## NATIONAL TURFGRASS EVALUATION PROGRAM

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

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

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

Executive Director - Kevin N. Morris, National Turfgrass Evaluation Program, Inc.

## **CURRENT POLICY COMMITTEE MEMBERS:**

Mr. Aaron Kuenzi, Mountain View Seeds
Mr. Ryan Jeffries, Columbia Seeds, Inc.
Dr. Cole Thompson, USGA Green Section
Dr. Charles Fontanier, Oklahoma State University
Dr. Alec Kowalewski, Oregon State University
Mr. Mike Selman, Buena Vista Turf Farm
Mr. Mark Johnson, Golf Course Superintendents Assoc. of America
Dr. Aaron Patton, Purdue University
Mr. Steve Reid, DLF Pickseed USA
Mr. Steve Rackliffe, University of Connecticut

## FOR ADDITIONAL REPORTS OR INFORMATION CONTACT:

Kevin Morris, Executive Director National Turfgrass Evaluation Program Beltsville Agricultural Research Center-West Building 005, Room 307 Beltsville, Maryland 20705 kmorris@ntep.org www.ntep.org

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## A Guide to NTEP Turfgrass Ratings

## Introduction

The quality and scientific merit of NTEP data is extremely important. However, the evaluation of turfgrass species and cultivars is a difficult and complex issue. Furthermore, turfgrass evaluation is generally a subjective process based on visual estimates of factors, like genetic color, stand density, leaf texture, uniformity and quality. These factors can not be measured in the same way as other agricultural crops. Turfgrass quality is not a measure of yield or nutritive value. Turfgrass quality is a measure of aesthetics (i.e. density, uniformity, texture, smoothness, growth habit and color), and functional use. The most common way of assessing turfgrass quality is a visual rating system that is based on the turfgrass evaluator's judgement.

## **General Considerations**

Most visual ratings collected on NTEP trials are based on a 1 to 9 rating scale. One is the poorest or lowest and 9 is the best or highest rating. However, a few characteristics, such as winter kill or percent living ground cover, are rated on a percentage basis, again by using the evaluator's judgement. Most disease ratings found in NTEP reports will use the 1-9 scale, 9=no disease except where the evaluator made a judgement of the percentage of disease in each plot. Percent disease data will be found in separate tables and will normally not be included with disease data using the 1-9 scale.

## **Turfgrass Quality**

Turfgrass Quality is based on 9 being outstanding or ideal turf and 1 being poorest or dead. A rating of 6 or above is generally considered acceptable. A quality rating value of 9 is reserved for a perfect or ideal grass, but it also can reflect an absolutely outstanding treatment plot. The NTEP requires quality ratings on a monthly basis. Quality ratings take into account the aesthetic and functional aspects of the turf. Quality ratings are not based on color alone, but on a combination of color, density, uniformity, texture, and disease or environmental stress.

Turfgrass quality ratings are grouped and presented by region, management level, a particular stress (shade, traffic, etc.) and in some cases, by individual location (starting with 2001 data, data from each location will be posted separately as well on the NTEP web site, *http://www.ntep.org*). Also available now is a summary table (Appendix) in the back of this report. This summary table includes various statistical measures not previously compiled for NTEP reports. For an explanation of this table and these changes, please go to the NTEP web site at *http://www.ntep.org/pdf/grandmean.mem.pdf*.

## **Other Ratings**

More detailed information on the ratings of specific characteristics can be found on the NTEP web site at <u>http://www.ntep.org/reports/ratings.htm</u>.

## 2014 NATIONAL BENTGRASS TEST (Fairway/Tee)

## LOCATIONS SUBMITTING DATA FOR 2019

State	Location	Code
California	Riverside (Reduced Irrigation)	CA3
Illinois	Urbana	IL1
Indiana	West Lafayette (Reduced Irrigation)	IN1
Iowa	Ames	IA1
Kansas	Manhattan	KS1
Maryland	College Park	MD1
Michigan	East Lansing	MI1
Missouri	Columbia	MO1
New Jersey	North Brunswick	NJ1
North Dakota	Fargo (Winter Tolerance)	ND1
Utah	Logan (Reduced Irrigation)	UT1

## 2014 NATIONAL BENTGRASS TEST (Fairway/Tee)

## Entries and Sponsors

Entry No	Name	Species	Sponsor
1	DLFPS-AT/3026	Colonial	DLF Pickseed USA
*2	007	Creeping	Standard
*3	Penncross	Creeping	Standard
*4	Crystal Blue Links	Creeping	Standard
*5	Greentime	Colonial	Standard
*6	L-93XD	Creeping	Jacklin Seed by Simplot®
*7	Armor	Creeping	Jacklin Seed by Simplot®
*8	Kingdom	Creeping	Jacklin Seed by Simplot®
*9	Nightlife	Creeping	Jacklin Seed by Simplot®
*10	V-8	Creeping	Jacklin Seed by Simplot®
*11	Piranha (DC-1)	Creeping	Mountain View Seeds & Toyo Green Co. Ltd.
*12	Musket (PPG-AT 104)		Mountain View Seeds
*13	Chinook (H10G-OP)	Creeping	Vista Seed Partners LLC
*14	Shark	Creeping	Mountain View Seeds
*15	Barracuda	Creeping	Mountain View Seeds
16	PST-ORBS	Creeping	Pure Seed Testing Inc
*17	PC2.0 (PST-0CV6)	Creeping	Tee-2-Green

\* Commercially Available in the US or any Other Country in 2020.

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LOCATION	SOIL TEXTURE	SOIL PH	SOIL PHOSPHOROUS (LBS/ACRE)	SOIL POTASSIUM (LBS/ACRE)	NITROGEN (LBS/1000 SQ FT)	SUN OR SHADE	MOWING HEIGHT (IN)	IRRIGATION PRACTICED
CA3	SANDY LOAM	7.1-7.5	0-60	241-375	2.1-3.0	FULL SUN	0.0-0.5	ONLY DURING SEVERE STRESS
IA1	SANDY CLAY LOAM	7.1-7.5	0-60	0-150	2.1-3.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
IL1	SILT LOAM AND SILT	6.1-6.5	0-60	376-500	4.1-5.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
IN1	SAND	7.6-8.5	61-150	151-240	3.1-4.0	FULL SUN	0.0-0.5	TO PREVENT DORMANCY
KS1	SILTY CLAY LOAM	6.6-7.0	151-270	151-240	2.1-3.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
MD1	SILT LOAM AND SILT	6.1-6.5	61-150	151-240	3.1-4.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
MI1 MO1 ND1	_ 	- - 7.1-7.5	- - 0-60	_ _ 151-240	 2.1-3.0	- - FULL SUN	- - 0.0-0.5	- - TO PREVENT DORMANCY
NJ1	SANDY LOAM	6.1-6.5	451+	151-240	0.0-1.0	FULL SUN	0.0-0.5	TO PREVENT STRESS
UT1	SILT LOAM AND SILT	7.1-7.5	0-60	0-150		FULL SUN	0.0-0.5	TO PREVENT DORMANCY

#### 2019 LOCATIONS, SITE DESCRIPTIONS AND MANAGEMENT PRACTICES IN THE 2014 NATIONAL BENTGRASS (FAIRWAY/TEE) TEST

TABLE A.

TABLE B.

