

NATIONAL TURFGRASS EVALUATION PROGRAM

The National Turfgrass Evaluation Program (NTEP) is designed to develop and coordinate uniform evaluation trials of turfgrass varieties and promising selections in the United States and Canada. Test results can be used by national companies and plant breeders to determine the broad picture of the adaptation of a cultivar. Results can also be used to determine if a cultivar is well adapted to a local area or level of turf maintenance.

Briefly, the NTEP is a self-supporting, non-profit program, sponsored by the Beltsville Agricultural Research Center and the National Turfgrass Federation, Inc. Program policy is made by a policy committee consisting of one member from each of the four (4) Regional Turfgrass Research Committees in the United States, one member from the Lawn Seed Division of the American Seed Trade Association, one member from the American Sod Producers Association, one member from the United States Golf Association (USGA) Green Section, one member from the Turfgrass Breeders Association, an executive director and a national program coordinator. The program does not make variety recommendations. However, the data from tests can be used by extension specialists and others for making recommendations.

The policy committee is responsible for determining program policy including, (1) requirements for submission of entries, (2) scheduling tests, (3) evaluation methods, (4) selecting standard or control test entries, (5) setting entry fees, (6) coordinating tests in their respective regions, (7) establishing guidelines for publication and data distribution and (8) scheduling committee meetings.

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CONTENTS

1989 National Bentgrass (Fairway/Tee) Test - 1993 data

LOCATIONS SUBMITTING DATA FOR 1993.....1

NATIONAL BENTGRASS (FAIRWAY/TEE) TEST, 1989 - Entries and Sponsors.....2

Table A - 1993 Locations, Site Descriptions and Management Practices
in the 1989 National Bentgrass (Fairway/Tee) Test.....3

Table B - Locations and Data Collected in 1993.....4

Table 1 - Mean Turfgrass Quality Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee at Thirteen Locations in the U. S.....5

Table 2 - Mean Turfgrass Quality Ratings of Bentgrass Cultivars For Each
Month Grown on a Fairway or Tee at Thirteen Locations in the
U. S.....6

Table 3 - Ranking of Mean Turfgrass Quality Ratings of Bentgrass Cultivars
Grown on a Fairway or Tee at Thirteen Locations in the U. S.....7

Table 4 - Genetic Color Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee.....8

Table 5 - Leaf Texture Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee.....9

Table 6 - Spring Density Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee.....10

Table 7 - Summer Density Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee.....11

Table 8 - Fall Density Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee.....12

Table 9 - Thatch Measurements of Bentgrass Cultivars Grown on a
Fairway or Tee.....13

Table 10 - Thatch Ashed Dry Weight of Bentgrass Cultivars Grown on a
Fairway or Tee.....14

Table 11 - Brown Patch Ratings of Bentgrass Cultivars Grown on a
Fairway or Tee.....15

Table 12 - Percent Poa Annua (January) Ratings of Bentgrass Cultivars
Grown on a Fairway or Tee.....16

Table 13 - Percent Poa Annua (February) Ratings of Bentgrass Cultivars
Grown on a Fairway or Tee.....17

Table 14 - Percent Poa Annua (April) Ratings of Bentgrass Cultivars
Grown on a Fairway or Tee.....18

CONTENTS (Continued)

Table 15 - Percent Poa Annua (May) Ratings of Bentgrass Cultivars Grown on a Fairway or Tee.....	19
Table 16 - Percent Poa Annua (July) Ratings of Bentgrass Cultivars Grown on a Fairway or Tee.....	20
Table 17 - Percent Poa Annua (October) Ratings of Bentgrass Cultivars Grown on a Fairway or Tee.....	21
Table 18 - Herbicide Injury Ratings of Bentgrass Cultivars Grown on a Fairway or Tee.....	22

LOCATIONS SUBMITTING DATA FOR 1993

<u>State</u>	<u>Location</u>	<u>Code</u>
California	Santa Clara	CA1
Illinois	Urbana	IL1
Kentucky	Lexington	KY1
Maryland	Beltsville	UB1
Maryland	Silver Spring	MD1
Michigan	East Lansing	MI1
New Jersey	North Brunswick	NJ1
New Jersey	Martinsville	NJ3
Ohio	Columbus	OH1
Oregon	Halsey	OR3
Rhode Island	Kingston	RI1
Virginia	Fairfax (Riverbend Country Club)	VA5
Washington	Puyallup	WA3

1989 NATIONAL BENTGRASS TEST

(Fairway/Tee)

