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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
Building 003 Room 217
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 Point 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	Alan Zelko	Dr. Barb Corwin, 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 BERMUDAGRASS TEST

Entries and Sponsors

Entry No.	Name	Sponsor
1	MS-Supreme	Mississippi State University
2	TifEagle	Georgia Seed Development Commission
3	Mini-Verde	Turfgrass America
4	Tifdwarf	Standard Entry
5	Champion	Coastal Turf, Inc.
6	Tifgreen	Standard Entry
7	Floradwarf	Florida Turfgrass Foundation

TABLE 1A. 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	11-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	August 1998	KNO3, methylene urea	1 lb. N	Three times per year	Bensulide	
		August 1998	P2O5	1/2 lb. P			
		August 1998	K2O	1 lb. K			
FACTORS OF PLAY		September 1998	KNO3, methylene urea	1 lb. N			
Date opened for play	not yet opened	September 1998	P2O5	1/2 lb. P	INSECTICIDES		
Date closed for play		September 1998	K2O	1 lb. K			
Type of spikes allowed	softspikes	Oct.-Dec. 1998	20-5-20	0.10 lb. N	Date(s)	Product	Rate (oz./M)
Uses of green	will be used for chipping, bunker shots	2-4x/month			None		
MOWING							
Initial height	0.275"				OTHER PRODUCTS		
Current height	0.15"						
Frequency	6 days/week				Date(s)	Product	Rate (oz./M)
Type of mower	walking				None		
Rollers used	2-3 times/month						
Groomers used	groom every time green is mowed. Blades set .005" below bedknife.						
		FUNGICIDES			NOTES/COMMENTS		
CULTIVATION		Date(s)	Product	Rate (oz./M)			
Aerification - dates	Sept. 1998 - 5/8" hollow hydroject - 2x/month, March-November	every 2-3 wks, July - mid-Dec.	Alternate Banol, Alliette, Heritage and Subdue with either Mancozeb or Daconil	labeled preventative rates	Since the bermuda has been overseeded with poa trivialis, we have been spraying with our weekly bentgrass fungicide & fertilizer mix. The bermuda was covered this winter when nighttime temps. dropped below 27 degrees F.		
Aerification - type	once per week- July-Sept.						
Verticutting	once per week- July-Sept.						
Dates of topdressing	None						
Other cultural practices							

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TABLE 1B. 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	11-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	March, April, June-Sept.	26-0-22 (Methylene Urea + KNO3)	1/2 lb. N	March, May, July	Bensulide	
FACTORS OF PLAY							
Date opened for play	July of 1998	April, May, Aug.	12-2-12 (Natural Organic + Methylene Urea)	0.6 lb. N	INSECTICIDES		
Date closed for play					Date(s)	Product	Rate (oz./M)
Type of spikes allowed	softspikes						
Uses of green	chipping, bunker practice	March-November	20-5-20 (ProSol foliar)	1/32 to 1/10 lb N bi-weekly	As needed in Summer for cutworms and army worms	Talstar	
MOWING							
Initial height	0.25"				OTHER PRODUCTS		
Current height	0.14"				Date(s)	Product	Rate (oz./M)
Frequency	6-7 days/week						
Type of mower	walking						
Rollers used							
Groomers used	6-7 days/week						
CULTIVATION		FUNGICIDES					
Aerification - dates	1" deep - early May, 1/2 " hollow tine -early July, 5/8 " hollow tine - late Aug.	Date(s)	Product	Rate (oz./M)			
Aerification - type	hydroject - bi-weekly From April to Oct.	Sprayed bi-weekly in Summer	Consyst	4 oz./1000 sq.ft.	NOTES/COMMENTS		
Verticutting	Lightly every two weeks- June-Sept.				Overseeded with Poa trivialis and covered when temperatures dropped below 24 degrees		
Dates of topdressing	Heavy after aerifications, Lightly bi-weekly						
Other cultural practices	Rolling as needed						

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

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	11-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	March, April, May	26-0-22 (Nutralene+KNO ₃)	0.5 lb. N	March, May, July	Bensulide	
FACTORS OF PLAY		June, July	Anderson's (22-0-22)	0.5 lb. N			
		June, July	K ₂ SO ₄ (0-0-24)	1 lb. K ₂ O			
		March-November	20-5-20 ProSol foliar	1/16 lb. N			
Date opened for play	July of 1998. Open year				INSECTICIDES		
Date closed for play	round				Date(s)	Product	Rate (oz./M)
Type of spikes allowed	softspikes						
Uses of green	chipping, bunker practice				for cutworms,	Talstar	
MOWING					armyworms and a few		
					mole crickets		
Initial height	0.25"	FUNGICIDES					
Current height	0.125-0.150"	Date(s)	Product	Rate (oz./M)			
Frequency	6-7 days/week				OTHER PRODUCTS		
Type of mower	Toro 800 walk				Date(s)	Product	Rate (oz./M)
Rollers used		Fungicides are sprayed	Alliette	4			
Groomers used	6-7 days/week	biweekly in summer	Banol	2			
		depending on weather	Subdue Maxx	1			
		conditions. Big	Dithane	4	None		
CULTIVATION		problem with pythium	Daconil Ultrex	4-8 oz.			
Aerification - dates	5/8" hollow - June. 1/4"	so Alliette, Banol,	Heritage	0.4			
Aerification - type	hollow tine- July & August.	Subdue, and Heritage	Consynt	4			
	Graden - Sept. 1.	are rotated and sprayed	Terrazole	6			
		on a two weeks			NOTES/COMMENTS		
Verticutting	Lightly verticut every 3	schedule.			Overseeded with Poa trivialis and covered when temperatures dropped below 24 degrees. Areas of green that get the most splash from bunkers are healthier. No discernable layer underneath. Weekly topdressing would probably be better.		
	weeks or so.						
Dates of topdressing	Heavy after aerifications,						
	Lightly bi-weekly						
Other cultural practices	Rolling as needed						

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TABLE 1D. 2001 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	11-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	March, April, May	26-0-22 (Nutralene+KNO ₃)	0.5 lb. N	March, May, July	Bensulide	
FACTORS OF PLAY		June, July	Anderson's (22-0-22)	0.5 lb. N			
		June, July	K ₂ SO ₄ (0-0-24)	1 lb. K ₂ O			
		March-November	20-5-20 ProSol foliar	1/16 lb. N			
Date opened for play	July of 1998. Open year				INSECTICIDES		
Date closed for play	round				Date(s)	Product	Rate (oz./M)
Type of spikes allowed	softspikes						
Uses of green	chipping, bunker practice						
MOWING					for cutworms,	Talstar	
					armyworms and a few		
					mole crickets		
Initial height	0.25"	FUNGICIDES					
Current height	0.125-0.150"	Date(s)	Product	Rate (oz./M)			
Frequency	6-7 days/week				OTHER PRODUCTS		
Type of mower	Toro 800 walk				Date(s)	Product	Rate (oz./M)
Rollers used		Fungicides are sprayed	Alliette	4			
Groomers used	6-7 days/week	biweekly in summer	Banol	2			
		depending on weather	Subdue Maxx	1			
		conditions. Big	Dithane	4	None		
CULTIVATION		problem with pythium	Daconil Ultrex	4-8 oz.			
Aerification - dates	5/8" hollow - June. 1/4"	so Alliette, Banol,	Heritage	0.4			
Aerification - type	hollow tine- July & August.	Subdue, and Heritage	Consynt	4			
	Graden - Sept. 1.	are rotated and sprayed	Terrazole	6			
		on a two weeks			NOTES/COMMENTS		
Verticutting	Lightly verticut every 3	schedule.			Overseeded with Poa trivialis and covered when temperatures dropped below 24 degrees. Areas of green that get the most splash from bunkers are healthier. No discernable layer underneath. Weekly topdressing would probably be better.		
	weeks or so.						
Dates of topdressing	Heavy after aerifications,						
	Lightly bi-weekly						
Other cultural practices	Rolling as needed						

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1998 On Site Bermudagrass test with permission from NTEP

TABLE 1E.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
 IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
 AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM) 1/
 1998-2001 DATA

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

NAME	GENETIC COLOR	SPRING GREENUP	COLOR	COLOR	OVERSEEDING QUALITY		STIMPMETER READINGS 1999	POA	PERCENT	OVERSEED ESTABLISHMENT	
			SEPTEMBER 2000-01	OCTOBER 1999 & 2001	NOVEMBER 1999	DECEMBER 1999		TRIVIALIS DENSITY MAY 2001	5 WEEKS 1998	OCTOBER 1998	NOVEMBER 1998
MINI-VERDE	6.9	5.1	5.8	4.5	7.3	8.7	105.0	6.0	61.7	4.7	3.3
TIFEAGLE	6.2	4.7	5.7	4.2	7.3	8.3	102.7	6.0	58.3	4.7	2.7
FLORADWARF	6.9	5.0	5.4	4.3	5.7	7.3	106.7	5.0	65.0	4.0	3.0
MS-SUPREME	5.8	5.3	4.8	4.0	7.3	8.3	107.3	6.3	71.7	4.0	2.7
CHAMPION	6.3	4.7	4.4	4.2	6.7	8.0	105.0	5.7	60.0	4.3	3.0
TIFDWARF	5.4	5.6	4.3	5.0	6.3	7.7	105.3	5.7	71.7	4.7	3.0
TIFGREEN	4.0	4.3	2.7	4.0	4.7	6.3	103.3	6.0	76.7	2.3	2.3
LSD VALUE	0.7	2.8	0.8	2.6	0.9	1.8	9.7	1.7	14.2	1.5	1.4
C.V. (%)	15.9	36.3	19.6	30.8	7.9	10.9	3.6	12.1	10.5	18.6	19.7

TABLE 1E.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
 IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
 AT BIRMINGHAM, AL (COUNTRY CLUB OF BIRMINGHAM) 1/
 1998-2001 DATA

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

NAME	QUALITY RATINGS											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	DEC	MEAN
MINI-VERDE	6.0	7.0	6.3	6.7	5.2	6.2	6.0	6.9	6.1	5.0	3.7	5.9
TIFEAGLE	6.0	6.0	6.7	7.0	5.1	6.1	5.6	6.3	6.1	5.1	2.7	5.7
FLORADWARF	5.7	6.3	6.3	7.0	5.7	5.8	5.9	5.9	5.8	4.1	2.7	5.6
MS-SUPREME	6.0	7.3	7.0	7.0	5.4	6.1	5.3	6.1	5.2	4.1	3.3	5.6
CHAMPION	5.7	6.0	7.0	6.7	5.1	5.9	5.6	5.8	5.4	4.7	2.7	5.5
TIFDWARF	6.0	5.7	6.0	7.0	5.8	5.8	5.2	5.6	5.3	4.2	3.7	5.4
TIFGREEN	5.3	3.7	4.7	5.0	3.9	4.7	3.4	3.6	3.4	4.0	4.0	4.0
LSD VALUE	0.8	0.9	1.3	1.0	1.8	0.6	0.6	0.7	0.8	1.3	1.5	0.3
C.V. (%)	6.3	9.0	10.8	7.8	28.3	13.2	15.4	16.4	20.5	23.2	21.7	8.4

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 2A 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MOBILE, AL (COUNTRY CLUB OF MOBILE)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	18-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None	Preplant	13-13-13		None		
			19-25-13	1 lb. N per week			
FACTORS OF PLAY		Winter 1998		0.5 lb. N per month			
Date opened for play	20-Aug-98						
Date closed for play	not closed						
Type of spikes allowed	softspikes only						
Uses of green	putting, chipping, pitching				INSECTICIDES		
					Date(s)	Product	Rate (oz./M)
MOWING						Dursban	
						Orthene	
Initial height	1/4"	FUNGICIDES					
Current height	5/32"	Date(s)	Product	Rate (oz./M)			
Frequency	7 days/week						
Type of mower	walking						
Rollers used			Heritage	preventative	OTHER PRODUCTS		
Groomers used			Subdue Maxx	preventative	Date(s)	Product	Rate (oz./M)
			Koban	preventative			
CULTIVATION			Daconil				
			ProStar				
Aerification - dates	None		LESCO Manicure				
Aerification - type							
Verticutting	bi-weekly				NOTES/COMMENTS		
Dates of topdressing	May-Sept.: every week						
	Oct.-Apr.: every other week						
Other cultural practices	Rolled once per week						

All varieties grew in quickly. The establishment cover slowed down spread by about a week.

