lee McLemore	Dr. Elizabeth Guertal, Auburn University
Country Club of Green Valley	Green Valley, Arizona	Mike Bates	Dr. David Kopec, University of Arizona
The Missouri Bluffs	St. Charles, Missouri	Mike Vogt	Dr. John Dum, University of Missouri
SCGA Members Club	Murrieta, California	John Martinez	Dr. Robert Green, University of California-Riverside
<i>Bermudagrass only</i>			
Country Club of Mobile	Mobile, Alabama	Ron Wright	Dr. Bryan Unruh, University of Florida
Jupiter Island Club	Hobe Sound, Florida	Rob Kloska	Dr. John Cisar, University of Florida
Lakeside Country Club	Houston, Texas	Mike Sandburg	Dr. Richard White, Texas A&M University

## USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST

### Entries and Sponsors

Entry No.	Name	Sponsor
1	L-93	Simplot Turf & Horticulture
2	Putter	Simplot Turf & Horticulture
3	Cato	Pickseed West, Inc.
4	Crenshaw	ProSeeds Marketing, Inc.
5	Grand Prix (LCB-103)	LESCO, Inc.
6	Penncross	Standard entry
7	Backspin	Turf Merchants, Inc.
8	Trueline	Turf Merchants, Inc.
9	Providence	Seed Research of Oregon
10	SR 1020	Seed Research of Oregon
11	SR 1119	Seed Research of Oregon
12	Viper	Cebeco International Seeds, Inc.
13	Century	ProSeeds Marketing, Inc.
14	Imperial	ProSeeds Marketing, Inc.
15	Penn A-1	Tee-2-Green Corp.
16	Penn A-4	Tee-2-Green Corp.
17	Penn G-6	Tee-2-Green Corp.
18	Penn G-1	Tee-2-Green Corp.

TABLE 1A. 2000 MANAGEMENT - ON-SITE BENTGRASS TEST AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Seeding date	16-Sep-97	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						(1000 sq.ft.)
		Foliar application					
FACTORS OF PLAY		applied weekly in Feb. - Nov.		1/10-1/32 lb N	March, May, late July, and Sept.	Pre-San	2 lbs. product
		Granular application					
Date opened for play	year round	Feb., March, April	26-0-22 (Nutralene+KNO <sub>3</sub> )	0.5-0.6 lb. N			
Date closed for play		May, June	K <sub>2</sub> SO <sub>4</sub> (0-0-24)	1 lb. K <sub>2</sub> O			
Type of spikes allowed	softspikes	September	26-0-22 (Nutralene+KNO <sub>3</sub> )	0.6 lb. N			
Uses of green	chipping	October	26-0-22 (Nutralene+KNO <sub>3</sub> )	0.6 lb. N			
MOWING					INSECTICIDES		
Initial height	0.25"	FUNGICIDES			Date(s)	Product	Rate (oz./M)
Current height	0.135 -0.150"	Date(s)	Product	Rate (oz./M)			
Frequency	6-7 days/week			(1000 sq.ft.)	as needed for cutworms	Talstar	1 lb./100 sq.ft.
Type of mower	Toro 800 walk				early May	Nemacur	2.3 lbs./1000 sq.ft.
Rollers used	Rolling as needed (1/2x/week)	Fungicides applications are made from Feb. to early Dec. depending on weather conditions. Big problem with pythium so Alliette, Banol, Subdue, and Heritage are	Alliette	4			
Groomers used	6-7x/week Oct-June		Banol	2			
CULTIVATION			Subdue Maxx	1	OTHER PRODUCTS		
			Dithane	4	Date(s)	Product	Rate (oz./M)
			Daconil Ultrex	4-8 oz.			
Aerification - dates	5/8" hollow x 2 direction - Feb. 1/4" hollow tine (June-August) 5/8" tine - Sept. Hydroject every other week (Feb.- Nov.).	rotated and sprayed on a two weeks schedule in May-Nov.	Heritage	0.4	weekly as needed	Astron	1
			Consyst	4	weekly as needed	Perkup	3
			Terrazole	6	6-May-98	Primo	8 oz./Acre
Verticutting	Lightly verticut in April & June.				10-Jun-98	Primo	8 oz./Acre
Dates of topdressing		Heavy topdressed after Feb. and Sept. aerifications to fill holes. Lightly topdressed biweekly during growing season.				NOTES/COMMENTS	
Other cultural practices		Rolled heavy after aerifications				This green gets a lot of play.	

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TABLE 1B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	LEAF TEXTURE	WINTER COLOR	FALL	FALL	FALL	FALL	QUALITY RATINGS												
				COLOR SEPTEMBER	COLOR OCTOBER	COLOR NOVEMBER	COLOR DECEMBER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
PENN A-1	6.0	7.3	6.0	7.7	7.7	6.0	7.0	7.3	7.0	7.3	7.3	7.3	7.7	7.3	7.7	7.0	7.3	7.0	7.0	7.3
PENN A-4	5.7	7.0	5.7	7.3	7.7	6.0	7.0	7.7	7.0	8.0	7.0	7.3	7.7	7.3	7.3	7.0	7.0	6.7	7.7	7.3
CENTURY	5.0	7.3	5.0	7.3	7.0	6.3	6.3	6.7	7.0	6.7	7.0	7.0	7.3	7.7	5.7	7.0	7.0	6.7	7.0	6.9
PENN G-1	5.7	6.3	5.7	7.3	7.3	6.3	6.3	6.7	7.0	6.7	7.0	7.0	7.0	7.0	7.0	7.0	7.3	6.3	6.3	6.9
BACKSPIN	6.0	7.0	6.0	6.7	7.0	5.3	6.7	6.3	7.0	6.3	7.0	7.0	7.0	7.3	6.0	7.0	7.0	6.0	7.0	6.8
GRAND PRIX (LCB-103)	5.3	6.7	5.3	7.0	6.7	5.0	7.0	6.0	7.0	7.7	6.7	7.0	7.0	7.0	6.7	6.7	7.0	6.7	6.7	6.8
IMPERIAL	6.3	6.7	6.3	7.0	7.3	5.7	6.7	5.7	6.7	6.3	7.0	7.0	7.0	7.3	6.3	7.0	7.0	6.7	6.3	6.7
SR 1020	6.3	6.3	6.3	6.0	6.7	6.0	6.3	6.7	7.0	6.7	7.0	7.0	6.7	7.0	7.0	5.7	7.0	6.3	6.0	6.7
CRENSHAW	7.0	6.7	7.0	7.0	6.7	7.0	6.0	6.7	6.3	5.7	7.0	7.3	7.0	7.0	7.0	7.0	7.0	6.3	5.0	6.6
PENN G-6	6.3	6.3	6.3	7.0	7.0	6.3	6.3	6.0	6.7	6.3	7.0	6.7	7.0	6.7	6.3	7.0	7.0	6.3	6.3	6.6
PROVIDENCE	7.3	6.0	7.3	6.0	7.0	7.0	6.7	5.7	6.7	5.7	7.0	6.7	7.0	7.0	6.3	6.3	7.0	6.7	5.7	6.5
SR 1119	7.7	6.3	7.7	6.3	7.0	7.7	6.7	6.0	6.7	5.7	7.0	6.7	6.7	7.0	6.7	7.0	6.7	6.7	5.7	6.5
L-93	6.7	5.7	6.7	6.0	6.7	7.0	6.3	6.0	6.7	6.3	6.7	6.3	6.7	6.7	7.0	6.3	6.7	6.0	6.0	6.4
PUTTER	6.3	5.3	6.3	5.7	6.3	6.3	6.3	6.7	7.0	5.7	6.7	6.0	6.0	6.0	6.3	5.7	6.7	6.0	6.0	6.2
TRUELINE	7.0	5.7	7.0	5.7	6.3	6.3	6.3	6.0	6.3	6.0	7.0	6.3	6.3	6.3	6.0	6.0	6.0	6.0	5.7	6.2
CATO	7.0	5.0	7.0	5.3	6.3	6.3	6.0	5.7	6.7	5.7	6.3	6.3	6.3	6.3	5.7	5.3	6.7	6.3	5.7	6.1
VIPER	7.3	5.3	7.3	6.0	6.3	7.0	6.0	5.7	6.3	5.7	7.0	6.0	6.0	6.3	6.3	6.0	6.3	6.0	5.7	6.1
PENNCROSS	6.0	4.7	6.0	4.7	6.0	5.7	6.0	5.3	6.0	5.0	5.7	6.3	5.7	6.0	4.3	4.7	5.3	5.0	4.7	5.3
LSD VALUE	1.0	1.2	1.0	1.1	1.3	1.1	1.0	1.5	1.2	1.1	0.8	0.9	0.8	1.7	1.2	1.2	0.6	1.1	1.0	0.3
C.V. (%)	9.0	11.0	9.0	10.0	8.7	9.6	6.8	11.6	6.9	9.9	6.0	6.8	7.1	10.1	10.8	10.4	5.7	8.3	9.8	3.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 2A. 2000 MANAGEMENT - ON-SITE BENTGRASS TEST AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY)

