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. Mike Kenna, USGA Green Section
Dr. Charles Fontanier, Oklahoma State University
Dr. David Kopec, University of Arizona
Mr. Gary Wilbur, Oakwood Sod Farms
Mr. Mark Johnson, Golf Course Superintendents Assoc. of America
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CONTENTS

2015 National Low Input Cool-Season Test - 2017 data

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 *http://www.ntep.org/reports/ratings.htm*.

2015 NATIONAL LOW INPUT COOL-SEASON TEST

LOCATIONS SUBMITTING DATA FOR 2017

State	Location	Code
Connecticut	Storrs	CT1
Connecticut	Storrs (Pre-Emergence Applied in 2016 Only)	CT2
Indiana	West Lafayette	IN1
Indiana	West Lafayette (Medium Input)	IN2
Michigan	East Lansing	MI1
Maryland	College Park	MD1
Minnesota	St. Paul	MN1
Missouri	Columbia	MO1
Missouri	Columbia (Pre-Emergence Applied in 2016 Only)	MO2
North Carolina	Raleigh	NC1
Nebraska	Mead	NE1
Oregon	Corvallis	OR1
Pennsylvania	Kennett Square	PA2
Utah	Logan	UT1
Virginia	Blacksburg	VA1

2015 National Low Input Cool-Season Test
Entries and Sponsors

Entry No.	Name	Species/Composition	Sponsor
*1	Natural Knit ® PRG Mix	50% Mensa perennial ryegrass 50% Savant perennial ryegrass	Ledeboer Seed LLC
*2	Bullseye	100% Bullseye tall fescue	Standard entry
*3	Bewitched	100% Bewitched Ky. Bluegrass	Standard entry
4	BGR-TF3	100% BGR-TF3 tall fescue	Berger International LLC
5	MNHD-15	100% MNHD-15 hard fescue	University of Minnesota
6	DLFPS TF-A	33% Mustang 4 tall fescue 33% Grande 3 tall fescue 34% Fayette tall fescue	DLF/Pickseed/Seed Research of OR
7	DLFPS ChCrM	24% Longfellow 3 chewings fescue 24% Windward chewings fescue 24% Chantilly strong creeping red fescue 25% Ruddy strong creeping red fescue 3% Microclover ™	DLF/Pickseed/Seed Research of OR
8	DLFPS ShHM	32% Quatro sheep fescue 32% Spartan II hard fescue 33% Eureka II hard fescue 3% Microclover ™	DLF/Pickseed/Seed Research of OR
9	DLFPS TFAM	32% Mustang 4 tall fescue 32% Grande 3 tall fescue 33% Fayette tall fescue 3% Microclover ™	DLF/Pickseed/Seed Research of OR
*10	Vitality Low Maintenance Mixture	80% VNS hard fescue 20% VNS chewings fescue	Landmark Turf & Native Seed
*11	Vitality Double Coverage Mixture	90% VNS tall fescue 10% VNS Kentucky bluegrass	Landmark Turf & Native Seed
*12	Chantilly	100% Chantilly strong creeping red	Standard entry
*13	Dutch White Clover	100% Dutch White Clover	Standard entry
14	DLFPS TFAStC	32% Mustang 4 tall fescue 32% Grande 3 tall fescue 33% Fayette tall fescue 3% strawberry clover	DLF/Pickseed/Seed Research of OR
15	DLFPS ChCrSH	14% Longfellow 3 chewings fescue 14% Windward chewings fescue 14% Chantilly strong creeping red fescue 14% Ruddy strong creeping red fescue 14% Quatro sheep fescue 14% Eureka hard fescue 14% Spartan hard fescue	DLF/Pickseed/Seed Research of OR
*16	Spartan II	100% Spartan II hard fescue	Standard entry
*17	Quatro	100% Quatro sheep fescue	Standard entry

2015 National Low Input Cool-Season Test
Entries and Sponsors

Entry No.	Name	Species/Composition	Sponsor
*18	Ky-31 E+	100% Ky-31 tall fescue w/endophyte	Standard entry
19	CRS Mix #1	55% Gladiator hard fescue 45% 4GUD hard fescue	Columbia River Seed
20	CRS Mix #2	67% Gladiator hard fescue 33% NAI13-14 Kentucky bluegrass	Columbia River Seed
21	CRS Mix #3	45% Gladiator hard fescue 45% Sword hard fescue 10% Dutch White Clover	Columbia River Seed
22	DTT Tall Fescue Mix	50% DTT20 tall fescue 50% DTT43 tall fescue	Allied Seed LLC
23	DTTHO TF/KBG Mix	45% DTT20 tall fescue 45% DTT43 tall fescue 10% Holiday lawn Ky. Bluegrass	Allied Seed LLC
24	A-SFT	100% A-SFT tall fescue	Allied Seed LLC
*25	Kingdom	100% Kingdom tall fescue	SiteOne Landscape Supply
*26	Resolute (7H7)	100% 7H7 hard fescue	SiteOne Landscape Supply
27	Northern Mixture	40% VNS perennial ryegrass 20% VNS Kentucky bluegrass 20% VNS chewings fescue 20% VNS creeping red fescue	ProSeeds Marketing
28	Southern Mixture	70% VNS tall fescue 10% VNS Kentucky bluegrass 10% VNS perennial ryegrass 10% VNS chewings fescue	ProSeeds Marketing
29	CS Mix	40% Castle chewings fescue 40% Sword hard fescue 10% Kent creeping red fescue 10% B-15.2415 sheep fescue	Columbia Seeds LLC
*30	Yaak	100% Yaak western yarrow	Pacific NW Natives
*31	Radar	100% Radar chewings fescue	Standard entry
*32	Kenblue	100% Kenblue Kentucky bluegrass	Standard entry

* Commercially Available in the USA in 2018

TABLE A.   2017 LOCATIONS, SITE DESCRIPTIONS AND MANAGEMENT PRACTICES IN
                                        THE 2015 NATIONAL LOW INPUT COOL-SEASON TEST

LOCATION	SOIL TEXTURE	SOIL PH	SOIL PHOSPHOROUS (LBS/ACRE)	SOIL POTASSIUM (LBS/ACRE)	NITROGEN (LBS/1000 SQ FT)	SUN OR SHADE	MOWING HEIGHT (IN)	IRRIGATION PRACTICED
CT1	SANDY LOAM	6.1-6.5	0-60	151-240	-	FULL SUN	3.6-4.0	NO IRRIGATION
CT2	SANDY LOAM	6.1-6.5	0-60	151-240	-	FULL SUN	3.6-4.0	NO IRRIGATION
IN1	SILT LOAM AND SILT	7.1-7.5	61-150	151-240	1.1-2.0	FULL SUN	4.1+	NO IRRIGATION
IN2	SILT LOAM AND SILT	7.1-7.5	61-150	151-240	2.1-3.0	FULL SUN	4.1+	NO IRRIGATION
MD1	SILT LOAM AND SILT	6.1-6.5	61-150	151-240	0.0-1.0	FULL SUN	3.6-4.0	NO IRRIGATION
MI1	-	-	-	-	-	-	-	-
MN1	SILTY CLAY LOAM	6.1-6.5	61-150	241-375	0.0-1.0	FULL SUN	3.1-3.5	NO IRRIGATION
MO1	-	-	-	-	-	-	-	-
MO2	-	-	-	-	-	-	-	-
NC1	SILTY CLAY LOAM	6.1-6.5	61-150	0-150	0.0-1.0	FULL SUN	3.1-3.5	NO IRRIGATION
NE1	SILTY CLAY AND CLAY	7.1-7.5	0-60	376-500	0.0-1.0	FULL SUN	2.6-3.0	NO IRRIGATION
OR1	SILTY CLAY LOAM	6.1-6.5	0-60	241-375	0.0-1.0	FULL SUN	2.6-3.0	NO IRRIGATION
PA2	SILT LOAM AND SILT	6.1-6.5	61-150	241-375	0.0-1.0	FULL SUN	2.6-3.0	NO IRRIGATION
UT1	SILT LOAM AND SILT	7.1-7.5	0-60	151-240	-	FULL SUN	3.6-4.0	NO IRRIGATION
VA1	SILT LOAM AND SILT	5.6-6.0	0-60	0-150	0.0-1.0	FULL SUN	3.1-3.5	NO IRRIGATION

TABLE B.   LOCATIONS AND DATA COLLECTED IN 2017

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
CT1					X	X	X	X	X	X				X
CT2					X	X	X	X	X	X				X
IN1					X	X	X	X	X	X				
IN2					X	X	X	X	X	X				
MD1							X	X	X	X				
MI1					X	X	X	X	X	X				X
MN1						X	X	X	X	X				
MO1				X	X	X	X	X	X	X	X		X	
MO2				X	X	X	X	X	X	X	X		X	
NC1	X	X	X	X	X	X	X	X	X	X	X			X
NE1					X	X	X	X	X	X				X
OR1				X	X	X	X	X	X	X	X			
PA2			X	X	X	X	X	X	X	X	X			
UT1					X	X	X	X	X	X				X
VA1					X	X	X	X	X	X				

