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ON-SITE TESTING OF GRASSES FOR OVERSEEDING OF BERMUDAGRASS FAIRWAYS

INTRODUCTION

With the initiation of on-site testing of bentgrass and bermudagrass on putting greens, interest is now increasing for the evaluation of other grasses used on golf courses. Grasses are needed that provide exceptional playing surfaces with less pesticides, fertilizer and water. Therefore, grasses that have superior drought, cold, heat, disease and insect resistance need to be identified.

Overseeding bermudagrass fairways is a common practice throughout the southern half of the United States. Millions of pounds of seed are bought and sown each autumn on golf courses in this region. Golf course owners, managers and superintendents seek grasses that establish quickly, exhibit exceptional playability, are aesthetically pleasing and require less inputs. This project evaluates new and established cultivars on bermudagrass fairways at golf courses in the Southern and Western U.S. This on-site testing program will provide scientific information of a more applied nature about cultivars for overseeding.

Information from this project is valuable to the golfing industry because it will determine the adaptation of grasses for golf course use. 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 cultivars for overseeding in a particular regional climate.

Location and Number of Trial Sites

This evaluation trial is jointly sponsored by the Golf Course Superintendents Association of America (GCSAA), the United States Golf Association (USGA) Green Section and the National Turfgrass Evaluation Program (NTEP). 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. Ten evaluation trial sites have been established. Trials are located on active play sites where golfers hit fairway golf shots and/or drive golf carts. Host clubs provide daily maintenance of the fairway site.

Trial Specifics

The NTEP functions as the coordinating agent for the cultivar trials. These trials are two years in duration, established in fall 1999 and again in fall 2000. 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)

This trial is conducted principally with named cultivars and commercially available blends or mixtures. Various species used in overseeding, such as perennial ryegrass and *poa trivialis* have been allowed. Experimental lines that will be released in the immediate future (i.e. before the end of the testing cycle) were also included in this trial at the sponsoring company's discretion.

The research cooperator is responsible for data collection. The following data has been collected from each trial:

1. Percent establishment rate (4-6 weeks after seeding)
2. Turfgrass quality (monthly during winter, 2 - 4 times per month during the spring and fall transition period)
3. Plot color, genetic color (twice - late fall/early winter and spring)
4. Rate or speed of transition from bermudagrass to overseeded grass in fall (2 - 4 times per month during fall)
5. Rate or speed of transition from overseeded grass to bermudagrass in spring (2 - 4 times per month during spring)
6. Environmental stress, traffic and divotting damage, disease and insect damage and other data deemed appropriate and feasible by the research cooperator.

Administration

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 which constitute the entries for each trial location. The NTEP provides the 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
Building 003, Room 217
Beltsville, Maryland 20705 USA

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

TRIAL LOCATIONS - ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAYS

Sponsored by USGA, GCSAA and NTEP

Location	Golf Course	Superintendent	Research Cooperator	University/Institution
Green Valley, AZ	Green Valley Country Club	Mike Bates	Dr. David Kopec	Arizona
Palm Desert, CA	Mountain Vista	Nancy Dickens	Dr. Robert Green Mike Henry Jeff Place	California-Riverside Univ. of California Coop. Ext. College of the Desert, Palm Desert, CA
Orlando, FL	Grand Cypress	Tom Alex	Dr. Al Dudeck	Florida
Duluth (Atlanta), GA	Atlanta Athletic Club	Ken Mangum	Dr. Gil Landry	Georgia
Starkville, MS	Mississippi State Univ.	Pat Sneed	Dr. Jeff Krans	Mississippi State
Crescent (St. Louis), MO	Players Club at St. Louis	Todd Marquette	Dr. Barb Corwin	Missouri
Myrtle Beach, SC	Blackmoor	Bob Zuercher	Dr. Bruce Martin	Clemson
Garland (Dallas), TX	Fire Wheel Golf Park	Gary Chambers	Dr. Milt Engelke	Texas A&M-Dallas
The Woodlands, TX (Houston)	The Woodlands	Scott Hamilton, Gant Austin	Dr. Richard White	Texas A&M-College Station
Charlottesville, VA	Glenmore Country Club	Tim Thomas	Dr. David Chalmers	Virginia Tech

ON-SITE TESTING OF GRASSES FOR OVERSEEDING OF BERMUDAGRASS FAIRWAYS

Entry #	Name	Species or composition	Sponsor
1	Allsport	perennial ryegrass	LESCO, Inc.
2	LS-DE1	33% ProSport, 33% 6011, 33% Wilmington p. ryegrass blend	LESCO, Inc.
3	Proam	poa trivialis	LESCO, Inc.
4	Barlennium	perennial ryegrass	Barenbrug USA
5	Pirouette	perennial ryegrass	Barenbrug USA
6	Bariviera	poa trivialis	Barenbrug USA
7	Professional's Select	40% Windstar, 35% Sonata, 25% Jet p. ryegrass blend	Pennington Seed, Inc.
8	Transist	intermediate ryegrass	Pickseed West, Inc.
9	Pick HR A-97	intermediate ryegrass	Pickseed West, Inc.
10	First Cut	85% Paragon p. rye, 15% Stardust poa trivialis	Turf Merchants, Inc.
11	Brightstar II	perennial ryegrass	Turf-Seed, Inc.
12	Charger II	perennial ryegrass	Turf-Seed, Inc.
13	Citation III	perennial ryegrass	Turf-Seed, Inc.
14	Brightstar II + Winterplay	85% Brightstar II p. rye, 15% Winterplay poa trivialis	Turf-Seed, Inc.
15	Charger	perennial ryegrass	Standard Entry
16	Citation III + Winterstar	85% Citation III p. rye, 15% Winterstar poa trivialis	Turf-Seed, Inc.
17	Winterplay	poa trivialis	Standard Entry
18	ABT-99-3.268	annual ryegrass	Cebeco International Seeds
19	Paragon	perennial ryegrass	Turf Merchants, Inc.
20	Quick Trans. (ST-3BK-99)	perennial ryegrass	Pure-Seed Testing, Inc.
21	Fiesta 3	perennial ryegrass	Pickseed West, Inc.
22	Futura 2500	33% Cutter p. rye, 33% Sunshine p. rye, 33% Transist intermediate rye	Pickseed West, Inc.
23	MED-007	25% JR-151, 25% JR-142, 25% JR-128, 25% JR-265 p. ryegrass blend	Simplot Turf & Horticulture
24	Capri	perennial ryegrass	DLF Trifolium
25	Leaderboard	34% Pennant II, 33% Panther, 33% Seville II p. ryegrass blend	Independent Seeds
26	Seville II	perennial ryegrass	ProSeeds Marketing
27	Snowbird	poa trivialis	ProSeeds Marketing
28	MP58	perennial ryegrass	Jenks Seed Connection
29	Prime	33% Elfin, 33% MP58, 33% MP88 p. ryegrass blend	Jenks Seed Connection
30	Elfin	perennial ryegrass	Jenks Seed Connection
31	MP111	perennial ryegrass	Cascade International Seed Co.
32	Mountain View Seed Blend 1	40% Pearl, 30% Pageant II, 30% EP57 p. ryegrass blend	Mountain View Seed Co.
33	Mountain View Seed Blend 2	40% EP56, 30% Pearl, 30% Academy p. ryegrass blend	Mountain View Seed Co.
34	Mountain View Seed Blend 3	40% EP57, 30% EP56, 30% Flash p. ryegrass blend	Mountain View Seed Co.
35	Essence	perennial ryegrass	Cebeco International Seeds
36	Top Hat	perennial ryegrass	Standard Entry
37	Cebeco Blend 1	33% Top Hat, 33% R2, 33% Gator II p. ryegrass blend	Cebeco International Seeds
38	Sabre	poa trivialis	Standard Entry
39	Tourstar	34% Imagine, 33% Ice, 33% Lynx p. ryegrass blend	Budd Seed
40	Marvelgreen + Laser	40% Palmer III, 20% Prelude III, 20% Phantom p. rye, 15% Laser p	Budd Seed
41	Phantom	perennial ryegrass	ProSeeds Marketing
42	Marvelgreen Supreme	50% Palmer III, 25% Prelude III, 25% Phantom p. ryegrass blend	Budd Seed