#### LOCATIONS AND DATA COLLECTED IN 2019

LOCATION	JANUARY QUALITY RATING	FEBRUARY QUALITY RATING	MARCH QUALITY RATING	APRIL QUALITY RATING	MAY QUALITY RATING	JUNE QUALITY RATING	JULY QUALITY RATING	AUGUST QUALITY RATING	SEPTEMBER QUALITY RATING	OCTOBER QUALITY RATING	NOVEMBER QUALITY RATING	DECEMBER QUALITY RATING	GENETIC COLOR	SPRING GREENUP	LEAF TEXTURE
CA3 IA1 IL1	Х	Х	Х	X X X	X X X	X X X	X X X	X X X	X X X	X X X	Х	Х	X X X	х	
IN1 KS1 MD1					X X X	X X	X X	X X X	X X X	X X					Х
MI1 MO1 ND1				Х	X X X	X X X	X X X	X X X	X X X	Х			Х		
NJ1 UT1				X X	X X	X X	X X	X X	X X	X X			Х	Х	Х

#### LOCATIONS AND DATA COLLECTED IN 2019

S LOCATION D	PRING ENSITY	SUMMER DENSITY	FALL DENSITY	PERCENT COVER SPRING	PERCENT COVER SUMMER	PERCENT COVER FALL	DOLLAR SPOT	BROWN PATCH WARM TEMP	FALL COLOR OCTOBER	MOWING QUALITY	PERCENT POA ANNUA	DOLL. JULY	AR SPOT F AUGUST	
CA3 IA1 IL1							Х		Х			Х		Х
IN1 KS1 MD1		Х					Х			Х	Х	Х	Х	Х
MI1 MO1 ND1	х	Х	Х	Х	Х	Х	Х							
NJ1 UT1			Х	Х	Х	Х	Х	Х						

#### TABLE 1A.

#### MEAN TURFGRASS QUALITY RATINGS OF BENTGRASS CULTIVARS GROWN ON 1/ A FAIRWAY OR TEE GROWN IN LOCATION PERFORMANCE INDEX (LPI) GROUP 1 \*\*/ 2019 DATA

#### TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	# ENTRY	MD1	IL1	MI1	MO1	MEAN
*CHINOOK (H10G-OP)	13	7.2	7.5	7.3	6.2	7.1
*007	2	7.0	7.6	7.3	6.2	7.0
*CRYSTAL BLUE LINKS	4	6.6	7.6	7.3	6.0	6.9
*SHARK	14	6.7	7.5	7.2	6.0	6.8
*PIRANHA (DC-1)	11	6.5	7.4	7.1	6.1	6.8
*BARRACUDA	15	6.5	7.4	7.1	6.0	6.8
*NIGHTLIFE	9	6.4	7.5	7.1	5.8	6.7
*L-93XD	6	6.8	7.2	6.9	5.9	6.7
*V-8	10	5.8	7.3	7.0	5.7	6.4
*PC2.0 (PST-0CV6)	17	4.6	7.7	7.2	5.6	6.3
PST-ORBS	16	4.4	7.7	7.2	5.5	6.2
*MUSKET (PPG-AT 104)	12	6.0	6.8	6.5	5.4	6.2
*ARMOR	7	5.3	7.1	6.7	5.3	6.1
*KINGDOM	8	4.9	7.3	6.9	5.3	6.1
DLFPS-AT/3026	1	5.1	6.5	6.2	5.0	5.7
*PENNCROSS	3	3.6	7.2	6.7	5.0	5.6
*GREENTIME	5	3.1	7.0	6.5	4.8	5.3
LSD VALUE		0.8	0.8	0.8	0.8	0.8
C.V. (%)		8.4	6.5	6.9	8.5	7.5

\*/ COMMERCIALLY AVAILABLE IN THE USA IN 2020

\*\*/ ENTRIES WITHIN THIS TABLE ARE ORDERED BY THE OVERALL MEAN AND HAVE SIMILAR TURF QUALITY PERFORMANCES IN ALL TEST LOCATIONS INCLUDED IN THIS LPI GROUP. IF YOUR STATE IS NOT REPRESENTED, THEN CHOOSE A LPI GROUP THAT CONTAINS A LOCATION AND MANAGEMENT SIMILAR TO YOUR PLANTING CONDITIONS. FOR MORE INFORMATION ON LPI, GO TO WWW.NTEP.ORG/LPI Q&A.PDF

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

#### TABLE 1B.

## MEAN TURFGRASS QUALITY RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON ~1/ A FAIRWAY OR TEE GROWN IN LOCATION PERFORMANCE INDEX (LPI) GROUP 1 ~\*/

2019 DATA

#### TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	# ENTRY	MD1	IL1	MI1	MO1	MEAN
*CHINOOK (H10G-OP)	13	7.2	7.5	7.3	6.2	7.1
*007	2	7.0	7.6	7.3	6.2	7.0
*CRYSTAL BLUE LINKS	4	6.6	7.6	7.3	6.0	6.9
*SHARK	14	6.7	7.5	7.2	6.0	6.8
*PIRANHA (DC-1)	11	6.5	7.4	7.1	6.1	6.8
*BARRACUDA	15	6.5	7.4	7.1	6.0	6.8
*NIGHTLIFE	9	6.4	7.5	7.1	5.8	6.7
*L-93XD	6	6.8	7.2	6.9	5.9	6.7
*V-8	10	5.8	7.3	7.0	5.7	6.4
*PC2.0 (PST-0CV6)	17	4.6	7.7	7.2	5.6	6.3
PST-ORBS	16	4.4	7.7	7.2	5.5	6.2
*ARMOR	7	5.3	7.1	6.7	5.3	6.1
*KINGDOM	8	4.9	7.3	6.9	5.3	6.1
*PENNCROSS	3	3.6	7.2	6.7	5.0	5.6
LSD VALUE		0.8	0.8	0.8	0.8	0.8
C.V. (%)		8.1	6.4	6.7	8.3	7.3

#### TABLE 1C. MEAN TURFGRASS QUALITY RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON 1/ A FAIRWAY OR TEE GROWN IN LOCATION PERFORMANCE INDEX (LPI) GROUP 1 \*/ 2019 DATA TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	# ENTRY	MD1	IL1	MI1	MO1	MEAN
*MUSKET (PPG-AT 104)	12	6.0	6.8	6.5	5.4	6.2
DLFPS-AT/3026	1	5.1	6.5	6.2	5.0	5.7
*GREENTIME	5	3.1	7.0	6.5	4.8	5.3
LSD VALUE		0.8	0.8	0.8	0.8	0.8
C.V. (%)		10.1	7.0	7.5	9.4	8.3

\*/ ENTRIES WITHIN THIS TABLE ARE ORDERED BY THE OVERALL MEAN AND HAVE SIMILAR TURF QUALITY PERFORMANCES IN ALL TEST LOCATIONS INCLUDED IN THIS LPI GROUP. IF YOUR STATE IS NOT REPRESENTED, THEN CHOOSE A LPI GROUP THAT CONTAINS A LOCATION AND MANAGEMENT SIMILAR TO YOUR PLANTING CONDITIONS. FOR MORE INFORMATION ON LPI, GO TO WWW.NTEP.ORG/LPI Q&A.PDF

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

#### TABLE 2A.

#### A. MEAN TURFGRASS QUALITY RATINGS OF BENTGRASS CULTIVARS GROWN ON 1/ A FAIRWAY OR TEE GROWN IN LOCATION PERFORMANCE INDEX (LPI) GROUP 2 \*/ 2019 DATA

NAME	# ENTRY	NJ1	IA1	KS1	MEAN
PIRANHA (DC-1)	11	7.3	7.3	7.0	7.2
CHINOOK (H10G-OP)	13	6.6	6.9	6.9	6.8
L-93XD	6	6.8	6.8	6.7	6.8
007	2	6.0	6.7	6.8	6.5
BARRACUDA	15	5.9	6.6	6.7	6.4
V-8	10	5.4	6.3	6.5	6.1
DLFPS-AT/3026	1	5.9	6.2	6.1	6.0
MUSKET (PPG-AT 104)	12	5.7	6.1	6.2	6.0
SHARK	14	5.1	6.2	6.6	5.9
PC2.0 (PST-OCV6)	17	4.3	6.1	6.6	5.7
CRYSTAL BLUE LINKS	4	4.4	5.9	6.5	5.6
GREENTIME	5	4.4	5.9	6.2	5.5
PENNCROSS	3	4.2	5.8	6.3	5.4
PST-ORBS	16	3.5	5.7	6.5	5.3
NIGHTLIFE	9	3.9	5.6	6.3	5.3
ARMOR	7	4.0	5.5	6.1	5.2
KINGDOM	8	3.3	5.3	6.1	4.9
LSD VALUE		0.8	0.8	0.8	0.8
C.V. (%)		9.4	7.7	7.4	8.1

#### TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

\*/ ENTRIES WITHIN THIS TABLE ARE ORDERED BY THE OVERALL MEAN AND HAVE SIMILAR TURF QUALITY PERFORMANCES IN ALL TEST LOCATIONS INCLUDED IN THIS LPI GROUP. IF YOUR STATE IS NOT REPRESENTED, THEN CHOOSE A LPI GROUP THAT CONTAINS A LOCATION AND MANAGEMENT SIMILAR TO YOUR PLANTING CONDITIONS. FOR MORE INFORMATION ON LPI, GO TO WWW.NTEP.ORG/LPI Q&A.PDF