TABLE B. (CONT'D)   LOCATIONS AND DATA COLLECTED IN 2017

LOCATION	PERCENT COVER SPRING	PERCENT COVER SUMMER	PERCENT COVER FALL	STEM RUST	DOLLAR SPOT	PINK SNOW MOLD	WINTER ANNUAL WEED	PERCENT PLANTED GRASS/WEEDS	PERCENT COVER JUNE	PERCENT WEED RATINGS APR	JUN	AUG	SEP	OCT	PERCENT WEED RATINGS SPRING	SUMMER	FALL
CT1			X								X			X			
CT2			X								X			X			
IN1			X														
IN2			X														
MD1				X			X	X						X			
MI1			X														
MN1	X	X	X												X	X	X
MO1	X														X		
MO2	X														X		
NC1			X								X	X					
NE1			X													X	X
OR1			X													X	X
PA2	X		X		X					X			X				
UT1						X											
VA1	X		X					X	X								

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TABLE 1.                          MEAN TURFGRASS QUALITY RATINGS OF COOL-SEASON CULTIVARS GROWN UNDER   1/
                                    LOW INPUT IN LOCATION PERFORMANCE INDEX (LPI) GROUP 1  **/
                                                      2017 DATA
                                    TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF  2/
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NAME	ENTRY #	CT1	PA2	MD1	VA1	NC1	MI1	MO1	NE1	OR1	MEAN
DLFPS TFAM	9	7.5	4.6	5.5	7.2	4.2	5.4	5.8	4.0	5.1	5.7
CRS MIX #3	21	7.1	4.0	5.7	7.2	3.7	6.7	5.5	3.7	4.2	5.7
CRS MIX #2	20	6.2	3.8	5.8	6.9	2.8	6.7	6.0	3.9	4.1	5.5
DLFPS TFASTC	14	7.0	4.4	5.0	7.0	3.6	5.0	6.0	4.1	5.2	5.4
CRS MIX #1	19	6.2	3.6	5.8	6.9	2.4	6.5	6.1	3.7	3.9	5.3
*VITALITY DOUBLE	11	6.1	4.3	4.9	6.7	3.3	5.1	6.1	4.2	5.2	5.2
DLFPS CHCRM	7	6.2	4.2	5.3	6.5	3.3	4.8	6.1	3.8	5.0	5.2
*VITALITY LOW	10	5.5	3.7	5.6	6.5	2.5	6.1	6.1	3.8	4.2	5.2
MNHD-15	5	5.9	3.4	5.1	6.8	2.3	6.7	5.7	3.8	3.8	5.1
*BULLSEYE	2	6.2	4.3	4.5	6.6	3.5	4.6	6.0	4.2	5.4	5.1
DLFPS TF-A	6	6.5	4.2	4.5	6.6	3.3	4.5	5.8	4.0	5.2	5.1
*SPARTAN II	16	5.4	3.4	5.1	6.5	2.6	6.8	5.5	3.8	3.8	5.0
BGR-TF3	4	5.7	4.2	4.8	6.3	3.3	4.4	5.9	4.0	5.2	5.0
*RESOLUTE (7H7)	26	6.1	3.1	4.7	6.7	2.3	6.4	5.3	3.5	3.6	4.9
DTTHO TF/KBG MIX	23	6.0	3.9	4.0	6.6	3.1	5.1	5.6	4.2	5.0	4.9
DLFPS SHHM	8	5.2	3.5	4.3	6.3	3.3	6.7	4.8	4.1	4.1	4.9
*RADAR	31	4.6	3.8	5.6	5.9	2.5	5.1	6.3	3.8	4.6	4.8
DTT TALL FESCUE MIX	22	6.3	3.7	4.2	6.4	2.7	4.5	5.5	3.6	4.6	4.8
SOUTHERN MIXTURE	28	5.9	3.6	4.1	6.4	2.8	4.9	5.5	3.8	4.6	4.7
CS MIX	29	5.2	3.2	4.6	6.2	2.2	5.9	5.5	3.7	3.9	4.7
DLFPS CHCRSH	15	4.5	3.5	4.8	6.0	2.4	5.7	5.8	4.0	4.3	4.7
*KINGDOM	25	6.1	3.7	3.5	6.4	2.8	4.2	5.4	3.9	4.9	4.6
*YAAK	30	7.1	3.5	2.6	6.7	2.6	3.7	5.1	3.7	4.9	4.5
*QUATRO	17	4.8	2.9	3.7	6.1	2.5	6.4	4.6	3.8	3.7	4.4
*KY-31 E+	18	4.5	3.5	3.2	5.9	2.9	5.5	5.0	4.4	4.7	4.4
*CHANTILLY	12	4.0	3.5	4.5	5.4	2.2	4.6	5.8	3.7	4.5	4.3
NORTHERN MIXTURE	27	4.1	3.4	4.2	5.5	2.1	4.5	5.7	3.7	4.5	4.2
A-SFT	24	5.0	3.5	3.0	5.8	2.8	4.1	5.0	3.9	4.9	4.2
*KENBLUE	32	2.9	3.0	3.4	5.2	2.3	5.6	4.9	4.1	4.1	3.9
*NATURAL KNIT ® PRG MIX	1	4.2	3.1	2.4	5.2	2.6	3.7	4.3	3.6	4.5	3.6
*DUTCH WHITE CLOVER	13	3.7	2.6	1.6	5.3	2.6	5.4	3.5	4.0	3.8	3.5
*BEWITCHED	3	4.2	2.8	2.5	5.0	2.0	3.6	4.3	3.2	4.0	3.5
LSD VALUE		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
C.V. (%)		9.7	14.7	12.3	8.5	19.0	10.1	9.7	13.7	11.9	11.2

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*/  COMMERCIALLY AVAILABLE IN THE USA IN 2018.

**/ 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).

2/  C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.
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        TABLE 2.     MEAN TURFGRASS QUALITY RATINGS OF COOL-SEASON CULTIVARS GROWN UNDER   1/
                     LOW INPUT IN LOCATION PERFORMANCE INDEX (LPI) GROUP 2  */
                              2017 DATA
                  TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF  2/
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NAME	IN1	MN1	UT1	MEAN
YAAK	7.2	4.9	5.4	5.8
MNHD-15	6.6	5.4	4.3	5.4
KINGDOM	6.9	4.7	4.6	5.4
CRS MIX #1	6.6	5.5	4.0	5.4
VITALITY DOUBLE	6.9	4.5	4.3	5.2
DTTHO TF/KBG MIX	6.7	4.3	4.6	5.2
NORTHERN MIXTURE	6.9	5.1	3.5	5.2
VITALITY LOW	6.6	5.1	3.7	5.1
RADAR	6.8	5.2	3.2	5.1
DLFPS CHCRSH	6.6	5.0	3.6	5.1
CS MIX	6.4	4.9	3.9	5.1
SOUTHERN MIXTURE	6.5	4.2	4.2	5.0
CRS MIX #2	6.3	4.7	3.9	5.0
BULLSEYE	6.7	3.9	4.2	4.9
DLFPS TFASTC	6.5	3.8	4.4	4.9
DTT TALL FESCUE MIX	6.4	4.1	4.1	4.9
DLFPS TF-A	6.5	3.8	4.2	4.9
RESOLUTE (7H7)	6.0	4.5	4.1	4.8
CHANTILLY	6.6	4.7	3.1	4.8
DLFPS CHCRM	6.4	3.9	3.7	4.7
KY-31 E+	6.2	3.5	4.2	4.7
A-SFT	6.3	3.4	4.0	4.5
BGR-TF3	6.3	3.5	3.6	4.5
SPARTAN II	5.7	3.9	3.7	4.4
KENBLUE	5.9	3.5	3.2	4.2
QUATRO	5.2	2.8	3.7	3.9
BEWITCHED	5.4	2.6	3.1	3.7
NATURAL KNIT ® PRG MIX	5.3	1.9	3.3	3.5
DLFPS TFAM	5.2	1.6	3.8	3.5
CRS MIX #3	4.7	1.7	3.5	3.3
DLFPS SHHM	4.5	1.2	3.3	3.0
DUTCH WHITE CLOVER	4.4	0.9	3.6	3.0
LSD VALUE	0.9	0.9	0.9	0.9
C.V. (%)	8.6	13.8	13.7	11.5

*/ 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).

