

## **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:**

Dr. Steve Johnson, Peak Plant Genetics LLC  
Mr. Steve Tubbs, Turf Merchants, Inc.  
Dr. Jeff Nus, USGA Green Section  
Dr. Michael Richardson, University of Arkansas  
Dr. David Kopec, University of Arizona  
Mr. Warren Bell, Biograss Sod Farms  
Dr. Clark Throssell, Golf Course Superintendents Assoc. of America  
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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 2007 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>.

2007 NATIONAL ZOYSIAGRASS TEST

LOCATIONS SUBMITTING DATA FOR 2007

<u>State</u>	<u>Location</u>	<u>Code</u>
California	Riverside	CA3
Kansas	Manhattan	KS1
North Carolina	Raleigh	NC1

## 2007 NATIONAL ZOYSIAGRASS TEST

### Entries and Sponsors

Entry No.	Name	Type	Sponsor
1	Zenith	seeded	Standard entry
2	Meyer	vegetative	Standard entry
3	Zorro	vegetative	Standard entry
4	DALZ 0501	vegetative	Texas A&M Dallas & Phillip Jennings Turf
5	DALZ 0701	vegetative	Texas A&M Dallas
6	DALZ 0702	vegetative	Texas A&M Dallas
7	Shadowturf	vegetative	Ivey Gardens
8	L1F	vegetative	Bladerunner Farms
9	29-2	vegetative	Bladerunner Farms
10	240	vegetative	Bladerunner Farms
11	380-1	vegetative	Bladerunner Farms

TABLE A.

2007 LOCATIONS, SITE DESCRIPTIONS AND MANAGEMENT PRACTICES IN  
THE 2007 NATIONAL ZOYSIAGRASS 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
CA3	SANDY LOAM	6.6-7.0	0-60	0-150	3.1-4.0	FULL SUN	1.6-2.0	TO PREVENT STRESS
KS1	-	-	-	-	-	-	-	-
NC1	SILTY CLAY AND CLAY	6.1-6.5	61-150	0-150	3.1-4.0	FULL SUN	2.1-2.5	TO PREVENT STRESS

TABLE B.

LOCATIONS AND DATA COLLECTED IN 2007

LOCATION	GENETIC COLOR	LEAF TEXTURE	SEEDLING VIGOR	FALL COLOR NOVEMBER	FALL COLOR DECEMBER	PERCENT ESTABLISHMENT	WEED RATINGS	PERCENT ESTABLISHMENT SEPTEMBER	PERCENT ESTABLISHMENT OCTOBER	RATINGS NOVEMBER
CA3			X			X	X			
KS1		X				X				
NC1	X	X		X	X			X	X	X

TABLE 1. GENETIC COLOR RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA

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

NAME	NC1
380-1	7.7
* MEYER	7.7
29-2	7.3
240	7.0
L1F	6.7
* ZENITH	6.7
DALZ 0501	6.3
DALZ 0702	6.3
* SHADOWTURF	6.3
DALZ 0701	6.0
* ZORRO	5.7
LSD VALUE	1.0
C.V. (%)	9.0

TABLE 2. LEAF TEXTURE RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA

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

NAME	KS1	NC1	MEAN
DALZ 0702	9.0	8.0	8.5
DALZ 0501	8.7	8.0	8.3
DALZ 0701	8.7	8.0	8.3
L1F	8.7	8.0	8.3
SHADOWTURF	8.7	8.0	8.3
ZORRO	8.7	8.0	8.3
380-1	8.0	7.0	7.5
MEYER	6.0	6.3	6.2
ZENITH	4.7	6.0	5.3
240	4.0	6.0	5.0
29-2	4.0	5.7	4.8
LSD VALUE	0.7	0.4	0.4
C.V. (%)	5.9	3.4	4.8

\* COMMERCIALY AVAILABLE IN THE USA IN 2009.

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. SEEDLING VIGOR RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA

SEEDLING VIGOR RATINGS 1-9; 9=MAXIMUM VIGOR 2/

NAME	CA3
ZENITH	4
LSD VALUE	0
C.V. (%)	0

TABLE 4. FALL COLOR (NOVEMBER) RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA

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

NAME	NC1
DALZ 0501	8.0
L1F	8.0
DALZ 0701	7.7
SHADOWTURF	7.7
DALZ 0702	7.0
380-1	6.0
ZORRO	5.7
29-2	4.7
MEYER	4.3
240	3.7
ZENITH	3.7
LSD VALUE	1.0
C.V. (%)	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).

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



TABLE 5. FALL COLOR (DECEMBER) RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA

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

NAME	NC1
DALZ 0702	6.0
L1F	6.0
DALZ 0501	5.7
DALZ 0701	5.7
SHADOWTURF	5.3
380-1	4.0
ZORRO	4.0
29-2	2.0
240	1.3
MEYER	1.3
ZENITH	1.0
LSD VALUE	0.8
C.V. (%)	12.8

TABLE 6. PERCENT ESTABLISHMENT RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA 2/

NAME	CA3	KS1	MEAN
ZORRO	30.0	65.0	47.5
29-2	26.7	66.7	46.7
DALZ 0701	43.3	50.0	46.7
SHADOWTURF	30.0	55.0	42.5
240	23.3	58.3	40.8
DALZ 0702	20.0	55.0	37.5
MEYER	23.3	50.0	36.7
ZENITH	40.0	31.7	35.8
DALZ 0501	23.3	41.7	32.5
L1F	23.3	38.3	30.8
380-1	20.0	40.0	30.0
LSD VALUE	18.8	9.0	10.4
C.V. (%)	42.3	11.1	23.5

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

TABLE 7. WEED RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
2007 DATA

WEED RATINGS 1-9; 9=NONE 2/

NAME	CA3
SHADOWTURF	3.7
380-1	2.7
ZENITH	2.3
240	2.0
29-2	2.0
DALZ 0501	2.0
DALZ 0701	2.0
DALZ 0702	2.0
L1F	2.0
MEYER	2.0
ZORRO	2.0
LSD VALUE	1.3
C.V. (%)	35.6

TABLE 8. PERCENT ESTABLISHMENT RATINGS OF ZOYSIAGRASS CULTIVARS 1/  
AT RALEIGH, NC 2/  
2007 DATA

NAME	SEP	OCT	NOV	MEAN
ZENITH	73.3	80.0	80.0	77.8
SHADOWTURF	58.3	70.0	76.7	68.3
ZORRO	51.7	58.3	58.3	56.1
DALZ 0701	40.0	53.3	55.0	49.4
240	46.7	48.3	48.3	47.8
29-2	46.7	46.7	46.7	46.7
DALZ 0501	36.7	45.0	46.7	42.8
DALZ 0702	36.7	45.0	45.0	42.2
MEYER	31.7	33.3	33.3	32.8
L1F	25.0	31.7	36.7	31.1
380-1	20.0	23.3	23.3	22.2
LSD VALUE	13.2	18.7	17.8	15.8
C.V. (%)	19.2	22.9	21.4	20.4

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