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

#### TABLE 2B. MEAN TURFGRASS QUALITY RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON 1/ A FAIRWAY OR TEE GROWN IN LOCATION PERFORMANCE INDEX (LPI) GROUP 2 \*/ 2019 DATA

NAME	# ENTRY	NJ1	IA1	KS1	MEAN
PIRANHA (DC-1)	11	7.3	7.3	7.0	7.2
CHINOOK (H10G-OP)	13	6.6	6.9	6.9	6.8
L-93XD	6	6.8	6.8	6.7	6.8
007	2	6.0	6.7	6.8	6.5
BARRACUDA	15	5.9	6.6	6.7	6.4
V-8	10	5.4	6.3	6.5	6.1
SHARK	14	5.1	6.2	6.6	5.9
PC2.0 (PST-OCV6)	17	4.3	6.1	6.6	5.7
CRYSTAL BLUE LINKS	4	4.4	5.9	6.5	5.6
PENNCROSS	3	4.2	5.8	6.3	5.4
PST-ORBS	16	3.5	5.7	6.5	5.3
NIGHTLIFE	9	3.9	5.6	6.3	5.3
ARMOR	7	4.0	5.5	6.1	5.2
KINGDOM	8	3.3	5.3	6.1	4.9
LSD VALUE		0.8	0.8	0.8	0.8
C.V. (%)		9.5	7.7	7.3	8.0

#### TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

## TABLE 2C. MEAN TURFGRASS QUALITY RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON 1/ A FAIRWAY OR TEE GROWN IN LOCATION PERFORMANCE INDEX (LPI) GROUP 2 \*/ 2019 DATA

#### TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF 2/

NAME	# ENTRY	NJ1	IA1	KS1	MEAN
DLFPS-AT/3026	1	5.9	6.2	6.1	6.0
MUSKET (PPG-AT 104)	12	5.7	6.1	6.2	6.0
GREENTIME	5	4.4	5.9	6.2	5.5
LSD VALUE		0.8	0.8	0.8	0.8
C.V. (%)		9.0	7.9	7.8	8.2

\*/ ENTRIES WITHIN THIS TABLE ARE ORDERED BY THE OVERALL MEAN AND HAVE SIMILAR TURF QUALITY PERFORMANCES IN ALL TEST LOCATIONS INCLUDED IN THIS LPI GROUP. IF YOUR STATE IS NOT REPRESENTED, THEN CHOOSE A LPI GROUP THAT CONTAINS A LOCATION AND MANAGEMENT SIMILAR TO YOUR PLANTING CONDITIONS. FOR MORE INFORMATION ON LPI, GO TO WWW.NTEP.ORG/LPI Q&A.PDF

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

TABLE 3A.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT RIVERSIDE, CA 1/ 2019 DATA

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

NAME	GENETIC COLOR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
007	7.0	6.3	6.0	6.7	7.0	6.7	6.3	6.3	6.0	6.0	6.7	6.0	6.0	6.3
CHINOOK (H10G-OP)	7.3	6.0	6.0	6.0	6.0	6.7	6.0	6.7	6.3	6.7	6.3	6.3	6.0	6.3
PENNCROSS	7.0	6.0	6.3	6.7	6.3	6.7	6.3	6.3	6.0	6.3	6.0	6.0	6.0	6.3
PIRANHA (DC-1)	7.0	6.0	6.0	6.0	6.7	6.7	6.3	6.3	6.3	6.3	6.3	6.0	6.0	6.3
PST-ORBS	7.0	6.3	6.0	6.0	7.0	6.7	6.3	6.7	6.0	6.3	6.0	6.0	6.3	6.3
SHARK	7.0	6.3	6.0	6.3	6.0	6.7	6.3	6.0	6.0	6.7	6.0	6.3	6.3	6.3
CRYSTAL BLUE LINKS	7.0	6.0	6.0	6.3	6.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.2
L-93XD	7.0	6.0	6.0	6.0	6.7	6.0	6.3	6.3	6.3	6.3	6.7	6.0	6.0	6.2
NIGHTLIFE	7.3	5.7	6.0	6.0	6.3	6.7	6.3	6.3	6.3	6.7	6.3	6.0	6.0	6.2
PC2.0 (PST-OCV6)	7.0	6.0	6.0	6.0	6.3	7.0	6.0	6.7	6.0	6.3	6.0	6.0	6.0	6.2
ARMOR	7.0	6.0	6.0	6.0	6.0	6.0	6.3	6.0	6.3	6.3	6.0	6.0	6.0	6.1
BARRACUDA	7.3	6.0	6.0	6.3	6.3	6.0	5.7	6.0	6.3	6.3	6.0	6.0	6.0	6.1
KINGDOM	7.0	6.0	6.0	6.0	6.7	6.3	6.3	6.3	5.7	6.0	6.0	6.0	6.0	6.1
V-8	7.0	6.0	5.7	6.0	6.7	6.7	5.7	6.3	6.0	6.0	5.7	6.0	6.0	6.1
DLFPS-AT/3026	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
GREENTIME	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.3	6.0	6.0	6.0	6.0
MUSKET (PPG-AT 104)	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
LSD VALUE	0.7	0.8	0.5	0.7	1.1	1.0	1.5	1.2	1.3	1.8	0.7	0.7	0.6	0.4
C.V. (%)	3.4	4.6	3.2	5.1	7.5	6.9	7.9	6.6	6.6	8.4	5.4	4.0	3.3	2.6

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

TABLE 3B.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT RIVERSIDE, CA 1/ 2019 DATA

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

NAME	GENETIC COLOR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
007	7.0	6.3	6.0	6.7	7.0	6.7	6.3	6.3	6.0	6.0	6.7	6.0	6.0	6.3
CHINOOK (H10G-OP)	7.3	6.0	6.0	6.0	6.0	6.7	6.0	6.7	6.3	6.7	6.3	6.3	6.0	6.3
PENNCROSS	7.0	6.0	6.3	6.7	6.3	6.7	6.3	6.3	6.0	6.3	6.0	6.0	6.0	6.3
PIRANHA (DC-1)	7.0	6.0	6.0	6.0	6.7	6.7	6.3	6.3	6.3	6.3	6.3	6.0	6.0	6.3
PST-ORBS	7.0	6.3	6.0	6.0	7.0	6.7	6.3	6.7	6.0	6.3	6.0	6.0	6.3	6.3
SHARK	7.0	6.3	6.0	6.3	6.0	6.7	6.3	6.0	6.0	6.7	6.0	6.3	6.3	6.3
CRYSTAL BLUE LINKS	7.0	6.0	6.0	6.3	6.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.2
L-93XD	7.0	6.0	6.0	6.0	6.7	6.0	6.3	6.3	6.3	6.3	6.7	6.0	6.0	6.2
NIGHTLIFE	7.3	5.7	6.0	6.0	6.3	6.7	6.3	6.3	6.3	6.7	6.3	6.0	6.0	6.2
PC2.0 (PST-OCV6)	7.0	6.0	6.0	6.0	6.3	7.0	6.0	6.7	6.0	6.3	6.0	6.0	6.0	6.2
ARMOR	7.0	6.0	6.0	6.0	6.0	6.0	6.3	6.0	6.3	6.3	6.0	6.0	6.0	6.1
BARRACUDA	7.3	6.0	6.0	6.3	6.3	6.0	5.7	6.0	6.3	6.3	6.0	6.0	6.0	6.1
KINGDOM	7.0	6.0	6.0	6.0	6.7	6.3	6.3	6.3	5.7	6.0	6.0	6.0	6.0	6.1
V-8	7.0	6.0	5.7	6.0	6.7	6.7	5.7	6.3	6.0	6.0	5.7	6.0	6.0	6.1
LSD VALUE	0.8	0.9	0.6	0.8	1.0	1.2	1.6	1.3	1.3	1.8	0.8	0.8	0.6	0.5
C.V. (%)	3.8	5.1	3.6	5.6	7.0	7.4	8.6	6.9	7.3	8.8	5.8	4.4	3.7	2.8

