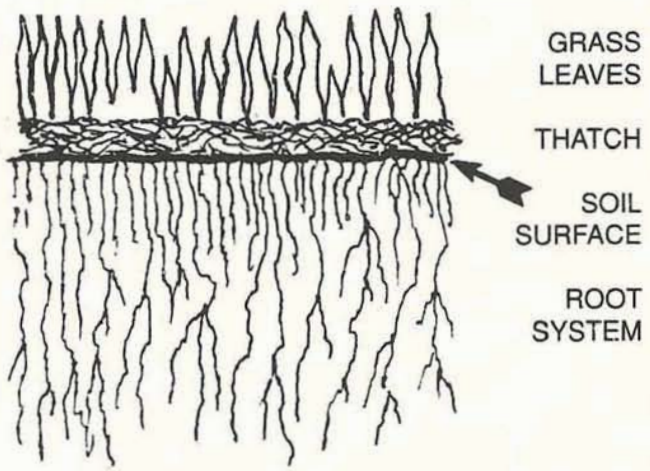
TURFGRASS RESEARCH CONFERENCE AND FIELD DAY



SEPTEMBER 18, 1990

UNIVERSITY OF CALIFORNIA

RIVERSIDE

THE DEVELOPMENT OF THE UC RIVERSIDE TURF PLOTS IS LARGELY DUE TO THE GENEROSITY OF THE FIRMS AND ORGANIZATIONS SHOWN HERE.

NORTHERN CALIFORNIA GOLF ASSOCIATION

SOUTHERN CALIFORNIA GOLF ASSOCIATION

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AND CONFERENCE SCHEDULE

KIKUYUGRASS IMPROVEMENT. BIOLOGY. AND CULTURE RESEARCH PROJECT PROGRESS REPORT

Stephen T. Cockerham[1]

Kikuyugrass (Pennisetum clandestinum Hochst.) research at the University of California, Riverside, is being funded through grants from the Northern California Golf Association and the Southern California Golf Association.

The objectives of the study are:

KIKUYUGRASS IMPROVEMENT: To gain understanding of the breeding mechanism of kikuyugrass and to improve texture, reduce aggressiveness, preserve drought resistance and preserve winter color retention.

KIKUYUGRASS BIOLOGY: To increase understanding of the growth and development of kikuyugrass relative to temperature and moisture so that chemical, non-chemical and cultural practices can be maximized to deter growth and spread of the weed.

KIKUYUGRASS CULTURE: To evaluate the competitive relationships between kikuyugrass and other warm- and cool-season turfgrasses when maintained under different cultural regimes.

A coordinated team approach involving scientists from several disciplines is being used for the overall kikuyugrass study. The individual researchers are working on specific objectives recognizing that in the real world of turfgrass management these objectives are inexorably linked.

Kikuyugrass IMPROVEMENT is being addressed by Dr. Ruth G. Shaw, assisted by Dr. Matthew K. Leonard, both of the Department of Botany and Plant Sciences, UC Riverside.

The BIOLOGY of kikuyugrass is being investigated by Dr. Jodie S. Holt and graduate student Cheryl Wilen, Department of Botany and Plant Sciences, UC Riverside.

Kikuyugrass CULTURE is being studied by Dr. David Cudney and Dr. Victor A. Gibeault, Department of Botany and Plant Sciences, UC Riverside; James A. Downer, UC Cooperative Extension, Ventura; Dr. Clyde L. Elmore, Department of Botany, UC Davis; and Stephen T. Cockerham, Agricultural Operations Department, UC Riverside.

[1]Superintendent, Agricultural Operations, UC Riverside

KIKUYUGRASS GROWTH AND DEVELOPMENT

Jodie S. Holt and Cheryl A. Wilen[1]

The objective of this research is to study the life history characteristics and physiology of kikuyugrass in order to define the factors that regulate its growth and distribution. This information will be valuable in the development of cultural means of managing kikuyugrass. Our approach is to characterize the ecological variability, physiology, and reproduction of kikuyugrass in response to environmental factors, focusing on temperature and water as the main factors regulating adaptation. This approach will allow us to predict the environments in California to which it is likely to spread and to understand its seasonal growth patterns in each. Data on kikuyugrass responses to moisture regimes will be used to construct potential strategies for water management to deter growth and spread of this weed.

Twenty-one clones of kikuyugrass were collected from golf courses and other managed turf areas around California, from Palo Alto in the north to San Diego in the south, and inland to Riverside. Collection areas included courses where kikuyugrass is managed as the predominant turf and where it is treated as an invasive weed into fairways and tees. Samples were propagated clonally by stolon cuttings to obtain pure cultures for experimentation. Four field experiments have been initiated or completed.

The first experiment was designed to characterize growth and development of the 21 kikuyugrass clones under field conditions in Riverside. Four-node stolon cuttings were planted in the field as single plants in replicated plots in fall 1989 and allowed to grow unmown until the following spring. Nondestructive growth measurements and observations were made during the experimental period, including cover area, height, number and length of stolons, number of nodes, internode length, and flowering time. Plants were harvested for dry weight in the spring. The second field experiment was planted in replicated plots with 4-inch plugs of kikuyugrass from the 21 clones to observe growth and development as sod under mown conditions. This experiment is still underway and nondestructive measurements and observations are regularly taken. Data from these experiments show that the kikuyugrass collection is quite homogeneous, as only a few distinct growth habits were observed. The selection of clones for further study was reduced from 21 to eight, chosen for heterogeneity in phenotypic and growth characteristics and low variability among replications. A third field experiment similar to the first, to quantify characteristics of growth and development, was planted in spring 1990 and is still underway.

Kikuyugrass is thought to be male-sterile since viable pollen has rarely been observed. However, only two of the 21 clones, both collected from the same location, fit this description. The other 19 clones produced pollen in our experiment and a preliminary assay demonstrated that the pollen was viable. Based on this finding, a fourth field experiment was planted in spring 1990 to examine the role of seedlings in the spread of kikuyugrass. Stolons were planted to generate mature plants, which are mown weekly to initiate flowering. After flowering, mature plants will be removed without disturbing the soil, and seedling emergence and growth will be quantified.

Several other experiments are planned to continue this research. Electrophoresis will be used to identify protein patterns and thus to clarify genetic relationships among clones. Controlled environment experiments will be conducted to investigate physiological responses to environmental factors. Seed and stolon sprouting in response to temperature will be investigated using a temperature gradient bar.

[1]Associate Professor of Plant Physiology and Graduate Research Assistant Botany and Plant Sciences Department, UC Riverside.

KIKUYUGRASS CONTROL STUDIES

David W. Cudney, James A Downer, Clyde L. Elmore, Victor A. Gibeault[1]

Kikuyugrass has been a serious weed management problem in turf along the coastal and intermountain valleys of California from San Francisco to San Diego. Kikuyugrass is well adapted to these areas and invades both cool- and warm-season turfgrass species. This invasion is so rapid and complete that kikuyugrass has become the major weed control problem for many of the turfgrass producers in the region.

Until recently, one of the first lines of defense against kikuyugrass invasion was the use of siduron. Since siduron has been removed from the market, new methods of control are needed. A trial was established in a mixed kikuyugrass and cool-season turf sward. The cool-season turf consisted of perennial ryegrass and Kentucky bluegrass.

Triclopyr, MSMA and a combination of triclopyr plus MSMA were applied in single and multiple applications to the mixed turfgrass. The first application occurred on August 1, 1989, the second application was made on September 3, 1989, and the third application on November 13, 1989. Single application plots received treatments only on August 2. This is a continuing trial which will be utilized to measure kikuyugrass invasion and cool-season reestablishment over a two-year period. Five replications of each treatment were made on plots that were 10 by 7 feet in size.

The accompanying table shows the effect of treatment on kikuyugrass control and cool-season phytotoxicity when measured on August 17, October 17 and November 13. A single application of triclopyr gave some initial kikuyugrass control, but by October 17 and November 13 the kikuyugrass had recovered. A second application of triclopyr increased kikuyugrass control. MSMA applied at a single application also gave control initially. A second MSMA application increased kikuyugrass control markedly. Triclopyr plus MSMA controlled kikuyugrass similarly to MSMA alone for the single application. However, the combination, after two applications, controlled kikuyugrass best. None of the applications have thus far produced significant phytotoxicity to the cool-season species.

Kikuyugrass postemergence[z] trial
at Ventura, California

Treatment	Rate lb ai/a	T.S.	K.C. 8/17/89	C.S.P.	K.C. 10/17/89	K.D.	K.C. 11/13/89
triclopyr	0.5	5.2	3.6	0.8	2.2	8.8	1.2
triclopyr[y]	0.5	4.8	3.8	0.8	5.2	7.0	5.0
MSMA	2.0	3.6	6.0	1.6	2.6	7.2	1.2
MSMA[y]	2.0	3.6	5.4	1.2	6.8	5.6	5.2
triclopyr+MSMA	0.5+2	3.2	6.2	1.6	4.4	7.4	1.8
triclopyr+MSMA[y]	0.5+2	3.2	6.2	1.4	8.6	1.8	8.8
Check		7.6	0.4	0.4	0.0	10.0	0.0
LSD 0.05		0.8	0.8	0.6	0.4	0.6	0.8

[z]1st application 8/2/89; 2nd application 9/3/89; 3rd application 11/13/89
[y]repeated applications.
T.S. = turf score. 0 is dead and 10 is perfect turf.
K.C. = kikuyugrass control. 0 is no control and 10 is dead kikuyugrass.
C.S.P. = cool season phytotoxicity. 0 = no effect; 10 = all turf dead.
K.D. = kikuyugrass density based on presence in 10, 4 in.^{2} samplings per plot.

[1]Extension Weed Scientist, Dept. of Botany and Plant Sci., UC Riverside; Farm Advisor, Univ. of Calif., Coop. Ext., Ventura County; Extension Weed Scientist, Botany Dept., UC Davis; Extension Environmental Horticulturist, Botany and Plant Sci., UC Riverside.

IMPROVED KIKUYUGRASS

Ruth G. Shaw and Matthew K. Leonard[1]

Balancing some of its less desirable features, such as coarse texture and aggressive habit, kikuyugrass possesses several attributes that make it very well-suited for use as turf in southern California. Among the most important of these are its drought tolerance and its relatively good color retention during the winter. Its aggressive habit can even be regarded as a boon, because it confers competitive ability against invading weeds. In our program to improve this species, genetically for turf use, we plan to retain its useful characteristics while selecting to alter its less desirable features. Our primary goal is to improve the texture of kikuyugrass by reducing the width of the leaf blade and the thickness of the stolons and by increasing the shoot density. In addition, we plan to select types that have reduced aggressiveness, while retaining the features of kikuyugrass that confer its ability to become established quickly and to outcompete its weeds. We are focusing on the extremely rapid rate of regrowth as an especially undesirable component of the competitive ability of kikuyugrass. This trait permits the species to invade golf greens and borders and is a major cause of the high costs of management for this species.

To date, we have examined 21 collections of kikuyugrass from southern California, in order to assess the magnitude of genetic variability existing in the state. Although there are significant differences among these clones in their stem diameter and internode length, the genetic variability is limited. We are also examining the progeny of a polycross involving numerous parents of diverse origin. This collection of kikuyugrass appears to provide a much greater pool of genetic variability. In particular, extreme differences in shoot density and regrowth rate are apparent. We believe that the outlook for improved varieties of kikuyugrass is quite promising.

[1]Assistant Geneticist and Staff Research Associate, Botany and Plant Sciences Dept., UC Riverside.

SPRING DEAD SPOT MANAGEMENT ALTERNATIVES

John Karlik[1]

Spring dead spot (SDS) is a destructive disease of bermudagrass. Found in Australia as well as the U.S., SDS can kill virtually an entire turf sward. Although an occasional problem in Southern California, SDS has been particularly troublesome in the southern San Joaquin Valley. The disease can be spread through turf/soil cores. Symptoms were noticed on bermudagrass turf in the Bakersfield area beginning in the early 1980's and reached a peak in 1985-87. At that time little was known about management of the disease, so a series of experiments was begun to address management alternatives.

To obtain background information, a survey was distributed in 1987 to 160 houses that had characteristic symptoms of SDS in surrounding turf areas. Eighty-one of the surveys were returned. Cultural practices varied widely, with no obvious correlation with disease development. Time of appearance of the disease ranged from 3 months to 12 years after establishment.

Different fertilizer materials were compared over 3 1/2 years because some turf managers surmised that disease expression in spring was retarded by the use of certain fertilizers the previous fall. Although treatment differences were noticeable early in the study, fewer differences were noted in subsequent years. Nitrogen fertilizer and sufficient irrigation do promote vigorous bermudagrass growth in late spring and summer. Stolons and rhizomes can then rapidly enter areas of dead turf, often covering killed circles by early July.

Because some treatment differences were noted in the early years of the fertilizer study, and because some fungicides did show activity against the disease, it was decided to combine these treatments. Experiments were conducted for two years in one location and one year in another. In these experiments, addition of either a fertilizer or fungicide was beneficial in controlling SDS. The fertilizer alone enhanced growth of turf and apparently reduced severity of SDS. The fungicide, Rubigan, reduced disease incidence, but turf was not as vigorous the following spring. The combination of fertilizer and fungicide gave the best results.

Recovery of SDS-affected bermudagrass has been seen in the field following renovation and overseeding of annual ryegrass, and sometimes the improvement in appearance has been dramatic. A turf area with extensive symptoms was used to evaluate three kinds of overseeding treatments, and a control. Addition of ryegrass markedly improved appearance of turf.

It has been repeatedly observed in the field that symptoms may subside or even disappear after several years. In the Bakersfield area, SDS appears to follow a cycle of severity at a given site, increasing in number of disease centers and total area for two to three years, then decreasing for about two years. If turf is managed well during the onset of the disease, damage can be minimized. Even if severe injury has occurred, resodding may not be necessary if steps are taken to invigorate remaining turf and prevent further damage.

[l]Farm Advisor, Univ. of Calif., Cooperative Extension, Kern County.

WINTER COLOR OF BERMUDAGRASSES

Victor A. Gibeault and Richard Autio[1]

Common and hybrid bermudagrasses are well adapted to much of California and are used for various facility purposes. Their deep root system, low water use rate, good traffic tolerance during warm months and low pest susceptibility are positive characteristics. Unfortunately, their use is limited because of winter dormancy. Therefore, it was the objective of this study to evaluate commercially available and experimental bermudagrasses for winter color and to determine environmental parameters that be used to predict dormancy.

Thirty-two cu1tivars and lines of bermudagrass were established at the UC South Coast Field Station at Irvine and at UC Riverside in 1986. The grasses were maintained at 3/4 inch, fertilized regularly and irrigated according to calculated evapotranspiration. From November 1988 to March 1989 winter color ratings were collected on a weekly basis. Also, environmental parameters were collected from both sites, at the same time, from an automated weather station.

It was found that varieties differed significantly in dormancy patterns. Those grasses that had the least dormancy pattern were hybrid bermudagrasses but not all hybrid bermudagrasses had good winter color. Of the commercially available grasses in California, Santa Ana, Tifway II and Tifway had least dormancy. Tifgreen and Tifgreen II, in comparison, were dormant for an extended time period.

Of common bermudagrasses, little difference was noted between Sahara and Arizona Common. They had more dormancy than the good performing hybrids but had less dormancy than Tifgreen or Guymon.

The environmental parameters examined were soil temperature at 4 inches, average air, maximum air and minimum air temperatures, and solar radiation. It was found that soil temperature was the most closely associated factor with dormancy, and solar radiation was the least closely associated factor. Once soil temperatures dropped below 50°F for 1-2 weeks, all bermudagrasses lost all color.

