

An Evaluation of Turfgrass Species and Varieties: Kentucky Bluegrass

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DEDICATION

This publication is dedicated to Dr. Noel Jackson, professor emeritus, turfgrass pathologist, and agronomist of the University of Rhode Island. The “shy and retiring” Dr. Jackson served as mentor and major professor for the senior author and is remembered vividly both for his introduction to the “pretty little fungi” and for the integrity and intensity of his scientific endeavors. He has offered a wealth of stewardship to all of us involved in various aspects of turfgrass management. His undying enthusiasm for all things agronomic and his appreciation for the richly interwoven intricacies of living systems inspire us with both awe and humility. We wish him every health and happiness in his retirement; we will all miss him intensely.

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INTRODUCTION

The Bluegrasses

The bluegrasses rank highest among those grasses used as amenity turfgrasses. They comprise the most important, most popular, and the most richly colored of all turfgrasses and have found excellent adaptation in the United States, Europe, and the cooler regions of Asia. The bluegrasses, and in particular the Kentucky bluegrasses, have been subjected to the most rigorous breeding and screening efforts, with the resulting release of the greatest numbers of improved cultivars of any turfgrass species.

The bluegrasses are adapted to seasonally cool upland climates and are tolerant of wide diurnal and seasonal fluctuations in both temperature and available moisture. Unique amongst turfgrasses, the bluegrasses remain tolerant of open desiccating winter conditions followed by sweltering summer heat and humidities. They will also survive extended periods of snow and ice accumulation, but are susceptible to wet wilt when submerged during the growing season.

There are numerous disease and insect challenges associated with bluegrass production and use. Recent breeding efforts have identified and selected cultivars of superior tolerance and even resistance to many of these. With proper management practices, the bluegrasses produce a sufficiently dense sod, which minimizes weed encroachment.

There are more than 200 species of bluegrasses distributed globally throughout the cool humid and transition zones. The bluegrasses are classified in the family Poaceae, subfamily Festucoideae, tribe Festuceae, and the genus *Poa*. Several hundred of these species are native to the contiguous United States while many others are natives of Eurasia. Only four species find intentional or unintentional use as turfgrasses. These include Kentucky bluegrass or smooth stalked meadowgrass (*Poa pratensis* L.), which is the most widely used perennial turfgrass in the temperate or subarctic climatic zones; rough bluegrass or rough-stalked meadowgrass (*Poa trivialis* L.), which exhibits greater tolerance for shade and moist conditions and is often used for overseeding in the transition zone; Canada bluegrass (*Poa compressa* L.), a very hardy species that finds use in forage, roadside, and bank-stabilization efforts; and annual bluegrass (*Poa annua* L. and its variants), which occurs normally as weedy volunteers in intensively managed turf swards.

The growth habits of the bluegrasses include those with a vigorous rhizomatous habit characterized by the formation of dense and easily transported

sod (Kentucky bluegrass) to those with a prostrate stoloniferous habit characterized by the formation of a weak sod (rough bluegrass) to those with an erect bunch type habit that does not form sod at all (Canada and annual bluegrass). The majority of the *Poa* species used for turf are long-lived perennials that respond well to fertilization and irrigation. The turf-type *Poa* are best adapted to moist, fertile soils of moderate to fine texture accompanied by pH values ranging from 5.5 to 7.0. The bluegrasses are readily distinguished by their boat-shaped leaf tips and the lines located parallel to the leaf mid-vein.

The 2000 National Turfgrass Evaluation Programs (NTEP) Kentucky Bluegrass Trial (High Maintenance) included 173 cultivars that were evaluated for their tolerance to and performance under normal mid-Maine conditions.

Description

Kentucky bluegrass (*Poa pratensis* L.) is a widely occurring native of Eurasia that has been introduced for use as a turfgrass throughout the cool humid regions of the world. It has subsequently become both the most important and widely used cool-season turfgrass species because of the high-quality turf it develops under appropriate management conditions. This strongly rhizomatous species is highly variable with regard to color, texture, shoot density, growth habit, adaptation, close mowing tolerance, cultural requirements, and disease resistance.

Kentucky bluegrass is characterized by a folded leaf vernation (leaves folded within the shoot) and the presence of a short membranous ligule ranging from 0.2 to 0.6 mm in length. The leaf collar is broad, divided develops without auricles. The leaf blade is V-shaped or somewhat flat with parallel sides and has two parallel light lines on either side of the prominent mid-vein. The leaf is smooth and hairless on both upper and lower surfaces and terminates in a very distinctive boat-shaped tip. The inflorescence is an open pyramidal ascending panicle that yields apomitic (identical to the maternal parent) seed in great quantities; thus remaining true to type for many generations.

Adaptation and Use

Kentucky bluegrass is a long-lived perennial grass that is widely adapted to the cool humid and transitional climatic regions of the world. It is used throughout the subarctic and temperate climates where it exhibits excellent cold tolerance. It finds adaptation to high altitudes in temperate, tropical, and subtropical regions. Kentucky bluegrass can also be effectively used in cool semiarid and arid regions if supplemental moisture is provided frequently.

Kentucky bluegrass is known for both its stress tolerance and its rapid recovery from environmental stresses, such as high temperature and drought, but these are usually accompanied by substantial reductions in shoot and inflorescence growth and density. If occurring for prolonged periods, these stresses may induce a condition known as “summer dormancy” characterized by desiccation, browning, and thinning of aboveground foliage. However, this species is capable of surviving extended periods of drought and high-temperature stress when summer dormant and will initiate new leaf and shoot growth from rhizome and crown buds when moisture conditions again become favorable. Kentucky bluegrass also exhibits excellent low-temperature hardiness, excellent tolerance to frozen and/or frozen while submerged soils, good autumn color retention, and a rapid spring green-up rate. Kentucky bluegrass performs best in full sunlight and will only survive slight shade. This grass demonstrates moderate to good tolerance to traffic and will recover rapidly and fully from the most damaging wear when given sufficient fertility and abundant moisture.

Although widely distributed throughout the world’s cool humid regions, the soil requirements of Kentucky bluegrass are rather stringent. It requires moist, well-drained fertile soils of a medium loam texture with a preferred pH of 5.5 to 7. It does not tolerate extremes in acidity or alkalinity and reveals that intolerance through dramatically enhanced disease susceptibility. Kentucky bluegrass forms a poor sod on acidic infertile soils and does not tolerate wet, moderately waterlogged, or heavy soils for prolonged periods.

Kentucky bluegrass has found wide use as a general-purpose turf in home lawns, parks, institutional grounds, high-maintenance cemeteries, athletic fields, and on golf course fairways, tees, and roughs. Due to its excellent recuperative potential and vigorous rhizome development, Kentucky bluegrass is well adapted for use on seasonal athletic fields and has found extensive use on equine polo fields and racetracks. Its strong rhizome and root system make Kentucky bluegrass the grass of choice for sod producers in cool temperate climates.

Kentucky bluegrass is frequently used in seed mixtures with perennial ryegrass and/or fine fescue. The more rapid germination of the perennial ryegrass or fine fescues acts as a “nurse crop” to provide soil stability during the slower germination of the bluegrass yet they do not compete for nutrients and water during establishment. With time, the aggressive growth and strong rhizomatous habit of Kentucky bluegrass will dominate in conditions of full sun.

Cultural Requirements for Use as a Turfgrass

The various Kentucky bluegrass varieties demonstrate a wide range of cultural and management tolerances when used as turfgrasses. It is this range in fertility and water requirements that best facilitates its continued use as an amenity turfgrass. The variation in cultural practices is dependent upon cultivar and upon breeding efforts for increased disease resistance.

Kentucky bluegrasses perform best with medium to high management efforts and will yield an excellent perennial turf when properly maintained. These management requirements are based upon mowing heights ranging from 0.75 to 2.5 in., with optimum heights of 1.0 to 1.5 in. Mowing frequency will play a critical role in stimulating both rhizome and root growth; frequencies of one to three times weekly will be required.

The recommended annual nitrogen budget is 2 to 6 lbs N per 1000 ft² per year; higher levels and more frequent applications will be required if clippings are routinely removed. Kentucky bluegrass responds best to applications of slow-release materials; it can be easily maintained with 100% slow-release sources if the turf manager is adroit at predicting the seasonal fluctuations in growth and development.

Lime will need to be applied frequently but judiciously. An application every three years to maintain a pH of 6.0 should be based on soil tests. When the pH of a stand of bluegrass drifts below 5.5, the grass will develop a greater susceptibility to pink and gray snow mold, leaf spot and brown patch, and broad leaf weeds. A pH higher than 6.0 will increase the likelihood of patch disease incidence, most notably the spring and summer patch diseases.

Kentucky bluegrass responds well to applied irrigation during the summer season. Applications of 1.5 to 2 in. of water per week will be necessary to prevent the onset of summer dormancy and to minimize the likelihood of summer patch development. Drought stress prevention is also an important cornerstone in minimizing the seriousness of leaf spot disease and the prevention of its further deterioration from diseases known as melting out and crown rot. Thatch becomes a serious problem in vigorous varieties maintained at high levels of cultural intensity. Annual or biennial dethatching efforts should be incorporated into any Kentucky bluegrass management plan; this grass also responds favorably to biennial aerification and deep tine aerification.

Intensive breeding efforts have recently led to the release of numerous varieties with greatly improved tolerance and/or resistance to disease. An important

consideration in selecting varieties for moderate to high cultural intensity is their resistance to leaf spot, striped smut, and one or more of the various patch diseases.

MATERIALS AND METHODS

The 2000 National Turfgrass Evaluation Program (NTEP) Kentucky Bluegrass Trial was established in September of 2000 at the Turfgrass Experimental Plot Area of the Littlefield Ornamental Trial Garden on the University of Maine campus. The trial consisted of 173 cultivars (Table 1) arranged in randomized block design and replicated three times.

The soil, a well-drained Marlowe fine sandy loam was plowed, harrowed, and rototilled to a depth of 12 in. and amended with lime at 60 lbs/1000 ft² and a 10-10-10 fertilizer was applied at 20 lbs/1000 ft² as recommended by the Maine Soil Testing Service. The soil surface was hand raked for rock removal and leveling. Seeding was facilitated by using a 5x3-ft plywood box constructed to eliminate wind drift, and the seed was raked in by hand. The area was not rolled to avoid varietal contamination of adjacent plots, and irrigation was provided immediately after seeding.

This study was conducted in a shade-free environment with a maintenance fertility program of 1.0 lb N/1000 ft² per month of growing season using a commercial 20-5-15 fertilizer with 50% N as a sulfur-coated urea slow-release source.

Irrigation was supplied as needed to prevent stress from mid-June to mid-September. Mid-day syringing was used occasionally to provide minimal heat stress relief during the heat of the summer. This supplemental moisture was supplied through an in-ground irrigation system controlled by a Toro computer.

Mowing was initiated in May of 2001 using a National Triplex mower at a height of 2.5 in.; this was gradually lowered to a maintenance height of 1.5 in. for the duration of the test. The mowing height was increased to 2.5 in. for October and November to increase leaf area and carbohydrate storage in the crown region to minimize potential winter loss.

To prevent cross-plot contamination and the movement of rhizomes within the trial, the area was neither aerified nor dethatched during the study. Thus by the end of the second year, considerable thatch and mat had developed. The relative aggression or nonaggression of particular cultivars was not controlled by any chemical or mechanical means, and some encroachment into adjacent plots occurred by the end of the study. No additional wear stress, foot, or cart traffic was imposed during this study.

Pest control efforts were kept to a minimum throughout the study with annual herbicide applications made to control broadleaf weeds. Fungicides applications were made to control leaf spot disease; insecticides were not used in this trial. In winter, no attempt was made to increase or remove the snow or ice burden from the site.

Visual turf quality, turf density, turf color, weediness, and disease rating were made monthly during the growing season. The ranking scale used ranged from 1 = no living turf to 9 = ideal turf. Yearly data were compiled and statistically analyzed by the NTEP office in Beltsville, Maryland. These analyses have been combined for the five years of the study and the means separated and arrayed for each of the factors evaluated.

RESULTS AND DISCUSSION

The data collected and analyzed for the five years of this test principally involved turfgrass quality, genetic color (that color unaffected by and unrelated to fertilizer application), leaf blade width, weediness, and four fungal diseases: pink snow mold, leaf spot, red thread, and summer patch. Pink snow mold occurred sporadically in mid- to late spring and caused appreciable damage to many cultivars. Despite their close proximity to the trial area, stripe smut and rust did not occur as diseases of measurable importance in this test. Fairy rings developed in minor profusion after the test was complete and had no apparent impact on turf health during the five years of trial data. As appropriate, other data included turfgrass density, winter survival, and percentage cover as an indication of germination success.

Kentucky bluegrass cultivars germinated in seven to 28 days in this test and large differences were observed between cultivars for this parameter.

2001

The establishment rate for this species was very good in 2001 and nearly all cultivars developed full cover and a true sod within 16 months (Table 2). Several of these cultivars demonstrated rapid germination followed by extensive lateral growth, and percentage ground cover was considered excellent for these newly seeded cultivars. By spring of 2001, five cultivars demonstrated sufficient growth to cover 75% or more of their respective plot areas: Bordeaux, Arrow, Raven, Moonshine, and the oldest improved cultivar Kenblue (Table 2). Nine cultivars covered 70% or more of the plot areas: Abbey, Wildwood, Goldrush, Impact, Misty, Tsunami, Wellington, GO-9LM9, and DLF 76-9036. Forty-four cultivars

Table 1. Identification of varieties evaluated in the 2000 NTEP Kentucky bluegrass test indicating the breeding house of origin.

No.	Variety	Origin
1	Midnight*	Standard Entry
2	Baron*	Standard Entry
3	Lily	Deutsche Saatveredelung
4	Limerick	Deutsche Saatveredelung
5	Bodacious*	Turf Merchants, Inc.
6	Bedazzled*	Turf Merchants, Inc.
7	Boomerang*	Turf Merchants, Inc.
8	Eagleton*	Standard Entry
9	HV 140	Advanta Seeds Pacific, Inc.
10	Cheetah	Seed Research of Oregon
11	Pp H 6366	Advanta Seeds Pacific, Inc.
12	Pp H 7929	Advanta Seeds Pacific, Inc.
13	Pp H 78732	Advanta Seeds Pacific, Inc.
14	Pp H 7907	Advanta Seeds Pacific, Inc.
15	Monte Carlo*	Pennington Seed Co.
16	Royale*	Pennington Seed Co.
17	Shamrock*	LESCO, Inc.
18	Wellington*	LESCO, Inc.
19	Wildwood*	LESCO, Inc.
20	Hallmark*	LESCO, Inc.
21	Lakeshore*	LESCO, Inc.
22	Glenmont*	LESCO, Inc.
23	Coventry*	The Scotts Co.
24	Avalanche*	Pure Seed Testing, Inc.
25	PST-B5-125	Pure Seed Testing, Inc.
26	PST-604	Pure Seed Testing, Inc.
27	PST-108-79	Pure Seed Testing, Inc.
28	Voyager II*	Pure Seed Testing, Inc.
29	PST-161	Pure Seed Testing, Inc.
30	Bluemax*	Pure Seed Testing, Inc.
31	Brilliant*	Turf-Seed, Inc.
32	PST-222	Pure Seed Testing, Inc.
33	Midnight II*	Rutgers University
34	PST- York Harbor 4	Pure Seed Testing, Inc.
35	Blacksburg II*	Pure Seed Testing, Inc.
36	Mallard*	Pennington Seed Co.
37	Blue Ridge*	Pennington Seed Co.
38	Apollo*	Pro Seeds Marketing, Inc.
39	A97-1432	DLF-Jenks / Rutgers
40	HV 238	DLF-Jenks
41	Mercury*	Pickseed West, Inc.
42	Arrow*	Zseeds, LLC
43	Moonshine*	Turf Seed, Inc.
44	Dynamo*	Burlington Seeds
45	B5-43	Burlington Seeds
46	B5-45	Grassland Oregon
47	Blue-tastic*	Rutgers University
48	H92-203	Turf Merchants, Inc.
49	Casablanca*	Grassland Oregon
50	B5-144	Turf Merchants, Inc.
51	PST-B4-246	Pure Seed Testing, Inc.
52	PST-H6-150	Oregro Seed, Inc.
53	Alpine*	Pickseed West, Inc.
54	Pick 453	Pickseed West, Inc.
55	Rampart*	TurfOne
56	Limousine*	TurfOne
57	Quantum Leap*	TurfOne

Table 1. Continued.