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

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

#### TABLE 3C. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT RIVERSIDE, CA 1/ 2019 DATA

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

NAME	GENETIC COLOR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
DLFPS-AT/3026	7	6	6	6	6.0	6	6	6	6	6.0	6	6	6	6.0
GREENTIME	7	6	6	6	6.0	6	6	6	6	6.3	6	6	6	6.0
MUSKET (PPG-AT 104)	7	6	6	6	6.0	6	6	6	6	6.0	6	6	6	6.0
LSD VALUE	0	0	0	0	1.3	0	0	0	0	0.8	0	0	0	0.1
C.V. (%)	0	0	0	0	9.6	0	0	0	0	5.5	0	0	0	0.9

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

TABLE 4A.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT WEST LAFAYETTE, IN 1/ 2019 DATA

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

	LEAF	SUMMER	MOWING	PERCENT POA	DOLLAR SPOT	DOLLAR SPOT	DOLLAR			ουαιττην	RATINGS		
NAME	TEXTURE	DENSITY	QUALITY	ANNUA	JULY	AUGUST	SPOT	MAY	JUN	JUL	AUG	SEP	MEAN
CHINOOK (H10G-OP)	8.0	8.3	7.3	4.7	8.3	8.7	7.0	7.3	7.3	7.0	7.3	7.0	7.2
L-93XD	7.3	8.0	7.0	3.0	8.3	7.7	7.0	7.0	7.0	7.3	6.7	6.3	6.9
PIRANHA (DC-1)	7.3	8.0	7.7	4.7	8.0	8.3	6.7	6.7	6.7	7.3	7.0	6.3	6.8
BARRACUDA	7.3	8.0	7.3	4.3	7.3	7.3	5.7	6.3	6.7	7.3	7.0	5.3	6.5
NIGHTLIFE	7.3	8.3	7.7	15.0	7.0	6.7	5.0	6.3	7.0	7.7	5.7	5.3	6.4
PC2.0 (PST-OCV6)	7.0	7.3	7.3	9.3	6.0	7.0	4.3	6.3	7.0	7.3	6.7	4.0	6.3
SHARK	7.7	8.0	7.7	9.0	8.3	6.3	5.0	7.0	6.7	6.7	6.7	4.7	6.3
V-8	7.7	8.0	6.7	12.7	8.0	7.0	6.0	6.3	6.3	7.3	5.3	6.0	6.3
007	7.0	6.7	6.0	5.0	8.7	8.0	6.7	7.0	6.7	6.3	5.0	5.3	6.1
CRYSTAL BLUE LINKS	6.7	6.0	6.7	16.7	7.3	6.7	5.7	6.3	6.3	6.3	5.3	5.3	5.9
MUSKET (PPG-AT 104)	7.0	6.7	8.3	18.3	8.7	8.3	6.7	6.0	5.7	5.3	6.3	6.0	5.9
PST-ORBS	8.0	8.3	5.0	10.0	6.0	7.7	4.7	6.3	6.7	6.7	5.0	4.7	5.9
DLFPS-AT/3026	6.7	7.0	7.7	26.7	9.0	9.0	6.3	5.7	5.7	5.7	5.3	5.7	5.6
ARMOR	7.7	8.7	6.3	10.7	6.3	5.7	4.7	5.7	5.7	6.3	5.3	4.3	5.5
GREENTIME	6.7	6.7	6.7	31.7	7.7	7.7	5.0	5.3	5.3	5.3	5.7	5.7	5.5
KINGDOM	7.3	8.0	6.0	19.0	8.0	6.0	5.3	5.7	6.0	6.3	5.3	4.3	5.5
PENNCROSS	5.7	5.7	8.7	41.7	7.7	4.7	3.0	5.0	5.3	5.3	4.7	3.0	4.7
LSD VALUE	1.1	1.5	2.3	13.4	1.3	1.4	1.3	1.2	1.3	1.8	1.3	1.2	0.9
C.V. (%)	8.1	11.0	15.4	56.5	9.8	11.8	14.3	10.2	10.5	13.4	12.4	14.0	8.6

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

TABLE 4B.

## MEAN TURFGRASS QUALITY AND OTHER RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT WEST LAFAYETTE, IN 1/2019 DATA

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

				PERCENT	DOLLAR	DOLLAR							
	LEAF	SUMMER	MOWING	POA	SPOT	SPOT	DOLLAR			QUALIT	Y RATING	S	
NAME	TEXTURE	DENSITY	QUALITY	ANNUA	JULY	AUGUST	SPOT	MAY	JUN	JUL	AUG	SEP	MEAN
CHINOOK (H10G-OP)	8.0	8.3	7.3	4.7	8.3	8.7	7.0	7.3	7.3	7.0	7.3	7.0	7.2
L-93XD	7.3	8.0	7.0	3.0	8.3	7.7	7.0	7.0	7.0	7.3	6.7	6.3	6.9
PIRANHA (DC-1)	7.3	8.0	7.7	4.7	8.0	8.3	6.7	6.7	6.7	7.3	7.0	6.3	6.8
BARRACUDA	7.3	8.0	7.3	4.3	7.3	7.3	5.7	6.3	6.7	7.3	7.0	5.3	6.5
NIGHTLIFE	7.3	8.3	7.7	15.0	7.0	6.7	5.0	6.3	7.0	7.7	5.7	5.3	6.4
PC2.0 (PST-OCV6)	7.0	7.3	7.3	9.3	6.0	7.0	4.3	6.3	7.0	7.3	6.7	4.0	6.3
SHARK	7.7	8.0	7.7	9.0	8.3	6.3	5.0	7.0	6.7	6.7	6.7	4.7	6.3
V-8	7.7	8.0	6.7	12.7	8.0	7.0	6.0	6.3	6.3	7.3	5.3	6.0	6.3
007	7.0	6.7	6.0	5.0	8.7	8.0	6.7	7.0	6.7	6.3	5.0	5.3	6.1
CRYSTAL BLUE LINKS	6.7	6.0	6.7	16.7	7.3	6.7	5.7	6.3	6.3	6.3	5.3	5.3	5.9
PST-ORBS	8.0	8.3	5.0	10.0	6.0	7.7	4.7	6.3	6.7	6.7	5.0	4.7	5.9
ARMOR	7.7	8.7	6.3	10.7	6.3	5.7	4.7	5.7	5.7	6.3	5.3	4.3	5.5
KINGDOM	7.3	8.0	6.0	19.0	8.0	6.0	5.3	5.7	6.0	6.3	5.3	4.3	5.5
PENNCROSS	5.7	5.7	8.7	41.7	7.7	4.7	3.0	5.0	5.3	5.3	4.7	3.0	4.7
LSD VALUE	1.2	1.4	2.3	13.4	1.4	1.5	1.3	1.1	1.5	2.1	1.4	1.2	0.9
C.V. (%)	8.2	10.3	15.8	66.0	10.3	12.4	14.8	9.4	10.6	12.8	13.1	14.4	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 4C.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT WEST LAFAYETTE, IN 1/ 2019 DATA

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

	LEAF	SUMMER	MOWING	PERCENT POA	DOLLAR SPOT	DOLLAR SPOT	DOLLAR			QUALITY	RATING	5	
NAME	TEXTURE	DENSITY	QUALITY	ANNUA	JULY	AUGUST	SPOT	MAY	JUN	JUL	AUG	SEP	MEAN
MUSKET (PPG-AT 104)	7.0	6.7	8.3	18.3	8.7	8.3	6.7	6.0	5.7	5.3	6.3	6.0	5.9
DLFPS-AT/3026	6.7	7.0	7.7	26.7	9.0	9.0	6.3	5.7	5.7	5.7	5.3	5.7	5.6
GREENTIME	6.7	6.7	6.7	31.7	7.7	7.7	5.0	5.3	5.3	5.3	5.7	5.7	5.5
LSD VALUE	1.2	2.4	1.5	21.6	1.8	1.9	1.9	1.9	1.5	2.4	1.2	1.5	1.5
C.V. (%)	7.8	15.6	8.8	36.3	9.3	9.8	13.6	14.4	12.0	19.4	9.1	11.5	11.6