ESTABLISHMENT		FERTILIZATION			INSECTICIDES		
Seeding date	October 1997	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	one plot washed out-replanted	start 10/ to 5/15 (bi-weekly)	Florentine liquid	0.25 lbs. N	April	Bill bugs adults treated with dilox at lable rate	
FACTORS OF PLAY		2/22, 3/30	15-15-15	1 lbs. N	May	Bill bugs and rove beetles treated with fonofos - crusade at lable rate	
Date opened for play	Open all year						
Date closed for play							
Type of spikes allowed	soft only						
Uses of green	Practice putting						
MOWING		FUNGICIDES			OTHER PRODUCTS		
Initial height	5/32"	Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Current height	5/32"						
Frequency	6X/week	None					
Type of mower	walk (Mon.-Fri.), triplex - Sat.						
Rollers used	Grooved roller						
Groomers used	None						
CULTIVATION		HERBICIDES			NOTES/COMMENTS		
Aerfication - dates	Quad tine - 3/30, 6/6	Date(s)	Product	Rate (oz./M)			
Aerification - type	Hollow tine - 11/24, 4/27						
Verticutting	Vert Lite - 10/6, 11/24, 1/25, 4/27, 3/30, 2/22						
Dates of topdressing	Same as lite vert dates						
Other cultural practices							

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TABLE 2B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/  
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	DENSITY RATINGS			PERCENT LIVING COVER			WINTER COLOR	FALL	FALL	FALL	FALL	STIMPMETER READINGS		
				SPRING	SUMMER	FALL	SPRING	SUMMER	FALL		COLOR	COLOR	COLOR	COLOR	SPRING	SUMMER	FALL
PENN A-4	6.3	7.0	8.3	8.3	8.0	8.7	99.0	99.0	99.0	5.3	6.7	6.7	7.0	6.7	100.0	112.3	92.0
BACKSPIN	5.3	6.7	7.3	7.3	7.3	8.0	96.0	97.0	97.7	6.3	5.3	4.3	4.7	5.7	99.0	107.7	91.0
PENN A-1	5.7	5.3	7.3	6.7	7.0	7.3	93.0	97.0	97.7	5.7	6.7	6.0	6.0	6.3	106.3	115.0	99.3
SR 1119	6.7	7.0	7.3	7.7	7.0	7.3	98.3	97.3	98.7	7.0	7.0	6.3	6.7	6.7	95.0	115.7	88.7
CENTURY	5.3	5.0	7.7	8.0	6.7	7.7	95.3	94.0	99.0	5.3	6.0	5.3	5.3	5.7	115.7	106.0	104.3
GRAND PRIX (LCB-103)	4.7	4.7	7.7	8.0	7.7	7.7	98.7	98.7	98.7	5.0	5.0	4.3	4.3	5.0	99.3	110.3	97.0
L-93	5.7	6.3	6.7	7.0	7.0	7.7	97.3	97.0	98.7	6.7	6.3	5.3	6.0	6.3	104.3	108.0	98.0
SR 1020	5.3	6.3	6.7	6.7	6.0	7.0	93.3	91.7	96.7	6.3	6.0	4.0	5.0	6.3	110.3	108.0	96.3
PROVIDENCE	5.7	7.0	6.0	6.7	6.0	7.0	94.3	92.3	97.3	6.7	6.7	4.7	5.3	6.0	94.7	104.7	95.0
PENN G-1	5.7	7.0	7.3	8.0	7.7	7.7	98.3	98.3	99.0	5.7	5.3	5.0	5.3	5.3	104.0	112.7	92.3
IMPERIAL	5.0	6.0	7.3	7.7	7.0	7.7	97.7	97.0	97.7	5.3	6.0	4.7	5.0	5.0	102.7	109.3	100.3
TRUELINE	6.0	6.3	6.7	7.0	6.3	7.3	96.7	95.0	98.7	6.3	6.7	4.7	5.3	5.7	103.0	108.3	99.7
CRENSHAW	6.0	6.0	7.0	7.0	7.0	6.7	95.3	97.3	96.7	7.0	6.3	5.3	6.0	6.7	100.3	110.0	94.0
VIPER	6.0	7.3	6.7	7.0	6.7	6.7	95.0	94.0	97.3	7.3	7.7	4.7	6.0	7.0	103.0	110.0	96.3
PENN G-6	6.0	6.3	7.0	6.7	6.7	7.0	95.0	96.7	97.7	6.0	5.3	4.0	5.0	5.7	107.3	107.3	102.3
CATO	5.3	6.0	7.0	7.3	6.7	6.7	95.3	96.7	97.3	5.7	6.0	5.0	5.3	5.3	107.7	107.3	101.3
PUTTER	4.7	5.3	6.3	6.0	5.7	7.0	90.0	90.0	97.0	5.7	5.7	4.7	5.3	4.7	99.3	110.3	92.7
PENNCROSS	4.0	4.7	5.7	6.3	5.3	6.3	91.7	86.7	96.0	5.0	4.3	4.0	4.3	4.3	96.3	106.7	95.7
LSD VALUE	1.0	1.7	1.1	1.6	1.3	1.7	7.8	6.0	4.1	1.0	2.5	1.8	1.2	1.3	17.9	11.3	20.5
C.V. (%)	10.3	13.4	8.8	10.6	10.5	10.1	3.5	3.4	1.5	9.9	17.7	17.6	12.5	12.3	7.3	4.0	7.4

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 2B.  
(CONT'D)

MEAN TURFGRASS QUALITY RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY) 1/  
2000 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=BEST 2/

NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
PENN A-4	6.7	7.0	7.0	8.3	6.7	8.3	8.0	6.7	6.3	7.0	6.7	8.7	7.3
BACKSPIN	6.7	7.3	7.7	8.0	6.0	7.0	6.7	6.3	4.7	6.0	6.0	6.7	6.6
PENN A-1	5.3	6.0	6.0	6.7	6.3	7.3	6.3	6.0	6.3	6.0	6.0	7.0	6.3
SR 1119	6.3	7.5	7.0	7.3	6.7	7.3	6.7	5.7	4.7	6.0	5.3	5.3	6.3
CENTURY	6.0	7.5	7.5	6.3	5.7	6.3	6.0	6.7	4.7	6.0	6.0	6.7	6.2
GRAND PRIX (LCB-103)	6.7	7.0	7.0	9.0	5.3	7.0	6.0	5.7	4.0	5.7	5.3	6.7	6.2
L-93	6.0	6.3	6.3	7.7	5.3	6.7	6.0	6.3	5.7	6.0	6.0	6.3	6.2
SR 1020	6.3	6.7	5.7	7.0	5.0	5.3	6.0	7.0	6.0	6.0	7.0	6.7	6.2
PROVIDENCE	6.0	6.7	7.3	7.7	4.7	5.7	5.7	6.0	5.3	5.7	6.0	6.3	6.1
PENN G-1	6.0	7.0	7.0	8.0	5.3	6.7	5.3	5.3	4.7	5.0	5.3	6.3	6.0
IMPERIAL	4.7	6.0	6.7	7.7	5.3	6.7	6.0	6.0	4.3	6.0	5.3	6.3	5.9
TRUELINE	6.7	6.7	6.7	8.0	5.0	5.7	6.0	5.0	4.0	5.3	5.0	6.3	5.9
CRENSHAW	5.3	6.3	5.7	7.0	5.0	7.0	6.5	6.0	5.0	5.7	5.7	5.0	5.8
VIPER	5.7	6.0	7.0	7.7	4.3	6.0	5.7	5.3	5.3	5.3	5.7	5.7	5.8
PENN G-6	5.3	7.0	6.5	7.0	5.7	6.3	5.7	5.0	5.0	5.0	4.7	6.7	5.7
CATO	5.7	6.3	5.7	7.3	4.7	6.3	5.7	5.3	4.3	5.0	5.0	5.7	5.6
PUTTER	5.0	6.7	6.7	6.7	4.3	5.3	4.7	5.3	5.7	4.7	5.3	6.7	5.6
PENNCROSS	6.3	7.0	7.0	6.7	2.7	4.7	4.7	4.7	3.7	4.7	4.3	6.7	5.3
LSD VALUE	2.8	-	3.1	2.8	2.3	1.6	2.7	-	3.8	3.1	3.7	1.8	2.0
C.V. (%)	16.9	19.1	15.8	13.8	20.9	13.4	17.9	21.1	26.6	18.8	21.7	13.9	11.9