[l]Extension Environmental Horticulturist and Staff Research Associate, Botany and Plant Sciences Dept., UC Riverside.

TRAFFIC EFFECTS ON OVERSEEDED GRASSES

S. T. Cockerham, V. A. Gibeault, J. Van Dam and M. K. Leonard

Common bermudagrass (Cynodon dactylon L.) was overseeded with several cool season grasses in October 1986, Figure 1. Roughstalk bluegrass (Poa trivialis L.) was seeded at 3 lbs./1000 sq. ft. (1.5 kgs./are) and all of the rest were seeded at 10 lbs./1000 sq. ft. (4.8 kgs./are). Two-thirds equivalent-games of BTS (Brinkman Traffic Simulator) traffic one day/week was applied for a year beginning February 1987. Plots were rated weekly for turf quality.

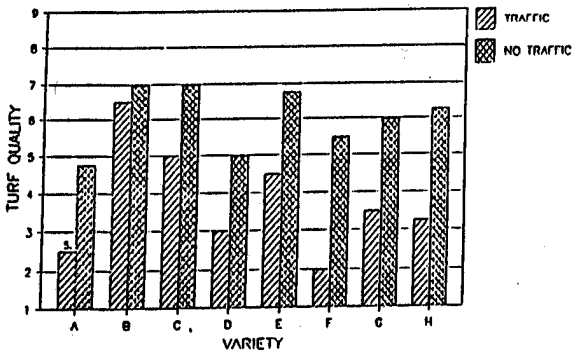
The highest quality overseeded bermudagrass turf without traffic was seen with the two perennial ryegrasses followed closely by the three fescues. Roughstalk bluegrass and annual ryegrass (Lolium multiflorum Lam.) were acceptable, but significantly lower in quality.

Roughstalk bluegrass did not tolerate traffic. Annual ryegrass and the two fine fescues--Shadow Chewing's fescue (Festuca rubra var. commutata Gaud.) and Flyer creeping red fescue (Festuca rubra L.)--performed little better. The Rebel II tall fescue under traffic was significantly better than all, except the perennial ryegrasses.

The two perennial ryegrasses as overseeded grasses performed remarkably well under traffic through a wide range of temperatures. Caliente perennial ryegrass was significantly better under traffic than Elka. With no traffic, there was no difference between them. Very little difference was observed between the Caliente with traffic and without.

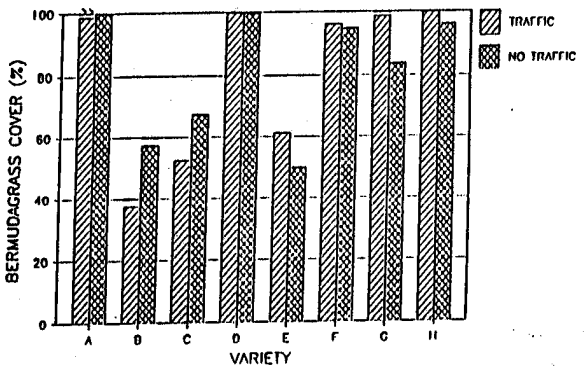
In the Spring of 1988, the plot area was treated with pronamide herbicide to eradicate the remaining cool-season grasses. Figure 2 shows the percent common bermudagrass cover in the plots after the cool-season grasses had been eliminated. The grasses that were weak under traffic as overseeded turf, were better for the Spring transition from cool-season grass to bermudagrass. The tall fescue did not allow a good transition to bermudagrass, but was better as a result of the traffic eliminating some of the fescue. The perennial ryegrasses allowed a poor transition without traffic and significantly reduced the bermudagrass stand with traffic.

Figure 1 OVERSEEDING TRAFFIC STUDY
TURF QUALITY

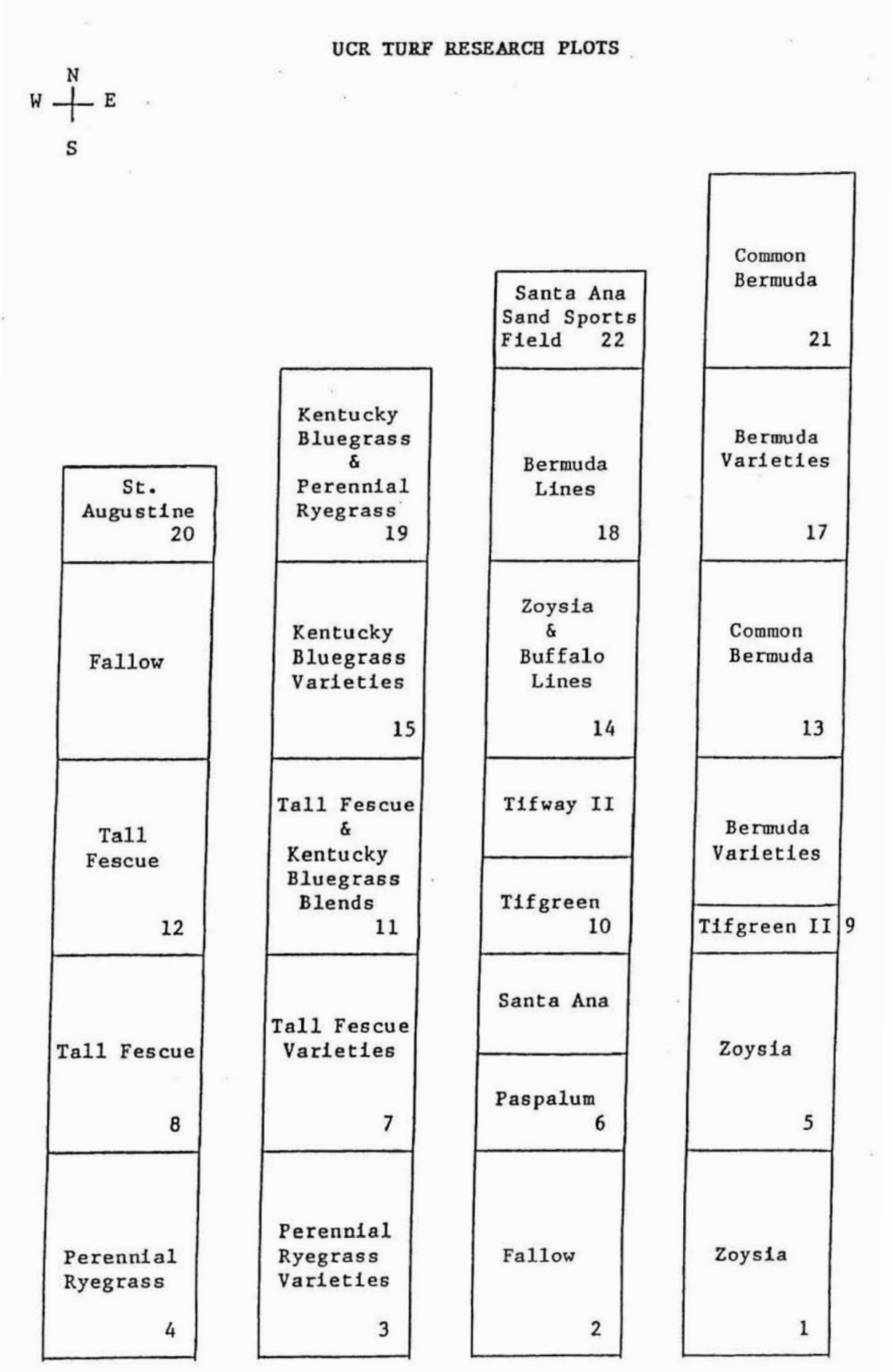


A - CONTROL
B - CALIENTE PER RYE
C - ELKA PER RYE
D - ANNUAL RYE
E - REBEL II T.F.
F - POA TRIVIALIS
G - SHADOW C.F.
H - FLYER C.R.F.

Figure 2 OVERSEEDING TRAFFIC STUDY
BERMUDAGRASS TRANSITION



[1]Supt., Agricultural Operations, UC Riverside; Extension Environmental Horticulturist, Botany and Plant Sciences Dept., UC Riverside; Farm Advisor, Coop. Ext., San Bernardino County; and Staff Research Associate, Botany and Plant Sciences Dept., UC Riverside.


UCR TURF RESEARCH PLOTS
N
W
E
S
St. Augustine 20
Fallow
Tall Fescue 12
Tall Fescue 8
Perennial Ryegrass 4
Kentucky Bluegrass & Perennial Ryegrass 19
Kentucky Bluegrass Varieties 15
Tall Fescue & Kentucky Bluegrass Blends 11
Tall Fescue Varieties 7
Perennial Ryegrass Varieties 3
Santa Ana Sand Sports Field 22
Bermuda Lines 18
Zoysia & Buffalo Lines 14
Tifway II
Tifgreen 10
Santa Ana
Paspalum 6
Fallow 2
Common Bermuda 21
Bermuda Varieties 17
Common Bermuda 13
Bermuda Varieties
Tifgreen II 9
Zoysia 5
Zoysia 1

CIMIS WEATHER STATION

L. A. Warren, UCR

The California Irrigation Management Information System (CIMIS) project has been undertaken by the Department of Water Resources to provide information to irrigation managers for the improvement of water management.

CIMIS weather stations can be found in 70-80 locations throughout California. All stations are located within six-inch tall turfgrass and are standardized to provide uniformity in the information collected.

The measurements taken are air and soil temperature, wind speed and direction, precipitation, solar radiation, and humidity. This information is measured every twenty minutes and averaged every hour. Every twenty-four hours the information is sent to a computer in Davis, California, by telephone line.

After the information is collected, evapotranspiration is estimated (ETo). CIMIS uses the modified Penman equation to determine ETo. ETo and weather information can be obtained from CIMIS on a daily basis through a computer dial-up service.

With this information, a grower can develop a refined irrigation schedule that can optimize yields and growth as well as reduce water costs by minimizing over-irrigation.

Each crop or plant has a Crop Coefficient (Kc value). Once daily ETo is known, it is multiplied by the crop Kc value to get real-time water use. With this information, water can be applied the crop needs it.

ETo x Kc = ETc (ET crop)

CIMIS information can be obtained by writing to:

California Department of Water Resources
Office of Water Conservation
P. O. Box 942836
Sacramento, CA 94236-0001

Some Kc values can be obtained from Leaflets 21427 and 21428 from the University of California Cooperative Extension.

LAW/mlr

(Lisa A. Warren, May 23, 1990)

UCR - TURFGRASS RESEARCH CENTER - PROJECT SUMMARY

Starting Date June 14, 1988 Project No. 5
Completion Date 1991 Plot No.

Title: Zoysia cultivar evaluation

Objective: Examine turf quality and growth characteristics of commerciall available and experimental cultivars of zoysiagrass.

Investigator(s):
Name Victor Gibeault Dept. B&PS Phone 3575
Name M. Leonard Dept. B&PS Phone 3898

Species/Cultivars: Zoysia japonica and intraspecific hybrids of Z. japonica, Z. matrella and Z. tenuifolia.

Management: Mowing Frequency 1 x/Wk. Height 0.75/1.5 in.
Fertilizer-Material IBDU Rate 6.0 lb N/year
Irrigation - / / as needed 60 % ET_o / /Other (Specify Below)
Special

Experimental Design: / / CRD /X/ RCB / / SPLT / / Other
No. of Reps 3 Size of Rep. 10' x 10' Total Plot 60' x 90'
Treatments: Cultivars: El Toro, Meyer, Emerald, Belair plus 14 experimental UC cultivars.

Data Collection: 1) Variable See Below Frequency
2) Variable Frequency
3) Variable Frequency

Special Instructions/Comments: Cultivars will be evaluated for rate of establishment, winter color retention, rooting depth, thatch accumulation, mowability, seedhead production, color, and general turf quality, over a period of several years.
Plots were established from 16 2" plugs planted on 2' centers.
Since June 12, 1990, individual plots have been split, with one half mowed at 0.75 in. with a reel mower, while the other half mowed at 1.5 in. with a rotary mower.

UCR ZOYSIA VARIETY EVALUATION

	H | L	L | H	H | L	L | H	H | L	L | H	
	11	5	16	15	13	9	
Rep I	14	17	4	1	3	18	Rep I
	12	8	2	7	10	6	
	15	3	9	16	17	4	
Rep II	6	1	12	14	10	7	Rep II
	5	8	11	13	18	2	
	14	12	11	1	13	15	
Rep III	7	2	9	8	6	18	Rep III
	10	5	4	17	16	3	

Zoysia Selection:

1) El Toro
2) Meyer
3) Emerald
4) Belair
5) UCR-Z88-1
6) UCR-Z88-2
7) UCR-Z88-3
8) UCR-Z88-4
9) UCR-Z88-5
10) UCR-Z88-6
11) UCR-Z88-7
12) UCR-Z88-8
13) UCR-Z88-9
14) UCR-Z88-10
15) UCR-Z88-11
16) UCR-Z88-12
17) UCR-Z88-13
18) UCR-Z88-14

UCR - TURFGRASS RESEARCH CENTER - PROJECT SUMMARY

Starting Date 29 May 86 Project No. _____
Completion Date _____ Plot No. 9 North & 17

Title: National Bermudagrass Trial

Objective: To evaluate Bermudagrass cultivars in southern California.

Investigator(s):
Name V.A. Gibeault Dept. Coop Ext Phone X 3575
Name R. Autio Dept. Coop Ext Phone X 4430

Species/Cultivars: 32 Bermudagrass cultivars.

Management: Mowing Frequency 1 or 2 x/Wk. Height 3/4 in.
Fertilizer-Material _____ Rate 1# N/M/6 wk.
Irrigation - /X/ as needed _____ % ET_o / /Other (Specify Below)
Special _____

Experimental Design: / / CRD /X/ RCB / / SPLT / / Other _____
No. of Reps 3 Total Plots 90 x 90 (Block 17), 60 x 70 (N Block 9)
Treatments: _____

Data Collection: 1) Variable Turfscores Frequency Monthly
2) Variable _____ Frequency _____
3) Variable _____ Frequency _____

Special Instructions/Comments: _____

NATIONAL BERMUDAGRASS TEST, 1986

Entries and Sponsors

Entry No.	Name	Sponsor
1	CT-23	Cal-Turf, Inc.-Camarillo, CA
2	NM 43	A. Baltensperger - New Mexico State University
3	NM 72	A. Baltensperger
4	NM 375	A. Baltensperger
5	NM 471	A. Baltensperger
6	NM 507	A. Baltensperger
7	Vamont	L. Taylor - Va. Tech
8	E-29	Kansas State University
9	A-29	Kansas State University
10	RS-1	H. Rice, A.J. Powell- University of Kentucky
11	MSB-10	J. Krans - Miss. St. Univ.
12	MSB-20	J. Krans
13	MSB-30	J. Krans
14	A-22	Kansas State University
15	Texturf 10	Texas A & M University
16	Midiron	-
17	Tufcote	-
18	Tifgreen	-
19	Tifway	-
20	Tifway II	-
21	NMS 1 (NuMex-Sahara)	A. Baltensperger & Farmers Marketing Corp.
22	NMS 2	A. Baltensperger
23	NMS 3	A. Baltensperger
24	NMS 4	A. Baltensperger
25	NMS 14	A. Baltensperger
26	Arizona Common	-
27	Guymon	Agriculture Processors - Enid, OK
28	FB-119	A. E. Dudeck - University of Florida

NOTE: Entries 21-27 are seeded bermudagrasses.