No.	Variety	Origin
58	Envicta*	The Scotts Co.
59	Goldrush*	Landmark Seed Co.
60	Misty*	The Scotts Co.
61	Ascot*	The Scotts Co.
62	BH 00-6002	The Scotts Co.
63	Fairfax*	The Scotts Co.
64	Abbey*	The Scotts Co.
65	BH 00-6003	The Scotts Co.
66	Baronette*	Barenbrug USA, Inc.
67	Raven*	The Scotts Co.
68	Ba 83-113	The Scotts Co.
69	Marquis*	TurfOne
70	Ba 84-140	The Scotts Co.
71	Ba 82-288	The Scotts Co.
72	Chateau*	The Scotts Co.
73	Ba 00-6001	The Scotts Co.
74	CVB-20631	DLF International Seeds
75	Chelsea*	DLF International Seeds
76	A97-1409	DLF International Seeds
77	A96-451	DLF International Seeds
78	Julius*	DLF International Seeds
79	Allure*	DLF International Seeds
80	A97-1330	DLF International Seeds
81	H92-558	DLF International Seeds
82	Julia*	DLF International Seeds
83	Brooklawn*	Turf Merchants, Inc.
84	Boutique*	Turf Merchants, Inc.
85	Blue Sapphire*	Columbia River Seeds
86	NA-K992	Novel AG, Inc.
87	Showcase*	Seed Research of Oregon, Inc.
88	Arcadia*	Seed Research of Oregon, Inc.
89	Kingfisher*	Seed Research of Oregon, Inc.
90	SRX 26351	Seed Research of Oregon, Inc.
91	SRX 27921	Seed Research of Oregon, Inc.
92	Sonoma*	Lebanon Seaboard Corp.
93	Bordeaux*	Lebanon Seaboard Corp.
94	Cabernet*	Lebanon Seaboard Corp.
95	Champagne*	Lebanon Seaboard Corp.
96	Durham*	Grassland Oregon
97	Skye*	Grassland Oregon
98	Jewel	Seeds, Inc.
99	Unknown (Midnight)	
100	Blue Knight*	DLF-Jenks
101	DLF 76-9032	DLF-Trifolium
102	DLF 76-9034	DLF-Trifolium
103	DLF 76-9036	DLF-Trifolium
104	DLF 76-9037	DLF-Trifolium
105	SI A96-386	Seeds, Inc
106	SRX 21 14	Seed Research of Oregon, Inc.
107	SR 2284*	Seed Research of Oregon, Inc.
108	Diva*	Pro Seeds Marketing, Inc.
109	SRX QG245	Seed Research of Oregon, Inc.
110	99AN-53	Seeds, Inc.
111	Mongoose*	Grassland Oregon
112	Jefferson*	Landmark Seed Co.
113	A98-407	Cascade International Seed Co.
114	A98-1028	Cascade International Seed Co.
115	A98-183	Cascade International Seed Co.
116	Champlain*	Mountain View Seeds, Ltd.

Table 1. Continued.

No.	Variety	Origin
117	Goldstar*	Mountain View Seeds, Ltd.
118	Royce*	Mountain View Seeds, Ltd.
119	A98-139	DLF-Jenks
120	A98-365	DLF-Jenks
121	Kenblue*	Standard Entry
122	Princeton 105	Pro Seeds Marketing, Inc.
123	Impact*	Jacklin Seed/Simplot
124	Total Eclipse*	Jacklin Seed/Simplot
125	Odyssey*	Jacklin Seed/Simplot
126	Chicago II*	Jacklin Seed/Simplot
127	NuGlade*	Jacklin Seed/Simplot
128	Perfection*	Allied Seed LLC
129	Tsunami	Jacklin Seed/Simplot
130	Ginney*	Pro Seeds Marketing, Inc.
131	Courtyard*	The Scotts Co.
132	Alexa*	Pro Seeds Marketing, Inc.
133	J- 2885	Jacklin Seed/ Simplot
134	Blue Velvet*	Pickseed West, Inc.
135	Everest*	Jacklin Seed/ Simplot
136	Awesome*	Allied Seed LLC
137	Excursion*	LESCO, Inc.
138	Freedom II*	Jacklin Seed/Simplot
139	EverGlade*	Jacklin Seed/Simplot
140	Nu Destiny*	Jacklin Seed/Simplot
141	Barrister*	Barenburg, USA, Inc.
142	Beyond*	Jacklin Seed/Simplot
143	Rugby II*	Jacklin Seed/Simplot
144	Award*	Jacklin Seed/Simplot
145	Rambo*	Jacklin Seed/Simplot
146	Freedom II*	Jacklin Seed/Simplot
147	Liberator*	Jacklin Seed/Simplot
148	GO-9LM9	Grassland Oregon
149	Moonshadow*	Pickseed West, Inc.
150	Langara*	Pickseed West, Inc.
151	A96-739	Seeds, Inc.
152	PST-H5-35	Pure Seed Testing, Inc.
153	PST-B3-170	Pure Seed Testing, Inc.
154	B4-128A	DLF International Seeds, Inc.
155	Bluestone*	Mountain View Seeds, Inc.
156	Washington*	Seeds, Inc.
157	A96-742	Seeds, Inc.
158	A97-857	Seeds, Inc./DLF-Jenks
159	BAR Pp 0468	Barenburg USA, Inc.
160	BAR Pp 4471	Barenburg USA, Inc.
161	BAR Pp 0566	Barenburg USA, Inc.
162	BAR Pp 0573	Barenburg USA, Inc.
163	Bartitia*	Barenburg USA, Inc.
164	Baritone*	Barenburg USA, Inc.
165	Bariris*	Barenburg USA, Inc.
166	Barzan*	Barenburg USA, Inc.
167	Baronie*	Barenburg USA, Inc.
168	Unique*	Turf-Seed, Inc.
169	Serene*	Turf-Seed, Inc.
170	Moonlight*	Turf-Seed, Inc.
171	Blackstone*	Turf-Seed, Inc.
172	Rita*	Turf-Seed, Inc.
173	North Star*	Turf-Seed, Inc.

* Varieties that became commercially available in the U.S. in 2005.

covered 60% or more of the plot area. Insufficient germination and lateral growth plagued many cultivars, and we observed 76 cultivars with less than 50% coverage the following spring. Coverage was somewhat variable, and there was no significant difference between cultivars with percentage cover of greater than 46.7%. It is expected that overall turfgrass quality will remain more important than germinability.

First-season turfgrass quality was very good to excellent for most cultivars in this test. Quality ratings above 6.3 do not differ significantly, and 119 cultivars exhibited turf quality at least that high. Of these, first-year quality scores were considered exceptional and averaged higher than 7.7 for Delight, BA 84-140, and Perfection. Five cultivars had scores greater than 7.5: Beyond, A96-739, PST-B3-170, B5-45, and Freedom II. Thirty-four cultivars had overall quality scores greater than 7.0, and 79 exhibited quality scores of greater than 6.5. Of the cultivars tested, only 14 had moderate to inadequate quality scores of less than 6.0, and none was considered poor and scored less than 5.0 (Table 2). These scores exceeded even the most rigorous expectations and show that turf managers have a wide range of cultivars from which to choose. These high scores for the first year reflect a summer that was not particularly hot and proper management using starter fertilizer and adequate moisture.

First-season turfgrass color was exceptional for the majority of these cultivars and reflects their true genetic color without fertilizer enhancement. Monthly color scores were averaged over six months. A score of 9.0 was considered "perfect" and was observed in 17 cultivars: Delight, BA 84-140, Blue-Tastic, Moonshadow, Bordeaux, Moonlight, Arcadia, A98183, Royale, Bluemax, Unknown, Mallard, Chicago II, Total Eclipse, Blue Sapphire, Freedom III, and Boutique. Nearly as dark and evenly colored were 29 cultivars whose scores were 8.5 or higher: Perfection, Beyond, A96-739, Blue Velvet, Midnight II, Award, Nu Destiny, Bedazzled, Kingfisher, Sonoma, Blackstone, Katie, Monte Carlo, Royce, BAR PP 0471, PST-222, PST-B5-125, Courtyard, Midnight, A98-365, Everest, Barrister, Quantum Leap, Rugby II, Awesome, Baronette, Odyssey, Excursion, and PST-604.

One hundred and eleven cultivars had color scores over 7.0, which is considered excellent. Only 13 cultivars had color scores considered adequate but less than 7.0 including Abbey, Goldrush, Coventry, Raven, Moonshine, Kenblue, Envicta, Washington, and Jewel. Of 173 cultivars, only Wellington had initial turf color scores of less than 6.0 (Table 2). Improvements noted in first-year establishment,

quality, and color scores demonstrate the enormous efforts made by turfgrass breeders.

2002

Autumnal tiller, rhizome and root growth allowed nearly all of these cultivars to completely cover their respective plot areas and to develop a knitted sod capable of withstanding the rigors of frequent mowing and traffic. With plot coverage came an increase in turf quality of nearly a full point (Table 3). One hundred and twenty-two of these grasses were considered excellent and scored a 7.0 or more for season-long quality. Quality scores above 7.4 do not differ significantly, and there were 84 cultivars in this highest-ranking group. Those cultivars rated extremely high across the season included Ginney at 8.4 and Barrister at 8.3. Blue-Tastic, Award, BA 84-140, Perfection, and Midnight II each scored 8.2, while four cultivars, Freedom II, Moonlight, Total Eclipse, and Tsunami, scored 8.1, and Blackstone and Langara scored 8.0. In all, 13 cultivars could be considered nearly perfect for the combination of agronomic characteristics that constitute turfgrass quality.

Many new and a few familiar cultivars scored greater than 7.5 and were considered excellent in turf quality. Arcadia, Beyond, Chicago II, Everglade, J-2885, Midnight, Quantum Leap, and SRX 27921 were rated 7.9. There were six cultivars that scored 7.8; eleven that scored 7.7; 22 that scored 7.6; and eight that scored 7.5. These scores are all considered to be excellent, and they reflect a season-long adaptation that is tolerant not only of cold winters but hot, humid, and occasionally oppressive summers. For the remaining cultivars, 53 had scores above 7.0, which is considered to be extremely good. Thirty-two cultivars were considered very good with scores above 6.5; 12 cultivars were considered good with scores above 6.0; and only five cultivars were classed as adequate to poor with scores below 6.0 (Table 3).

The 2002 season was categorized as one of fluctuating temperatures and variable humidities that provided ample conditions for the development of disease. Two diseases developed and were rated: pink snow mold in May and June followed by leaf spot in June, July, and September.

Pink snow mold in both pink and white forms caused substantial problems in 2002. Despite heroic efforts to develop and incorporate resistance to the winter diseases, susceptibilities continue to limit Kentucky bluegrass turf and sod quality. Pink snow mold scores of more than 6.0 reflect the occasional loss of leaf tissue or the preponderance of symptom-free tissues. There were nine cultivars that remained

Table 2 Turfgrass quality, genetic color, and disease ratings for Kentucky bluegrass varieties seeded in September 2000 at the University of Maine. Means are the average of monthly ratings made during the 2001 growing season.

Rank	Variety	Quality ¹	Color ¹	Ground Cover ¹ % Spring
1	Delight	7.5	9.0	53.3
2	BA 84-140	7.5	9.0	36.7
3	Perfection	7.5	8.7	53.3
4	Beyond	7.4	8.7	40.0
5	A96-739	7.4	8.7	56.7
6	PST-B3-170	7.4	8.3	63.3
7	B5-45	7.4	7.3	60.0
8	Freedom II	7.4	8.3	50.0
9	Apollo	7.3	7.7	60.0
10	Blue Velvet	7.3	8.7	56.7
11	Blue-Tastic	7.3	9.0	43.3
12	Midnight II	7.3	8.7	60.0
13	Moonshadow	7.3	9.0	50.0
14	B4-128A	7.3	8.0	66.7
15	Award	7.2	8.7	66.7
16	SRX 27921	7.2	8.3	40.0
17	Ginney	7.2	8.3	66.7
18	Casablanca	7.2	8.0	53.3
19	Nu Destiny	7.2	8.7	60.0
20	Bordeaux	7.2	9.0	76.7
21	H92-558	7.2	8.0	63.3
22	Unique	7.2	8.0	60.0
23	Moonlight	7.2	9.0	63.3
24	Blue Ridge	7.2	8.0	50.0
25	Avalanche	7.1	7.7	53.3
26	Abbey	7.1	6.3	73.3
27	Arcadia	7.1	9.0	63.3
28	Bedazzled	7.1	8.7	63.3
29	Boomerang	7.1	8.0	43.3
30	Kingfisher	7.1	8.7	46.7
31	Mercury	7.1	8.3	56.7
32	PST-B4-246	7.1	7.7	43.3
33	SRX 26351	7.1	8.3	56.7
34	Sonoma	7.1	8.7	56.7
35	BAR PP 0468	7.1	8.0	50.0
36	SR 2284	7.1	8.0	66.7
37	Langara	7.0	7.7	56.7
38	Blackstone	7.4	8.7	63.3
39	Katie	7.0	8.7	60.0
40	A98-183	7.0	9.0	50.0
41	A98-1028	7.0	7.7	63.3
42	Monte Carlo	7.0	8.7	56.7
43	Royce	7.0	8.7	56.7
44	BAR PP 0471	7.0	7.7	50.0
45	BAR PP 0566	7.0	8.7	13.3
46	PST-222	7.0	8.7	36.7
47	BA 82-288	7.0	8.3	63.3
48	Julius	7.0	7.7	66.7
49	PST-York Harbor	7.0	8.3	46.7
50	Rita	7.0	8.3	60.0
51	A97-1330	7.0	7.7	56.7
52	Ascot	7.0	8.0	63.3
53	PST-108-79	7.0	8.3	33.3
54	Royale	7.0	9.0	63.3
55	Bluemax	7.0	9.0	30.0
56	B5-144	7.0	8.0	43.3
57	Serene	7.0	7.7	56.7
58	Chelsea	6.9	7.3	50.0

Table 2. Continued.

Rank	Variety	Quality ¹	Color ¹	Ground Cover ¹ % Spring
59	PST-B5-125	6.9	8.7	43.3
60	Unknown	6.9	9.0	60.0
61	Mallard	6.9	9.0	63.3
62	Brilliant	6.9	8.0	56.7
63	Rampart	6.9	8.0	60.0
64	A97-1409	6.9	8.3	60.0
65	Courtyard	6.9	8.7	56.7
66	Midnight	6.9	8.7	50.0
67	A98-365	6.9	8.7	56.7
68	Julia	6.9	8.0	56.7
69	Everest	6.8	8.7	60.0
70	Pick 453	6.8	8.0	56.7
71	PST-161	6.8	7.3	50.0
72	B5-43	6.8	7.6	53.3
73	Arrow	6.8	8.3	80.0
74	Barrister	6.8	8.7	63.3
75	Quantum Leap	6.8	8.7	46.7
76	Hallmark	6.8	7.0	66.7
77	Wildwood	6.8	8.0	70.0
78	Goldrush	6.8	6.7	70.0
79	Impact	6.8	8.3	73.3
80	Misty	6.8	8.0	73.3
81	Rugby II	6.8	8.7	46.7
82	Champlain	6.8	7.7	46.7
83	Tsunami	6.8	8.3	73.3
84	Chicago II	6.8	9.0	60.0
85	Alpine	6.8	7.7	63.3
86	BA 83-1 13	6.7	8.3	46.7
87	Awesome	6.7	8.7	40.0
88	Alexa	6.7	8.0	50.0
89	Goldstar	6.7	8.3	53.3
90	J-2885	6.7	7.3	56.7
91	Allure	6.7	7.0	43.3
92	BH 00-6002	6.7	7.7	56.7
93	Everglade	6.7	8.3	50.0
94	Brooklawn	6.7	7.0	36.7
95	Total Eclipse	6.7	9.0	43.3
96	Glenmont	6.7	8.7	53.3
97	Coventry	6.7	6.7	43.3
98	BAR PP 0573	6.7	8.3	56.7
99	Dynamo	6.6	7.7	40.0
100	Showcase	6.6	8.3	43.3
101	Skye	6.6	8.0	30.0
102	Fairfax	6.6	7.3	50.0
103	Shamrock	6.6	7.7	63.3
104	Blacksburg II	6.6	7.3	50.0
105	HV 140	6.6	7.0	56.7
106	Nuglade	6.6	8.3	66.7
107	BA 00-6001	6.6	8.3	36.7
108	Voyager II	6.6	8.0	60.0
109	Durham	6.6	8.3	43.3
110	Raven	6.6	6.3	76.7
111	Baronette	6.6	8.7	66.7
112	Baritone	6.6	7.3	40.0
113	H92-203	6.6	8.0	33.3
114	Moonshine	6.6	6.3	76.7
115	HV 238	6.6	7.7	66.7
116	PP H 7907	6.6	8.0	53.3
117	Champagne	6.5	8.0	56.7

Table 2. Continued.