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 3A. 2000 MANAGEMENT - ON-SITE BENTGRASS TEST AT BURLINGAME, CA (CRYSTAL SPRINGS GOLF COURSE)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Seeding date	25-Sep-97	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	10-Jan	Floratine NOW 12-0-12	2 fl. oz.	20-Jul	Triplet	0.66 fl.oz./M
FACTORS OF PLAY		13-Jan	Milorganite 6-2-0	8.0		/2,4-D, MCP, P, Dicamba	
		3/21, 4/7	Seasource 16-4-8	5.5			
		1-May	Milorganite 6-2-0	7.5			
		31-May	Scotts 29-2-3	3.2 fl. oz.			
Date opened for play	open all year	22-Jun	Milorganite 6-2-0	9.7	INSECTICIDES		
Date closed for play		22-Aug	Milorganite 6-2-0	9.5			
Type of spikes allowed	Softspikes encouraged	9/1, 9/15	Floratine NOW 6-12-3	1.9 fl. oz.			
Uses of green	putting only (80,000 rounds/year)	27-Sep	Nutralene 40-0-0	3.5			
		25-Oct	Milorganite 6-2-0	9.0			
MOWING		31-Oct	Floratine NOW 6-12-3	2.6 fl. oz.	Date(s)	Product	Rate (oz./M)
		12/6, 12/27	Floratine NOW 12-0-12	2.6 fl. oz.	None		
Initial height	5/32"	FUNGICIDES					
Current height	5/32"						
Frequency	3 times/week						
Type of mower	walking						
Rollers used	None						
Groomers used	None						
CULTIVATION		15-Feb	Cleary's 3336G /Tiophanate Methyl	3 lbs./M	OTHER PRODUCTS		
		11-May	Cavalier 2G /Tiophanate Methyl	3 lbs./M			
Aerification - dates	1/7, 3/21, 8/4 - 1/4" hollow tines.	5/31, 7/20	Heritage/Azoxystrobin	0.4	NOTES/COMMENTS		
Aerification - type	6/14, 6/21, 6/28, 7/5, 7/27, 10/25, 12/5 - Toro Spiker	29-Aug	Scotts Systemic Fungicide /Tiophanate Methyl	2 lbs./M			
Verticutting	None	15-Sep	Heritage/Azoxystrobin	0.4			
Dates of topdressing	4/20, 9/7, 10/13 - Sand	31-Oct	Chipco 26019/Iprodione	3			
Other cultural practices	None	21-Dec	Cleary's 3336G /Tiophanate Methyl	3 lbs./M			

Product and company names mentioned herein may be trademarks and/or registered trademarks of their respective owners

TABLE 3B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT BURLINGAME, CA (CRYSTAL SPRINGS G.C.) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/  
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	LEAF TEXTURE	DENSITY FALL	PERCENT		STIMPMETER READINGS						QUALITY RATINGS						MEAN	
				POA ANNUA	MAY	OCTOBER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV		DEC
L-93	8.0	8.3	8.7	2.0	97.3	116.0	7.0	7.0	8.3	7.3	6.7	6.3	7.7	7.7	7.3	8.7	8.7	8.0	7.6
CRENSHAW	7.7	8.0	9.0	1.0	98.7	126.3	7.3	7.0	8.0	7.7	7.0	6.7	7.7	6.7	6.7	8.0	8.7	7.3	7.4
PENN A-4	6.7	7.7	8.0	2.0	108.3	129.7	6.0	6.7	7.7	7.0	8.0	6.7	7.7	7.7	6.7	7.3	8.7	8.3	7.4
PENN G-6	7.3	7.7	8.7	1.0	107.3	123.0	7.3	7.0	7.7	7.3	6.7	6.7	7.7	6.3	7.3	8.0	8.7	7.7	7.4
IMPERIAL	7.3	8.0	8.7	1.7	89.3	124.3	7.3	7.0	7.7	7.0	6.7	6.3	7.3	7.0	6.3	7.7	8.3	7.7	7.2
PENN A-1	6.7	8.0	8.0	1.0	102.7	123.7	7.0	7.0	8.0	7.3	6.7	6.3	7.3	7.0	7.3	6.7	8.7	7.3	7.2
SR 1119	7.7	8.0	8.3	3.3	97.3	128.0	6.3	6.7	7.0	7.3	7.0	6.3	7.7	7.0	7.3	8.0	8.7	7.3	7.2
BACKSPIN	8.0	8.3	9.0	1.0	98.0	121.3	6.7	7.0	7.7	7.0	6.3	6.3	7.0	6.3	7.3	7.3	8.3	7.7	7.1
CENTURY	7.3	8.7	8.3	1.0	99.3	121.3	6.3	7.0	8.0	6.3	6.7	6.7	7.3	8.0	7.0	7.3	7.7	7.3	7.1
PENN G-1	7.3	8.3	8.7	2.3	94.7	118.3	6.0	6.7	7.7	6.7	6.7	7.0	7.3	7.3	6.7	7.0	8.3	8.3	7.1
GRAND PRIX (LCB-103)	7.3	7.7	8.0	1.7	102.0	125.7	6.7	7.0	7.7	7.0	6.3	5.7	7.0	7.0	6.3	7.3	8.3	7.7	7.0
PROVIDENCE	7.3	7.7	8.7	2.7	99.3	125.0	6.7	6.7	7.0	7.3	7.3	6.7	7.0	5.7	6.0	7.7	8.3	7.7	7.0
SR 1020	6.0	7.7	7.7	2.3	103.3	124.7	6.3	7.3	7.7	6.7	7.0	7.0	7.0	6.0	5.3	6.3	7.7	7.3	6.8
VIPER	6.3	7.3	7.7	1.3	91.3	124.7	6.3	6.7	7.0	6.7	7.0	6.3	5.7	6.3	5.3	6.7	8.3	7.7	6.7
CATO	6.7	7.0	7.0	3.0	105.3	126.0	6.0	6.3	6.3	6.7	5.3	6.0	6.7	5.3	7.0	7.0	7.7	6.7	6.4
PUTTER	6.0	7.0	7.0	1.7	102.0	123.3	6.7	7.0	8.0	5.3	6.0	6.3	6.7	6.3	4.7	6.0	7.7	6.7	6.4
TRUELINE	6.7	7.7	7.7	3.3	100.0	127.7	6.3	6.3	6.7	6.3	5.3	5.7	6.7	6.7	5.0	7.0	8.3	7.0	6.4
PENNCROSS	5.7	6.3	6.3	1.7	111.7	131.7	6.0	5.3	5.3	6.0	4.7	4.7	5.0	7.3	6.0	5.7	7.3	6.3	5.8
LSD VALUE	1.9	1.7	1.7	3.0	20.0	13.4	1.4	2.0	1.2	2.7	2.3	1.8	1.3	1.5	1.6	2.1	1.8	1.8	0.7
C.V. (%)	12.5	9.5	10.5	61.8	8.0	4.3	9.3	10.6	9.3	13.8	15.4	12.0	10.2	11.5	13.6	13.0	8.3	10.0	5.8

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 4A. 2000 MANAGEMENT - ON-SITE BENTGRASS TEST AT MURRIETA, CA (The SCGA MEMBERS' CLUB)

ESTABLISHMENT		FUNGICIDES			INSECTICIDES		
Seeding date	Sept. 1997	Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	19-Jan	Daconil WS	2	11-Jul	Merit (75 WSP)	0.19
		2-Jun	Subdue (F)	2	14-Aug	Tempo 20 WP	5 grams/1000
FACTORS OF PLAY		27-Jul	Daconil WS	2			
		3-Aug	Alliette	4			
Date opened for play		3-Aug	Fore (WP)	8			
Date closed for play		14-Aug	Subdue Maxx	1	HERBICIDES		
Type of spikes allowed	Softspikes only	14-Aug	Fore (WP)	8			
Uses of green	putting, chipping, target. Heavy use PPG.	20-Nov	26 Chipco GT Flo.	5	Date(s)	Product	Rate (oz./M)
					28-Jan	Betasan	4
MOWING							
Initial height	0.125"				OTHER PRODUCTS		
Current height	0.125"						
Frequency	7 days/week				Date(s)	Product	Rate (oz./M)
Type of mower	Triplex - GKV						
Rollers used	Groomers used						
Groomers used	approximate 4 days/week. Rollers used 1-2 times per month.						
CULTIVATION							
					NOTES/COMMENTS		
Aerification - dates	3/14, 10/10				Control of "Poa annua" continues to be our biggest problem. Some bentgrass varieties are very resistant to "Poa annua" in comparison to other varieties. Site visits from other Club Officials and Superintendents are frequent.		
Aerification - type	5/8" hollow tine						
Verticutting	2-3 times per month depending upon thatch						
Dates of topdressing	Heavy topdressing w/USGA spec. sand on 3/14, 10/10, following aerification. Light topdressing w/#30 silica sand monthly except Jan. and Feb.						
Other cultural practices	Heavy brushing in Mar., Oct. Rolled for special tournament events which is 1-2 times/month. Flushed with 6" of irrigation water once every 3 weeks from June-Oct. to lower High E.C. (100% reclaimed irrigation use in 2000)						