Entries and Sponsors

<u>Entry No.</u>	<u>Name</u>	<u>Species</u>	<u>Sponsor</u>
1	BR 1518	A. castellana (dryland bent)	USGA Green Section
2	Carmen	creeping	Advanta Seeds West, Inc.
3	Tracenta	colonial	Advanta Seeds West, Inc.
4	Putter	creeping	Jacklin Seed Co.
5	SR 1020	creeping	Seed Research of OR, Inc.
6	Providence	creeping	Seed Research of OR, Inc.
7	Bardot	colonial	Barenbrug USA
8	Penncross	creeping	Tee-2-Green Corp.
9	Penneagle	creeping	Tee-2-Green Corp.
10	Egmont	A. capillaris (browntop bent)	Olsen-Fennell Seed Co.
11	Regent (Nomarc 101)	creeping	Barenbrug USA
12	PRO/CUP (Forbes 89-12)	creeping	Forbes Seed & Grain, Inc.
13	Lopez (WVPB 89-D-15)	creeping	Finelawn Research Corp.
14	National	creeping	Pickseed West, Inc.
15	88.CBE	creeping	International Seeds, Inc.
16	Viper (88.CBL)	creeping	International Seeds, Inc.
17	Cobra	creeping	International Seeds, Inc.
18	Emerald	creeping	International Seeds, Inc.
19	TAMU 88-1	creeping	Texas A&M University
20	Allure	colonial	Willamette Seed Co.

TABLE A.

1993 LOCATIONS, SITE DESCRIPTIONS AND MANAGEMENT PRACTICES IN
THE 1989 NATIONAL BENTGRASS (FAIRWAY/TEE) TEST

LOCATION	SOIL TEXTURE	SOIL PH	SOIL PHOSPHOROUS (LBS/ACRE)	SOIL POTASSIUM (LBS/ACRE)	NITROGEN (LBS/1000 SQ FT)	SUN OR SHADE	MOWING HEIGHT (IN)	IRRIGATION PRACTICED
CA1	LOAM	6.1-6.5	61-150	0-150	3.1-4.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
IL1	SILT LOAM AND SILT	-	-	-	2.1-3.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
KY1	SILT LOAM AND SILT	6.1-6.5	61-150	151-240	2.1-3.0	FULL SUN	0.6-1.0	ONLY DURING SEVERE STRESS
MD1	SILT LOAM AND SILT	5.6-6.0	61-150	241-375	3.1-4.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
MI1	SANDY LOAM	7.1-7.5	-	-	8.1+	FULL SUN	0.6-1.0	TO PREVENT STRESS
NJ1	LOAM	6.1-6.5	61-150	151-240	2.1-3.0	FULL SUN	5/8"	TO PREVENT STRESS
NJ3	SILT LOAM AND SILT	6.6-7.0	151-270	501+	4.1-5.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
OH1	SILTY CLAY LOAM	7.1-7.5	271-450	0-150	2.1-3.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
OR3	-	-	-	-	-	-	-	-
RI1	SILT LOAM AND SILT	6.6-7.0	-	0-150	2.1-3.0	FULL SUN	0.6-1.0	TO PREVENT STRESS
UB1	SILT LOAM AND SILT	4.6-5.5	61-150	0-150	3.1-4.0	FULL SUN	5/8"	TO PREVENT DORMANCY
VA5	SILTY CLAY LOAM	6.1-6.5	-	-	-	FULL SUN	0.0-0.5	TO PREVENT STRESS
WA3	SANDY LOAM	5.6-6.0	61-150	151-240	2.1-3.0	FULL SUN	0.0-0.5	TO PREVENT STRESS

FUNGICIDE USE IN 1993 (SUBMITTED TO NTEP)

LOCATION	FUNGICIDE	RATE (OZ/1000 SQ. FT.)	DATE(S) OF APPLICATION
NJ1	CHLOROTHALONIL	6	6/4 - 8/26, FOUR TOTAL APPLICATIONS

TABLE B.

LOCATIONS AND DATA COLLECTED IN 1993

LOCATION	JANUARY QUALITY RATINGS	FEBRUARY QUALITY RATINGS	MARCH QUALITY RATINGS	APRIL QUALITY RATINGS	MAY QUALITY RATINGS	JUNE QUALITY RATINGS	JULY QUALITY RATINGS	AUGUST QUALITY RATINGS	SEPTEMBER QUALITY RATINGS	OCTOBER QUALITY RATINGS	NOVEMBER QUALITY RATINGS	DECEMBER QUALITY RATINGS	GENETIC COLOR RATINGS	LEAF TEXTURE RATINGS
CA1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
IL1				X	X	X	X							
KY1			X	X	X	X	X	X	X	X				
MD1				X	X		X	X						
MI1					X	X	X	X	X					
NJ1				X	X	X	X		X	X	X			
NJ3				X	X		X		X				X	X
OH1									X				X	
OR3	X	X	X	X	X	X	X	X						
RI1				X	X	X	X	X	X	X	X			
UB1				X	X	X								
VA5				X	X	X	X	X	X	X	X			
WA3	X	X		X	X	X		X			X	X		

