United States Patent [19]

Meier et al.

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[54] **KENTUCKY BLUEGRASS—BA 70-139**

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[57] **ABSTRACT**

A variety of Kentucky bluegrass having a high level of disease resistance, excellent turf performance in the sun and shade and a high level of seed yield potential.

1 Drawing Sheet

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BACKGROUND

Kentucky bluegrasses have been disclosed in U.S. Plant Pat. No. 3,156 which issued on May 9, 1972; U.S. Plant Pat. No. 3,186 which issued on May 23, 1972; U.S. Plant Pat. No., 4,336 which issued on Nov. 28, 1978; U.S. Plant patent application, Ser. No. 872,537, filed June 10, 1986; U.S. Plant patent application, Ser. No. 910,146, filed Sept. 19, 1986 and U.S. Plant patent application, Ser. No. 027,285, filed of even date herewith.

SUMMARY OF THE VARIETY

The present invention relates to a new and distinct variety of *Poa pratensis* which has been designated Ba 70-139 Kentucky bluegrass.

Ba 70-139 plant material originated by crossing a Kentucky bluegrass plant ("Gnome") disclosed in U.S. Plant patent application Ser. No. 872,537, the seed parent, with a pollen parent plant. As a result of this breeding, a distinct variety was produced and asexually propagated by rhizomes, tillers and disseminules.

Ba 70-139 Kentucky bluegrass reproduced asexually by propagules, i.e., by tillers and rhizomes and by disseminules (modified caryopses produced by apomoxis). Progeny plants have been consistently produced which are indistinguishable from the mother plant.

Ba 70-139 has a number of highly desirable characteristics including a good level of resistance to Helminthosporium spp. that causes leaf spot, melting out, and crown rot; *Ustilago striiformis* that causes stripe smut; *Erysiphe graminis* that causes powdery mildew; and Puccinia spp. that causes rust; an attractive leafy turf type growth habit; moderately wide leaf blades; an attractive green color which can be maintained throughout the entire growing season; good turf performance as evidenced by consistently high scores in tests throughout the U.S.A. and Canada, and a high seed yield potential in the bluegrass seed production region of the U.S.A.

In comparison with its seed parent, Gnome, the new variety is more shade tolerant and has better resistance to powdery mildew and rust. In comparison to the Kentucky bluegrass ("Ba 72-492") disclosed in U.S. Plant patent application, Ser. No. 027,285, filed of even date herewith and the Kentucky bluegrass ("72-500") disclosed in U.S. Plant patent application, Ser. No. 910,146, filed Sept. 19, 1986, both of which also have Gnome as their seed parent, Ba 70-139 produces seeds that are longer, has panicles that nod more, and has peduncles that are thicker than Ba 72-492; and Ba

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70-139 has peduncles that are thinner and a seed yield that is higher than Ba 72-500.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a photograph of Ba 70-139 Kentucky bluegrass plant in the vegetative stage including the extensive root and rhizome system;

FIG. **2** is a photograph of Ba 70-139 Kentucky bluegrass panicle;

FIG. **3** is a photograph of Ba 70-139 Kentucky bluegrass seed; and

FIG. **4** is a photograph of Ba 70-139 Kentucky bluegrass turf.

DETAILED DESCRIPTION OF THE VARIETY

Ba 70-139 Kentucky bluegrass (*Poa pratensis* L.) is perennial with creeping rhizomes forming a moderately dense turf. When plants overwinter in the field with freezing temperatures and then are brought into the greenhouse during late winter to continue growth undisturbed by clipping under moderate temperatures (60–80 degrees F.), culms are erect averaging 435 mm in length with an average of 2.7 nodes per culm. The uppermost internode averages 10.2 cm, and the peduncle averages 13.2 cm in length and 0.610 mm in thickness. The flag leaf averages 4.7 cm in length, 3.2 mm in width, and 0.112 mm in thickness. The panicle is generally nodding with an average length of 6.7 cm, width of 3.7 cm, and 4.8 whorls. The lowest whorl has an average of 3.8 branches and the third whorl from the bottom of the panicle has an average of 2.7 branches. The average spikelet at the tip of a branch in the lowest whorl is 5.2 mm in length and has 4.2 florets with an outer glume of 3.2 mm and an inner glume of 3.5 mm in length. A similar spikelet from the third whorl from the bottom of the panicle is 5.2 mm in length and has 4.0 florets with an outer glume of 3.1 mm and an inner glume of 3.5 mm in length. After the seed has been conditioned, the lemma has a generally smooth keel and almost no long, fine hairs at the base. The seed of Ba 70-139 is 2.86 mm in length and 0.78 mm in width with approximately 1,246,200 seeds per pound. Comparisons of Ba 70-139 with other bluegrasses varieties on seed measurements and on seed counts per pound are found in Tables 1 and 2.