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

#### TABLE 5A.

# MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT LOGAN, UT $1/2019\ {\rm DATA}$

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

	SPRING	PERCEN	T GROUND C			QUALITY	RATINGS					
NAME	GREENUP	SPRING	SUMMER	FALL	APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
ARMOR	4.7	99.0	99.0	99	8.3	7.3	5.0	5.7	5.3	6.0	5.3	6.1
KINGDOM	4.3	99.0	99.0	99	7.3	6.7	4.7	5.0	5.3	6.0	5.3	5.8
NIGHTLIFE	4.0	99.0	94.7	99	8.3	7.0	4.7	4.7	4.7	5.3	5.3	5.7
PIRANHA (DC-1)	5.7	99.0	99.0	99	6.7	6.7	3.3	5.0	5.0	6.0	5.7	5.5
PC2.0 (PST-OCV6)	5.0	99.0	96.0	99	5.7	6.3	5.0	5.0	4.7	5.7	5.0	5.3
007	4.3	99.0	99.0	99	7.3	6.3	4.0	4.3	4.3	5.3	4.7	5.2
CHINOOK (H10G-OP)	5.7	99.0	96.0	99	7.3	6.3	4.3	3.7	4.0	5.0	5.0	5.1
PST-ORBS	4.3	96.0	92.7	99	6.3	5.7	3.3	4.3	4.3	5.7	5.3	5.0
SHARK	5.0	99.0	99.0	99	6.0	5.3	3.7	5.0	4.3	5.3	4.7	4.9
MUSKET (PPG-AT 104)	3.7	96.0	88.3	99	4.7	5.0	4.0	4.0	4.3	6.0	5.7	4.8
V-8	5.0	99.0	96.0	99	6.0	5.7	3.7	4.3	4.0	5.0	5.0	4.8
DLFPS-AT/3026	2.3	96.0	91.3	99	4.0	4.3	3.7	4.3	4.3	5.3	5.7	4.5
BARRACUDA	5.7	99.0	92.7	99	6.0	5.7	3.0	4.0	3.0	4.7	4.0	4.3
CRYSTAL BLUE LINKS	3.7	99.0	88.0	99	5.3	5.0	4.0	3.7	3.0	4.7	4.3	4.3
PENNCROSS	5.0	99.0	99.0	99	3.3	4.0	3.7	4.3	4.3	5.0	5.7	4.3
L-93XD	4.7	99.0	73.3	99	6.0	4.3	3.0	2.3	2.3	3.7	4.0	3.7
GREENTIME	3.3	99.0	86.7	99	4.0	2.3	1.3	2.0	2.0	2.3	4.0	2.6
LSD VALUE	1.2	6.5	13.7	0	1.5	1.7	1.1	1.4	1.7	1.5	1.5	0.8
C.V. (%)	15.5	2.2	7.5	0	15.8	17.8	17.9	19.0	22.5	16.8	14.5	10.4

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

#### TABLE 5B.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT LOGAN, UT 1/ 2019 DATA

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

	SPRING	PERCEN	T GROUND C	OVER				QUALITY	RATINGS			
NAME	GREENUP	SPRING	SUMMER	FALL	APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
ARMOR	4.7	99.0	99.0	99	8.3	7.3	5.0	5.7	5.3	6.0	5.3	6.1
KINGDOM	4.3	99.0	99.0	99	7.3	6.7	4.7	5.0	5.3	6.0	5.3	5.8
NIGHTLIFE	4.0	99.0	94.7	99	8.3	7.0	4.7	4.7	4.7	5.3	5.3	5.7
PIRANHA (DC-1)	5.7	99.0	99.0	99	6.7	6.7	3.3	5.0	5.0	6.0	5.7	5.5
PC2.0 (PST-OCV6)	5.0	99.0	96.0	99	5.7	6.3	5.0	5.0	4.7	5.7	5.0	5.3
007	4.3	99.0	99.0	99	7.3	6.3	4.0	4.3	4.3	5.3	4.7	5.2
CHINOOK (H10G-OP)	5.7	99.0	96.0	99	7.3	6.3	4.3	3.7	4.0	5.0	5.0	5.1
PST-ORBS	4.3	96.0	92.7	99	6.3	5.7	3.3	4.3	4.3	5.7	5.3	5.0
SHARK	5.0	99.0	99.0	99	6.0	5.3	3.7	5.0	4.3	5.3	4.7	4.9
V-8	5.0	99.0	96.0	99	6.0	5.7	3.7	4.3	4.0	5.0	5.0	4.8
BARRACUDA	5.7	99.0	92.7	99	6.0	5.7	3.0	4.0	3.0	4.7	4.0	4.3
CRYSTAL BLUE LINKS	3.7	99.0	88.0	99	5.3	5.0	4.0	3.7	3.0	4.7	4.3	4.3
PENNCROSS	5.0	99.0	99.0	99	3.3	4.0	3.7	4.3	4.3	5.0	5.7	4.3
L-93XD	4.7	99.0	73.3	99	6.0	4.3	3.0	2.3	2.3	3.7	4.0	3.7
LSD VALUE	1.5	3.8	13.1	0	1.8	1.9	1.4	1.5	1.5	2.1	1.8	0.8
C.V. (%)	15.0	1.4	7.3	0	16.3	17.1	17.9	18.4	19.5	17.0	15.2	10.0

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 5C. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER REDUCED IRRIGATION AT LOGAN, UT 1/ 2019 DATA

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

			QUALIT	Y RATING	S							
NAME	GREENUP	SPRING	SUMMER	FALL	APR	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
MUSKET (PPG-AT 104)	3.7	96.0	88.3	99	4.7	5.0	4.0	4.0	4.3	6.0	5.7	4.8
DLFPS-AT/3026	2.3	96.0	91.3	99	4.0	4.3	3.7	4.3	4.3	5.3	5.7	4.5
GREENTIME	3.3	99.0	86.7	99	4.0	2.3	1.3	2.0	2.0	2.3	4.0	2.6
LSD VALUE	0.8	11.0	17.6	0	0.8	2.4	1.3	2.0	2.4	1.5	1.2	1.3
C.V. (%)	10.7	4.9	8.5	0	7.9	27.1	19.2	25.6	29.6	14.6	10.3	14.5

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

TABLE 6A.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER LOW TEMPERATURE/WINTER TOLERANCE AT FARGO, ND 1/ 2019 DATA

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

	SPRING	SUMMER	FALL	PERCE	NT GROUND (	COVER		QU	ALITY R	ATINGS		
NAME	DENSITY	DENSITY	DENSITY	SPRING	SUMMER	FALL	MAY	JUN	JUL	AUG	SEP	MEAN
SHARK	6.0	7	8.0	95.0	99.0	99.0	7.0	7.7	7.3	8.3	8.0	7.7
CRYSTAL BLUE LINKS	7.0	7	8.0	93.3	99.0	99.0	7.0	7.0	7.3	8.0	8.0	7.5
KINGDOM	6.0	7	8.0	93.3	97.7	99.0	6.7	7.0	7.7	8.0	8.3	7.5
PIRANHA (DC-1)	6.0	7	7.0	93.3	99.0	99.0	7.0	7.0	7.0	8.0	8.0	7.4
PST-ORBS	5.0	7	8.0	95.0	95.0	99.0	7.0	7.0	7.0	8.0	8.0	7.4
BARRACUDA	6.0	7	8.0	93.3	99.0	99.0	6.7	6.7	7.0	8.3	8.0	7.3
CHINOOK (H10G-OP)	6.0	7	8.0	93.3	99.0	97.7	7.0	7.3	7.0	7.3	7.7	7.3
L-93XD	6.0	7	8.0	95.0	95.0	99.0	6.3	6.3	7.7	8.0	8.0	7.3
007	5.0	7	7.0	95.0	99.0	99.0	6.7	6.7	7.3	7.7	7.7	7.2
MUSKET (PPG-AT 104)	5.0	6	8.0	95.0	99.0	99.0	5.7	6.3	7.3	8.0	8.0	7.1
PC2.0 (PST-OCV6)	5.0	7	7.3	95.0	99.0	99.0	6.3	6.3	7.7	8.0	7.3	7.1
PENNCROSS	6.3	7	7.0	95.0	95.0	99.0	6.0	6.7	8.0	8.0	7.0	7.1
DLFPS-AT/3026	5.0	7	7.0	95.0	99.0	99.0	5.7	6.7	7.7	7.3	7.3	6.9
NIGHTLIFE	5.0	6	8.0	95.0	99.0	99.0	6.3	6.3	7.0	7.0	8.0	6.9
V-8	5.0	7	8.0	93.3	99.0	99.0	6.3	6.7	7.0	7.7	7.0	6.9
ARMOR	6.0	7	7.0	93.3	95.0	99.0	6.0	6.3	7.0	7.0	7.3	6.7
GREENTIME	5.7	6	8.0	93.3	96.3	99.0	5.3	6.0	7.3	7.3	7.7	6.7
LSD VALUE	0.3	0	0.2	6.7	1.3	1.6	1.0	1.0	1.0	0.6	0.7	0.5
C.V. (%)	3.6	0	1.8	2.1	0.8	0.6	8.1	7.1	5.9	4.7	4.9	3.9

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

TABLE 6B.