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TABLE 2B. 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MOBILE, AL (COUNTRY CLUB OF MOBILE)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	18-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
	1 lb. N/M, amend soil with Ca as needed. Topdress & roll until smooth surface was attained	Summer Winter		1 lb. N & 2 lbs. K 1/2 lb. N & 1 lb. K per Month - split into two apps. 14 days apart.	None		
FACTORS OF PLAY							
Date opened for play	Open all year		Calcium & Minors	As needed			
Date closed for play	not closed				INSECTICIDES		
Type of spikes allowed	softspikes						
Uses of green	putting, chipping,				Date(s)	Product	Rate (oz./M)
					None		
MOWING							
		FUNGICIDES					
Initial height	1/4"						
Current height	5/32"	Date(s)	Product	Rate (oz./M)			
Frequency	7 days/week						
Type of mower	walking			As needed -	OTHER PRODUCTS		
Rollers used	weekly during Summer season			preventative			
Groomers used				during overseed	Date(s)	Product	Rate (oz./M)
						Primo	2 oz./Acre bi-weekly in July & Aug.
CULTIVATION							
Aerification - dates	June & Aug. 14						
Aerification - type	Core						
Verticutting	bi-weekly during growing season & topdressed lightly between verticuttings						
					NOTES/COMMENTS		
Dates of topdressing	Every other week in season - as needed during Winter				Overseeded plots on Oct. 18 with Poa trivialis at 8 lbs/1000 sq.ft.		
							Aquafer Wetting agent
Other cultural practices	Rolled weekly and brushed						

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

TABLE 2C. 2000 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MOBILE, AL (COUNTRY CLUB OF MOBILE)

ESTABLISHMENT		FERTILIZATION			HERBICIDES			
Planting date	18-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)	
Problems during	None							
	1 lb. N/M, amend soil with Ca as needed. Topdress & roll until smooth surface was attained	June - October November - May		1 lb. N & 2 lbs. K 1/2 lb. N & 1 lb. K	None			
				75% slow release (Nutralene) Nitrogen Typical blend 12-2-24 Foliar nutrients as needed (<2 lbs./year)				
FACTORS OF PLAY								
Date opened for play		FUNGICIDES			INSECTICIDES			
Date closed for play	NA	Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)	
Type of spikes allowed	softspikes							
Uses of green	putting, chipping,	July-September Fall, Spring	Delta Guard for armyworms Banol, Heritage, Terrazole for Pythium		None			
			Chipco, chlorothalonil for patch disease					
MOWING								
Initial height	0.155"							
Current height	0.140"							
Frequency	7 days/week							
Type of mower	walking				OTHER PRODUCTS			
Rollers used	weekly in June - October				Date(s)	Product	Rate (oz./M)	
Groomers used								
CULTIVATION		NOTES/COMMENTS				Aquafer Wetting agent	4 oz./K every 30 days	
Aerification - dates	5/15 and 8/14	Lots of disease fall of 2000. Tifgreen almost gone - taken over by adjacent plots. High nematode populations on Floradwarf.						
Aerification - type	5/8" Hollow Tines							
Verticutting	Verticut lightly every other							
Dates of topdressing	Monday in June-Oct. & topdressed lightly on the opposite Mondays. Topdressing monthly in November to May.							

Other cultural practices

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

TABLE 2D. 2001 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MOBILE, AL (COUNTRY CLUB OF MOBILE)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	18-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
	1 lb. N/M, amend soil with Ca as needed. Topdress & roll until smooth surface was attained		1 lb. Of N per month 1/2 lb. Of P per month 2 lbs. Of K per month		None		
			Spray minors and wetting agent monthly rates for fertilizer cut by 1/2 in Winter				
FACTORS OF PLAY							
Date opened for play	always open	FUNGICIDES			INSECTICIDES		
Date closed for play		Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Type of spikes allowed	softspikes						
Uses of green	putting, chipping,		Chipco top choice in June for mole crickets			None	
			Everything else as needed				
MOWING							
Initial height	0.250"						
Current height	0.135"						
Frequency	7 days/week						
Type of mower	Jacobsen 22" walkers				OTHER PRODUCTS		
Rollers used	No				Date(s)	Product	Rate (oz./M)
Groomers used	No						
CULTIVATION		NOTES/COMMENTS			every 2 weeks in Summer	Primo	2 oz./K
Aerification - dates	May and August	The green was not overseeded in Winter 2001-20. Some differences in cold tolerance and greenup were noted. Some varieties (Tifgreen and Floradwarf) are almost completely overtaken by surrounding varieties.					
Aerification - type	1/2" Hollow Tines						
Verticutting	Verticut as needed - about 6 times per growing season						
Dates of topdressing	Topdress every Monday lightly. Primo at 2 oz./M every 2 weeks in Summer.						
Other cultural practices	Brushing after topdressing						

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1998 On Site Bermudagrass test with permission from NTEP

TABLE 2E.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT MOBILE, AL (COUNTRY CLUB OF MOBILE) 1/
1998-2001 DATA

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

NAME	GENETIC COLOR	LEAF TEXTURE	SEEDLING VIGOR	FALL DENSITY 2000	DOLLAR SPOT 2000-01	PERCENT DOLLAR SPOT 2000	COUNTS OF NEMATODES IN 2000 (NUMBERS/100 CUBIC CM SOIL)				STIMPMETER READINGS FALL 1999
							ROOT-KNOT	RING	LANCE	SHEATH	
MINI-VERDE	7.9	9.0	5.3	7.8	3.6	17.0	72.5	5.0	0.0	5.0	114.3
CHAMPION	7.4	9.0	5.5	7.5	3.5	29.5	60.0	0.0	2.5	5.0	134.3
TIFEAGLE	7.3	9.0	5.8	7.8	3.9	14.5	55.0	35.0	0.0	0.0	121.3
MS-SUPREME	6.3	9.0	5.5	6.0	6.0	2.5	55.0	5.0	0.0	5.0	125.3
FLORADWARF	6.9	9.0	5.3	6.8	4.9	21.8	35.0	2.5	102.5	0.0	125.8
TIFDWARF	7.5	8.3	5.8	7.8	3.5	8.3	90.0	15.0	0.0	15.0	116.8
TIFGREEN	5.8	6.7	5.8	5.3	3.6	2.5	127.5	15.0	0.0	10.0	116.0
LSD VALUE	0.8	0.3	1.8	0.8	2.5	11.2	68.1	69.1	14.7	16.8	18.5
C.V. (%)	15.0	5.0	14.0	8.3	47.0	55.5	54.6	278.0	72.6	151.2	8.2

TABLE 2E.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT MOBILE, AL (COUNTRY CLUB OF MOBILE) 1/
1998-2001 DATA

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

NAME	QUALITY RATINGS										
	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN
MINI-VERDE	8.0	7.8	8.0	7.8	7.7	7.9	8.1	8.1	7.9	8.0	8.0
CHAMPION	8.0	7.8	7.9	7.5	7.6	7.9	7.8	7.6	7.8	7.8	7.7
TIFEAGLE	7.8	7.8	7.6	7.4	7.7	7.7	7.5	7.7	7.5	7.5	7.6
MS-SUPREME	7.3	7.7	7.3	6.6	6.6	7.0	6.5	7.3	7.5	8.0	7.3
FLORADWARF	8.0	7.5	7.7	6.4	6.6	7.3	6.8	6.9	7.1	8.0	7.2
TIFDWARF	7.0	7.5	7.3	6.8	6.8	7.2	7.4	7.4	7.1	6.8	7.1
TIFGREEN	6.5	7.3	7.3	6.5	4.8	5.0	5.2	5.6	5.8	6.5	6.1
LSD VALUE	0.5	0.7	0.7	0.7	1.1	0.9	0.8	0.6	0.6	0.6	0.4
C.V. (%)	4.8	7.9	9.6	12.5	20.1	16.7	15.4	13.7	12.4	5.8	9.3

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 3A. 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	July 1998	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	Established from plugs only - 40 per plot	Summer 1998	21-7-14	3.5-3.75 lbs. N	None		
					INSECTICIDES		
FACTORS OF PLAY					Date(s)	Product	Rate (oz./M)
Date opened for play	not yet open				None		
Date closed for play							
Type of spikes allowed							
Uses of green	putting				OTHER PRODUCTS		
MOWING					Date(s)	Product	Rate (oz./M)
Initial height					August 1998	Ferromec	4
Current height					Sept. 1998	Ferromec	4
Frequency					October 1998	Ferromec	4
Type of mower	walking						
Rollers used	smooth roller				NOTES/COMMENTS		
Groomers used							
CULTIVATION		FUNGICIDES			Irrigation system would not support stolon establishment. Plugs produced raised turf by late Fall 1998. In April 1998, renovated all plots via special core aeration and lowering turf via cup cutter and re-setting plugs. Following aggressive aeration and rolling, green will open for play June 15, 1999		
		Date(s)	Product	Rate (oz./M)			
Aerification - dates	None						
Aerification - type		None					
Verticutting							
Dates of topdressing	None						
Other cultural practices	None						