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

TABLE 3.　　　　　　　　　　MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COOL-SEASON CULTIVARS
GROWN UNDER LOW INPUT WITH INITIAL ANNUAL GRASS PRE-EMERGENCE AT STORRS, CT 1/
2017 DATA
TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

		PERCENT GROUND COVER	WEED RATINGS		QUALITY RATINGS						
NAME	SPRING GREENUP	FALL	SUMMER	FALL	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
DLFPS TFAM	4.7	97.7	1.3	2.7	7.0	7.3	7.7	8.0	8.0	7.0	7.5
CRS MIX #3	5.7	94.3	1.3	1.7	6.7	7.0	7.3	7.7	7.0	7.7	7.2
DLFPS TF-A	4.0	93.7	9.7	3.3	7.7	7.3	6.0	6.7	7.0	7.0	6.9
DLFPS TFASTC	4.3	95.0	1.0	2.3	6.3	6.7	6.7	7.0	6.7	7.7	6.8
BULLSEYE	3.7	94.3	20.7	5.0	7.0	7.3	6.0	6.3	7.0	6.3	6.7
YAAK	2.0	95.3	4.0	13.3	7.0	6.7	7.3	7.3	6.3	5.3	6.7
CRS MIX #1	5.0	76.7	21.7	12.3	6.0	7.7	6.0	6.0	6.3	6.3	6.4
CRS MIX #2	5.7	75.0	23.0	26.0	5.7	7.3	6.0	6.7	6.3	6.3	6.4
DLFPS CHCRM	5.0	96.0	1.3	2.0	6.3	6.3	6.3	6.7	6.3	6.3	6.4
DTTHO TF/KBG MIX	3.3	71.7	36.0	5.3	6.7	7.3	6.0	5.7	6.3	6.3	6.4
MNHD-15	5.3	77.0	17.3	15.0	5.7	7.3	6.3	6.0	6.0	6.3	6.3
VITALITY DOUBLE	3.0	76.7	25.0	8.3	6.3	7.7	5.3	5.7	6.3	6.3	6.3
VITALITY LOW	5.3	88.7	5.7	10.0	5.7	6.3	6.7	6.0	6.0	6.0	6.1
SOUTHERN MIXTURE	4.0	78.0	8.7	17.0	6.3	6.0	6.3	6.3	6.3	4.7	6.0
SPARTAN II	5.0	69.7	8.7	14.3	5.7	6.3	6.7	6.0	5.3	6.0	6.0
CS MIX	5.3	75.3	25.3	21.0	6.7	6.7	5.0	5.7	5.7	6.0	5.9
DLFPS SHHM	5.7	88.7	4.3	11.7	5.7	7.0	6.3	6.3	5.0	5.0	5.9
KINGDOM	3.7	70.7	33.3	10.3	6.7	6.3	5.3	5.0	6.3	6.0	5.9
RESOLUTE (7H7)	5.7	61.7	33.3	26.7	5.0	8.0	5.7	5.0	4.7	5.7	5.7
A-SFT	4.0	68.3	21.3	12.3	6.0	7.0	5.3	3.7	5.7	6.0	5.6
DLFPS CHCRSH	4.7	87.7	11.0	10.3	5.7	5.3	5.3	5.7	5.7	5.7	5.6
DTT TALL FESCUE MIX	3.7	75.0	24.0	19.3	5.3	6.7	5.3	4.7	6.0	5.7	5.6
BGR-TF3	4.3	61.7	41.7	17.7	6.0	6.0	4.7	4.3	6.0	6.0	5.5
RADAR	4.3	91.0	6.7	17.3	6.0	5.3	4.7	5.3	6.0	5.7	5.5
KY-31 E+	4.0	94.0	7.7	14.3	4.7	3.7	6.0	6.3	6.0	4.3	5.2
NORTHERN MIXTURE	4.0	61.7	60.0	35.0	5.0	6.0	4.7	4.3	4.7	4.7	4.9
CHANTILLY	5.0	80.0	16.7	28.3	5.7	5.7	4.3	4.3	4.7	4.0	4.8
NATURAL KNIT ® PRG MIX	4.7	51.7	38.3	26.7	4.7	5.7	4.3	3.3	4.7	5.3	4.7
QUATRO	4.7	60.0	28.3	43.3	4.3	5.0	4.7	4.0	4.7	4.0	4.4
BEWITCHED	5.3	10.0	90.0	83.3	5.0	6.3	3.0	2.7	3.0	4.7	4.1
DUTCH WHITE CLOVER	4.7	23.3	20.0	86.7	5.0	4.0	5.3	5.7	1.7	1.7	3.9
KENBLUE	4.3	7.0	90.0	88.3	6.0	5.0	3.0	2.3	1.7	2.0	3.3
LSD VALUE	2.8	26.9	30.4	17.0	1.4	1.2	1.5	1.5	1.5	1.3	0.8
C.V. (%)	25.7	22.9	79.7	52.2	13.2	11.4	16.2	17.1	16.7	15.2	9.6

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

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

TABLE 4.   MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COOL-SEASON CULTIVARS
GROWN UNDER LOW INPUT WITH INITIAL ANNUAL GRASS PRE-EMERGENCE AT COLUMBIA, MO 1/
2017 DATA
TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

NAME	GENETIC COLOR	PERCENT GROUND COVER SPRING	PERCENT WEED SPRING	APR	MAY	JUN	QUALITY RATINGS JUL	AUG	SEP	OCT	NOV	MEAN
DLFPS TFAM	6.7	98.0	8.7	7.3	7.0	6.3	6.3	6.7	6.3	6.3	6.7	6.6
CRS MIX #1	6.3	97.0	16.7	6.7	7.0	6.3	6.0	6.7	6.7	6.7	6.0	6.5
DLFPS CHCRM	7.0	98.0	6.3	7.7	7.0	5.7	5.7	6.7	6.0	6.7	6.7	6.5
DLFPS TFASTC	7.3	98.0	4.3	7.3	6.0	5.7	6.0	6.7	7.3	6.3	6.3	6.5
DTTHO TF/KBG MIX	7.0	98.0	9.3	6.3	6.7	7.0	6.0	6.7	6.7	6.0	6.7	6.5
VITALITY LOW	6.0	98.0	11.7	7.0	6.7	5.3	5.7	5.7	6.7	7.0	7.7	6.5
RADAR	6.3	98.0	8.7	6.7	7.0	5.3	5.7	6.3	6.3	6.7	7.3	6.4
DLFPS TF-A	6.3	98.0	6.7	5.7	6.0	6.7	6.3	6.3	6.3	6.7	6.7	6.3
SOUTHERN MIXTURE	5.7	98.0	5.0	6.3	6.3	6.3	6.0	6.3	6.3	6.3	6.7	6.3
BULLSEYE	6.3	97.0	8.3	6.3	6.3	6.3	5.3	6.3	6.3	6.0	6.3	6.2
DLFPS CHCRSH	6.3	97.0	10.0	6.0	6.7	6.0	5.7	5.7	6.3	5.7	6.7	6.1
BEWITCHED	6.0	97.0	21.7	6.3	6.7	7.0	5.7	6.0	5.3	5.3	5.3	6.0
MNHD-15	6.0	98.0	10.0	5.7	7.0	6.3	5.7	6.3	6.0	5.7	5.7	6.0
VITALITY DOUBLE	6.0	98.0	5.0	5.3	6.3	5.7	5.7	6.3	6.3	6.3	6.3	6.0
CS MIX	6.0	97.0	15.0	5.3	6.7	5.7	5.0	5.7	6.3	6.0	6.7	5.9
DTT TALL FESCUE MIX	7.0	97.0	9.3	6.3	6.3	6.0	5.7	6.0	5.7	5.7	5.7	5.9
CRS MIX #2	5.7	98.0	16.7	5.7	6.0	5.7	5.7	6.0	6.0	6.0	5.7	5.8
CRS MIX #3	6.0	87.7	23.3	5.7	6.0	6.0	5.7	6.0	6.0	5.7	5.0	5.8
KINGDOM	7.7	98.0	13.3	6.7	6.0	6.0	5.3	6.0	5.7	5.3	5.7	5.8
KENBLUE	6.3	97.0	20.0	6.3	6.3	6.7	5.3	5.7	5.0	5.3	5.0	5.7
NORTHERN MIXTURE	6.3	97.0	6.0	6.0	6.7	5.7	5.3	6.0	5.3	5.3	5.3	5.7
A-SFT	7.0	98.0	11.7	6.3	6.3	6.0	5.3	5.3	5.0	5.3	5.3	5.6
BGR-TF3	6.3	98.0	11.7	5.7	6.3	6.0	5.3	5.7	5.3	5.3	5.3	5.6
RESOLUTE (7H7)	5.3	96.0	18.3	5.0	5.7	6.7	5.3	6.0	5.7	5.3	5.3	5.6
DLFPS SHHM	6.0	88.3	23.3	6.7	6.7	5.7	5.0	5.3	5.0	5.0	4.3	5.5
SPARTAN II	4.7	98.0	16.7	5.3	5.7	5.7	5.3	5.7	5.7	5.3	5.3	5.5
CHANTILLY	6.0	98.0	9.3	5.0	5.0	5.0	4.7	5.3	4.7	5.7	5.3	5.1
QUATRO	6.0	97.0	30.0	6.0	6.3	6.0	5.0	5.0	4.3	4.0	3.7	5.0
YAAK	6.0	91.7	15.0	5.7	5.3	5.0	5.0	4.7	5.0	5.0	4.7	5.0
NATURAL KNIT ® PRG MIX	6.3	93.3	25.0	6.3	6.7	5.7	4.7	4.3	3.7	4.0	4.0	4.9
KY-31 E+	4.0	94.3	6.0	4.7	4.0	5.7	4.7	5.0	4.3	5.3	5.0	4.8
DUTCH WHITE CLOVER	6.3	60.0	55.0	3.3	3.0	3.0	2.3	2.7	2.0	2.3	2.0	2.6
LSD VALUE	1.0	9.6	9.2	1.8	1.8	1.5	1.2	1.2	1.1	1.0	1.0	0.8
C.V. (%)	9.3	6.1	41.6	15.7	15.3	13.5	12.8	12.1	12.9	11.0	11.3	9.1