Product and company names mentioned herein may be trademarks and/or registered trademarks of their respective owners

TABLE 4A. (CONT'D) 2000 MANAGEMENT - ON-SITE BENTGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

FERTILIZATION

Date(s)	Product Name	Product Analysis	Rate (lbs./M)		
			N	P	K
5-Jan	Turf Partners	7-0-0	0.02		
5-Jan	Turf Partners	1-0-23			0.07
5-Jan	Turf Partners	7-32-6	0.02	0.1	0.02
5-Jan	Crown Tech.	FeSO4			
14-Jan	Nutriculture	20-20-20	0.08	0.08	0.08
14-Jan	Turf Partners	1-0-23			0.07
14-Jan	Turf Partners	7-0-0	0.02		
14-Jan	Crown Tech.	FeSO4			
14-Jan	Turf Partners	7-32-6	0.02	0.1	0.02
24-Jan	Turf Partners	1-0-23			0.07
24-Jan	Turf Partners	Eco-Mag			
24-Jan	Turf Partners	7-32-6	0.02	0.1	0.02
24-Jan	Turf Partners	7-0-0	0.02		
9-Feb	Best	10-4-16	0.4	0.16	1.62
22-Feb	True Green	34-0-0	0.04		
22-Feb	Turf Partners	7-0-0	0.02		
22-Feb	Turf Partners	Eco-Mag			
22-Feb	Crown Tech.	FeSO4			
1-Mar	Nutriculture	28-8-18	0.08	0.02	0.05
1-Mar	Turf Partners	1-0-23			0.07
1-Mar	Turf Partners	1-0-0 (8% Ca)			
1-Mar	Turf Partners	7-32-6	0.02	0.1	0.02
1-Mar	Turf Partners	Eco-Mag			
1-Mar	Crown Tech.	FeSO4			
2-Mar	Best	10-4-16	0.62	0.25	0.99
8-Mar	Turf Partners	1-0-0 (8% Ca)			
8-Mar	Turf Partners	1-0-23			0.07
8-Mar	Turf Partners	7-32-6	0.02	0.1	0.02
8-Mar	Turf Partners	7-0-0	0.02		
17-Mar	Nutriculture	20-20-20	0.06	0.06	0.06
17-Mar	Nutriculture	34-0-0	0.04		
17-Mar	Turf Partners	Eco-Mag			

FERTILIZATION

Date(s)	Product Name	Product Analysis	Rate (lbs./M)		
			N	P	K
17-Mar	Crown Tech.	FeSO4			
27-Mar	Nutriculture	28-8-18	0.08	0.02	0.05
27-Mar	Turf Partners	1-0-23			0.07
27-Mar	Turf Partners	7-32-6	0.02	0.1	0.02
27-Mar	Crown Tech.	FeSO4			
2-Apr	Turf Partners	Gypsum			
3-Apr	Turf Partners	34-0-0	0.01		
3-Apr	Turf Partners	1-0-0 (8% Ca)			
3-Apr	Turf Partners	1-0-23			0.07
3-Apr	Nutriculture	28-8-18	0.08	0.02	0.05
3-Apr	Nutriculture	24-0-0	0.07		
14-Apr	Turf Partners	34-0-0	0.1		
14-Apr		0-0-34			0.09
18-Apr	Best	18-3-18 (Polyon)	0.5	0.08	0.5
23-Apr	Turf Partners	0-0-34			0.2
23-Apr	Nutriculture	28-8-18	0.08	0.02	0.05
23-Apr	Turf Partners	Eco-Mag			
23-Apr	Crown Tech.	FeSO4			
26-Apr	Nutriculture	28-8-18	0.08	0.02	0.05
26-Apr	Turf Partners	1-0-23			0.07
26-Apr	Turf Partners	Eco-Mag			
26-Apr	promot	Promot			
26-Apr	Crown Tech.	FeSO4			
1-May	Turf Partners	34-0-0	0.07		
1-May	Crown Tech.	FeSO4			
7-May	Best	18-3-18 (Polyon)	0.5	0.08	0.5
12-May	Nutriculture	28-8-18	0.08	0.02	0.05
12-May	Crown Tech.	FeSO4			
12-May	Turf Partners	1-0-23			0.04
12-May	Turf Partners	Eco-Mag			
23-May	Nutriculture	20-20-20	0.06	0.06	0.06
23-May	Turf Partners	1-0-23			0.04

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TABLE 4A. (CONT'D) 2000 MANAGEMENT - ON-SITE BENTGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

FERTILIZATION

FERTILIZATION

Date(s)	Product Name	Product Analysis	Rate (lbs./M)			Date(s)	Product Name	Product Analysis	Rate (lbs./M)		
			N	P	K				N	P	K
23-May	Crown Tech.	FeSO4				1-Oct	Turf Partners	Gypsum			
31-May	Nutriculture	28-8-18	0.08	0.02	0.05	4-Oct	Best	10-4-16	0.26	0.11	0.42
31-May	Nutriculture	24-0-0	0.07			25-Oct	Turf Partners	0-0-34			0.1
14-Jun	Nutriculture	34-0-0	0.07			25-Oct	Nutriculture	28-8-18	0.08	0.02	0.05
14-Jun	Turf Partners	1-0-23			0.14	12-Nov	K-Power	34-0-0	0.1		
14-Jun	Turf Partners	8% chelated Fe				12-Nov	Turf Partners	1-0-23			0.07
19-Jun	Turf Partners	0-0-34			0.07	12-Nov	Crown Tech.	FeSO4			
19-Jun	Nutriculture	24-0-0	0.07			2-Nov	Turf Partners	Gypsum			
24-Jun	Pursell	0-0-46			1.1	15-Nov	Turf Partners	Eco-Mag			
10-Jul	Turf Partners	0-0-34			0.07	15-Nov	Turf Partners	1-0-23			0.14
10-Jul	Turf Partners	7-0-0	0.1			15-Nov	K-Power	13.75-0-46	0.04		0.13
16-Jul	Turf Partners	Gypsum				15-Nov	Nutriculture	20-20-20	0.06	0.06	0.06
27-Jul	Pac. Ag. & Turf	0-0-25			0.08	15-Nov	Crown Tech.	FeSO4			
27-Jul	Nutriculture	24-0-0	0.1			27-Nov	Turf Partners	0-0-34			0.07
8-Aug	Pac. Ag. & Turf	0-0-25			0.1	27-Nov	Nutriculture	28-8-18	0.08	0.02	0.05
8-Aug	Nutriculture	24-0-0	0.1			3-Dec	Lebenon S.G.	20-0-20	0.5		0.5
17-Aug	Turf Partners	Gypsum				7-Dec	K-Power	13.75-0-46	0.04		0.13
19-Aug	Turf Partners	0-0-34			0.07	7-Dec	Turf Partners	34-0-0			0.07
19-Aug	Nutriculture	28-8-18	0.08	0.02	0.05	7-Dec	Turf Partners	1-0-0-8Ca			
19-Aug	Sequestar	13% Fe				16-Dec	Best	10-4-16	0.4	0.16	1.62
5-Sep	Turf Partners	0-0-34			0.07	22-Dec	Nutriculture	28-8-18	0.08	0.02	0.05
5-Sep	K-Power	13.75-0-46	0.04		0.13	22-Dec	Turf Partners	34-0-0			0.07
5-Sep	Sequestar	13% Fe				22-Dec	Crown Tech.	FeSO4			
11-Sep	Turf Partners	1-0-0-8Ca				27-Dec	Turf Partners	34-0-0			0.1
11-Sep	Turf Partners	1-0-23			0.07	27-Dec	Nutriculture	20-20-20	0.1	0.1	0.1
11-Sep	Nutriculture	34-0-0	0.1								
19-Sep	Best	10-4-16	0.62	0.25	0.99			Total	6.03	1.89	11.59

Product and company names mentioned herein may be trademarks and/or registered trademarks of their respective owners