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TABLE 3B. 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	July 1998	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	Established from plugs only - 40 per plot	April	15-15-15	2 lbs. N	None		
		May	21-7-14	1.5 lbs.			
		May	14-0-8	0.25 lbs.			
		June	33-0-0	0.8 lbs.			
FACTORS OF PLAY		June	0-0-37	0.25 lbs.	INSECTICIDES		
		July	15-5-8	1.25 lbs.			
Date opened for play	open year round	August	21-7-14	1 lbs.	Date(s)	Product	Rate (oz./M)
Date closed for play		September	34-0-0	0.5 lbs.			
Type of spikes allowed	soft spikes only				April	Crusade	1x label rate
Uses of green							
MOWING							
Initial height	5/32"				OTHER PRODUCTS		
Current height	5/32"						
Frequency	6X/week				Date(s)	Product	Rate (oz./M)
Type of mower	22" walker						
Rollers used							
Groomers used	Shallow wiehle (round)				May	Ferromec	4
					June	Ferromec	4
CULTIVATION		FUNGICIDES			August	Ferromec	4
Aerification - dates	None	Date(s)	Product	Rate (oz./M)			
Aerification - type							
Verticutting		None			NOTES/COMMENTS		
Dates of topdressing	6/5, 10/22						
Other cultural practices	Only to brush in sand. Rolled once in May				Not overseeded due to location/elevation site		

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TABLE 3C. 2000 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	July 1998	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	Established from plugs only - 40 per plot	May-September (bi-monthly)	Florentine liquid	0.25 lbs. N	Roundup applied when bermuda was dormant to control poa and stray bentgrass		
		once in June-Sep.	15-15-15 greens grade granular	1.25 lbs. N			
FACTORS OF PLAY							
Date opened for play	01-Jun	May-September (monthly)	Ferromec (Iron)	4 oz. product	INSECTICIDES		
Date closed for play	15-Dec				Date(s)	Product	Rate (oz./M)
Type of spikes allowed	soft				None		
Uses of green	putting practice						
MOWING							
Initial height	5/32"				OTHER PRODUCTS		
Current height	5/32"				Date(s)	Product	Rate (oz./M)
Frequency	6X/week						
Type of mower	Walking and triplex				April-September	soil wetting agent	2
Rollers used	Grooved rollers only						
Groomers used							
CULTIVATION		FUNGICIDES					
Aerification - dates	22-Jun	Date(s)	Product	Rate (oz./M)			
Aerification - type	1/2" hollow tines 2 passes @ 2x2 spacing	None			NOTES/COMMENTS		
Verticutting	Light vert. - 6/5, 7/18, 8/22						
Dates of topdressing	Sand - 6/22, 7/5, 7/18, 8/22						
Other cultural practices							

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TABLE 3D. 2001 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	July 1998	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	Established from plugs only - 40 per plot	May 11-Jun	20-10-5-Micros Florantine Slo- Release and ammonium nitrate 10-6-4	0.75 lb. N 1.5 lbs. 0.5 lb. N	Roundup applied when bermuda was dormant in March to control poa annua.		
FACTORS OF PLAY		18-Jun	3 oz. Ferromec/M		INSECTICIDES		
Date opened for play	Open year round	13-Aug	Calcium nitrate	0.4 lb. N			
Date closed for play		31-Aug	20-10-5 and 4 oz. Ferromec	1.0 lb. N	Date(s)	Product	Rate (oz./M)
Type of spikes allowed	soft spikes only						
Uses of green	putting	None					
MOWING							
Initial height	5/32"						
Current height	5/32"	OTHER PRODUCTS					
Frequency	6X/week						
Type of mower	22" walker	Date(s)					
Rollers used	Shallow wiehle (round)	Product					
Groomers used		Rate (oz./M)					
CULTIVATION		Florantine Root enhancer applied six times year at 1x rate.					
		FUNGICIDES					
Aerification - dates	May and July	Date(s)	Product	Rate (oz./M)			
Aerification - type	2 solid tine aerifications	None	NOTES/COMMENTS				
Verticutting	same as aerifications; plus lite verticutting twice in June, once in July and Aug.						
Dates of topdressing	5/18, 6/11, 7/20, 8/10						
Other cultural practices	only brush in sand						

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

1998 On Site Bermudagrass test with permission from NTEP

TABLE 3E.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY) 1/
1998-2001 DATA

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

NAME	DENSITY RATINGS			PERCENT LIVING COVER			FROST TOLERANCE 2001	THATCH 2000-01	FALL COLOR RATINGS			STIMPMETER READINGS			PERCENT ESTABLISHMENT	
	SPRING	SUMMER	FALL	SPRING	SUMMER	FALL			SEP 2000-01	OCT 2000-01	NOV 2001	SPRING 2001	SUMMER 1999-01	FALL 1999-01	SUMMER	FALL
TIFEAGLE	6.9	7.4	7.9	88.2	90.5	95.0	8.0	24.7	6.3	6.7	5.0	108.3	97.0	98.9	50.0	83.3
TIFGREEN	5.8	6.3	6.8	72.5	78.8	76.2	7.3	19.5	7.7	7.0	5.3	100.0	99.3	102.1	53.3	86.0
TIFDWARF	7.3	7.3	7.8	68.3	80.8	93.7	7.0	21.2	5.0	5.3	5.3	110.0	99.8	103.9	55.0	86.0
MINI-VERDE	7.1	7.2	7.9	80.8	87.3	91.2	7.0	24.7	6.2	6.0	5.0	116.7	101.3	102.6	40.0	76.0
MS-SUPREME	6.6	6.5	7.5	77.5	85.0	91.5	7.3	19.2	5.5	5.5	3.7	109.7	95.8	96.9	43.3	80.3
FLORADWARF	5.6	6.0	6.5	80.8	90.8	76.2	8.0	14.3	6.0	5.0	6.0	97.0	93.2	99.1	75.0	94.7
CHAMPION	6.2	6.7	7.7	72.3	79.0	83.7	3.3	21.2	5.0	4.5	2.3	126.7	109.2	112.7	43.3	81.0
LSD VALUE	1.0	1.4	0.8	22.4	21.2	10.8	2.3	3.9	1.8	1.8	1.2	7.6	21.1	21.5	8.3	5.8
C.V. (%)	15.6	20.4	12.4	18.1	14.7	10.4	17.9	16.3	22.6	23.7	14.4	4.1	15.2	15.0	9.6	3.9

TABLE 3E.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT GREEN VALLEY, AZ (COUNTRY CLUB OF GREEN VALLEY) 1/
1998-2001 DATA

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

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	SEEDLING VIGOR	QUALITY RATINGS								
					APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MEAN
TIFEAGLE	7.1	6.3	7.7	6.3	4.8	6.0	6.9	7.0	7.6	6.8	6.8	6.7	6.8
TIFGREEN	7.2	6.7	6.5	6.3	4.5	5.1	6.1	5.9	7.2	7.8	7.3	6.8	6.6
TIFDWARF	6.7	7.0	7.5	6.7	4.2	6.8	7.3	7.6	6.7	5.3	6.0	6.0	6.4
MINI-VERDE	7.0	5.9	8.2	5.0	3.8	5.1	6.4	6.4	7.9	6.2	6.3	5.4	6.1
MS-SUPREME	6.4	6.6	7.5	5.3	4.5	5.3	6.2	5.9	7.0	6.2	5.7	5.9	6.1
FLORADWARF	5.4	5.4	5.6	8.7	6.2	4.9	5.2	5.3	4.8	5.9	6.3	7.0	5.8
CHAMPION	6.3	5.0	7.8	5.7	3.2	4.7	5.4	5.6	6.7	5.6	5.2	4.1	5.4
LSD VALUE	0.8	1.6	0.5	0.9	1.2	1.1	1.3	1.2	0.9	1.7	1.2	1.1	0.7
C.V. (%)	14.6	23.4	8.6	8.9	22.1	21.0	19.9	19.8	15.1	24.7	21.4	19.5	13.1

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 4A. 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

ESTABLISHMENT		FUNGICIDES			OTHER PRODUCTS		
Planting date	29-May-98	Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
		19-Jun-98	Heritage	0.4	10-Jun-98	Turf Partners Eco-Mag	34
		01-Jul-98	Daconil	4	10-Jun-98	Deep Green FeSO4	1.6 lb./M
FACTORS OF PLAY		14-Jul-98	Alliette	4	15-Jun-98	Deep Green FeSO4	1.3 lb./M
		11-Aug-98	Fore	8	19-Jun-98	Roots 1-2-3	34
Date opened for play	not opened in 1998	21-Aug-98	Clearys 3336	8	01-Jul-98	Turf Partners Eco-Mag	34
Date closed for play		02-Sep-98	Subdue	2	04-Aug-98	Turf Partners Eco-Mag	34
Type of spikes allowed		02-Sep-98	Fore	8	25-Aug-98	Turf Partners Eco-Mag	34
Uses of green		14-Sep-98	Daconil 2787	5	14-Sep-98	Roots	17
		24-Oct-98	Subdue	2	22-Sep-98	Roots	34
MOWING		24-Oct-98	Fore	8	08-Oct-98	Roots	17
		25-Nov-98	Fore	8	06-Nov-98	Turf Partners Eco-Mag	34
Initial height	3/8"	22-Dec-98	Chipco 26 GT	6	06-Nov-98	Thio-cal (6% calcium)	68
Current height	1/4"				17-Nov-98	FeSO4	1.6 lbs./M
Frequency	5 days/week				17-Nov-98	Lesco Micro-Mix	34
Type of mower	triplex and walking	HERBICIDES			25-Nov-98	FeSO4	1.3 lbs./M
Rollers used	roller on triplex	Date(s)	Product	Rate (oz./M)			
Groomers used	Jacobsen groomers	None					
CULTIVATION					NOTES/COMMENTS		
Aerification - dates	None	INSECTICIDES					
Aerification - type							
Verticutting	None	Date(s)	Product	Rate (oz./M)			
Dates of topdressing	02-Sep-98						
Other cultural practices	rolled monthly to help level	10-Aug-98	Merit	1.6			

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1998 On Site Bermudagrass test with permission from NTEP
 TABLE 4A. (CONT'D) 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