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 5.   MEAN TURFGRASS QUALITY AND OTHER RATINGS OF COOL-SEASON CULTIVARS
GROWN WITH ADDITIONAL FERTILIZER (MEDIUM INPUT) AT WEST LAFAYETTE, IN 1/
2016 DATA
TURFGRASS QUALITY AND OTHER RATINGS 1-9; 9=BEST 2/

| | PERCENT GROUND COVER | QUALITY RATINGS | | | | | | |
NAME	FALL	MAY	JUN	JUL	AUG	SEP	OCT	MEAN
KINGDOM	99.0	7.3	7.3	6.7	7.0	8.0	7.7	7.3
VITALITY LOW	98.7	7.3	7.0	6.7	6.7	7.3	7.0	7.0
SOUTHERN MIXTURE	98.7	6.7	6.7	7.0	7.0	7.0	7.0	6.9
A-SFT	99.0	6.7	7.0	6.3	7.0	7.3	6.7	6.8
DLFPS TF-A	99.0	6.3	5.7	7.0	7.0	7.7	7.3	6.8
DTTHO TF/KBG MIX	99.0	6.0	6.0	7.0	7.0	7.3	7.3	6.8
BULLSEYE	99.0	6.7	6.0	6.7	7.0	7.0	7.0	6.7
VITALITY DOUBLE	99.0	6.0	6.0	6.3	7.0	7.3	7.3	6.7
YAAK	99.0	6.0	7.0	6.3	7.0	7.0	6.7	6.7
BEWITCHED	97.0	5.7	6.0	7.0	7.0	7.0	7.0	6.6
BGR-TF3	99.0	6.0	6.0	6.3	7.0	7.3	7.0	6.6
DTT TALL FESCUE MIX	99.0	6.0	6.0	6.0	7.0	7.3	7.0	6.6
RADAR	96.0	6.7	6.7	6.0	6.3	7.0	7.0	6.6
DLFPS TFASTC	99.0	7.0	6.0	6.3	6.3	7.3	6.0	6.5
KY-31 E+	99.0	6.0	6.7	7.0	6.3	6.3	6.7	6.5
CHANTILLY	97.7	6.3	6.3	6.0	6.3	6.7	7.0	6.4
DLFPS CHCRSH	97.7	6.7	6.3	6.3	6.0	6.7	6.7	6.4
NORTHERN MIXTURE	99.0	6.3	6.7	6.7	6.0	6.0	7.0	6.4
CS MIX	94.7	6.3	6.3	6.3	6.0	6.7	6.3	6.3
KENBLUE	98.7	6.0	6.0	7.0	6.7	5.7	6.0	6.2
SPARTAN II	74.3	6.0	6.0	6.0	5.3	6.3	6.7	6.1
CRS MIX #2	98.3	5.7	5.3	5.7	6.3	6.3	6.0	5.9
DLFPS TFAM	97.7	6.0	6.0	5.7	6.0	6.3	5.7	5.9
RESOLUTE (7H7)	58.3	5.7	6.3	5.7	5.3	6.0	5.0	5.7
MNHD-15	80.0	5.0	5.0	5.7	5.7	5.7	6.7	5.6
DLFPS CHCRM	88.3	5.0	5.0	5.3	6.0	5.7	5.7	5.4
NATURAL KNIT ® PRG MIX	89.7	4.3	5.3	5.7	5.7	4.7	6.3	5.3
QUATRO	56.7	4.7	5.3	4.7	5.0	5.3	5.0	5.0
CRS MIX #1	76.7	4.3	4.7	4.3	4.7	5.3	5.0	4.7
DLFPS SHHM	23.3	3.7	4.3	5.0	4.7	3.3	3.3	4.1
DUTCH WHITE CLOVER	23.3	3.3	4.0	4.3	5.0	3.7	3.7	4.0
CRS MIX #3	21.7	3.3	3.3	4.0	4.3	3.3	3.3	3.6
LSD VALUE	18.7	1.4	1.0	1.0	0.7	0.9	0.8	0.6
C.V. (%)	14.3	15.0	11.1	10.5	7.6	9.8	8.4	6.9

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.

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TABLE 6.              GENETIC COLOR RATINGS OF COOL-SEASON CULTIVARS  1/
                            GROWN UNDER LOW INPUT IN THE U.S.
                                     2017 DATA

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


                      NAME                          MO1

                      DLFPS TF-A                    7.3
                      DTTHO TF/KBG MIX              7.0
                      SOUTHERN MIXTURE             7.0
                      BGR-TF3                       6.7
                      CRS MIX #2                    6.7
                      CS MIX                        6.7
                      DLFPS TFASTC                  6.7
                      KINGDOM                       6.7
                      NATURAL KNIT ® PRG MIX       6.7
                      VITALITY LOW                  6.7
                      A-SFT                         6.3
                      BEWITCHED                     6.3
                      CHANTILLY                     6.3
                      DLFPS CHCRM                   6.3
                      DTT TALL FESCUE MIX          6.3
                      MNHD-15                       6.3
                      VITALITY DOUBLE               6.3
                      BULLSEYE                      6.0
                      DLFPS SHHM                    6.0
                      DLFPS TFAM                    6.0
                      DUTCH WHITE CLOVER           6.0
                      KENBLUE                       6.0
                      NORTHERN MIXTURE             6.0
                      QUATRO                        6.0
                      RADAR                         6.0
                      CRS MIX #3                    5.7
                      DLFPS CHCRSH                  5.7
                      RESOLUTE (7H7)                5.3
                      SPARTAN II                    5.3
                      CRS MIX #1                    5.0
                      YAAK                          5.0
                      KY-31 E+                      4.3


                      LSD VALUE                     1.5
                      C.V. (%)                      14.9
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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 7.            SPRING GREENUP RATINGS OF COOL-SEASON CULTIVARS  1/
                          GROWN UNDER LOW INPUT IN THE U.S.
                                   2017 DATA

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


        NAME                     CT1     MI1     NC1     NE1     UT1     MEAN

        YAAK                     2.0     9.0     5.7     3.0     8.7     5.7
        DLFPS CHCRM              5.7     7.7     3.0     4.0     7.0     5.5
        DLFPS SHHM               5.3     5.3     4.3     5.0     7.3     5.5
        CRS MIX #3               5.7     5.3     3.3     3.3     8.7     5.3
        DLFPS TFAM               4.0     7.3     4.7     4.3     6.0     5.3
        DUTCH WHITE CLOVER       4.0     6.3     3.0     3.7     9.0     5.2
        DLFPS TFASTC             3.7     5.7     4.3     4.3     6.0     4.8
        NATURAL KNIT ® PRG MIX   5.0     4.7     3.7     4.3     6.0     4.7
        BULLSEYE                 3.0     4.7     4.3     5.0     6.0     4.6
        NORTHERN MIXTURE         4.0     5.0     3.3     3.3     7.0     4.5
        QUATRO                   5.0     3.3     2.0     4.0     8.3     4.5
        CHANTILLY                5.3     3.7     3.7     2.7     7.0     4.5
        RADAR                    3.7     3.7     2.7     3.3     8.0     4.3
        BGR-TF3                  3.0     4.7     3.7     4.3     5.3     4.2
        DTT TALL FESCUE MIX      3.3     4.3     3.0     5.0     5.0     4.1
        KY-31 E+                 3.3     4.3     2.7     4.0     6.3     4.1
        CS MIX                   3.3     3.0     2.7     4.3     7.0     4.1
        DLFPS CHCRSH             3.7     3.7     2.3     3.3     7.3     4.1
        KINGDOM                  2.3     3.7     3.7     5.0     5.7     4.1
        SOUTHERN MIXTURE         3.7     4.0     3.3     3.0     6.3     4.1
        VITALITY LOW             3.7     3.3     2.3     3.7     7.3     4.1
        CRS MIX #1               3.7     2.7     2.0     4.0     7.7     4.0
        DLFPS TF-A               3.3     4.3     3.3     3.3     5.7     4.0
        VITALITY DOUBLE          2.7     4.0     3.0     4.7     5.7     4.0
        A-SFT                    2.3     4.3     4.3     3.3     5.3     3.9
        MNHD-15                  4.0     3.0     2.0     3.3     7.0     3.9
        RESOLUTE (7H7)           3.7     3.0     2.3     3.0     7.3     3.9
        KENBLUE                  1.7     3.3     2.3     4.3     7.3     3.8
        BEWITCHED                3.0     3.7     2.0     4.0     6.0     3.7
        DTTHO TF/KBG MIX         2.0     4.3     3.3     3.0     6.0     3.7
        CRS MIX #2               3.3     2.7     2.3     3.3     6.7     3.7
        SPARTAN II               3.3     2.3     2.3     3.3     7.0     3.7


        LSD VALUE                1.3     1.0     1.7     1.8     1.1     0.6
        C.V. (%)                22.9    14.7    34.1    28.9    10.0    20.4
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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 8.   PERCENT LIVING GROUND COVER (SPRING) RATINGS OF COOL-SEASON CULTIVARS 1/
                          GROWN UNDER LOW INPUT IN THE U.S.
                                    2017 DATA