#### MEAN TURFGRASS QUALITY AND OTHER RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER LOW TEMPERATURE/WINTER TOLERANCE AT FARGO, ND 1/ 2019 DATA

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

	SPRING	SUMMER	FALL	PERCEN	T GROUND CO	OVER		QUA	LITY RA	TINGS		
NAME	DENSITY	DENSITY	DENSITY	SPRING	SUMMER	FALL	MAY	JUN	JUL	AUG	SEP	MEAN
SHARK	6.0	7	8.0	95.0	99.0	99.0	7.0	7.7	7.3	8.3	8.0	7.7
CRYSTAL BLUE LINKS	7.0	7	8.0	93.3	99.0	99.0	7.0	7.0	7.3	8.0	8.0	7.5
KINGDOM	6.0	7	8.0	93.3	97.7	99.0	6.7	7.0	7.7	8.0	8.3	7.5
PIRANHA (DC-1)	6.0	7	7.0	93.3	99.0	99.0	7.0	7.0	7.0	8.0	8.0	7.4
PST-ORBS	5.0	7	8.0	95.0	95.0	99.0	7.0	7.0	7.0	8.0	8.0	7.4
BARRACUDA	6.0	7	8.0	93.3	99.0	99.0	6.7	6.7	7.0	8.3	8.0	7.3
CHINOOK (H10G-OP)	6.0	7	8.0	93.3	99.0	97.7	7.0	7.3	7.0	7.3	7.7	7.3
L-93XD	6.0	7	8.0	95.0	95.0	99.0	6.3	6.3	7.7	8.0	8.0	7.3
007	5.0	7	7.0	95.0	99.0	99.0	6.7	6.7	7.3	7.7	7.7	7.2
PC2.0 (PST-OCV6)	5.0	7	7.3	95.0	99.0	99.0	6.3	6.3	7.7	8.0	7.3	7.1
PENNCROSS	6.3	7	7.0	95.0	95.0	99.0	6.0	6.7	8.0	8.0	7.0	7.1
NIGHTLIFE	5.0	6	8.0	95.0	99.0	99.0	6.3	6.3	7.0	7.0	8.0	6.9
V-8	5.0	7	8.0	93.3	99.0	99.0	6.3	6.7	7.0	7.7	7.0	6.9
ARMOR	6.0	7	7.0	93.3	95.0	99.0	6.0	6.3	7.0	7.0	7.3	6.7
LSD VALUE	0.2	0	0.2	6.5	0.9	1.7	1.1	1.0	0.8	0.6	0.6	0.4
C.V. (%)	2.7	0	2.0	2.2	0.6	0.6	7.5	6.9	5.4	4.3	4.5	3.3

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

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

#### TABLE 6C. MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE UNDER LOW TEMPERATURE/WINTER TOLERANCE AT FARGO, ND 1/ 2019 DATA

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

	SPRING	SUMMER	FALL	PERCEN	r ground Co	OVER		QUA	LITY RA	TINGS		
NAME	DENSITY	DENSITY	DENSITY	SPRING	SUMMER	FALL	MAY	JUN	JUL	AUG	SEP	MEAN
MUSKET (PPG-AT 104)	5.0	6	8	95.0	99.0	99	5.7	6.3	7.3	8.0	8.0	7.1
DLFPS-AT/3026	5.0	7	7	95.0	99.0	99	5.7	6.7	7.7	7.3	7.3	6.9
GREENTIME	5.7	6	8	93.3	96.3	99	5.3	6.0	7.3	7.3	7.7	6.7
LSD VALUE	0.8	0	0	3.9	3.1	0	1.2	1.3	1.5	1.2	1.3	1.1
C.V. (%)	6.4	0	0	1.8	1.4	0	9.5	9.1	9.0	7.0	7.5	7.0

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).

#### GENETIC COLOR RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

NAME	IA1	IL1	MI1	NJ1	MEAN
CHINOOK (H10G-OP) PIRANHA (DC-1) BARRACUDA L-93XD NIGHTLIFE 007 SHARK PC2.0 (PST-0CV6) PENNCROSS CRYSTAL BLUE LINKS PST-0RBS GREENTIME ARMOR KINGDOM V-8 DLFPS-AT/3026 MUSKET (PPG-AT 104)	7.3 7.0 8.0 7.0 6.7 7.0 6.0 7.0 6.7 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	7.3 7.3 8.0 7.3 7.7 7.3 7.7 7.0 7.0 7.3 6.7 7.3 6.7 7.0 7.3 6.0 6.0	7.0 7.7 7.7 7.7 7.0 7.3 6.7 7.0 7.0 7.0 7.0 7.3 7.3 7.3	$\begin{array}{c} 6.0\\ 6.3\\ 6.3\\ 4.0\\ 5.3\\ 5.5\\ .\\ 4.5\\ 5.3\\ 4.5\\ 3.3\\ 4.7\\ 3.7\\ 3.7\end{array}$	7.1 7.0 6.9 6.8 6.8 6.6 6.5 6.5 6.5 6.5 6.4 6.2 6.1 5.9
LSD VALUE C.V. (%)	1.1 9.9	0.7 6.2	0.7 5.8	2.8 31.3	0.7 12.8

#### GENETIC COLOR RATINGS 1-9; 9=DARK GREEN 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 7A.

#### GENETIC COLOR RATINGS OF CREEPING BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

NAME	IA1	IL1	MI1	NJ1	MEAN
CHINOOK (H10G-OP) PIRANHA (DC-1) BARRACUDA L-93XD NIGHTLIFE 007 SHARK PC2.0 (PST-0CV6) PENNCROSS CRYSTAL BLUE LINKS PST-0RBS ARMOR KINGDOM V-8	$\begin{array}{c} 7.3 \\ 7.3 \\ 6.7 \\ 7.0 \\ 8.0 \\ 7.0 \\ 6.7 \\ 7.0 \\ 6.0 \\ 7.0 \\ 6.7 \\ 7.3 \\ 8.0 \\ 7.0 \end{array}$	7.3 7.3 8.0 7.3 7.7 7.3 7.7 7.0 7.0 7.7 7.3 7.0 7.3 7.0 7.3 7.0	7.7 7.3 7.0 7.7 7.7 7.0 7.3 6.7 7.0 7.3 7.0 7.3 7.3	$\begin{array}{c} 6.0\\ 6.3\\ 6.3\\ 4.0\\ 5.3\\ 5.7\\ 5.5\\ .\\ 4.5\\ 4.5\\ 3.0\\ 3.3 \end{array}$	7.1 7.0 6.9 6.8 6.8 6.8 6.7 6.65 6.55 6.55 6.4 6.2
LSD VALUE C.V. (%)	1.1 10.0	0.7 6.3	0.7 6.4	3.0 32.7	0.7 13.1

#### GENETIC COLOR RATINGS 1-9; 9=DARK GREEN 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 7C.

#### GENETIC COLOR RATINGS OF COLONIAL BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

GENETIC COLOR RATINGS 1-9; 9=DARK GREEN 2/

NAME	IA1	IL1	MI1	NJ1	MEAN
GREENTIME	7.0	6.7	7	5.3	6.5
DLFPS-AT/3026	6.7	6.0	7	4.7	6.1
MUSKET (PPG-AT 104)	7.0	6.0	7	3.7	5.9
LSD VALUE	1.1	0.5	0	1.9	0.6
C.V. (%)	9.7	5.4	0	25.3	

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 7B.