FERTILIZATION			FERTILIZATION		
Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (lbs./M)
04-Jun-98	Best 11-55-0	0.4 lbs. N	14-Sep-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
04-Jun-98	Best 0-0-50	2 lbs. K	14-Sep-98	Peters 20-10-20	0.06 lbs. N
09-Jun-98	Par-Ex 25-4-8	0.55 lbs. N	14-Sep-98	Nutriculture 28-8-18	0.08 lbs. N
10-Jun-98	Turf Partners 1-0-23	0.07 lbs. K	22-Sep-98	Peters 20-10-20	0.06 lbs. N
10-Jun-98	Turf Partners 24-0-0	0.07 lbs. N	22-Sep-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
10-Jun-98	Nutriculture 28-8-18	0.08 lbs. N	23-Sep-98	Best 10-4-16	0.41 lbs. N
15-Jun-98	Turf Partners 24-0-0	0.07 lbs. N	30-Sep-98	Best 10-4-16	0.41 lbs. N
15-Jun-98	Turf Partners 1-0-23	0.07 lbs. K	08-Oct-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
16-Jun-98	Best 25-4-8	0.73 lbs. N	08-Oct-98	K-Power 14-0-46	0.04 lbs. N
01-Jul-98	Turf Partners 1-0-23	0.07 lbs. K	08-Oct-98	Peters 20-10-20	0.06 lbs. N
01-Jul-98	Nutriculture 28-8-18	0.08 lbs. N	16-Oct-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
01-Jul-98	Turf Partners 24-0-0	0.07 lbs. N	16-Oct-98	Peters 20-10-20	0.06 lbs. N
03-Jul-98	Turf Partners 1-0-23	0.07 lbs. K	16-Oct-98	Turf Partners 3-0-14	0.02 lbs. K
03-Jul-98	Nutriculture 28-8-18	0.08 lbs. N	24-Oct-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
13-Jul-98	Turf Partners 1-0-23	0.28 lbs. N	24-Oct-98	Peters 20-20-20	0.06 lbs. N
13-Jul-98	Nutriculture 28-8-18	0.08 lbs. N	30-Oct-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
14-Jul-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N	30-Oct-98	Peters 20-10-20	0.06 lbs. N
14-Jul-98	Nutriculture 28-8-18	0.08 lbs. N	31-Oct-98	Best 10-4-16	0.58 lbs. N
16-Jul-98	Best 5-16-22	0.41 lbs. N	06-Nov-98	Turf Partners 1-0-23	0.07 lbs. K
04-Aug-98	Turf Partners 1-0-23	0.07 lbs. K	06-Nov-98	Turf Partners 7-0-0	0.02 lbs. N
04-Aug-98	Turf Partners 24-0-0	0.07 lbs. N	13-Nov-98	Turf Partners 1-0-23	0.07 lbs. K
04-Aug-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N	13-Nov-98	Turf Partners 7-0-0	0.02 lbs. N
11-Aug-98	Turf Partners 1-0-23	0.07 lbs. K	13-Nov-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N
15-Aug-98	Best 25-4-8	0.55 lbs. N	13-Nov-98	Nutriculture 28-8-18	0.08 lbs. N
17-Aug-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N	17-Nov-98	Turf Partners 1-0-23	0.07 lbs. K
17-Aug-98	Nutriculture 28-8-18	0.08 lbs. N	17-Nov-98	Turf Partners 7-32-6	0.02 lbs. N
25-Aug-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N	25-Nov-98	Turf Partners 7-0-0	0.02 lbs. N
25-Aug-98	Nutriculture 28-8-18	0.08 lbs. N	25-Nov-98	Turf Partners 7-32-6	0.02 lbs. N
02-Sep-98	Gold-N-Grow 10-0-0 w/iron	0.03 lbs. N	25-Nov-98	Turf Partners 1-0-23	0.07 lbs. K
09-Sep-98	Peters 20-10-20	0.06 lbs. N	03-Dec-98	Best 10-4-16	0.47 lbs. N
				TOTAL - 1998	6.43 lbs. N
					5.18 lbs. P
					8.8 lbs. K

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

TABLE 4B 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FUNGICIDES		
Planting date	29-May-98	Date(s)	Product	Rate (oz./M)
Problems during	None	05-Aug	Alliette Fore (WP)	4 8
FACTORS OF PLAY		14-Sep	Alliette Fore (WP)	4 8
Date opened for play	opened on July			
Date closed for play				
Type of spikes allowed	Metal spikes, Softspikes			
Uses of green	Putting, Chipping	HERBICIDES		
MOWING		Date(s)	Product	Rate (oz./M)
Initial height	1/2"	None		
Current height	3/25"			
Frequency	Daily	INSECTICIDES		
Type of mower	triplex			
Rollers used	Jacobsen GreensKing V -	Date(s)	Product	Rate (oz./M)
Groomers used	triplex attachments for groomers and rollers	12-Jul	Merit (75 WSP)	0.19
CULTIVATION		OTHER PRODUCTS		
Aerification - dates	Sept. 16			
Aerification - type	1/4" solid tine - followed by topdressing (USGA spec.)	Date(s)	Product	Rate (oz./M)
Verticutting	monthly on July, August, September, October	None		
Dates of topdressing	light to moderate - monthly in July, August, September, October			
Other cultural practices	rolled and brushed for tournament dates			NOTES/COMMENTS
				-Very high traffic practice green -Plots are doing very well -Green is flushed monthly w/ 6"water due to high salts -Green is irrigated to prevent stress

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

1998 On Site Bermudagrass test with permission from NTEP
 TABLE 4B. (CONT'D) 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

FERTILIZATION

FERTILIZATION

Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (lbs./M)
15-Mar	Best 10-4-16	1 lb. N	10-Jun	Nutriculture 24-0-0	0.07 lbs. N
02-Apr	Nutriculture 20-20-20	0.06 lbs. N		Turf Partners 1-0-23	0.14 lbs. K
	Nutriculture 24-0-0	0.07 lbs. N		Turf Partners (w/8% chelated Fe)	
05-Apr	Best 10-4-16	0.5 lbs. N	21-Jun	Turf Partners 1-0-23	0.07 lbs. K
08-Apr	Turf Partners 1-0-0 (w/8% Ca)			Nutriculture 24-0-0	0.07 lbs. N
	Turf Partners 1-0-23	0.07 lbs. K	22-Jun	Pursell 0-0-46	2.6 lbs. K
	Nutriculture 28-8-18	0.08 lbs. N	25-Jun	Turf Partners - Gypsum	
	Nutriculture 24-0-0	0.07 lbs. N	03-Jul	Best 18-3-18 (Polyon)	1 lbs. N
12-Apr	Best 18-3-18 (Polyon)	0.50 lbs. N	06-Jul	Turf Partners 1-0-23	0.07 lbs. K
23-Apr	Nutriculture 28-8-18	0.08 lbs. N		Nutriculture 24-0-0	0.07 lbs. N
	Turf Partners - Eco-Mag		21-Jul	Pac. Ag. & Turf 0-0-25	0.08 lbs. K
	Crown Tech. (FeSO4)			Nutriculture 24-0-0	0.10 lbs. N
24-Apr	Turf Partners - Gypsum		16-Aug	Pac. Ag. & Turf 0-0-25	0.08 lbs. K
28-Apr	Nutriculture 28-8-18	0.08 lbs. N		Nutriculture 24-0-0	0.07 lbs. N
	Turf Partners 1-0-23	0.07 lbs. K	19-Aug	Turf Partners 1-0-23	0.07 lbs. K
	Turf Partners - Eco-Mag			Nutriculture 28-8-18	0.08 lbs. N
	Promot			Sequestar - 13% Fe	
	Crown Tech. (FeSO4)		07-Sep	Turf Partners 1-0-23	0.07 lbs. K
03-May	Nutriculture 24-0-0	0.07 lbs. N		K-power 13.75-0-46	0.13lbs. K
04-May	Best 18-3-18 (Polyon)	0.53 lbs. N	14-Sep	Turf Partners 1-0-0-8Ca	
10-May	Nutriculture 28-8-18	0.08 lbs. N		Turf Partners 1-0-23	0.07 lbs. K
	Crown Tech. (FeSO4)			Nutriculture 24-0-0	0.07 lbs. N
	Turf Partners 1-0-23	0.04 lbs. K	20-Sep	Best 10-4-16	0.35 lbs. N
	Turf Partners - Eco-Mag		04-Oct	Best 10-4-16	0.26 lbs. N
21-May	Nutriculture 20-20-20	0.06 lbs. N	25-Oct	Turf Partners 1-0-23	0.10 lbs. K
	Turf Partners 1-0-23	0.04 lbs. K		Nutriculture 28-8-18	0.08 lbs. N
	Crown Tech. (FeSO4)		19-Nov	K-power 13.75-0-46	0.13lbs. K
27-May	Nutriculture 28-8-18	0.08 lbs. N		Turf Partners 1-0-0-8Ca	
	Crown Tech. (FeSO4)			Turf Partners 1-0-23	0.07 lbs. K
31-May	Nutriculture 28-8-18	0.08 lbs. N		Crown Tech. (FeSO4)	
	Nutriculture 24-0-0	0.07 lbs. N			
				TOTAL - 1999	5.71 lbs. N
					3.53 lbs. P
					9.83 lbs. K

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

TABLE 4C. 2000 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

ESTABLISHMENT

Planting date
Problems during

29-May-98
None

FUNGICIDES

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

FACTORS OF PLAY

Date opened for play
Date closed for play
Type of spikes allowed
Uses of green

Softspikes only
putting, chipping, target. Heavy use PPG.

27-Jul Daconil WS 2
03-Aug Alliette 4
03-Aug Fore (WP) 8
14-Aug Subdue Maxx 1
14-Aug Fore (WP) 8
20-Nov 26 Chipco GT Flo. 5

MOWING

Initial height
Current height
Frequency
Type of mower
Rollers used
Groomers used

0.125"
0.125"
7 days/week
Triplex - GKV
Groomers used approximate 4 days/week.
Rollers used 1-2 times per month.

HERBICIDES

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

CULTIVATION

Aerification - dates
Aerification - type
Verticutting

3/14, 10/10
5/8" hollow tine
2-3 times/month depending upon thatch except
Nov.-May.

INSECTICIDES

Date(s) Product Rate (oz./M)
11-Jul Merit (75 WSP) 0.19
14-Aug Tempo 20 WP 5 grams/1000

Dates of topdressing

Heavy topdressing w/USGA spec. sand on 3/14, 10/10, following aerification. Light topdressing w/#30 silica sand monthly except Nov.-Mar.