                  PERCENT LIVING GROUND COVER IN SPRING: LOCATIONS 2/

NAME	MN1	MO1	PA2	VA1	MEAN
YAAK	96.3	96.3	97.3	99.0	97.3
DLFPS TFASTC	92.7	98.0	98.0	99.0	96.9
KY-31 E+	90.0	97.0	97.7	92.7	94.3
VITALITY DOUBLE	82.3	96.0	98.7	99.0	94.0
KENBLUE	83.0	95.3	97.3	99.0	93.7
DLFPS CHCRM	77.3	98.0	98.7	99.0	93.3
SOUTHERN MIXTURE	80.3	93.7	98.7	99.0	92.9
CRS MIX #1	75.3	98.0	98.3	99.0	92.7
MNHD-15	75.7	98.0	97.7	99.0	92.6
CRS MIX #2	74.3	98.0	99.0	99.0	92.6
KINGDOM	74.0	98.0	99.0	99.0	92.5
SPARTAN II	74.7	98.0	98.3	99.0	92.5
RESOLUTE (7H7)	76.0	95.3	99.0	99.0	92.3
DLFPS CHCRSH	72.7	98.0	98.7	99.0	92.1
DTTHO TF/KBG MIX	74.0	95.3	99.0	99.0	91.8
RADAR	71.7	97.0	98.7	99.0	91.6
DLFPS TFAM	69.7	98.0	99.0	99.0	91.4
BGR-TF3	69.7	98.0	98.7	99.0	91.3
DLFPS TF-A	69.3	98.0	98.7	99.0	91.3
VITALITY LOW	67.3	98.0	98.3	99.0	90.7
BULLSEYE	68.3	95.3	99.0	99.0	90.4
CRS MIX #3	74.0	89.3	98.3	99.0	90.2
DLFPS SHHM	74.7	87.7	98.3	99.0	89.9
NORTHERN MIXTURE	74.7	87.7	98.3	99.0	89.9
CS MIX	70.7	92.0	97.3	99.0	89.8
CHANTILLY	65.3	98.0	97.7	96.0	89.3
DUTCH WHITE CLOVER	89.0	68.3	98.7	99.0	88.8
DTT TALL FESCUE MIX	59.0	97.0	98.7	99.0	88.4
A-SFT	58.3	97.0	98.3	99.0	88.2
QUATRO	46.3	94.3	98.0	99.0	84.4
BEWITCHED	38.7	84.3	98.7	91.0	78.2
NATURAL KNIT ® PRG MIX	11.7	97.0	99.0	94.3	75.5
LSD VALUE	19.0	11.7	1.4	5.7	5.8
C.V. (%)	16.6	7.7	0.9	3.6	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 9.   PERCENT LIVING GROUND COVER (SUMMER) RATINGS OF COOL-SEASON CULTIVARS 1/
GROWN UNDER LOW INPUT IN THE U.S.
2017 DATA

PERCENT LIVING GROUND COVER IN SUMMER: LOCATIONS 2/

NAME	MN1
DLFPS TFASTC	94.7
KY-31 E+	93.7
YAAK	90.7
SOUTHERN MIXTURE	87.0
VITALITY DOUBLE	85.3
DLFPS CHCRM	82.3
KINGDOM	81.7
NORTHERN MIXTURE	81.7
DUTCH WHITE CLOVER	81.0
DLFPS TFAM	80.0
RADAR	80.0
CRS MIX #3	78.3
CS MIX	78.3
DLFPS CHCRSH	78.3
BULLSEYE	77.3
CRS MIX #1	77.3
DLFPS TF-A	77.0
DLFPS SHHM	75.3
VITALITY LOW	75.3
MNHD-15	75.0
CHANTILLY	73.7
RESOLUTE (7H7)	73.7
KENBLUE	73.3
DTTHO TF/KBG MIX	72.0
SPARTAN II	71.0
DTT TALL FESCUE MIX	68.7
BGR-TF3	68.0
CRS MIX #2	66.3
A-SFT	65.3
QUATRO	46.3
BEWITCHED	41.3
NATURAL KNIT ® PRG MIX	15.7
LSD VALUE	18.2
C.V. (%)	15.3

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.

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TABLE 10.           PERCENT LIVING GROUND COVER (FALL) RATINGS OF COOL-SEASON CULTIVARS  1/
                              GROWN UNDER LOW INPUT IN THE U.S.
                                      2017 DATA


                    PERCENT LIVING GROUND COVER IN FALL: LOCATIONS  2/
```

NAME	CT1	IN1	MI1	MN1	NC1	NE1	OR1	PA2	VA1	MEAN
DLFPS TFASTC	53.3	99.0	88.3	97.3	76.7	96.0	90.3	86.7	99.0	87.4
DLFPS TFAM	58.3	91.0	78.3	90.3	91.7	86.3	96.7	78.3	99.0	85.6
DLFPS TF-A	71.7	99.0	88.3	86.0	50.0	96.0	93.0	80.0	99.0	84.8
BULLSEYE	61.7	99.0	78.3	91.3	50.0	99.0	93.3	83.3	99.0	83.9
BGR-TF3	80.0	99.0	81.7	77.3	48.3	82.7	94.0	78.3	99.0	82.3
NORTHERN MIXTURE	88.3	99.0	86.7	95.7	31.7	96.0	89.7	53.3	99.0	82.1
KY-31 E+	89.7	99.0	93.3	96.3	31.7	99.0	94.3	27.3	99.0	81.1
DLFPS CHCRM	55.0	96.0	56.7	94.0	78.3	93.0	88.7	65.0	99.0	80.6
SOUTHERN MIXTURE	46.0	99.0	78.3	92.7	49.3	96.0	97.3	61.7	99.0	79.9
VITALITY DOUBLE	46.7	99.0	85.0	90.3	35.0	93.0	90.3	80.0	99.0	79.8
DLFPS CHCRSH	87.7	99.0	97.7	83.7	36.7	93.0	89.3	30.0	99.0	79.6
DTTHO TF/KBG MIX	69.0	99.0	88.3	76.0	20.0	99.0	90.0	75.0	99.0	79.5
CHANTILLY	96.0	99.0	83.3	86.0	28.3	99.0	83.3	40.0	99.0	79.3
RADAR	94.3	99.0	70.0	85.0	30.0	96.0	82.0	56.7	99.0	79.1
A-SFT	83.3	99.0	60.0	77.0	28.3	96.0	92.7	71.7	99.0	78.6
CRS MIX #2	96.3	89.3	99.0	58.7	50.0	99.0	48.3	60.0	99.0	77.7
YAAK	69.3	99.0	50.0	86.0	44.7	89.7	88.3	63.3	99.0	76.6
KINGDOM	59.0	99.0	78.3	89.3	38.3	83.0	92.7	43.3	99.0	75.8
VITALITY LOW	55.7	97.7	96.3	84.3	38.3	89.7	65.0	50.0	99.0	75.1
CS MIX	69.7	97.7	93.3	84.0	28.3	89.7	72.3	38.3	98.3	74.6
KENBLUE	93.7	96.0	92.7	64.3	71.7	99.0	21.0	26.7	99.0	73.8
RESOLUTE (7H7)	84.7	88.3	99.0	72.0	31.7	93.0	38.3	53.3	99.0	73.3
DTT TALL FESCUE MIX	51.7	99.0	70.0	73.7	11.7	96.0	91.3	65.0	99.0	73.0
CRS MIX #1	46.7	94.7	97.7	85.3	40.0	99.0	41.7	50.0	99.0	72.7
MNHD-15	81.7	91.7	99.0	74.3	26.7	96.0	20.0	56.7	99.0	71.7
CRS MIX #3	68.3	26.7	99.0	80.0	68.3	96.0	35.0	61.7	99.0	70.4
DLFPS SHHM	73.3	35.0	99.0	83.3	63.3	96.0	50.0	33.3	96.0	69.9
SPARTAN II	45.0	84.7	99.0	68.3	31.7	90.0	61.7	33.3	99.0	68.1
QUATRO	93.3	71.7	97.7	43.7	20.0	96.0	61.0	21.7	99.0	67.1
NATURAL KNIT ® PRG MIX	81.7	93.0	56.7	16.0	5.0	93.0	80.0	30.0	91.3	60.7
DUTCH WHITE CLOVER	69.7	10.0	94.7	67.7	61.7	99.0	2.7	18.3	97.7	57.9
BEWITCHED	65.7	94.7	70.0	43.7	5.0	83.0	18.3	36.7	99.0	57.3
LSD VALUE	47.9	19.1	16.3	17.9	31.9	14.4	16.7	24.2	3.3	8.1
C.V. (%)	41.7	13.3	12.0	14.3	47.9	9.5	14.7	28.1	2.1	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.

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      TABLE 11.                  STEM RUST RATINGS OF COOL-SEASON CULTIVARS  1/
                                   GROWN UNDER LOW INPUT IN THE U.S.
                                            2017 DATA

                          STEM RUST RATINGS 1-9; 9=NO DISEASE  2/


                          NAME                        MD1

                          CHANTILLY                   9.0
                          CRS MIX #1                  9.0
                          CRS MIX #2                  9.0
                          CRS MIX #3                  9.0
                          DLFPS CHCRM                 9.0
                          DLFPS CHCRSH                9.0
                          DLFPS SHHM                  9.0
                          MNHD-15                     9.0
                          NORTHERN MIXTURE            9.0
                          QUATRO                      9.0
                          RESOLUTE (7H7)              9.0
                          SPARTAN II                  9.0
                          VITALITY LOW                9.0
                          YAAK                        9.0
                          CS MIX                      8.7
                          RADAR                       8.7
                          SOUTHERN MIXTURE            8.3
                          DUTCH WHITE CLOVER          7.7
                          DLFPS TFAM                  7.0
                          BGR-TF3                     6.7
                          VITALITY DOUBLE             6.7
                          DLFPS TF-A                  6.3
                          DLFPS TFASTC                6.3
                          DTTHO TF/KBG MIX            6.3
                          BULLSEYE                    5.7
                          DTT TALL FESCUE MIX         5.7
                          KY-31 E+                    5.7
                          A-SFT                       5.3
                          KINGDOM                     5.3
                          BEWITCHED                   4.7
                          NATURAL KNIT ® PRG MIX      3.7
                          KENBLUE                     3.0


                          LSD VALUE                   1.0
                          C.V. (%)                    8.7
```

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.