TABLE 1

Seed Measurements of Ba 70-139 and Other Bluegrass Varieties After Conditioning.

Variety	Length (mm)	Width (mm)
Ba 70-139	2.86	0.78
Ba 72-492	2.53	0.76
Ba 72-500	2.77	0.80
Baron	3.07	0.86
Bristol	2.73	0.80
Nassau	2.96	0.78
Newport	2.76	0.71
Park	3.04	0.72
Ram I	3.51	0.84
Victa	3.20	0.86
LSD(.05)	0.19	0.06

TABLE 2

Comparison of Seed Counts Per Pound of Ba 70-139 and Other Bluegrass Varieties After Conditioning.

Ba 70-139	1,246,200
Adelphi	1,383,976
America	1,659,824
Gnome	1,017,641
Baron	1,051,693
Birka	1,223,530
Bonnieblue	1,135,303
Bristol	1,270,821
Eclipse	1,335,668
Glade	1,108,441
Kenblue	1,463,923
Merit	1,109,728
Nassau	1,127,130
Newport	1,226,481
Park	1,248,349
Sydsport	1,355,644
Vantage	1,555,303
Victa	1,038,298

Since environmental conditions such as soil and climate may influence morphological characters to some extent, comparisons of morphological characteristics of Ba 70-139 are made with other Kentucky bluegrass varieties in Table 3-10.

TABLE 3

Morphological Comparison of Panicles of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio

Variety	Panicle Nod-ding*	Panicle Length (cm)	Panicle Width (cm)	Number of Whorls Per Panicle	Number of Branches Lower Whorl	Number of Branches Third Whorl
Ba 70-139	2.0	6.7	3.7	4.8	3.8	2.7
Ba 72-492	1.2	7.5	4.2	5.5	4.0	3.0
Ba 72-500	2.0	6.8	3.8	5.0	4.0	2.4
Baron	1.0	7.8	4.1	5.2	3.8	2.5
Bristol	2.0	9.7	5.0	5.0	3.3	2.7
Nassau	2.0	10.0	6.0	5.0	3.0	2.0
Newport	2.0	10.3	4.4	4.5	2.3	2.3
Park	1.6	9.0	3.7	4.0	4.3	3.7
Ram I	2.0	9.0	4.7	4.0	2.5	2.0
Victa	1.2	7.5	4.1	5.4	4.4	3.4
LSD (.05)	0.5	1.6	1.0	0.8	0.7	0.8

*Panicle nodding rated 1 = erect, 2 = nodding.

TABLE 4

Morphological Comparison of Spikelets of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Spikelet Length (mm) Lowest Whorl	Spikelet Length (mm) Third Whorl	Number of Florets per Spikelet Lowest Whorl	Number of Florets per Spikelet Third Whorl
Ba 70-139	5.2	5.2	4.2	4.0
Ba 72-492	5.2	5.0	4.4	4.2
Ba 72-500	5.1	5.0	4.2	3.9
Baron	5.0	5.0	3.7	3.8
Bristol	6.2	6.0	5.7	5.3
Nassau	4.6	4.6	4.5	4.5
Newport	5.3	5.2	5.2	5.2
Park	6.5	6.7	5.2	4.7
Ram I	4.7	5.2	5.2	5.5
Victa	5.2	5.0	3.8	3.8
LSD(.05)	0.9	0.8	1.1	1.0