OTHER PRODUCTS

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

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)

NOTES/COMMENTS

Overseeded with Perennial Ryegrass (Certified Blue Tag "Brightstar II & Charger II) on Oct. 18. Preparations included verticutting and scalping to .120

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

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

FERTILIZATION

Date(s)	Product Name	Product Analysis	Rate (lbs./M)		
			N	P	K
05-Jan	Turf Partners	7-0-0	0.02		
05-Jan	Turf Partners	1-0-23			0.07
05-Jan	Turf Partners	7-32-6	0.02	0.1	0.02
05-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		
09-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			
01-Mar	Nutriculture	28-8-18	0.08	0.02	0.05
01-Mar	Turf Partners	1-0-23			0.07
01-Mar	Turf Partners	1-0-0 (8% Ca)			
01-Mar	Turf Partners	7-32-6	0.02	0.1	0.02
01-Mar	Turf Partners	Eco-Mag			
01-Mar	Crown Tech.	FeSO4			
02-Mar	Best	10-4-16	0.62	0.25	0.99
08-Mar	Turf Partners	1-0-0 (8% Ca)			
08-Mar	Turf Partners	1-0-23			0.07
08-Mar	Turf Partners	7-32-6	0.02	0.1	0.02
08-Mar	Turf Partners	7-0-0	0.02		
17-Mar	Nutriculture	20-20-20	0.06	0.06	0.06

FERTILIZATION

Date(s)	Product Name	Product Analysis	Rate (lbs./M)		
			N	P	K
17-Mar	Nutriculture	34-0-0	0.04		
17-Mar	Turf Partners	Eco-Mag			
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			
02-Apr	Turf Partners	Gypsum			
03-Apr	Turf Partners	34-0-0	0.01		
03-Apr	Turf Partners	1-0-0 (8% Ca)			
03-Apr	Turf Partners	1-0-23			0.07
03-Apr	Nutriculture	28-8-18	0.08	0.02	0.05
03-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			
01-May	Turf Partners	34-0-0	0.07		
01-May	Crown Tech.	FeSO4			
07-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			

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

TABLE 4C (CONT'D). 2000 MANAGEMENT - ON-SITE BERMUDAGRASS 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	
12-May	Turf Partners	1-0-23			0.04	11-Sep	Turf Partners	1-0-23			0.07	
12-May	Turf Partners	Eco-Mag				11-Sep	Nutriculture	34-0-0	0.1			
23-May	Nutriculture	20-20-20	0.06	0.06	0.06	19-Sep	Best	10-4-16	0.62	0.25	0.99	
23-May	Turf Partners	1-0-23			0.04	01-Oct	Turf Partners	Gypsum				
23-May	Crown Tech.	FeSO4				04-Oct	Best	10-4-16	0.26	0.11	0.42	
31-May	Nutriculture	28-8-18	0.08	0.02	0.05	25-Oct	Turf Partners	0-0-34			0.1	
31-May	Nutriculture	24-0-0	0.07			25-Oct	Nutriculture	28-8-18	0.08	0.02	0.05	
14-Jun	Nutriculture	34-0-0	0.07			02-Nov	Turf Partners	Gypsum				
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			15-Nov	Turf Partners	Eco-Mag				
24-Jun	Pursell	0-0-46			1.1	15-Nov	Turf Partners	1-0-23			0.14	
10-Jul	Turf Partners	0-0-34			0.07	15-Nov	K-Power	13.75-0-46	0.04		0.13	
10-Jul	Turf Partners	7-0-0	0.1			15-Nov	Nutriculture	20-20-20	0.06	0.06	0.06	
16-Jul	Turf Partners	Gypsum				15-Nov	Crown Tech.	FeSO4				
27-Jul	Pac. Ag. & Turf	0-0-25			0.08	27-Nov	Turf Partners	0-0-34			0.07	
27-Jul	Nutriculture	24-0-0	0.1			27-Nov	Nutriculture	28-8-18	0.08	0.02	0.05	
08-Aug	Pac. Ag. & Turf	0-0-25			0.1	03-Dec	Lebenon S.G.	20-0-20	0.5		0.5	
08-Aug	Nutriculture	24-0-0	0.1			07-Dec	K-Power	13.75-0-46	0.04		0.13	
17-Aug	Turf Partners	34-0-0				07-Dec	Turf Partners	34-0-0			0.07	
19-Aug	Turf Partners	0-0-34			0.07	07-Dec	Turf Partners	1-0-0-8Ca				
19-Aug	Nutriculture	28-8-18	0.08	0.02	0.05	16-Dec	Best	10-4-16	0.4	0.16	1.62	
19-Aug	Sequestar	13% Fe				22-Dec	Nutriculture	28-8-18	0.08	0.02	0.05	
05-Sep	Turf Partners	0-0-34			0.07	22-Dec	Turf Partners	34-0-0			0.07	
05-Sep	K-Power	13.75-0-46	0.04		0.13	22-Dec	Crown Tech.	FeSO4				
05-Sep	Sequestar	13% Fe				27-Dec	Turf Partners	34-0-0			0.1	
11-Sep	Turf Partners	1-0-0-8Ca				27-Dec	Nutriculture	20-20-20	0.1	0.1	0.1	
									Total	7.53	1.89	12.09

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

TABLE 4D. 2001 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT MURRIETA, CA (SCGA MEMBERS CLUB)

ESTABLISHMENT		FUNGICIDES		
Planting date	29-May-98	Date(s)	Product	Rate (oz./M)
Problems during	None	18-Jul	Alliette	4
		18-Jul	Fore (WP)	8
FACTORS OF PLAY		30-Jul	Daconil WS	2
		25-Aug	Subdue Maxx	1
Date opened for play		25-Aug	Fore (WP)	8
Date closed for play				
Type of spikes allowed	Softspikes only			
Uses of green	putting, chipping, target. Heavy use PPG.			
MOWING		HERBICIDES		
Initial height	0.125"	Date(s)	Product	Rate (oz./M)
Current height	0.125"			
Frequency	7 days/week	None		
Type of mower	Triplex - GKV			
Rollers used	Groomers used approximate 4 days/week.			
Groomers used	Rollers used 1-2 times per month.	INSECTICIDES		
CULTIVATION		Date(s)	Product	Rate (oz./M)
Aerification - dates	3/12, 10/9	02-Jul	Merit (75 WSP)	0.19
Aerification - type	5/8" hollow tine	14-Sep	Tempo 20 WP	5 grams/1000
Verticutting	2-3 times/month depending upon thatch except Nov.-May.	OTHER PRODUCTS		
Dates of topdressing	Heavy topdressing w/USGA spec. sand on 3/14, 10/10, following aerification. Light topdressing w/#30 silica sand monthly except Nov.-Mar.	Date(s)	Product	Rate (oz./M)
		None		
Other cultural practices	Heavy brushing in Mar., Oct. Rolled for special tournament events which were 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 2001)	NOTES/COMMENTS		
		No overseeding this Fall.		

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

1998 On Site Bermudagrass test with permission from NTEP

TABLE 4E.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
 IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
 AT MURRIETA, CA (SCGA MEMBERS CLUB) 1/
 1998-2001 DATA

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

NAME	GENETIC COLOR	LEAF TEXTURE	PERCENT COVER SPRING 2000	PERCENT ESTABLISHMENT		STIMPMETER READINGS		QUALITY RATINGS							MEAN
				3 WEEKS	6 WEEKS	SUMMER 2000	FALL 1999-01	APR	MAY	JUN	JUL	AUG	SEP	OCT	
MS-SUPREME	7.8	7.2	81.7	7.3	7.7	132.3	105.7	8.0	8.0	7.0	8.0	7.1	7.6	8.0	7.5
MINI-VERDE	7.7	7.2	68.3	5.0	6.0	124.7	101.8	7.0	8.0	6.5	7.8	7.2	7.4	7.8	7.3
CHAMPION	7.6	7.2	60.0	4.7	6.3	123.3	102.0	7.0	8.0	6.3	7.8	6.9	7.3	7.2	7.1
TIFEAGLE	7.6	6.8	75.0	4.7	6.0	129.3	108.3	7.0	7.3	6.5	7.7	6.7	7.0	7.3	6.9
FLORADWARF	6.4	6.8	63.3	3.7	6.3	126.0	107.4	6.0	8.0	6.5	7.5	6.4	6.6	6.5	6.5
TIFGREEN	6.3	5.9	53.3	7.3	8.7	122.7	103.2	6.3	6.0	6.0	6.8	6.0	6.6	6.8	6.4
TIFDWARF	6.6	5.9	46.7	5.7	7.0	129.0	104.8	6.0	6.7	6.0	6.5	6.0	6.4	6.2	6.2
LSD VALUE	0.5	0.5	16.1	1.3	1.6	14.9	5.3	0.4	0.5	0.9	0.6	0.9	0.6	0.5	0.4
C.V. (%)	7.5	7.8	13.7	14.0	12.4	4.9	4.6	3.2	4.0	9.3	6.8	12.6	8.9	5.9	6.7

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).

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

TABLE 5A 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT HOBE SOUND, FL (THE JUPITER ISLAND CLUB)
 1998 On Site Bermudagrass test with permission from NTEP

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date		Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during		Fall 1998		1 lb. N per month 1.5 lb. K per month	None		
FACTORS OF PLAY							
Date opened for play							
Date closed for play					INSECTICIDES		
Type of spikes allowed					Date(s)	Product	Rate (oz./M)
Uses of green	putting				None		
MOWING							
Initial height							
Current height	1/8"						
Frequency	7 days/week	FUNGICIDES			OTHER PRODUCTS		
Type of mower		Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Rollers used		None			None		
Groomers used							
CULTIVATION							
Aerification - dates							
Aerification - type					NOTES/COMMENTS		
Verticutting							
Dates of topdressing	2-4 times per month lightly with dried sand				Irrigation as needed with heavy application every 4-6 days		
Other cultural practices							

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

TABLE 198 On Site Pesticide Use Report for 2009-2010 for PERMUDA GRASS TEST AT HOBE SOUND, FL (THE JUPITER ISLAND CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date		Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during							
			Granular: 13-4-13 and 0-0-30		None		
		Summer	0-0-30	5 lbs./month			
FACTORS OF PLAY		Summer	13-4-13	1 lb. N/ month			
Date opened for play		Foliar: Coron 28-0-0, Monopotassium Phosphate,			INSECTICIDES		
Date closed for play		Roots 1-2-3					
Type of spikes allowed	softspikes	Winter		3/4 lb. N/month	Date(s)	Product	Rate (oz./M)
Uses of green	chipping, short game area	Summer		1/2 lb. N/month			
					None		
MOWING							
Initial height	0.18"						
Current height	0.10"						
Frequency	7 days/week	FUNGICIDES			OTHER PRODUCTS		
Type of mower		Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Rollers used	None						
Groomers used							
			Fungicides have been used on a curative program.			None	
CULTIVATION							
Aerification - dates	Aerified (2x)- hollow tines.						
Aerification - type	Hydroject -1x/month						
Verticutting	2 times last season with Ren-o-thin (2 directions)			NOTES/COMMENTS			
Dates of topdressing	walk topdress with LESCO rotary spreader weekly during season. Use pull behind spread biweekly during the Winter season			Irrigation as needed with heavy application every 4-6 days			
Other cultural practices	None						