TABLE 1A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT GREEN VALLEY, AZ (GREEN VALLEY COUNTRY CLUB)

SEEDBED PREPARATION		FERTILIZATION		
Scalped 3 directions from 5/8 to 3/8 and 2 cross vertical mowings - medium intensity.		Date(s)	Product	Rate (lbs./M)
MOWING		Oct. 00-Jan. 01 (monthly)	21-7-14	1.0 lb. N
Initial height mowing height during test	1.0"-first 2 weeks, 3/4"-another 2 weeks. 5/8" (3/8" - late April)	Feb.-May, 2001 (monthly)	16-20-0 15-0-0	1.0 lb. N
Frequency	3 times per week	Dec. 00-Mar. 01 (monthly)	Ferromec	4 oz. Product/M
Type of mower	7 gang tractor pull (gang) unit.		Total	7-8 lbs. N
CULTIVATION		FUNGICIDES		
Aerification - dates	at end of transition mid-June 2001.	Date(s)	Product	Rate (oz./M)
Aerification - type		None		
Verticutting		HERBICIDES		
Dates of topdressing		Date(s)	Product	Rate (oz./M)
Other cultural practices		None		
MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION		INSECTICIDES		
Mowing height lowered from 5/8 to 3/8 inch in late April, 2001.		Date(s)	Product	Rate (oz./M)
OTHER INFORMATION		None		
Course closed for overseeding	Yes, for 12 days	OTHER PRODUCTS		
Landing area	Yes, 3 reps spaced equally across long fairway no	Date(s)	Product	Rate (oz./M)
Divotting problem		None		
Cart allowed on Test area	Yes, cart path down middle of fairways no	NOTES/COMMENTS		
Traffic patterns				

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TABLE 2A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT PALM DESERT, CA (MOUNTAIN VISTA GOLF COURSE)

SEEDBED PREPARATION

Verticut three times; mowed at 0.25"; swept debris (3 times); water off 2 weeks prior to seeding; dethatching would be described as light (not very aggressive).

FERTILIZATION

		Date(s)	Product	Rate (lbs./M)
MOWING		10/9/00, 10/15/00 18-Oct-00 10/24/00, 10/25/00 10-Nov-00 11/20/00, 12/5/00	8-8-8 15-15-15 33-0-0 15-15-15 Iron application	0.11 N 0.50N 0.20 N 0.6 N 0.70 N
Initial height	3/4"			
mowing height during test	7/16"			
Frequency	3 times per week	11/22/00, 11/28/00, 1/10/01	21-7-14	0.70 N
Type of mower	5 plex: John Deere 3235A; Jacobsen 3800	24-May-01 30-May-01	21-0-0 25-3-10	0.55 N 0.80 N

CULTIVATION

Aerification - dates	Vertidrain with 5/8"-diam. Solid tines, 8" depth -6/1/01; aerify with 5/8" diam.	FUNGICIDES		
Aerification - type	Hollow tines, 2.5"depth in July, 2001.	Date(s)	Product	Rate (oz./M)
Verticutting				
Dates of topdressing		None		
Other cultural practices			HERBICIDES	

MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION

cutting height of fairway to 7/16" from 1/2"; Vertidrain on June 1, 2001

OTHER INFORMATION

Course closed for overseeding	Yes, month of October	Date(s)	Product	Rate (oz./M)
Landing area				
Divotting problem		None		
Cart allowed on Test area	players were allowed off of cartpath on Nov. 2000		OTHER PRODUCTS	
Traffic patterns		Date(s)	Product	Rate (oz./M)

NOTES/COMMENTS

Seeded on Oct. 6, 2000. Open for play (cartpaths only) on Oct. 30

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TABLE 2B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING CULTIVARS IN THE
 1999 USGA/GCSAA/NTEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
 AT PALM DESERT, CA (MOUNTAIN VISTA GOLF COURSE) 1/
 2000-01 DATA
 TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	PERCENT COVER OF LIVING GRASSES IN FALL TRANSITION PERIOD IN 2000						WINTER PERCENT COVER OF (2001)			
	BERMUDA GRASS	OVERSEED GRASS	BERMUDA GRASS	OVERSEED GRASS	BERMUDA GRASS	OVERSEED GRASS	DORMANCY BERMUDA GRASS	LIVING GRASS	DORMANCY BERMUDA GRASS	LIVING GRASS
	11/22	11/22	12/7	12/7	12/21	12/21	1/18	1/18	2/15	2/15
BARIENNIAL	10.0	86.7	6.7	93.0	1.7	97.7	0.0	99.0	0	99
MARVELGREEN SUPREME	16.7	80.0	10.0	90.0	0.0	99.0	0.0	99.0	0	99
MP111	15.0	78.3	6.7	93.0	1.0	97.7	0.0	99.0	0	99
PARAGON	11.7	85.0	10.0	90.0	0.0	99.0	0.0	99.0	0	99
FIRST CUT	16.7	83.3	10.0	88.3	0.0	99.0	0.0	99.0	0	99
SEVILLE II	18.3	76.7	10.0	90.0	0.7	97.7	0.0	99.0	0	99
TOURSTAR	16.7	78.3	10.0	90.0	0.0	99.0	0.0	99.0	0	99
BRIGHTSTAR II	15.0	78.3	6.7	91.3	0.0	97.7	0.0	99.0	0	99
CHARGER	13.3	76.7	10.0	90.0	0.0	99.0	0.0	99.0	0	99
FIESTA 3	20.0	76.7	10.0	88.3	0.7	97.7	0.0	99.0	0	99
PHANTOM	20.0	76.7	10.0	86.7	1.7	96.0	0.0	99.0	0	99
PIQUETTE	20.0	76.7	6.7	93.0	0.0	99.0	0.0	99.0	0	99
ALLSPORT	15.0	81.7	15.0	85.0	1.7	97.7	0.0	99.0	0	99
BRIGHTSTAR II + WINTERPLAY	16.7	70.0	16.7	80.0	2.3	96.3	1.7	97.7	0	99
CITATION III	15.0	78.3	10.0	86.7	1.7	96.3	0.0	99.0	0	99
ELFKIN	13.3	86.7	6.7	89.7	0.0	97.7	0.0	99.0	0	99
LEADERBOARD	20.0	80.0	10.0	90.0	1.7	94.7	0.0	99.0	0	99
LS-DE1	16.7	80.0	6.7	93.0	3.3	94.3	0.0	99.0	0	99
MOUNTAIN VIEW 1	20.0	80.0	8.3	91.7	0.0	99.0	0.0	99.0	0	99
MOUNTAIN VIEW 2	20.0	76.7	13.3	86.7	1.7	97.7	0.0	99.0	0	99
MOUNTAIN VIEW 3	16.7	80.0	6.7	93.0	2.3	94.7	0.0	99.0	0	99
PRIME	16.7	80.0	6.7	89.7	2.3	94.7	0.0	99.0	0	99
CHARGER II	20.0	80.0	10.0	89.7	2.3	96.3	0.0	99.0	0	99
MED-007	20.0	80.0	13.3	86.7	0.7	97.7	0.0	99.0	0	99
MP58	20.0	80.0	20.0	75.0	5.0	89.7	0.0	99.0	0	99
PST-3BK-99	21.7	75.0	10.0	90.0	0.0	99.0	0.0	99.0	0	99
CITATION III + WINTERSTAR	16.7	80.0	15.0	83.3	3.3	93.0	0.0	99.0	0	99
ESSENCE	20.0	76.7	13.3	80.0	0.0	99.0	0.0	99.0	0	99
MARVELGREEN + LASER	20.0	73.3	15.0	85.0	4.0	95.0	0.0	99.0	0	99
CEBECO BLEND 1	16.7	80.0	10.0	86.7	3.3	94.7	0.0	99.0	0	99
PROFESSIONAL'S SELECT	20.0	76.7	10.0	86.7	3.3	93.0	0.0	99.0	0	99
CAPRI	25.0	66.7	16.7	83.3	5.0	93.0	0.0	99.0	0	99
FUTURA 2500	20.0	76.7	10.0	90.0	3.3	93.0	0.0	99.0	0	99
PICK HR A-97	16.7	70.0	6.7	89.7	1.3	96.3	0.0	99.0	0	99
TOP HAT	23.3	70.0	15.0	85.0	1.7	96.3	0.0	99.0	0	99
TRANSIST	20.0	76.7	13.3	81.7	5.7	90.0	0.0	99.0	0	99
SNOWBIRD	23.3	66.7	23.3	73.3	6.7	91.7	0.0	99.0	0	99
PROAM	23.3	70.0	13.3	76.7	5.0	89.7	0.0	99.0	0	99
SABRE	16.7	70.0	10.0	76.3	5.0	89.7	0.0	99.0	0	99
WINTERPLAY	21.7	63.3	16.7	83.3	6.7	88.3	0.0	99.0	0	99
BARIVIERA	20.0	60.0	18.3	66.7	6.7	83.3	0.0	99.0	0	99
ABT-99-3.268	20.0	73.3	5.0	93.0	5.0	91.7	0.0	99.0	0	99
LSD VALUE	19.4	15.8	15.5	16.9	6.0	10.6	1.6	1.3	-	-
C.V. (%)	30.3	9.5	52.7	8.9	117.8	4.9	1122.5	0.4	-	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).