#### TABLE 8A.

#### SPRING GREENUP RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

SPRING GREENUP RATINGS 1-9; 9=COMPLETELY GREEN 2/

NAME	IL1
007 SHARK ARMOR BARRACUDA CHINOOK (H10G-OP) DLFPS-AT/3026 GREENTIME KINGDOM MUSKET (PPG-AT 104) PC2.0 (PST-0CV6) PENNCROSS CRYSTAL BLUE LINKS L-93XD V-8 NIGHTLIFE PIRANHA (DC-1) PST-0RBS	7.7 7.3 7.3 7.0 7.0 7.0 7.0 7.0 6.3 6.3 6.3 6.3 6.3 6.0 6.0
LSD VALUE C.V. (%)	0.8 7.1

- 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.

#### SPRING GREENUP RATINGS OF CREEPING BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

#### SPRING GREENUP RATINGS 1-9; 9=COMPLETELY GREEN 2/

NAME	IL1
007 SHARK ARMOR BARRACUDA CHINOOK (H10G-OP) KINGDOM PC2.0 (PST-0CV6) PENNCROSS CRYSTAL BLUE LINKS L-93XD V-8 NIGHTLIFE PIRANHA (DC-1) PST-0RBS	7.7 7.7 7.3 7.3 7.0 6.7 6.3 6.3 6.3 6.0 6.0 6.0
LSD VALUE C.V. (%)	0.7 6.8

- 1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).
- 2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE	8C	•
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TABLE 8B.

#### SPRING GREENUP RATINGS OF COLONIAL BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

#### SPRING GREENUP RATINGS 1-9; 9=COMPLETELY GREEN 2/

 NAME
 IL1

 DLFPS-AT/3026
 7.0

 GREENTIME
 7.0

 MUSKET (PPG-AT 104)
 7.0

 LSD VALUE
 0.9

 C.V. (%)
 8.2

- 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 9A.

#### LEAF TEXTURE RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

LEAF TEXTURE RATINGS 1-9; 9=VERY FINE 2/

NAME	NJ1
DLFPS-AT/3026 MUSKET (PPG-AT 104) L-93XD PIRANHA (DC-1) CHINOOK (H10G-OP) 007 GREENTIME ARMOR CRYSTAL BLUE LINKS PST-0RBS BARRACUDA SHARK V-8 NIGHTLIFE PC2.0 (PST-0CV6) KINGDOM	7.7 7.3 7.0 6.3 5.5 5.5 5.5 5.3 5.3 5.3 5.0 4.0
LSD VALUE C.V. (%)	1.7 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.

#### LEAF TEXTURE RATINGS OF CREEPING BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

LEAF TEXTURE RATINGS 1-9; 9=VERY FINE 2/

NAME	NJ1
L-93XD PIRANHA (DC-1) CHINOOK (H10G-OP) 007 ARMOR CRYSTAL BLUE LINKS PST-ORBS BARRACUDA SHARK V-8 NIGHTLIFE PC2.0 (PST-0CV6) KINGDOM	$\begin{array}{c} 7.0\\ 7.0\\ 6.3\\ 6.0\\ 5.5\\ 5.5\\ 5.3\\ 5.3\\ 5.3\\ 5.0\\ 5.0\\ 4.0\end{array}$
LSD VALUE C.V. (%)	1.9 18.8

- 1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).
- 2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 9C.	LEAF TEXTURE RATINGS OF COLONIAL GROWN ON A FAIRWA	
	2019 DATA	
	LEAF TEXTURE RATINGS 1-9	; 9=VERY FINE 2/
	NAME	NJ1

DLFPS-AT/3026 7.7 MUSKET (PPG-AT 104) 7.3 GREENTIME 5.7 LSD VALUE 0.9 C.V. (%) 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.

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TABLE 9B.

TABLE 10A.

#### FALL DENSITY RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	NJ1
DLFPS-AT/3026 L-93XD MUSKET (PPG-AT 104) PIRANHA (DC-1) 007 CHINOOK (H10G-OP) GREENTIME CRYSTAL BLUE LINKS PC2.0 (PST-0CV6) PST-0RBS BARRACUDA SHARK V-8 ARMOR KINGDOM NIGHTLIFE	7.0 6.0 6.0 5.3 5.3 4.5 4.5 4.5 4.3 4.3 4.0 3.0 2.0
LSD VALUE C.V. (%)	2.0 23.4

- 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 10B.

TABLE 10C.

#### FALL DENSITY RATINGS OF CREEPING BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

#### DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

NAME	NJ1
L-93XD PIRANHA (DC-1) 007 CHINOOK (H10G-OP) CRYSTAL BLUE LINKS PC2.0 (PST-0CV6) PST-0RBS BARRACUDA SHARK V-8 ARMOR KINGDOM NIGHTLIFE	7.0 6.0 5.3 4.5 4.5 4.5 4.3 4.3 4.3 4.3 4.3 4.0 3.0 2.0
LSD VALUE C.V. (%)	2.3 27.3

- 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.

FALL	DENSITY	RATINGS	OF	COLONIAL BENTGRASS CULTIVARS	1/
		GRC	DWN	ON A FAIRWAY OR TEE	
				2019 DATA	

#### DENSITY RATINGS 1-9; 9=MAXIMUM DENSITY 2/

 NAME
 NJ1

 DLFPS-AT/3026
 7.0

 MUSKET (PPG-AT 104)
 6.0

 GREENTIME
 5.3

 LSD VALUE
 1.1

 C.V. (%)
 10.9

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

TABLE 11A.

#### DOLLAR SPOT RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

#### DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	IA1	MO1	NJ1	MEAN
L-93XD PIRANHA (DC-1) CHINOOK (H10G-OP) 007 DLFPS-AT/3026 BARRACUDA MUSKET (PFG-AT 104) CRYSTAL BLUE LINKS PENNCROSS KINGDOM V-8 SHARK PC2.0 (PST-0CV6) PST-0RBS NIGHTLIFE GREENTIME ARMOR	$\begin{array}{c} 8.3\\ 8.0\\ 8.0\\ 6.7\\ 6.3\\ 7.0\\ 6.3\\ 4.7\\ 5.0\\ 4.7\\ 4.3\\ 5.7\\ 4.3\\ 5.7\\ 4.3\\ 4.7\\ 5.3\\ 4.7\end{array}$	9.0 9.0 8.7 8.7 8.7 9.0 8.7 8.3 8.7 8.0 9.0 7.0 9.0 7.3 6.3	7.7 7.3 7.7 7.7 7.0 6.0 5.3 6.0 5.3 5.5 4.0 5.0 3.3 3.0	8.3 8.0 7.7 7.6 7.6 7.4 7.0 6.3 6.2 6.1 5.8 5.7 5.8 5.7 4.7
LSD VALUE C.V. (%)	2.0 21.0	2.3 17.0	2.6 24.4	1.3 20.2

- 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 11B.

#### DOLLAR SPOT RATINGS OF CREEPING BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

NAME	IA1	MO1	NJ1	MEAN
L-93XD PIRANHA (DC-1) CHINOOK (H10G-OP) 007 BARRACUDA CRYSTAL BLUE LINKS PENNCROSS KINGDOM V-8 SHARK PC2.0 (PST-0CV6) PST-0RBS NIGHTLIFE ARMOR	8.3 8.0 6.7 7.0 6.3 4.7 5.0 4.7 4.3 5.7 4.3 4.7	9.0 9.0 8.7 8.7 8.7 8.7 8.3 8.0 9.0 7.0 9.0 7.3 6.3	7.7 7.3 7.7 7.0 6.0 5.3 6.0 5.3 5.5 4.0 5.0 3.0	8.3 8.1 7.7 7.6 7.0 6.3 6.2 6.1 5.8 5.7 4.7
LSD VALUE C.V. (%)	1.9 20.0	1.9 13.9	2.7 24.6	1.2 18.6

DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 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 11C.

#### DOLLAR SPOT RATINGS OF COLONIAL BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

#### DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	IA1	MO1	NJ1	MEAN
DLFPS-AT/3026	6.3	8.7	7.7	7.6
MUSKET (PPG-AT 104)	6.7	9.0	6.7	7.4
GREENTIME	5.3	6.3	3.3	5.0
LSD VALUE	2.5	3.6	2.3	1.6
C.V. (%)	25.0	27.6	24.0	26.3

- 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 12A.