TABLE B. (CONTINUED)

LOCATIONS AND DATA COLLECTED IN 1993

LOCATION	SPRING DENSITY	SUMMER DENSITY	FALL DENSITY	THATCH MEASUREMENTS	BROWN PATCH FALL	PCT FOA JAN	PCT FOA FEB	PCT FOA APR	PCT FOA MAY	PCT FOA JUL	PCT FOA OCT	HERBICIDE INJURY
CA1	X	X	X	X		X	X	X	X	X	X	
IL1					X							
KY1												
MD1				X								
MI1												
NJ1												
NJ3	X	X	X									
OH1												
OR3												
RI1												
UB1												
VA5					X				X			
WA3				X								X

TABLE 1.

MEAN TURFGRASS QUALITY RATINGS OF BENTGRASS CULTIVARS GROWN ON
A FAIRWAY OR TEE AT THIRTEEN LOCATIONS IN THE U.S.
1993 DATA

NAME	TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 1/													
	CA1	IL1	KY1	MD1	MI1	NJ1	NJ3	OH1	OR3	RI1	UB1	VA5	WA3	MEAN
* PUTTER	7.2	5.8	4.7	6.3	6.0	6.7	5.9	8.7	6.0	4.8	4.8	6.3	5.2	6.0
* PROVIDENCE	6.3	6.3	5.6	5.9	7.1	6.9	6.3	7.0	5.5	4.7	5.1	6.5	4.9	6.0
* PENNEAGLE	6.8	6.5	5.5	6.4	7.2	6.6	5.9	8.0	5.5	4.5	4.2	6.4	4.4	6.0
* PENNCROSS	6.8	5.7	4.9	6.7	6.3	6.0	5.5	7.7	5.8	4.5	4.7	7.0	5.0	5.9
* REGENT (NORMARC 101)	6.8	6.2	5.7	6.5	6.4	6.7	5.1	7.0	5.7	4.7	4.3	6.5	4.3	5.8
88.CBE	.	6.1	6.1	.	6.6	6.6	.	6.7	5.9	4.5	4.8	6.6	4.3	5.8
* VIPER (88.CBL)	.	5.3	6.0	6.5	6.4	6.8	.	7.3	5.9	4.6	4.3	5.9	4.8	5.8
* COBRA	6.7	5.4	5.8	6.3	6.3	6.5	5.7	7.3	5.7	4.5	4.6	5.9	4.4	5.8
TAMU 88-1	6.7	.	5.1	6.5	6.6	6.3	.	6.0	5.0	4.4	5.0	6.5	4.8	5.7
* LOPEZ (WVPB 89-D-15)	6.1	5.2	4.9	6.4	6.6	6.2	6.0	7.3	5.7	4.6	4.8	5.9	4.5	5.7
* PRO/CUP (FORBES 89-12)	6.2	5.8	4.9	5.8	6.3	6.6	4.5	8.0	5.7	4.8	4.8	6.0	4.4	5.7
* CARMEN	6.1	5.9	4.3	6.1	6.1	6.0	6.3	7.7	5.1	4.2	3.6	6.1	4.4	5.5
* SR 1020	6.4	5.3	4.5	5.7	6.7	5.6	5.6	7.0	5.3	3.9	4.1	5.6	4.8	5.4
* EMERALD	6.0	3.8	4.0	6.3	5.8	4.9	5.2	8.0	5.2	4.2	3.2	6.8	4.4	5.2
* NATIONAL	6.2	4.5	5.6	6.0	5.9	4.5	5.3	7.3	4.5	4.5	3.3	5.8	4.2	5.2
* EGMONT	5.4	4.0	5.2	5.6	6.3	5.7	5.1	5.7	3.6	4.1	5.6	5.0	5.5	5.1
* TRACENTA	5.1	3.9	5.7	6.3	6.2	6.0	3.9	5.7	3.4	4.0	4.8	5.3	5.3	5.0
* BARDOT	5.3	3.8	5.3	6.3	5.7	6.1	3.9	5.7	3.4	4.2	4.8	5.5	4.6	5.0
ALLURE	5.6	.	4.5	6.0	5.9	4.7	4.6	.	3.4	4.2	3.8	5.5	5.2	4.8
BR 1518	4.7	3.4	4.7	5.8	5.3	4.7	3.1	6.3	2.2	4.3	4.6	5.5	4.6	4.5
LSD VALUE	0.6	0.9	0.4	0.6	1.1	0.9	1.4	1.5	0.4	0.5	1.2	1.0	0.5	0.3

* COMMERCIALY AVAILABLE IN THE USA IN 1994

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).