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

TABLE 2B.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING CULTIVARS IN THE
 1999 USGA/GCSAA/NTEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
 AT PALM DESERT, CA (MOUNTAIN VISTA GOLF COURSE) 1/
 2000-01 DATA
 TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	PERCENT COVER OF LIVING GRASSES IN SPRING/SUMMER TRANSITION PERIOD IN 2001									
	BERMUDA GRASS 4/12	OVERSEED GRASS 4/12	BERMUDA GRASS 5/3	OVERSEED GRASS 5/3	BERMUDA GRASS 5/29	OVERSEED GRASS 5/29	BERMUDA GRASS 6/28	OVERSEED GRASS 6/28	BERMUDA GRASS 7/26	OVERSEED GRASS 7/26
BARIENNIIUM	84.7	15.0	65.0	35.0	73.3	26.7	88.3	11.7	99.0	0.0
MARVELGREEN SUPREME	84.7	15.0	60.0	40.0	76.7	23.3	92.7	7.3	98.7	0.7
MP111	81.3	18.3	70.0	30.0	80.0	20.0	88.3	11.7	99.0	0.0
PARAGON	88.0	11.7	63.3	36.7	73.3	26.7	80.0	13.3	99.0	0.0
FIRST CUT	84.7	15.0	63.3	36.7	75.0	25.0	89.0	11.0	99.0	0.0
SEVILLE II	76.3	23.3	66.7	33.3	73.3	26.7	88.3	10.0	99.0	0.0
TOURSTAR	84.7	15.0	70.0	30.0	75.0	25.0	90.0	10.0	97.7	1.7
BRIGHTSTAR II	76.3	23.3	70.0	30.0	75.0	25.0	86.7	8.3	99.0	0.0
CHARGER	84.7	15.0	63.3	36.7	78.3	21.7	91.7	8.3	99.0	0.0
FIESTA 3	79.7	20.0	66.7	33.3	73.3	26.7	89.0	9.3	99.0	0.0
PHANTOM	84.7	15.0	66.7	33.3	78.3	21.7	95.0	5.0	99.0	0.0
PIROUETTE	86.3	13.3	70.0	30.0	80.0	20.0	83.3	13.3	99.0	0.0
ALLSPORT	88.0	11.7	70.0	30.0	80.0	20.0	94.0	6.0	99.0	0.0
BRIGHTSTAR II + WINTERPLAY	92.7	6.7	66.7	33.3	80.0	20.0	81.7	16.7	99.0	0.0
CITATION III	91.0	8.3	63.3	36.7	75.0	25.0	97.0	3.0	99.0	0.0
ELFKIN	83.0	16.7	73.3	26.7	80.0	20.0	90.0	10.0	99.0	0.0
LEADERBOARD	82.7	16.7	63.3	36.7	78.3	21.7	94.0	5.7	99.0	0.0
LS-DE1	83.0	16.7	76.7	23.3	71.7	28.3	95.0	5.0	99.0	0.0
MOUNTAIN VIEW 1	86.3	13.3	66.7	33.3	78.3	21.7	90.7	9.3	97.7	1.7
MOUNTAIN VIEW 2	84.7	15.0	70.0	30.0	76.7	23.3	91.3	8.3	97.7	1.7
MOUNTAIN VIEW 3	86.3	13.3	70.0	30.0	78.3	21.7	91.7	8.3	98.7	0.7
PRIME	91.0	8.3	68.3	31.7	81.7	18.3	88.0	8.3	99.0	0.0
CHARGER II	86.3	13.3	66.7	33.3	80.0	20.0	94.3	5.7	97.7	1.7
MED-007	92.7	6.7	60.0	40.0	76.7	23.3	96.0	4.0	99.0	0.0
MP58	88.0	11.7	66.7	33.3	76.7	23.3	90.7	9.3	99.0	0.0
PST-3BK-99	83.0	16.7	60.0	40.0	80.0	20.0	91.7	8.3	99.0	0.0
CITATION III + WINTERSTAR	73.0	26.7	63.3	36.7	70.0	30.0	88.3	11.7	99.0	0.0
ESSENCE	83.0	16.7	70.0	30.0	80.0	20.0	90.0	10.0	99.0	0.0
MARVELGREEN + LASER	91.0	8.3	61.7	38.3	80.0	20.0	92.7	7.3	99.0	0.0
CEBEKO BLEND 1	82.7	16.7	63.3	36.7	80.0	20.0	90.0	10.0	99.0	0.0
PROFESSIONAL'S SELECT	91.0	8.3	66.7	33.3	76.7	23.3	91.7	8.3	99.0	0.0
CAPRI	68.0	31.7	60.0	40.0	75.0	25.0	83.3	16.7	97.7	1.7
FUTURA 2500	89.3	10.0	66.7	33.3	76.7	23.3	83.3	16.7	99.0	0.0
PICK HR A-97	86.3	13.3	60.0	40.0	60.0	40.0	81.7	18.3	99.0	0.0
TOP HAT	83.0	16.7	63.3	36.7	63.3	30.0	73.3	10.0	99.0	0.0
TRANSIST	82.7	16.7	53.3	46.7	55.0	45.0	78.3	21.7	99.0	0.0
SNOWBIRD	82.7	16.7	53.3	46.7	40.0	48.3	81.7	16.7	99.0	0.0
PROAM	76.3	21.7	43.3	56.7	35.0	53.3	63.3	30.0	97.7	1.7
SABRE	82.7	16.7	50.0	50.0	28.3	56.7	48.3	40.0	99.0	0.0
WINTERPLAY	63.0	36.7	53.3	46.7	56.7	23.3	71.7	11.7	99.0	0.0
BARIVIERA	58.0	36.7	45.0	51.7	38.3	28.3	76.7	11.7	99.0	0.0
ABT-99-3.268	69.7	26.7	50.0	50.0	33.3	28.3	68.3	20.0	99.0	0.0
LSD VALUE	32.9	35.9	12.8	13.0	9.9	10.8	18.7	13.4	3.3	4.3
C.V. (%)	13.8	68.4	11.4	19.8	9.5	25.6	11.8	62.4	0.9	409.9

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. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT ORLANDO, FL (GRAND CYPRESS GOLF COURSE)

SEEDBED PREPARATION

Fairway was scalped from 3/8" to 1/4", blown and swept.