TABLE 4B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT MURRIETA, CA (SCGA MEMBERS CLUB) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/  
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	LEAF TEXTIURE	PERCENT	PERCENT	PERCENT	STIMPMETER READINGS		QUALITY RATINGS							MEAN
			POA ANNUA MAR.	POA ANNUA OCT.	POA ANNUA DEC.	JULY	DECEMBER	JAN	FEB	JUN	JUL	AUG	OCT	DEC	
PENN A-4	7.7	8.0	8.3	13.3	13.3	129.7	150.7	7.7	8.3	8.0	8.0	8.0	8.0	7.3	7.9
PENN A-1	7.3	8.0	23.3	31.7	26.7	122.0	159.7	7.7	8.0	7.0	8.0	8.0	7.0	7.3	7.6
PENN G-1	7.7	7.7	20.0	25.0	26.7	133.0	159.7	7.3	8.0	7.7	8.0	8.0	7.0	7.0	7.6
CENTURY	7.7	8.0	25.0	33.3	28.3	127.7	163.7	7.0	7.7	7.0	7.7	8.0	7.3	7.0	7.4
BACKSPIN	7.3	7.7	30.0	36.7	41.7	130.3	154.7	7.0	7.3	7.0	8.0	8.0	7.0	7.0	7.3
GRAND PRIX (LCB-103)	7.7	8.0	28.3	35.0	28.3	124.0	156.3	7.0	7.3	7.0	7.7	8.0	7.0	7.0	7.3
PENN G-6	8.0	8.0	16.7	21.7	21.7	141.7	153.0	7.0	7.3	7.3	7.7	8.0	7.0	7.0	7.3
CRENSHAW	7.3	7.3	50.0	58.3	46.7	133.3	159.3	7.0	7.0	7.0	7.7	7.7	7.0	7.0	7.2
L-93	7.3	7.3	45.0	55.0	46.7	143.7	156.0	7.0	7.0	7.0	7.3	8.0	7.0	7.0	7.2
CATO	7.3	7.0	53.3	58.3	53.3	145.0	160.0	7.0	7.0	7.0	7.0	8.0	7.0	7.0	7.1
IMPERIAL	7.7	7.3	36.7	46.7	43.3	138.3	158.3	7.0	7.0	7.0	7.3	7.7	7.0	7.0	7.1
PROVIDENCE	7.0	7.0	38.3	46.7	50.0	123.7	160.3	7.0	7.0	7.0	7.3	7.7	7.0	7.0	7.1
PUTTER	7.3	7.3	50.0	58.3	66.7	128.0	162.0	6.7	7.0	7.0	7.0	8.0	7.0	7.0	7.1
TRUELINE	7.3	7.0	36.7	41.7	53.3	134.7	162.7	7.0	7.0	6.7	7.3	8.0	7.0	7.0	7.1
SR 1020	7.0	7.0	46.7	51.7	56.7	135.0	161.0	7.0	7.0	6.7	7.0	7.3	6.7	7.0	7.0
SR 1119	7.3	7.7	50.0	60.0	51.7	125.0	158.7	6.7	7.0	7.0	7.0	7.3	7.0	7.0	7.0
VIPER	7.0	7.0	63.3	70.0	75.0	138.0	160.3	7.0	7.0	7.0	7.0	7.3	7.0	7.0	7.0
PENNCROSS	7.0	7.0	70.0	75.0	75.0	138.7	158.0	6.0	7.0	6.0	7.0	7.0	6.0	6.7	6.5
LSD VALUE	1.3	0.6	15.7	14.2	13.4	33.1	-	0.5	0.5	0.5	0.6	0.6	0.3	0.7	0.2
C.V. (%)	6.2	4.7	25.8	20.1	19.4	8.8	4.2	4.2	4.2	4.0	4.6	4.0	2.7	3.4	1.6

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 5B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
 1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
 AT LAKEWOOD, CO (FOX HOLLOW AT LAKEWOOD) 1/  
 2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	SUMMER DENSITY	QUALITY RATINGS							MEAN
					APR	MAY	JUN	JUL	AUG	SEP	OCT	
PENN A-1	6.3	6.0	8.7	8.7	7.3	8.0	9.0	9.0	9.0	8.7	7.3	8.3
CENTURY	6.0	6.7	8.0	8.0	7.3	8.0	8.3	8.7	8.7	8.0	7.7	8.1
PENN A-4	7.0	6.0	9.0	8.7	7.7	8.0	8.7	8.7	8.7	8.0	7.3	8.1
L-93	7.7	6.7	8.0	8.0	7.3	8.0	8.0	8.7	8.3	8.0	7.3	8.0
IMPERIAL	6.3	6.3	8.3	8.0	7.3	7.7	8.3	8.0	8.0	8.0	7.0	7.8
PENN G-6	7.0	6.0	8.3	8.0	7.0	7.0	7.7	8.3	8.7	8.0	7.0	7.7
PENN G-1	7.0	6.0	8.0	8.0	7.0	7.3	7.7	8.0	8.3	8.0	7.0	7.6
BACKSPIN	6.0	6.3	7.7	8.0	7.0	8.0	8.0	7.7	7.3	7.0	7.0	7.4
CATO	7.0	5.7	7.0	7.3	7.0	7.3	7.7	7.3	8.0	7.3	7.0	7.4
CRENSHAW	7.0	5.3	7.7	7.3	7.0	7.3	7.7	8.0	8.0	7.0	7.0	7.4
SR 1119	7.0	6.7	7.7	8.0	7.0	7.0	7.3	8.0	8.0	7.3	7.0	7.4
GRAND PRIX (LCB-103)	6.0	5.3	8.0	7.7	7.0	7.7	7.7	7.3	7.3	7.0	7.0	7.3
PROVIDENCE	5.7	7.0	7.3	7.0	7.0	7.3	7.7	7.3	7.0	7.0	7.7	7.3
VIEER	8.0	5.3	7.3	7.7	7.0	7.0	7.0	7.3	7.3	7.0	7.0	7.1
SR 1020	6.3	5.0	7.3	7.0	6.3	7.0	7.0	8.0	7.7	6.7	6.0	7.0
TRUELINE	6.0	5.7	6.0	7.0	7.0	7.0	7.0	7.0	6.3	6.0	6.0	6.6
PUTTER	5.3	5.7	5.0	5.3	5.7	5.3	5.3	4.7	5.0	5.0	5.0	5.1
PENNCROSS	5.0	6.0	4.3	5.0	5.0	5.0	5.0	4.7	4.7	5.0	4.7	4.9
LSD VALUE	0.5	0.8	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.4	0.5	0.2
C.V. (%)	5.1	7.7	5.7	4.9	5.3	5.1	6.0	5.9	6.0	3.9	5.1	2.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
 STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 6B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT GLENVIEW, IL (NORTH SHORE COUNTRY CLUB) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	QUALITY RATINGS							
				APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
PENN A-1	6.0	6.7	7.3	7.7	8.3	9.0	6.7	6.7	8.3	7.7	7.8
PENN G-6	6.0	7.0	7.7	7.0	8.0	9.0	6.7	6.7	8.0	7.7	7.6
PENN G-1	6.0	6.0	8.3	6.7	8.0	8.0	5.7	6.3	8.0	7.7	7.2
L-93	6.3	5.3	7.0	7.3	7.3	7.3	5.7	6.0	8.0	7.7	7.0
PENN A-4	6.3	7.0	8.0	6.7	8.0	8.7	5.3	5.7	7.0	7.7	7.0
BACKSPIN	6.3	6.3	6.7	7.3	8.0	7.7	5.0	4.7	7.0	7.3	6.7
PROVIDENCE	6.0	5.7	7.0	6.7	7.3	7.3	5.7	5.7	7.7	6.7	6.7
TRUELINE	6.0	5.3	6.7	6.3	7.0	7.0	5.7	6.3	7.7	6.7	6.7
GRAND PRIX (LCB-103)	5.7	6.3	6.7	7.0	7.3	8.0	4.7	6.0	6.7	6.7	6.6
SR 1119	6.0	6.0	7.3	7.0	7.0	7.3	5.0	6.3	7.0	6.3	6.6
PUTTER	6.0	6.0	6.7	7.3	7.0	7.0	5.7	5.7	6.0	6.7	6.5
IMPERIAL	6.3	6.0	8.0	7.0	7.7	8.0	4.0	5.3	6.0	7.0	6.4
SR 1020	6.0	5.0	7.0	6.3	7.7	7.7	4.7	5.7	6.3	6.7	6.4
VIPER	6.3	4.7	7.0	6.3	7.0	7.7	5.0	5.3	6.0	6.7	6.3
CATO	6.3	5.0	6.7	5.7	6.3	7.7	4.3	5.7	6.7	6.7	6.1
CENTURY	5.3	6.0	7.7	6.7	7.3	7.7	4.3	4.7	5.3	6.0	6.0
CRENSHAW	6.3	4.3	7.0	6.3	6.7	7.3	4.7	5.3	5.3	6.3	6.0
PENNCROSS	6.0	5.3	5.3	6.7	5.7	6.3	5.3	5.3	5.7	5.7	5.8
LSD VALUE	1.1	1.2	1.4	2.7	1.4	0.8	1.3	1.4	1.4	1.8	0.5
C.V. (%)	6.8	11.8	10.0	13.2	9.8	6.5	13.5	12.0	11.9	11.6	4.8