TABLE 2. MEAN TURFGRASS QUALITY RATINGS OF BENTGRASS CULTIVARS FOR EACH MONTH GROWN ON A FAIRWAY OR TEE AT THIRTEEN LOCATIONS IN THE U.S. 1993 DATA

NAME	TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF: MONTHS 1/												MEAN
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
FUTTER	5.9	5.3	6.6	5.9	5.9	6.5	5.6	6.0	5.9	5.3	6.2	5.3	6.0
PROVIDENCE	5.2	4.6	6.1	6.2	6.2	6.2	5.7	5.8	6.2	6.1	6.0	4.0	6.0
PENNEAGLE	5.4	5.1	6.0	5.8	5.8	6.3	6.0	5.9	6.2	5.7	5.8	4.2	6.0
PENNCROSS	5.6	5.6	5.8	5.7	5.8	5.9	5.8	6.0	6.0	6.1	5.9	5.0	5.9
REGENT (NORMARC 101)	5.4	5.2	6.4	5.8	5.8	6.2	5.7	5.8	5.9	6.1	5.8	4.7	5.8
88.CBE	5.3	4.8	6.2	6.0	5.9	5.7	5.8	5.9	5.6	6.4	5.3	3.3	5.8
VIPER (88.CBL)	5.7	5.2	6.3	5.7	5.8	5.9	5.7	5.6	5.7	6.0	5.5	3.0	5.8
COBRA	5.6	5.0	6.1	5.9	5.6	5.9	5.6	5.8	5.7	6.3	5.8	4.5	5.8
TAMU 88-1	5.9	5.7	5.7	5.3	6.0	5.7	5.4	5.6	5.7	6.1	6.0	5.3	5.7
LOPEZ (WVPB 89-D-15)	4.9	4.9	6.0	5.4	5.8	5.9	5.6	5.5	5.5	5.9	5.7	4.7	5.7
PRO/CUP (FORBES 89-12)	4.8	4.4	6.1	5.4	5.4	6.0	5.6	5.4	5.6	5.9	6.1	4.5	5.7
CARMEN	4.8	4.2	6.0	5.4	5.5	5.7	5.5	5.3	5.5	5.1	5.3	4.5	5.5
SR 1020	5.2	4.7	6.0	5.3	5.4	5.5	5.3	5.3	5.2	5.3	5.9	5.2	5.4
EMERALD	5.2	5.0	5.8	4.9	4.9	4.8	5.2	5.5	5.4	5.1	5.5	4.8	5.2
NATIONAL	4.9	5.2	6.1	4.9	4.9	4.9	5.1	5.5	5.3	5.7	5.4	4.7	5.2
EGMONT	4.3	5.7	4.8	5.1	4.8	5.1	5.0	5.1	5.0	5.5	5.4	5.2	5.1
TRACENTA	4.3	5.4	5.8	5.1	4.7	5.2	5.0	5.1	4.9	5.1	5.0	4.5	5.0
BARDOT	3.8	4.9	5.4	5.2	4.6	4.8	4.9	5.2	5.0	5.5	5.1	4.2	5.0
ALLURE	4.2	5.7	5.1	5.3	4.3	4.4	4.8	5.1	4.6	5.1	5.5	5.0	4.8
ER 1518	3.6	4.9	4.4	4.3	3.8	4.2	4.4	4.7	4.5	5.4	5.4	4.7	4.5
LSD VALUE	1.1	1.5	1.1	0.6	0.6	0.6	0.8	0.8	0.9	0.9	0.7	2.0	0.5

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).

TABLE 3.

RANKING OF MEAN TURFGRASS QUALITY RATINGS OF BENTGRASS CULTIVARS GROWN
ON A FAIRWAY OR TEE AT THIRTEEN LOCATIONS IN THE U.S. 1/
1993 DATA