Rank	Variety	Quality ¹	Color ²	Ground Cover ³ % Spring
118	PST-H5-35	6.5	8.0	36.7
119	Lily	6.5	7.7	60.0
120	Blue Sapphire	6.2	9.0	56.7
121	Blue Knight	6.2	8.3	30.0
122	Eagleton	6.2	7.0	53.3
123	Bluestone	6.2	7.7	53.3
124	A97-857	6.2	7.3	40.0
125	Kenblue	6.2	6.7	80.0
126	A96-742	6.2	6.3	56.7
127	Envicta	6.2	6.0	70.0
128	Odyssey	6.2	8.7	46.7
129	NA-K992	6.1	8.3	43.3
130	Ulysses	6.1	8.0	46.7
131	Cabernet	6.1	8.0	20.0
132	Excursion	6.1	8.7	50.0
133	Bartitia	6.1	7.3	46.7
134	Freedom III	6.1	9.0	46.7
135	DLF 76-9034	6.1	6.0	50.0
136	SI A96-386	6.1	8.3	43.3
137	Barzan	6.1	7.3	36.7
138	PP H 7929	6.1	8.0	36.7
139	Lakeshore	6.0	7.0	46.7
140	Bodacious	6.0	8.0	26.7
141	Jefferson	5.9	8.3	56.7
142	Rambo	5.9	8.0	50.0
143	North Star	5.9	8.0	50.0
144	PP H 6366	5.9	6.0	50.0
145	99AN-53	5.9	7.7	30.0
146	Washington	5.8	6.3	60.0
147	Jewel	5.8	6.7	46.7
148	Wellington	5.8	5.7	73.3
149	Baron	5.8	7.0	63.3
150	Bariris	5.7	7.3	56.7
151	Appalachian	5.7	8.3	60.0
152	CVB-20631	5.3	7.3	33.3
153	GO-9LM9	5.1	6.3	73.3
154	SRX 2114	6.5	7.7	36.7
155	Princeton105	6.5	8.0	60.0
156	Chateau	6.4	7.7	40.0
157	Sorbonne	6.4	8.0	50.0
158	Boutique	6.4	9.0	23.3
159	Mongoose	6.4	7.7	53.3
160	BH 00-6003	6.4	8.7	33.3
161	DLF 76-9036	6.4	7.0	70.0
162	Marquis	6.4	7.7	53.3
163	Cheetah	6.4	7.7	40.0
164	Limousine	6.4	7.0	43.3
165	Liberator	6.4	8.0	56.7
166	Baronie	6.3	8.3	63.3
167	PST-H6-150	6.3	8.3	40.0
168	DLF 76-9032	6.3	8.0	40.0
169	A98-407	6.3	9.0	13.3
170	PST-604	6.3	8.7	30.0
171	Limerick	6.3	7.7	60.0
172	Diva	6.3	8.3	40.0
173	SRX QG245	6.2	8.0	60.0

¹ Varieties with quality ratings of 6.3 and higher did not differ significantly in turf quality.² Varieties with genetic color ratings of 8.0 and higher were not significantly different.³ Varieties with establishment percentages of 46.7 and higher were not significantly different.

Table 3. Turfgrass quality and incidence of leaf spot and pink snow mold diseases for Kentucky bluegrass varieties seeded in September 2000 at the University of Maine, Means are the average of monthly ratings made during the 2002 growing season.

Rank	Variety	Quality ¹	Leaf Spot ²	Pink Snow Mold ³
1	Ginney	8.4	9.0	6.0
2	Barrister	8.3	8.0	6.0
3	Blue-Tastic	8.2	8.7	6.7
4	Award	8.2	8.7	5.3
5	BA 84-140	8.2	7.3	5.3
6	Perfection	8.2	9.0	6.0
7	Midnight II	8.2	8.7	5.7
8	Freedom II	8.1	9.0	6.7
9	Moonlight	8.1	9.0	5.0
10	Total Eclipse	8.1	8.7	5.0
11	Tsunami	8.1	8.7	5.7
12	Blackstone	8.0	6.7	5.0
13	Langara	8.0	7.3	6.7
14	Arcadia	7.9	7.3	5.0
15	Beyond	7.9	9.0	6.3
16	Chicago II	7.9	9.0	5.3
17	Everglade	7.9	9.0	6.3
18	J-2885	7.9	9.0	5.7
19	Midnight	7.9	8.7	4.3
20	Quantum Leap	7.9	8.3	4.7
21	SRX 27921	7.9	8.3	5.7
22	BAR PP 0566	7.8	8.3	5.7
23	Hallmark	7.8	8.0	4.7
24	Nu Destiny	7.8	9.0	5.7
25	Nuglade	7.8	7.3	5.3
26	Royale	7.8	8.7	4.7
27	Sonoma	7.8	8.7	5.3
28	A96-739	7.7	7.3	6.0
29	Bedazzled	7.7	8.0	5.3
30	Boomerang	7.7	8.3	5.0
31	Bordeaux	7.7	6.7	5.7
32	Chelsea	7.7	8.0	6.0
33	Impact	7.7	9.0	5.3
34	Alexa	7.7	8.0	5.0
35	PST-York Harbor 4	7.7	8.0	6.0
36	Royce	7.7	8.3	5.3
37	Kingfisher	7.7	9.0	5.7
38	Unknown	7.7	8.7	5.7
39	Katie	7.6	9.0	5.7
40	A97-1409	7.6	8.3	5.7
41	Delight	7.6	8.0	6.0
42	Skye	7.6	7.7	6.3
43	A98-183	7.6	7.7	6.0
44	Apollo	7.6	8.0	6.0
45	BA 82-288	7.6	7.7	4.7
46	Blue Ridge	7.6	8.7	5.7
47	Everest	7.6	8.7	5.0
48	Goldstar	7.6	7.0	4.7
49	H92-558	7.6	8.3	6.0
50	Julius	7.6	7.3	5.0
51	Moon Shadow	7.6	8.0	5.3
52	Rampart	7.6	8.0	4.7
53	Princeton 105	7.6	9.0	5.0
54	Avalanche	7.6	5.0	5.7
55	PST-B4-246	7.6	8.0	6.3
56	Bluemax	7.6	8.3	5.3
57	Rita	7.6	8.0	5.3

Table 3. Continued.

Rank	Variety	Quality ¹	Leaf Spot ²	Pink Snow Mold ³
58	SR 2284	7.6	7.0	5.7
59	SRX 26351	7.6	8.0	5.3
60	Wildwood	7.6	7.7	4.7
61	Ascot	7.5	8.7	5.0
62	B4-128A	7.5	7.7	5.7
63	B5-45	7.5	8.3	5.7
64	BAR PP 0573	7.5	8.0	5.0
65	Baronette	7.5	7.3	5.3
66	Awesome	7.5	8.7	5.0
67	PST-222	7.5	8.7	6.0
68	SRX 2114	7.5	8.0	6.0
69	*A97-1330	7.4	8.7	5.3
70	A98-365	7.4	8.3	5.7
71	Arrow	7.4	8.7	5.0
72	Casablanca	7.4	8.3	6.0
73	BA 00-6001	7.4	8.0	5.3
74	BAR PP 0468	7.4	8.0	5.3
75	Boutique	7.4	7.7	4.0
76	Glenmont	7.4	8.0	4.7
77	Blue Velvet	7.4	9.0	5.7
78	Liberator	7.4	7.7	5.3
79	Mallard	7.4	7.3	5.0
80	Monte Carlo	7.4	7.0	5.3
81	Blue Sapphire	7.4	7.7	4.0
82	PST-H5-35	7.4	8.3	5.3
83	Serene	7.4	8.0	5.0
84	Showcase	7.4	7.7	4.7
85	SI A96-386	7.3	8.7	5.7
86	A98-1028	7.3	8.3	5.0
87	Alpine	7.3	9.0	5.0
88	Bartitia	7.3	7.7	3.7
89	Champlain	7.3	8.7	4.3
90	HV 238	7.3	7.7	5.0
91	PP H 7907	7.3	7.7	4.7
92	PST-B3-170	7.3	7.7	6.0
93	Raven	7.3	6.3	6.0
94	Rugby II	7.3	7.3	5.0
95	Shamrock	7.3	7.7	4.7
96	Unique	7.3	8.3	5.3
97	Abbey	7.2	7.3	6.0
98	B5-144	7.2	8.3	6.0
99	BAR PP 0471	7.2	7.3	5.3
100	Goldrush	7.2	7.0	6.3
101	Courtyard	7.2	8.0	5.0
102	Freedom III	7.2	7.0	3.7
103	Odyssey	7.2	8.7	5.0
104	Pick 453	7.2	8.0	4.3
105	Mercury	7.2	7.7	6.3
106	Ulysses	7.2	7.7	4.3
107	PST-161	7.2	5.0	5.0
108	A96-742	7.1	6.3	5.0
109	A98-407	7.1	7.7	3.3
110	Blacksburg II	7.1	7.0	6.0
111	Brilliant	7.1	7.3	5.3
112	Coventry	7.1	7.3	5.3
113	DLF 76-9036	7.1	7.3	5.0
114	Excursion	7.1	8.7	5.3
115	H92-203	7.1	8.3	4.3
116	Misty	7.1	5.3	4.3
117	North Star	7.1	8.3	3.3

Table 3. Continued.

Rank	Variety	Quality ¹	Leaf Spot ²	Pink Snow Mold ³
118	Diva	7.1	8.3	4.7
119	Voyager II	7.1	8.3	5.0
120	PST-604	7.1	6.7	4.3
121	Allure	7.0	7.0	4.7
122	Envicta	7.0	7.0	5.0
123	Durham	6.9	8.3	5.7
124	Dynamo	6.9	8.0	5.0
125	BA 83-113	6.9	7.0	5.0
126	Bariris	6.9	7.0	3.0
127	Sorbonne	6.9	7.7	4.7
128	Lakeshore	6.9	7.0	4.7
129	Cheetah	6.9	6.7	4.0
130	PST-H6-150	6.9	8.3	5.0
131	Rambo	6.9	6.3	4.0
132	A97-857	6.8	7.7	5.0
133	Mongoose	6.8	7.7	4.0
134	Baronie	6.8	7.3	4.0
135	Blue Knight	6.8	7.3	4.7
136	DLF 76-9032	6.8	7.3	4.7
137	Limerick	6.8	7.0	5.0
138	Marquis	6.8	7.0	4.7
139	PST-108-79	6.8	7.3	5.3
140	PST-B5-125	6.8	8.3	5.7
141	Washington	6.8	5.0	3.7
142	B5-43	6.7	6.7	4.7
143	BH 00-6002	6.7	6.0	5.0
144	Cabernet	6.7	5.3	4.3
145	Champagne	6.7	6.0	5.0
146	Fairfax	6.7	6.0	4.3
147	Limousine	6.7	6.7	3.7
148	PP H 6366	6.7	6.7	4.0
149	Appalachian	6.6	4.7	4.0
150	Baron	6.6	7.0	3.0
151	BH 00-6003	6.6	6.7	5.3
152	Bodacious	6.6	7.7	3.7
153	CVB-20631	6.6	7.7	3.7
154	Eagleton	6.6	6.3	4.7
155	Julia	6.6	6.7	5.0
156	Baritone	6.5	6.3	4.3
157	Brooklawn	6.4	6.7	4.7
158	Chateau	6.4	7.0	4.0
159	Jefferson	6.4	6.7	3.7
160	Lily	6.4	6.7	5.0
161	PP H 7929	6.4	8.3	3.7
162	Moonshine	6.4	7.0	4.3
163	SRX QG245	6.4	5.3	5.0
164	99AN-53	6.3	5.3	5.0
165	Barzan	6.3	5.0	4.3
166	Bluestone	6.3	6.7	3.7
167	HV 140	6.3	4.3	4.7
168	NA-K992	6.3	4.3	4.3
169	DLF 76-9034	5.8	5.0	4.7
170	Jewel	5.7	4.7	4.3
171	Kenblue		5.7	3.7
172	Wellington	5.0	2.7	3.7
173	GO-9LM9	4.4	2.7	3.3

¹Varieties with quality ratings of 7.4 and higher were not significantly different.²Varieties with leaf spot ratings of 7.7 and higher were not significantly different.³Varieties with pink snow mold ratings of 2.7 and higher were not significantly different.

nearly free of snow mold in this test: Blue-Tastic, Freedom II, Langara, Beyond, Everglade, Skye, PST-B4-246, Goldrush, and Mercury. Scores of 6.0 to 5.5 reflect the loss of substantial leaf tissue with matted pink sporodochia visible on affected leaf tissue. There were 35 cultivars in this category, including Ginney, Barrister, Midnight II, Tsunami, J-2885, SRX-27921, Nu Destiny, Bordeaux, Chelsea, PST-York Harbor 4, Kingfisher, Unknown, and Katie. Scores of 5.5 to 4.5 reflect the loss of many leaves, tillers and crowns followed by a gradual thinning of the turf and the development of deep rings. There were 84 cultivars so affected. Pink snow mold scores of 4.0 reflect the loss of significant sod surface and the development of pronounced bare spots. There were 25 cultivars in this group. Four cultivars, Northstar, Bariris, Baron, and GO-9LM9, scored 3.7 or less and demonstrated 50% loss of the affected turf area. Pink snow mold remains a substantial threat to the successful use of Kentucky bluegrass when maintained in full winter conditions under high fertility and low mowing conditions. Turf managers should employ methods to reduce inoculum dissemination, increase the dryness of the turf surfaces and where appropriate, apply protection in the form of organic or inorganic fungicides.

Cultivars that were free of leaf spot scored a 9.0 and included Ginney, Perfection, Freedom II, Moonlight, Beyond, Chicago II, Everglade, J-2885, Nu Destiny, Impact, Kingfisher, Katie, Princeton 105, Blue Velvet, and Alpine. There were 19 cultivars that were nearly disease free with scores of 8.7 or higher: Blue-Tastic, Award, Midnight II, Total Eclipse, Tsunami, Midnight, Royale, Sonoma, Unknown, Blue Ridge, Everest, Ascot, Awesome, Odyssey, and Excursion. Leaf spot scores above 7.7 do not differ significantly and this group includes 61 cultivars. With scores of less than 5.5, leaf spot, melting out, and crown rot caused significant turf loss for 13 cultivars, including Avalanche, PST-161, Misty, Washington, Cabernet, Barzan, Jewel, Kenblue, and Wellington. The severity of leaf spot and its related diseases served to significantly reduce over-all turfgrass-quality scores in early 2002. Despite the inclusion of both horizontal and vertical resistance mechanisms against leaf spot in many of these grasses, turf managers should remain alert to the insidious development and rapid dissemination of this disease.

2003

The 2003 growing season began early with turfgrass showing pronounced new growth and color in late April. Turf quality scores were as high as the previous season (Table 4).

Quality scores greater than 7.6 do not differ significantly; there were 58 cultivars in this group whose quality was labeled excellent. Midnight II and Moonlight both scored 8.4; Bluemax and Chicago II scored 8.3; Freedom II, Ginney, Impact, Perfection, and Unknown scored 8.2; BAR PP 0566, Barrister, Blue Velvet, and Alexa scored 8.1; and Blue-Tastic, Beyond, and Nu Destiny scored 8.0 across the season.

There were 41 excellent cultivars scoring between 7.6 and 8.0, including superior grasses identified in prior seasons: Awesome, BA 84-140, Kingfisher, Katie, Midnight, PST-B5-125, Quantum Leap, Tsunami, PST-York Harbor 4, Ascot, Freedom III, Princeton 105, Royale, Sonoma, Total Eclipse, and Unique. There were 47 superior grasses with quality scores between 7.0 and 7.6, including Apollo, Langara, Bordeaux, Chelsea, Goldstar, Mercury, Durham, and Skye. Fifty-two cultivars were very good in quality with scores between 6.0 and 6.9, including Allure, Chateau, Alpine, Blacksburg II, Moonshine, Abbey, Blue Sapphire, Blackstone, and Limousine. Quality scores below 6.0 were considered adequate, but significantly less worthwhile for most turf purposes. However, there were only 13 cultivars in this group, including older cultivars such as Eagleton, Limerick, Barzan, Jewel, and Kenblue.

