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An Evaluation of Turfgrass Species and Varieties: Fineleaf Fescues

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DEDICATION

This publication is dedicated to the memory of Dr. C. Richard Skogley (1924-1997), turfgrass breeder and mentor, late of the University of Rhode Island. "Doc" Skogley will long be remembered for his contributions to the breeding and management of the fineleaf fescues. Most notably, his varieties Jamestown, Jamestown II, Exeter, Bridgeport, and Reliant rank among the premier fineleaf fescues available today.

INTRODUCTION

The fineleaf fescues comprise 28 species of perennial grasses in the genus *Festuca*. The fescue species represented in the United States include deeply rooted grasses with both wide and narrow leaf types, bunch and spreading plant morphologies, and tolerances to a wide variety of environmental conditions. Several of these species exhibit desirable characteristics for turfgrass use: adaptation to cool, humid regions, tolerance to droughty acidic soils, excellent wear and shade tolerance, deep, erosion-resistant root systems and rapid recovery following mowing.

As a result of concentrated plant breeding efforts during the past decade, the fineleaf fescues have been overshadowed by improvements and releases of Kentucky bluegrass and perennial ryegrass varieties. Thus, the fescues have often been relegated to constituting a portion of seed mixtures with bluegrass and ryegrasses to extend the range of adaptation. Recently, however, breeding efforts in the various fescue species have resulted in grasses more tolerant of conditions associated with amenity turfgrass use. These improvements include increased shade tolerance, reduced water requirements, decreased mowing height requirements, increased disease tolerance, improved endophyte content (improved insect resistance), and improved recovery to wear and stress events.

The 1993 National Turfgrass Evaluation Program (NTEP) Fineleaf Fescue Trial evaluated 59 varieties representing four species: Chewings fescue, creeping red fescue, hard fescue, sheep fescue, and blue sheep fescue.

Adaptation and Use

Chewings fescues (*Festuca rubra* L. spp. *commutata* Gaud.) exhibit extraordinary adaptation to diverse edaphic and microclimatic conditions. Truly tolerant of wet to nearly submerged soils, they are best suited to moderately well drained soils. Chewings fescues are aggressive bunch-type grasses, which form a dense matted turf that is tolerant to close and frequent mowing. They have found extensive use in playing fields where surface smoothness is important: golf fairways, polo fields, cricket pitches, croquet and bocce courts. They are frequently seeded with creeping or colonial bentgrass for enhanced wear tolerance, but will often predominate when so mixed with Kentucky bluegrass or perennial ryegrass.

Creeping red fescues (*Festuca rubra* L. spp. *rubra*) are adapted to well drained, sunny to moderately shaded sites and to droughty, infertile, sodic to

moderately acidic soils. Both strong (*F. rubra* L. spp. *rubra*) and slender creeping (*F. rubra* L. spp. *trichophylla*) are rhizomatous spreading types, which are intolerant of seasonally wet conditions and to conditions of high fertility or frequent low mowing. These grasses are best suited to areas of moderate management and moderate expectations. The creeping fescues are frequently used in seed mixtures with Kentucky bluegrass or colonial bentgrass in cooler climates and with perennial ryegrass in upland climates located in the mid-Atlantic states.

Hard fescues (*Festuca longifolia* Thuill) are bunch grasses capable of tolerating extreme temperature ranges, dry to seasonally moist soils, but require moderate fertility to thrive. While extremely tolerant of wear and stress events, the relative slowness in their recovery precludes their use in most sports facilities. They have found extensive use in low-maintenance golf roughs, playing court surrounds, cemetery swards, and as erosion control grasses on slopes and right-of ways. Significant improvements in hard fescue breeding will further enhance their use in home, commercial, and estate lawn turfs.

Sheep fescues (*Festuca ovina* L.) and **blue sheep fescues** (*F. ovina* L. ssp. *glauca*) are best adapted to dry and excessively well drained soils of low fertility. They are bunch type grasses with slow recovery rates, making them intolerant of frequent mowing or wear events. They are, however, useful for soil stabilization in both inland and shoreline situations. Sheep fescues produce extensive root systems and promote long-term soil stabilization in areas of both moderate and steep slopes. They often constitute 50% or more of wild flower mixtures and several varieties have found favor as herbaceous garden perennials.