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TABLE 5C. 2000 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT HOBE SOUND, FL (THE JUPITER ISLAND CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date		Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during		Summer	14-3-14	1 lb./month	None		
		Summer	0-0-30	4 lbs./month			
FACTORS OF PLAY		Summer	Spray with Mono KP+Minors weekly				
Date opened for play					INSECTICIDES		
Date closed for play	None	Winter	0-0-30	2-4 lbs. K/month			
Type of spikes allowed	softspikes				Date(s)	Product	Rate (oz./M)
Uses of green	chipping - trap lessons	Spray Magnesium and 1-0-14 weekly					
		Spray Mono KP+Minors+Liquid-green+Primer weekly					
					Sprayed for insects as needed		
MOWING							
Initial height	0.110"						
Current height	0.110"						
Frequency	7 days/week	FUNGICIDES			OTHER PRODUCTS		
Type of mower	Walk-Jacobsen	Date(s)	Product	Rate (oz./M)	Date(s)	Product	Rate (oz./M)
Rollers used	None						
Groomers used	When needed	None					
CULTIVATION							
Aerification - dates	4 times hollow in Summer. 2						
Aerification - type	times water injection in Winter.						
Verticutting	5 times heavy verticutting in Summer						NOTES/COMMENTS
Dates of topdressing	Topdressed every 3 weeks in Summer and 5 times in Winter						
Other cultural practices	None						

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TABLE 5D. 2001 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT HOBE SOUND, FL (THE JUPITER ISLAND CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date		Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during		Greens Foliar Program (weekly spray)			None		
FACTORS OF PLAY		Week 1					
Date opened for play		Garys Greens	18-3-4	0.23 lb. N			
Date closed for play	None	P. K. Plus.	3-21-18	0.13 lb. P			
Type of spikes allowed	softspikes	Ultra Plex	5-0-3	2.5 gal. Micro's	INSECTICIDES		
Uses of green	chipping	Week 1			Date(s)	Product	Rate (oz./M)
		Garys Greens	18-3-4	0.23 lb. N			
		P. K. Plus.	3-21-18	0.27 lb. P			
			8-0-4	0.05 lb. N	None		
MOWING		Granular Applications					
Initial height	0.125"						
Current height	0.125"	Year round 0-0-30 once per month at 1.5 lbs. K/1000.					
Frequency	daily	Immediately after aerification 12-0-20, 75%					
Type of mower	Jacobsen PGM	Nitroform, 25% Nutralene at 1 lb. Per 1000.					
Rollers used	None	Supplemented with Itarrells 13-4-13 during summer					
Groomers used	brushes used on front of mower	when needed			Date(s)	Product	Rate (oz./M)
CULTIVATION		OTHER PRODUCTS					
		None					
		FUNGICIDES					
Aerification - dates	hollow tines May-Aug; solid Sep	Date(s)	Product	Rate (oz./M)			
Aerification - type	& Dec; water inject Jan-Mar.						
Verticutting	deep - Jan May Jun Aug; Light - 1X/month Apr-Nov.	Heritage at recommended rate - 4 times last year					
Dates of topdressing	3 times/month in Jun-Sep. once per month in Oct-Nov. light dusting in Jan.-March.						
Other cultural practices	Brushing as needed	NOTES/COMMENTS					

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1998 On Site Bermudagrass test with permission from NTEP

TABLE 5E.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
 IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
 AT HOBE SOUND, FL (THE JUPITER ISLAND CLUB) 1/
 1998-2001 DATA

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

NAME	FALL COLOR	FALL COLOR	FALL COLOR	STOLON COUNTS	SHOOT 3/ COUNTS	STIMPMETER READINGS				PERCENT ESTABLISHMENT RATINGS				
	SEPTEMBER 2000-01	NOVEMBER 2001	DECEMBER 2000-01			2000	2001	SPRING 1999	WINTER 1998-99	2000	2001	JULY 14	AUG.1	AUG.14
MINI-VERDE	8.2	8.0	8.3	318.7	337.0	126.0	91.0	116.3	107.3	31.7	60.0	85.0	96.3	99
TIFEAGLE	8.2	8.0	8.2	320.0	401.0	130.0	89.3	113.7	112.7	40.0	65.0	85.0	94.3	99
CHAMPION	7.2	7.7	8.2	402.7	434.0	131.3	94.7	112.7	113.7	40.0	63.3	81.7	97.0	99
FLORADWARF	7.5	7.7	8.2	303.7	382.0	143.3	104.7	112.3	120.3	31.7	55.0	86.7	99.0	99
TIFDWARF	8.7	8.3	7.7	275.3	258.0	124.7	92.0	118.3	113.7	25.0	53.3	80.0	96.0	99
MS-SUPREME	7.0	6.3	7.4	371.0	366.7	123.3	89.7	109.3	113.7	43.3	68.3	91.3	98.3	99
TIFGREEN	6.8	6.0	5.7	244.3	292.7	124.7	81.7	117.3	117.0	38.3	85.0	97.7	99.0	99
LSD VALUE	0.9	0.8	1.2	113.7	103.9	11.7	16.8	18.0	6.7	18.2	21.2	8.2	4.6	0
C.V. (%)	10.0	6.0	16.8	17.4	15.2	4.7	8.6	6.2	3.0	23.1	16.3	5.1	2.2	0

TABLE 5E.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
 IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
 AT HOBE SOUND, FL (THE JUPITER ISLAND CLUB) 1/
 1998-2001 DATA

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

NAME	GENETIC COLOR	LEAF TEXTURE	DENSITY SPRING	DENSITY FALL	WINTER COLOR	THATCH	QUALITY RATINGS												
						MEASUREMENT 1999-01	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
MINI-VERDE	8.6	8.4	7.7	8.5	8.0	5.7	8.5	8.2	8.8	7.0	7.1	7.0	8.3	9.0	8.5	7.0	8.3	8.2	8.1
TIFEAGLE	7.9	7.7	7.7	7.9	7.7	5.1	8.5	8.2	8.4	7.2	7.3	6.7	8.0	8.3	8.3	7.0	7.7	8.2	7.9
CHAMPION	8.2	8.0	7.7	7.6	7.7	5.4	8.5	8.2	8.2	7.3	6.9	6.7	8.3	7.3	7.7	6.0	7.6	8.3	7.6
FLORADWARF	7.6	7.5	7.7	7.2	7.0	5.3	7.3	7.2	7.7	6.3	6.8	6.7	7.3	8.0	8.1	7.7	7.3	7.5	7.4
TIFDWARF	7.5	6.8	7.3	7.2	5.3	5.2	6.5	6.8	7.7	6.8	7.3	8.0	8.0	9.0	8.7	6.3	7.9	6.9	7.4
MS-SUPREME	7.0	7.0	7.3	5.9	5.7	5.7	7.2	7.5	7.6	7.0	7.7	7.7	7.7	7.0	7.4	5.3	6.6	7.0	7.1
TIFGREEN	5.7	5.2	5.3	4.9	3.3	5.3	4.7	5.3	6.3	7.2	7.2	8.0	7.3	7.7	6.2	3.0	6.1	4.6	5.7
LSD VALUE	0.8	0.6	1.0	0.8	0.8	7.3	0.9	1.0	0.7	1.7	1.2	1.0	1.7	0.7	0.7	1.7	1.1	0.7	0.5
C.V. (%)	14.6	11.5	8.0	14.5	7.4	76.8	12.0	12.0	10.0	13.6	11.9	7.1	8.9	5.0	11.8	15.7	15.0	13.1	9.4

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.

3/ A TWO INCH DIAMETER CORE WAS TAKEN FROM EACH PLOT AND COUNTED ALL SHOOTS WITHIN THAT AREA.

TABLE 6A. 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT ST. CHARLES, MO (THE MISSOURI BLUFFS G. C.)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	10-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
		June	18-5-9	1 lbs. N	Fall	Roundup	spot applied
		July	18-5-9	1 lbs. N			
		August	18-5-9	1 lbs. N			
FACTORS OF PLAY							
Date opened for play	not yet opened						
Date closed for play							
Type of spikes allowed	softspikes						
Uses of green	putting when opened				INSECTICIDES		
MOWING					Date(s)	Product	Rate (oz./M)
Initial height	3/16"				None		
Current height	3/16"						
Frequency	3 days/week						
Type of mower	walking						
Rollers used	None						
Groomers used	None				OTHER PRODUCTS		
CULTIVATION					Date(s)	Product	Rate (oz./M)
Aerification - dates	None	FUNGICIDES			None		
Aerification - type							
Verticutting	None	Date(s)	Product	Rate (oz./M)			
Dates of topdressing	monthly through Sept.						
Other cultural practices	None	None					
					NOTES/COMMENTS		

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1998 On Site Bermudagrass test with permission from NTEP

TABLE 6B. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT ST. CHARLES, MO (THE MISSOURI BLUFFS G. C.) 1/
1998 DATA 3/

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

NAME	GENETIC COLOR	LEAF TEXTURE	PERCENT ESTABLISHMENT RATINGS		QUALITY RATINGS			
			SUMMER	FALL	AUG	SEP	OCT	MEAN
TIFEAGLE	6.0	6.0	46.7	91.7	4.3	5.7	3.0	4.3
TIFDWARF	7.0	6.0	33.3	91.7	3.7	5.3	3.7	4.2
TIFGREEN	5.7	5.0	26.7	96.3	4.0	5.3	3.3	4.2
CHAMPION	5.7	6.3	50.0	99.0	4.7	5.3	2.3	4.1
MINI-VERDE	6.0	6.7	36.7	99.0	4.7	4.7	2.3	3.9
MS-SUPREME	6.0	6.3	33.3	98.3	4.3	4.7	2.3	3.8
FLORALDWARF	7.0	6.0	30.0	86.7	3.0	4.3	2.0	3.1
LSD VALUE	0.6	0.7	8.2	3.8	1.0	-	1.0	0.9
C.V. (%)	5.2	6.6	12.9	2.3	12.7	18.8	18.6	11.0

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.

3/ DUE TO WINTER INJURY, THE TEST WAS DISCONTINUED IN SPRING 1999.

1998 On Site Bermudagrass test with permission from NTEP

TABLE 7A. 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT DALLAS, TX (BENT TREE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	08-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	Extremely hot and dry	08-Jun-98	Milorganite	1 lb. N	None		
		July 1998	Scotts 18-9-18	1 lb. N			
FACTORS OF PLAY		August 1998	Scotts 18-9-18	1 lb. N	INSECTICIDES		
		Sept. 1998	Polygon 0-0-50	1 lb. K			
Date opened for play	October 1998	October 1998	Polygon 0-0-50	1 lb. K	Date(s)	Product	Rate (oz./M)
Date closed for play		November 1998	Polygon 0-0-50	1 lb. K			
Type of spikes allowed	softspikes	December 1998	Polygon 0-0-50	1 lb. K	August 1998	Battle GC	
Uses of green	putting						
MOWING					OTHER PRODUCTS		
Initial height	1/2"				Date(s)	Product	Rate (oz./M)
Current height	1/8"						
Frequency	6 days/week				every two weeks from	Astron	
Type of mower	walking				August - December	FG-20	
Rollers used	None					Knife	
Groomers used	Aug.-Sept.					Now 12-0-12	
CULTIVATION		FUNGICIDES				Now 6-12-3	
		Date(s)	Product	Rate (oz./M)		Now 4-4-16	
Aerification - dates	None					Phlex-Man	
Aerification - type		None				Phlex-Mag	
Verticutting	Once per month in Aug. & Sept.					Renaissance	
Dates of topdressing	Twice per month- July, August, Sept.				monthly from Aug.-Dec.	Perk-Up	
						Maxiplex	
Other cultural practices	Rolled weekly during establishment with Hydroject in off mode to assist leveling				monthly from July-Dec.	Pro-Mag 36	5 lbs./M
					NOTES/COMMENTS		
					No overseeding this year.		
					Used covers to protect three times. Target temp. was 20 degrees F for two hours to be covered.		