LOCATIONS SUBMITTING DATA FOR 1989

State	Location	Code
Arkansas	Fayetteville	AR1
Arizona	Tucson	AZ1
California	Irvine	CA2
California	Riverside	CA3
Florida	Gainesville	FL1
Kansas	Manhattan	KS1
Kansas	Wichita	KS2
Maryland	Beltsville	UB1
Maryland	Silver Spring	MD1
Mississippi	Mississippi State	MS1
Missouri	Springfield	MO4
Oklahoma	Stillwater	OK1
Texas	Cleveland	TX1
Virginia	Blacksburg	VA1
Virginia	Blackstone	VA2
Virginia	Virginia Beach	VA4

N

NATIONAL BERMUDAGRASS TRIAL, UCR
Planted May 29, 1986

Block 1

Plot Size 10' x 10'

	32	31	30	24	3	10
	25	7	6	26	15	21
	1	29	12	5	11	16
I	2	19	9	28	13	8
	4	20	27	18	14	17
	22	23	7	3	16	13
	23	2	12	5	29	11
	25	24	9	19	15	27
II	21	14	17	28	8	22

(Common Bermudagrass)

			31	32	18	6
	20	30	26	1	8	2
	30	22	9	27	11	7
	26	6	18	25	5	1
III	12	16	19	14	29	13
	17	15	21	28	24	23
	32	31				

Entry Number	Name
1	CT-23
2	NM 43
3	NM 72
4	NM 375
5	NM 471
6	NM 507
7	Vamont
8	E-29
9	A-29
10	RS-1
11	MSB-10
12	MSB-20
13	MSB-30
14	A-22
15	Texturf 10
16	Midiron
17	Tufcote
18	Tifgreen
19	Tifway
20	Tifway II
21	NMS 1
22	NMS 2
23	NMS 3
24	NMS 4
25	NMS 14
26	Arizona Commo
27	Guymon
28	FB-119
29	C19
30	C84
31	Tifgreen II
32	Santa Ana

Objective:
To evaluate Bermudagrass varieties in southern California.

Methods and Materials:
In May, 1986, 1" plugs were placed on 1" centers in 10' x 10' plots. The plots are mowed at 3/4", fertilized at 1# N/M every 6 weeks and irrigated as needed.

TABLE 1A.

MEAN TURFGRASS QUALITY RATINGS OF BERMUDAGRASS CULTIVARS
AT SIXTEEN LOCATIONS IN THE UNITED STATES
1989 DATA

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

NAME	AR1	AZ1	CA2	CA3	FL1	KS1	KS2	MD1	MO4	MS1	OK1	TX1	UB1	VA1	VA2	VA4	MEAN
MSB-10	8.4	8.1	6.9	6.4	6.9	7.8	8.0	7.3	4.0	7.3	7.0	7.3	7.1	6.4	6.4	7.7	7.1
* TIFWAY II	8.5	7.7	6.4	6.2	7.0	7.7	8.0	7.0	5.0	7.3	6.8	8.0	6.8	6.3	6.4	7.3	7.0
* TIFWAY	8.3	7.8	6.3	6.1	6.9	7.8	7.7	6.9	4.0	7.1	6.9	7.3	6.6	6.1	6.4	7.3	6.8
* TIFGREEN	7.7	6.9	5.4	5.3	6.9	7.5	8.0	6.8	4.3	6.9	6.3	7.7	7.3	7.1	6.7	7.5	6.8
MSB-30	7.3	6.6	6.0	6.3	6.7	7.3	8.2	6.6	6.0	6.1	6.8	6.7	6.4	6.3	6.5	7.9	6.7
NM 43	7.7	7.0	5.4	5.4	6.6	7.8	7.6	6.9	3.7	7.0	6.9	8.0	7.2	6.8	6.7	7.0	6.7
MSB-20	7.9	6.5	5.5	5.3	6.7	7.3	7.4	6.9	3.7	7.3	6.3	7.3	7.3	7.1	6.7	7.5	6.7
* TUFCOTE	7.6	6.2	5.1	5.7	6.8	7.6	8.0	6.3	5.7	5.6	5.8	5.7	7.0	6.7	5.8	6.9	6.4
A-29	6.9	6.9	5.5	5.8	6.1	7.2	8.2	6.7	5.7	5.3	5.8	5.7	6.8	6.9	5.9	6.3	6.3
NM 471	7.6	7.0	5.9	5.9	7.1	5.3	6.1	6.2	5.3	5.5	6.8	7.7	4.8	6.0	6.5	7.7	6.3
A-22	7.3	6.3	5.3	5.9	6.6	7.6	8.7	6.6	4.3	5.3	6.2	5.7	6.3	6.4	5.7	6.4	6.3
E-29	7.0	6.3	5.6	6.2	6.3	6.9	8.7	7.2	5.0	5.1	5.7	4.7	6.1	6.7	5.8	6.3	6.2
* TEXTURF 10	7.2	5.8	5.8	5.2	6.5	7.4	7.9	5.8	4.0	5.3	6.4	4.7	6.6	6.8	6.3	7.2	6.2
* MIDIRON	6.4	6.3	5.7	5.7	6.3	6.9	8.6	6.4	5.3	4.7	5.4	5.7	6.5	5.7	5.4	6.5	6.1
NM 507	7.4	7.3	6.0	5.8	7.3	3.7	6.6	5.7	5.0	5.5	6.0	7.3	4.3	5.2	6.6	7.7	6.1
NM 375	7.7	6.2	5.2	5.2	6.9	6.3	7.4	5.8	5.0	5.2	5.4	6.0	5.9	5.8	6.1	7.3	6.1
CT-23	7.6	6.8	5.4	5.9	6.3	6.9	7.3	6.4	4.7	5.9	5.8	5.7	4.8	4.3	5.5	7.0	6.0
RS-1	5.9	5.4	5.1	5.3	6.1	6.7	8.1	5.9	5.7	4.7	5.8	5.7	6.2	6.2	5.9	6.6	5.9
FB-119	7.2	6.0	4.9	5.3	6.5	5.3	6.2	6.0	6.7	5.3	5.2	5.3	4.7	6.4	6.1	7.3	5.9
* VAMONT	5.5	5.8	5.1	5.4	6.2	6.1	6.7	5.8	6.0	4.5	5.7	4.0	6.1	6.2	6.1	6.3	5.7
NM 72	6.6	6.1	4.9	4.9	6.7	5.1	5.6	5.4	5.3	5.1	5.4	5.7	4.9	5.9	6.3	7.4	5.7
NMS 3	6.9	6.4	5.1	5.5	6.3	5.8	5.3	5.7	5.3	4.5	5.4	4.3	5.0	5.4	5.7	7.1	5.6
NMS 4	6.7	5.8	5.1	5.1	6.5	5.9	6.0	5.2	5.3	3.8	5.6	4.0	5.1	5.8	5.7	7.1	5.5
* NMS 1 (NUMEX-SAHARA)	5.8	5.1	4.9	5.0	5.9	5.5	6.0	5.2	4.3	3.2	5.5	4.7	4.9	5.1	4.9	6.7	5.2
NMS 14	5.4	4.8	5.0	4.7	6.1	5.5	6.1	5.6	6.3	3.5	4.8	3.7	4.2	5.2	5.1	6.6	5.2
NMS 2	5.2	5.0	4.8	4.7	5.9	5.3	5.3	5.8	6.7	3.5	4.8	3.3	4.6	5.1	5.1	6.4	5.1
* GUYMON	4.6	5.4	4.7	4.9	5.8	5.1	6.2	5.1	4.7	2.7	5.2	3.3	4.7	4.1	4.8	5.3	4.8
* AZ. COMMON	5.6	4.8	4.6	4.6	5.9	3.9	5.2	4.2	4.7	3.3	4.7	3.0	3.8	4.0	4.3	5.8	4.5
LSD VALUE	0.6	0.8	0.4	0.4	0.5	1.4	0.6	0.9	1.6	0.5	0.8	1.3	0.6	0.7	0.5	0.4	0.2

* COMMERCIALLY AVAILABLE VARIETY

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).

UCR - TURFGRASS RESEARCH CENTER - PROJECT SUMMARY

Starting Date: May 29, 1990 Project No.:
Completion Date: Plot No.: 19

Title: Nitrate Leaching Study

Objective: Measure amount of nitrate leaching below root zone of turf fertilized with several nitrogen sources.

Investigator(s):

Name: V. A. Gibeault Dept. B&PS Phone X 3575
Name: R. Autio/M. Leonard Dept. B&PS Phone X 3898

Species/Cultivars: Mixture of 'Rugby' Kentucky bluegrass and 'Pennant' perennial ryegrass.

Management: Mowing Frequency 1 x/Wk. Height 1.5 in.
Fertilizer-Material Rate
Irrigation - / / as needed 80 % ET_o / /Other (Specify Below)
Special

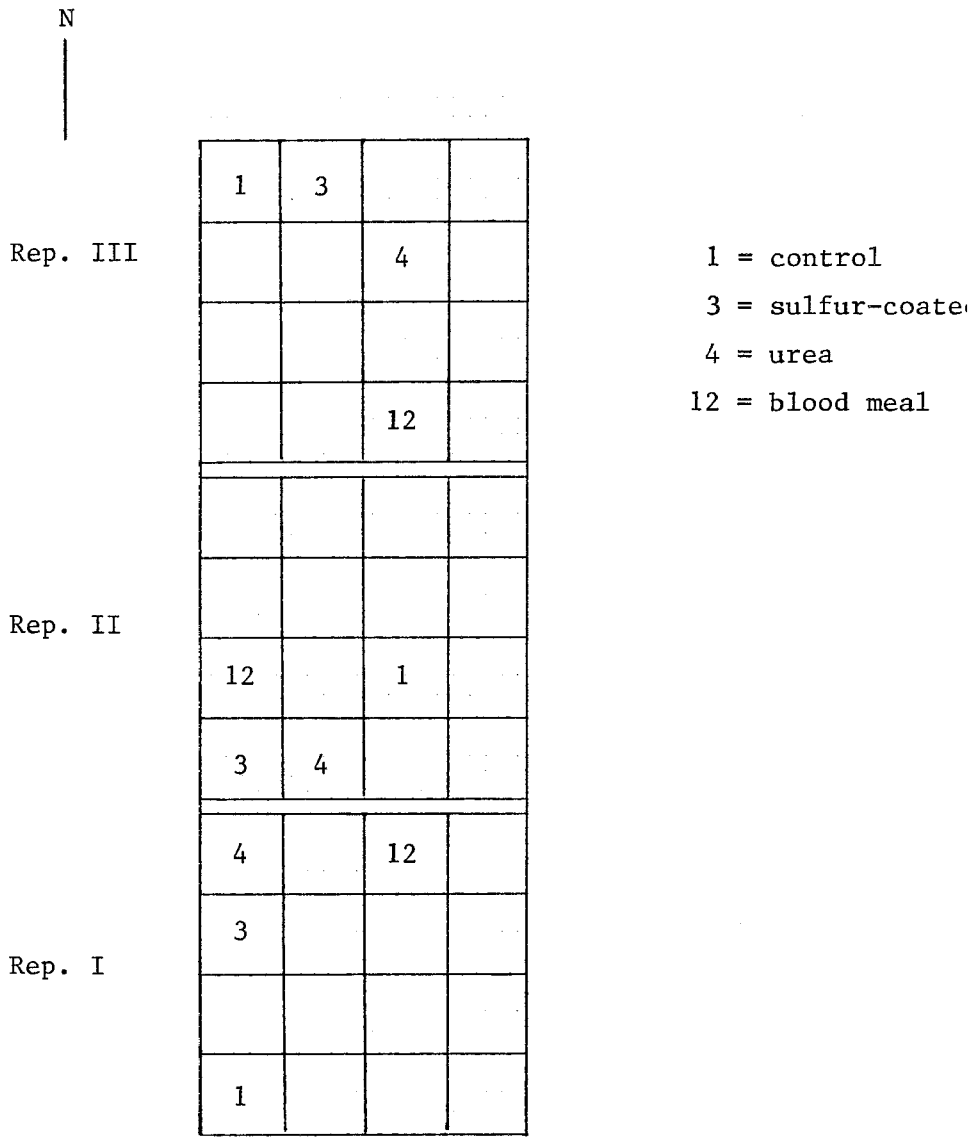
Experimental Design: / / CRD /X/ RCB / / SPLT / / Other
No. of Reps 3 Size of Rep. 4' x 6' Total Plot 24' x 50'
Treatments: Urea (46-0-0), sulfur-coated urea (SCU, 37-0-0), and blood meal (13-0-0) are applied at a rate of 2.5 lb. of actual nitrogen every 8 weeks. The control treatment receives no nitrogen.

Data Collection: 1) Variable Nitrate Concentration Frequency weekly
2) Variable Frequency
3) Variable Frequency

Special Instructions/Comments: A pair of suction lysimeters, reaching a depth of approximately 40 inches, was placed in each treatment plot.

The plots used in this study are part of a continuing, long-term nitrogen fertilizer study initiated in January 1989.

NITRATE LEACHING STUDY



UCR - TURFGRASS RESEARCH CENTER - PROJECT SUMMARY

Starting Date 12 Apr 85 Project No. _____
Completion Date _____ Plot No. 11

Title: Tall Fescue/Kentucky Bluegrass Mix

Objective: To evaluate the compatibility of high, medium and low levels of competitition between tall fescues and Kentucky bluegrasses for turf purposes.

Investigator(s):
Name V.A. Gibeault Dept. Coop Ext Phone X 3575
Name R. Autio Dept. Coop Ext Phone X 4430

Species/Cultivars: 3 cultivars tall fescue alone and with 3 cultivars Kentucky bluegrass

Management: Mowing Frequency 1 x/Wk. Height 1-1/2 in.
Fertilizer-Material _____ Rate 1# N/M/6 wk.
Irrigation - /X/ as needed _____% ET_o / /Other (Specify Below)
Special _____

Experimental Design: / / CRD /X/ RCB / / SPLT / / Other _____
No. of Reps 3 Size of Rep. 60 x 30 Total Plot 60 x 90
Treatments: _____

Data Collection: 1) Variable Turfscores Frequency Monthly
2) Variable _____ Frequency _____
3) Variable _____ Frequency _____

Special Instructions/Comments: _____

UCR TALL FESCUE AND KENTUCKY BLUEGRASS MIX TRIAL

Block #11

N

11	6	3	4	10	2	I
5	9	1	7	12	8	
10	12	5	9	6	7	II
4	8	11	3	2	1	
2	11	3	4	7	5	III
6	9	8	12	1	10	15'
					10'	

Entry No.	Name
1	Alta
2	Alta + A34
3	Alta + Columbia
4	Alta + Kenblue
5	Mustang
6	Mustang + A34
7	Mustang + Columbia
8	Mustang + Kenblue
9	Jaguar
10	Jaguar + A34
11	Jaguar + Columbia
12	Jaguar + Kenblue

Objectives:

To evaluate the compatibility of very competitive, moderately competitive and low competitive tall fescues and Kentucky bluegrasses for turf purposes.

Methods and Materials:

On 12 April 1985, three cultivars of tall fescue were seeded individually and in blends with three cultivars of Kentucky bluegrass (95% tall fescue + 5% Kentucky bluegrass) at the rate of 6#/M to 10' x 15' plots. The plots are fertilized at 1# N/M every 6 weeks, mowed at 1-1/2", and irrigated as needed.