Cultural Requirements of Fescues for Use as Turf

The fineleaf fescues demonstrate an ability to perform under a wide range of cultural conditions. Tolerance to a wide range of soil fertility and moisture requirements ensures their place as amenity turfgrasses. The differences noted in cultural practices are dependent firstly upon species and to date, much less so upon variety.

Chewings fescues require greater inputs of supplemental management regimes than any other fescue species, and the demands made by these grasses rival that of Kentucky bluegrass or perennial ryegrass. Chewings fescues require frequent mowing (two to three per week) at heights between 0.65 and 1.75 inches. Annual fertility requirements

range from 2 to 4 lbs of actual nitrogen per thousand square feet (2-4 lb N/1000 ft²/yr), which needs to be accompanied by supplemental irrigation of a minimum of 1.5 inches weekly. The sod-forming abilities of Chewings fescues will result in turfgrass densities that may require annual thatch removal and aerification, but will seldom require overseeding. Chewings fescues are strongly aggressive and naturally resist weed encroachment unless compromised by injuries caused by disease, insects, or excessive wear.

Creeping fescues are classified as either strong or slender creepers depending on the frequency and length of the rhizomes that arise annually. Generally those classified as "strong" require 2-2.5 lb N/1000 ft²/yr accompanied by 1.5 inches of water weekly. Creeping fescues classified as "slender" require 1.0-1.75 lb N/1000 ft²/yr with 1-1.5 inches of water per week. Both creeping types will require thatch removal once every two or three years, aerification only as compaction develops, and may require overseeding once every three to five years. They are subject to several seasonal diseases and midsummer infestations which may result in weed encroachment. Strong creeping fescues produce a reasonable sod and recover well from wear or mechanical disturbance; slender creeping fescues do not.

Hard fescues are usually classified as "low maintenance" turfgrasses; however, better turf will result from a low to moderate management regime. Hard fescues require 1.0-2.0 lb N/1000 ft²/yr accompanied by 0.5 -1.0 inch of water every two weeks. To prevent excessive clumpiness, the nitrogen component should be spread evenly over the growing season in frequent low-volume applications. Hard fescues will seldom require thatch removal, once every five years should be sufficient; overseeding to assist recovery may be necessary annually. Recent improvements in the hard fescues have led to grasses capable of forming strong sods with good to excellent wear tolerance. Recovery from excessive wear, insect or disease stresses is limited and unlikely to occur during the heat of the summer months. Several hard fescues exhibit continued growth well past the onset of severe frost and spring growth is excellent.

Sheep and blue sheep fescues rank high among the "low-maintenance" grasses. They require little supplemental nitrogen, less than 1.0 N/1000 ft²/yr accompanied by less than 1.0 inch of water every two weeks. Sheep fescues and especially the blue fescues are intolerant of excessive nitrogen and will develop extensive weed invasion when their fertility needs are exceeded. Sheep

fescues will seldom, if ever, require thatch removal or aerification; overseeding may be necessary annually to maintain turf cover. The sheep fescues tolerate moderate wear, but recover poorly and do not form an appropriate sod.

MATERIALS AND METHODS

The 1993 National Turfgrass Evaluation Program (NTEP) Fineleaf Fescue Trial was established in September 1994 at the Turfgrass Experimental Plot Area of the Littlefield Ornamental Trial Garden on the University of Maine campus. The test consisted of 59 varieties replicated three times in a randomized complete block design.

The soil, a well drained Marlowe fine sandy loam, was plowed, harrowed, and rototilled to a depth of 12 inches and amended with lime at 60 lb/1000 ft² and a 10-10-10 fertilizer at 20 lb/1000 ft² according to Maine Soil Testing Service recommendations. The soil surface was hand raked for rock removal and leveled. Seeding was facilitated by using a 5 x 3 ft plywood box to eliminate wind drift, and the seed was raked in by hand. The area was not rolled following seeding.

The study was conducted in a shade-free location with a maintenance fertility program of 0.6 lb N/1000 ft² per month of growing season using a commercial 20-5-15 fertilizer with 50% N as a sulfur-coated urea (SCU) slow release source.

Supplemental moisture was supplied as needed to prevent stress during the entire the test through an in-ground irrigation system controlled by a Toro computer.

Mowing was initiated in May 1995 using a 21-inch rotary mower at a height of 2.5 inches; this was gradually lowered to a maintenance height of 2 inches for the duration of the test. The mowing height was increased to 3 inches for October and November to minimize potential winter loss. Clippings were removed and composted off site.