FERTILIZATION

Date(s) Product Rate (lbs./M)

Nov. 00	5-0-15	0.5 N
Dec. 00	5-0-15	0.5 N
Jan. 01	5-0-15	0.5 N
Nov. 00	5-0-15	1 N

MOWING

Initial height
mowing height during test

5/8"

Liquid fertilizer applied w/irrigation throughout at minimal rates.

Frequency

Type of mower

every other day
Jacobson LF 100

FUNGICIDES

Date(s) Product Rate (oz./M)

CULTIVATION

None

Aerification - dates

Aerification - type

Verticutting

Dates of topdressing

Other cultural practices

HERBICIDES

Date(s) Product Rate (oz./M)

None

MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION

Simazine applied twice in April - 1/16 oz./1000 ft.²

INSECTICIDES

Date(s) Product Rate (oz./M)

None

OTHER INFORMATION

Course closed for overseeding

Yes, 1 day

Date(s) Product Rate (oz./M)

Landing area

Yes

None

Divotting problem

No

Cart allowed on Test area

Yes

Traffic patterns

No

OTHER PRODUCTS

NOTES/COMMENTS

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

TABLE 3B.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING GRASSES IN THE
1999 USGA/GCSAA/NTEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
AT ORLANDO, FL (GRAND CYPRESS GOLF COURSE) 1/
2000-01 DATA
TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	ESTABLISHED	QUALITY RATINGS IN WINTER AND SPRING/SUMMER TRANSITION PERIOD (2001)						QUALITY MEAN
		EARLY DEC. 00	JAN. 01	FEB. 01	MAR. 01	APR. 01	MAY 01	
SNOWBIRD	65.3	6.0	7.3	5.3	6.0	7.7	7.3	7.3 6.7
BARIVIERA	55.3	5.3	7.0	5.0	5.7	7.7	7.3	8.0 6.6
PROAM	56.3	6.0	7.3	5.3	6.3	7.7	6.7	6.7 6.6
WINTERPLAY	55.0	5.7	6.7	5.3	6.0	7.7	6.7	6.3 6.3
SABRE	47.3	5.3	6.3	5.3	5.7	7.3	6.0	6.7 6.1
MARVELGREEN + LASER	79.7	6.3	6.0	4.0	4.7	6.3	7.0	7.7 6.0
FIRST CUT	79.7	6.7	6.3	3.7	4.3	6.3	7.0	7.0 5.9
LEADERBOARD	85.7	6.3	6.7	4.0	4.3	5.3	5.3	6.0 5.4
PARAGON	81.0	7.0	6.0	3.0	3.0	5.3	6.3	7.0 5.4
TOP HAT	87.7	6.0	5.3	3.0	3.3	6.0	7.0	7.3 5.4
TRANSIST	80.7	5.7	7.3	4.3	3.3	5.0	6.3	6.0 5.4
ELFKIN	86.0	6.7	6.3	3.0	3.7	5.0	5.7	6.7 5.3
CHARGER	84.7	5.7	5.7	2.7	3.0	5.3	6.7	7.3 5.2
FIESTA 3	85.0	6.7	6.3	3.7	3.7	4.3	5.3	6.3 5.2
MOUNTAIN VIEW 1	83.3	6.0	5.3	3.0	3.3	5.3	6.3	7.3 5.2
PROFESSIONAL'S SELECT	84.0	6.3	6.0	3.3	3.3	4.7	6.0	6.7 5.2
CITATION III + WINTERSTAR	82.7	5.3	5.7	3.7	4.0	5.7	5.7	5.7 5.1
MOUNTAIN VIEW 3	79.0	6.3	6.3	2.7	3.3	4.7	5.7	6.7 5.1
SEVILLE II	83.0	6.3	6.3	3.0	3.3	5.0	5.7	6.0 5.1
ALLSPORT	73.0	6.0	6.0	3.0	3.3	4.7	6.0	6.3 5.0
BARLENNIUM	81.7	6.3	6.0	3.0	3.0	4.7	6.0	6.3 5.0
CHARGER II	83.7	6.3	6.0	3.3	3.3	5.0	5.7	5.7 5.0
FUTURA 2500	80.3	6.3	6.7	3.7	3.0	4.0	5.7	6.0 5.0
MARVELGREEN SUPREME	82.3	6.0	6.3	3.3	3.0	4.7	5.7	5.7 5.0
MED-007	86.3	6.3	6.3	3.7	3.3	4.3	5.3	5.3 5.0
MOUNTAIN VIEW 2	77.3	6.3	6.0	3.3	3.3	4.3	5.7	6.0 5.0
BRIGHTSTAR II + WINTERPLAY	71.0	5.7	5.7	3.0	3.3	5.0	5.7	6.0 4.9
CEBEKO BLEND 1	89.0	6.0	6.0	3.0	3.0	4.0	5.7	6.3 4.9
TOURSTAR	83.7	6.0	6.0	2.7	3.0	4.7	5.7	6.3 4.9
BRIGHTSTAR II	77.0	5.7	5.3	3.0	3.0	5.0	5.7	5.7 4.8
ESSENCE	85.0	6.0	6.0	3.0	3.0	4.0	5.7	5.7 4.8
MP111	71.3	5.3	5.0	2.7	3.0	4.7	6.0	6.7 4.8
PHANTOM	85.0	6.0	5.7	3.3	3.0	4.3	5.3	5.3 4.7
ABT-99-3.268	87.7	6.7	8.0	4.3	3.3	3.3	3.3	3.0 4.6
CITATION III	79.3	5.7	5.3	3.3	3.7	4.7	4.7	5.0 4.6
PICK HR A-97	76.0	6.3	7.0	4.3	3.7	3.3	3.7	3.3 4.5
PRIME	80.3	5.7	5.7	3.0	3.0	4.0	4.7	5.0 4.4
CAPRI	68.3	5.3	6.0	3.0	3.0	4.0	4.7	4.0 4.3
MP58	71.3	5.3	5.3	3.0	2.7	4.0	4.7	5.3 4.3
PIROUETTE	79.0	5.0	5.0	2.7	2.7	4.3	4.7	5.0 4.2
PST-3BK-99	74.0	5.0	5.0	2.0	2.3	3.7	4.7	4.7 3.9
LS-DE1	58.7	4.3	4.7	2.0	2.3	3.0	4.0	4.3 3.5
LSD VALUE	12.0	1.3	1.0	1.0	1.1	1.1	1.5	1.8 0.7
C.V. (%)	9.8	11.0	10.3	18.7	20.1	14.3	15.2	17.0 8.9

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 4A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT DULUTH (ATLANTA), GA (ATLANTA ATHLETIC CLUB)

SEEDBED PREPARATION

Scalped at 0.25" and handraked. After seeding, brushed with push brooms in two directions.

MOWING

Initial height 0.25"
mowing height during test 7/16"
Frequency 3-4 times per week
Type of mower JD 3235 Reel

FERTILIZATION

	Date(s)	Product	Rate (lbs./M)
1 week after seeding	19-19-19	0.25 lb. N	
23-Apr-01	19-19-19	1.5 lb. N	
5-Jun-01	42-0-0 (multicote)	1 lb. N	

CULTIVATION

Aerification - dates 22-Jul-01
Aerification - type 3/4" solid
Verticutting
Dates of topdressing
Other cultural practices

FUNGICIDES

	Date(s)	Product	Rate (oz./M)
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None

HERBICIDES

	Date(s)	Product	Rate (oz./M)
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None

INSECTICIDES

	Date(s)	Product	Rate (oz./M)
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None

MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION

Solid tine (3/4") on July 22

OTHER INFORMATION

Course closed for overseeding Yes, for 1 day
Landing area Yes
Divotting problem No
Cart allowed on Test area No carts until Bermuda greenup
Traffic patterns No

OTHER PRODUCTS

	Date(s)	Product	Rate (oz./M)
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None

NOTES/COMMENTS

Different types of Bermudagrass affected overseeding establishment.