North →

← 13' →

5	2
1	8
4	9
3	5
9	7
1	2
6	8
8	4
1	6
9	7
6	3
8	7
3	1
2	4
4	5
7	9
6	5
2	3

East

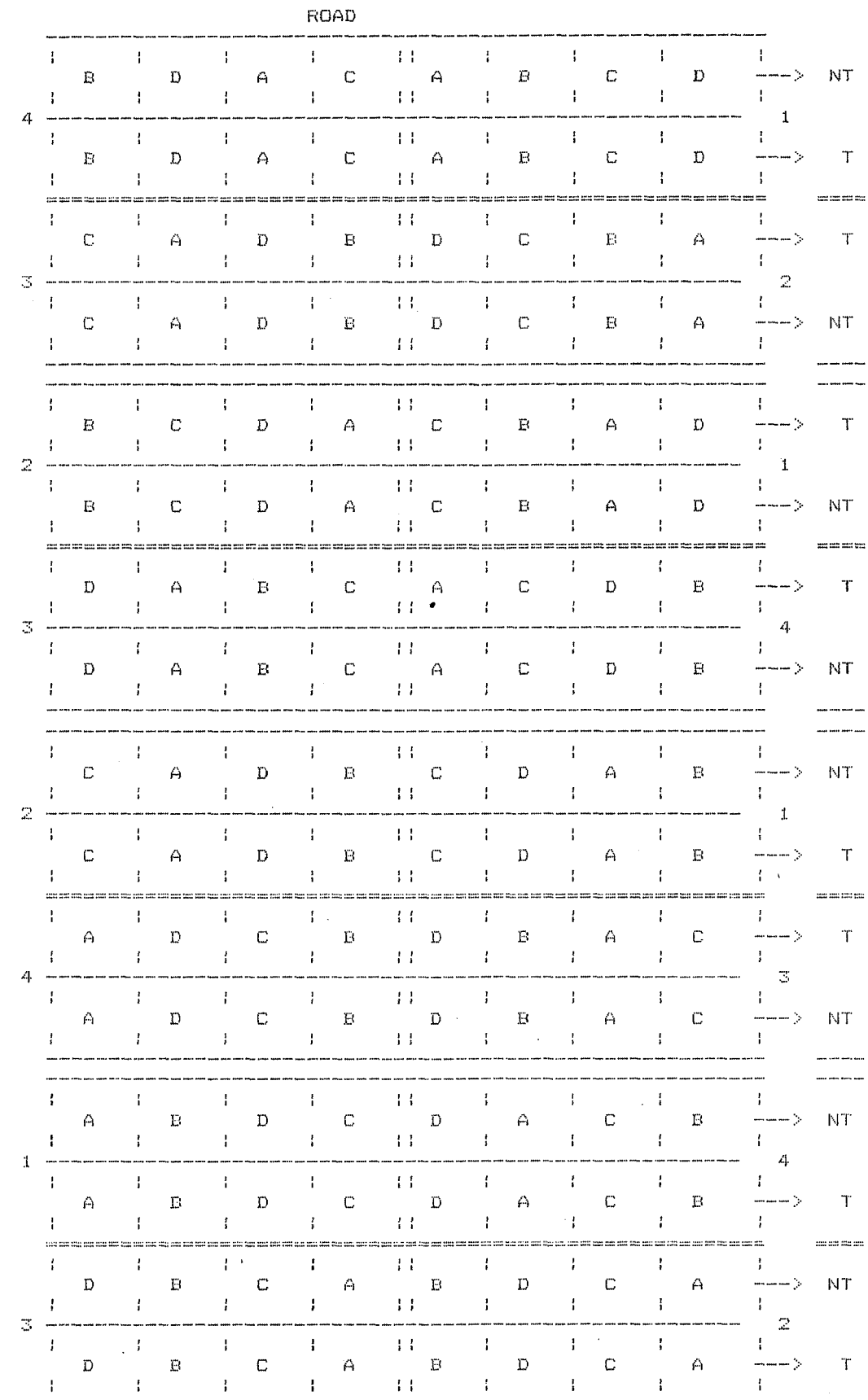
GROUND COVER MANAGEMENT PLOT MAP

UC Riverside Field, 12-F

KEY:

1. Baccharis pilularis 'Twin Peaks' - coyote bush
2. Drosanthemum floribundum - rosea ice plant
3. Hedera helix - English ivy
4. Osteospormum fruticosum - freeway or African trailing daisy
5. Potentilla tabernaemontanii (P. verna) - spring cinquefoil
6. Verbena rigida - blue verbena
7. Aptenia cordifolia - red apple
8. Lantana montevidensis - lavender lantana
9. Myoporum parvifolium - 'Prostratum'

LIGHT INTENSITY TURF EVALUATION (L.I.T.E.) PLANTED 5/90



1 = 73% SHADE
2 = 55% SHADE
3 = 30% SHADE
4 = 0 SHADE

A = BONSAI DWARF TALL FESCUE
B = MANHATTAN II PER RYEGRASS 60%
JASPAR CREEPING RED FESCUE 40%
C = MANHATTAN II PER RYEGRASS
D = EL TORO ZOYSIA

----> NT = NO TRAFFIC
----> T = TRAFFIC

UCR - TURFGRASS RESEARCH CENTER - PROJECT SUMMARY

Starting Date Oct. 87 Project No. _____
Completion Date _____ Plot No. 7

Title: National Tall Fescue Trial

Objective: To evaluate the suitability of turf-type tall fescue in southern California

Investigator(s):
Name V.A. Gibeault Dept. Coop Ext Phone X 3575
Name R. Autio Dept. Coop Ext Phone X 4430

Species/Cultivars: 72 tall fescue cultivars

Management: Mowing Frequency 1 x/Wk. Height 1-1/2 in.
Fertilizer-Material _____ Rate 1# N/M/6 wk.
Irrigation - /X/ as needed _____% ET_o / /Other (Specify Below)
Special _____

Experimental Design: / / CRD /X/ RCB / / SPLT / / Other _____
No. of Reps 3 Size of Rep. 50 x 20 Total Plot 50 x 60
Treatments: _____

Data Collection: 1) Variable Turfscores Frequency Monthly
2) Variable _____ Frequency _____
3) Variable _____ Frequency _____

Special Instructions/Comments: _____

Submitted by _____ Date _____

1987 NATIONAL TALL FESCUE TEST

Entries and Sponsors

Entry No.	Name	Sponsor
1	Adventure	Warren's Turf Nursery
2	BAR Fa 7851 (Barnone)	Barenbrug Holland
3	Trident	Seed Research of Oregon
4	Titan	Seed Research of Oregon
5	Pick DDF (Shortstop)	Pickseed West, Inc.
6	Pick 127 (Cochise)	Pickseed West, Inc.
7	Pick 84SPN (Guardian)	Roberts Seed Co.
8	Pick SLD (Emperor)	Zajac Performance Seeds
9	PE-7	Reed Funk - Rutgers
10	PE-7E (Shenandoah)	Willamette Seed Co.
11	Hubbard 87	Reed Funk - Rutgers
12	Syn Ga (Aquara)	O. M. Scott & Sons
13	Legend	Agway
14	Taurus	Turf Merchants, Inc.
15	Aztec	Turf Merchants, Inc.
16	Sundance	Seaboard Seed Co.
17	Fatima	Van der Have Oregon, Inc.
18	Normarc 25	Reed Funk - Rutgers
19	Normarc 77 (Phoenix)	Normarc Seed Co.
20	KWS-DUR	KWS-Einbeck
21	KWS-BG-6 (Twilight)	Turf Merchants
22	Willamette	Willamette Seed Co.
23	Chieftain	Roberts Seed Co.
24	Pick GH6 (Maverick II)	Pickseed West, Inc.
25	Thoroughbred	Pickseed West, Inc.
26	Pick TF9 (Crossfire)	Pickseed West, Inc.
27	PST-5OL (Olympic II)	Turf-Seed, Inc.
28	PST-5D7 (Murietta)	Pure-Seed Testing, Inc.
29	Cimmaron	LESCO, Inc.
30	Bonanza	Proprietary Seeds
31	PST-5AG	Pure-Seed Testing, Inc.
32	PST-5BL (Silverado)	Pure-Seed Testing, Inc.
33	PST-5MW	Pure-Seed Testing, Inc.
34	Trailblazer	LESCO, Inc.
35	PST-5D1 (Eldorado)	Pure-Seed Testing, Inc.
36	PST-5AP	Turf-Seed, Inc.
37	PST-5HF (Amigo)	Northrup King Co.
38	Jaguar	Zajac Performance Seeds
39	PST-DBC	Pure-Seed Testing, Inc.
40	Olympic	Turf-Seed, Inc.
41	Jaguar II	Zajac Performance Seeds
42	Monarch	Turf-Seed, Inc.
43	Apache	Turf-Seed, Inc.
44	PST-5DM	Pure-Seed Testing, Inc.
45	Pick DM (Avanti)	Pickseed West, Inc.
46	Normarc 99	Normarc, Inc.
47	Pacer	International Seeds, Inc.
48	Carefree	International Seeds, Inc.
49	Richmond	Jonathan Green, Inc.
50	Tip	NPI Seed, Inc.
51	Ky-31	-
52	Bel 86-1	Jack Murray - USDA, ARS
53	Bel 86-2	Jack Murray - USDA, ARS
54	PST-5EN	Pure-Seed Testing, Inc.
55	PST-5F2 (Winchester)	E. F. Burlingham
56	Finelawn 5GL	Finelawn Research Corp.
57	Finelawn I	Finelawn Research Corp.
58	Rebel	Loft's Seed, Inc.
59	Rebel II	Loft's Seed, Inc.
60	Tribute	Loft's Seed, Inc.
61	Arid	Jacklin Seed Co.
62	Wrangler	Jacklin Seed/LESCO, Inc.
63	Mesa	Jonathan Green, Inc.
64	JB-2	Jacklin Seed Co.
65	Falcon	E. F. Burlingham

LOCATIONS SUBMITTING DATA FOR 1989

State	Location	Code
Arkansas	Fayetteville	AR1
Arizona	Tucson	AZ1
California	Santa Clara	CA1
California	Santa Ana	CA2
California	Riverside	CA3
Georgia	Griffin	GA1
Idaho	Post Falls	ID2
Illinois	Urbana	IL1
Indiana	West Lafayette (high maintenance)	IN1
Indiana	West Lafayette (low maintenance)	IN2
Iowa	Ames	IA1
Kansas	Manhattan	KS1
Kansas	Wichita	KS2
Maryland	Beltsville (medium maintenance)	UB1
Maryland	Beltsville (low maintenance)	UB2
Maryland	Silver Spring	MD1
Michigan	East Lansing	MI1
Missouri	Columbia	MO1
Missouri	St. Louis	MO3
Nebraska	Lincoln	NE1
New Jersey	North Brunswick	NJ1
New Jersey	Adelphia	NJ2
New Jersey	Martinsville	NJ3
New York	Ithaca	NY1
New York	Riverhead, Long Island	NY2
Ohio	Marysville	OH2
Oklahoma	Stillwater	OK1
Oregon	Hubbard	OR1
Oregon	Corvallis	OR2
Rhode Island	Kingston	RI1
Texas	Dallas (high mowing)	TX1
Texas	Dallas (low mowing)	TX2
Virginia	Blacksburg	VA1
Virginia	Blackstone	VA2
Virginia	Richmond	VA3
Virginia	Virginia Beach	VA4
Washington	Ritzville	WA4

BLOCK #7

NATIONAL TALL FESCUE TRIAL
CA3 Riverside

N

64	30	47	06	01	12	54	63	57	33	38	36
52	72	56	27	59	32	58	60	69	13	35	14
10	17	62	40	68	41	45	05	42	09	08	39
37	18	34	67	24	03	26	46	55	31	66	04
22	20	44	50	29	53	71	15	43	70	02	48
19	28	65	61	23	16	25	07	21	49	11	51
42	08	49	43	19	56	52	47	32	25	53	60
04	48	70	66	61	44	30	50	46	05	24	15
09	69	57	33	10	40	20	37	59	68	58	45
51	55	21	14	62	34	67	72	54	07	23	29
02	39	31	36	17	22	18	06	63	26	03	12
13	35	11	38	64	28	27	65	71	41	01	16
53	03	41	01	49	31	70	09	52	61	10	44
23	60	58	45	02	33	35	21	18	47	20	37
05	46	54	63	43	08	04	48	56	19	27	34
07	68	26	15	42	57	39	38	72	64	30	22
59	32	29	16	11	36	14	66	50	65	28	40
51	24	25	67	71	13	69	55	06	62	17	12

Entry Name	Entry Name
1 Adventure	37 PST-5HF
2 BAR Fa 7851	38 Jaguar
3 Trident	39 PST-DBC
4 Titan	40 Olympic
5 Pick DDF	41 Jaguar II
6 Pick 127	42 Monarch
7 Pick 845PN	43 Apache
8 Pick SLD	44 PST-5DM
9 PE-7	45 Pick DM
10 PE-7E	46 Normarc 99
11 Hubbard 87	47 Pacer
12 Syn Ga	48 Carefree
13 Legend	49 Richmond
14 Taurus	50 Tip
15 Aztec	51 Ky-31
16 Sundance	52 Bel 86-1
17 Fatima	53 Bel 86-2
18 Normarc 25	54 PST-5EN
19 Normarc 77	55 PST-5F2
20 KWS-DUR	56 Finelawn 5GL
21 KWS-BG-6	57 Finelawn I
22 Willamette	58 Rebel
23 Chieftan	59 Rebel II
24 Pick GH6	60 Tribute
25 Thoroughbred	61 Arid
26 Pick TF9	62 Wrangler
27 PST-50L	63 Mesa
28 PST-5D7	64 JB-2
29 Cimmaron	65 Falcon
30 Bonanza	66 5MI + Endophyte
31 PST-5AG	67 5MI
32 PST-5BL	68 517
33 PST-5MW	69 5D6
34 Trailblazer	70 Pick 151
35 PST-5D1	71 DDF MD
36 PST-5AP	72 DDF GP87

Objectives:
To evaluate the suitability of turf-type tall fescue for southern California.

Methods and Materials:
In october, 1987, 72 cultivars of tall fescue were seeded to 5' x 5' plots at a rate of 4.4 #/M. The plots are mowed at 1-1/2", fertilized at 1# N/M every 6 weeks and irrigated as needed.

TABLE 1.