To prevent cross-plot contamination and encroachment of rhizomes from adjacent plots, the area was neither aerified nor de-thatched during the study; thus by the end of the second year, considerable thatch and mat had developed. Although each plot was outlined using Roundup each year, some encroachment by more aggressive varieties into adjacent plots had occurred by the end of the study.

No additional wear stress, foot or cart traffic was imposed during the study. Pest control efforts were kept to a minimum throughout the study, with annual herbicide applications made to control broad leaf weeds. Two applications of fungicides

were made to control leaf spot disease while insecticides were not used in this trial.

No attempt was made to moderate or alter seasonal fluctuations in temperature, humidity, air flow or light. Turf covers were not used in winter, and no attempt was made to increase or remove the snow or ice burden from the site. Only supplemental irrigation was used to provide minimal heat stress relief during the heat of summer.

Visual turf quality, turf density, color, weediness and disease ratings 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 sent to the NTEP office in Beltsville, MD, for statistical analyses. These analyses have been combined for the three years of the study and the means separated and arrayed for each of the factors evaluated.

It should be noted that the impartial conditions under which this test was conducted may have markedly compromised the natural tolerances and environmental preferences of some of these grass varieties. While the performance of some of these varieties may have been limited by the uniform conditions imposed in this national trial, the reader should be aware that these conditions can and often do influence both grass survival and eventual turf success of a particular selection.

RESULTS AND DISCUSSION

The majority of data collected during the three years this test was conducted involved elements of turfgrass quality, genetic color (that color which is unaffected by and unrelated to fertilizer application) and three fungal diseases: leaf spot (causal agent *Dreschlera dictyoides* Dreschler f. sp. *dictyoides*), brown patch (causal agent *Rhizoctonia solani* Kuhn.), and dollar spot (causal agent *Sclerotinia homoeocarpa* Bennett). As appropriate, other data included turfgrass density, weediness, and percentage cover as an indicator of survival.

The research names or designators of each variety evaluated in this trial are shown in Table 1, along with their origins and comments.

It is important to note that there were few significant differences in turfgrass quality for the highest ranking varieties. This would mean that any one of these varieties could be expected to perform well in a similar situation. Although there were significant differences in genetic color, only individual color ratings are presented since color remains a personal or design preference. Thus, turfgrass quality should be of greater importance in the selection process.

Fineleaf fescue varieties germinated surprisingly rapidly in this test; no differences were observed between species or varieties.

1995

During the first year of evaluation, 18 fineleaf fescue varieties performed exceptionally well under central Maine conditions (Table 2). Each of these varieties averaged scores of greater than 7.0 in overall turfgrass for the monthly ratings taken during the 1995 growing season. Although several of these varieties appeared more vigorous in spring and fall than in summer while others appeared more tolerant of summer conditions, there were no significant differences in quality among any of these varieties. Two of these top ranking varieties were especially dark in color; these were NJ F-93 and Discovery. Since many of the other varieties listed did not differ in color from those noted above, any whose average color rating was 7.3 or above can be considered excellent and interchangeable for this factor.

All of the varieties tested exhibited mild to severe leaf spot symptoms; a rating of 4.0 or less would indicate some natural tolerance for this disease. Ratings higher than that probably reflected the need for applied disease control efforts (fungicides). Similarly, these varieties exhibited a three-point difference in the severity of brown patch or dollar spot observed. One would be well advised to choose varieties with high quality and dark color ratings accompanied by the lowest disease ratings. Since there were not statistical differences observed in quality ratings between these 18 varieties, it is important to weigh the relative quality ratings, along with price and availability. Any of these 18 varieties can be strongly recommended for future consideration, principally on the basis that they were able to achieve very high turf quality scores within the early months of their establishment year.

1996

Sixteen varieties exhibited very high quality scores in 1996 (Table 3). Five of these, NJ F-93, Florentine, Columbra, Shademaster II, and Darwin, were top ranking in 1995 while the remainder of these varieties developed excellent turf cover, but somewhat more slowly. Overall quality in 1996 declined slightly as summer heat and humidity depressed visual appearance. Top ranking varieties are those whose quality scores exceeded 6.6; well above the national average of 5.5. While no significance can be attributed to quality differences between these 16 varieties, several of these grasses

Table 1. Identification of varieties evaluated in the 1993 NTEP fine-leaf fescue test in alphabetical order by species, their breeding house of origin, and comments.