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

TABLE 4B.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING GRASSES IN THE
 1999 USGA/GCSAA/NIEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
 AT DULUTH (ATLANTA), GA (ATLANTA ATHLETIC CLUB) 1/
 2000-01 DATA
 TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR 3/13/01	WINTER QUALITY 2/21 2001	SPRING/SUMMER QUALITY RATINGS IN 2001						QUALITY MEAN
			3/13	4/16	5/11	5/18	6/26	7/10	
TOP HAT	7.3	6.0	7.0	8.3	8.3	8.0	5.3	5.7	7.0
FIESTA 3	9.0	5.7	7.3	8.7	8.0	8.0	5.3	5.3	6.9
BRIGHTSTAR II	9.0	5.3	6.7	8.7	8.3	8.3	5.3	4.7	6.8
CEBEKO BLEND 1	8.0	5.7	6.3	8.3	8.3	7.7	5.7	5.3	6.8
CHARGER II	8.3	5.7	7.0	8.3	8.0	7.3	6.0	5.3	6.8
PIROUETTE	7.7	5.7	6.7	8.3	8.3	8.0	5.0	4.7	6.7
TOURSTAR	8.3	6.0	7.0	7.7	8.0	8.0	5.3	5.0	6.7
MARVELGREEN SUPREME	8.7	5.3	6.7	9.0	8.3	7.0	5.0	4.7	6.6
MED-007	8.7	5.0	6.3	8.7	8.3	8.3	5.0	4.3	6.6
MOUNTAIN VIEW 3	8.3	5.0	6.0	8.3	8.3	8.0	5.3	5.3	6.6
CHARGER	7.7	5.7	7.3	7.7	7.7	7.0	5.0	5.0	6.5
BARLENNIUM	8.7	5.3	7.0	8.7	7.0	6.3	5.3	5.3	6.4
FIRST CUT	8.3	5.3	6.3	7.7	8.0	7.7	5.0	4.7	6.4
ELFKIN	8.0	5.0	7.0	7.7	7.0	7.0	5.3	5.0	6.3
ESSENCE	7.3	5.0	6.3	8.0	8.0	7.0	4.7	5.0	6.3
MOUNTAIN VIEW 2	8.7	5.3	6.3	8.0	8.3	7.3	4.3	4.7	6.3
MP58	9.0	5.0	6.0	7.7	7.3	7.0	6.0	5.0	6.3
CITATION III + WINTERSTAR	8.0	5.3	6.3	7.7	7.7	7.0	5.0	4.3	6.2
PHANTOM	8.7	4.7	6.3	8.3	8.0	7.7	4.3	4.0	6.2
SEVILLE II	8.7	5.0	6.0	8.0	7.3	7.0	5.3	4.7	6.2
MOUNTAIN VIEW 1	8.7	4.7	6.0	8.3	7.3	7.0	4.7	5.0	6.1
ALLSPORT	8.7	5.0	6.0	8.0	7.0	6.3	5.0	4.7	6.0
FUTURA 2500	8.3	5.0	6.0	7.3	6.7	7.0	5.0	5.3	6.0
LS-DE1	9.0	5.0	5.7	7.7	7.0	7.0	5.3	4.3	6.0
PROFESSIONAL'S SELECT	9.0	4.7	6.3	8.3	7.7	5.7	5.0	4.7	6.0
CITATION III	8.3	5.3	6.7	7.0	6.3	5.7	4.7	4.7	5.8
LEADERBOARD	8.7	4.3	5.7	7.0	7.0	6.7	5.7	4.0	5.8
PST-3BK-99	8.3	5.0	6.0	6.7	6.0	5.7	5.3	5.7	5.8
MP111	8.3	4.7	5.3	6.7	7.0	6.7	5.0	4.3	5.7
PRIME	8.7	4.3	5.3	7.7	6.7	6.0	5.3	4.7	5.7
ABT-99-3.268	5.0	5.3	5.7	4.7	5.0	5.3	6.7	6.7	5.6
BRIGHTSTAR II + WINTERPLAY	8.7	5.0	6.3	7.0	6.3	5.7	4.7	4.0	5.6
PARAGON	8.7	5.0	6.7	7.7	6.0	5.3	4.7	4.0	5.6
SNOWBIRD	7.0	3.3	4.7	6.3	6.3	6.0	6.0	6.3	5.6
CAPRI	7.3	4.0	5.7	7.0	6.0	6.7	5.0	4.3	5.5
MARVELGREEN + LASER	8.3	4.7	5.7	7.3	6.7	5.7	4.7	4.0	5.5
TRANSIST	6.7	4.3	5.3	6.0	5.0	4.3	6.0	6.7	5.4
BARIVIERA	6.3	3.3	4.0	5.3	6.3	6.3	5.7	6.0	5.3
WINTERPLAY	7.0	4.0	4.7	5.7	6.3	6.7	5.0	5.0	5.3
PICK HR A-97	7.7	4.7	5.7	6.7	4.3	4.0	5.3	6.0	5.2
SABRE	7.0	4.0	4.3	5.0	6.3	6.3	4.0	5.0	5.0
PROAM	7.0	3.7	4.3	5.0	5.7	5.3	4.3	5.7	4.9
LSD VALUE	0.8	1.3	1.5	1.4	2.0	3.2	2.0	1.2	1.2
C.V. (%)	6.4	14.1	13.4	11.7	15.6	20.4	14.7	13.5	10.2

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 5A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT STARKVILLE, MS (MISS. ST. UNIV. GOLF COURSE)

SEEDBED PREPARATION

Vertical mowing in 2 directions @ .125" below soil line and removal of debris
MOWING
 Initial height 0.75"
 mowing height during test 0.5"
 Frequency 3 times per week
 Type of mower Light wt. 5 gang (Jac. 3800)

FERTILIZATION

	Date(s)	Product	Rate (lbs./M)
	10-Oct-00	8/24/2024	500 lbs./Acre
	26-Jan-01	46-0-0	100 lbs./Acre
	28-Mar-01	22-0-22	175 lbs./Acre
	28-Jun-01	21-2-20	300 lbs./Acre

FUNGICIDES

CULTIVATION

Aerification - dates None
 Aerification - type
 Verticutting
 Dates of topdressing
 Other cultural practices

	Date(s)	Product	Rate (oz./M)
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HERBICIDES

	Date(s)	Product	Rate (oz./M)
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MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION

INSECTICIDES

	Date(s)	Product	Rate (oz./M)
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OTHER INFORMATION

Course closed for overseeding No
 Landing area No
 Divotting problem No
 Cart allowed on Test area No
 Traffic patterns No

OTHER PRODUCTS

	Date(s)	Product	Rate (oz./M)
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Pendimethalin applied @ a 3#/A rate on 3/8/01

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

TABLE 5B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING GRASSES IN THE
 1999 USGA/GCSAA/NIEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
 AT STARKVILLE, MS (MISSISSIPPI STATE UNIVERSITY GOLF COURSE) 1/
 2000-01 DATA