MEAN TURFGRASS QUALITY RATINGS OF TALL FESCUE CULTIVARS
AT THIRTY-SEVEN LOCATIONS IN THE UNITED STATES
1989 DATA

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

NAME	AR1	AZ1	CA1	CA2	CA3	GA1	IA1	ID2	IL1	IN1	IN2	KS1	KS2	MD1	MI1	MO1	MO3	NE1	NJ1
* HUBBARD 87	5.1	5.9	6.9	6.1	6.9	7.3	6.9	6.6	7.6	7.6	4.7	7.5	7.4	6.8	6.1	6.8	7.0	6.8	6.1
* PICK 84SPN (GUARDIAN)	6.7	5.8	6.8	6.1	6.9	7.5	6.7	6.6	7.4	7.2	4.4	7.5	7.6	6.6	5.7	7.0	6.8	7.1	6.1
* PE-7E (SHENANDOAH)	6.0	5.9	7.0	6.1	6.9	6.9	7.0	6.8	7.8	7.1	4.7	7.3	7.7	6.7	.	7.1	6.9	6.2	6.0
PE-7	5.2	6.1	6.7	6.1	6.9	7.9	6.2	7.1	7.7	7.2	4.5	7.4	7.8	6.6	5.7	7.2	6.8	6.5	5.8
* PICK TF9 (CROSSFIRE)	6.8	5.4	6.7	6.1	6.9	7.7	5.9	6.8	7.3	6.8	4.3	7.7	8.0	6.3	6.0	6.4	6.5	5.2	6.4
PST-5MW	4.0	5.9	6.2	6.2	6.9	7.2	6.4	6.8	7.5	6.8	4.3	7.3	7.7	6.4	6.1	7.2	6.8	6.3	6.2
* PICK DM (AVANTI)	4.5	5.8	6.6	6.1	6.9	7.6	6.2	6.5	7.0	6.7	4.4	8.0	7.6	6.4	6.1	6.7	6.6	6.6	6.0
* PST-5HF (AMIGO)	6.2	5.8	6.7	6.1	6.8	7.1	5.9	6.7	7.6	6.8	4.3	7.4	7.5	6.4	5.6	7.3	6.2	6.0	5.9
* PICK 127 (COCHISE)	6.3	5.6	6.3	5.8	6.8	7.6	5.8	7.1	7.7	6.8	4.1	7.2	7.8	6.1	6.3	6.9	6.9	6.0	6.2
BEL 86-2	5.5	6.0	7.1	6.0	6.9	7.5	5.7	6.8	7.1	6.9	4.7	7.6	7.3	7.1	5.8	6.8	6.3	6.2	5.2
NORMARC 25	4.7	5.9	6.3	6.1	6.8	7.4	7.2	7.3	7.6	6.8	.	7.2	7.3	6.6	.	7.2	6.7	5.9	5.3
* AZTEC	5.4	5.7	6.8	6.1	6.9	7.3	5.9	7.0	7.2	7.0	4.3	7.7	7.8	6.7	6.1	6.7	6.4	5.4	6.3
* MONARCH	5.8	5.6	6.9	6.1	6.9	7.6	6.5	6.4	6.9	6.8	4.1	7.0	7.9	6.1	5.8	6.9	6.2	6.0	6.7
NORMARC 99	6.6	6.0	6.3	5.9	6.9	7.0	6.7	6.7	6.8	6.4	4.3	7.5	7.3	5.7	5.8	6.8	6.1	5.5	5.9
PST-5AG	5.2	5.6	6.4	6.1	6.9	6.4	5.1	6.7	7.5	6.9	4.4	7.3	7.0	6.6	5.9	6.6	6.4	6.1	5.2
* TRIBUTE	5.6	6.3	6.1	6.1	6.8	7.5	6.8	6.7	7.1	6.8	4.8	7.3	7.4	6.6	6.1	7.3	6.3	5.9	6.0
* PST-5D1 (ELDORADO)	5.3	5.9	6.4	6.0	6.9	7.2	6.2	6.8	7.1	6.7	4.2	7.4	7.5	6.5	6.3	6.9	6.5	6.0	6.1
* NORMARC 77 (PHOENIX)	5.0	5.9	6.6	6.1	6.9	7.6	5.9	7.0	7.6	6.9	4.4	7.1	7.1	6.8	5.8	6.7	6.2	6.0	5.4
* THOROUGHBRED	5.7	6.1	6.5	5.9	6.9	7.1	6.4	6.8	7.3	6.8	4.4	7.0	7.1	6.4	5.8	6.6	6.5	6.3	5.0
PST-5AP	4.9	5.8	6.1	6.1	6.8	6.9	6.7	6.5	7.4	6.6	4.6	7.1	7.6	6.4	5.8	6.4	6.5	6.3	5.3
* REBEL II	5.6	5.8	6.6	6.2	6.9	7.3	6.2	6.5	7.2	6.8	4.4	6.8	7.3	6.9	5.9	6.7	6.3	5.3	5.2
* CHIEFTAIN	4.5	5.7	6.3	5.9	6.9	6.9	5.5	7.1	7.3	6.9	4.5	7.1	7.6	6.9	5.6	7.0	6.3	5.3	5.3
* BONANZA	5.6	5.7	6.4	5.9	6.8	7.0	5.7	6.3	7.3	7.2	4.4	6.8	7.5	6.5	5.9	6.8	6.6	5.7	5.7
* PICK GH6 (MAVERICK II)	5.3	5.6	6.6	6.0	6.9	7.2	6.1	5.9	7.1	6.8	4.2	7.0	7.6	6.1	6.0	6.6	5.7	6.0	5.4
* PST-5OL (OLYMPIC II)	5.9	6.0	6.7	6.1	6.8	7.7	5.8	6.4	6.7	6.6	4.4	7.1	7.2	6.6	5.8	6.4	6.1	5.1	5.3
* WRANGLER	5.5	5.6	6.8	6.1	6.9	6.8	6.4	7.0	7.4	7.1	4.7	7.0	7.3	6.8	6.0	7.0	6.4	5.5	5.3
* APACHE	6.1	5.8	6.4	5.9	6.8	7.0	6.4	6.8	6.9	6.7	4.5	7.1	7.3	6.6	5.5	6.5	6.2	6.5	5.1
PST-5DM	5.3	5.7	6.7	6.1	6.9	6.9	6.6	6.6	6.9	6.8	4.3	6.9	7.0	6.6	5.6	6.9	6.1	6.1	5.3
PST-5EN	5.8	6.2	.	6.0	6.8	6.8	6.2	7.1	6.9	6.6	4.6	6.9	7.2	6.7	5.6	6.8	6.1	5.3	4.9
* JAGUAR II	5.1	5.7	6.2	5.8	6.8	7.5	6.8	6.2	7.0	7.0	4.4	6.8	7.2	6.9	6.0	7.0	6.3	5.3	4.8
* PICK DDF (SHORTSTOP)	5.1	5.4	6.4	6.0	6.9	6.3	5.3	6.6	6.9	6.7	4.4	7.6	7.3	5.9	6.0	6.9	6.3	6.0	5.3
KWS-DUR	5.1	5.9	6.3	6.0	6.9	7.1	6.5	7.1	7.4	6.6	4.3	7.2	7.1	5.9	5.8	6.7	6.6	4.6	5.7
* PST-5BL (SILVERADO)	5.1	5.8	7.0	6.1	6.9	7.1	5.4	6.2	6.9	6.8	4.1	7.3	7.5	6.3	5.6	6.8	5.8	5.1	6.1
* LEGEND	5.6	6.2	6.4	6.1	6.9	6.7	6.3	6.3	6.6	7.1	4.7	7.1	7.6	6.5	5.9	6.3	6.7	6.3	5.3
* JAGUAR	4.6	6.1	6.3	6.1	6.9	7.3	6.6	6.3	7.3	6.8	4.4	6.9	6.8	6.4	5.6	6.6	6.4	5.4	4.9
* TRAILBLAZER	4.2	5.8	6.7	6.0	6.9	5.6	6.4	6.4	7.1	6.9	4.2	7.5	7.4	6.3	5.9	6.7	6.3	5.3	5.2
* MESA	5.4	5.5	6.0	5.9	6.8	7.5	6.9	6.8	7.7	6.5	4.6	7.1	7.4	6.4	5.7	6.9	6.5	5.9	5.3
PST-DBC	6.3	5.9	6.2	5.8	6.9	7.3	6.7	6.3	7.0	6.6	4.5	7.0	7.2	6.3	5.7	6.4	6.2	5.1	4.9
JB-2	5.0	5.6	6.2	6.0	6.9	6.8	6.4	7.0	7.3	6.8	4.3	6.9	6.9	6.5	5.7	6.6	6.4	6.0	4.8
* OLYMPIC	5.7	6.0	6.1	6.0	6.8	6.9	6.3	6.3	6.9	6.7	4.2	7.0	6.9	6.6	5.7	6.7	5.9	6.2	4.8

TABLE 1. (continued)

MEAN TURFGRASS QUALITY RATINGS OF TALL FESCUE CULTIVARS
AT THIRTY-SEVEN LOCATIONS IN THE UNITED STATES
1989 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

NAME	AR1	AZ1	CA1	CA2	CA3	GA1	IA1	ID2	IL1	IN1	IN2	KS1	KS2	MD1	MI1	MO1	MO3	NE1	NJ1
* PST-5F2 (WINCHESTER)	4.5	6.0	6.2	5.8	6.9	7.2	6.1	7.0	7.1	6.6	4.4	6.9	7.5	6.5	5.9	6.6	6.0	5.5	4.9
* BAR FA 7851 (BARNONE)	5.0	5.9	6.7	6.0	6.9	6.9	6.4	7.3	7.0	6.6	4.4	6.9	7.2	6.3	.	6.4	6.3	5.8	4.7
* TAURUS	5.3	5.8	6.2	6.0	6.9	6.7	6.1	6.6	6.6	6.7	4.1	6.6	7.0	6.8	5.8	6.7	6.3	5.8	5.3
* REBEL	5.8	5.3	6.2	6.0	6.9	7.1	6.2	6.9	6.6	6.4	4.6	6.7	6.8	6.3	5.8	6.8	6.0	5.3	4.6
* SUNDANCE	4.8	5.7	6.0	5.9	6.9	7.2	5.9	6.4	7.1	6.6	4.3	7.0	7.3	6.4	5.8	6.3	6.4	6.0	5.2
* TITAN	5.1	5.9	5.8	5.9	6.8	7.3	6.3	7.0	6.8	6.8	4.6	7.0	7.3	6.8	5.6	7.2	5.6	5.3	4.6
* CIMMARON	5.3	5.9	6.6	5.8	6.9	6.7	6.3	6.8	7.1	6.7	4.4	6.9	7.4	6.4	6.0	6.2	6.3	4.8	4.6
* KWS-BG-6 (TWILIGHT)	6.4	6.3	6.1	5.8	6.9	6.3	5.6	7.1	6.3	6.1	4.3	8.0	7.0	5.9	.	6.3	8.0	4.7	4.6
* TRIDENT	4.4	6.1	6.2	5.8	6.9	6.7	6.2	6.9	7.0	6.5	3.8	6.6	7.1	6.8	5.6	6.6	6.3	5.3	4.1
* ARID	6.3	5.7	6.0	6.0	6.8	7.1	6.2	6.5	6.8	6.6	4.4	6.7	6.4	6.5	5.5	6.7	6.2	5.1	4.5
* FINELAWN 5GL	5.2	5.4	6.1	5.9	6.8	6.9	6.6	6.5	6.4	6.8	4.7	6.7	7.1	6.4	5.5	6.8	5.9	5.3	4.1
* PST-5D7 (MURIETTA)	3.8	5.5	7.2	6.1	6.9	6.4	5.6	5.3	6.9	6.7	4.1	7.1	7.4	6.2	5.3	6.7	6.3	5.8	4.7
* ADVENTURE	4.7	5.4	6.4	5.8	6.9	6.6	6.2	6.7	7.1	6.8	4.2	6.9	6.7	6.6	5.5	6.3	6.0	5.5	3.9
* CAREFREE	4.3	5.7	6.3	6.0	6.9	6.2	6.7	6.8	7.2	6.7	4.6	7.2	6.9	6.2	5.7	6.5	5.6	5.9	4.6
BEL 86-1	4.2	5.3	6.3	5.9	6.8	6.5	5.9	6.8	7.2	6.3	4.4	6.6	7.3	6.5	6.0	6.6	5.8	5.3	4.8
* PICK SLD (EMPEROR)	4.7	5.9	6.6	6.0	6.9	6.6	5.6	6.3	6.0	6.4	4.2	7.3	7.6	6.1	5.8	6.1	6.1	4.8	5.1
* FALCON	4.9	5.8	5.6	5.8	6.8	6.9	6.8	6.6	6.8	5.9	4.5	6.6	6.6	6.6	5.7	6.0	5.9	5.1	3.6
* PACER	5.4	5.3	5.4	5.9	6.8	6.6	6.1	6.6	6.5	6.2	4.3	6.4	6.5	6.3	5.3	6.3	6.0	4.8	4.0
* FINELAWN I	5.3	6.0	5.7	5.6	6.6	6.3	6.7	6.8	6.5	6.3	4.1	6.2	6.8	6.5	5.5	6.3	6.0	4.9	3.4
* RICHMOND	4.9	5.9	5.6	5.8	6.7	6.5	6.1	6.3	6.5	6.3	4.5	6.3	6.6	6.2	5.5	6.4	6.0	5.8	3.8
* WILLAMETTE	5.2	5.6	5.8	5.7	6.8	5.9	6.7	6.1	6.6	6.7	4.3	6.2	6.5	6.2	5.6	6.9	5.8	3.4	3.4
FATIMA	5.0	5.8	5.2	5.8	6.7	6.8	6.6	6.2	6.1	5.9	4.2	6.1	6.4	6.4	5.4	6.4	5.5	4.8	3.6
* SYN GA (AQUARA)	5.3	5.6	5.5	5.8	6.8	6.3	6.2	6.0	6.4	6.3	4.5	6.5	6.8	5.6	5.5	6.2	5.8	4.8	3.4
* TIP	5.1	5.8	5.7	5.7	6.8	6.1	6.3	6.3	6.5	6.0	4.3	6.2	5.3	6.3	5.7	6.1	5.3	4.3	3.1
* KY-31	4.9	5.6	4.6	4.9	5.8	5.7	6.1	5.9	5.8	5.8	3.9	5.4	5.2	5.8	5.2	5.7	5.2	4.3	2.3
LSD VALUE	1.2	0.5	0.5	0.2	0.1	0.7	1.3	0.9	0.9	0.4	0.6	0.5	0.6	0.5	0.4	0.7	0.6	1.3	0.7

* COMMERCIALLY AVAILABLE VARIETY

TABLE 1. (continued)

MEAN TURFGRASS QUALITY RATINGS OF TALL FESCUE CULTIVARS
AT THIRTY-SEVEN LOCATIONS IN THE UNITED STATES
1989 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