TABLE 5

Morphological Comparison of Glumes of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Glume Length (mm) Outer Lowest Whorl	Outer Third Whorl	Inner Lowet Whorl	Inner Third Whorl
Ba 70-139	3.2	3.1	3.5	3.5
Ba 72-492	2.9	3.0	3.3	3.3
Ba 72-500	3.1	3.1	3.4	3.4
Baron	2.9	2.8	3.4	3.3
Bristol	3.4	3.3	3.7	3.9
Nassau	2.3	2.4	2.7	2.7
Newport	2.6	2.5	2.9	2.9
Park	3.0	3.2	3.5	3.7
Ram I	2.6	2.4	2.9	2.7
Victa	2.8	3.0	3.3	3.3
LSD(.05)	0.5	0.4	0.4	0.4

TABLE 6

Morphological Comparison of Flag Leaves of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Thickness (mm)
Ba 70-139	4.7	3.2	0.112
Ba 72-492	5.2	3.6	0.117
Ba 72-500	4.1	3.2	0.112
Baron	4.5	3.2	0.119
Bristol	5.5	3.4	0.127
Nassau	6.1	3.1	0.127
Newport	6.2	3.5	0.135
Park	4.2	2.6	0.109
Ram I	4.7	3.1	0.127
Victa	5.9	4.0	0.124
LSD(.05)	1.8	0.6	0.013

TABLE 7

Morphological Comparison of Peduncles, Culms, and Internodes of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Pe-duncle Length (cm)	Peduncle Width (mm)	Culm Length (mm)	Number of Nodes Per Culm	Top Internode Length (cm)
Ba 70-139	13.2	0.610	435	2.7	10.2
Ba 72-492	12.6	0.558	486	2.2	10.5
Ba 72-500	12.9	0.660	439	2.7	9.8
Baron	12.7	0.559	482	2.5	10.1
Bristol	15.0	0.686	522	2.7	11.3
Nassau	8.0	0.533	450	2.5	11.2

TABLE 7-continued

Morphological Comparison of Peduncles, Culms, and Internodes of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Peduncle Length (cm)	Peduncle Width (mm)	Culm Length (mm)	Number of Nodes Per Culm	Top Internode Length (cm)
Newport	18.0	0.558	547	2.3	11.2
Park	14.3	0.787	578	3.0	13.0
Ram I	18.5	0.610	527	3.0	10.2
Victa	12.2	0.711	474	2.4	10.6
LSD(.05)	3.7	0.018	79	0.6	2.1

TABLE 8

Morphological Comparison of Leaves of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Ligule Length (mm)	Leaf Length (mm)	Leaf Width (mm)	Leaf Angle (Degrees From Horizontal)
Ba 70-139	0.26	218	4.1	55
Ba 72-492	0.28	239	4.4	52
Ba 72-500	0.25	204	4.1	50
Baron	0.30	313	4.4	63
Bristol	0.30	253	4.3	37
Nassau	0.22	226	3.5	39
Newport	0.22	251	4.1	50
Park	0.33	329	4.2	44
Ram I	0.18	188	3.7	40
Victa	0.28	235	4.3	52
LSD(.05)	0.11	49	0.6	10

TABLE 9

Morphological Comparison of Leaf Hairs of Ba 70-139 and Other Bluegrass Varieties in the Greenhouse at Marysville, Ohio.

Variety	Hairs[a] Around Ligule on Upper Surface of the Leaf	Hairs[a] on Collar	Hairs[b] on Ligule
Ba 70-139	1.0	3.5	1.5
Ba 72-492	1.0	3.2	1.3
Ba 72-500	1.0	3.5	2.7
Baron	1.0	5.0	4.0
Bristol	1.3	4.7	4.3
Nassau	2.7	5.0	1.0
Newport	1.0	4.0	0.8
Park	1.0	1.7	0.0
Ram I	1.0	3.7	0.3
Victa	1.0	3.3	2.2
LSD(.05)	0.3	1.4	1.8

[a]hairs around ligule and on collar rated 1–5: 1 = none, 5 = many
[b]Hairs on ligule rated 0–5: 0 = none, 5 = many

TABLE 10

Morphological Comparisons of Ba 70-139 and Other Bluegrass Varieties Grown as Unmowed Spaced Plants in the Field at Marysville, Ohio.