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

NAME	PERCENT COVER OF LIVING GRASSES IN FALL TRANSITION PERIOD IN 2000						DORMANCY BERMUDA GRASS 2/6/01	LIVING OVERSEED GRASS 2/6/01
	BERMUDA GRASS	OVERSEED GRASS	BERMUDA GRASS	OVERSEED GRASS	BERMUDA GRASS	OVERSEED GRASS		
	11/21	11/21	12/6	12/6	12/19	12/19		
SEVILLE II	50.0	50.0	41.7	58.3	33.3	66.7	16.7	83.3
ALLSPORT	50.0	50.0	51.7	48.3	41.7	58.3	18.3	81.7
LEADERBOARD	53.3	46.7	46.7	53.3	36.7	63.3	15.0	85.0
LS-DE1	50.0	50.0	43.3	56.7	31.7	68.3	15.0	85.0
BRIGHTSTAR II	50.0	50.0	46.7	53.3	40.0	60.0	21.7	78.3
FIESTA 3	50.0	50.0	40.0	60.0	33.3	66.7	16.7	83.3
MED-007	53.3	46.7	48.3	51.7	36.7	63.3	18.3	81.7
MP111	60.0	40.0	45.0	55.0	45.0	55.0	23.3	76.7
PIROUETTE	50.0	50.0	40.0	60.0	31.7	68.3	13.3	86.7
TOURSTAR	50.0	50.0	45.0	55.0	38.3	61.7	20.0	80.0
BARLENNIUM	50.0	50.0	43.3	56.7	33.3	66.7	15.0	85.0
CEBECO BLEND 1	50.0	50.0	46.7	53.3	36.7	63.3	16.7	83.3
ELFKIN	56.7	43.3	51.7	48.3	43.3	56.7	18.3	81.7
ESSENCE	50.0	50.0	43.3	56.7	35.0	65.0	15.0	85.0
MARVELGREEN SUPREME	50.0	50.0	45.0	55.0	33.3	66.7	16.7	83.3
PARAGON	50.0	50.0	40.0	60.0	35.0	65.0	20.0	80.0
PHANTOM	50.0	50.0	45.0	55.0	36.7	63.3	21.7	78.3
PROFESSIONAL'S SELECT	50.0	50.0	45.0	55.0	35.0	65.0	16.7	83.3
PST-3BK-99	50.0	50.0	48.3	51.7	45.0	55.0	21.7	78.3
CHARGER II	50.0	50.0	41.7	58.3	35.0	65.0	18.3	81.7
MP58	60.0	40.0	53.3	46.7	48.3	51.7	23.3	76.7
TOP HAT	50.0	50.0	45.0	55.0	40.0	60.0	18.3	81.7
CITATION III	53.3	46.7	58.3	41.7	48.3	51.7	18.3	81.7
MOUNTAIN VIEW 1	53.3	46.7	46.7	53.3	41.7	58.3	20.0	80.0
MOUNTAIN VIEW 2	53.3	46.7	56.7	43.3	46.7	53.3	23.3	76.7
MOUNTAIN VIEW 3	53.3	46.7	50.0	50.0	43.3	56.7	23.3	76.7
PRIME	50.0	50.0	41.7	58.3	35.0	65.0	16.7	83.3
CHARGER	50.0	50.0	43.3	56.7	31.7	68.3	15.0	85.0
FUTURA 2500	50.0	50.0	46.7	53.3	40.0	60.0	21.7	78.3
CAPRI	50.0	50.0	50.0	50.0	41.7	58.3	18.3	81.7
BRIGHTSTAR II + WINTERPLAY	56.7	43.3	55.0	45.0	45.0	55.0	23.3	76.7
FIRST CUT	53.3	46.7	48.3	51.7	40.0	60.0	18.3	81.7
MARVELGREEN + LASER	53.3	46.7	50.0	50.0	38.3	61.7	16.7	83.3
PICK HR A-97	50.0	50.0	41.7	58.3	33.3	66.7	13.3	86.7
CITATION III + WINTERSTAR	50.0	50.0	50.0	50.0	43.3	56.7	20.0	80.0
TRANSIST	53.3	46.7	45.0	55.0	43.3	56.7	20.0	80.0
ABT-99-3.268	56.7	43.3	51.7	48.3	38.3	61.7	18.3	81.7
PROAM	63.3	36.7	61.7	38.3	50.0	50.0	15.0	85.0
SNOWBIRD	60.0	40.0	55.0	45.0	45.0	55.0	15.0	85.0
WINTERPLAY	70.0	30.0	60.0	40.0	51.7	48.3	21.7	78.3
BARIVIERA	70.0	30.0	63.3	36.7	60.0	40.0	30.0	70.0
SABRE	66.7	33.3	61.7	38.3	50.0	50.0	20.0	80.0
LSD VALUE	9.2	9.2	12.1	12.1	13.2	13.2	9.9	9.9
C.V. (%)	9.9	11.4	13.6	12.8	17.3	11.7	23.4	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 6A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT CRESCENT, MO (PLAYER CLUB AT ST. LOUIS)

SEEDBED PREPARATION

Spray bermudagrass with Primo one week before overseeding (11 oz./A.)

MOWING

Initial height
mowing height during test
Frequency
Type of mower

0.60"
0.80"
3 times per week
Light weight 5-plex

FERTILIZATION

Date(s)	Product	Rate (lbs./M)
23-Sep-99	5-10-20	1 lbs. N
13-Apr-00	24-3-11 (SCU)	1 lbs. N
6-Jun-00	14-4-14 (SCU)	1 lbs. N
13-Jul-00	14-4-14 (SCU)	1 lbs. N

CULTIVATION

Aerification - dates
Aerification - type
Verticutting
Dates of topdressing
Other cultural practices

FUNGICIDES

Date(s)	Product	Rate (oz./M)
None		

MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION

Lower cutting height, fertilize heavy, cut down on irrigation back to 0.6"

HERBICIDES

Date(s)	Product	Rate (oz./M)
17-Jan-22	Prograss	0.75 gallon/Acre
6-Mar-00	Ronstar Preemergence	4.5 lbs./Acre

OTHER INFORMATION

Course closed for overseeding

Yes, for 1 week

Landing area

Yes, none more than normal

Divotting problem

Yes

Cart allowed on Test area

no

Traffic patterns

OTHER PRODUCTS

Date(s)	Product	Rate (oz./M)
23-Sep-99	Primo	11 oz./Acre

NOTES/COMMENTS

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

TABLE 6B.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING CULTIVARS IN THE
 1999 USGA/GCSAA/NTEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
 AT CRESCENT (ST. LOUIS), MO (PLAYERS CLUB AT ST. LOUIS) 1/
 2000-01 DATA