Type & Variety	Quality Rank #	Origin	Comments
Chewings Fescues:			
Banner II	26	E.F. Burlingham	Old, light colored, aggressive cv. now w/endo.
Bridgeport	28	Barenbrug USA	Important standard in sports turf
Brittany	15	Lesco	
Cascade	52	Cascade Int'l Seeds	
Darwin	8	International Seeds	
ISI-FC-62	18	International Seeds	
Jamestown II	27	Loft's Seed, Inc.	Industry standard, aggressive, thatchy w/endo.
Jamestown	24	Loft's Seed, Inc.	First improved Chewings fescue
Banner III	13	E.F. Burlingham	
Eco	16	E.F. Burlingham	
Columbra	3	E.F. Burlingham	
K-2	7	E.F. Burlingham	
MB65-93	49	E.F. Burlingham	
Medina	37	Danish Plant Breeding	
Molinda	36	O.M. Scott & Sons	
NJF-93	1	Rutgers University	Very dark, strong sod former
Sandpiper	19	Research Seeds	
Victory II	5	Pickseed West	
Shadow II	6	Pure-Seed Test. Inc.	
SR 5100	10	Seed Research	
Shadow (E)	34	Turf-Seed Inc.	Very dark, shade tolerant, aggressive
TMI-3CE	20	Turf Merchants	
Tiffany	14	Turf-Seed Inc.	
Victory (E)	44	Pickseed West	Industry standard, dark, persistent
WX3-FF54	9	Willamette Seed Co.	
Treasure	33	Zajac Perf. Seeds	
Strong Creeping Fescues:			
Aruba	41	International Seed	
BARR Frr 4ZBD	42	Barenbrug Holland	
BARR UR 204	54	Barenbrug Holland	
CAS-FR13	46	Cascade Int'l Seed	
Common Creeping	57	Canadian Source	Readily available, subject to severe disease
Flyer	47	Pennington Seed	
Jasper (E)	30	Pickseed West	Dark color, spreading, chinch bug resistant
PST-4DT	29	Pure-Seed Test. Inc	
PST-4ST	11	Pure-Seed Test. Inc.	
Florentine (E)	2	Pure-Seed Test. Inc	
Rondo	59	Danish Plant Breeding	
Shadmaster II	4	Turf-Seed Inc.	Shade tolerant, rapid spreader
Silverlawn	45	Willamette Valley P.B.	
WX3-FFG6	32	Willamette Seed Co.	
Flyer II	12	Zajac Perf. Seeds	
Slender Creeping Fescues:			
Dawson	56	Standard Entry	Old variety, thin, leaf spot suseptible
Seabreeze	58	Turf-Seed Inc.	Blue green color, spreader
Hard Fescues:			
Aurora (E)	23	Turf-Seed Inc.	Deep rooted, excellent soil retention
Brigade	53	O.M. Scott & Sons	Important sports turf var., dark color
Discovery	17	Turf-Seed Inc.	
Ecostar	38	Jacklin Seed Co.	
Defiant	22	E.F. Burlingham & Sons	
MB 82-93	21	E.F. Burlingham & Sons	
Vernon	43	E.F. Burlingham & Sons	
Nordic	39	Zajac Perf. Seeds	
Pamela	55	Danish Plant Breeding	
Osprey	25	Research Seeds	
Reliant II	48	Loft's Seed Inc.	
Scaldis	31	Standard Entry	
Spartan	40	Pickseed West Inc.	
SR 3100	35	Seed Res. of Oregon	
Sheep:			
Quatro	51	Int'l Seeds Inc.	Tolerates infrequent mowing, dark, strong
67135	60	Norfarm Seeds	

Table 2. Turfgrass quality, genetic color, and disease ratings for best-performing fineleaf fescue varieties evaluated monthly during the 1995 growing season.