Variety	Mature Plant Height	Panicle Density	Seedhead Weight
Ba 70-139	35	5	402
Adelphi	42	3	345
Nugget	17	3	233
Bristol	40	4	511
Merion	25	2	320
Glade	20	3	214
Vantage	52	2	1019
Victa	23	2	648

Ratings: Mature Plant Height (cm) includes panicle Panicle Density - 1–10, 10 = high panicle density Seedhead Weight - Weight (mg) of 3 panicles

Ba 70-139 has performed well throughout the U.S.A. and Canada, as exhibited by high turf quality ratings in many different locations in comparison to other varieties. In addition, Ba 70-139 tolerates shady growing conditions very well, which is an important characteristic that allows an even broader range of use. The new variety has a pleasant medium green color which can be maintained throughout the growing season and widely scattered locations in the U.S.A. and Canada. The color of Ba 70-139 is enhanced compared to other varieties when grown in the shade due to its high tolerance to the various stresses and diseases that occur frequently under shady conditions. Comparisons of Ba 70-139 with other varieties for quality, color, and shade performance are shown in Tables 11–14.

TABLE 11

Comparison of the Turf Quality of BA 70-139 and Other Bluegrass Varieties in the U.S.A.

Variety	St. Louis Missouri 1 Year Mean	Adelphia New Jersey 2 Year Mean	Marysville Ohio 5 Year Mean
BA 70-139	3.2	6.1	2.3
America	2.8		
Adelphi	2.9	6.4	2.3
Banff			
Baron	2.7	6.4	2.3
Birka	2.3	5.9	
Bonnieblue		6.7	
Bristol	2.7	6.5	
Columbia		5.9	
Eclipse		7.2	
Flyking		5.7	
Glade	2.8	6.7	2.3
Gnome	2.9	6.4	2.2
Kenblue		3.3	
Merion		6.0	2.1
Merit	2.8	6.2	
Midnight		7.3	
Monopoly		5.7	
Nassau		5.9	
Newport			2.0
Nugget			2.4
Parade		5.6	
Park	1.8		
Ram I		6.2	
Sydsport	2.7	6.0	
Touchdown	2.7	6.1	
Vantage	2.6	3.6	2.1
Victa	2.8	6.5	2.3
Wabash		4.8	
Windsor			2.0

		Maryland	
Variety	Gervais Oregon 1 Year Mean	Beltsville 1 Year Mean	Prince Frederick 1 Year Mean
Ba 70-139	2.9	5.8	2.4
America			
Adelphi	2.8	5.9	2.0
Banff		4.8	
Baron		5.3	
Birka			
Boonieblue		5.0	1.1
Bristol	3.0	5.0	1.5
Columbia		4.9	
Eclipse		5.9	
Flyking		4.9	
Glade		5.3	1.3
Gnome			
Kenblue			
Merion		5.3	1.2
Merit		6.1	1.5
Midnight		5.5	
Monopoly		4.9	
Nassau		4.5	
Newport			
Nugget			
Parade		5.0	

TABLE 11-continued

Comparison of the Turf Quality of BA 70-139 and Other Bluegrass Varieties in the U.S.A.

Park	1.8		1.3
Ram I	2.4	4.6	
Sydsport		5.8	
Touchdown		5.8	
Vantage		5.5	2.0
Victa	2.7	5.5	1.6
Wabash			
Windsor			

Rating Scale: Larger number indicates higher quality.

TABLE 12

Comparison of Turf Color of Ba 70-139 and Other Bluegrass Varieties at Various Locations in the U.S.A.

Variety	St. Louis Missouri 1 Year Mean	Somis California 1 Year Mean	Gervais Oregon 2 Year Mean	Prince Frederick Maryland 1 Year Mean	Marysville Ohio 3 Year Mean
Ba 70-139	9.1	6.3	8.7	6.9	8.5
Adelphi	9.4	6.5	9.6	6.7	8.7
America	9.4				
Baron	9.2				
Birka	9.1	6.3			
Bono	9.0	6.2			
Bristol	9.5	7.6	9.5	7.3	
Fylking					8.4
Glade	9.3	7.0		7.4	8.8
Gnome	9.3				8.7
Kenblue		5.8			
Merion				4.7	8.4
Merit		5.8			
Midnight		5.5			
Newport		6.0			8.3
Nugget					8.8
Park	9.0		6.9	5.5	
Ram I		7.3	8.6		
Rugby		6.7			
Sydsport	9.2				
Touchdown	9.0				
Vantage	9.2	5.7		6.3	8.4
Victa	9.2	6.0	8.5	6.8	8.7
Windsor					8.4
LSD(.05)	0.3				0.2

Rating Scale: Larger number indicates darker green color.