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

NAME	PERCENT EARLY ESTABLISHED	GENETIC COLOR 3/1	FALL QUALITY IN 2000		WINTER QUALITY		SPRING/SUMMER QUALITY		QUALITY MEAN
			10/20	11/16	3/1 2001	4/26 2001	RATINGS IN 2001	8/2	
BARLENNIUM	41.7	5.0	3.3	3.7	5.0	4.3	4.0	6.7	4.5
ELFKIN	26.7	4.7	3.3	3.3	4.3	5.0	4.7	6.3	4.5
FIESTA 3	23.3	6.0	3.0	3.0	5.3	4.7	4.0	7.0	4.5
LS-DE1	33.3	5.7	3.0	3.3	5.3	4.0	3.7	7.0	4.4
PARAGON	35.0	5.3	3.3	3.7	5.3	4.3	5.0	4.7	4.4
PROFESSIONAL'S SELECT	35.0	4.7	3.0	3.7	5.0	4.7	4.3	5.7	4.4
CHARGER II	35.0	4.3	3.0	3.3	5.0	4.3	4.3	6.0	4.3
PRIME	23.3	5.0	3.0	3.3	4.7	3.7	4.7	6.7	4.3
PST-3BK-99	21.7	5.0	3.0	3.3	5.0	3.3	5.3	5.7	4.3
CHARGER	28.3	4.7	3.0	3.0	4.3	3.7	4.3	6.7	4.2
PHANTOM	18.3	5.3	3.0	3.0	5.0	4.3	3.7	6.3	4.2
PIROUETTE	26.7	5.0	3.0	3.0	5.0	4.0	4.0	6.3	4.2
BRIGHTSTAR II + WINTERPLAY	18.3	5.3	3.0	3.0	5.0	4.0	3.0	6.3	4.1
CITATION III + WINTERSTAR	21.7	4.3	2.7	2.7	4.3	3.7	4.0	7.0	4.1
FIRST CUT	25.0	4.0	2.7	3.0	4.7	4.3	3.7	6.0	4.1
MARVELGREEN SUPREME	20.0	5.3	3.0	3.0	4.7	4.0	4.0	5.7	4.1
MED-007	18.3	5.0	2.7	3.0	5.0	4.3	3.7	6.0	4.1
MOUNTAIN VIEW 2	25.0	6.3	2.7	3.0	5.0	4.0	3.7	6.0	4.1
MP111	21.7	6.0	2.7	2.7	5.0	4.7	4.0	5.3	4.1
PICK HR A-97	20.0	5.0	3.0	3.0	4.7	3.0	4.7	6.0	4.1
BRIGHTSTAR II	25.0	7.3	3.0	3.0	5.0	4.3	4.0	4.7	4.0
CITATION III	26.7	5.3	3.0	3.0	4.7	3.7	4.0	5.7	4.0
ESSENCE	13.3	5.0	2.7	3.0	4.3	3.7	4.3	6.0	4.0
MOUNTAIN VIEW 1	18.3	5.0	3.0	3.0	4.7	4.0	3.3	6.0	4.0
SEVILLE II	23.3	6.0	3.0	3.0	5.3	3.3	3.7	5.7	4.0
TURSTAR	28.3	4.0	3.0	3.0	4.3	4.0	4.7	5.0	4.0
ALLSPORT	28.3	5.0	3.0	3.3	4.3	4.0	3.7	5.3	3.9
CAPRI	8.3	4.7	2.0	3.0	5.0	3.3	4.0	6.0	3.9
FUTURA 2500	20.0	4.3	3.0	3.0	5.0	3.7	3.7	5.0	3.9
LEADERBOARD	18.3	5.3	3.0	3.3	5.3	4.0	3.7	4.3	3.9
MARVELGREEN + LASER	31.7	4.3	3.3	3.3	4.3	3.7	4.0	5.0	3.9
MP58	16.7	5.0	2.7	2.7	5.0	3.3	3.7	6.3	3.9
TRANSIST	36.7	3.3	3.3	3.3	3.3	2.7	4.3	6.7	3.9
CEEBCO BLEND 1	21.7	5.3	3.0	3.0	4.3	3.3	4.0	5.3	3.8
MOUNTAIN VIEW 3	18.3	5.3	3.0	2.7	4.3	3.3	3.7	5.7	3.8
ABT-99-3.268	25.0	2.3	3.0	3.0	3.0	2.0	5.0	6.0	3.7
TOP HAT	20.0	4.3	3.0	3.0	4.3	3.0	4.0	4.0	3.6
SNOWBIRD	11.7	5.3	2.0	2.0	4.3	3.0	3.3	6.3	3.5
BARIVIERA	10.0	3.7	2.0	2.0	3.7	2.7	4.0	5.3	3.3
WINTERPLAY	8.3	4.7	2.0	2.0	3.7	3.0	3.0	6.3	3.3
PROAM	16.7	3.0	2.0	2.3	3.0	3.0	3.7	5.3	3.2
SABRE	13.3	5.0	2.3	2.0	3.0	2.7	3.7	5.3	3.2
LSD VALUE	23.4	1.9	0.5	0.8	1.5	1.2	1.5	4.3	0.6
C.V. (%)	44.6	20.2	11.3	14.5	16.6	18.1	16.5	21.0	8.1

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 7A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT MYRTLE BEACH, SC (BLACKMOOR GOLF COURSE)

SEEDBED PREPARATION

Fairway was lightly scalped and then verticut five days prior to seeding test area.
Test areas were then seeded utilizing a specially prepared "box" to provide for uniform placement of seed. Seeding was accomplished on Oct.26.

MOWING

Initial height	5/8"	
mowing height during test	1/2"	
Frequency	3 times per week	
Type of mower	Toro 450D	

CULTIVATION

Aerification - dates	12/5/00, 2/13/01	
Aerification - type	Aeroway slicer	
Verticutting		
Dates of topdressing		
Other cultural practices		

MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION

OTHER INFORMATION

Course closed for overseeding	No	
Landing area	No more than rest of fairway	
Divotting problem		
Cart allowed on Test area	Yes, traffic was allowed (carts)	
Traffic patterns	No patterns were noted	

FERTILIZATION

Date(s)	Product	Rate (lbs./M)
29-Nov-00	90% SCU (20-10-20)	1 lb. N
1-Jan-01	TGR (Scotts growth regulator)	16 oz./Acre
29-Jan-01	21-0-0	1 lb. N
2/19, 3/19/01	TGR	24 oz./Acre
12-Mar-01	75% SCU (12-13-9-20) (impregnated w/team Pro 2.5 lbs A.I/Acre)	1 lb. N
2-May-01	90% SCU (20-10-20) (impregnated w/Ronstar 2.5 lbs A.I/Acre)	1 lb. N
17-Jul-01	97% SCU (20-10-20)	1 lb. N

FUNGICIDES

Date(s)	Product	Rate (oz./M)
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None

HERBICIDES

Date(s)	Product	Rate (oz./M)
---------	---------	--------------

None

INSECTICIDES

Date(s)	Product	Rate (oz./M)
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None

OTHER PRODUCTS

Date(s)	Product	Rate (lbs./M)
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None

NOTES/COMMENTS

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

TABLE 7B.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF OVERSEEDING CULTIVARS IN THE
 1999 USGA/GCSAA/NIEP ON-SITE OVERSEEDING OF BERMUDAGRASS FAIRWAY TEST
 AT MYRTLE BEACH, SC (BLACKMOOR GOLF COURSE) 1/
 2000-01 DATA
 TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	FALL PERCENT COVER OF LIVING GRASSES (2000)			WINTER PERCENT COVER OF (2001)				SPRING/SUMMER PERCENT COVER OF LIVING OVERSEEDING GRASS (2001)	
	BERMUDA GRASS	OVERSEED GRASS	OVERSEED GRASS	DORMANCY	LIVING BERMUDA GRASS	LIVING OVERSEED GRASS	LIVING OVERSEED GRASS	4/2	6/4
				BERMUDA GRASS	1/11	2/1	2/27		
CHARGER II	81.7	62.3	79.0	20.0	62.7	67.3	90.3	92.7	32.0
SEVILLE II	77.7	54.0	76.7	19.0	57.3	65.0	90.7	91.0	37.0
MARVELGREEN SUPREME	72.7	60.0	78.7	17.0	67.0	72.7	88.7	87.7	39.3
CITATION III + WINTERSTAR	80.0	53.3	83.7	15.0	70.0	76.3	92.3	91.7	58.3
CEBECCO BLEND 1	73.3	46.7	74.3	19.7	59.3	65.0	87.0	92.0	37.3
FIRST CUT	68.3	43.0	75.7	21.0	64.7	69.0	85.7	85.7	24.3
MOUNTAIN VIEW 1	70.0	51.7	70.7	22.7	52.3	59.7	85.3	90.0	29.0
PICK HR A-97	75.0	55.7	74.3	27.0	53.7	63.0	93.3	97.3	20.7
SNOWBIRD	71.7	64.0	89.3	6.0	84.7	88.7	95.7	93.3	47.3
BRIGHTSTAR II	61.7	52.0	69.3	24.3	55.0	59.3	86.7	91.3	36.7
BRIGHTSTAR II + WINTERPLAY	60.7	48.7	73.3	16.7	65.3	70.7	90.7	90.7	38.3
ESSENCE	80.0	46.0	73.7	25.3	52.7	59.3	86.3	88.0	25.0
LEADERBOARD	75.7	47.3	73.3	23.3	55.3	60.7	87.3	89.0	31.3
CITATION III	63.3	49.7	68.3	21.0	56.7	59.7	81.0	91.3	28.0
MOUNTAIN VIEW 2	70.0	47.3	67.3	21.7	55.0	61.0	86.0	85.3	34.7
TOP HAT	61.7	40.7	67.3	21.7	56.3	60.0	85.0	95.0	40.0
TOURSTAR	68.3	49.7	66.7	25.7	51.7	55.0	83.0	88.7	36.7
BARLENNIUM	70.0	52.3	70.7	20.3	59.0	59.0	85.3	91.0	44.0
CHARGER	73.3	48.0	62.7	26.0	47.3	62.3	81.7	89.0	29.0
PHANTOM	69.3	49.0	65.0	27.7	51.7	54.3	82.7	87.7	22.7
PROFESSIONAL'S SELECT	70.0	56.7	70.0	27.7	53.3	56.7	85.7	87.7	39.0
FIESTA 3	75.0	43.3	66.7	23.3	56.7	52.3	81.3	81.0	38.0
MARVELGREEN + LASER	63.3	45.0	75.7	18.7	65.0	64.3	85.0	87.7	46.7
PIROUETTE	76.7	52.7	71.0	22.0	57.7	56.7	79.0	80.3	33.0
SABRE	73.3	63.0	89.0	6.7	84.0	84.3	95.3	91.0	51.7
WINTERPLAY	60.0	51.7	87.3	15.3	79.7	83.3	93.3	86.3	41.0
ELFKIN	65.0	44.0	62.3	24.0	52.0	53.3	81.3	87.7	37.0
PRIME	68.3	44.7	61.3	26.7	45.3	50.7	83.7	86.3	25.0
PROAM	66.7	62.3	82.7	13.3	78.0	77.7	97.0	94.3	49.3
TRANSIST	73.3	48.0	67.7	27.7	47.3	62.3	90.0	94.3	25.7
ABT-99-3.268	63.3	36.7	69.0	29.0	48.0	68.0	93.3	92.3	8.3
BARIVIERA	76.7	65.7	87.7	6.0	82.3	86.3	94.7	89.3	45.7
CAPRI	55.0	33.7	61.0	27.7	47.7	56.7	82.7	90.3	19.7
FUTURA 2500	60.0	38.7	55.0	30.0	44.7	51.7	83.3	93.7	26.3
LS-DE1	63.3	40.0	60.0	30.0	48.0	53.7	76.0	85.3	31.7
MED-007	77.3	46.0	66.0	32.0	47.0	48.3	81.7	81.0	23.3
PARAGON	58.3	45.7	63.3	27.3	52.3	52.3	78.3	83.3	41.3
PST-3BK-99	66.7	49.0	67.3	24.3	50.7	56.3	76.3	81.7	25.0
ALLSPORT	70.0	42.3	57.7	29.3	48.7	49.0	75.0	85.0	27.0
MOUNTAIN VIEW 3	65.0	40.7	57.7	27.3	49.0	53.7	75.7	84.3	36.7
MP111	51.7	39.7	57.0	31.3	44.0	51.3	81.0	85.3	30.3
MP58	71.7	39.0	61.3	30.0	44.0	49.7	83.3	76.3	23.3
LSD VALUE	28.8	18.6	12.6	11.4	12.6	13.7	16.5	17.2	17.8
C.V. (%)	15.0	18.8	10.8	28.5	13.9	13.6	8.7	7.3	29.6