Variety	Quality ¹	Genetic Color ²	Leaf Spot ³	Brown Patch	Dollar Spot
Discovery	7.83	8.0	4.0	3.0	1.3
Eco	7.56	7.0	3.0	3.7	1.0
Darwin	7.56	7.7	4.7	5.7	1.3
Florentine	7.50	6.0	4.7	4.7	1.7
NJ F-93	7.50	8.7	4.3	4.3	1.7
Shadow II	7.50	7.0	3.0	4.3	2.0
Ecostar	7.44	7.3	4.7	4.3	3.0
Defiant	7.44	7.7	5.0	4.3	1.7
Columbra	7.44	7.7	4.7	6.0	2.7
Scaldis	7.39	7.7	4.7	2.7	4.0
Banner III	7.39	7.7	3.7	4.3	2.0
WX3-FF54	7.39	7.3	4.0	3.7	2.7
K-2	7.39	7.3	4.3	6.0	2.7
MB 82-93	7.33	7.3	4.3	3.0	2.3
SR 3100	7.28	7.0	4.7	4.7	1.3
Shademaster II	7.28	7.7	4.0	4.7	2.7
Tiffany	7.22	7.3	3.7	4.7	1.3
Osprey	7.22	7.3	4.7	3.0	1.3

¹There were no significant differences in quality ratings for any of the varieties listed.

²NJ F-93 was significantly different from Eco, Shadow II and SR 3100. Florentine differed from all others.

³Disease ratings for this table and all subsequent tables were as follows: 1= Dead to 9= Healthy.

Table 3. Turfgrass quality, genetic color and disease ratings for best-performing fineleaf fescue varieties evaluated monthly during the 1996 growing season.

Variety	Quality ¹	Genetic Color	Leaf Spot	Brown Patch
NJ F-93	7.43	9.0	7.5	6.7
Florentine	7.29	8.3	7.1	6.3
Flyer II	7.24	8.0	6.7	5.6
Columbra	7.14	8.7	6.3	6.4
Shademaster II	7.10	8.0	7.1	6.4
Victory II	7.10	7.3	6.5	6.3
SR 5100	6.95	8.0	6.9	6.3
ISI-FC-62	6.76	7.0	6.3	5.3
Banner III	6.76	7.7	6.6	5.2
Darwin	6.76	9.0	5.9	6.3
PST-4ST	6.76	8.3	6.2	5.6
Banner II	6.76	6.7	5.9	4.3
WX3-FF54	6.71	7.7	6.9	5.2
Sandpiper	6.67	8.0	6.2	5.6
K-2	6.67	7.7	6.1	6.0
Brittany	6.62	7.3	6.4	4.4

¹ There were no significant differences in quality ratings for any of the varieties listed.

displayed extraordinarily dark color: NJ F-93, Darwin, Columbra, Florentine, and PST-4ST. This consistency in dark coloration should be a consideration in selecting between nearly identical varieties. Cost and availability should also be considerations.

1997

Half of the varieties tested exhibited very high quality scores in 1997; in fact, there were no statistical differences in quality between the top 35 varieties (Table 4). All of these grasses received scores higher than 7.27 for the season, with Shadow II scoring an exceptional season average of 8.0. Twenty-three of these varieties averaged greater than 7.5 for quality in their third season. Five of

these varieties, Flyer II, Darwin, Eco, SR 3100, and Discovery averaged 9.0 for color rating in 1997 while 24 others scored 8.0 or higher for this character. Cool, dry weather during spring and early summer of 1997 favored growth and quality of the majority of the fescues in this test. However, both dollar spot and brown patch disease symptoms became apparent during the heat and humidity of August. Many of these top-ranked varieties were able to withstand disease pressure with little or no loss in quality. Disease tolerance should be a major consideration in any decision-making process, but the disease rating data presented here should only be used as a guide since no significant differences among varieties were observed.

Table 4. Turfgrass quality, genetic color, and disease ratings for best-performing fineleaf fescue varieties evaluated monthly during the 1997 growing season.