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TABLE 7B. 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT DALLAS, TX (BENT TREE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION			FUNGICIDES		
Planting date	08-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	Extremely hot and dry	Granular Fertilizer Applications			None		
FACTORS OF PLAY		20-Mar	Par Ex 16-0-24	1 lb. N			
		10-May	Par Ex 16-0-24	1 lb. N			
Date opened for play		21-Jun	Polyon 0-0-46	1 lb. K	HERBICIDES		
Date closed for play		28-Jun	Country Club 16-4-8	1 lb. N			
Type of spikes allowed		14-Jul	Polyon 0-0-46	1 lb. K	Date(s)	Product	Rate (oz./M)
Uses of green		02-Aug	Scotts 18-9-18	0.5 lb. N			
		20-Sep	Scotts 13-2-26	0.5 lb. N	None		
MOWING		25-Oct	Polyon 0-0-46	1 lb. K			
			Milorganite 6-2-0	1 lb. N			
Initial height		01-Dec	Polyon 0-0-32	1 lb. K			
Current height		INSECTICIDES					
		Total - Granular app. 5.0 lbs. N, 3.6 lbs. P, 9.2 lbs. K					
Frequency							
Type of mower							
Rollers used							
Groomers used		Liquid (Foliar) Fertilizer Applications			None		
CULTIVATION		Every two weeks (March-Sept.) - 14 Applications					
Aerification - dates		Each Floratine app. consisted of		0.15 lb. N	OTHER PRODUCTS		
Aerification - type				0.08 lb. P			
Verticutting				0.15 lb. K	Date(s)	Product	Rate (oz./M)
Dates of topdressing		Total - Foliar app. 2.1 lbs. N, 1.2 lbs. P, 2.1 lbs. K			None		
Other cultural practices							
		Total Fertilizer app. 7.1 lbs. N, 4.8 lbs. P, 11.3 lbs. K					

NOTES/COMMENTS

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TABLE 7C. 2000 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT DALLAS, TX (BENT TREE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION				FUNGICIDES		
Planting date	08-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)	
Problems during	Extremely hot and dry	Granular Fertilizer Applications				None		
FACTORS OF PLAY		March	Par Ex 16-0-24	1 lb. N				
		May	Par Ex 16-0-24	1 lb. N				
Date opened for play	open every day except	June	Polyon 0-0-46	1 lb. K	HERBICIDES			
Date closed for play	Monday when club closed	June	Country Club 16-4-8	1 lb. N				
Type of spikes allowed	Softspikes	July	Polyon 0-0-46	1 lb. K	Date(s)	Product	Rate (oz./M)	
Uses of green	Chipping and Putting	August	Scotts 18-9-18	0.5 lb. N	None			
		September	Scotts 13-2-26	0.5 lb. N				
MOWING		October	Polyon 0-0-46	1 lb. K				
		October	Milorganite 6-2-0	1 lb. N				
Initial height		December	Polyon 0-0-32	1 lb. K				
Current height	0.125"					INSECTICIDES		
Frequency	6 days/week	Total - Granular app.	5.0 lbs. N,	3.6 lbs. P,	9.2 lbs. K			
Type of mower	Toro 1000 walking unit					Date(s)	Product	Rate (oz./M)
Rollers used	Brush attachments used in							
Groomers used	growing season	Foliar Fertilizer Applications				sprayed with Battle GC for cutworms in May, July and August		
CULTIVATION		Every two weeks (March-Sept.) - 14 Applications						
Aerification - dates	May and September	Each Floratine app. consisted of		0.15 lb. N	OTHER PRODUCTS			
Aerification - type	Solid tine			0.08 lb. P				
Verticutting	Spike biweekly May-Sept.			0.15 lb. K	Date(s)	Product	Rate (oz./M)	
	Verticut biweekly April-Sept. (alternate with verticut program)	Total - Foliar app.	2.1 lbs. N,	1.2 lbs. P,	2.1 lbs. K	None		
Dates of topdressing	biweekly (different week from verticut) April-Sept.	Total Fertilizer app.	7.1 lbs. N,	4.8 lbs. P,	11.3 lbs. K	NOTES/COMMENTS		
	Heavy application after solid tine					Not overseeded in Fall. Used covers when temp predicted to be below 20 for excess of 24 hours		
Other cultural practices	rolling in Winter to smooth surface when not mowing							

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TABLE 7D. 2001 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT DALLAS, TX (BENT TREE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION				FUNGICIDES		
Planting date	08-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)	
Problems during	Extremely hot and dry	Granular Fertilizer Applications			Heritage apps in Spring (April/May) and Fall (Sept/Oct)			
FACTORS OF PLAY		March	Par Ex 16-0-24	1 lb. N				
Date opened for play	open every day except	May	Par Ex 16-0-24	1 lb. N				
Date closed for play	Monday when club closed	June	Polyon 0-0-46	1 lb. K	HERBICIDES			
Type of spikes allowed	Softspikes	June	Country Club 16-4-8	1 lb. N	Date(s)	Product	Rate (oz./M)	
Uses of green	Chipping and Putting	July	Polyon 0-0-46	1 lb. K				
MOWING		August	Scotts 18-9-18	0.5 lb. N	None			
Initial height		September	Scotts 13-2-26	0.5 lb. N				
Current height	0.125"	October	Polyon 0-0-46	1 lb. K				
Frequency	6 days/week	October	Milorganite 6-2-0	1 lb. N				
Type of mower	Toro walker	December	Polyon 0-0-32	1 lb. K	INSECTICIDES			
Rollers used		Total - Granular app. 5.0 lbs. N, 3.6 lbs. P, 9.2 lbs. K			Date(s)	Product	Rate (oz./M)	
Groomers used	Solid rollers with brush, daily in May-Sept, weekly other months when not dormant.	Foliar Fertilizer Applications			Conserve GC apps 1 week prior to each star tine cultivation			
CULTIVATION		Each Floratine app. consisted of		0.15 lb. N	OTHER PRODUCTS			
Aerification - dates	June and September			0.08 lb. P	Date(s)	Product	Rate (oz./M)	
Aerification - type	Star tine			0.15 lb. K				
Verticutting	Weekly April-September	Total - Foliar app.	2.1 lbs. N, 1.2 lbs. P,	2.1 lbs. K	None			
Dates of topdressing	Weekly April-September							
Other cultural practices		Total Fertilizer app.	7.1 lbs. N, 4.8 lbs. P,	11.3 lbs. K	NOTES/COMMENTS			
					Green not overseeded and covered if forecast below 20 or to remain below 32 for excess of 24 hours. Covered 1 time in December of 01.			

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1998 On Site Bermudagrass test with permission from NTEP

TABLE 7E.

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT DALLAS, TX (BENT TREE COUNTRY CLUB) 1/
1998-2001 DATA

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

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	DENSITY SPRING	DENSITY SUMMER	DENSITY FALL	WINTER COLOR 1998	FALL COLOR	FALL COLOR	FALL COLOR	DORMANCY OCTOBER 1999	PERCENT ESTABLISHMENT		
								OCTOBER 1999	NOVEMBER 1999,2001	DECEMBER 1999		1 WEEK	5 WEEKS	8 WEEKS
MINI-VERDE	7.3	6.9	5.3	5.9	6.9	7.7	8.0	3.3	5.5	3.0	5.7	66.7	40.0	53.3
TIFEAGLE	7.0	6.6	4.8	5.8	6.4	7.7	7.7	2.3	5.2	2.3	5.0	88.3	53.3	36.7
CHAMPION	6.9	6.2	5.0	5.6	6.2	8.0	7.7	2.3	5.5	2.3	5.3	91.7	33.3	23.3
FLORADWARF	6.8	5.2	4.6	5.1	5.4	7.3	7.3	2.0	4.3	2.0	6.0	66.7	58.3	63.3
MS-SUPREME	6.3	5.8	4.6	5.0	6.2	7.7	7.0	1.3	5.0	1.7	5.7	73.3	53.3	80.0
TIFDWARF	6.9	5.1	4.8	4.8	5.1	6.7	5.3	4.3	4.7	4.3	7.3	76.7	40.0	26.7
TIFGREEN	5.9	4.0	5.4	4.2	4.6	6.3	3.7	3.7	5.3	3.0	7.7	85.0	70.0	80.0
LSD VALUE	1.3	2.1	3.9	3.4	1.2	0.6	1.0	1.7	1.8	2.1	2.4	22.0	19.4	19.2
C.V. (%)	18.1	33.7	46.4	42.4	20.3	5.0	9.4	31.9	20.8	37.5	18.7	13.6	20.6	21.7

TABLE 7E.
(CONT'D)

MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT DALLAS, TX (BENT TREE COUNTRY CLUB) 1/
1998-2001 DATA

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

NAME	QUALITY RATINGS													MEAN
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
MINI-VERDE	4.7	6.9	6.8	5.7	6.3	6.2	5.7	7.2	7.2	6.3	7.2	5.3	6.6	
TIFEAGLE	4.6	6.3	6.7	5.1	5.7	5.7	5.3	6.6	5.9	6.4	6.9	5.2	6.2	
CHAMPION	4.1	6.1	6.1	4.9	5.9	5.7	4.9	6.2	5.4	5.8	6.4	5.0	5.8	
FLORADWARF	4.9	5.7	5.1	4.2	5.3	4.8	4.7	5.6	5.9	5.8	6.1	5.1	5.7	
MS-SUPREME	4.6	5.6	5.4	4.4	6.2	5.4	5.2	6.1	6.1	5.3	5.9	4.8	5.7	
TIFDWARF	5.2	5.6	5.1	4.3	4.6	4.1	4.9	6.1	5.2	5.3	5.4	5.3	5.4	
TIFGREEN	4.4	4.8	4.0	4.3	4.1	3.6	5.0	5.6	4.6	4.8	4.9	4.6	4.8	
LSD VALUE	1.3	1.7	1.8	3.2	2.0	1.6	2.1	1.9	2.2	2.3	0.8	2.3	1.0	
C.V. (%)	21.1	24.8	31.1	43.9	32.0	30.5	26.9	23.7	31.5	33.2	14.7	28.2	20.0	