TABLE 13

Turf Performance Ratings Under Natural Shade of Ba 70-139 and Other Bluegrass Varieties.

Variety	Prince Frederick Maryland 3 Year Mean	Marysville Ohio Test 1 4 Year Mean	Test 2 4 Year Mean	Test 3 4 Year Mean	Test 4 2 Year Mean
Ba 70-139	2.1	2.6	2.4	3.1	2.6
Adelphi				2.6	2.0
Banff		2.4			
Birka				2.2	
Bonniblue			1.9	1.9	
Bristol	1.8	2.4	2.0	2.6	1.7
Flyking			1.9	1.5	
Glade		2.1		2.5	1.5
Merion			1.8	2.2	1.7
Monopoly		2.8			2.4
Nassau					1.9
Newport	1.2	1.8	1.9		
Nugget				2.3	
Parade			2.0	2.3	
Park			1.9		1.8
Ram I					2.0
Rugby		2.2			
Sydsport				2.5	
Touchdown			1.9	2.1	
Vantage				1.8	2.2

TABLE 13-continued

Turf Performance Ratings Under Natural Shade of Ba 70-139 and Other Bluegrass Varieties.

Variety	Prince Frederick Maryland 3 Year Mean	Marysville Ohio Test 1 4 Year Mean	Test 2 4 Year Mean	Test 3 4 Year Mean	Test 4 2 Year Mean
Victa	1.2	1.7	1.8	2.0	1.5
Wabash					2.2
Windsor				1.7	

Rated 1–4, 4 = Best

TABLE 14

Comparison of Turf Color Under Natural Shade Conditions of Ba 70-139 and Other Bluegrass Varieties.

	Marysville Ohio				Prince Frederick Maryland
Variety	Test 1	Test 2	Test 3	Test 4	3 Year Mean
Ba 70-139	8.8	8.3	8.3	8.2	8.2
Adelphi			7.8	7.9	
America			7.5		
Banff		8.3			
Bonnieblue	8.5		7.5		
Bristol	8.4	7.8	7.5	7.9	8.2
Flyking	8.1				
Glade		8.0	7.5	8.1	
Merion	8.3			8.1	
Monopoly		8.3		7.8	
Mystic			7.8		
Nassau				8.0	
Newport	8.3	7.5	8.2		5.5
Nugget	8.3				
Parade	8.2				
Park	8.1		7.0	7.8	
Ram I			7.8	8.0	
Rugby		8.3			
Sydsport			7.5		
Touchdown	8.3				
Vantage				8.0	
Victa	8.3	8.0	7.9	8.1	6.0
Wabash		7.5		8.0	
LSD(.05)		0.4	0.7	0.3	

Rated 1–9, 9 = darkest green

Turf diseases are one of the major causes of inconsistent and poor turf performance among locations and years. Comparisons of resistance to leaf spot (also known as melting out and crown rot) caused by *Helminthosporium vagans,* powdery mildew caused by *Erysiphe graminis,* rust caused by Puccinia spp., dollarspot caused by *Sclerotina homeocarpa,* and stripe smut caused by *Ustilago striiformis,* are presented in Tables 15–21.

TABLE 15

Comparison of Leafspot Disease Incidence on Ba 70-139 and Other Bluegrasses at Several Locations in the U.S.A.

Variety	St. Louis[a] Missouri	Beltsville[b] Maryland	Adelphia[b] New Jersey
Ba 70-139	2	7.3	7.0
A-34		5.3	4.3
Adelphi	2	8.0	5.7
America	8		
Banff		5.3	7.0
Baron	2	7.0	8.7
Birka	5		6.3
Bonnieblue			7.0
Bono	7		
Bristol	2	7.0	8.3
Columbia		5.7	6.3
Eclipse		7.7	9.0
Flyking		6.7	6.3
Glade	2	7.3	6.3

TABLE 15-continued

Comparison of Leafspot Disease Incidence on Ba 70-139 and Other Bluegrasses at Several Locations in the U.S.A.