Variety	Quality ¹	Genetic Color	Dollar Spot	Brown Patch
Shadow II	8.00	8.00	7.3	7.7
Florentine	7.93	8.67	8.7	8.7
Tiffany	7.87	8.33	7.7	8.0
Victory II	7.87	8.00	7.7	7.7
Shademaster II	7.87	8.33	8.7	7.0
NJ F-93	7.80	8.67	7.7	8.0
PST-4ST	7.80	8.00	8.7	8.3
Columbra	7.73	8.00	8.3	7.3
SR 5100	7.73	7.67	7.3	9.0
K-2	7.73	8.33	8.7	7.0
Brittany	7.73	8.00	7.7	8.0
Jamestown II	7.73	7.33	7.3	8.3
Sandpiper	7.67	8.67	7.7	7.3
Jasper	7.60	8.67	8.3	6.0
WX3-FF54	7.60	7.67	6.7	6.3
MB 82-93	7.60	8.67	7.7	7.7
Jamestown	7.60	8.33	7.7	6.7
Aurora (endo)	7.60	8.67	8.3	6.3
Shadow (e)	7.53	8.33	8.3	6.0
Bridgeport	7.53	8.00	6.7	7.0
Osprey	7.53	8.67	6.7	8.0
TMI-3CE	7.53	7.33	7.3	7.3
Medina	7.53	8.00	7.0	5.7
Flyer II	7.47	9.00	8.0	6.7
Treazure	7.47	7.67	8.3	7.3
Darwin	7.47	9.00	7.0	6.3
Banner II	7.40	8.33	7.0	8.0
WX3-FFG6	7.40	8.33	6.3	6.7
Molinda	7.33	7.00	7.7	7.3
Defiant	7.33	8.67	8.0	8.0
Banner III	7.27	8.00	7.0	7.3
Eco	7.27	9.00	7.3	7.7
SR 3100	7.27	9.00	7.7	6.3
Discovery	7.27	9.00	7.3	5.3
ISI-FC-62	7.27	8.00	6.3	6.0

¹There were no significant differences in quality ratings for any of the varieties listed.

Three-Year Average

A number of the varieties in this trial have exhibited marked preferences for the cooler and less humid conditions experienced in the spring and fall in central Maine (Table 5). Varieties such as, Darwin, NJ F-93, Columbra, Florentine, and the Banner II and III series are some of the names that appear as excellent performers in the early and late season evaluations. Several varieties, however, demonstrated greater tolerances for early summer conditions than previously expected. These summer "specialists" included BAR FRR4ZBD, Jasper (E), Defiant, Silverlawn, Treazure, SR 5100, and Spartan. All fescue varieties showed depressed quality scores in August with no statistical differences in quality observed among varieties. It should

be noted, however, that many of these varieties recovered in September, with half or more of these selections appearing at the top of the list. The onset of true autumn conditions in October reduced the number of excellent performing varieties to approximately the number that had been observed in spring.

There are at least eight varieties that appeared in the lists of top-performing varieties in each month, regardless of fluctuations in day length, temperature, and humidity. These include NJ F-93, Victory II, Shademaster II, Florentine, WX3-FF54, Columbra, K-2, and Shadow II. For those turfgrass managers located in coastal or southern Maine (areas with season-long demands for quality), this list offers significant improvements over

Table 5. Best-performing NTEP fineleaf fescue varieties based on monthly turfgrass quality ratings evaluated at the University of Maine during a three-year study. Those varieties listed for a given month did not differ statistically (one variety was as good as any other in the list for that month).

May	June	July	August ¹	September	October
Darwin	Darwin	Shademaster II		NJ F-93	Florentine
NJF-93	Columbra	Flyer II		SR 5100	Tiffany
Columbra	Scaldis	NJ F-93		WX3-FF54	Brittany
Molinda	SR 5100	Florentine		Florentine	WX3-FF54
Banner III	K - 2	PST-4ST		ShadowII	Flyer II
Banner II	Vernon	BAR FRR4ZBD		Columbra	Shademaster II
Sandpiper	Ecostar	Columbra		Tiffany	Darwin
Medina	ISI-FC-62	K - 2		Darwin	Discovery
Silverlawn	NJ F-93	Victory II		Flyer II	PST-4DT
K - 2	Medina	Defiant		Brittany	Banner III
Brittany	Osprey	Jasper (E)		Victory II	ECO
WX3-FFG6	Nordic	Aruba		Shademaster II	Medina
ECO	Defiant	WX3-FF54		ISI-FC-62	Bridgeport
PST-4DT	Sandpiper	Bridgeport		Banner III	NJ F-93
Jamestown	Spartan	Jamestown		Sandpiper	Columbra
Shadow II	TMI-3CE	Silverlawn		Jamestown II	ISI-FC-62
ISI-FC-62	Shadow	Treazure		PST-4ST	MB 82-93
Jamestown	MB82-93	SR 5100		WX3-FFG6	K - 2
WX3-FF54	SR 3100	Spartan		Jamestown	PST-4ST
SR 5100	Aurora(E)			TMI-3CE	Banner II
Florentine	Discovery			Treazure	Victory II
Osprey	Entry 60			ECO	Spartan
Victory II	Florentine			Bridgeport	
MB 66-93	Flyer II			Aruba	
TMI-3CE	Molinda			Victory (E)	
ShademasterII	WX3-FF54			Shadow (E)	
	Victory II			Flyer	
	MB 66-93			Banner II	
	Banner II			PST-4DT	
				K - 2	
				Jasper (E)	
				MB 82-93	
				Discovery	
				Molinda	