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 7B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT WEST LAFAYETTE, IN (PURDUE UNIVERSITY - KAMPEN G.C.) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	QUALITY RATINGS								
				APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN
FENN G-1	7.0	5.7	7.3	7.7	7.7	8.0	7.3	7.0	7.0	7.7	6.0	7.3
FENN A-4	7.3	5.7	7.7	7.3	7.3	7.3	7.3	7.0	7.0	8.0	6.0	7.2
FENN A-1	7.0	5.3	7.3	6.7	7.0	7.3	7.7	7.0	7.0	7.7	5.7	7.0
IMPERIAL	6.7	5.7	7.3	7.0	7.7	7.3	7.0	6.3	7.0	7.3	5.7	6.9
FENN G-6	7.3	5.0	7.0	7.0	6.7	7.0	7.0	7.0	7.0	7.7	5.3	6.8
CENTURY	6.0	5.3	7.7	6.3	7.0	7.0	7.3	6.7	6.7	7.0	5.3	6.7
GRAND PRIX (LCB-103)	6.3	5.0	7.3	6.7	7.3	7.3	6.7	6.7	6.3	7.0	5.3	6.7
L-93	7.7	3.7	6.3	6.7	7.0	7.3	6.7	6.0	6.7	7.7	5.3	6.7
CATO	6.3	4.7	6.7	7.0	6.7	6.7	6.3	6.0	7.0	7.0	5.3	6.5
SR 1020	7.0	5.0	6.7	6.7	6.7	7.0	6.7	6.3	6.7	7.0	5.3	6.5
SR 1119	8.0	3.7	7.0	6.7	7.0	7.0	6.7	6.0	6.7	7.0	5.3	6.5
PROVIDENCE	7.0	3.3	7.0	6.7	6.0	7.0	6.7	5.7	6.0	7.7	5.7	6.4
BACKSPIN	5.7	5.7	7.0	6.3	6.7	6.7	7.0	5.7	6.3	7.0	5.0	6.3
CRENSHAW	8.0	3.7	6.3	6.3	6.3	6.0	6.0	6.3	6.3	7.0	5.0	6.2
VIPER	7.3	3.7	6.7	6.3	6.0	6.7	6.3	5.3	6.0	7.0	5.3	6.1
TRUELINE	6.7	4.0	6.7	6.0	6.0	6.3	5.7	5.3	5.7	6.7	4.7	5.8
FUTTER	6.3	5.3	7.3	5.7	5.7	6.0	5.7	4.7	5.3	6.7	5.0	5.6
FENNCROSS	5.7	3.7	6.3	5.7	5.3	6.7	4.7	4.0	5.0	5.7	5.0	5.3
LSD VALUE	0.8	1.8	1.0	1.0	0.8	1.5	1.0	1.0	1.0	0.7	1.7	0.6
C.V. (%)	7.4	19.8	7.2	8.0	7.1	9.5	8.8	10.0	8.8	5.9	11.0	5.4

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 8B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT FLORENCE, KY (LASSING POINTE GOLF COURSE) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/  
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	LEAF TEXTIURE	DENSITY RATINGS			PERCENT PERCENT DOLLAR DOLIAR		STIMPMETER READINGS			QUALITY RATINGS								
			SPRING	SUMMER	FALL	SPOT JUNE	SPOT JULY	APRIL	AUGUST	OCTOBER	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
PENN A-4	8.0	8.3	7.7	9.0	8.7	5.0	1.7	121.2	120.5	129.5	7.0	8.0	8.7	9.0	8.0	8.7	7.3	8.0	8.1
PENN G-1	7.7	7.0	6.3	9.0	7.3	0.3	0.0	121.4	130.1	135.5	7.0	8.0	8.0	8.7	6.7	8.3	6.7	8.0	7.7
PENN G-6	7.7	8.3	6.3	8.0	7.7	4.0	0.7	118.1	118.9	124.2	6.7	8.0	7.0	8.0	7.3	8.0	7.3	7.0	7.4
PENN A-1	8.0	8.0	6.7	8.3	7.7	0.7	0.0	119.9	121.3	128.3	6.7	7.3	7.3	7.7	6.7	8.0	7.0	8.0	7.3
SR 1119	7.3	7.7	6.3	6.7	6.0	1.3	0.7	115.1	110.6	125.1	7.0	8.0	8.0	8.0	6.7	7.0	6.3	7.0	7.3
CENTURY	7.3	7.7	7.7	7.0	8.3	15.3	14.7	114.8	111.2	125.6	7.0	8.0	5.7	6.3	7.0	8.0	7.3	8.0	7.2
CRENSHAW	8.0	6.3	6.0	6.3	6.3	8.7	6.0	129.8	121.9	126.8	7.7	6.7	6.7	7.0	7.7	7.7	7.0	7.3	7.2
CATO	8.0	7.7	6.0	6.0	6.7	1.3	0.0	126.9	121.6	129.8	6.3	7.3	7.7	7.7	5.7	7.0	7.3	7.0	7.0
IMPERIAL	7.3	8.0	6.3	7.7	7.7	6.0	6.0	118.7	115.6	125.3	7.0	7.0	7.0	7.3	7.3	7.0	7.0	6.7	7.0
BACKSPIN	8.3	8.3	6.3	7.0	8.0	12.3	9.0	115.6	112.7	115.7	6.3	7.7	5.7	6.7	7.0	7.0	7.0	7.0	6.8
GRAND PRIX (LCB-103)	8.0	7.3	6.7	7.7	7.3	0.7	0.7	113.5	123.8	125.4	5.7	7.0	7.3	6.3	7.3	7.0	6.7	7.3	6.8
L-93	7.7	7.0	6.3	6.7	5.7	0.0	0.0	125.3	123.5	130.3	6.3	7.3	6.7	7.7	6.7	5.7	6.0	7.0	6.7
PROVIDENCE	7.3	7.7	5.0	6.3	5.3	0.7	0.0	124.6	122.3	125.3	7.0	7.3	7.0	7.7	5.0	6.7	5.7	6.7	6.6
SR 1020	7.0	7.0	6.3	5.3	7.0	4.3	2.3	127.8	130.7	133.4	6.0	7.0	7.0	6.3	6.3	7.3	6.7	6.0	6.6
PUTTER	6.3	6.7	6.0	7.0	6.3	1.3	0.3	118.0	114.4	122.7	6.3	6.7	7.0	7.0	5.7	5.3	6.7	6.0	6.3
TRUELINE	8.7	6.7	5.7	6.0	5.7	0.7	0.3	110.3	101.3	113.9	6.7	7.0	7.0	6.0	5.7	5.3	6.3	5.3	6.2
VIPER	8.0	7.0	4.7	5.3	5.3	1.3	0.0	120.1	122.4	128.2	6.7	6.3	7.0	6.0	5.0	5.7	5.7	6.3	6.1
PENNCROSS	7.3	6.0	6.3	5.0	5.0	1.3	0.7	113.5	117.3	125.1	6.0	6.3	6.0	5.0	5.0	5.0	5.0	5.0	5.4
LSD VALUE	2.1	2.8	1.4	0.8	1.0	2.9	3.2	34.7	38.9	45.7	1.1	1.6	0.6	0.6	2.1	0.7	1.5	0.7	0.6
C.V. (%)	10.6	14.5	11.6	7.6	9.7	52.9	85.2	21.1	25.7	23.2	8.3	10.0	5.5	5.8	16.0	6.5	11.1	6.7	5.2