Gnome	2	7.0	8.0
Kenblue		3.3	1.7
Merion		6.3	7.7
Merit	3	7.3	7.7
Midnight		7.0	7.0
Monopoly		5.3	6.0
Mystic			
Nassau		7.7	7.4
Parade		6.0	5.0
Park	52		
Ram I		6.5	7.0
Rugby			5.0
Sydsport	3	7.3	6.3
Touchdown	7	7.7	
Vantage	7	5.0	2.0
Victa	2	8.0	7.0
Wabash			2.0
Windsor			
LSD(.05)	7		1.9

Variety	Gervais[a] Oregon	Accokeek[a] Maryland	Marysville[a] Ohio
Ba 70-139	7	4	0
A-34			
Adelphi	0		
America			
Banff			
Baron			
Birka			
Boonieblue			
Bono			
Bristol	1	3	0
Columbia			
Eclipse			
Flyking		16	
Glade			27
Gnome			0
Kenblue		3	40
Merion		5	0
Merit			
Midnight			
Monopoly			13
Mystic			35
Nassau			
Parade			
Park	13		40
Ram I	3		
Rugby			
Sydsport			0
Touchdown			
Vantage		5	
Victa	3		0
Wabash			
Windsor		53	
LSD(.05)	5	22	9

Ratings
[a]% of turf affected by disease
[b]1–9, 9= least disease

TABLE 16

Comparison of Powdery Mildew Disease Incidence Under Natural Shade Conditions on Ba 70-139 and Other Bluegrasses.

	Prince Frederick	Marysville Ohio			
Variety	Maryland	Test 1	Test 2	Test 3	Test 4
Ba 70-139	5	5	0	15	0
Adelphi		15			10
America			13		0
Banff				45	
Baron					
Birka		8	3		
Bonnieblue		58			0
Bristol	5	5	2	30	10
Columbia					
Eclipse			5		
Flyking		50			

TABLE 16-continued

Comparison of Powdery Mildew Disease Incidence Under Natural Shade Conditions on Ba 70-139 and Other Bluegrasses.

	Prince Frederick	Marysville Ohio			
Variety	Maryland	Test 1	Test 2	Test 3	Test 4
Glade		5	36	65	0
Gnome			72		
Kenblue			4		
Merion		83			
Merit					
Midnight					
Monopoly				5	
Mystic					5
Nassau					
Newport	53			75	0
Nugget		18			
Parade		60			
Park					0
Ram I					25
Rugby				40	
Sydsport		15			20
Touchdown		5	0		
Vantage		30			
Victa	60	84	69	60	8
Windsor		26			
LSD(.05)	10	22		31	8

Rated as % of turf affected by disease.

TABLE 17

Comparison of Powdery Mildew Disease Incidence Under Conditions Other Than Natural Shade on Ba 70-139 and Other Bluegrasses.

	Greenhouse		Spaced Plants - Sun[c]
Variety	New Brunswick[a] New Jersey	Marysville[b] Ohio	Marysville Ohio
Ba 70-139	4.7	2	0
Adelphi	0.8	6	
America	6.7		
Banff	0.4		
Baron	1.4	9	2
Birka	5.7		
Bonnieblue	0.8		
Bristol	6.4	2	2
Columbia	0.5		
Eclipse	6.9		
Flyking	1.3		
Glade	7.0	7	
Gnome	1.7		
Kenblue			2
Merion	0.9	6	1
Merit	2.3	8	
Midnight	0.7		
Monopoly	5.9		
Mystic	8.3		
Nassau		7	
Newport		2	
Nugget	7.0		0
Parade	2.2		
Park		6	2
Ram I	7.2	2	
Rugby	0.6		
Sydsport	6.1	2	
Touchdown			
Vantage	5.0	4	
Victa	1.9	9	3
Windsor			3
LSD(.05)	0.8	3	2

[a]Rated 0–9, 9 = least disease
[b]Rated 1–9, 9 = most disease
[c]Rated 1–5, 5 = most disease

TABLE 18

Comparison of Rust (Puccinia spp.) Disease Incidence on Ba 70-139 and Other Bluegrasses.