¹There were no differences in turf quality between varieties for month of August.

the fescue varieties that were previously available. For the warm, humid inner regions of Maine, turfgrass managers should consider those varieties that have shown summer tolerance, while for the more northerly sections of the state, the fescues with strong spring and autumn scores would be of greater value.

Final Ranking

The Chewings fescue, NJ F-93 was the best-performing variety for the duration of the test (Table 6).

Of the top ten performing varieties examined, eight of them are Chewings fescues, appropriate for moderately high to high maintenance turf situations. Two of these, Victory II and Shadow II, have a long history of excellent performance. Two creeping fescues, Florentine and Shademaster II, were ranked #2 and #4, respectively; both responded favorably to the fertility and water management practices employed here. Chewings and creeping fescues predominate in the ranks 10 to 20; the most management-tolerant hard fescue was Discovery, which ranked # 17. The dark coloration of Discovery is an added bonus to those who wish to use a moderate maintenance hard fescue in golf course or estate situations. The middle ranks (30–50) of this test are equally split between Chewings, creeping, and hard fescues. Most of these Chewings fescue varieties required a higher nitrogen maintenance level than was available in this test, or they were subject to increased disease damage than were varieties receiving higher rankings. This range in ranking for the hard fescues indicates that many not only tolerate additional nutrition, but actually require higher inputs of nitrogen and water than was formally thought. Many of the creeping fescues ranked in the lower half of this test succumbed to disease pressures and heat stress. Only two sheep fescues were represented in this test; both fared poorly under the moderate fertility and moisture conditions of this test.

CONCLUSIONS

There are many fineleaf fescue varieties which will perform extremely well in Maine. At least 20 of these are generally indistinguishable in quality, but not color. All of these varieties will perform nearly as well as Kentucky bluegrass and all will provide far better long-term performance than will perennial ryegrass under Maine conditions. All of the fineleaf fescue varieties in this test showed excellent persistence, and none was adversely affected by winter conditions, whether snow covered, inundated with ice, or fully exposed to deep soil frost. No loss in turfgrass cover was directly attributable to winter stresses.

The number of fineleaf fescues suited to Maine conditions offers many excellent choices to those engaged in turfgrass management. Although several of these varieties have yet to be named or released in the turf trade, there are still sufficient choices available for each and every situation likely to be encountered in this state.

Fineleaf fescue varieties ranked at the top of the list are most appropriate for high to very high management regimes, such as golf courses, resorts, private and public estates, playing fields and some commercial accounts. Those varieties ranked in the middle of the list would be more appropriate for lawn care, home lawns, parks, and most commercial enterprises. The fescues ranked in the lower half of the list may, with utmost discretion, find use in low maintenance situations, such as cemeteries, seasonal recreation, urban streets and sidewalks, soil stabilization and conservation projects.

Table 6. Turfgrass quality, genetic color, and disease ratings for fineleaf fescue varieties evaluated at the Littlefield Ornamental Trial Gardens at the University of Maine. Means are the average of monthly ratings made over the three-year duration of the study.