QUALITY RANKINGS; 1=HIGHEST MEAN; STATE LOCATIONS REPORTING 2/

NAME	CA1	IL1	KY1	MD1	MI1	NJ1	NJ3	OH1	OR3	RI1	UB1	VA5	WA3	MEAN
PUTTER	1.0	6.0	16.0	7.5	15.0	3	4.5	1.0	1.0	1.5	6.5	8.0	3.5	1
PROVIDENCE	8.0	2.0	6.0	15.0	2.0	1	1.5	12.0	9.5	3.0	2.0	6.0	6.0	2
PENNEAGLE	3.5	1.0	8.0	5.5	1.0	6	4.5	3.0	9.5	9.5	15.0	7.0	16.0	3
PENNCROSS	3.5	8.0	12.0	1.0	9.0	13	8.0	5.5	4.0	9.5	10.0	1.0	5.0	4
REGENT (NORMARC 101)	2.0	3.0	4.5	3.0	7.5	4	11.5	12.0	7.0	4.0	13.5	5.0	18.5	5
88.CBE	.	4.0	1.0	.	5.0	6	.	14.0	2.0	9.5	6.5	3.0	18.5	6
VIPER (88.CBL)	.	11.0	2.0	3.0	7.5	2	.	8.5	3.0	5.5	13.5	13.0	7.0	7
COBRA	5.5	9.0	3.0	7.5	12.0	8	6.0	8.5	7.0	7.0	11.0	11.5	16.0	8
TAMU 88-1	5.5	.	11.0	3.0	5.0	9	.	16.0	14.0	12.0	3.0	4.0	8.5	9
LOPEZ (WVEB 89-D-15)	12.0	12.0	13.5	5.5	5.0	10	3.0	8.5	5.0	5.5	6.5	11.5	12.0	10
PRO/CUP (FORBES 89-12)	9.0	7.0	13.5	16.5	10.5	6	14.0	3.0	7.0	1.5	6.5	10.0	16.0	11
CARMEN	11.0	5.0	19.0	12.0	14.0	14	1.5	5.5	13.0	14.0	18.0	9.0	13.5	12
SR 1020	7.0	10.0	17.0	18.0	3.0	16	7.0	12.0	11.0	20.0	16.0	15.0	8.5	13
EMERALD	13.0	16.5	20.0	10.0	18.0	17	10.0	3.0	12.0	16.0	20.0	2.0	13.5	14
NATIONAL	10.0	13.0	7.0	13.5	16.5	20	9.0	8.5	15.0	9.5	19.0	14.0	20.0	15
EGMONT	15.0	14.0	10.0	19.0	10.5	15	11.5	18.0	16.0	18.0	1.0	20.0	1.0	16
TRACENTA	17.0	15.0	4.5	10.0	13.0	12	15.5	18.0	19.0	19.0	6.5	19.0	2.0	17
BARDOT	16.0	16.5	9.0	10.0	19.0	11	15.5	18.0	17.5	16.0	6.5	16.5	10.0	18
ALLURE	14.0	.	18.0	13.5	16.5	19	13.0	.	17.5	16.0	17.0	16.5	3.5	19
BR 1518	18.0	18.0	15.0	16.5	20.0	18	17.0	15.0	20.0	13.0	12.0	18.0	11.0	20

1/ THIS TABLE CONTAINS NO STATISTICAL VALUES (LSD VALUES) THEREFORE IT SHOULD ONLY BE USED TO DETERMINE THE GENERAL PERFORMANCE OF AN ENTRY OR ENTRIES ACROSS SEVERAL LOCATIONS OR REGIONS. TO ASSESS STATISTICAL DIFFERENCES AMONG ENTRIES, REFER TO THE MEANS AND LSD VALUES FOUND IN TABLE 1.

2/ RANKING OF MEAN TURFGRASS QUALITY IS ACHIEVED BY ASSIGNING "1" TO THE HIGHEST MEAN, "2" TO THE SECOND HIGHEST MEAN, ETC. FOR EACH LOCATION. FOR EXAMPLE, IF TWO MEANS ARE TIED FOR THE SECOND AND THIRD RANKS, BOTH ARE ASSIGNED "2.5".

TABLE 4.

GENETIC COLOR RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

GENETIC COLOR RATINGS 1-9; 9=DARK GREEN 1/

NAME	CA1	NJ3	OH1	MEAN
VIPER (88.CBL)	.	.	7.3	7.3
PENNCROSS	8.0	5.7	8.0	7.2
LOPEZ (WVPB 89-D-15)	7.3	6.7	7.3	7.1
COBRA	7.3	6.0	7.7	7.0
PUTTER	7.7	5.3	8.0	7.0
TAMU 88-1	8.0	.	6.0	7.0
PENNEAGLE	7.3	5.7	7.7	6.9
PRO/CUP (FORBES 89-12)	7.0	5.7	7.7	6.8
PROVIDENCE	7.0	6.3	7.0	6.8
88.CBE	.	.	6.7	6.7
CARMEN	7.0	5.3	7.7	6.7
REGENT (NORMARC 101)	7.7	5.0	7.3	6.7
SR 1020	7.0	6.0	7.0	6.7
NATIONAL	7.0	4.7	7.7	6.4
EMERALD	7.0	4.0	7.7	6.2
BR 1518	6.0	3.3	7.3	5.6
TRACENTA	5.3	4.7	6.3	5.4
EGMONT	5.3	4.3	6.3	5.3
BARDOT	5.0	4.3	6.0	5.1
ALLURE	6.0	4.0	.	5.0
LSD VALUE	0.9	1.0	1.2	0.7

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).