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 8A. 1998 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT HOUSTON, TX (LAKESIDE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	16-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
		19-Jun-98	14-28-10	1 lb. N	None		
		26-Jun-98	16-8-8	1 lb. N			
FACTORS OF PLAY		03-Jul-98	16-8-8	1 lb. N			
		09-Jul-98	16-8-8	1 lb. N			
Date opened for play	01-Sep-99	22-Jul-98	16-8-8	1 lb. N			
Date closed for play		27-Jul-98	16-8-8	1 lb. N	INSECTICIDES		
Type of spikes allowed	softspikes only	04-Aug-98	16-8-8	1 lb. N			
		21-Aug-98	16-8-8	1 lb. N	Date(s)	Product	Rate (oz./M)
Uses of green		13-Aug-98	16-8-8	1 lb. N			
		31-Aug-98	20-0-20	1 lb. N	13-Aug-98	Dursban 2G	2 lb./M
MOWING		21-Sep-98	20-0-20	1 lb. N			
		19-Oct-98	20-0-20	1 lb. N			
Initial height	1/4"	09-Nov-98	14-28-10	0.75 lb. N			
Current height	5/32"	14-Dec-98	14-28-10	1 lb. N			
Frequency	7 days/week						
Type of mower	walking						
Rollers used	None				OTHER PRODUCTS		
Groomers used	None	FUNGICIDES					
					Date(s)	Product	Rate (oz./M)
CULTIVATION		Date(s)	Product	Rate (oz./M)	None		
Aerification - dates	mid-Feb., mid-March	13-Aug-98	Captan	3			
Aerification - type	water injection	31-Aug-98	Heritage	4			
Verticutting	None	12-Oct-98	Heritage	4	NOTES/COMMENTS		
Dates of topdressing	dusting every 2 weeks						
Other cultural practices	None				Overseeded on 10/26/98 with 12 lb./M poa trivialis		

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

TABLE 8B. 1999 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT HOUSTON, TX (LAKESIDE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	16-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
		04-Jan	Milorganite 6-4-0	0.7 lb. N	None		
		25-Jan	Andersons 18-6-15	0.6 lb. N			
FACTORS OF PLAY		2/2, 3/22	Agriplex Micro-mix 0-4-4	2.0 oz./M			
		3/19, 4/19	Best 16-8-8	1 lb. N			
Date opened for play		5/5, 5/17	HHI 15-4-7	0.5 lb. N			
Date closed for play		11-May	Ferromec 15-0-0	5 oz./M	INSECTICIDES		
Type of spikes allowed	softspikes	01-Jun	Agriplex Micro-mix 0-4-4	2.0 oz./M			
Uses of green	Putting/Chipping	21-Jun	Best 16-8-8	0.75 lb. N	Date(s)	Product	Rate (oz./M)
		23-Jun	Agriplex Micro-mix 0-4-4	2.0 oz./M			
		7/19, 8/2	Anderson 22-0-22	0.5 lb. N	22-Feb	Scimitar	7
MOWING		20-Sep	HHI 15-4-7	0.75 lb. N			
		11-Oct	Agriplex Micro-mix 0-4-4	2.0 oz./M			
Initial height	3/16"	22-Nov	Andersons 10-20-20	0.5 lb. N			
Current height	9/64"	29-Nov	Agriplex Micro-mix 0-4-4	2.0 oz./M			
Frequency	7 days/week	06-Dec	Andersons 10-20-20	0.75 lb. N			
Type of mower	walking	21-Dec	Milorganite 6-4-0	0.5 lb. N			
Rollers used	Toro Triplex - weekly	27-Dec	Andersons 10-20-20	0.75 lb. N	OTHER PRODUCTS		
Groomers used	None						
		FUNGICIDES			Date(s)	Product	Rate (oz./M)
CULTIVATION							
		Date(s)	Product	Rate (oz./M)	None		
Aerification - dates	April 5 - solid 1/4"						
	Sept.7 - 1/2" hollow	22-Feb	Daconil	5			
		22-Mar	Daconil	5	NOTES/COMMENTS		
Aerification - type	Water injection monthly	11-May	Subdue	1			
	May-Sept.		Fore	6	Overseeded on		
		01-Jun	Heritage	0.4	10/25/99 with 12 lb.		
Verticutting	None	28-Jun	Fore	6	and on 11/25 with 2		
Dates of topdressing	Dusting weekly	06-Aug	Prostar	6	lbs of Sabre II poa		
Other cultural practices	Brush green monthly	11-Oct	Subdue Maxx	1	trivialis per 1000		
		29-Nov	Fore	6	sq.ft.		

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TABLE 8C. 2000 MANAGEMENT - ON-SITE BERMUDAGRASS TEST AT HOUSTON, TX (LAKESIDE COUNTRY CLUB)

ESTABLISHMENT		FERTILIZATION			HERBICIDES		
Planting date	16-Jun-98	Date(s)	Product	Rate (lbs./M)	Date(s)	Product	Rate (oz./M)
Problems during	None						
		31-Jan	Houactonite	0.5 lb. N	05-Jun	Illoxan	1
		2/14, 2/28, 3/27, 5/15	Andersons 18-6-15	0.5 lb. N			
FACTORS OF PLAY		24-Apr	Andersons 22-0-22	1.5 lb. N			
		30-May	Andersons 18-6-15	0.75 lb. N			
Date opened for play	open year round	6/5, 8/7	Andersons 10-20-20	1.0 lb. N			
Date closed for play		12-Jun	HHI 15-4-6	1.0 lb. N	INSECTICIDES		
Type of spikes allowed	Metal spikes are banned	05-Jul	Andersons 18-4-6	1.0 lb. N			
Uses of green	Putting/Chipping/bunker play, etc.	7/31, 9/11	Andersons 10-20-20	0.75 lb. N	Date(s)	Product	Rate (oz./M)
		10/30, 11/20, 12/4	Andersons 10-20-20	0.5 lb. N			
		08-Dec	Gypsum	8 lbs	1/24, 4/17	Dursban	2.0 lbs./A
MOWING					15-Jun	Dursban	
					10/5, 10/30	Dursban	1
Initial height	0.156"						
Current height	0.125"	FUNGICIDES					
Frequency	7 days/week						
Type of mower	Toro walking greens mower	Date(s)	Product	Rate (oz./M)			
Rollers used	used weekly in Summer				OTHER PRODUCTS		
Groomers used	used biweekly in Summer	1/24, 3/13	Subdue Maxx	1			
		1/24, 3/13	Daconil	2.5	Date(s)	Product	Rate (oz./M)
CULTIVATION		03-May	Fore	4.9			
		5/18, 6/5	Prostar	4.5	1/10, 3/13	Invigorate	2
Aerification - dates	2/22 - Hydroject	5/23, 11/3, 11/17	Fore	6	1/10, 1/24, 4/17, 5/3, 5/23	Ferromec	5
Aerification - type	4/10, 9/5 - 3/8" Hollow tine	05-Oct	Subdue	1	1/10, 1/24, 3/13	Thoroughbred	0.4
	7/12 - 1" Drill & Fill	11/3, 11/17/2000	Heritage	0.4	3/13, 6/5	SeaQuential	2
Verticutting	5/22, 5/30, 6/12, 6/20, 7/3, 7/17, 8/7, 8/21, 9/21				17-Apr	Primo	0.05
Dates of topdressing	Very heavy: 4/10, 7/12, 9/5; Dusting-heavy: 10/16; Moderate: 1/10, 1/17, 1/24, 1/31., 2/7, 2/28, 3/20, 3/27, 6/7, 7/17; Light: 1/3, 2/14, 5/8, 5/15, 6/5, 7/31, 8/21, 11/6, 12/4				03-May	Green Lawngrer	7
		NOTES/COMMENTS					
		Overseeded on 10/16/00 with 8-10 lbs. of Poa Trivialis per 1000 sq.ft.					
Other cultural practices	Brush green monthly						

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

1998 On Site Bermudagrass test with permission from NTEP

TABLE 8D. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT HOUSTON, TX (LAKESIDE COUNTRY CLUB) 1/
1998-2001 DATA

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

NAME	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE	SEEDLING VIGOR	PERCENT LIVING COVER		STIMPMETER READINGS		
					SPRING 2001	SUMMER 2001	SPRING 1999-00	SUMMER 1999-01	FALL 1999-00
MINI-VERDE	5.7	5.3	6.3	7.7	76.7	91.7	112.0	106.2	117.0
CHAMPION	5.0	3.7	6.3	6.0	81.7	91.7	107.7	108.9	109.0
MS-SUPREME	5.3	4.3	6.3	7.3	81.7	86.7	107.3	106.7	108.5
FLORADWARF	5.3	4.0	6.3	6.3	73.3	91.7	104.3	105.7	106.0
TIFEAGLE	4.9	4.0	6.7	6.3	56.7	73.3	101.7	107.6	105.5
TIFDWARF	5.1	5.7	5.0	7.0	41.7	78.3	118.7	116.1	122.8
TIFGREEN	2.5	3.0	1.7	7.3	58.3	61.7	106.2	106.0	106.3
LSD VALUE	1.2	3.6	0.8	0.8	23.3	13.3	9.9	13.9	8.5
C.V. (%)	31.2	35.3	8.7	6.6	18.3	9.1	7.0	9.4	6.5

TABLE 8D. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BERMUDAGRASS CULTIVARS
(CONT'D)
IN THE 1998 USGA/GCSAA/NTEP ON-SITE BERMUDAGRASS TEST
AT HOUSTON, TX (LAKESIDE COUNTRY CLUB) 1/
1998-2001 DATA

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

NAME	QUALITY RATINGS												MEAN
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
MINI-VERDE	5.7	6.8	6.2	5.3	5.9	6.4	6.2	6.1	5.9	5.5	5.1	5.0	5.8
CHAMPION	5.4	6.0	6.1	5.4	5.8	6.0	5.9	5.8	5.8	5.4	4.6	4.5	5.5
MS-SUPREME	5.7	6.3	6.8	5.6	5.9	6.0	5.8	5.3	5.5	5.1	4.6	4.5	5.4
FLORADWARF	5.6	6.1	5.4	4.7	4.9	6.0	5.4	4.8	5.2	5.1	4.3	4.5	5.1
TIFEAGLE	5.8	6.1	5.6	4.6	4.6	5.3	5.8	5.3	5.3	5.3	4.2	4.5	5.1
TIFDWARF	5.6	6.2	5.8	4.3	4.8	5.1	5.2	4.4	4.6	4.8	4.2	4.8	4.7
TIFGREEN	4.6	4.7	4.1	3.4	3.9	2.2	2.1	1.7	2.1	1.6	2.4	3.7	2.6
LSD VALUE	1.7	1.0	1.1	1.3	1.6	1.0	0.7	0.9	0.9	0.6	0.5	0.5	0.6
C.V. (%)	21.9	16.4	19.6	27.0	29.1	22.0	15.8	25.4	23.5	17.1	13.6	9.0	16.5

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).

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