Rank	Variety	Quality ¹	Genetic Color	Leaf Spot ²	Brown Patch ³
1.	NJ F-93 (Chewings)	7.58	8.78	6.3	6.3
2.	Florentine (Creeping)	7.57	7.67	7.3	6.6
3.	Columbra (Chewings)	7.44	8.11	6.2	6.0
4.	Shademaster II (Creeping)	7.41	8.00	6.2	6.0
5.	Victory II (Chewings)	7.36	7.56	6.0	6.0
6.	Shadow II (Chewings)	7.33	7.33	5.6	5.8
7.	K - 2 (Chewings)	7.26	7.78	5.9	6.3
8.	Darwin (Chewings)	7.26	8.56	5.7	6.1
9.	WX3-FF54 (Chewings)	7.23	7.56	6.0	5.1
10.	SR 5100 (Chewings)	7.23	7.56	6.3	5.2
11.	PST - 4ST (Creeping)	7.22	7.78	5.8	6.3
12.	Flyer II (Creeping)	7.22	7.78	6.0	5.9
13.	Banner III (Chewings)	7.14	7.78	5.7	5.6
14.	Tiffany (Chewings)	7.11	7.67	5.9	5.6
15.	Brittany (Chewings)	7.10	7.33	6.2	6.0
16.	Eco (Chewings)	7.05	7.89	5.2	5.3
17.	Discovery (Hard)	7.05	8.22	5.8	4.6
18.	ISI-FC-62 (Chewings)	7.05	7.56	5.9	5.8
19.	Sandpiper (Chewings)	7.02	7.78	6.0	6.0
20.	TMI-3CE (Chewings)	7.01	7.33	5.9	5.9
21.	MB 82-93 (Hard)	6.99	7.89	6.1	5.3
22.	Defiant (Hard)	6.96	8.33	5.9	6.0
23.	Aurora (E) (Hard)	6.92	7.78	5.9	4.6
24.	Jamestown (Chewings)	6.92	7.44	5.6	5.4
25.	Osprey (Hard)	6.92	8.00	5.6	5.6
26.	Banner II (Chewings)	6.89	7.33	5.8	6.3
27.	Jamestown II (Chewings)	6.87	7.11	5.8	5.9
28.	Bridgeport (Chewings)	6.86	7.67	6.0	5.8
29.	PST - 4DT (Creeping)	6.86	7.89	5.4	5.2
30.	Jasper (E) (Creeping)	6.84	7.44	5.6	5.1
31.	Scaldis (Hard)	6.83	7.89	5.6	4.9
32.	WX3 - FFG6 (Creeping)	6.81	7.44	5.8	5.7
33.	Treasure (Chewings)	6.79	7.22	5.7	6.0
34.	Shadow (E) (Chewings)	6.77	7.44	5.6	6.1
35.	SR 3100 (Hard)	6.77	8.00	6.1	5.2
36.	Molinda (Chewings)	6.77	6.89	5.9	6.2
37.	Medina (Chewings)	6.76	7.67	5.7	6.0
38.	Ecostar (Hard)	6.70	8.00	5.4	4.9
39.	Nordic (Hard)	6.59	7.78	6.1	5.3
40.	Spartan (Hard)	6.95	7.56	5.7	5.3
41.	Aruba (Creeping)	6.58	6.78	5.3	5.0
42.	Bar FRR 4ZBD (Creeping)	6.58	7.56	5.5	5.7
43.	Vernon (Hard)	6.50	7.89	5.8	5.9
44.	Victory (E) (Chewings)	6.45	7.22	5.2	5.5
45.	Silverlawn (Creeping)	6.41	7.78	5.7	6.2
46.	CAS - FR13 (Creeping)	6.41	8.00	5.7	5.3
47.	Flyer (Creeping)	6.37	6.78	5.1	6.0
48.	Reliant II (Hard)	6.31	7.67	5.3	4.5
49.	MB 66-93 (Chewings)	6.31	7.78	5.1	4.7
50.	Entry 60 (Creeping)	6.25	8.22	6.2	6.2
51.	Quatro (Sheep)	6.22	8.00	5.8	4.3
52.	Cascade (Chewings)	6.16	6.89	5.3	6.7
53.	Brigade (hard)	6.03	8.00	5.1	4.9
54.	BAR UR 204 (Creeping)	6.02	7.22	5.2	5.4
55.	Pamela (Hard)	5.95	7.56	5.4	5.7
56.	Dawson (Creeping)	5.95	6.44	4.9	5.6
57.	Common Creeping	5.88	7.11	5.4	4.7
58.	Seabreeze (Creeping)	5.88	7.22	5.8	5.9
59.	Rondo (Creeping)	5.84	6.78	5.3	5.7
60.	67135 (Sheep)	4.78	7.22	5.2	5.8

¹ The first 21 varieties did not differ significantly in turf quality.

² There were no significant differences in leaf spot injury between varieties.

³ There were no significant differences in brown patch injury between varieties.