TABLE 5. LEAF TEXTURE RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

LEAF TEXTURE RATINGS 1-9; 9=VERY FINE 1/

NAME	CA1	NJ3	MEAN
BARDOT	8.0	6.0	7.0
SR 1020	7.0	7.0	7.0
TAMU 88-1	7.0	.	7.0
PUTTER	7.0	6.7	6.8
CARMEN	7.0	6.3	6.7
COBRA	6.7	6.3	6.5
PENNEAGLE	7.3	5.7	6.5
PROVIDENCE	6.3	6.7	6.5
EMERALD	7.0	5.7	6.3
LOPEZ (WBPB 89-D-15)	6.7	6.0	6.3
REGENT (NORMARC 101)	7.0	5.7	6.3
TRACENTA	7.0	5.7	6.3
EGMONT	6.0	6.3	6.2
NATIONAL	6.0	6.3	6.2
PENNCROSS	6.3	5.3	5.8
ALLURE	6.0	5.3	5.7
PRO/CUP (FORBES 89-12)	6.0	5.3	5.7
BR 1518	5.3	4.0	4.7
LSD VALUE	1.1	1.3	0.9

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).

TABLE 6.

SPRING DENSITY RATINGS OF BENGGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 1/

NAME	CA1	NJ3	MEAN
PUTTER	6.7	7.7	7.2
PROVIDENCE	7.0	7.3	7.2
COBRA	6.7	7.3	7.0
SR 1020	6.0	8.0	7.0
LOPEZ (WFPB 89-D-15)	6.7	7.0	6.8
CARMEN	6.0	7.0	6.5
NATIONAL	5.7	7.3	6.5
PENNCROSS	6.3	6.7	6.5
PENNEAGLE	5.3	7.3	6.3
EMERALD	6.3	6.0	6.2
PRO/CUP (FORBES 89-12)	6.3	6.0	6.2
REGENT (NORMARC 101)	7.0	5.0	6.0
TAMU 88-1	5.7	.	5.7
TRACENTA	6.0	5.0	5.5
ALLURE	6.3	4.0	5.2
BARDOT	6.0	4.3	5.2
EGMONT	5.3	4.7	5.0
BR 1518	5.0	2.7	3.8
LSD VALUE	1.8	1.4	1.2

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).

TABLE 7. SUMMER DENSITY RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 1/

NAME	CA1	NJ3	MEAN
PUTTER	6.7	6.7	6.7
PROVIDENCE	6.0	7.3	6.7
PENNEAGLE	7.0	6.0	6.5
LOPEZ (WPB 89-D-15)	6.0	6.7	6.3
SR 1020	6.0	6.7	6.3
TAMU 88-1	6.3	.	6.3
COBRA	5.7	6.7	6.2
PRO/CUP (FORBES 89-12)	6.0	6.3	6.2
REGENT (NORMARC 101)	6.3	5.7	6.0
PENNCROSS	6.0	5.7	5.8
ALLURE	7.0	4.3	5.7
EMERALD	6.0	5.3	5.7
NATIONAL	5.3	6.0	5.7
CARMEN	6.0	4.7	5.3
EGMONT	4.0	5.3	4.7
BARDOT	4.0	4.0	4.0
TRACENTA	4.3	3.7	4.0
BR 1518	4.0	2.3	3.2
LSD VALUE	0.7	1.8	1.0

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).

TABLE 8. FALL DENSITY RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 1/

NAME	CA1	NJ3	MEAN
LOPEZ (WPB 89-D-15)	6.3	7.0	6.7
COBRA	6.3	6.7	6.5
PENNEAGLE	6.0	7.0	6.5
PROVIDENCE	6.0	7.0	6.5
PUTTER	6.7	6.3	6.5
REGENT (NORMARC 101)	6.3	6.0	6.2
NATIONAL	6.3	5.7	6.0
PRO/CUP (FORBES 89-12)	6.0	6.0	6.0
SR 1020	6.0	6.0	6.0
TAMU 88-1	6.0	.	6.0
PENNCROSS	6.0	5.7	5.8
EMERALD	6.3	5.3	5.8
CARMEN	6.0	4.7	5.3
ALLURE	6.3	3.7	5.0
BARDOT	5.0	4.7	4.8
EGMONT	5.0	4.7	4.8
TRACENTA	5.0	4.3	4.7
BR 1518	5.3	2.3	3.8
LSD VALUE	0.7	1.6	0.9

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).