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        TABLE 12.          DOLLAR SPOT RATINGS OF COOL-SEASON CULTIVARS  1/
                           GROWN UNDER LOW INPUT IN THE U.S.
                                       2017 DATA

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

                        NAME                      PA2

                        BEWITCHED                 9.0
                        CRS MIX #1                9.0
                        CRS MIX #2                9.0
                        CRS MIX #3                9.0
                        DLFPS CHCRM               9.0
                        DLFPS CHCRSH              9.0
                        DLFPS SHHM                9.0
                        DLFPS TFAM                9.0
                        DTTHO TF/KBG MIX          9.0
                        KENBLUE                   9.0
                        KY-31 E+                  9.0
                        MNHD-15                   9.0
                        NATURAL KNIT ® PRG MIX    9.0
                        QUATRO                    9.0
                        RADAR                     9.0
                        RESOLUTE (7H7)            9.0
                        SPARTAN II                9.0
                        VITALITY DOUBLE           9.0
                        VITALITY LOW              9.0
                        YAAK                      9.0
                        BGR-TF3                   8.3
                        BULLSEYE                  8.3
                        CHANTILLY                 8.3
                        CS MIX                    8.3
                        DTT TALL FESCUE MIX       8.3
                        DUTCH WHITE CLOVER        8.3
                        KINGDOM                   8.3
                        SOUTHERN MIXTURE          8.3
                        A-SFT                     8.0
                        DLFPS TF-A                8.0
                        DLFPS TFASTC              8.0
                        NORTHERN MIXTURE          7.7

                        LSD VALUE                 1.3
                        C.V. (%)                  9.5
```

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.

```
    TABLE 13.        PINK/GRAY SNOW MOLD RATINGS OF COOL-SEASON CULTIVARS  1/
                         GROWN UNDER LOW INPUT IN THE U.S.
                                  2017 DATA

                     PINK/GRAY SNOW MOLD RATINGS 1-9; 9=NO DISEASE  2/


                     NAME                       UT1

                     DUTCH WHITE CLOVER         9.0
                     CRS MIX #3                 8.7
                     YAAK                       8.7
                     QUATRO                     8.3
                     RADAR                      8.0
                     CRS MIX #1                 7.7
                     DLFPS CHCRSH               7.3
                     DLFPS SHHM                 7.3
                     KENBLUE                    7.3
                     RESOLUTE (7H7)             7.3
                     VITALITY LOW               7.3
                     CHANTILLY                  7.0
                     CS MIX                     7.0
                     DLFPS CHCRM                7.0
                     MNHD-15                    7.0
                     NORTHERN MIXTURE           7.0
                     SPARTAN II                 7.0
                     CRS MIX #2                 6.7
                     KY-31 E+                   6.3
                     SOUTHERN MIXTURE           6.3
                     BEWITCHED                  6.0
                     BULLSEYE                   6.0
                     DLFPS TFAM                 6.0
                     DLFPS TFASTC               6.0
                     DTTHO TF/KBG MIX           6.0
                     NATURAL KNIT ® PRG MIX     6.0
                     DLFPS TF-A                 5.7
                     KINGDOM                    5.7
                     VITALITY DOUBLE            5.7
                     A-SFT                      5.3
                     BGR-TF3                    5.3
                     DTT TALL FESCUE MIX        5.0


                     LSD VALUE                  1.1
                     C.V. (%)                   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 14.                    PERCENT COVER (JUNE) RATINGS OF COOL-SEASON CULTIVARS  1/
                                GROWN UNDER LOW INPUT IN THE U.S.  2/
                                        2017 DATA


                          NAME                    MD1

                          YAAK                    91.7
                          CRS MIX #3              86.7
                          DLFPS CHCRM             81.7
                          SPARTAN II              80.0
                          CRS MIX #2              78.3
                          RADAR                   78.3
                          KY-31 E+                76.7
                          DLFPS CHCRSH            75.0
                          DLFPS TFAM              75.0
                          NORTHERN MIXTURE        73.3
                          VITALITY LOW            71.7
                          DLFPS SHHM              70.0
                          CHANTILLY               68.3
                          CS MIX                  63.3
                          DLFPS TFASTC            63.3
                          MNHD-15                 61.7
                          RESOLUTE (7H7)          60.0
                          CRS MIX #1              56.7
                          SOUTHERN MIXTURE        55.0
                          VITALITY DOUBLE         51.7
                          KENBLUE                 50.0
                          QUATRO                  48.3
                          BULLSEYE                46.7
                          BGR-TF3                 43.3
                          DLFPS TF-A              38.3
                          DTT TALL FESCUE MIX     36.7
                          DTTHO TF/KBG MIX        35.0
                          DUTCH WHITE CLOVER      31.7
                          KINGDOM                 30.0
                          NATURAL KNIT ® PRG MIX  28.3
                          A-SFT                   25.0
                          BEWITCHED                5.0


                          LSD VALUE               19.4
                          C.V. (%)                21.1
```

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 15.                    PERCENT WINTER ANNUAL WEEDS (MARCH) RATINGS OF COOL-SEASON CULTIVARS  1/
                                        GROWN UNDER LOW INPUT IN THE U.S.  2/
                                                    2017 DATA


                                 NAME                        MD1

                                 BEWITCHED                   90.0
                                 CRS MIX #2                  88.3
                                 KENBLUE                     88.3
                                 DUTCH WHITE CLOVER          75.0
                                 VITALITY LOW                73.3
                                 CRS MIX #1                  71.7
                                 MNHD-15                     66.7
                                 RESOLUTE (7H7)              63.3
                                 CS MIX                      51.7
                                 SPARTAN II                  45.0
                                 RADAR                       43.3
                                 QUATRO                      41.7
                                 DLFPS CHCRSH                33.3
                                 DTTHO TF/KBG MIX            33.3
                                 CRS MIX #3                  31.7
                                 KINGDOM                     31.7
                                 NORTHERN MIXTURE            30.0
                                 DLFPS SHHM                  25.0
                                 DLFPS TF-A                  25.0
                                 CHANTILLY                   21.7
                                 A-SFT                       20.7
                                 BGR-TF3                     20.0
                                 BULLSEYE                    17.7
                                 VITALITY DOUBLE             16.0
                                 DLFPS CHCRM                 15.3
                                 DLFPS TFASTC                15.0
                                 DTT TALL FESCUE MIX         12.7
                                 YAAK                        10.0
                                 SOUTHERN MIXTURE             8.3
                                 DLFPS TFAM                   6.7
                                 KY-31 E+                     5.3
                                 NATURAL KNIT ® PRG MIX       5.0


                                 LSD VALUE                   15.5
                                 C.V. (%)                    26.0
```

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 16.                  PERCENT WEED (SPRING) RATINGS OF COOL-SEASON CULTIVARS  1/
                                      GROWN UNDER LOW INPUT IN THE U.S.  2/
                                               2017 DATA

                              NAME                    MO1

                              DUTCH WHITE CLOVER      40.0
                              BEWITCHED               20.0
                              KENBLUE                 20.0
                              NORTHERN MIXTURE        20.0
                              SOUTHERN MIXTURE        20.0
                              DLFPS SHHM              16.7
                              CRS MIX #1              15.0
                              QUATRO                  15.0
                              YAAK                    15.0
                              CRS MIX #3              13.3
                              CS MIX                  13.3
                              CRS MIX #2              12.7
                              CHANTILLY               11.7
                              RESOLUTE (7H7)          11.0
                              DLFPS TF-A              10.0
                              KINGDOM                 10.0
                              NATURAL KNIT ® PRG MIX  10.0
                              RADAR                   10.0
                              SPARTAN II              10.0
                              BULLSEYE                 9.3
                              DLFPS CHCRSH             9.3
                              MNHD-15                  9.3
                              DTTHO TF/KBG MIX         8.7
                              BGR-TF3                  8.3
                              DLFPS TFASTC             8.3
                              VITALITY DOUBLE          8.3
                              KY-31 E+                 7.7
                              DLFPS CHCRM              6.7
                              DLFPS TFAM               6.7
                              A-SFT                    6.0
                              DTT TALL FESCUE MIX      5.0
                              VITALITY LOW             5.0

                              LSD VALUE               14.2
                              C.V. (%)                71.9
```

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.

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   TABLE 17.              PERCENT COVER OF PLANTED GRASSES AND WEED RATINGS OF COOL-SEASON CULTIVARS  1/
                              GROWN UNDER LOW INPUT AT BLACKSBURG, VA  2/
                                            2017 DATA


                                          PERCENT      PERCENT
                              NAME         WEEDS     GROUND COVER
                              NAME        PCTWEED      PCTCOVER


                          DLFPS TF-A         3.0         97.0
                          VITALITY DOUBLE    3.0         97.0
                          KY-31 E+           4.0         96.0
                          SOUTHERN MIXTURE   5.0         95.0
                          BGR-TF3            6.7         93.3
                          MNHD-15            6.7         93.3
                          BULLSEYE           7.3         92.7
                          CRS MIX #3         7.3         92.7
                          DLFPS TFAM         8.3         92.7
                          CRS MIX #1         8.3         91.7
                          CRS MIX #2         8.3         91.7
                          DLFPS CHCRM        8.3         91.7
                          DTTHO TF/KBG MIX   8.3         91.7
                          NORTHERN MIXTURE   8.3         91.7
                          RADAR              9.0         91.0
                          DTT TALL FESCUE MIX 10.0       90.0
                          KINGDOM           10.0         90.0
                          SPARTAN II        10.0         90.0
                          A-SFT             10.7         89.3
                          DLFPS CHCRSH      11.7         88.3
                          DLFPS TFASTC      13.3         86.7
                          YAAK              13.3         86.7
                          CS MIX            14.0         85.0
                          QUATRO            15.0         85.0
                          VITALITY LOW      15.0         85.0
                          CHANTILLY         15.0         84.7
                          DLFPS SHHM        15.0         81.7
                          KENBLUE           20.0         80.0
                          RESOLUTE (7H7)    23.3         76.7
                          NATURAL KNIT ® PRG MIX 25.0    66.7
                          DUTCH WHITE CLOVER 53.3        45.0
                          BEWITCHED         58.3         41.7


                          LSD VALUE         18.7         17.9
                          C.V. (%)          80.6         12.5
```

   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.