Genetic color scores were uniformly higher than in previous years and reflect excellent growing conditions and express each cultivar's unique properties. Despite the high color scores, those above 7.6 do not differ significantly. However, there were six cultivars that scored a perfect 9.0 for color in 2003: Moonlight, Ginney, Barrister, Beyond, BA 84-140, and Blackstone. With the exception of Blackstone, these cultivars were also in the top 20 for overall quality scores. Nearly perfect color scores of 8.5 to 9.0 were observed for 14 cultivars: Midnight II, Impact, Unknown, BAR PP 0566, Blue-Tastic, Everglade, Tsunami, Everest, Princeton 105, Total Eclipse, Monte Carlo, Rita, Blue Knight, and Serene. Excellent color scores of 8.0 to 8.5 were observed for 52 cultivars. Those that also appeared in the top 25 for overall quality included Freedom II, Perfection, Arcadia, Arrow, Awesome, and BA 84-140. Superior color was recorded for 40 cultivars scoring between 7.6 and 8.0. Those that also appear in the top 25 for overall quality include Bluemax, Blue Velvet, Alexa, Katie, and Blue Ridge. Scores of 7.0 or above were considered to reflect very good color, and there were 38 cultivars in this group. Kingfisher, A97-1409, Royce, and Ascot also numbered in the top 50 for overall quality. There were only 15 cultivars whose lighter green color was considered adequate,

Table 4. Turfgrass quality, genetic color, leaf texture and leaf spot ratings for Kentucky bluegrass varieties seeded September 2000 at the University of Maine. Means are the average of monthly ratings taken during the 2003 growing season.

Rank	Variety	Quality ¹	Genetic Color ²	Pink Snow Mold ³	Leaf Spot ⁴
1	Midnight II	8.4	8.7	7.3	8.0
2	Moonlight	8.4	9.0	9.0	7.0
3	Bluemax	8.3	7.7	7.7	8.0
4	Chicago II	8.3	9.0	8.0	7.7
5	Freedom II	8.2	8.3	7.7	6.7
6	Ginney	8.2	9.0	7.0	6.7
7	Impact	8.2	8.7	7.7	7.3
8	Perfection	8.2	8.3	8.0	7.3
9	Unknown	8.2	8.7	6.3	7.7
10	Arcadia	8.1	8.0	7.7	6.3
11	BAR PP 0566	8.1	8.7	7.7	7.0
12	Barrister	8.1	9.0	8.0	5.3
13	Blue Velvet	8.1	7.7	7.7	8.0
14	Alexa	8.1	7.7	7.7	7.3
15	Blue-Tastic	8.0	8.7	9.0	5.3
16	Beyond	8.0	9.0	7.3	5.3
17	Nu Destiny	8.0	8.3	7.7	7.0
18	Arrow	7.9	8.3	8.0	6.7
19	Awesome	7.9	8.3	6.0	7.3
20	BA 84-140	7.9	9.0	6.0	6.3
21	Glenmont	7.9	8.0	8.7	8.0
22	Hallmark	7.9	8.3	6.7	8.0
23	Nuglade	7.9	8.3	7.7	5.7
24	Kingfisher	7.9	7.3	8.7	6.7
25	Katie	7.8	7.7	8.7	7.3
26	Blue Ridge	7.8	7.7	8.7	5.7
27	Boutique	7.8	8.3	8.7	7.0
28	Champlain	7.8	7.7	6.0	6.7
29	Everglade	7.8	8.7	8.0	6.0
30	Courtyard	7.8	7.7	6.7	6.7
31	J-2885	7.8	8.0	7.3	6.7
32	Midnight	7.8	8.0	7.3	7.3
33	PST-B5-125	7.8	8.0	5.7	7.3
34	Quantum Leap	7.8	8.3	8.0	7.3
35	Tsunami	7.8	8.7	7.0	5.0
36	Wild wood	7.8	7.7	8.3	6.7
37	A97-1409	7.7	7.3	8.0	5.7
38	Delight	7.7	8.3	7.3	5.0
39	Everest	7.7	8.7	5.7	6.7
40	Mallard	7.7	8.3	9.0	5.7
41	Odyssey	7.7	8.0	6.7	5.0
42	Rampart	7.7	7.7	8.3	8.0
43	PST-222	7.7	7.7	8.3	6.0
44	PST-York Harbor 4	7.7	8.3	6.7	7.7
45	Royce	7.7	7.3	8.0	6.7
46	Ascot	7.6	7.3	7.0	8.3
47	BAR PP 0573	7.6	7.7	8.0	6.0
48	Bedazzled	7.6	8.0	8.7	6.3
49	Brilliant	7.6	8.0	6.7	6.7
50	H92-558	7.6	8.0	7.7	7.7
51	Freedom III	7.6	7.7	7.7	7.3
52	Liberator	7.6	8.3	7.3	5.7
53	Princeton 105	7.6	8.7	6.3	6.7
54	Royale	7.6	8.0	8.0	5.7
55	Sonoma	7.6	8.3	8.7	6.0
56	SRX 2114	7.6	7.7	6.7	7.3
57	Total Eclipse	7.6	8.7	6.7	6.3
58	Unique	7.6	7.3	6.3	5.7

Table 4. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Pink Snow Mold ³	Leaf Spot ⁴
59	Valor	7.5	7.3	7.0	6.3
60	Apollo	7.5	7.7	7.7	6.0
61	Langara	7.5	8.0	6.7	6.7
62	Rugby II	7.5	7.3	7.7	5.7
63	Voyager II	7.5	7.7	6.0	6.7
64	A98-3 65	7.4	8.3	7.0	6.3
65	Award	7.4	8.3	6.7	6.0
66	Bordeaux	7.4	8.0	8.0	6.7
67	Chelsea	7.4	7.7	6.0	6.0
68	Goldstar	7.4	7.3	8.7	5.3
69	Monte Carlo	7.4	8.7	7.3	6.0
70	Pick 453	7.4	8.0	8.7	7.0
71	Rambo	7.4	8.3	7.3	6.3
72	Showcase	7.4	7.7	7.3	7.0
73	SR 2284	7.4	7.7	8.7	5.7
74	A96-742	7.3	7.7	6.3	7.7
75	A98-183	7.3	7.3	8.3	5.3
76	BAR PP 0468	7.3	7.7	7.0	5.7
77	BAR PP 0471	7.3	7.7	6.0	6.0
78	Baronette	7.3	7.0	8.3	4.7
79	Excursion	7.3	7.3	6.7	6.3
80	Mercury	7.3	8.3	7.7	5.0
81	Diva	7.3	7.7	8.0	6.7
82	PST-B3-170	7.3	7.7	8.0	5.3
83	Rita	7.3	8.7	7.3	5.3
84	Durham	7.2	8.0	8.3	5.3
85	Casablanca	7.2	8.0	7.7	6.0
86	B4-128A	7.2	7.3	6.0	7.0
87	BA 82-288	7.2	7.7	8.0	5.3
88	Blue Knight	7.2	8.7	4.7	5.3
89	Champagne	7.2	7.7	8.7	4.7
90	Moonshadow	7.2	7.7	7.3	7.7
91	*PST-6045	7.2	8.0	8.3	4.7
92	BH 00-6003	7.1	8.0	7.0	6.3
93	Sorbonne	7.1	7.3	6.0	6.3
94	Lakeshore	7.1	7.0	7.0	5.3
95	North Star	7.1	7.3	4.0	6.7
96	PP H 6366	7.1	7.0	5.3	8.0
97	PST-108-79	7.1	7.0	7.0	6.3
98	PST-B4-246	7.1	8.0	6.0	6.3
99	PST-H6-150	7.1	7.3	6.7	6.0
100	Shamrock	7.1	7.3	8.0	4.7
101	SRX 27921	7.1	7.7	4.7	7.7
102	Skye	7.0	8.3	9.0	5.0
103	Brooklawn	7.0	7.0	6.3	4.7
104	H92-203	7.0	7.3	7.7	5.3
105	Serene	7.0	8.7	6.0	5.3
106	SI A96-386	7.0	8.3	6.7	6.7
107	A98-1028	6.9	7.7	8.0	5.0
108	A98-407	6.9	8.0	7.7	4.0
109	Allure	6.9	7.7	7.3	5.7
110	B5-45	6.9	8.3	7.3	6.3
111	Bartitia	6.9	6.0	5.3	6.3
112	Bluestone	6.9	6.7	6.3	6.0
113	Chateau	6.9	7.7	6.0	6.0
114	DLF 76-9032	6.9	7.7	6.7	5.7
115	PST-H5-35	6.9	7.3	6.3	7.0
116	A96-739	6.8	7.7	7.3	5.3
117	Alpine	6.8	6.7	5.0	6.3
118	Dynamo	6.8	7.7	6.0	5.0

Table 4. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Pink Snow Mold ³	Leaf Spot ⁴
119	BA 83-113	6.8	6.7	6.0	6.0
120	Blacksburg II	6.8	8.3	7.3	4.3
121	Fairfax	6.8	8.0	6.3	6.0
122	HV 238	6.8	8.3	5.7	6.7
123	Cheetah	6.8	7.0	5.0	5.0
124	PP H 7929	6.8	7.0	6.7	6.3
125	Moonshine	6.8	7.7	7.3	5.0
126	Abbey	6.7	7.3	7.0	5.7
127	B5-144	6.7	7.3	6.7	5.3
128	BA 00-6001	6.7	7.7	7.7	4.3
129	Blue Sapphire	6.7	7.0	6.0	6.3
130	Boomerang	6.7	8.0	6.0	4.0
131	Coventry	6.7	8.3	7.0	5.0
132	Limousine	6.7	6.7	5.7	7.3
133	Raven	6.7	7.3	6.7	6.0
134	Mongoose	6.6	6.3	7.7	4.7
135	B5-43	6.6	8.3	5.3	6.0
136	Baronie	6.6	6.3	7.7	6.3
137	Blackstone	6.6	9.0	7.3	3.3
138	Bodacious	6.6	8.0	5.7	5.3
139	Julius	6.6	7.0	5.7	7.0
140	Marquis	6.6	7.7	6.3	6.0
141	Misty	6.6	6.7	5.3	5.0
142	PST-161	6.6	8.0	7.0	5.3
143	SRX 26351	6.6	7.7	6.0	6.7
144	A97-857	6.5	7.3	6.0	5.0
145	Envicta	6.5	8.0	6.3	6.0
146	DLF 76-9036	6.4	7.3	5.0	6.0
147	Goldrush	6.4	7.0	4.7	6.0
148	Jefferson	6.4	7.0	6.7	4.7
149	Julia	6.4	6.7	5.7	5.3
150	PP H 7907	6.4	7.0	5.3	4.3
151	Avalanche	6.4	7.0	7.3	5.3
152	Baron	6.3	7.3	5.3	6.3
153	Cabernet	6.3	8.3	6.0	4.7
154	Lily	6.3	7.7	5.0	4.7
155	Ulysses	6.3	8.0	6.0	5.3
156	Bariris	6.1	7.3	4.3	7.3
157	Washington	6.1	7.3	6.3	3.3
158	Baritone	6.0	6.3	4.7	6.7
159	CVB-20631	6.0	6.7	4.0	7.7
160	Eagleton	5.9	8.0	5.7	3.7
161	Limerick	5.9	7.3	5.3	4.3
162	NA-K992	5.9	7.3	5.7	4.0
163	Appalachian	5.8	8.0	8.3	3.3
164	BH 00-6002	5.8	7.7	7.0	2.3
165	HV 140	5.8	7.0	3.3	4.7
166	Barzan	5.7	7.7	6.0	5.3
167	Jewel	5.4	7.7	4.3	3.3
168	99AN-53	5.3	7.0	5.3	3.7
169	DLF 76-9034	5.3	7.3	6.7	3.0
170	SRX QG245	5.3	6.7	5.0	2.7
171	Kenblue	4.7	5.0	3.7	2.3
172	GO-9LM9	4.4	4.7	5.0	6.0
173	Wellington	4.4	5.3	5.0	3.0

¹Varieties with quality ratings of 7.6 and higher were not significantly different.

²Varieties with genetic color ratings of 6.3 and higher were not significantly different.

³Varieties with Pink Snow ratings of 7.0 and higher were not significantly different.

⁴Varieties with Leaf Spot ratings of 6.0 and higher were not significantly different and were observed during the June evaluation.

including the familiar Bartitia, Bluestone, Alpine, and Limousine.

Pink snow mold again presented a significant challenge to some Kentucky bluegrass cultivars. Despite substantial disease pressure and proximity to infected bentgrasses, there were three cultivars that remained essentially disease free: Moonlight, Blue-Tastic, and Skye. There were 11 cultivars that scored 8.5 to 9.0 and in which disease was nearly undetectable: Glenmont, Kingfisher, Katie, Blue Ridge, Champlain, Bedazzled, Sonoma, Goldstar, Pick 453, SR 2284, and Champagne. For 30 cultivars, 10% or more of the grass was visibly affected. These scored 8.0 to 8.5 and included Chicago II, Perfection, Arrow, Glenmark, Boutique, and Everglade. With scores between 6.3 and 8.0, 98 cultivars lost between one-quarter and one-third of the turf surface. Those also in the top 20 for over-all quality included Midnight II, Bluemax, Freedom II, Ginney, Impact, Unknown, Arcadia, BAR PP 0566, Blue Velvet, Alexa, Beyond, and Nu Destiny. More than half the turf surface was lost to pink snow mold disease in 32 cultivars; among these were Wellington, GO9LM9, Kenblue, SRX QG245, 99AN-53, HV 140, and Eagleton.

Damp, overcast spring weather with frequent light showers exacerbated the on-going dilemma of leaf spot disease. Rapid spread by mowing equipment and clippings led to a surge in disease development, and none of the cultivars remained disease free. There were only seven cultivars with less than 10% of the leaves showing classic leaf spot symptoms; with scores of 8.0 or higher, this group included Midnight II, Bluemax, Blue Velvet, Glenmont, Hallmark, Rampart, and PP H 6366. Nineten cultivars had a 10% to 18% leaf infection rate without turf loss (scores of 7.3 to 8.0), including Chicago II, Impact, Perfection, Unknown, Alexa, Awesome, Katie, Midnight, PST-B5-125, and Quantum Leap. The melting-out and crown rot phases of this disease resulted in various levels of turf or sod loss in 135 cultivars; these were scored 7.2 or lower. Despite this level of disease severity, several appear in the top 25 for overall quality. These include Moonlight, Freedom II, Ginney, Arcadia, BAR PP 0566, Barrister, Alexa, Blue-Tastic, Beyond, Nu Destiny, Arrow, BA 84-140, Nuglade, and Kingfisher.

Many cultivars were able to withstand the pressures of common disease-causing organisms and developed both superior turf quality and color in 2003. Several of these were the same strong cultivars from 2001 and 2002, but others had finally knitted together a strong sod and were in far better condition than previously reported. Similarly, several formerly strong cultivars were unable to recover from disease and damage and declined in turf quality.

2004

The spring and early summer of 2004 were hot and relatively dry with largely intermittent rain events. In general, turf quality scores were slightly suppressed with few described as exceptional, but with many cultivars described as moderate to superior. However, there were also only three with conditions that were described as fair to poor over the season (Table 5).

Only three cultivars maintained quality scores above 8.4: Blue-Tastic, Kingfisher, and Moonlight. Seven cultivars averaged 8.2: Barrister, Blue Velvet, Chicago II, Ginney, Midnight II, Perfection, and Unknown. The cultivars Delight, Arcadia, Bedazzled, Beyond, Bluemax, Goldstar, Hallmark, J-2885, BAR PP 0566, Freedom II, Glenmont, and Liberator all scored higher than 8.0, which was defined as exceptional in 2004.