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 9B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT ST. CHARLES, MO (THE MISSOURI BLUFFS G.C.) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	LEAF LEAFTEX	QUALITY RATINGS									
			MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN
PENN G-1	8.0	8.0	7.0	7.7	7.7	8.0	8.0	7.3	7.7	7.0	7.0	7.5
PENN A-1	8.0	8.0	6.7	7.7	7.7	7.3	7.7	7.3	7.3	7.3	7.3	7.4
PENN A-4	7.7	8.0	7.0	7.7	7.7	8.0	7.7	7.7	7.0	6.7	7.3	7.4
CENTURY	6.3	7.0	7.0	8.0	8.0	7.7	8.0	7.0	6.7	7.0	6.3	7.3
IMPERIAL	6.7	7.3	7.0	8.0	8.0	7.7	8.0	7.0	7.3	6.3	6.3	7.3
BACKSPIN	4.7	7.3	7.0	8.0	8.0	7.7	8.0	6.0	7.0	7.0	6.3	7.2
PENN G-6	8.0	8.0	6.3	7.0	7.3	7.3	8.0	7.3	7.0	6.7	7.0	7.1
GRAND PRIX (LCB-103)	7.3	7.0	6.3	7.3	7.7	7.3	7.7	6.7	6.7	6.7	6.7	7.0
L-93	7.7	6.7	6.3	7.3	7.3	7.3	7.3	7.0	6.3	6.3	6.3	6.9
SR 1020	7.3	7.0	6.0	7.0	7.3	7.3	7.0	6.3	6.3	6.3	6.3	6.7
SR 1119	7.0	7.0	6.7	7.3	7.3	7.0	7.0	6.7	6.0	6.3	6.0	6.7
CATO	7.0	6.7	6.7	7.3	7.3	7.0	7.0	6.7	5.7	6.0	6.0	6.6
CRENSHAW	7.7	7.0	6.3	7.0	7.0	6.7	7.0	6.7	6.3	6.0	6.0	6.6
PROVIDENCE	6.7	6.7	6.3	7.3	7.3	7.0	7.0	6.3	6.3	6.0	6.0	6.6
PUTTER	6.7	6.0	6.3	6.3	7.0	7.0	7.0	6.3	5.7	5.7	6.0	6.4
VIPER	7.0	6.3	6.0	7.0	7.0	6.7	7.0	6.3	6.0	5.3	6.3	6.4
TRUELINE	6.7	5.7	6.0	7.0	7.0	6.7	7.0	6.7	5.3	5.3	5.7	6.3
PENNCROSS	5.3	4.0	5.3	6.0	6.0	6.0	6.0	5.3	5.0	5.0	5.0	5.5
LSD VALUE	0.7	0.7	0.7	0.7	0.7	0.6	0.4	1.0	1.2	0.8	0.9	0.3
C.V. (%)	6.4	7.0	6.5	5.6	5.7	5.4	3.4	8.2	10.4	7.7	8.3	3.2

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 10.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT RYE, NY (WESTCHESTER COUNTRY CLUB) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	DENSITY SPRING	DENSITY SUMMER	DENSITY FALL	PERCENT LIVING COVER SUMMER	PERCENT LIVING COVER FALL	QUALITY RATINGS							
									APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
PENN A-4	5.7	6.0	8.7	8.7	9.0	8.7	94.3	97.0	8.0	9.0	9.0	8.3	8.7	9.0	8.7	8.7
PENN G-1	6.7	6.7	8.7	8.7	8.3	8.0	89.0	81.7	8.3	8.7	9.0	8.7	7.7	8.3	8.3	8.4
CENTURY	4.0	6.0	9.0	8.7	8.7	7.7	91.7	85.0	7.3	8.7	8.7	8.0	8.0	8.3	7.3	8.0
GRAND PRIX (LCB-103)	3.7	6.3	8.0	8.0	8.3	7.7	91.7	91.7	8.0	8.0	8.0	8.3	7.7	8.7	7.7	8.0
PENN A-1	6.0	6.3	8.3	8.7	8.3	8.3	80.7	90.0	7.7	9.0	8.3	8.0	6.3	8.0	8.7	8.0
PENN G-6	6.0	7.0	7.7	8.3	8.7	7.3	93.3	85.0	8.7	8.0	8.3	7.3	7.3	8.7	7.0	7.9
SR 1119	8.3	5.3	7.0	7.0	6.7	6.7	81.7	73.3	6.7	7.7	8.0	7.3	7.0	7.0	6.7	7.2
BACKSPIN	4.7	5.3	7.7	8.0	8.3	5.7	85.0	71.7	6.7	7.7	8.0	7.7	6.7	7.0	6.3	7.1
L-93	7.7	5.7	7.0	7.0	7.0	6.7	88.3	73.3	6.7	7.3	7.7	7.0	7.7	6.7	7.0	7.1
IMPERIAL	5.3	4.7	8.3	8.0	8.0	5.7	86.7	68.3	6.3	7.3	7.7	7.7	7.0	6.7	6.0	7.0
SR 1020	5.7	6.7	6.3	7.0	7.3	7.0	80.0	73.3	7.0	6.7	6.3	7.0	6.3	6.7	6.3	6.6
CRENSHAW	6.0	4.7	6.0	6.0	6.3	5.3	76.7	70.0	6.0	6.3	6.3	7.0	6.7	6.3	6.0	6.4
PROVIDENCE	6.3	6.0	6.3	6.3	5.7	5.7	70.0	70.0	6.0	6.3	6.3	6.7	5.3	5.3	6.0	6.0
CATO	7.0	4.7	6.3	6.3	5.7	5.0	70.0	68.3	5.3	6.7	6.0	6.0	5.3	5.3	5.7	5.8
TRUELINE	6.3	4.0	5.3	5.0	4.3	5.0	58.3	55.0	4.7	5.0	4.7	5.3	4.3	4.3	4.7	4.7
VIPER	8.3	3.7	5.7	5.3	3.7	4.3	48.3	55.0	4.3	5.0	5.0	5.3	3.7	4.0	5.0	4.6
PUTTER	4.0	3.0	4.3	4.0	4.0	3.3	50.0	45.0	3.7	4.3	3.7	4.7	2.3	3.7	3.7	3.7
PENNCROSS	3.3	3.7	4.0	4.0	3.7	2.7	55.0	40.0	3.7	4.0	3.3	3.0	2.7	3.3	3.3	3.3
LSD VALUE	1.4	1.2	0.8	0.7	0.8	1.2	9.7	10.1	1.0	0.8	0.7	0.8	1.0	1.2	0.7	0.5
C.V. (%)	15.3	14.3	7.8	6.6	8.2	12.5	8.3	9.3	9.9	8.0	6.7	8.0	11.3	11.9	7.6	4.9

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 11B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
 1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
 AT DALLAS, TX (BENT TREE COUNTRY CLUB) 1/  
 2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	LEAF TEXTURE	DENSITY SPRING	DENSITY SUMMER	QUALITY RATINGS												MEAN
					JAN	FEB	MAR	APR	MAY	JUN	JUL	SEP	OCT	NOV	DEC		
PENN A-4	7.7	7.3	7.7	6.0	7.3	6.3	6.7	7.7	6.7	7.0	6.0	4.7	7.7	8.0	8.3	6.9	
IMPERIAL	6.0	6.3	7.0	6.0	7.0	7.0	6.7	7.3	6.3	5.3	6.3	6.0	6.3	7.7	8.3	6.8	
PENN A-1	5.3	7.7	8.0	6.3	7.3	6.3	6.7	7.7	5.7	5.3	6.3	5.7	7.7	8.3	7.7	6.8	
L-93	6.3	5.0	7.3	6.7	7.0	6.7	7.0	7.3	7.0	6.7	6.7	4.7	5.7	7.0	8.0	6.7	
PENN G-1	6.3	6.0	6.7	6.7	7.3	7.0	6.7	6.3	6.7	5.7	6.3	5.3	6.7	8.0	8.0	6.7	
SR 1119	7.0	5.3	8.0	6.3	6.7	5.7	6.0	8.3	7.3	6.3	6.3	5.3	5.7	7.3	8.3	6.7	
PENN G-6	6.3	5.7	7.3	4.7	6.3	6.3	7.7	7.0	6.3	6.3	5.0	5.7	7.0	7.7	7.7	6.6	
GRAND PRIX (LCB-103)	5.7	7.7	5.3	5.0	6.0	6.7	6.7	5.3	5.7	6.7	5.0	6.3	6.7	8.0	9.0	6.5	
SR 1020	5.7	6.0	7.7	4.7	7.7	7.0	7.7	7.7	5.3	5.0	5.3	5.3	5.7	7.7	7.7	6.5	
BACKSPIN	6.0	7.3	6.7	6.3	6.7	6.0	6.0	7.0	5.3	5.3	6.3	5.3	6.7	7.7	7.7	6.4	
CENTURY	6.0	7.7	7.0	6.3	5.7	6.3	6.3	6.7	5.7	5.7	6.0	5.3	7.0	8.0	7.7	6.4	
CATO	5.3	5.7	7.0	4.7	7.0	7.0	6.3	7.3	5.3	4.7	4.7	4.3	6.0	7.7	8.0	6.2	
CRENSHAW	4.7	6.7	7.7	4.7	6.3	6.0	6.7	7.3	5.3	6.0	5.0	5.7	6.0	7.3	7.0	6.2	
PUTTER	5.0	5.7	7.7	5.7	7.0	6.7	5.7	8.0	5.0	5.7	6.0	4.3	5.7	7.0	7.7	6.2	
TRUELINE	5.3	5.3	7.0	6.7	6.7	5.3	6.3	7.3	6.0	5.0	6.0	4.3	5.7	7.0	7.7	6.1	
PROVIDENCE	6.3	6.0	6.3	4.3	6.3	5.7	6.7	6.7	6.0	4.3	4.7	4.7	5.3	7.0	7.7	5.9	
VIPER	5.3	5.3	7.0	4.3	7.0	6.3	6.7	7.0	5.3	4.7	5.0	4.0	5.0	6.7	7.3	5.9	
PENNCROSS	4.3	4.0	8.0	4.0	7.0	6.3	5.7	7.7	4.7	4.0	4.3	4.0	5.0	6.0	7.7	5.7	
LSD VALUE	1.7	1.5	3.1	3.8	-	2.8	2.0	2.9	3.3	1.4	4.2	1.7	1.0	0.8	1.6	0.7	
C.V. (%)	15.1	14.5	15.3	26.2	14.6	14.4	12.2	14.7	20.1	14.0	24.3	15.9	9.5	6.5	8.1	5.9	