TABLE 18.   PERCENT WEED (OCTOBER) RATINGS OF COOL-SEASON CULTIVARS 1/
                              GROWN UNDER LOW INPUT IN THE U.S. 2/
                                        2017 DATA

NAME	MD1
DUTCH WHITE CLOVER	80.0
BEWITCHED	68.3
NATURAL KNIT ® PRG MIX	66.7
KINGDOM	40.0
A-SFT	36.0
QUATRO	27.7
KY-31 E+	19.0
DTTHO TF/KBG MIX	18.3
RESOLUTE (7H7)	16.3
DLFPS TF-A	15.0
KENBLUE	15.0
DTT TALL FESCUE MIX	14.7
NORTHERN MIXTURE	13.3
DLFPS TFASTC	12.7
YAAK	12.7
DLFPS SHHM	12.0
CS MIX	9.7
DLFPS CHCRM	9.3
SPARTAN II	8.7
CHANTILLY	8.3
CRS MIX #3	7.7
MNHD-15	7.7
SOUTHERN MIXTURE	7.3
BULLSEYE	7.0
VITALITY DOUBLE	6.7
VITALITY LOW	6.7
BGR-TF3	6.3
DLFPS CHCRSH	6.3
DLFPS TFAM	6.3
CRS MIX #1	4.7
CRS MIX #2	3.3
RADAR	3.3
LSD VALUE	21.9
C.V. (%)	75.3

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 19.   PERCENT WEED RATINGS OF COOL-SEASON CULTIVARS 1/
                                     GROWN UNDER LOW INPUT AT STORRS, CT 2/
                                                   2017 DATA

                                           PERCENT WEED RATINGS
            NAME   SUMMER   FALL   MEAN

            BEWITCHED   86.7   27.0   56.8
            KENBLUE   75.0   5.7   40.3
            VITALITY DOUBLE   3.7   55.0   29.3
            KINGDOM   22.7   34.3   28.5
            DTT TALL FESCUE MIX   16.3   35.3   25.8
            A-SFT   36.7   13.3   25.0
            VITALITY LOW   7.0   39.3   23.2
            RADAR   40.0   4.0   22.0
            BULLSEYE   20.0   23.3   21.7
            CS MIX   8.3   33.7   21.0
            BGR-TF3   17.3   23.3   20.3
            SOUTHERN MIXTURE   3.0   37.3   20.2
            SPARTAN II   5.7   34.3   20.0
            CRS MIX #1   4.7   35.0   19.8
            DLFPS CHCRM   1.0   38.3   19.7
            YAAK   5.3   34.0   19.7
            DLFPS CHCRSH   34.3   4.3   19.3
            NATURAL KNIT ® PRG MIX   18.3   20.0   19.2
            DLFPS TFAM   1.0   36.7   18.8
            DTTHO TF/KBG MIX   26.7   10.7   18.7
            DLFPS TFASTC   1.0   36.0   18.5
            CHANTILLY   31.7   4.7   18.2
            DLFPS SHHM   4.0   26.0   15.0
            DUTCH WHITE CLOVER   11.0   17.0   14.0
            DLFPS TF-A   3.0   23.7   13.3
            MNHD-15   12.3   11.7   12.0
            RESOLUTE (7H7)   15.7   7.3   11.5
            CRS MIX #2   20.3   2.0   11.2
            CRS MIX #3   2.0   18.3   10.2
            NORTHERN MIXTURE   16.0   4.0   10.0
            QUATRO   4.3   3.3   3.8
            KY-31 E+   1.7   3.3   2.5

            LSD VALUE   26.7   86.9   42.3
            C.V. (%)   93.2   116.7   76.9

      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.

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        TABLE 20.              PERCENT WEED RATINGS OF COOL-SEASON CULTIVARS  1/
                             GROWN UNDER LOW INPUT AT ST. PAUL, MN  2/
                                          2017 DATA


                  NAME                   SPRING    SUMMER    FALL      MEAN

                  NATURAL KNIT ® PRG MIX   84.0      79.3      72.0      78.4
                  BEWITCHED                61.3      58.0      56.3      58.6
                  QUATRO                   53.0      52.0      56.3      53.8
                  A-SFT                    41.7      34.0      22.7      32.8
                  DTT TALL FESCUE MIX      40.3      31.3      26.3      32.7
                  CRS MIX #2               20.7      32.0      41.3      31.3
                  SPARTAN II               24.3      28.0      31.3      27.9
                  KENBLUE                  17.0      26.3      35.7      26.3
                  DTTHO TF/KBG MIX         26.0      28.0      24.0      26.0
                  CHANTILLY                33.3      25.0      14.0      24.1
                  MNHD-15                  22.0      24.7      25.3      24.0
                  BGR-TF3                  18.3      28.0      22.3      22.9
                  RESOLUTE (7H7)           15.7      23.7      27.0      22.1
                  VITALITY LOW             26.3      23.0      15.7      21.7
                  CS MIX                   28.7      21.0      15.0      21.6
                  DLFPS TF-A               26.7      21.3      13.3      20.4
                  CRS MIX #1               24.0      22.0      14.7      20.2
                  RADAR                    26.3      18.3      14.3      19.7
                  BULLSEYE                 30.7      21.0       7.0      19.6
                  DLFPS CHCRSH             21.0      20.3      16.3      19.2
                  KINGDOM                  25.7      18.0      10.0      17.9
                  CRS MIX #3               18.0      19.7      15.3      17.7
                  DLFPS SHHM               18.3      21.0      13.3      17.6
                  NORTHERN MIXTURE         25.0      18.0       4.3      15.8
                  DLFPS CHCRM              20.0      15.7       5.0      13.6
                  VITALITY DOUBLE          17.3      14.0       9.3      13.6
                  DUTCH WHITE CLOVER        6.7      14.3      18.7      13.2
                  SOUTHERN MIXTURE         17.7      11.7       7.3      12.2
                  DLFPS TFAM               10.0      12.7       5.0       9.2
                  YAAK                      3.7       8.0      12.0       7.9
                  KY-31 E+                  7.3       3.7       2.3       4.4
                  DLFPS TFASTC              2.3       4.7       2.3       3.1


                  LSD VALUE                18.5      18.1      18.4      15.4
                  C.V. (%)                 45.8      46.1      56.6      42.3
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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 21.   PERCENT WEED RATINGS OF COOL-SEASON CULTIVARS 1/
                    GROWN UNDER LOW INPUT AT RALEIGH, NC 2/
                              2017 DATA

NAME	JUNE	AUGUST	MEAN
DTT TALL FESCUE MIX	81.7	85.0	83.3
NATURAL KNIT ® PRG MIX	86.7	80.0	83.3
A-SFT	78.3	81.7	80.0
BEWITCHED	83.3	71.7	77.5
DLFPS TF-A	80.0	65.0	72.5
QUATRO	68.3	71.7	70.0
CHANTILLY	68.3	66.7	67.5
CS MIX	66.7	68.3	67.5
KINGDOM	61.7	70.0	65.8
VITALITY DOUBLE	60.0	71.7	65.8
DTTHO TF/KBG MIX	58.3	71.7	65.0
RADAR	61.7	68.3	65.0
NORTHERN MIXTURE	55.0	71.7	63.3
KY-31 E+	56.7	68.3	62.5
BGR-TF3	56.7	65.0	60.8
BULLSEYE	58.3	61.7	60.0
SPARTAN II	56.7	60.0	58.3
VITALITY LOW	51.7	65.0	58.3
CRS MIX #1	61.7	51.7	56.7
RESOLUTE (7H7)	50.0	58.3	54.2
SOUTHERN MIXTURE	56.7	51.7	54.2
YAAK	53.3	50.7	52.0
DLFPS CHCRSH	51.7	48.3	50.0
MNHD-15	53.3	45.0	49.2
KENBLUE	55.0	41.7	48.3
CRS MIX #2	58.3	33.3	45.8
DLFPS TFASTC	6.7	25.7	16.2
DLFPS SHHM	1.7	25.0	13.3
DUTCH WHITE CLOVER	3.3	13.3	8.3
DLFPS CHCRM	3.3	8.3	5.8
DLFPS TFAM	1.7	10.0	5.8
CRS MIX #3	1.7	3.0	2.3
LSD VALUE	24.7	26.6	22.1
C.V. (%)	30.9	30.8	27.1

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.