Turf quality scores of 7.6 and above did not differ significantly and this category included 69 cultivars. All of these were defined as superior in quality. There were 12 with scores of 7.9, including A97-1409, Blue Ridge, Bordeaux, Boutique, Nuglade, Odyssey, and Sonoma. Ten cultivars averaged 7.8, including Alexa, Apollo, BAR PP 0468, Langara, PST York Harbor 4, Total Eclipse, and Unique. Ten cultivars were nearly as noticeable with quality scores of 7.7; these include Valor, Awesome, Everglade, Freedom III, Impact, Monte Carlo, Quantum Leap, Royale, and Tsunami. Fifteen cultivars completed the category of superior grasses, including Arrow, Ascot, Champagne, and Champlain.

There was little difference in quality for cultivars with scores that ranged from 7.0 to 7.5, and 53 cultivars fell into this category. Several notable cultivars that were exceptional in earlier years were in this class: PST-222, Katie, Blackstone, Midnight, Princeton 105, Skye, Chelsea, Blackburg II, Bluestone, and Limousine. Thirty-four cultivars considered very good had quality scores that ranged from 6.5 to 7.0. This class included the familiar cultivars Alpine, Bartitia, PST-161, Coventry, Eagleton, Abbey, Baron, Julia, and Washington. Thirteen cultivars were classed as adequate to reasonable, including Envicta, Jewel, Banns, and Barzan. Only three cultivars were not recommended: Wellington, Kenblue, and GO-9LM9.

Genetic color scores for 2004 reflected trends similar to those observed in previous years. Perfect season-long color was reported for 16 cultivars: Blue-Tastic, Kingfisher, Moonlight, Barrister, Bedazzled, Blue Ridge, Boutique, Mallard, Royale, A98-365, Monte Carlo, SR 2284, Katie, PST-604, Durham, and BA 85-288. Fourteen cultivars averaged a near perfect 8.7, where two of three replicate plots scored

Table 5. Turfgrass quality, genetic color, and disease ratings for Kentucky bluegrass varieties seeded September, 2000 at the University of Maine. Means are the average of monthly ratings taken over the 2004 growing season.

Rank	Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Red Thread ⁴	Summer Patch ⁵
1	Blue-Tastic	8.4	9.0	9.0	9.0	9.0
2	Kingfisher	8.4	9.0	9.0	9.0	9.0
3	Moonlight	8.4	9.0	8.7	9.0	9.0
4	Barrister	8.2	9.0	8.0	9.0	9.0
5	Blue Velvet	8.2	8.7	8.3	8.3	9.0
6	Chicago II	8.2	8.3	7.7	7.7	8.3
7	Ginney	8.2	7.0	8.3	9.0	9.0
8	Midnight II	8.2	8.3	7.0	8.3	9.0
9	Perfection	8.2	8.0	8.3	8.7	9.0
10	Unknown	8.2	8.0	8.7	9.0	9.0
11	Delight	8.1	8.3	9.0	9.0	9.0
12	Arcadia	8.1	8.3	8.3	8.3	9.0
13	Bedazzled	8.1	9.0	8.3	9.0	9.0
14	Beyond	8.1	8.0	7.7	8.7	9.0
15	Bluemax	8.1	8.7	8.3	8.0	7.3
16	Goldstar	8.1	8.7	8.7	9.0	8.3
17	Hallmark	8.1	7.3	7.7	8.3	9.0
18	J-2885	8.1	8.0	8.0	8.7	9.0
19	BAR PP 0566	8.0	8.3	9.0	9.0	9.0
20	Freedom II	8.0	8.0	7.3	8.3	9.0
21	Glenmont	8.0	8.3	8.3	8.3	9.0
22	Liberator	8.0	8.0	7.7	8.3	8.0
23	A97-1409	7.9	8.7	8.7	9.0	7.3
24	Blue Ridge	7.9	9.0	7.3	8.3	9.0
25	Bordeaux	7.9	8.0	9.0	9.0	9.0
26	Boutique	7.9	9.0	8.7	9.0	9.0
27	Brilliant	7.9	8.7	8.0	8.3	9.0
28	Mallard	7.9	9.0	8.7	9.0	9.0
29	Nu Destiny	7.9	8.3	8.3	8.3	9.0
30	Nuglade	7.9	8.0	8.0	8.7	9.0
31	Odyssey	7.9	7.3	7.7	8.7	9.0
32	PST-B3-170	7.9	7.3	8.7	8.7	9.0
33	Sonoma	7.9	8.3	7.7	8.7	9.0
34	SRX 2114	7.9	7.3	8.7	9.0	9.0
35	A98-365	7.8	9.0	8.3	9.0	9.0
36	Alexa	7.8	8.3	7.7	8.3	9.0
37	Apollo	7.8	8.3	7.7	8.3	9.0
38	Award	7.8	8.0	7.7	8.3	9.0
39	BAR PP 0468	7.8	8.3	8.7	9.0	9.0
40	Courtyard	7.8	8.3	8.0	8.7	9.0
41	Langara	7.8	7.7	8.7	9.0	9.0
42	PST-York Harbor 4	7.8	8.3	8.3	8.3	8.3
43	Total Eclipse	7.8	7.7	8.0	9.0	9.0
44	Unique	7.8	7.7	9.0	8.7	7.7
45	Valor	7.7	8.0	9.0	8.7	9.0
46	Awesome	7.7	8.0	8.3	9.0	9.0
47	Everglade	7.7	8.0	8.0	9.0	9.0
48	Freedom III	7.7	8.3	8.0	9.0	9.0
49	Impact	7.7	8.0	8.0	8.7	9.0
50	Monte Carlo	7.7	9.0	8.3	9.0	8.3
51	Quantum Leap	7.7	8.0	7.0	8.3	9.0
52	Royale	7.7	9.0	8.0	8.7	9.0
53	Tsunami	7.7	8.3	6.7	8.7	9.0
54	Wildwood	7.7	6.0	8.3	9.0	9.0
55	A98-1028	7.6	7.0	8.0	9.0	9.0
56	A98-407	7.6	8.7	7.7	8.3	9.0
57	Arrow	7.6	8.3	8.0	8.7	9.0
58	Ascot	7.6	6.7	8.0	8.3	8.7

Table 5. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Red Thread ⁴	Summer Patch ⁵
59	BA 84-140	7.6	8.7	8.0	8.7	8.7
60	Champagne	7.6	7.0	8.7	8.7	8.7
61	ChAMPLain	7.6	7.3	7.7	8.3	9.0
62	Sorbonne	7.6	8.0	8.0	9.0	9.0
63	H92-203	7.6	7.7	8.3	9.0	7.3
64	Moonshadow	7.6	8.3	7.7	7.7	9.0
65	PST-B4-246	7.6	8.0	8.7	8.7	8.7
66	Rampart	7.6	8.7	7.3	8.0	8.3
67	Royce	7.6	8.0	8.7	9.0	9.0
68	Rugby II	7.6	7.3	7.7	8.7	9.0
69	*SR 2284	7.6	9.0	8.7	9.0	8.3
70	A96-739	7.5	8.7	7.7	8.0	8.3
71	134-128A	7.5	6.0	7.3	5.0	7.0
72	PST-222	7.5	8.3	8.0	8.0	7.7
73	PST-B5-125	7.5	8.3	8.7	9.0	9.0
74	Showcase	7.5	8.0	8.3	8.7	9.0
75	Katie	7.4	9.0	7.7	8.7	9.0
76	A98-183	7.4	8.7	8.7	8.7	9.0
77	BA 83-113	7.4	8.0	8.3	9.0	9.0
78	BAR PP 0471	7.4	7.7	8.3	9.0	9.0
79	BAR PP 0573	7.4	8.7	8.0	8.7	9.0
80	Blackstone	7.4	8.7	8.3	8.3	9.0
81	Everest	7.4	8.3	7.3	8.3	9.0
82	H92-558	7.4	7.3	8.0	8.7	9.0
83	Lakeshore	7.4	7.7	7.7	8.0	9.0
84	Midnight	7.4	8.3	7.7	8.7	9.0
85	Misty	7.4	6.7	7.3	8.0	9.0
86	Princeton 105	7.4	7.7	7.7	9.0	9.0
87	PST-604	7.4	9.0	7.0	7.7	9.0
88	PST-H5-35	7.4	7.0	8.0	7.7	8.7
89	Rambo	7.4	7.7	7.7	8.3	9.0
90	Skye	7.4	8.0	8.0	8.7	9.0
91	BA 00-6001	7.3	8.3	8.0	8.7	9.0
92	Baronette	7.3	8.3	7.7	8.7	9.0
93	Casablanca	7.3	8.0	8.0	9.0	9.0
94	Chelsea	7.3	7.0	8.0	8.7	9.0
95	Durham	7.3	9.0	7.0	8.3	9.0
96	Mercury	7.3	8.7	7.7	8.3	9.0
97	Moonshine	7.3	7.7	7.3	8.3	9.0
98	Pick 453	7.3	7.7	8.3	8.3	8.3
99	Rita	7.3	8.3	8.0	9.0	8.7
100	SRX 27921	7.3	6.7	7.7	8.3	9.0
101	BA 82-288	7.2	9.0	8.0	9.0	9.0
102	Blacksburg II	7.2	8.3	8.0	8.7	9.0
103	Diva	7.2	8.3	8.0	9.0	9.0
104	Excursion	7.2	8.7	7.3	8.0	8.3
105	Serene	7.2	6.3	7.7	8.3	9.0
106	SI A96-386	7.2	8.3	8.0	9.0	9.0
107	A96-742	7.1	7.3	8.3	9.0	9.0
108	Allure	7.1	6.0	7.7	8.0	8.0
109	Avalanche	7.1	6.7	8.3	9.0	9.0
110	B5-45	7.1	6.3	6.7	8.0	8.0
111	BH 00-6003	7.1	7.7	6.7	7.7	9.0
112	Bluestone	7.1	7.7	7.7	6.3	7.3
113	Boomerang	7.1	7.0	8.3	7.7	8.3
114	Dynamo	7.1	7.7	8.7	9.0	9.0
115	Limousine	7.1	6.0	7.0	6.7	9.0
116	PST-108-79	7.1	6.3	7.3	8.7	9.0
117	PST-H6-150	7.1	8.7	7.7	8.7	9.0
118	Shamrock	7.1	8.3	6.7	7.3	9.0

Table 5. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Red Thread ⁴	Summer Patch ⁵
119	B5-43	7.0	6.0	7.3	6.7	9.0
120	Blue Sapphire	7.0	8.3	7.7	7.0	9.0
121	Jefferson	7.0	6.0	7.7	8.3	9.0
122	Mongoose	7.0	7.3	7.7	7.7	9.0
123	Voyager II	7.0	8.3	8.0	8.0	9.0
124	Alpine	6.9	6.0	8.0	8.3	8.3
125	Baronie	6.9	7.3	6.7	8.0	7.7
126	Bartitia	6.9	6.0	8.0	7.0	8.7
127	Cheetah	6.9	5.7	8.3	9.0	9.0
128	DLF 76-9032	6.9	7.3	9.0	8.7	7.3
129	Fairfax	6.9	6.0	7.0	7.0	8.7
130	HV 238	6.9	7.3	7.7	8.7	9.0
131	PST-161	6.9	7.0	8.7	9.0	9.0
132	SRX 26351	6.9	7.3	8.0	5.7	6.3
133	B5-144	6.8	5.7	7.3	8.7	9.0
134	Coventry	6.8	6.3	6.3	7.3	9.0
135	Eagleton	6.8	6.0	7.3	7.7	9.0
136	PP H 6366	6.8	6.3	6.3	3.7	5.7
137	Raven	6.8	7.0	7.0	8.3	9.0
138	A97-857	6.7	6.0	8.0	8.3	9.0
139	Abbey	6.7	7.0	6.7	8.0	8.3
140	Blue Knight	6.7	6.7	7.0	8.3	7.7
141	Bodacious	6.7	7.0	6.0	8.3	9.0
142	Brooklawn	6.7	7.7	8.0	8.3	9.0
143	Julius	6.7	5.3	7.3	5.0	5.0
144	Lily	6.7	5.7	6.0	7.7	9.0
145	Ulysses	6.7	6.0	5.3	5.7	7.7
146	PP H 7907	6.7	5.7	5.3	8.3	9.0
147	Baron	6.6	6.7	6.0	7.3	9.0
148	BH 00-6002	6.6	7.3	8.3	9.0	9.0
149	Chateau	6.6	6.3	7.0	7.3	9.0
150	CVB-20631	6.6	4.7	6.7	6.3	6.7
151	Julia	6.6	6.0	8.0	7.0	7.7
152	Marquis	6.6	6.3	6.7	8.0	8.3
153	North Star	6.6	6.0	8.0	4.3	6.7
154	Washington	6.6	6.0	8.0	8.7	9.0
155	Appalachian	6.5	6.3	6.0	7.0	6.7
156	Goldrush	6.5	6.0	7.3	8.0	7.7
157	NA-K992	6.5	7.3	7.0	6.7	9.0
158	Cabernet	6.4	6.3	8.0	7.3	9.0
159	Envicta	6.4	7.0	6.0	7.0	8.0
160	Jewel	6.4	5.0	7.0	7.3	9.0
161	99AN-53	6.3	6.3	8.0	8.7	9.0
162	Bariris	6.3	5.7	6.3	5.7	6.7
163	Limerick	6.3	6.7	6.3	6.3	6.0
164	SRX QG245	6.3	6.3	6.3	8.3	9.0
165	Baritone	6.2	6.7	6.3	5.7	6.0
166	DLF 76-9036	6.2	5.7	5.7	6.7	6.7
167	HV 140	6.2	4.7	8.3	8.7	7.0
168	PP H 7929	6.2	7.0	6.3	6.3	8.3
169	Barzan	6.0	6.0	7.0	7.0	8.3
170	DLF 76-9034	6.0	5.0	6.7	8.7	9.0
171	Wellington	5.8	5.0	7.3	7.7	6.3
172	Kenblue	5.4	4.3	7.7	7.0	7.7
173	GO-9LM9	5.2	5.7	6.7	4.0	6.3

¹Varieties with quality ratings of 7.6 and higher were not significantly different.²Varieties with genetic color ratings of 7.7 and higher were not significantly different.³Varieties with leaf spot ratings of 7.4 and higher were not significantly different.⁴Varieties with red thread ratings of 7.3 and higher were not significantly different.⁵Varieties with summer patch ratings of 6.8 and higher were not significantly different.

a perfect 9.0 on all dates. These included Blue Velvet, Bluemax, Goldstar, A97-1409, Brilliant, Mercury, and Blackstone. Thirty cultivars had average color scores of 8.3, and at least one of the replicate plots must have scored a perfect 9.0 on each sampling date. These exceptional cultivars included Chicago II, Delight, Arcadia, BAR PP 0566, Glenmont, Nu Destiny, and Sonoma. Following almost indistinguishably were 21 cultivars with average scores of 8.0; those ranked in the top 20 included Perfection, Unknown, Beyond, J-2885, Freedom II.

While color scores higher than 7.7 did not differ significantly, there were wide differences between those cultivars rated superior to excellent. These included Langara, Total Eclipse, Unique, Lakeshore, and Princeton 105. There were 25 with scores above 7.0, including the top-ranking cultivars Hallmark, Odyssey, PST-B3-170, and SRX 2114.

In total, the color of 36 cultivars was rated as good to very good with scores of 6.0 to 6.9, including Wildwood, Ascot, Coventry, Eagleton, Misty, and Serene. Only 10 cultivars were scored as adequate with scores of 5.0 or better; these included Cheetah, B5144, Julius, Lily, and Bariris. Only HV 140 and Kenblue were classed as poor.

Superior color was demonstrated by 102 of 173 cultivars in the third year of the trial. Only eight cultivars in the top 50 had color scores less than 8.0. Equally impressive, cultivars ranked as low as 95th, Durham, and 101st, BA 82-288, had perfect color despite difficulties with disease. In general, the cultivars ranked as the top 100 for quality also had impeccable color. Superior disease tolerance could offset less desirable color as is seen with cultivar Ginney, ranked 7th with quality at 8.2 but with a color rating of 7.0.