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
 STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 12B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
 1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
 AT VIENNA, VA (WESTWOOD GOLF COURSE) 1/  
 2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/  
 TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	QUALITY RATINGS							
				MAR	APR	MAY	JUL	AUG	SEP	OCT	MEAN
PENN A-4	7.0	5.7	8.0	5.7	6.0	6.7	7.0	8.3	7.0	7.7	6.9
PENN A-1	7.3	5.7	7.7	6.3	5.3	6.0	7.3	8.0	7.3	7.3	6.8
PENN G-6	6.3	5.7	7.7	6.3	5.3	6.0	7.0	8.0	7.3	7.0	6.7
CENTURY	7.0	5.0	7.7	6.3	5.3	6.3	6.7	7.7	7.0	7.0	6.6
GRAND PRIX (LCB-103)	6.7	5.3	7.7	6.3	5.3	5.7	6.7	8.3	7.0	7.0	6.6
L-93	7.0	6.0	8.0	6.3	5.0	6.3	7.0	7.7	7.0	6.7	6.6
CATO	6.0	6.3	7.7	6.3	5.7	6.0	7.0	7.3	6.7	6.3	6.5
CRENSHAW	6.7	5.7	8.0	6.0	5.3	6.0	7.0	8.0	6.7	6.3	6.5
PENN G-1	6.0	5.3	8.3	6.0	5.0	5.3	7.0	8.0	6.3	7.0	6.4
SR 1020	6.0	5.3	8.0	6.0	5.3	5.7	7.3	8.0	6.3	6.0	6.4
BACKSPIN	7.3	5.0	8.0	6.0	5.0	6.0	6.3	7.7	7.7	5.7	6.3
IMPERIAL	6.0	6.0	8.0	6.0	5.3	6.0	6.7	7.7	6.3	6.3	6.3
PROVIDENCE	7.0	6.0	7.0	6.3	5.7	5.7	6.7	7.0	6.7	6.3	6.3
SR 1119	6.0	5.3	8.0	5.7	5.7	5.3	7.0	7.3	6.7	6.0	6.2
PUTTER	6.3	6.0	7.7	6.0	5.3	5.7	6.3	7.3	6.0	5.7	6.0
VIPER	6.3	5.3	6.3	5.3	5.3	5.7	6.3	7.0	6.7	5.7	6.0
TRUELINE	6.0	5.0	6.7	5.7	4.7	5.0	6.3	6.7	6.3	5.7	5.8
PENNCROSS	5.3	4.7	6.3	5.0	4.7	4.3	6.0	5.7	6.0	4.3	5.1
LSD VALUE	0.7	1.1	1.7	1.5	1.6	1.0	2.0	0.9	1.4	0.7	0.4
C.V. (%)	6.6	9.6	10.0	9.6	10.6	9.4	10.0	6.8	9.2	6.9	4.3

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
 STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 13B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS IN THE  
1997 USGA/GCSAA/NTEP ON-SITE BENTGRASS TEST  
AT SNOQUALMIE, WA (TPC AT SNOQUALMIE RIDGE) 1/  
2000 DATA

TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/  
TURFGRASS STIMPMETER READINGS MEASURED IN INCHES

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	DENSITY SUMMER	WINTER COLOR	FILLING AFTER AERIFICATION	STIMPMETER READINGS			QUALITY RATINGS												
							APRIL	AUGUST	NOVEMBER	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
PENN A-4	7.0	7.0	9.0	9.0	6.0	6.3	103.3	148.3	134.0	6.0	6.3	7.0	6.3	6.0	7.7	8.0	8.0	6.7	7.0	7.0	6.0	6.8
CENTURY	5.7	5.0	9.0	9.0	5.7	6.7	98.3	134.3	127.7	5.7	7.0	7.0	6.3	6.3	7.0	7.7	8.3	6.3	7.0	6.0	5.3	6.7
L-93	7.0	6.7	7.7	8.0	4.0	6.3	96.3	138.0	129.0	5.0	6.0	6.7	5.7	5.7	7.0	8.0	8.0	6.7	7.7	6.7	6.3	6.6
PENN G-1	7.0	6.7	8.3	9.0	5.7	6.0	94.7	131.3	118.0	5.0	5.7	6.0	6.3	6.0	7.3	8.0	8.3	6.0	7.7	6.7	6.0	6.6
GRAND PRIX (LCB-103)	6.0	5.0	8.7	8.3	6.0	5.7	103.0	155.7	134.0	5.7	6.0	6.7	6.3	6.0	6.7	7.3	7.7	6.0	6.7	7.0	6.0	6.5
PENN A-1	7.0	6.0	9.0	9.0	5.0	5.7	95.7	139.0	127.3	5.7	5.7	7.0	5.7	5.3	7.0	8.0	8.0	6.3	7.0	6.7	5.7	6.5
IMPERIAL	5.7	6.0	8.3	8.3	4.7	6.3	99.7	136.7	122.3	5.0	5.7	6.3	5.7	5.7	7.3	6.7	8.3	6.3	6.7	6.3	5.7	6.3
BACKSPIN	6.0	6.0	8.0	8.3	4.0	6.0	104.0	136.7	124.3	5.0	6.0	5.7	6.0	5.3	7.0	7.7	7.3	6.3	6.7	6.0	5.3	6.2
SR 1020	6.7	6.0	8.0	8.0	5.0	5.3	101.3	141.3	126.0	5.7	5.0	6.0	5.7	5.7	6.7	7.0	7.3	5.7	7.0	6.3	6.3	6.2
PENN G-6	6.7	6.7	8.3	8.0	4.0	6.0	99.0	139.3	123.7	5.0	5.0	6.3	5.7	5.3	7.0	7.0	7.0	6.3	7.0	6.0	5.3	6.1
SR 1119	7.0	6.7	8.0	8.0	4.0	5.3	100.0	138.3	126.0	5.0	5.7	6.0	5.0	6.0	7.0	7.0	7.0	6.0	7.0	6.0	5.0	6.1
PROVIDENCE	6.7	5.7	7.0	8.0	4.0	6.3	104.0	141.0	132.7	5.0	5.7	6.3	5.0	5.7	6.7	6.3	7.3	6.0	6.3	6.0	5.3	6.0
CATO	7.0	6.0	7.7	8.0	4.0	5.3	97.3	134.0	137.3	5.0	5.7	5.3	5.7	5.7	6.3	7.0	7.3	5.3	6.0	5.0	5.7	5.8
TRUELINE	6.7	6.3	7.3	7.7	4.3	6.3	100.3	138.0	128.3	5.0	5.0	5.3	5.0	5.3	7.0	6.3	6.7	6.0	6.7	5.3	5.7	5.8
VIPER	6.7	7.0	8.0	8.0	4.0	5.7	100.3	135.7	136.3	5.0	5.3	5.7	5.0	5.0	6.7	7.0	7.0	6.0	6.0	6.0	5.3	5.8
CRENSHAW	7.0	6.7	7.3	8.0	3.0	6.0	105.0	147.7	141.7	4.3	4.0	5.3	5.0	5.3	6.0	7.0	7.0	6.3	6.7	4.7	4.7	5.5
PUTTER	6.0	6.0	7.0	7.3	5.0	5.7	98.3	143.3	131.7	5.0	5.0	5.0	5.0	4.7	5.7	6.0	6.0	5.3	5.3	5.7	5.3	5.3
PENNCROSS	5.7	5.0	6.7	7.0	4.0	6.0	98.0	135.7	139.0	5.0	4.0	4.0	4.3	4.0	6.0	5.0	5.7	5.0	5.3	4.3	4.7	4.8
LSD VALUE	0.6	0.7	0.6	0.5	0.4	1.5	-	28.9	24.2	0.5	0.7	0.6	0.9	0.8	1.0	0.7	0.7	0.8	1.0	0.8	1.0	0.3
C.V. (%)	6.0	7.1	5.0	3.8	6.1	9.9	7.3	7.2	7.2	6.0	8.3	6.3	9.4	8.2	7.5	6.7	6.1	7.1	8.5	8.1	9.3	2.8

1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN.  
STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).

2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.