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 8A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT GARLAND (DALLAS), TX (FIRE WHEEL GOLF PARK)

SEEDBED PREPARATION

FERTILIZATION

Lowered John Deere Fairway Mower from 1/2" down to 3/8". Ran a Lely dethatcher over the fairway and mowed behind. Blew the debris off.	Date(s)	Product	Rate (lbs./M)
Fertilized the fairway with Milorganite. Silced the fairway in two directions.	26-Sep-00 16-Jan-01 16-May-01 12-Jun-01 08-Aug-01	Milorganite 15-5-10-2% Iron 18-6-15-2% Iron 18-6-15-2% Iron 18-6-15-2% Iron	1 lb. N 1 lb. N 1 lb. N 1 lb. N 1 lb. N
MOWING			
Initial height	3/8"		
mowing height during test	1/2"		
Frequency	3 times per week	FUNGICIDES	
Type of mower	John Deere 3235A	Date(s)	Product

CULTIVATION

None

Aerification - dates	None, too much rain last winter/spring	HERBICIDES	
Aerification - type	N/A	Date(s)	Product
Verticutting	N/A		
Dates of topdressing	N/A	February	Pendulum
Other cultural practices	None		

INSECTICIDES

MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION	Date(s)	Product	Rate (oz./M)
We lowered the John Deere 3235A down to 3/8" and also held back on watering to stress it.	None		

OTHER INFORMATION

OTHER PRODUCTS

Course closed for overseeding	Two days	Date(s)	Product	Rate (oz./M)
Landing area	Yes			
Divotting problem	no	None		
Cart allowed on Test area	Yes			
Traffic patterns	no			

NOTES/COMMENTS

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

Last fall (2000) was not one of the best overseeding years we have seen in this area. Temperatures and humidity were high through November. The 419 bermuda became lush and thick which caused competition. We then had the wettest and coldest December in recent history.

TABLE 9A. 2000-01 MANAGEMENT - ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT THE WOODLANDS, TX (THE WOODLANDS GOLF COURSE)

SEEDBED PREPARATION		FERTILIZATION		
	Primo @ 9 oz. Per acre.	Date(s)	Product	Rate (lbs./M)
MOWING		1-Dec-00 every month	Starter fertilizer <chem>CaNO3</chem>	0.5 lb. N
Initial height	0.5"			
mowing height during test	0.44"			
Frequency	3 times per week		FUNGICIDES	
Type of mower	5 gang lightweight	Date(s)	Product	Rate (oz./M)
CULTIVATION		None		
Aerification - dates	Spring		HERBICIDES	
Aerification - type	0.5" hollow tine	Date(s)	Product	Rate (oz./M)
Verticutting		None		
Dates of topdressing			INSECTICIDES	
Other cultural practices		Date(s)	Product	Rate (oz./M)
MAINTENANCE PRACTICES TO ENHANCE SPRING		None		
Lower mowing height, Primo applications, drying cycle.			OTHER PRODUCTS	
OTHER INFORMATION		Date(s)	Product	Rate (oz./M)
Course closed for overseeding	Yes, for 1 week		Split applications of Pennant	
Landing area	short of landing area		Primo	9 oz./Acre
Divotting problem	minor divotting			
Cart allowed on Test area	Yes, after establishment		NOTES/COMMENTS	
Traffic patterns	not evident		Superintendent left course in April and is unsure of exact rates and dates.	

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TABLE 10A.2000-01 MANAGEMENT- ON-SITE OVERSEEDING OF BERMUDAGRASS TEST AT CHARLOTTESVILLE, VA (GLENMORE COUNTRY CLUB)

SEEDBED PREPARATION		FERTILIZATION		
None, seed spread over the area where aerified 6 weeks before seedings, which provide somewhat of a better seedbed.		Date(s)		
		Fertigation used for fertilizer applications, fertilizer applied 20 tons/Acre.		
MOWING				
Initial height	5/8"	Sep-00	4 lbs. N, 13 lbs. P, 13 lbs.K per Arec	
mowing height during test	5/8"	Oct-00	6.5 lbs. N, 23 lbs. P, 23 lbs.K per Arec	
Frequency	3 times per week	Nov-00	2.5 lbs. N, 10 lbs. P, 10 lbs.K per Arec	
Type of mower		Apr-01	17 lbs. N, 3 lbs. P, 6 lbs.K per Arec	
		May-01	11 lb. N, 2 lb. P, 41 lb. K	
		Jun-01	32 lb. N, 5.5 lb. P, 111 lb. K	
		Jul-01	90 lb. N, 15 lb. P, 30 lb. K	
CULTIVATION		FUNGICIDES		
Aerification - dates		Date(s)	Product	Rate (oz./M)
Aerification - type				
Verticutting		None		
Dates of topdressing				
Other cultural practices				
MAINTENANCE PRACTICES TO ENHANCE SPRING TRANSITION		HERBICIDES		
		Date(s)	Product	Rate (oz./M)
OTHER INFORMATION		None		
Course closed for overseeding	No	INSECTICIDES		
Landing area	No	Date(s)	Product	Rate (oz./M)
Divotting problem				
Cart allowed on Test area	Yes, carts were allowed	4-Aug-00	Merit WSP	6.4
Traffic patterns	No			
NOTES/COMMENTS		OTHER PRODUCTS		
		Date(s)	Product	Rate (oz./M)
		25-Jun-01	Primo	0.25
		16-Jul-01	Primo	0.32
		8/6, 8/28/00	Primo	0.38

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