#### BROWN PATCH (WARM TEMPERATURE) RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

BROWN PATCH RATINGS 1-9; 9=NO DISEASE 2/

NAME	NJ1
CHINOOK (H10G-OP) 007 BARRACUDA L-93XD NIGHTLIFE PIRANHA (DC-1) V-8 KINGDOM ARMOR CRYSTAL BLUE LINKS PC2.0 (PST-0CV6) SHARK PST-0RBS GREENTIME MUSKET (PPG-AT 104) DLFPS-AT/3026	8.7 8.3 8.0 8.0 8.0 7.0 6.5 6.5 6.5 6.5 6.3 6.0 5.0 5.0 4.0
LSD VALUE C.V. (%)	2.0 16.4

- 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 12B.

#### BROWN PATCH (WARM TEMPERATURE) RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE 2019 DATA

BROWN PATCH RATINGS 1-9; 9=NO DISEASE 2/

NAME	NJ1
CHINOOK (H10G-OP) 007 BARRACUDA L-93XD NIGHTLIFE PIRANHA (DC-1) V-8 KINGDOM ARMOR CRYSTAL BLUE LINKS PC2.0 (PST-0CV6) SHARK PST-0RBS	8.7 8.0 8.0 8.0 7.0 6.5 6.5 6.5 6.3 6.0
LSD VALUE C.V. (%)	1.8 13.8

- 1/ TO DETERMINE STATISTICAL DIFFERENCES AMONG ENTRIES, SUBTRACT ONE ENTRY'S MEAN FROM ANOTHER ENTRY'S MEAN. STATISTICAL DIFFERENCES OCCUR WHEN THIS VALUE IS LARGER THAN THE CORRESPONDING LSD VALUE (LSD 0.05).
- 2/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.

TABLE 12C.	BROWN PATCH	(WARM TEMPERATURE)	RATINGS OF	COLONIAL	BENTGRASS	CULTIVARS
		GROWN O	N A FAIRWAY	OR TEE		
			2019 DATA			

BROWN PATCH RATINGS 1-9; 9=NO DISEASE 2/

 NAME
 NJ1

 GREENTIME
 5.0

 MUSKET (PPG-AT 104)
 5.0

 DLFPS-AT/3026
 4.0

 LSD VALUE
 2.3

 C.V. (%)
 30.3

- 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 13A.

#### FALL COLOR (OCTOBER) RATINGS OF BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

FALL COLOR RATINGS 1-9; 9=COMPLETE COLOR RETENTION 2/

NAME	IL1
CHINOOK (H10G-OP) PC2.0 (PST-0CV6) 007 KINGDOM V-8 CRYSTAL BLUE LINKS L-93XD NIGHTLIFE PENNCROSS PST-0RBS BARRACUDA DLFPS-AT/3026 PIRANHA (DC-1) SHARK ARMOR GREENTIME MUSKET (PPG-AT 104)	8.0 8.0 7.7 7.7 7.3 7.3 7.3 7.3 7.3 7.3
LSD VALUE C.V. (%)	0.9 7.9

- 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 13B.

#### FALL COLOR (OCTOBER) RATINGS OF CREEPING BENTGRASS CULTIVARS 1/ GROWN ON A FAIRWAY OR TEE 2019 DATA

#### FALL COLOR RATINGS 1-9; 9=COMPLETE COLOR RETENTION 2/

NAME	IL1
CHINOOK (H10G-OP) PC2.0 (PST-0CV6) 007 KINGDOM V-8 CRYSTAL BLUE LINKS L-93XD NIGHTLIFE PENNCROSS PST-0RBS BARRACUDA PIRANHA (DC-1) SHARK ARMOR	8.0 8.0 7.7 7.7 7.3 7.3 7.3 7.3 7.3 7.3 7.3 7.0 7.0 7.0 6.7
LSD VALUE C.V. (%)	1.0 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 13C.	FALL COLOR	(OCTOBER)	RATINGS	OF	COLONIAL BENTGRASS CULTIVARS	1/
		GRO	WN ON A	FAI	RWAY OR TEE	
			201	9 D2	ATA	

#### FALL COLOR RATINGS 1-9; 9=COMPLETE COLOR RETENTION 2/

NAME IL1 DLFPS-AT/3026 7.0 GREENTIME 6.7 MUSKET (PPG-AT 104) 6.7 0.8 LSD VALUE C.V. (%) 7.0

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

TABLE 14A.

#### DOLLAR SPOT RATINGS OF BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE AT AMES, IA 1/ 2019 DATA

#### DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	JULY	SEPTEMBER	MEAN
CHINOOK (H10G-OP) L-93XD PIRANHA (DC-1) BARRACUDA 007 MUSKET (PPG-AT 104) DLFPS-AT/3026 CRYSTAL BLUE LINKS GREENTIME PC2.0 (PST-0CV6) KINGDOM PENNCROSS V-8 NIGHTLIFE PST-0RBS ARMOR SHARK	$\begin{array}{c} 8.0\\ 8.3\\ 8.0\\ 7.0\\ 6.7\\ 6.3\\ 5.3\\ 5.3\\ 5.7\\ 5.0\\ 4.7\\ 4.7\\ 4.7\\ 4.3\\ 4.7\\ 4.3\\ 4.7\end{array}$	8.0 7.3 7.0 6.0 5.0 5.0 4.3 5.3 4.7 5.0 5.3 5.0 4.0 4.3 3.7 3.7	8.0 7.8 7.5 5.8 5.8 5.3 5.3 5.2 5.0 4.3 4.3 4.2 4.0
LSD VALUE C.V. (%)	1.9 18.5	2.0 21.5	1.4 15.4

- 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 14B.

#### DOLLAR SPOT RATINGS OF CREEPING BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE AT AMES, IA 1/ 2019 DATA

#### DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	JULY	SEPTEMBER	MEAN
CHINOOK (H10G-OP) L-93XD PIRANHA (DC-1) BARRACUDA 007 CRYSTAL BLUE LINKS PC2.0 (PST-0CV6) KINGDOM PENNCROSS	8.0 8.3 7.0 6.7 6.3 5.7 5.0 4.7	8.0 7.3 7.0 6.0 5.0 4.3 4.7 5.0 5.3	8.0 7.8 7.5 6.5 5.8 5.3 5.2 5.0 5.0
V-8 NIGHTLIFE PST-ORBS ARMOR SHARK LSD VALUE C.V. (%)	4.7 4.7 4.3 4.7 4.3 1.8 18.6	5.0 4.0 4.3 3.7 3.7 2.0 21.6	4.8 4.3 4.2 4.0 1.5 16.0

<sup>1/</sup> 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.

#### DOLLAR SPOT RATINGS OF COLONIAL BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE AT AMES, IA 1/ 2019 DATA

#### DOLLAR SPOT RATINGS 1-9; 9=NO DISEASE 2/

NAME	JULY	SEPTEMBER	MEAN
MUSKET (PPG-AT 104)	6.7	5.0	5.8
DLFPS-AT/3026	6.3	5.0	5.7
GREENTIME	5.3	5.3	5.3
LSD VALUE	2.0	2.8	1.9
C.V. (%)	14.4	23.5	14.9

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).

#### APPENDIX TABLE. SUMMARY OF TURFGRASS QUALITY RATINGS FOR BENTGRASS CULTIVARS GROWN ON A FAIRWAY OR TEE 2019 DATA

NAME	QUALITY MEAN 1/	MAXIMUM IN TOP 25% 2/
CRYSTAL BLUE LINKS DLFPS-AT/3026 GREENTIME KINGDOM L-93XD	6.6 6.9 6.5 5.9 5.4 5.6 6.7 6.1	57.1 $14.3$ $14.3$ $71.4$ $14.3$ $14.3$ $0.0$ $14.3$ $42.9$ $0.0$ $14.3$ $28.6$ $14.3$ $57.1$ $0.0$ $0.0$ $0.0$ $0.0$
LSD VALUE C.V. (%)	0.3 7.7	

#### TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

\*/ 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 VALUE 0.05).

- 1/ MEAN AN AVERAGE OF ALL THE TURFGRASS QUALITY RATINGS FROM ALL LOCATIONS.
- 2/ MAXIMUM IN TOP 25%: THE PERCENTAGE OF LOCATIONS WHERE THAT ENTRY FINISHED IN THE TOP 25% OF ALL ENTRIES.