TABLE 9. THATCH MEASUREMENTS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

THATCH MEASUREMENTS IN MILLIMETERS 1/			
NAME	CA1	MD1	MEAN
PUTTER	39.3	15.0	27.2
COBRA	41.0	12.3	26.7
PENNCROSS	39.7	12.3	26.0
CARMEN	38.3	11.0	24.7
REGENT (NORMARC 101)	37.3	12.0	24.7
LOPEZ (WVPB 89-D-15)	36.3	12.7	24.5
EMERALD	34.7	12.3	23.5
PRO/CUP (FORBES 89-12)	34.3	12.3	23.3
PENNEAGLE	34.0	11.7	22.8
PROVIDENCE	32.7	13.0	22.8
NATIONAL	34.0	11.0	22.5
TAMU 88-1	32.0	11.0	21.5
ALLURE	34.3	8.3	21.3
SR 1020	27.3	12.3	19.8
EGMONT	29.3	9.7	19.5
BARDOT	26.7	10.7	18.7
TRACENTA	26.7	10.0	18.3
BR 1518	24.0	8.3	16.2
VIPER (88.CBL)	.	13.7	13.7
LSD VALUE	9.1	2.2	4.7

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).

TABLE 10.

THATCH ASHED DRY WEIGHT OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

THATCH ASHED DRY WEIGHT: GRAMS/0.25 SQ.FT. 1/

NAME	WA3
PENNEAGLE	13.7
ER 1518	13.0
LOPEZ (WVPB 89-D-15)	13.0
NATIONAL	13.0
PRO/CUP (FORBES 89-12)	13.0
COBRA	12.7
REGENT (NORMARC 101)	12.7
CARMEN	12.3
EGMONT	12.3
VIPER (88.CBL)	12.3
BARDOT	12.0
PENNCROSS	12.0
PROVIDENCE	12.0
SR 1020	12.0
EMERALD	11.7
FUTTER	11.7
TRACENTA	11.3
88.CBE	11.0
ALLURE	11.0
TAMU 88-1	10.7
LSD VALUE	1.8

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).

TABLE 11. BROWN PATCH RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

BROWN PATCH RATINGS 1-9; 9=NO DISEASE 1/

NAME	IL1	VA5	MEAN
ALLURE	.	9.0	9.0
PENNCROSS	9.0	9.0	9.0
PENNEAGLE	9.0	9.0	9.0
PRO/CUP (FORBES 89-12)	9.0	9.0	9.0
PROVIDENCE	9.0	9.0	9.0
TAMU 88-1	.	9.0	9.0
NATIONAL	8.7	9.0	8.8
88.CBE	8.3	9.0	8.7
CARMEN	8.3	9.0	8.7
LOPEZ (WBP 89-D-15)	8.3	9.0	8.7
PUTTER	8.3	9.0	8.7
REGENT (NORMARC 101)	8.3	9.0	8.7
COBRA	8.0	9.0	8.5
VIPER (88.CBL)	8.0	9.0	8.5
BR 1518	7.0	9.0	8.0
EMERALD	5.7	9.0	7.3
SR 1020	5.7	9.0	7.3
EGMONT	4.0	8.7	6.3
TRACENTA	4.3	8.0	6.2
BARDOT	3.3	8.0	5.7
LSD VALUE	2.4	0.9	1.3

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).

TABLE 12. PERCENT POA ANNUA (JANUARY) RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

PERCENT POA ANNUA: LOCATIONS 1/

NAME	CA1
EMERALD	26.3
NATIONAL	26.3
BARDOT	22.7
SR 1020	22.0
TAMU 88-1	22.0
CARMEN	21.3
LOPEZ (WVPB 89-D-15)	21.3
ALLURE	20.3
PRO/CUP (FORBES 89-12)	20.0
EGMONT	18.7
BR 1518	14.3
TRACENTA	13.7
PENNCROSS	10.7
PROVIDENCE	10.3
COBRA	10.0
FUTTER	7.0
REGENT (NORMARC 101)	6.3
PENNEAGLE	5.0
LSD VALUE	16.3

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).

TABLE 13. PERCENT POA ANNUA (FEBRUARY) RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

PERCENT POA ANNUA: LOCATIONS 1/

NAME	CA1
BR 1518	33.7
SR 1020	22.7
CARMEN	22.0
PRO/CUP (FORBES 89-12)	20.0
LOPEZ (WVPB 89-D-15)	19.7
ALLURE	19.0
EMERALD	17.7
TRACENTA	17.0
EGMONT	15.3
PROVIDENCE	14.0
COBRA	12.0
PENNCROSS	12.0
REGENT (NORMARC 101)	12.0
TAMU 88-1	11.3
BARDOT	11.0
NATIONAL	4.0
PENNEAGLE	2.3
FUTTER	2.3
LSD VALUE	22.9

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).