Alternating moist and dry conditions brought about an early and severe outbreak of leaf spot with the most susceptible cultivars losing nearly half of their turf for a second year. Seven cultivars remained unaffected by leaf spot and recorded scores of 9.0 with no disease evident in any month: Blue-Tastic, Kingfisher, Delight, BAR PP 0566, Bordeaux, Unique, and Valor. Fifteen cultivars demonstrated nearly undetectable levels of leaf spot, including Moonlight, Unknown, Goldstar, A97-1409, Boutique, and Mallard. Sixty-five cultivars developed leaf spots in moderation as their only symptom; these included the top-ranking cultivars Barrister, Blue Velvet, Ginney, Perfection, Arcadia, Bedazzled, Bluemax, Goldstar, and J-2885. Severe leaf spot accompanied by leaf thinning plagued 31 cultivars; among them were Chicago II, Beyond, Hallmark, Liberator, and Odyssey. Early melting out with some plant loss was seen in 22 cultivars

scoring 7.0 to 7.5, including Midnight II, Freedom II, Blue Ridge, and Quantum Leap. There were 24 cultivars scoring below 6.9 with plant and crown loss resulting in an appreciable decline in sodded turf area. These included B5-45, Shamrock, Baronie, Coventry and Abbey. Greater than 50% loss in turf surface was only seen in plots seeded to Bodacious, Lily, Baron, Appalachian, Envicta, Ulysses, PP H 7907, and DLF 76-9036.

Red thread disease appeared in the Kentucky bluegrass test plots for the first time since seeding. While occurring in specific areas adjacent to fine fescue and bentgrass plots, red thread had not infested the bluegrass plots until 2004. The outbreak of this disease in Kentucky bluegrass was slight to moderate. Nearly half of the cultivars remained nearly symptom free while the remainder evidenced little disease pressure. Forty-three cultivars showed no disease at all, including Blue-Tastic, Kingfisher, Moonlight, Barrister, Ginney, Delight, Bedazzled, and Goldstar.

Thirty-eight cultivars averaged red thread disease scores of 8.7, meaning that only one of the three replicate plots showed infection. These included Perfection, Beyond, J-2885, Nuglade, Odyssey, PST-BB-170, Sonoma, and SRX 2114. Thirty-four cultivars showed minor levels of red thread and averaged scores of 8.0 or better, including Blue Velvet, Midnight II, Arcadia, Hallmark, and Freedom II. Moderately severe infection was reported in only eight cultivars: Bluestone, Limousine, B5-43, and Ulysses among them. Red thread disease, sufficiently severe to cause turf loss and semi-permanent damage, was observed in only four cultivars: BA-128A, PP H 6366, Julius, and North Star. To date, in mid-Maine, health remains the rule and disease the exception with red thread disease. However, turf managers are cautioned that increasing spring and summer temperatures and fluctuating humidities that approximate conditions more commonly found in Connecticut, New York, and Pennsylvania will probably exacerbate red thread and pink patch diseases in the future. Vigilant observations of high-maintenance turf will be required to detect and correct this potentially severe threat to Kentucky bluegrass.

Summer patch was first observed in the trial area in 2004 following an extended period of hot dry mid-summer weather. As was seen for red thread evaluations, the majority of cultivars escaped infection and remained disease free. In total, there were 119 cultivars in which summer patch was not detected. This allows the turf manager ample selection diversity for choosing a cultivar that will withstand the very difficult to control summer patch.

Only slight levels of disease, less than 5% of the plot area, were seen in 19 of the top 100 cultivars. Only 12 cultivars developed appreciable disease, including SRX 26351, PPH 6366, Julius, Limerick, Baritone, and Wellington. Of these, PPH 6366 and Julius were the most susceptible and symptoms both persisted and developed into “frog-eye” patches with substantial turfgrass loss. Summer patch has been noted as a disease of increasing importance in the sod-growing areas of southern Maine and the southern New England states. It is difficult to predict, difficult to detect, and often impossible to control. Grasses overseeded into infected turf or sod will normally also develop infection, and mortality levels are high when seeding follows sod removal. The disease cycle requires five to 10 years before natural abatement occurs and flare-ups are common when disturbance happens during conditions of high temperatures and humidities. Summer patch, like other patch diseases, can be exacerbated by lime applications and temporary increases in pH levels.

2005

Unseasonably warm weather was rapidly followed by prolonged damp conditions during the growing season, which suppressed Kentucky bluegrass quality, with only 17 cultivars described as exceptional (Table 6). The five years following seeding placed considerable disease, insect, and weed pressure on the plots, but a few truly exceptional grasses were visually evident.

Four cultivars averaged 8.2 or higher for turfgrass quality, and of these only Moonlight was familiar from previous years. The remaining three were BAR PP 0566, J-2885, and SRX 2114. Nearly indistinguishable were Alexa, Barrister, Beyond, Blue Velvet, Chicago II, Freedom II, Kingfisher, PST-B3-170, PST-York Harbor 4, and Unknown. Quality ratings of 7.2 or higher did not differ significantly. There are 85 cultivars described as superior. These included eight scoring 7.9, among which were Ginney, Princeton 105, Royale, Unique, and Showcase. There were 12 cultivars scoring 7.8, including Ascot, Bluemax, Boutique, Champlain, Hallmark, and North Star. Cultivars such as Everglade, Glenmont, Katie, Midnight and Midnight II, Arcadia, Odyssey, Awesome, Langara, Monte Carlo, and Quantum Leap averaged superior scores between 7.5 and 7.8. Other notable cultivars in the group scoring 7.2 to 7.5 included Bedazzled, Blackstone, Blue Ridge, Liberator, and Limousine. Even the wide-blade sports turf types Rampart, Rugby II, Durham, Rambo, and Dynamo averaged quality scores greater than 7.2. Twenty cultivars were described as excellent

with scores averaging above 7.0, including Allure, Bartitia, Casablanca, Freedom III, Goldstar, and Blacksburg II. Thirty-eight cultivars were ranked good to very good with quality scores of 6.5 to 6.9. This group included Abbey, Lily, Raven, Washington, Avalanche, Coventry, and Eagleton. Only nine cultivars were described as adequate, including Bodacious, Appalachian Chateau, and Wellington. Three cultivars could not be recommended based on quality observed in this 2005 test: Jewel, DLF-76-9034, and Kenblue.

Unlike previous seasons, perfect marks for season-long color were seen in only seven cultivars: J-2885, Moonlight, Beyond, Bluemax, Perfection, Blue Knight, and SRX 27921. This latter cultivar was able to hold its deep dark color despite leaf spot severe enough to cause a 50% reduction in leaf surface. Moderately severe leaf spot disease caused a depression in some turf color scores. Twenty-two cultivars were nearly indistinguishable from perfect with color scores of 8.7. This group included Barrister, Chicago II, Freedom II, Unknown, Award, Boutique, Total Eclipse, Midnight II, and Nu Destiny. Similar to SRX 27921, Lily and Bluestone were able to hold extremely high color scores despite severe leaf spot infections. There were 69 cultivars classified as superior with color scores between 8.0 and 8.3. Familiar names included BAR PP 0566, SRX 2114, Alexa, Kingfisher, Ginney, Royale, Wildwood, Ascot, Hallmark, and NuGlade. Sixty-four cultivars were almost as dark and well defined and scored between 7.0 and 7.9, including Blue Velvet, Blue-Tastic, PST-York Harbor 4, Sorbonne, Princeton 105, Showcase, Unique, and Katie. Very good color, with scores averaging 6.5 to 7.0, was seen in only five cultivars: Bedazzled and Valor among them. Jewel and Casablanca scored a 6.3 as the least appropriate color. That rating is a point and a half above the industry standard and commercial expectations for adequate color.

Left unchecked and without any form of control, the disease incited by *Dreschlera* species—leaf spot, melting out, and crown rot—caused substantial damage to all 173 cultivars in the Kentucky bluegrass trial. None of the cultivars examined remained leaf spot free; however, melting out and crown rot severely affected only 36 cultivars or 21% of the test.

The very best of the cultivars showed, on average, nearly one-third of the available leaf surface compromised with small to large lesions. Only Mallard averaged less than 20% leaf infection, and Moonlight and Award averaged approximately 25% leaf infection. Lesions were visible in one-quarter to one-third of all leaves in 12 cultivars, including SRX

Table 6. Turfgrass quality, genetic color, and disease ratings for Kentucky bluegrass varieties seeded September, 2000 at the University of Maine. Means are the average of monthly ratings taken over the 2005 growing season.

Rank	Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Summer Patch ⁴
1	BAR PP 0566	8.2	8.3	6.0	9.0
2	J-2885	8.2	9.0	5.7	8.7
3	Moonlight	8.2	9.0	7.7	8.7
4	SRX 2114	8.2	8.3	7.0	9.0
5	Alexa	8.1	8.3	6.3	9.0
6	Barrister	8.1	8.7	5.3	9.0
7	Beyond	8.1	9.0	6.0	9.0
8	Blue Velvet	8.1	7.7	4.7	8.7
9	Blue-Tastic	8.1	7.7	7.3	9.0
10	Chicago II	8.1	8.7	5.7	8.0
11	Freedom II	8.1	8.7	7.0	9.0
12	Kingfisher	8.1	8.0	6.0	9.0
13	PST-B3-170	8.1	8.0	5.7	9.0
14	PST-York Harbor 4	8.1	7.7	6.3	9.0
15	Unknown	8.1	8.7	4.7	8.3
16	Award	8.0	8.7	7.7	9.0
17	Sorbonne	8.0	7.3	7.3	9.0
18	BAR PP 0468	7.9	8.0	6.7	9.0
19	Courtyard	7.9	8.0	5.3	8.7
20	Ginney	7.9	8.0	5.3	9.0
21	Princeton 105	7.9	7.7	6.3	9.0
22	Royale	7.9	8.0	6.7	9.0
23	Showcase	7.9	7.3	5.7	8.3
24	Unique	7.9	7.0	6.7	9.0
25	Wildwood	7.9	8.0	5.0	9.0
26	A98-1028	7.8	8.3	6.3	9.0
27	Ascot	7.8	8.0	5.0	9.0
28	B4-128A	7.8	7.3	5.7	9.0
29	Bluemax	7.8	9.0	6.7	9.0
30	Boutique	7.8	8.7	6.0	9.0
31	Champlann	7.8	8.3	7.0	8.7
32	Hallmark	7.8	8.3	4.7	8.7
33	North Star	7.8	8.7	6.7	9.0
34	Nuglade	7.8	8.3	5.3	9.0
35	Perfection	7.8	9.0	4.3	9.0
36	SR 2284	7.8	7.7	6.7	9.0
37	Total Eclipse	7.8	8.7	4.7	8.7
38	A97-1409	7.7	7.7	4.7	8.7
39	BAR PP 0471	7.7	7.7	6.7	9.0
40	Everglade	7.7	8.3	6.3	8.7
41	Glenmont	7.7	8.7	6.0	9.0
42	Katie	7.7	7.7	7.0	9.0
43	Midnight	7.7	8.0	6.3	8.0
44	Midnight II	7.7	8.7	4.3	9.0
45	Nu Destiny	7.7	8.7	5.0	9.0
46	PST-B5-125	7.7	8.3	5.7	9.0
47	Arcadia	7.6	8.0	4.7	9.0
48	Champagne	7.6	8.0	5.0	8.0
49	Delight	7.6	8.0	6.3	8.7
50	Impact	7.6	8.0	5.0	8.3
51	Lakeshore	7.6	8.3	6.3	8.7
52	Odyssey	7.6	8.7	4.7	9.0
53	PST-B4-246	7.6	7.0	5.7	9.0
54	Royce	7.6	7.7	7.3	9.0
55	Awesome	7.5	8.7	6.0	9.0
56	Bordeaux	7.5	8.7	5.3	9.0
57	H92-558	7.5	7.7	6.0	9.0

Table 6. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Summer Patch ⁴
58	Langara	7.5	8.3	4.0	9.0
59	Monte Carlo	7.5	7.7	6.0	8.7
60	Quantum Leap	7.5	8.7	6.3	8.3
61	Rita	7.5	8.0	6.3	8.3
62	A96-739	7.4	8.3	5.7	8.0
63	B5-45	7.4	7.3	6.3	8.3
64	BAR PP 0573	7.4	7.7	6.7	9.0
65	Bedazzled	7.4	6.7	6.3	7.3
66	Blackstone	7.4	8.7	5.7	8.7
67	Blue Knight	7.4	9.0	4.0	8.3
68	Blue Ridge	7.4	8.0	7.3	7.7
69	Everest	7.4	7.7	7.0	8.7
70	Liberator	7.4	8.3	5.7	9.0
71	Limousine	7.4	7.7	5.7	8.7
72	Pick 453	7.4	8.0	6.3	8.3
73	PP H 7907	7.4	8.7	5.0	8.0
74	Rampart	7.4	8.7	6.0	8.0
75	Rugby II	7.4	8.3	5.0	8.7
76	SI A96-386	7.4	8.3	6.0	9.0
77	Sonoma	7.4	7.7	6.0	9.0
78	A96-742	7.3	7.3	5.3	9.0
79	A98-407	7.3	8.7	5.0	8.7
80	Apollo	7.3	7.0	6.0	8.3
81	Arrow	7.3	7.3	5.7	7.7
82	BA 00-6001	7.3	8.3	4.7	8.7
83	BA 82-288	7.3	7.0	6.7	9.0
84	BA 84-140	7.3	8.7	5.7	6.3
85	Durham	7.3	8.3	7.3	8.7
86	H92-203	7.3	6.7	5.7	8.3
87	Mallard	7.3	8.0	8.0	7.0
88	PST-108-79	7.3	7.3	5.0	8.3
89	PST-222	7.3	8.3	6.3	8.7
90	Rambo	7.3	8.3	6.3	8.3
91	Serene	7.3	8.0	5.0	8.3
92	Tsunami	7.3	8.3	5.7	7.7
93	Voyager II	7.3	7.3	7.0	9.0
94	A98-183	7.2	7.7	5.7	8.7
95	B5-144	7.2	7.3	5.7	8.7
96	Barzan	7.2	8.0	6.3	9.0
97	Blue Sapphire	7.2	7.7	6.0	8.7
98	Brilliant	7.2	8.3	5.3	9.0
99	Chelsea	7.2	7.7	5.0	9.0
100	Dynamo	7.2	7.7	6.0	8.7
101	PST-H5-35	7.2	8.3	6.0	8.0
102	Shamrock	7.2	8.0	6.3	8.3
103	A98-365	7.1	8.3	5.3	9.0
104	Allure	7.1	7.3	5.3	8.7
105	Bartitia	7.1	8.3	5.3	7.0
106	BH 00-6003	7.1	8.0	4.7	9.0
107	Boomerang	7.1	8.0	3.3	8.3
108	Casablanca	7.1	6.3	5.3	7.7
109	Diva	7.1	7.7	6.7	9.0
110	Freedom III	7.1	8.0	4.3	8.7
111	Goldstar	7.1	8.3	6.3	8.3
112	Marquis	7.1	8.3	6.3	8.7
113	Misty	7.1	8.3	3.7	9.0
114	Moonshine	7.1	7.7	4.7	8.0
115	PP H 6366	7.1	8.3	6.3	7.3
116	Valor	7.1	6.7	4.7	7.7
117	Blacksburg II	7.0	7.3	6.3	8.7

Table 6. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Summer Patch ⁴
118	Cheetah	7.0	8.0	3.3	7.0
119	Excursion	7.0	7.7	6.0	9.0
120	PST-604	7.0	8.3	5.3	8.7
121	Skye	7.0	7.7	4.7	8.3
122	SRX 27921	7.0	9.0	5.0	8.3
123	A97-857	6.9	7.3	5.7	8.3
124	Abbey	6.9	7.7	5.7	8.7
125	BA 83-113	6.9	8.3	4.3	8.0
126	Brooklawn	6.9	7.3	5.7	8.3
127	CVB-20631	6.9	7.7	5.7	8.3
128	Lily	6.9	8.7	5.7	9.0
129	PP H 7929	6.9	8.0	5.7	8.0
130	Raven	6.9	7.7	5.3	7.7
131	Washington	6.9	8.0	2.3	7.0
132	99AN-53	6.8	7.0	7.0	8.3
133	Avalanche	6.8	8.0	2.0	7.7
134	Baronie	6.8	7.0	6.0	6.7
135	Bluestone	6.8	8.7	5.3	8.7
136	Coventry	6.8	8.3	4.0	9.0
137	Eagleton	6.8	7.3	6.0	8.3
138	Envicta	6.8	7.7	6.0	8.7
139	Goldrush	6.8	8.0	5.7	8.7
140	PST-161	6.8	8.3	3.3	7.7
141	Ulysses	6.8	8.3	5.0	8.3
142	B5-43	6.7	8.0	6.3	7.7
143	Bariris	6.7	8.3	5.3	8.0
144	DLF 76-9036	6.7	6.7	5.3	8.3
145	Fairfax	6.7	7.3	5.7	7.3
146	HV 238	6.7	6.7	3.7	8.7
147	Jefferson	6.7	7.7	4.0	8.0
148	Limerick	6.7	8.0	5.3	6.7
149	Mercury	6.7	7.7	5.7	8.3
150	Mongoose	6.7	7.0	6.0	8.0
151	Moonshadow	6.7	7.7	3.7	6.7
152	PST-H6-150	6.7	5.7	6.0	7.0
153	Alpine	6.6	7.3	5.7	8.7
154	Baron	6.6	8.0	5.7	8.0
155	HV 140	6.6	7.0	5.3	8.0
156	Julia	6.6	7.7	6.0	6.7
157	NA-K992	6.6	7.3	5.3	8.0
158	SRX QG245	6.6	8.3	6.0	7.3
159	Baronette	6.5	7.3	5.3	9.0
160	DLF 76-9032	6.5	7.3	4.7	9.0
161	Julius	6.5	6.7	5.3	7.7
162	Bodacious	6.4	7.7	4.3	8.3
163	Appalachian	6.3	8.0	4.0	6.3
164	Chateau	6.3	7.7	4.7	8.3
165	Cabernet	6.2	8.0	3.0	8.0
166	GO-9LK9	6.2	7.7	5.7	7.0
167	SRX 26351	6.2	8.0	6.7	8.7
168	Baritone	6.1	8.0	4.0	7.7
169	BH 00-6002	6.1	7.0	3.7	7.3
170	Wellington	6.0	7.3	5.0	9.0
171	Jewel	5.6	6.3	3.7	8.0
172	DLF 76-9034	5.4	7.3	2.3	8.7
173	Kenblue	5.3	7.0	1.7	6.0

¹Varieties with quality ratings of 7.2 or higher were not significantly different.²Varieties with genetic color ratings of 6.9 or higher were not significantly different.³Varieties with leaf spot ratings of 5.1 or higher were not significantly different.⁴Varieties with summer patch ratings of 6.2 or higher were not significantly different.