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         TABLE 22.              PERCENT WEED RATINGS OF COOL-SEASON CULTIVARS  1/
                                 GROWN UNDER LOW INPUT AT MEAD, NE  2/
                                            2017 DATA


                 NAME                    SUMMER       FALL        MEAN

                 CHANTILLY                30.0        70.0        50.0
                 NATURAL KNIT ® PRG MIX   20.0        80.0        50.0
                 NORTHERN MIXTURE         30.0        70.0        50.0
                 QUATRO                   23.3        76.7        50.0
                 YAAK                     23.3        76.7        50.0
                 MNHD-15                  26.7        70.0        48.3
                 CS MIX                   26.7        66.7        46.7
                 RADAR                    33.3        60.0        46.7
                 SOUTHERN MIXTURE         33.3        60.0        46.7
                 A-SFT                    16.7        73.3        45.0
                 DLFPS TF-A               26.7        63.3        45.0
                 VITALITY LOW             23.3        66.7        45.0
                 BGR-TF3                  13.3        70.0        41.7
                 BULLSEYE                 16.7        66.7        41.7
                 DTT TALL FESCUE MIX       6.7        76.7        41.7
                 KINGDOM                  20.0        63.3        41.7
                 RESOLUTE (7H7)           26.7        56.7        41.7
                 CRS MIX #1               16.7        63.3        40.0
                 CRS MIX #2               23.3        56.7        40.0
                 KY-31 E+                 16.7        63.3        40.0
                 VITALITY DOUBLE          26.7        53.3        40.0
                 DTTHO TF/KBG MIX         20.0        53.3        36.7
                 SPARTAN II               26.7        43.3        35.0
                 BEWITCHED                20.0        46.7        33.3
                 DLFPS CHCRSH             20.0        43.3        31.7
                 KENBLUE                  10.0        40.0        25.0
                 CRS MIX #3               23.3         0.0        11.7
                 DLFPS CHCRM              23.3         0.0        11.7
                 DUTCH WHITE CLOVER       16.7         3.3        10.0
                 DLFPS TFAM               16.7         0.0         8.3
                 DLFPS TFASTC             16.7         0.0         8.3
                 DLFPS SHHM                3.3         0.0         1.7


                 LSD VALUE                40.3        27.3        14.6
                 C.V. (%)                 57.6        34.1        26.0
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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 23.   PERCENT WEED RATINGS OF COOL-SEASON CULTIVARS 1/
                 GROWN UNDER LOW INPUT AT CORVALLIS, OR 2/
                              2017 DATA

NAME	BROAD WEEDS SUMMER	GRASSY WEEDS FALL	BROAD WEEDS FALL	MEAN
KENBLUE	16.7	51.7	25.7	34.8
MNHD-15	28.3	30.0	35.0	31.7
BEWITCHED	14.7	41.7	26.7	31.6
DUTCH WHITE CLOVER	1.7	51.7	4.0	28.3
RESOLUTE (7H7)	19.0	28.3	19.0	23.7
CRS MIX #2	23.7	12.7	28.3	18.3
CRS MIX #3	1.0	38.3	1.7	18.2
CRS MIX #1	17.0	23.3	19.0	17.2
QUATRO	13.3	23.3	12.3	14.8
SPARTAN II	8.7	18.3	16.0	14.1
VITALITY LOW	17.3	16.7	10.0	12.3
DLFPS SHHM	5.3	21.7	6.7	10.6
CS MIX	7.7	11.7	14.0	8.6
CHANTILLY	11.0	7.7	6.7	6.7
RADAR	2.7	7.3	8.7	5.3
DLFPS CHCRM	4.0	8.0	2.0	4.8
YAAK	2.7	5.0	4.3	4.0
DLFPS CHCRSH	5.0	2.7	5.7	3.8
NORTHERN MIXTURE	3.3	1.0	7.7	3.3
DLFPS TFASTC	0.7	5.7	4.0	2.8
DTTHO TF/KBG MIX	1.3	5.0	3.3	2.7
DTT TALL FESCUE MIX	0.7	3.3	5.0	2.5
NATURAL KNIT ® PRG MIX	1.3	0.3	5.3	2.5
VITALITY DOUBLE	1.3	1.3	6.0	2.3
DLFPS TF-A	0.7	3.0	3.3	2.0
A-SFT	1.7	3.7	1.3	1.9
BULLSEYE	0.7	2.3	2.3	1.6
BGR-TF3	0.3	1.3	2.0	1.3
DLFPS TFAM	0.7	1.7	1.7	1.3
KINGDOM	0.3	1.7	2.0	1.3
KY-31 E+	0.7	1.0	2.0	1.2
SOUTHERN MIXTURE	0.7	0.3	1.7	0.9
LSD VALUE	8.2	10.9	13.0	6.4
C.V. (%)	78.1	53.6	84.6	43.8

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.

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      TABLE 24.             PERCENT WEED RATINGS OF COOL-SEASON CULTIVARS  1/
                           GROWN UNDER LOW INPUT AT KENNETT SQUARE, PA  2/
                                         2017 DATA



          NAME                      APRIL      SEPTEMBER      MEAN

          DUTCH WHITE CLOVER        86.7        97.0         91.8
          NATURAL KNIT ® PRG MIX    85.0        91.7         88.3
          BEWITCHED                 81.7        91.0         86.3
          QUATRO                    76.0        95.3         85.7
          CHANTILLY                 81.7        83.3         82.5
          KENBLUE                   80.0        85.0         82.5
          KINGDOM                   83.3        80.0         81.7
          RESOLUTE (7H7)            75.0        81.7         78.3
          SPARTAN II                71.7        81.7         76.7
          DLFPS CHCRSH              70.0        81.7         75.8
          DTT TALL FESCUE MIX       75.0        71.7         73.3
          KY-31 E+                  53.3        93.3         73.3
          VITALITY LOW              65.0        78.3         71.7
          BGR-TF3                   70.0        66.7         68.3
          DTTHO TF/KBG MIX          66.7        70.0         68.3
          CS MIX                    61.7        73.3         67.5
          MNHD-15                   66.7        66.7         66.7
          DLFPS SHHM                54.3        77.7         66.0
          DLFPS TFAM                60.0        70.0         65.0
          NORTHERN MIXTURE          50.7        76.7         63.7
          A-SFT                     58.3        66.7         62.5
          CRS MIX #1                56.7        68.3         62.5
          DLFPS TF-A                55.0        68.3         61.7
          CRS MIX #2                51.7        70.0         60.8
          CRS MIX #3                50.0        60.0         55.0
          DLFPS CHCRM               51.7        58.3         55.0
          BULLSEYE                  53.3        53.3         53.3
          RADAR                     40.0        63.3         51.7
          SOUTHERN MIXTURE          40.0        61.7         50.8
          VITALITY DOUBLE           53.3        48.3         50.8
          DLFPS TFASTC              48.3        48.3         48.3
          YAAK                      43.3        50.0         46.7


          LSD VALUE                 54.4        21.7         32.1
          C.V. (%)                  32.1        17.2         22.5
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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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APPENDIX TABLE.    SUMMARY OF TURFGRASS QUALITY RATINGS FOR COOL-SEASON CULTIVARS
                          GROWN UNDER LOW INPUT
                                2017 DATA

                   TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF


                                     QUALITY     MAXIMUM
                NAME                 MEAN 1/    IN TOP 25% 2/


                A-SFT                  4.3         8.3
                BEWITCHED              3.6         0.0
                BGR-TF3                4.8        25.0
                BULLSEYE               5.0        41.7
                CHANTILLY              4.4         0.0
                CRS MIX #1             5.1        50.0
                CRS MIX #2             5.1        50.0
                CRS MIX #3             4.8        41.7
                CS MIX                 4.6         8.3
                DLFPS CHCRM            4.9        41.7
                DLFPS CHCRSH           4.7         8.3
                DLFPS SHHM             4.3        25.0
                DLFPS TF-A             4.9        33.3
                DLFPS TFAM             5.0        50.0
                DLFPS TFASTC           5.2        50.0
                DTT TALL FESCUE MIX    4.7         8.3
                DTTHO TF/KBG MIX       4.9        33.3
                DUTCH WHITE CLOVER     3.4         0.0
                KENBLUE                4.0         0.0
                KINGDOM                4.8        25.0
                KY-31 E+               4.5        16.7
                MNHD-15                5.0        50.0
                NATURAL KNIT ® PRG MIX 3.7         0.0
                NORTHERN MIXTURE       4.4         8.3
                QUATRO                 4.2        16.7
                RADAR                  4.8        33.3
                RESOLUTE (7H7)         4.7        25.0
                SOUTHERN MIXTURE       4.7        16.7
                SPARTAN II             4.7        16.7
                VITALITY DOUBLE        5.1        50.0
                VITALITY LOW           5.0        25.0
                YAAK                   4.8        33.3


                LSD VALUE              0.2
                C.V. (%)              11.5
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*/ 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).
**/ C.V. (COEFFICIENT OF VARIATION) INDICATES THE PERCENT VARIATION OF THE MEAN IN EACH COLUMN.
1/ MEAN AN AVERAGE OF ALL THE TURFGRASS QUALITY RATINGS FROM ALL LOCATIONS.
2/ MAXIMUM IN TOP 25%   THE PERCENTAGE OF LO