NAME	NJ2	NJ3	NY1	NY2	OH2	OK1	OR1	OR2	RI1	TX1	TX2	UB1	UB2	VA1	VA2	VA3	VA4	WA4	MEAN
HUBBARD 87	7.1	5.6	5.1	5.9	7.2	5.0	7.1	4.9	6.6	4.8	4.0	7.9	6.9	6.2	5.9	6.7	6.3	7.3	6.4
PICK 84SPN (GUARDIAN)	6.8	5.6	4.9	5.3	7.2	4.6	6.9	4.9	6.0	4.5	4.4	8.0	7.4	6.1	5.6	6.3	6.3	7.0	6.3
PE-7E (SHENANDOAH)	6.9	5.4	4.9	5.0	7.5	5.5	6.6	4.6	6.3	4.0	4.3	7.9	7.3	5.8	5.6	6.3	6.6	6.0	6.3
PE-7	7.1	5.3	4.8	5.2	7.5	5.2	6.4	4.4	6.2	4.8	3.7	7.8	7.3	5.8	5.1	5.8	5.7	6.0	6.2
PICK TF9 (CROSSFIRE)	6.8	5.6	4.4	5.2	7.2	5.8	6.4	4.4	6.8	5.0	3.9	7.7	7.1	6.0	5.4	6.3	5.9	5.3	6.2
PST-5MW	6.9	5.4	4.9	5.5	7.7	5.0	6.6	4.6	6.9	3.8	4.1	7.5	6.9	5.5	5.6	6.4	5.8	7.0	6.2
PICK DM (AVANTI)	6.5	5.3	4.3	5.1	6.7	5.3	6.8	4.9	6.1	4.6	4.1	7.6	7.1	6.2	5.8	6.6	6.2	6.3	6.1
PST-5HF (AMIGO)	6.2	5.2	5.0	5.5	7.0	4.3	6.4	4.6	6.6	4.8	3.8	7.7	7.0	5.9	5.7	6.4	6.1	5.7	6.1
PICK 127 (COCHISE)	6.8	5.3	4.7	5.7	6.8	5.1	6.5	4.7	6.1	4.5	4.0	7.6	7.5	5.9	5.0	6.2	6.2	4.7	6.1
BEL 86-2	5.4	5.2	3.9	4.7	7.3	4.5	6.4	4.8	6.6	4.4	4.2	7.4	7.0	6.3	5.9	6.7	6.6	6.7	6.1
NORMARC 25	6.0	4.9	4.8	5.3	7.0	4.7	5.9	4.5	6.6	4.5	4.0	7.5	6.9	6.3	4.8	6.2	5.7	.	6.1
AZTEC	6.9	5.5	4.6	5.0	7.0	4.8	6.5	4.4	6.2	4.4	4.1	7.9	7.0	5.6	5.3	6.4	5.8	5.7	6.1
MONARCH	6.6	5.9	5.0	4.6	7.2	5.2	6.6	4.7	6.6	4.4	3.8	7.8	7.0	5.8	5.2	6.3	5.6	5.0	6.1
NORMARC 99	6.8	5.9	4.7	5.1	6.3	5.0	6.4	4.7	5.7	4.5	4.1	7.6	7.2	5.7	6.0	6.4	6.2	5.7	6.1
PST-5AG	5.4	5.3	4.9	5.3	6.8	5.6	6.8	4.6	7.2	4.8	4.6	7.3	6.8	5.8	5.3	5.9	6.0	7.0	6.0
TRIBUTE	5.8	4.9	4.6	4.7	7.2	5.5	6.2	4.6	6.3	4.6	3.4	7.3	7.0	5.9	5.7	6.1	6.1	4.0	6.0
PST-5D1 (ELDORADO)	6.9	4.8	4.5	5.4	6.8	4.9	6.3	4.6	5.9	4.1	4.0	8.0	6.9	5.4	5.5	6.4	5.4	5.0	6.0
NORMARC 77 (PHOENIX)	6.0	4.9	4.9	5.3	7.2	4.5	5.9	4.6	6.5	4.5	4.3	7.3	6.9	6.2	5.5	6.3	5.9	5.0	6.0
THOROUGHBRED	5.7	5.3	4.5	4.6	7.3	5.0	5.8	4.8	7.0	4.1	3.9	7.0	6.6	5.9	5.2	5.9	6.0	6.7	6.0
PST-5AP	5.7	4.7	4.5	4.9	7.0	5.4	5.9	4.5	6.5	5.0	4.0	7.4	6.6	5.6	5.8	6.1	6.0	6.7	6.0
REBEL II	5.6	5.4	4.7	5.1	7.2	5.0	6.1	4.5	6.9	4.8	4.3	7.1	6.5	6.2	5.5	6.1	6.0	5.0	6.0
CHIEFTAIN	6.2	4.9	4.6	5.4	7.7	5.3	6.4	4.6	6.9	4.4	3.3	7.4	6.6	5.6	5.5	6.2	6.2	5.7	6.0
BONANZA	5.2	4.6	4.9	4.8	7.7	5.3	6.1	4.4	6.8	4.4	4.1	7.6	6.9	5.9	5.2	6.3	6.0	5.3	6.0
PICK GH6 (MAVERICK II)	6.2	5.4	4.3	4.7	6.5	4.8	6.0	4.2	6.5	4.6	4.4	7.4	6.9	5.7	5.7	5.8	6.4	7.7	6.0
PST-5OL (OLYMPIC II)	5.9	5.2	4.5	5.1	6.8	5.2	6.5	4.4	6.4	4.9	4.5	7.2	6.4	5.6	5.3	6.1	6.1	6.0	6.0
WRANGLER	5.8	5.1	4.8	5.2	7.3	4.8	6.6	4.5	6.1	3.9	4.2	7.4	6.3	5.8	5.4	6.1	6.0	4.5	6.0
APACHE	5.2	4.7	4.4	4.8	7.5	5.0	6.3	4.8	6.0	4.7	3.9	7.1	6.9	5.6	5.8	6.0	5.3	6.3	6.0
PST-5DM	6.1	5.1	4.4	5.0	6.8	5.4	6.3	4.7	6.2	4.3	4.2	7.4	6.4	5.8	5.7	6.2	6.2	4.5	5.9
PST-5EN	5.1	4.4	4.9	5.0	6.8	4.5	6.0	4.9	6.3	4.5	4.0	7.1	6.6	6.2	5.5	6.1	6.3	7.0	5.9
JAGUAR II	5.1	4.7	4.5	5.1	7.0	5.4	6.3	4.7	6.4	4.7	4.1	7.2	6.7	6.0	4.9	5.9	5.8	6.3	5.9
PICK DDF (SHORTSTOP)	6.4	5.4	4.0	4.7	6.7	4.9	6.5	4.7	5.1	3.9	3.9	7.8	7.2	5.5	5.5	6.1	6.1	7.0	5.9
KWS-DUR	6.8	5.1	3.9	4.9	6.7	5.0	6.4	4.5	6.1	3.9	3.9	7.6	6.8	5.7	5.1	5.7	6.0	6.3	5.9
PST-5BL (SILVERADO)	6.7	5.1	4.0	4.5	6.8	5.4	6.8	4.4	6.4	4.2	3.5	7.8	6.5	5.7	5.5	6.2	5.6	5.7	5.9
LEGEND	6.0	4.9	4.7	5.1	7.2	4.8	6.2	4.4	5.3	4.3	4.0	7.2	6.2	5.3	5.4	5.6	5.2	5.7	5.9
JAGUAR	4.7	4.4	4.9	4.8	7.7	4.9	5.7	4.8	7.0	4.7	4.6	6.9	6.3	6.0	5.2	5.8	5.7	6.0	5.9
TRAILBLAZER	6.5	4.5	4.4	5.0	6.8	5.3	6.5	5.0	5.9	5.0	4.2	7.3	7.1	5.1	5.3	5.9	5.1	5.7	5.9
MESA	5.8	4.2	4.5	4.8	7.0	5.0	5.8	4.4	5.9	4.3	3.9	7.0	6.7	5.8	4.9	5.9	6.2	4.3	5.9
PST-DBC	5.5	4.5	4.0	5.0	7.0	4.7	5.9	4.8	5.7	4.4	4.2	7.1	6.6	5.8	5.3	5.9	5.9	5.7	5.8
JB-2	5.0	4.7	4.7	5.0	7.0	5.2	5.7	4.6	6.7	4.6	3.8	6.5	6.0	5.9	5.1	6.1	5.3	6.0	5.8
OLYMPIC	5.3	4.6	4.7	5.0	7.0	4.9	5.9	4.7	6.0	4.3	3.9	7.0	6.5	5.5	5.1	6.1	5.3	6.3	5.8

TABLE 1. (continued)

MEAN TURFGRASS QUALITY RATINGS OF TALL FESCUE CULTIVARS
AT THIRTY-SEVEN LOCATIONS IN THE UNITED STATES
1989 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

NAME	NJ2	NJ3	NY1	NY2	OH2	OK1	OR1	OR2	RI1	TX1	TX2	UB1	UB2	VA1	VA2	VA3	VA4	WA4	MEAN
PST-5F2 (WINCHESTER)	5.8	4.7	3.9	4.8	7.0	5.2	5.5	4.5	6.5	4.5	3.7	7.3	6.7	5.5	5.5	6.3	5.6	5.7	5.8
BAR FA 7851 (BARNONE)	5.0	4.9	4.2	4.7	7.0	5.0	6.1	4.4	5.7	4.7	4.1	7.4	6.8	5.6	5.1	5.2	5.3	5.0	5.8
TAURUS	5.2	4.9	4.4	4.4	6.7	5.5	5.8	4.5	5.1	5.1	3.7	7.4	6.4	5.4	5.5	5.6	5.5	6.3	5.8
REBEL	4.5	4.4	4.6	5.0	7.2	5.3	5.3	4.7	6.6	4.9	3.5	6.8	6.0	5.9	5.5	5.7	5.5	6.7	5.8
SUNDANCE	5.5	5.3	4.1	4.3	7.0	5.3	5.3	4.4	6.0	4.6	3.4	7.0	6.5	5.8	5.2	5.9	5.7	5.7	5.8
TITAN	5.0	4.8	4.4	4.9	7.0	4.9	5.7	4.5	5.8	3.8	3.8	6.6	6.3	5.8	5.3	6.1	6.0	5.0	5.8
CIMMARON	5.2	4.1	4.5	5.1	7.2	5.0	5.4	4.3	6.2	4.6	4.3	7.3	6.7	5.4	5.6	5.9	4.8	4.7	5.8
KWS-BG-6 (TWILIGHT)	6.1	4.0	3.7	4.2	6.7	5.0	5.9	4.2	5.2	5.1	4.0	7.2	6.7	4.8	5.2	5.8	5.2	6.7	5.8
TRIDENT	5.5	3.5	4.5	4.6	6.8	4.8	5.4	4.9	5.3	4.8	4.2	7.0	6.5	5.2	5.4	5.4	5.3	6.3	5.7
ARID	4.3	4.2	4.5	5.1	6.8	5.3	5.5	4.5	6.0	4.4	3.5	6.5	6.1	5.5	5.2	5.6	5.7	5.3	5.7
FINELAWN 5GL	4.5	4.6	4.0	4.8	7.2	4.9	5.8	4.6	5.2	4.4	3.5	7.0	6.5	5.6	5.3	5.6	5.5	5.0	5.6
PST-5D7 (MURIETTA)	5.8	4.0	4.2	4.5	6.7	5.0	6.3	4.2	5.8	3.8	3.3	7.3	6.5	4.5	4.9	5.7	5.3	6.7	5.6
ADVENTURE	4.3	4.6	4.4	4.7	7.2	4.4	5.9	4.9	6.0	4.6	4.1	6.5	5.8	5.3	5.1	5.7	5.2	5.0	5.6
CAREFREE	4.6	4.6	3.9	4.5	6.5	4.9	5.7	4.8	5.1	3.9	3.3	6.8	6.3	5.1	4.8	5.6	5.6	5.7	5.6
BEL 86-1	4.9	4.5	3.8	4.8	7.2	4.8	5.4	4.3	5.1	3.8	3.5	7.2	6.6	5.4	5.1	5.9	5.3	5.3	5.6
PICK SLD (EMPEROR)	5.4	4.6	3.4	4.2	6.3	5.0	5.7	4.4	5.5	4.4	4.2	7.3	6.8	5.2	4.8	5.4	5.8	4.3	5.6
FALCON	3.7	3.8	4.6	4.9	7.2	5.0	5.4	4.6	5.5	4.5	4.5	6.1	5.8	5.4	5.3	5.4	5.6	6.3	5.6
PACER	3.9	4.5	3.8	4.5	6.7	5.4	4.9	4.6	5.0	4.4	4.3	6.5	5.7	5.0	4.9	5.4	5.3	5.3	5.4
FINELAWN I	3.8	3.7	3.8	4.0	7.0	5.2	5.1	4.6	5.9	4.3	3.9	6.3	5.8	5.5	5.1	5.3	5.3	4.7	5.4
RICHMOND	3.6	3.8	3.9	4.6	6.5	5.0	5.0	4.4	5.9	4.4	4.0	6.3	5.7	5.3	4.5	5.1	5.3	5.7	5.4
WILLAMETTE	3.5	3.0	4.2	4.8	7.2	5.1	5.0	4.3	4.7	4.5	3.4	6.2	5.5	5.1	4.7	5.4	5.0	6.3	5.3
FATIMA	3.3	3.6	4.0	4.6	6.8	5.3	5.0	4.3	4.7	3.9	4.0	6.2	5.6	5.6	4.7	5.4	5.1	6.0	5.3
SYN GA (AQUARA)	3.2	3.7	3.8	4.1	7.2	4.8	5.0	4.6	4.5	4.5	3.8	5.7	5.9	5.2	4.9	5.2	5.2	5.0	5.3
TIP	3.3	3.1	3.6	3.9	6.7	4.7	4.9	4.6	5.4	4.6	4.1	5.8	5.6	5.0	4.9	5.4	4.7	6.3	5.2
KY-31	2.4	2.7	3.9	3.9	6.8	4.8	3.8	4.3	4.4	3.7	3.4	4.9	4.9	5.3	4.9	4.8	4.2	5.0	4.8
LSD VALUE	0.8	0.8	0.7	0.8	0.7	0.8	0.6	0.4	1.0	0.9	1.0	0.4	0.5	0.5	0.8	0.7	0.6	2.3	0.1

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).

UCR - TURFGRASS RESEARCH CENTER - PROJECT SUMMARY

Starting Date May 86 Project No. _____
Completion Date _____ Plot No. 15

Title: National Kentucky Bluegrass Trial

Objective: To evaluate Kentucky bluegrass in southern California.

Investigator(s):
Name V.A. Gibeault Dept. Coop Ext Phone X 3575
Name R. Autio Dept. Coop Ext Phone X 4430

Species/Cultivars: 72 Kentucky bluegrass cultivars

Management: Mowing Frequency 1 x/Wk. Height 1-1/2 in.
Fertilizer-Material _____ Rate 1# N/M/6 wk.
Irrigation - /X/ as needed _____ % ET_o / /Other (Specify Below)
Special _____

Experimental Design: / / CRD /X/ RCB / / SPLT / / Other _____
No. of Reps 3 Size of Rep. 60 x 30 Total Plot 60 x 90
Treatments: _____

Data Collection: 1) Variable Turfscores Frequency Monthly
2) Variable _____ Frequency _____
3) Variable _____ Frequency _____