2114, Blue-Tastic, Freedom II, Sorbonne, Champlain, and Katie. Fifty-five cultivars exhibited leaf spot infection in 35% to 40% of their available leaf surfaces. This was accompanied by a gradual turf thinning, and melting out accounted for a loss of 1% to 5% of the sodded surface. Familiar cultivars in this group included BAR PP 0566, Alexa, Beyond, Kingfisher, PST-York Harbor 4, and Princeton 105. Infection of nearly 50% of the available leaves was normally accompanied by melting out at 5% to 10% of the plot surface. There were 63 cultivars so classified. Several were top-ranked grasses such as J-2885, Barrister, Chicago II, Courtyard, Ginney, Showcase, Wildwood, and Ascot. More than 50% leaf infection and melting out of 10% to 15% of the sodded surface were seen in 23 cultivars; they included Blue Velvet, Unknown, Hallmark, Perfection, Total Eclipse, Midnight II, and Arcadia. Severe leaf spot, 60% or more of the leaf surface and melting out of 15% to 25%, was occasionally accompanied by crown rot severe enough to result in bare ground and slow-to-heal areas. This was observed in 13 cultivars; among them were Boomerang, Misty, and Cheetah. Several cultivars were decimated by leaf spot and crown rot with a resultant loss of nearly the entire plot surface as was noted for Washington, Avalanche, DLF 76-9034, and Kenblue. Unaided recovery growth during the autumn and winter was not expected.

Summer patch was observed for a second year in this Kentucky bluegrass test. The greater majority of cultivars remained disease free with only 27 cultivars showing classic frog-eye symptoms. Sixty-one cultivars showed no summer patch symptoms despite drought and mid-summer conditions. These included the exceptional cultivars BAR PP 0566, SRX 2114, Alexa, Barrister, Beyond, Blue-Tastic, Freedom II, Kingfisher, and Award. In 37 cultivars, only a trace amount of summer patch was detected; these included J-2885, Moonlight, Blue Velvet, Courtyard, Champlain, Hallmark, Total Eclipse, and Everglade. Mild to very mild surface disturbances were noted in 43 cultivars, including Unknown, Showcase, Impact, Quantum Leap, Blue Knight, Rampart, and Apollo. Easily identified and more classic symptoms appeared as small size patches in 14 cultivars, none of them ranked in the top 65. Those so afflicted included Bedazzled, Blue Ridge, Arrow, Mallard, Tsunami, and Casablanca. Large easily distinguished patches exhibiting frog-eye circularity were seen in BA 84-140, Baronie, Limerick, Moonshadow, Julia, Appalachian, and Kenblue. If the expected global warming trend continues, cultivars capable of withstanding the warm summer

diseases and those favored by warm soil will be needed to ensure surface stability, root viability, and erosion resistance. The relative long-lived symptomatology and progressively destructive nature of the patch diseases suggests that turf managers must seek those cultivars demonstrating the greatest resistance against these organisms.

Five-Year Compilation

We observed significant improvements in quality, establishment, density, color, and disease tolerance of Kentucky bluegrass during the five years of this trial, and report turfgrass quality improvements of nearly one full point over former industry standards. Similarly, these quality improvements were noted for more than half the entries in this trial. On average, 111 cultivars will perform better in all circumstances than those currently available in the trade. This wide array of potential choices will allow the turf manager to tailor the grass to its desired future use and to define and match the parameters of that use to the agronomic characteristics of the grass.

Over the course of five years, exceptional quality was noted for 22 cultivars (Table 7). Scoring a trial best of 8.1 was Moonlight. This grass recorded superlative scores of 8.1 in 2002, 8.4 in 2003, 8.4 in 2004, and 8.2 in 2005. The uniformity of excellence should not be underestimated; three replicate plots measured monthly for five years all resulted in scores approaching perfection.

Four grasses performed nearly as well, averaging 8.0 over five years: BlueTastic, Ginney, Midnight II, and Perfection. Of these, Perfection scored highest in establishment, followed closely by Blue-Tastic and Midnight II. Ginney was ranked first in 2002, Midnight II was ranked first in 2003, Perfection was ranked 6th in 2002. All of these grasses appeared at the top of each year's rating, averaging greater than 8.2 in 2002, 2003, and 2004. The uniformity of ratings will assure the turf manager that consistent quality will be maintained in each of these grasses despite the vagaries of climate and locale.

Four grasses followed closely with a five-year average of 7.9: Barrister, Beyond, Chicago II, and Freedom II. Beyond and Freedom II scored very high in establishment. Barrister was ranked second in 2002, and Beyond showed great consistency with rankings of 15th, 16th, 14th, and 7th. Chicago II appeared 4th in 2003; Freedom II was rated 5th in 2003. All of these were recorded in the top 20 for quality every year of this trial.

Six grasses complete the top 15 ranking for five years. Averaging 7.8 during this period were Arcadia,

Table 7. Turfgrass quality, genetic color, and disease ratings for Kentucky bluegrass varieties seeded September, 2000 at the University of Maine. Means are the average of monthly ratings taken over the five-year duration of the study (2001–2005).

Rank	Variety	Quality ¹	Genetic Color ²	Red Thread ³	Summer Patch ⁴	Summer Color ⁵	Leaf Spot ⁶
1	Moonlight	8.1	9.0	9.0	8.8	8.0	8.2
2	Blue-Tastic	8.0	8.6	9.0	9.0	8.3	8.0
3	Ginney	8.0	8.1	9.0	9.0	7.7	7.5
4	Midnight II	8.0	8.6	8.3	9.0	8.7	6.8
5	Perfection	8.0	8.5	8.7	9.0	8.3	7.3
6	Barrister	7.9	8.8	9.0	9.0	8.0	7.0
7	Beyond	7.9	8.7	8.7	9.0	8.0	7.2
8	Chicago II	7.9	8.8	7.7	8.2	8.3	7.6
9	Freedom II	7.9	8.3	8.3	9.0	8.0	7.7
10	Arcadia	7.8	8.3	8.3	9.0	8.0	6.6
11	BAR PP 0566	7.8	8.5	9.0	9.0	8.0	7.7
12	Blue Velvet	7.8	8.2	8.3	8.8	7.7	7.6
13	Bluemax	7.8	8.6	8.0	8.2	8.3	7.9
14	Kingfisher	7.8	8.3	9.0	9.0	8.0	7.7
15	Unknown	7.8	8.6	9.0	8.7	8.0	7.4
16	Alexa	7.7	8.1	8.3	9.0	8.0	7.3
17	Award	7.7	8.4	8.3	9.0	8.0	7.4
18	BA 84-140	7.7	8.8	8.7	7.5	9.0	7.0
19	Delight	7.7	8.4	9.0	8.8	8.3	7.2
20	Hallmark	7.7	7.8	8.3	8.8	7.0	7.0
21	J-2885	7.7	8.1	8.7	8.8	7.7	7.3
22	Nu Destiny	7.7	8.5	8.3	9.0	8.3	7.4
23	Bedazzled	7.6	8.1	9.0	8.2	8.0	7.3
24	Blue Ridge	7.6	8.2	8.3	8.3	9.0	7.6
25	Bordeaux	7.6	8.4	9.0	9.0	7.7	6.6
26	Impact	7.6	8.3	8.7	8.7	8.3	7.3
27	Langara	7.6	7.9	9.0	9.0	7.7	6.6
28	Nuglade	7.6	8.3	8.7	9.0	8.0	6.6
29	PST-B3-170	7.6	7.8	8.7	9.0	7.3	7.1
30	PST York Harbor 4	7.6	8.2	8.3	8.7	7.3	7.4
31	Quantum Leap	7.6	8.4	8.3	8.7	8.7	7.3
32	Royale	7.6	8.5	8.7	9.0	7.3	7.6
33	Sonoma	7.6	8.3	8.7	9.0	7.3	7.1
34	Total Eclipse	7.6	8.5	9.0	8.8	8.0	7.0
35	Unique	7.6	7.5	8.7	8.3	7.3	7.7
36	Wildwood	7.6	7.4	9.0	9.0	7.0	7.0
37	A97-1409	7.5	8.0	9.0	8.0	8.3	7.0
38	Apollo	7.5	7.7	8.3	8.7	8.0	7.0
39	Ascot	7.5	7.5	8.3	8.8	7.7	7.3
40	Awesome	7.5	8.4	9.0	9.0	8.3	7.7
41	B4-128A	7.5	7.2	5.0	8.0	7.3	7.0
42	BAR PP 0468	7.5	8.0	9.0	9.0	7.3	7.4
43	Boutique	7.5	8.8	9.0	9.0	7.3	7.5
44	Courtyard	7.5	8.2	8.7	8.8	7.3	7.2
45	Everglade	7.5	8.3	9.0	8.8	8.0	7.3
46	Glenmont	7.5	8.4	8.3	9.0	7.0	7.5
47	Katie	7.5	8.3	8.7	9.0	7.3	7.7
48	Midnight	7.5	8.3	8.7	8.5	8.0	7.5
49	Royce	7.5	7.9	9.0	9.0	7.3	7.9
50	SR 2284	7.5	8.1	9.0	8.7	6.7	7.1
51	SRX 2114	7.5	7.8	9.0	9.0	6.0	7.8
52	Tsunami	7.5	8.4	8.7	8.3	8.3	6.7
53	A96-739	7.4	8.3	8.0	8.2	7.7	6.5
54	Arrow	7.4	8.1	8.7	8.3	7.3	7.4
55	Champlain	7.4	7.8	8.3	8.8	8.0	7.5
56	Everest	7.4	8.3	8.3	8.8	8.7	7.6
57	Goldstar	7.4	8.2	9.0	8.3	8.0	7.0
58	H92-558	7.4	7.8	8.7	9.0	8.0	7.4

Table 7. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Red Thread ³	Summer Patch ⁴	Summer Color ⁵	Leaf Spot ⁶
59	Liberator	7.4	8.2	8.3	8.5	8.3	6.6
60	Mallard	7.4	8.6	9.0	8.0	8.3	7.2
61	Monte Carlo	7.4	8.5	9.0	8.5	8.0	6.9
62	Princeton 105	7.4	8.0	9.0	9.0	8.7	7.5
63	PST-222	7.4	8.3	8.0	8.2	7.7	7.5
64	PST-B4-246	7.4	7.7	8.7	8.8	8.0	7.0
65	Rampart	7.4	8.3	8.0	8.2	8.0	7.0
66	Showcase	7.4	7.8	8.7	8.7	7.7	7.2
67	A98-1028	7.3	7.7	9.0	9.0	7.0	7.1
68	A98-183	7.3	8.2	8.7	8.8	7.3	6.9
69	A98-365	7.3	8.6	9.0	9.0	7.7	7.1
70	B5-45	7.3	7.3	8.0	8.2	7.0	6.8
71	BAR PP 0471	7.3	7.7	9.0	9.0	7.0	7.3
72	BAR PP 0573	7.3	8.1	8.7	9.0	7.7	7.4
73	Blackstone	7.3	8.8	8.3	8.8	8.3	5.9
74	Brilliant	7.3	8.3	8.3	9.0	7.3	6.8
75	Chelsea	7.3	7.4	8.7	9.0	7.0	7.0
76	Moonshadow	7.3	8.2	7.7	7.8	8.0	6.4
77	Odyssey	7.3	8.2	8.7	9.0	6.7	6.8
78	PST-B5-125	7.3	8.3	9.0	9.0	7.3	7.6
79	Rita	7.3	8.3	9.0	8.5	7.3	7.2
80	Rugby II	7.3	7.9	8.7	8.8	7.3	6.5
81	SRX 27921	7.3	7.9	8.3	8.7	9.0	7.0
82	Valor	7.3	7.4	8.7	8.3	7.0	7.4
83	BA 82-288	7.2	8.0	9.0	9.0	8.0	6.9
84	Casablanca	7.2	7.6	9.0	8.3	7.3	7.0
85	Pick 453	7.2	7.9	8.3	8.3	8.0	7.5
86	Serene	7.2	7.7	8.3	8.7	7.3	6.3
87	Sorbonne	7.2	7.7	9.0	9.0	7.3	7.5
88	Boomerang	7.1	7.8	7.7	8.3	9.0	6.3
89	Champagne	7.1	7.7	8.7	8.3	7.3	6.3
90	Durham	7.1	8.4	8.3	8.8	7.7	7.3
91	Freedom III	7.1	8.3	9.0	8.8	7.0	6.5
92	H92-203	7.1	7.4	9.0	7.8	7.3	7.3
93	Mercury	7.1	8.3	8.3	8.7	7.7	6.5
94	PST-H5-35	7.1	7.7	7.7	8.3	7.3	7.4
95	Shamrock	7.1	7.8	7.3	8.7	7.3	6.5
96	Skye	7.1	8.0	8.7	8.7	6.3	6.3
97	Voyager II	7.1	7.8	8.0	9.0	7.0	7.6
98	A96-742	7.0	7.2	9.0	9.0	6.7	6.8
99	A98-407	7.0	8.6	8.3	8.8	8.3	6.4
100	Allure	7.0	7.0	8.0	8.3	7.7	6.3
101	Avalanche	7.0	7.3	9.0	8.3	7.3	4.8
102	B5-144	7.0	7.1	8.7	8.8	7.3	6.6
103	BA 00-6001	7.0	8.2	8.7	8.8	7.0	6.3
104	Baronette	7.0	7.8	8.7	9.0	7.0	6.4
105	Diva	7.0	8.0	9.0	9.0	7.0	7.6
106	Lakeshore	7.0	7.5	8.0	8.8	7.0	6.8
107	Misty	7.0	7.4	8.0	9.0	7.0	5.1
108	PST-108-79	7.0	7.3	8.7	8.7	7.3	6.6
109	PST-604	7.0	8.5	7.7	8.8	8.7	6.2
110	Rambo	7.0	8.1	8.3	8.7	6.7	6.6
111	SI A96-386	7.0	8.3	9.0	9.0	7.3	7.5
112	. Abbey	6.9	7.1	8.0	8.5	7.3	6.3
113	Alpine	6.9	6.9	8.3	8.5	6.3	7.2
114	BA 83-113	6.9	7.8	9.0	8.5	7.7	6.5
115	BH 00-6003	6.9	8.1	7.7	9.0	8.0	6.2
116	Blacksburg II	6.9	7.8	8.7	8.8	7.3	6.5
117	Blue Knight	6.9	8.2	8.3	8.0	7.3	5.9
118	Blue Sapphire	6.9	8.0	7.0	8.8	8.3	7.0
119	Dynamo	6.9	7.7	9.0	8.8	7.3	7.0

Table 7. Continued.