TABLE 14. PERCENT POA ANNUA (APRIL) RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

PERCENT POA ANNUA: LOCATIONS 1/

NAME	CA1
SR 1020	32.3
BR 1518	25.3
PRO/CUP (FORBES 89-12)	24.7
CARMEN	23.7
NATIONAL	21.7
ALLURE	19.7
LOPEZ (WVPB 89-D-15)	18.3
EMERALD	15.0
COBRA	13.7
TRACENTA	13.7
EGMONT	13.3
PENNCROSS	13.0
BARDOT	12.3
PROVIDENCE	12.3
REGENT (NORMARC 101)	10.3
TAMU 88-1	8.3
FUTTER	6.3
PENNEAGLE	5.7
LSD VALUE	14.6

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).

TABLE 15. PERCENT POA ANNUA (MAY) RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

PERCENT POA ANNUA: LOCATIONS 1/			
NAME	CA1	VA5	MEAN
SR 1020	26.0	45.0	35.5
TRACENTA	27.3	33.3	30.3
PRO/CUP (FORBES 89-12)	19.0	38.3	28.7
VIPER (88.CBL)	.	28.3	28.3
ALLURE	16.3	35.0	25.7
LOPEZ (WVPB 89-D-15)	31.3	19.0	25.2
PENNEAGLE	3.3	41.7	22.5
BR 1518	19.3	25.0	22.2
NATIONAL	28.0	15.0	21.5
EGMONT	16.0	26.7	21.3
PROVIDENCE	19.3	23.3	21.3
BARDOT	14.0	28.3	21.2
EMERALD	20.3	16.7	18.5
PUTTER	8.3	28.3	18.3
TAMU 88-1	16.0	19.0	17.5
88.CBE	.	15.7	15.7
CARMEN	20.7	8.3	14.5
COBRA	14.3	13.0	13.7
REGENT (NORMARC 101)	7.7	16.7	12.2
PENNCROSS	13.0	8.3	10.7
LSD VALUE	7.5	23.9	13.4

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).

TABLE 16. PERCENT POA ANNUA (JULY) RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

PERCENT POA ANNUA: LOCATIONS 1/

NAME	CA1
BR 1518	72.0
EGMONT	60.3
BARDOT	57.0
EMERALD	54.3
NATIONAL	50.3
CARMEN	42.7
PRO/CUP (FORBES 89-12)	39.0
REGENT (NORMARC 101)	38.0
TRACENTA	35.3
PROVIDENCE	35.0
SR 1020	35.0
LOPEZ (WVPB 89-D-15)	32.7
COBRA	24.0
ALLURE	21.0
TAMU 88-1	13.3
PENNCROSS	11.7
FUTTER	10.0
PENNEAGLE	8.3
LSD VALUE	33.5

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).

TABLE 17. PERCENT POA ANNUA (OCTOBER) RATINGS OF BENTGRASS CULTIVARS
GROWN ON A FAIRWAY OR TEE
1993 DATA

PERCENT POA ANNUA: LOCATIONS 1/

NAME	CA1
BR 1518	93.3
ALLURE	91.3
TRACENTA	86.7
PRO/CUP (FORBES 89-12)	85.3
BARDOT	80.3
FUTTER	66.0
NATIONAL	65.7
COBRA	65.0
LOPEZ (WVPB 89-D-15)	61.7
EGMONT	61.0
EMERALD	57.0
PENNCROSS	53.7
PENNEAGLE	52.0
TAMU 88-1	49.0
SR 1020	46.0
CARMEN	45.7
PROVIDENCE	43.3
REGENT (NORMARC 101)	33.3
LSD VALUE	31.0

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).

TABLE 18. HERBICIDE INJURY RATINGS OF BENTGRASS CULTIVARS
 GROWN ON A FAIRWAY OR TEE 1/
 1993 DATA

HERBICIDE INJURY RATINGS 1-9; 9=NO INJURY 2/

NAME	WA3
EMERALD	8.0
PUTTER	8.0
EGMONT	7.7
PRO/CUP (FORBES 89-12)	7.7
PROVIDENCE	7.7
BARDOT	7.3
VIPER (88.CBL)	7.3
ALLURE	7.0
BR 1518	7.0
CARMEN	6.7
COBRA	6.7
LOPEZ (WVPB 89-D-15)	6.7
PENNEAGLE	6.7
REGENT (NORMARC 101)	6.7
88.CBE	6.3
SR 1020	6.3
TAMU 88-1	6.3
NATIONAL	5.3
PENNCROSS	4.7
TRACENTA	4.7
LSD VALUE	4.2

1/ HERBICIDE APPLIED WAS ETHOFUMESATE.

2/ 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).