Special Instructions/Comments: _____

1985 NATIONAL KENTUCKY BLUEGRASS TEST

Entries and Sponsors

Entry No.	Name	Sponsor
1	Classic	Peterson Seed Company
2	Monopoly	Peterson Seed Company
3	Barzan	Mount Emily Seeds, Inc.
4	Gnome	Turf Merchants, Inc.
5	Tendos	Turf Merchants, Inc.
6	P-104 (Princeton 104)	Loft's Seed, Inc.
7	Ram-1	Jacklin & Loft's Seed, Inc.
8	Compact	Tib Szego Associates
9	Joy	Green Seed Company
10	Sydsport	E. F. Burlingham & Sons
11	Haga	E. F. Burlingham & Sons
12	Georgetown	Loft's Seed, Inc.
13	Somerset	Loft's Seed, Inc.
14	Mystic	Loft's Seed, Inc.
15	Baron	Loft's Seed, Inc.
16	Able I	Warren's Turf Nursery, Inc.
17	A-34	Warren's Turf Nursery, Inc.
18	Merit	Full Circle, Inc.
19	BAR VB 577	Barenbrug Holland
20	Annika	Production Services
21	Conni	Production Services
22	Kenblue	-
23	Bristol	O. M. Scott & Sons
24	Victa	O. M. Scott & Sons
25	Ba 70-139 (Coventry)	O. M. Scott & Sons
26	Ba 70-242	O. M. Scott & Sons
27	Ba 72-441 (Abbey)	O. M. Scott & Sons
28	Ba 72-492 (Estate)	Roberts Seed Co.
29	Ba 72-500 (Chateau)	Finelawn Research Corp.
30	Ba 73-626 (Kelly)	Northrup King Co.
31	BAR VB 534	Barenbrug Holland
32	Cynthia	Van der Have - Oregon, Inc.
33	NE 80-88	Univ. of Nebraska - T. Riordan
34	America	Pickseed West, Inc.
35	Ba 69-82	O. M. Scott & Sons
36	Ba 73-540	O. M. Scott & Sons
37	Parade	Van der Have - Oregon, Inc.
38	Asset	Van der Have - Oregon, Inc.
39	HV 97 (Cocktail)	Pure-Seed Testing, Van der Have
40	Lofts 1757	Loft's Seed, Inc.
41	Cheri	Jacklin Seed Co.
42	Eclipse	Turf Cultivar Assoc.
43	Liberty	Zajac Performance Seeds
44	Destiny	Jonanthan Green & Son
45	Dawn	LESCO, Inc.
46	Merion	-
47	Nassau	Jacklin & Loft's Seed, Inc.
48	Amazon	Jacklin Seed Co.
49	239 (Suffolk)	Loft's Seed, Inc.
50	Wabash	Loft's Seed, Inc.
51	Julia	LESCO & Jacklin Seed Co.
52	Ikone	Jacklin Seed Co.
53	Glade	Jacklin Seed Co.
54	Huntsville	Jacklin Seed Co.
55	F-1872 (Freedom)	Jacklin Seed Co.
56	Aquila	Northrup King Co.
57	K1-152	Northrup King Co.
58	Harmony	Rothwell Seeds
59	Welcome	Rothwell Seeds
60	Aspen	Northrup King Co.
61	Rugby	Northrup King Co.
62	Trenton	Northrup King Co.
63	K3-178	Northrup King Co.
64	Midnight	Turf-Seed, Inc.
65	Challenger	Turf-Seed, Inc.
66	Blacksburg	Turf-Seed, Inc.
67	PST-CB1	Pure-Seed Testing, Inc.
68	S. D. Certified	-
69	WW Ag 468	E. F. Burlingham & Sons
70	WW Ag 491	E. F. Burlingham & Sons
71	WW Ag 495	E. F. Burlingham & Sons
72	WW Ag 496	E. F. Burlingham & Sons

LOCATIONS SUBMITTING DATA FOR 1989

State	Location	Code
British Columbia	Agassiz	BC1
California	Riverside	CA3
District of Columbia	Washington Monument Grounds	DC1
Idaho	Post Falls	ID2
Illinois	Carbondale	IL1
Illinois	Carbondale	IL2
Indiana	West Lafayette	IN1
Iowa	Ames	IA1
Kansas	Manhattan	KS1
Kansas	Wichita	KS2
Kentucky	Lexington	KY1
Maryland	Beltsville	UB1
Maryland	Silver Spring	MD1
Michigan	East Lansing	MI1
Missouri	Columbia	MO1
Nebraska	Lincoln (low mowing)	NE1
Nebraska	Lincoln (high mowing)	NE2
New Jersey	Adelphia (low nitrogen)	NJ1
New Jersey	Adelphia (high nitrogen)	NJ2
Oregon	Hubbard	OR1
Pennsylvania	University Park	PA1
Pennsylvania	University Park	PA2
Rhode Island	Kingston	RI1
South Dakota	Brookings	SD1
Virginia	Blacksburg	VA1
Virginia	Remington	VA3
Washington	Pullman	WA1
Washington	Ritzville (dense shade)	WA4

UCR NATIONAL KENTUCKY BLUEGRASS TRIAL

Block #15

N

64	30	47	06	01	12	54	63	57	33	38	36
52	72	56	27	59	32	58	60	69	13	35	14
10	17	62	40	68	41	45	05	42	09	08	39
37	18	22	67	24	03	26	46	55	31	66	04
34	20	44	50	29	53	71	15	43	70	02	48
19	28	65	61	23	16	25	07	21	49	11	51
42	08	49	43	19	56	52	47	32	25	53	60
04	48	51	66	61	44	30	50	46	05	24	15
09	69	57	33	10	40	20	37	59	68	58	45
70	55	21	14	62	34	67	72	54	07	23	29
02	39	31	36	17	22	18	06	63	26	03	71
13	35	11	38	64	28	27	65	12	41	01	16
53	03	41	01	49	31	70	09	52	61	10	44
23	60	58	45	02	33	35	21	18	47	20	37
05	46	54	63	43	08	04	48	56	19	27	34
07	68	26	15	42	57	39	38	72	64	30	65
59	32	29	16	11	36	14	66	50	22	28	40
71	24	25	12	51	13	69	55	06	62	17	67

Entry	Name	Entry	Name
1	Classic	37	Parade
2	Monopoly	38	Asset
3	Barzan	39	HV 97
4	Gnome	40	Lofts 1757
5	Tendos	41	Cheri
6	P-104	42	Eclipse
7	Ram-1	43	Liberty
8	Compact	44	Destiny
9	Joy	45	Dawn
10	Sydsport	46	Merion
11	Haga	47	Nassau
12	Georgetown	48	Amazon
13	Somerset	49	239
14	Mystic	50	Wabash
15	Baron	51	Julia
16	Able I	52	Ikone
17	A-34	53	Glade
18	Merit	54	Huntsville
19	BAR VB 577	55	F-1872
20	Annika	56	Aquila
21	Conni	57	K1-152
22	Kenblue	58	Harmony
23	Bristol	59	Welcome
24	Victa	60	Aspen
25	Ba 70-139	61	Rugby
26	Ba 70-242	62	Trenton
27	Ba 72-441	63	K3-178
28	Ba 72-492	64	Midnight
29	Ba 72-500	65	Challenger
30	Ba 73-626	66	Blacksburg
31	BAR VB 534	67	PST-CB1
32	Cynthia	68	South Dakota Cert.
33	NE 80-88	69	WW Ag 468
34	America	70	WW Ag 491
35	Ba 69-82	71	WW Ag 495
36	Ba 73-540	72	WW Ag 496

Objectives:
To evaluate Kentucky bluegrasses for use in southern California.

Methods and Materials:
In May, 1986, 72 cultivars of Kentucky bluegrass were seeded to 5' x 5' plots at a rate of 2.2 #/M. The plots are mowed at 1-1/2", fertilized at 1# N/M every 6 weeks and irrigated as needed.

TABLE 1. MEAN TURFGRASS QUALITY RATINGS OF KENTUCKY BLUEGRASS CULTIVARS AT TWENTY-EIGHT LOCATIONS IN THE UNITED STATES AND CANADA 1989 DATA

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

NAME	BC1	CA3	DC1	IA1	ID2	IL1	IL2	IN1	KS1	KS2	KY1	MD1	MI1	MO1
* BLACKSBURG	6.8	5.7	1.6	3.5	7.8	6.5	6.8	7.3	7.1	8.1	7.5	7.1	5.5	7.3
* P-104 (PRINCETON 104)	6.7	5.4	2.3	3.6	7.7	6.2	5.5	6.9	6.8	8.4	6.5	7.4	6.8	7.3
* MIDNIGHT	6.2	6.1	4.3	3.4	7.2	6.0	5.4	7.3	7.6	8.7	7.0	7.4	6.0	7.0
* ECLIPSE	6.4	5.7	3.4	4.1	7.2	6.2	5.3	6.9	6.8	7.6	6.9	7.0	6.2	6.3
* AMERICA	5.3	5.7	4.9	3.9	7.7	5.5	6.2	6.9	7.1	7.9	7.4	7.0	5.3	5.9
* ASSET	6.3	5.8	6.0	3.5	6.8	5.5	4.8	7.1	6.8	6.3	7.5	6.5	6.2	6.7
* ASPEN	5.7	5.9	3.8	4.2	7.2	6.0	5.3	6.8	6.9	7.4	7.4	6.3	5.8	6.7
* LOFTS 1757	6.2	5.8	4.0	4.7	7.0	5.4	5.3	6.7	7.0	8.3	6.5	7.1	6.0	6.3
* A-34	6.4	5.6	5.6	4.0	7.3	6.5	5.8	6.7	6.2	6.7	6.5	7.2	4.8	7.0
* ABLE I	5.6	5.8	3.1	4.5	7.3	6.0	5.0	6.9	6.9	6.0	6.9	6.9	5.3	6.4
* F-1872 (FREEDOM)	.	5.6	.	4.9	6.8	6.2	5.5	6.2	.	7.3	6.4	7.0	5.8	7.3
* GLADE	6.5	5.8	6.1	3.7	7.2	4.7	5.0	6.8	6.7	6.9	7.0	6.4	5.6	6.9
* SOMERSET	5.8	5.8	3.3	4.6	6.7	5.9	5.3	7.0	6.4	6.9	7.1	6.4	5.3	7.0
* BRISTOL	5.9	6.0	3.6	3.7	6.0	5.3	5.4	6.6	7.2	7.4	6.4	6.8	5.8	6.7
* BA 72-500 (CHATEAU)	6.6	5.8	3.9	3.3	7.0	5.3	5.8	6.2	7.0	5.3	6.3	6.6	5.0	7.1
* MYSTIC	4.8	5.3	4.6	3.8	6.2	6.8	5.8	6.7	6.3	5.8	6.9	7.6	5.4	6.5
UW AG 496	6.1	5.5	5.0	4.0	6.5	6.1	6.3	5.6	.	6.9	6.3	7.0	5.0	7.0
* TRENTON	6.1	5.6	4.7	4.0	7.3	6.2	5.2	6.6	6.3	7.3	6.8	6.8	5.5	6.3
* WABASH	5.4	4.8	6.7	4.7	6.2	6.6	7.0	6.9	6.1	6.0	6.8	6.7	5.6	7.6
* CHALLENGER	5.9	5.9	3.3	3.5	7.0	6.1	4.8	6.9	7.0	7.6	6.6	6.1	6.1	6.1
* MONOPOLY	5.8	5.4	6.0	4.7	6.3	6.0	6.1	6.9	6.0	5.1	6.6	6.8	5.4	6.5
* RUGBY	6.0	5.7	3.5	4.4	6.5	5.4	6.0	6.8	6.3	7.3	6.6	6.3	5.1	7.0
* CHERI	7.0	5.8	3.5	3.1	6.5	5.6	5.3	5.2	7.0	5.6	6.9	6.5	5.6	6.8
* SYDSPORT	6.8	5.8	4.8	3.1	6.5	5.0	5.7	4.9	7.0	6.1	6.4	6.4	5.2	6.5
* CLASSIC	5.8	5.9	3.7	4.1	6.8	5.7	5.3	6.6	6.5	6.9	6.8	6.9	5.5	6.9
PST-CB1	.	5.8	3.9	4.2	6.5	6.1	5.5	6.6	6.6	6.8	7.0	6.8	5.8	6.7
* HAGA	5.9	5.8	5.1	3.5	6.8	6.2	4.6	6.9	6.5	7.0	6.4	6.8	5.3	6.7
BA 73-540	6.9	5.8	4.7	3.3	7.0	5.8	5.4	3.7	6.8	4.6	6.5	7.1	5.6	7.1
* MERIT	6.3	5.7	4.8	3.7	7.2	5.5	5.0	6.5	6.7	7.9	6.1	6.6	5.1	6.2
* BA 70-139 (COVENTRY)	6.9	5.8	4.0	2.9	6.5	5.3	6.5	4.2	7.0	4.2	6.6	6.9	5.2	6.9
* BA 72-492 (ESTATE)	7.0	5.8	4.7	3.0	6.3	5.4	5.4	5.5	6.4	5.3	6.3	6.5	4.6	7.2
* VICTA	6.6	5.6	4.6	3.9	6.0	4.8	5.5	6.5	6.8	7.3	6.7	6.6	5.4	6.3
BAR VB 534	6.0	5.2	3.8	3.6	6.8	5.4	5.1	6.8	.	5.7	6.4	7.0	4.4	6.7
* CYNTHIA	6.1	5.4	3.6	3.6	7.3	5.5	4.9	7.0	6.3	5.6	6.2	6.6	4.6	6.4
K1-152	5.9	5.8	4.5	3.6	6.8	5.6	5.4	5.7	6.5	7.0	6.8	6.6	5.5	6.7
* 239 (SUFFOLK)	5.7	5.9	4.3	4.1	6.7	5.8	5.6	6.2	6.5	7.2	6.4	6.8	5.4	6.7
BA 69-82	6.4	5.8	5.2	3.4	6.5	5.9	5.2	5.2	6.6	4.9	6.7	6.3	5.6	6.9
* BA 73-626 (KELLY)	6.2	5.5	4.7	3.7	5.0	5.0	5.7	6.6	6.6	7.1	6.5	6.6	5.3	6.3
* BARON	5.9	5.7	3.6	4.2	6.5	5.1	5.9	6.4	7.0	6.8	5.9	6.8	4.8	6.1
* GEORGETOWN	5.9	5.8	4.0	4.1	6.5	5.5	5.3	6.7	6.6	7.3	6.8	6.7	5.4	6.7
* RAM-1	6.3	5.8	2.7	3.5	8.3	4.9	4.3	5.4	6.9	5.4	6.2	6.3	5.6	6.9
* PARADE	5.8	5.6	4.8	3.8	7.2	5.9	5.4	6.2	6.5	7.6	6.7	6.6	5.8	6.6
NE 80-88	.	5.8	.	3.9	6.3	6.4	5.5	6.6	.	5.7	6.4	6.1	5.4	7.1
* DAWN	.	5.9	4.8	4.1	7.3	5.4	4.5	5.2	6.5	6.1	6.4	6.7	5.6	6.8
* JULIA	6.1	5.6	5.6	4.0	6.3	5.8	5.9	5.9	.	5.4	6.5	6.1	4.6	6.8

TABLE 1. (continued) MEAN TURFGRASS QUALITY RATINGS OF KENTUCKY BLUEGRASS CULTIVARS AT TWENTY-EIGHT LOCATIONS IN THE UNITED STATES AND CANADA 1989 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