Rank	Variety	Quality ¹	Genetic Color ²	Red Thread ³	Summer Patch ⁴	Summer Color ⁵	Leaf Spot ⁶
120	Excursion	6.9	8.1	8.0	8.7	8.3	7.3
121	HV 238	6.9	7.5	8.7	8.8	7.7	6.1
122	Julius	6.9	6.7	5.0	6.3	6.0	6.7
123	Limousine	6.9	6.8	6.7	8.8	7.0	6.4
124	North Star	6.9	7.5	4.3	7.8	6.7	7.6
125	PP H 7907	6.9	7.3	8.3	8.5	8.0	5.8
126	PST-161	6.9	7.7	9.0	8.3	7.0	5.2
127	Raven	6.9	7.1	8.3	8.3	7.0	6.1
128	SRX 26351	6.9	7.8	5.7	7.5	7.0	7.4
129	B5-43	6.8	7.5	6.7	8.3	7.3	6.5
130	Bartitia	6.8	6.9	7.0	7.8	7.7	7.0
131	Cheetah	6.8	7.1	9.0	8.0	7.0	5.8
132	Coventry	6.8	7.4	7.3	9.0	7.3	5.6
133	Moonshine	6.8	7.3	8.3	8.5	7.7	6.2
134	PST-H6-150	6.8	7.5	8.7	8.0	7.0	7.1
135	Baronie	6.7	7.3	8.0	7.2	6.7	6.6
136	Brooklawn	6.7	7.3	8.3	8.7	7.0	6.4
137	DLF 76-9032	6.7	7.6	8.7	8.2	6.7	6.7
138	Fairfax	6.7	7.2	7.0	8.0	7.0	5.8
139	Goldrush	6.7	6.9	8.0	8.2	7.3	6.5
140	Marquis	6.7	7.5	8.0	8.5	7.0	6.5
141	Mongoose	6.7	7.1	7.7	8.5	7.3	6.9
142	PP H 6366	6.7	6.9	3.7	6.5	6.0	6.9
143	A97-857	6.6	7.0	8.3	8.7	7.0	7.0
144	Bluestone	6.6	7.7	6.3	8.0	8.3	6.5
145	DLF 76-9036	6.6	6.7	6.7	7.5	7.3	6.2
146	Envicta	6.6	7.2	7.0	8.3	7.3	6.3
147	Julia	6.6	7.1	7.0	7.2	7.0	6.5
148	Lily	6.6	7.4	7.7	9.0	8.0	6.1
149	Ulysses	6.6	7.6	5.7	8.0	7.7	5.9
150	Chateau	6.5	7.3	7.3	8.7	6.7	6.2
151	Eagleton	6.5	7.1	7.7	8.7	6.3	5.8
152	Jefferson	6.5	7.3	8.3	8.5	7.0	5.6
153	PP H 7929	6.5	7.5	6.3	8.2	7.7	6.9
154	Washington	6.5	6.9	8.7	8.0	6.3	4.7
155	Baron	6.4	7.3	7.3	8.5	7.3	6.3
156	BH 00-6002	6.4	7.4	9.0	8.2	6.7	5.0
157	Bodacious	6.4	7.7	8.3	8.7	6.7	6.0
158	Cabernet	6.4	7.7	7.3	8.5	7.3	5.1
159	Limerick	6.4	7.4	6.3	6.3	7.0	5.7
160	Bariris	6.3	7.2	5.7	7.3	6.0	6.5
161	Baritone	6.3	7.1	5.7	6.8	6.3	5.8
162	CVB-20631	6.3	6.6	6.3	7.5	6.3	6.8
163	HV 140	6.3	6.4	8.7	7.5	7.7	5.5
164	NA-K992	6.3	7.6	6.7	8.5	8.0	5.1
165	Appalachian	6.2	7.7	7.0	6.5	7.0	4.3
166	Barzan	6.2	7.3	7.0	8.7	6.3	5.8
167	SRX QG245	6.2	7.3	8.3	8.2	7.3	5.2
168	99AN-53	6.1	7.0	8.7	8.7	6.7	6.1
169	Jewel	5.8	6.4	7.3	8.5	6.7	4.6
170	DLF 76-9034	5.7	6.4	8.7	8.8	6.3	4.0
171	Kenblue	5.5	5.8	7.0	6.8	6.3	3.7
172	Wellington	5.4	5.8	7.7	7.7	6.3	4.3
173	GO-9LK9	5.1	6.1	5.0	6.7	5.3	5.3

¹Varieties with quality ratings of 7.7 and higher were not significantly different.

²Varieties with genetic color patch ratings of 8.3 and higher were not significantly different.

³Varieties with red thread ratings of 7.3 and higher were not significantly different.

⁴Varieties with summer patch ratings of 7.5 and higher were not significantly different.

⁵Varieties with summer color ratings of 8.0 and higher were not significantly different.

⁶Varieties with leaf spot ratings of 6.9 and higher were not significantly different.

BAR PP 0566, Blue Velvet, Bluemax, Kingfisher, and Unknown. Bluemax was rated third in 2003, and Kingfisher was rated second and Blue Velvet fourth in 2004. In the disease-prone year of 2005, BA PP 0566 was ranked first while Blue Velvet ranked 8th. All of them recorded scores greater than 8.1 for four of five years.

Alexa, Award, BA 84-140, Delight, Hallmark, J-2556, and Nu Destiny completed the group of 22 grasses demonstrating statistically significant improvements. This latter group of cultivars averaged 7.7 across the test. Delight and BA 84-140 were ranked first and second in establishment. In quality, Award was ranked fourth in 2002, BA 84-140 was ranked fifth in 2003, Delight was 11th in 2004, and J-2885 was second in 2005. This group averaged greater than 7.5 for four of the five years.

Thirty cultivars were nearly indistinguishable from the above groups. Of these, Bedazzled, Blue Ridge, Bordeaux, Impact, Langara, Nuglade, PST-B3-170, PST-York Harbor 4, Quantum Leap, Royale, Total Eclipse, Unique, and Wildwood averaged 7.6 over five years. All of these normally finished in the top 50 in any year despite disease pressures.

The industry quality expectation of 7.5 was met or exceeded by 16 additional cultivars; each of which exhibited one or more outstanding characteristics. Familiar names included Apollo (9th in establishment), Ascot, Awesome (19th in 2003), Boutique, Courtyard, Everglade, Glenmont (21st in 2003 and 2004), Katie, Midnight, Royce, and Tsunami (11th in 2002).

Fourteen grasses averaged 7.4, including Champlain, Goldstar, Mallard, Monte Carlo, and Princeton 105. Sixteen grasses averaged 7.3, including Blackstone, Chelsea, Moonshadow, and Odyssey. Casablanca, Sorbonne, Boomerang, Champagne, Durham, Freedom III, Shamrock, and Skye are among the grasses that complete the grouping with average quality above 7.0. These grasses meet or exceed the industry standard quality score of 7.0. This standard reflects the growing importance of Kentucky bluegrasses on golf courses and other areas of highly managed amenity turf. For municipal and public areas, quality scores should consistently meet this average with emphasis placed on summer quality. For home lawns and lawn-care-serviced commercial turf, quality scores greater than 6.5 will be more than sufficient. There were 154 grasses that meet this criterion (Table 7).

The tremendous increase in turfgrass quality was paralleled by extraordinary increases in genetic color. Many of these grasses appeared dark as seedlings and were able to hold or improve on that color during this test. Several of these grasses

were visible from the property boundaries of the Littlefield Garden and appeared nearly black upon examination. Depth of color will allow turf managers and golf course designers to visually emphasize and isolate specific features. They will also find appropriate use in cemeteries, estates, and public forums where visibility is a media-defined necessity.

One grass in this test retained perfect color for the entire duration of the trial. Genetic color scores for Moonlight were recorded as 9.0 for every replicate plot for each data date across five years. Its consistent color was not affected by mowing frequency, mowing direction, fertilizer application, water use, or disease development. Summer heat, winter cold, and variable sunlight did not affect the color and consistency of this trait, making this cultivar immensely valuable in all amenity circumstances. Genetic color ratings above 8.3 do not differ significantly; this category includes 49 cultivars. All 20 top-ranked grasses for quality fall into this category; 16 additional grasses were ranked in the top 50 for the five-year average.

Five grasses averaged 8.8 or above: Barrister (ranked 6th over all), Chicago II (9th), BA 84-140, Boutique, and Blackstone. There were 13 averaging at least 8.5 including the familiar grasses Blue-Tastic (2nd), Midnight II (4th), Perfection (5th), Beyond (7th), BAR PP 0566, Bluemax, Unknown, and Total Eclipse.

Statistically lower, but still superior, color scores above 8.0 were recorded for an unprecedented 55 cultivars, including Ginney (3rd), Freedom II (9th), Arcadia (10th), Blue Velvet, Kingfisher, Alexa, Award, Delight, J-2885, Nu Destiny, and Bedazzled. This category will offer the turf manager a vast array of quality and color choices. Additional factors such as establishment time, disease resistance, and economics will prove important in winnowing these numerous choices to a more comprehensible number.

For less-demanding turf situations or where economics limit grass choice, those cultivars with color scores 7.5 or higher will prove more than satisfactory. There are 47 grasses in this group. They include Hallmark (20th), Langara, PST -B3-170, Unique, Apollo, Royce, and Champlain. Grasses that meet or exceed current industry standards for color are those with five-year averages of 7.0 or above. There are 37, beginning with Wildwood (36th) and B4128A (41st) and continuing with grasses ranked below 70th: BA-45, Chelsea, Valor, Allure, Avalanche, and Misty.

Grasses with color scores below 7.0 should not be discounted; many of these may demonstrate other redeeming agronomic characteristics such as wear

tolerance, recuperative potential, drought and heat tolerance, or speed of establishment. This category includes Alpine and Limousine, both with tolerance to very close mowing, and Julius, Bartitia, and Washington with excellent wear tolerance.

Leaf spot and its related diseases appeared in every one of the grasses in this trial. Many appeared resistant in the early years, but proved susceptible by the fifth year. This was compounded by our inability to perform standard agronomic practices such as aerification and dethatching without cross-contamination. Hence innoculum build-up was unchallenged. When environmental conditions favored the pathogen, disease development was rapid and severe. Only Moonlight (1st) and Blue-Tastic (2nd) were able to maintain scores that were nearly leaf spot free for the duration of the trial. Excellent tolerance was seen in many of the top-ranked grasses: Ginney (3rd), Perfection (5th), Barrister (6th), Beyond (7th), Chicago II (8th), Freedom II (9th), Arcadia (10th), and BAR PP 0566 (11th). Forty-three other grasses did not differ statistically with leaf spot scores of 7.3 or above. Tolerance or resistance to leaf spot, melting out, and crown rot should play a crucial role in the decision-making process as this one disease complex can spell success or failure for turf managers in New England.

It is interesting to note that 129 cultivars of Kentucky bluegrass showed some red thread symptomatology in the five years of this trial. This should serve as a warning to turf managers in Maine that this disease will play a dominant role in future disease-control efforts. Red thread tolerance was a major component of disease scores for the top-ranked grasses in this trial. Forty-four grasses did not develop symptoms over five years, including 10 of the top 25 ranked grasses: Moonlight, Blue-Tastic, Ginney, Barrister, BAR PP 0566, Kingfisher, Unknown, Delight, Bedazzled, and Bordeaux. Minor levels of red thread were seen in 87 cultivars, including Midnight II, Perfection, Beyond, Freedom II, Arcadia, and Blue Velvet. Statistical significance was determined at 7.3, and this group includes grasses ranked below 75th place: Moonshadow, Boomerang, Shamrock, and Blue Sapphire. While relatively minor levels of severity offset the preponderance of infection, turf managers should be aware of the explosive potential of this disease.

As expected, summer patch was slow to develop in this trial. Symptoms became widespread enough to record in 2004 and 2005; the reader is cautioned that the overall averages reported in Table 7 are derived from only two years of data. Forty-eight cultivars remained free of summer patch despite its severity in adjacent plots. These included top-ranked

Blue-Tastic, Ginney, Midnight II, Perfection, Barrister, Beyond, Freedom II, Arcadia, and BAR PP 0566. One hundred and four cultivars were nearly symptomless, including Moonlight, Chicago II, Blue Velvet, Blue Max, and Unknown. Summer patch did not significantly compromise turf quality for the first 121 ranked cultivars and was only important in nine cultivars. However, its appearance in 73% of the plots should caution turf managers to its widespread occurrence and the likelihood of infection in aging Kentucky bluegrass turfs. Warming trends and restrictive cultural environments will contribute to the increasing importance and severity of summer patch in years to come.

Mid-summer color rating were taken late in the test as heat, drought, disease, and age influenced summer quality. Only four cultivars were able to maintain perfect color in mid-summer with none of them ranked in the top 15. BA 84-140, Blue Ridge, Boomerang, and SRX 27921 scored 9.0, while five had near-perfect scores of 8.7: Midnight II (4th), Quantum Leap, Everest, Princeton 105, and PST-604. Cultivars with mid-summer scores of greater than 8.0 did not differ statistically. This group includes all of the top 20 cultivars except Ginney and Blue Velvet and also includes 38 other cultivars with superlative summer color. With time and changing climate, summer color may prove to be as important as genetic color. The turf manager is reminded that close alliance between these two measures will best describe a turf with excellent uniformity and reliability.

CONCLUSIONS

The turfgrass managers of the 21st century have at their disposal a wide range of appropriate cultivars for nearly every imagined high-quality turf situation. However, in those circumstances that favor or require the use of minimal adjustments to the turf environment, the low-maintenance turf species should be employed. In Maine, the cool climatic growing conditions accompanied by a relative short duration of inhospitable conditions favor the use of such high-quality grasses as these Kentucky bluegrasses. Where fertilizer and lime use are warranted, these high-maintenance grasses will provide long-lasting superior turfs. Managers are cautioned, however, to choose those grasses with a wide array of tolerance or resistance mechanisms in order to avoid or minimize the need for pest control. As none of these grasses were evaluated for their tolerance to or requirements for normal agronomic practices, the manager is cautioned to closely observe these grasses during their development years. Close monitoring

will also help ensure early pest detection and assist the manager in the appropriate choice of mechanical or chemical adjustments so required.

There are many cultivars of Kentucky bluegrass that will perform extraordinarily well in Maine. At least 22 of these are generally indistinguishable in quality and all will perform nearly as well as other high-maintenance grasses such as chewings fescues and creeping bentgrasses. All will perform far better than perennial ryegrass in Maine. All of the Kentucky bluegrass cultivars evaluated here showed greater persistence than some cultivars of fineleaf fescues, bentgrasses, or perennial ryegrass located immediately adjacent to this trial. All of the Kentucky bluegrass varieties in this test showed excellent survival and none of these bluegrasses were adversely affected by Maine winter conditions. No loss of turfgrass cover could be directly attributed to winter stresses.

The number of bluegrasses suited for Maine conditions offers excellent choices to turfgrass managers. While several of these cultivars have yet to be named or released into the turf trade, there are still a great many choices available for nearly all situations likely to be encountered in the state of Maine.

Bluegrasses ranked in the top of the list are most appropriate for high-management regimes: golf courses, resorts, private and public estates, private playing fields, and some commercial accounts. Bluegrasses ranked in the middle of the list will be more appropriate for lawn care, home lawns, parks, and most commercial and sports enterprises. Those ranked in the lower half of the list may, with discretion, find occasional use in low-maintenance situations: public cemeteries, seasonal recreation, urban streets and sidewalks, soil stabilization and conservation efforts. They may also find utility in turfgrass blends and mixtures that would be more appropriate than monostands for the above conditions.

The Kentucky bluegrasses will produce high-quality, long-lived, deeply colored turf of immense value in those situations where turf quality is paramount. Where expectations are high and where management efforts and resources can be applied in a timely fashion, the Kentucky bluegrasses produce a fine-bladed, persistent, and recuperative surface that will withstand multiple uses for many seasons. Whether established as seed or sod, the uniformity of surface and its rapid repair, accompanied by excellence in color and disease tolerance, will ensure a continuity and uniformity of appearance that confirms this grass as the simply the best for Maine.



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