NAME	BC1	CA3	DC1	IA1	ID2	IL1	IL2	IN1	KS1	KS2	KY1	MD1	MI1	MO1
* LIBERTY	.	5.4	4.4	3.9	6.5	5.4	5.4	6.4	6.6	6.9	6.3	6.4	5.3	6.3
* BA 72-441 (ABBEY)	6.3	5.8	3.6	3.7	5.7	5.1	5.6	6.3	6.4	6.9	6.7	6.5	5.6	6.4
HV 97 (COCKTAIL)	6.2	5.8	2.7	2.9	8.5	5.3	6.0	5.3	6.1	5.9	6.2	6.8	5.1	6.5
* TENDOS	6.9	5.9	2.5	4.1	7.2	4.8	4.3	6.9	6.6	7.1	6.1	6.4	5.3	6.9
* AQUILA	5.8	5.5	3.4	4.6	6.5	5.0	5.0	6.7	.	4.7	6.5	7.1	5.1	6.9
BA 70-242	6.2	5.7	3.3	3.9	5.3	5.7	5.8	6.7	6.5	6.7	6.3	6.9	5.4	5.7
CONNI	.	5.6	1.7	3.3	7.5	4.8	5.1	5.6	.	5.1	6.3	6.5	5.0	5.5
K3-178	5.6	5.8	2.9	4.1	5.5	5.6	5.3	6.8	6.5	7.1	6.8	6.4	5.8	6.5
* IKONE	5.6	5.6	5.1	3.9	6.7	5.6	5.6	5.7	6.8	5.4	6.0	6.7	4.7	6.6
* MERION	6.0	5.7	3.1	3.6	6.2	5.8	4.7	6.7	6.6	7.3	6.8	5.6	5.2	6.3
WW AG 468	5.5	5.6	1.7	3.8	6.7	5.4	5.3	6.5	.	6.4	6.4	6.2	5.4	5.5
WW AG 491	5.8	5.5	5.0	3.8	7.2	5.6	5.0	5.9	.	5.1	6.9	6.3	5.0	6.2
* HARMONY	6.4	5.5	2.5	4.7	7.5	6.0	6.0	6.6	6.8	5.4	6.1	7.1	5.0	6.5
WW AG 495	5.3	5.7	5.1	3.9	7.3	5.8	5.4	4.9	.	5.1	6.4	6.7	4.6	6.1
BAR VB 577	5.5	5.9	2.5	3.6	6.3	4.8	4.6	6.7	6.7	5.7	6.0	5.6	5.0	6.6
* WELCOME	7.2	5.7	1.9	3.8	6.8	5.1	4.6	6.4	6.5	5.7	6.6	6.7	4.9	5.7
* GNOME	5.5	4.9	3.5	3.6	6.5	5.0	5.8	6.7	6.9	7.0	5.9	6.4	5.4	5.7
* NASSAU	5.7	5.6	2.5	3.9	6.5	5.3	5.0	6.3	7.0	7.1	6.1	6.1	5.2	6.1
* HUNTSVILLE	.	5.6	3.5	4.9	6.8	6.0	5.7	6.4	.	6.2	6.1	6.4	5.6	6.8
* AMAZON	6.2	5.3	1.7	3.5	7.8	5.3	5.1	4.8	.	6.8	6.0	7.1	4.7	6.4
* DESTINY	.	5.6	2.3	3.7	7.2	5.5	4.6	5.8	.	6.8	6.5	5.9	5.7	5.9
COMPACT	.	5.3	2.4	3.1	6.8	5.5	5.5	5.4	5.4	5.9	5.9	6.7	4.8	6.2
* BARZAN	6.0	5.6	3.3	3.4	7.3	4.7	5.5	6.8	6.6	6.2	6.0	6.7	4.7	5.9
ANNIKA	.	5.4	2.2	3.5	6.7	5.8	4.6	6.1	.	6.1	6.0	5.9	4.1	6.8
* JOY	5.3	5.0	5.5	5.3	7.0	5.5	5.5	6.3	5.6	5.0	5.4	6.2	5.2	6.7
* KENBLUE	4.9	4.7	3.7	5.2	6.5	6.2	5.4	5.7	5.4	5.3	5.6	6.3	5.0	5.9
* S.D. CERTIFIED	5.1	4.6	3.0	5.3	6.5	6.2	5.8	6.1	5.6	4.9	5.6	6.3	5.3	6.4
LSD VALUE	0.6	0.4	1.6	1.0	1.4	1.0	1.0	1.2	0.5	1.0	0.5	1.0	0.6	0.8

* COMMERCIALLY AVAILABLE VARIETY

TABLE 1. (continued)

MEAN TURFGRASS QUALITY RATINGS OF KENTUCKY BLUEGRASS CULTIVARS
AT TWENTY-EIGHT LOCATIONS IN THE UNITED STATES AND CANADA
1989 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

NAME	NE1	NE2	NJ1	NJ2	OR1	PA1	PA2	RI1	SD1	UB1	VA1	VA3	WA1	WA4	MEAN
BLACKSBURG	5.4	4.8	7.7	7.5	7.2	6.1	7.8	8.2	7.4	7.9	5.8	4.8	7.8	5.2	6.5
P-104 (PRINCETON 104)	5.3	5.7	7.3	7.7	7.4	5.4	.	8.0	6.9	7.6	6.6	4.5	8.5	5.2	6.4
MIDNIGHT	6.0	5.6	7.5	6.8	7.3	4.6	5.8	7.4	7.4	7.8	6.0	5.7	7.2	2.8	6.3
ECLIPSE	6.1	5.3	6.8	6.6	6.9	4.9	6.5	7.7	7.3	7.7	6.1	5.0	7.3	5.0	6.3
AMERICA	5.2	4.9	6.7	6.1	6.3	5.9	5.6	7.3	7.6	7.7	5.9	5.2	7.2	6.8	6.2
ASSET	5.7	5.9	6.9	6.1	6.5	4.9	6.3	7.7	7.1	7.2	6.0	4.4	7.2	5.3	6.2
ASPEN	5.4	5.9	6.7	5.9	6.0	5.8	6.8	6.9	7.2	7.7	5.8	5.6	7.0	4.0	6.2
LOFTS 1757	5.2	4.5	7.1	7.0	6.3	5.0	5.6	7.4	7.0	7.7	6.3	4.9	7.0	4.8	6.1
A-34	5.5	6.3	5.8	5.6	6.3	5.1	6.3	7.6	6.2	7.0	5.8	5.1	6.7	5.5	6.1
ABLE I	5.1	5.9	7.0	6.4	6.6	5.1	7.3	7.7	7.3	7.7	5.1	4.3	7.5	5.5	6.1
F-1872 (FREEDOM)	6.9	5.5	6.0	5.1	5.4	5.0	.	5.9	7.1	6.8	5.8	5.4	6.8	5.5	6.1
GLADE	5.8	5.9	6.5	6.1	5.2	5.1	6.5	7.1	7.0	7.5	5.5	4.7	7.0	5.3	6.1
SOMERSET	5.7	5.5	6.4	5.3	5.5	6.1	6.7	7.3	7.1	6.8	5.5	3.8	6.8	6.8	6.0
BRISTOL	6.3	5.2	7.1	6.0	6.1	5.1	5.8	7.1	6.9	7.3	5.6	4.7	7.3	5.3	6.0
BA 72-500 (CHATEAU)	5.1	6.1	6.6	5.9	6.5	4.8	6.2	6.8	6.9	7.1	5.7	5.4	7.2	6.5	6.0
MYSTIC	6.7	6.1	4.4	5.5	4.5	5.6	7.2	7.6	7.5	7.3	5.1	4.8	6.8	6.5	6.0
WW AG 496	7.2	5.4	6.0	5.7	5.9	5.1	6.1	7.2	6.9	7.0	5.7	4.5	6.8	3.3	5.9
TRENTON	5.5	5.3	6.7	5.3	5.5	4.7	5.3	6.6	6.9	7.0	5.7	5.3	6.8	5.0	5.9
WABASH	5.6	5.9	4.2	5.0	4.8	6.0	4.3	7.2	7.5	6.7	5.9	4.7	5.5	5.7	5.9
CHALLENGER	5.5	5.5	6.8	5.6	6.4	4.2	5.5	6.4	7.1	7.0	5.2	4.7	7.3	5.8	5.9
MONOPOLY	5.7	5.4	5.8	5.2	5.3	4.7	6.2	7.1	6.6	5.9	5.9	5.8	6.5	5.3	5.9
RUGBY	6.8	5.1	6.5	5.1	5.4	4.9	4.9	6.3	7.0	6.9	6.0	5.4	6.8	5.0	5.9
CHERI	5.7	5.8	5.7	5.7	6.1	4.3	5.6	6.9	6.8	7.0	5.5	5.0	7.3	7.0	5.9
SYDSPORT	5.0	6.0	6.0	5.7	6.4	4.8	5.7	6.2	6.9	7.1	5.6	5.8	7.2	6.0	5.9
CLASSIC	5.6	5.2	6.3	5.1	6.1	4.6	5.5	6.4	7.2	6.6	5.9	5.2	6.3	5.2	5.9
PST-CB1	4.9	4.9	6.1	5.2	5.9	4.8	.	6.9	6.5	6.7	5.6	4.9	6.8	5.0	5.9
HAGA	6.0	5.1	6.0	5.5	5.8	4.3	5.0	6.1	7.1	6.7	6.0	5.5	6.3	5.2	5.9
BA 73-540	5.6	6.3	5.8	5.4	6.7	4.4	6.1	6.8	6.8	7.4	5.5	4.8	7.3	4.5	5.8
MERIT	6.7	5.1	6.5	5.3	5.4	5.6	5.8	6.7	6.9	6.6	5.3	4.4	7.2	2.8	5.8
BA 70-139 (COVENTRY)	5.3	6.5	5.9	5.1	6.4	5.2	5.3	6.7	6.9	7.1	5.8	5.8	6.7	6.0	5.8
BA 72-492 (ESTATE)	5.2	6.5	6.3	5.2	6.6	4.6	5.6	7.2	6.9	7.3	5.3	5.4	7.3	4.3	5.8
VICTA	4.7	5.7	5.9	5.3	5.2	5.2	5.8	7.0	6.9	7.0	5.7	4.9	7.3	3.8	5.8
BAR VB 534	7.0	5.2	5.5	5.5	5.2	5.3	6.3	7.8	7.5	7.4	5.6	4.7	5.3	5.8	5.8
CYNTHIA	5.2	4.7	5.8	5.8	5.7	5.8	5.7	7.4	7.2	7.5	5.5	4.3	6.0	7.2	5.8
K1-152	5.7	5.1	6.0	5.3	5.0	5.1	5.9	6.3	6.7	7.1	5.9	5.1	7.3	3.7	5.8
239 (SUFFOLK)	5.8	4.8	6.1	5.3	5.6	4.7	4.8	6.5	6.8	6.9	5.8	5.6	6.7	3.8	5.8
BA 69-82	5.3	5.3	5.5	5.3	6.0	4.0	5.9	7.0	7.1	7.3	5.8	5.2	6.7	5.3	5.8
BA 73-626 (KELLY)	6.5	5.2	6.8	4.9	5.6	4.2	5.4	6.8	6.6	6.6	5.5	5.0	7.2	5.3	5.8
BARON	6.6	5.2	6.0	5.2	5.4	5.3	6.0	6.5	7.1	6.8	5.2	5.0	6.7	4.8	5.8
GEORGETOWN	5.5	5.0	6.1	5.5	5.5	4.1	5.4	5.9	7.1	6.6	5.3	4.8	7.0	5.2	5.8
RAM-1	7.0	5.2	6.0	6.3	5.7	4.9	5.3	6.3	7.3	6.8	5.7	3.4	7.0	6.3	5.8
PARADE	6.7	4.7	5.6	5.3	4.6	4.2	4.3	5.9	7.2	6.9	5.2	5.1	6.0	5.5	5.8
NE 80-88	5.9	5.7	5.2	5.3	5.4	4.3	.	6.5	7.2	6.1	5.1	3.6	6.5	.	5.7
DAWN	5.6	4.6	6.6	5.1	6.5	4.2	5.3	6.2	7.3	7.3	5.5	5.3	7.0	3.3	5.7
JULIA	4.2	5.5	6.8	6.3	6.7	3.2	5.3	6.3	7.2	7.3	5.4	5.1	6.5	4.3	5.7

TABLE 1. (continued) MEAN TURFGRASS QUALITY RATINGS OF KENTUCKY BLUEGRASS CULTIVARS AT TWENTY-EIGHT LOCATIONS IN THE UNITED STATES AND CANADA 1989 DATA

TURFGRASS QUALITY RATINGS 1-9; 9=IDEAL TURF

NAME	NE1	NE2	NJ1	NJ2	OR1	PA1	PA2	RI1	SD1	UB1	VA1	VA3	WA1	WA4	MEAN
LIBERTY	4.5	5.1	6.0	5.2	6.2	4.1	.	6.9	6.6	6.7	5.7	5.0	7.0	4.3	5.7
BA 72-441 (ABBEY)	6.0	4.9	6.2	5.4	5.5	4.7	5.9	6.4	6.9	6.8	6.0	4.6	7.0	2.7	5.7
HV 97 (COCKTAIL)	6.4	5.8	5.4	4.7	6.1	3.3	4.6	5.6	7.2	7.4	4.9	4.7	6.8	7.3	5.7
TENDOS	5.8	5.8	6.1	5.5	6.5	4.2	.	4.7	7.0	5.7	5.5	4.2	6.7	5.0	5.7
AQUILA	5.8	5.7	5.2	5.4	5.2	5.2	4.8	6.8	7.0	7.4	5.2	5.4	6.3	5.7	5.7
BA 70-242	4.8	4.6	6.5	4.5	5.4	4.6	5.8	6.9	6.7	6.9	5.7	4.4	7.3	5.2	5.7
CONNI	4.7	5.1	6.3	5.0	6.6	5.6	.	7.9	7.0	7.1	5.0	4.6	7.2	7.3	5.6
K3-178	4.8	5.3	5.9	5.0	5.4	4.1	5.0	6.0	7.1	6.5	5.9	5.2	7.2	4.0	5.6
IKONE	4.5	5.6	6.5	6.4	5.9	3.8	4.9	5.9	6.9	7.0	5.3	4.8	6.3	4.0	5.6
MERION	5.9	5.0	6.0	5.4	5.7	4.4	6.5	7.4	6.9	6.1	5.6	3.5	6.5	3.3	5.6
WW AG 468	6.7	5.2	6.0	4.3	5.0	4.8	6.8	7.3	7.0	7.2	5.2	2.9	7.3	6.0	5.6
WW AG 491	5.0	5.9	5.2	4.4	5.2	5.7	5.7	6.7	6.8	6.9	5.4	5.0	6.5	4.5	5.6
HARMONY	6.8	5.2	4.0	3.1	4.4	5.1	5.7	6.9	6.5	5.7	5.4	4.1	6.5	4.8	5.6
WW AG 495	5.9	5.7	7.0	5.3	5.2	4.2	5.4	6.1	7.2	7.0	5.2	4.0	6.3	3.8	5.6
BAR VB 577	5.9	5.5	6.6	4.9	5.9	5.7	5.0	5.7	7.0	6.8	5.0	3.9	6.8	5.5	5.6
WELCOME	4.8	5.6	4.8	4.9	5.3	5.7	6.8	6.2	7.6	6.1	5.5	4.2	6.5	3.5	5.5
GNOME	4.7	4.9	5.8	5.2	5.2	4.3	.	6.8	6.9	6.5	5.5	3.7	7.5	3.3	5.5
NASSAU	5.3	4.6	6.2	5.5	6.1	3.6	5.1	5.6	6.7	6.8	4.9	4.1	6.8	4.5	5.5
HUNTSVILLE	4.7	5.3	4.4	4.6	5.1	4.9	.	6.7	7.1	6.4	5.3	3.5	6.5	2.3	5.5
AMAZON	4.8	5.1	5.5	5.3	5.6	4.9	3.4	4.9	7.5	7.7	5.5	4.4	6.2	5.7	5.5
DESTINY	4.8	5.3	6.0	4.6	5.5	3.8	.	5.8	6.8	6.7	5.1	4.1	7.0	4.8	5.4
COMPACT	6.3	5.4	4.3	4.1	5.0	5.4	.	6.0	6.8	6.0	5.3	3.9	7.0	6.5	5.4
BARZAN	4.1	5.3	4.9	4.8	5.2	4.8	.	5.7	6.8	4.9	4.9	3.8	6.8	5.5	5.4
ANNIKA	6.0	5.9	5.2	4.9	5.1	4.4	.	5.2	7.1	6.0	4.9	3.2	6.3	5.2	5.3
JOY	4.5	5.1	3.2	3.3	4.2	4.7	4.5	5.0	6.8	4.6	5.0	4.4	5.3	5.3	5.2
KENBLUE	5.9	5.3	3.1	2.8	5.1	5.0	3.9	5.7	7.1	4.5	5.0	4.6	5.2	5.3	5.2
S.D. CERTIFIED	5.3	5.7	3.8	3.2	4.8	4.8	3.9	4.9	7.2	4.8	4.7	4.1	5.7	4.5	5.1
LSD VALUE	1.1	1.0	0.8	1.1	0.7	1.2	1.1	1.0	0.4	0.6	0.8	0.9	0.8	2.9	0.2

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).