	Turf[b] Gervais Oregon		Unmowed Spaced Plants[a] Marysville Ohio	
Variety	Test 1	Test 2	Test 1	Test 2
Ba 70-139	12	1	1	0
Adelphi		4		0
Baron			3	
Bristol	7	2	2	0
Glade				0
Kenblue			2	
Merion			2	2
Nugget			3	0
Park		49	1	
Ram I		15		
Victa	63	13	2	1
Vantage				2
Windsor			3	
LSD(.05)	26		1	

[a]Rated 1–5, 5 = most disease
[b]Rated as % of disease incidence

TABLE 19

Comparison of Stem Rust (*Puccinia graminis*) Disease Incidence on Ba 70-139 and Other Bluegrasses at Adelphia, New Jersey.

Variety	Test 1	Test 2
Ba 70-139	7.8	7.2
Midnight	7.0	7.8
Columbia	6.7	7.8
Banff	6.5	7.7
Bristol	7.7	7.7
Parade	6.2	7.5
Monopoly	7.1	7.4
Ram I	7.0	7.3
Victa	5.6	7.2
Merit	5.7	7.0
Baron	6.4	7.0
Nassau	6.8	7.0
Eclipse	4.7	7.0
Bonnieblue	5.4	7.0
Adelphi	7.1	6.9
America	7.4	6.9
Vantage	6.2	5.9
Touchdown	3.5	5.7
Birka	3.5	5.6
Merion	2.4	3.6
LSD(.05)	0.9	1.0

Rated 1–9, 9 = No Disease

TABLE 20

Comparison of Dollarspot Disease Incidence on Ba 70-139 and Other Bluegrasses.

Variety	Prince Frederick Maryland	Marysville Ohio Test 1	Marysville Ohio Test 2
Ba 70-139	30	37	32
Adelphi	8	20	36
America		13	
Banff			70
Baron	50	23	53
Birka	6	47	
Bonnieblue	10		57
Bono	4	63	
Bristol	6	17	43
Columbia	10		
Eclipse		8	60
Glade		40	43
Gnome		22	
Kenblue	8	37	30
Merion			50
Merit	4		50
Midnight	6		
Newport			67
Park		33	43

TABLE 20-continued

Comparison of Dollarspot Disease Incidence on Ba 70-139 and Other Bluegrasses.

Variety	Prince Frederick Maryland	Marysville Ohio Test 1	Marysville Ohio Test 2
Ram I	40		25
Rugby	12		73
Sydsport		43	
Touchdown		50	
Vantage	11	15	32
Victa	5	23	30
Wabash	11		
Windsor			33
LSD(.05)	19	24	38

Rating: % of turf that is affected by disease.

TABLE 21

Comparison of Stripe Smut Disease Incidence on Ba 70-139 and Other Bluegrasses in Maryland.

Variety	Prince Frederick	Accokeek
Ba 70-139	0	0
Bristol	13	0
Flyking		2
Kenblue		0
Merion		2
Mosa	28	
Vantage		4
Windsor		58
LSD(.05)	18	8

Rating: % of turf that is affected by disease.

Ba 70-139 has the capability to tolerate heat and drought stress, and it has a low growth habit and a lower vertical growth rate than many varieties, especially the common type of varieties such as Park, Kenblue, and Newport, that should allow it to tolerate lower mowing heights and possibly decrease the total number of mowings per year without sacrificing overall turf performance. The leaf texture of the new variety is similar to many bluegrass varieties when maintained under mowed turf conditions. Comparisons showing heat and drought stress, low growth habit, and leaf texture are presented in Tables 22–24.

TABLE 22

Comparison of Drought and Heat Tolerance of Ba 70-139 and Other Bluegrass in Maryland.

Variety	Test 1	Test 2	Test 3	Test 4
Ba 70-139	6	0	8	3
Adelphi			7	4
Baron				0
Birka				11
Bonnieblue			12	8
Bono				10
Bristol	31	50	10	5
Flyking		50		
Glade			13	
Kenblue		50		7
Merion		25	20	
Merit			18	2
Midnight				17
Mosa	27			
Park			20	3
Ram I				0
Rugby				6
Vantage		0	7	7
Victa			17	10
Wabash				13
Windsor		50		
LSD(.05)		33	14	

Rated as % brown turf due to drought and heat stress.

TABLE 23

Comparison of Growth habit of Ba 70-139 and Other Bluegrasses at Marysville, Ohio.

Variety	Test 1	Test 2
Ba 70-139	2.0	1.8
Adelphi	2.0	2.1
America	1.8	
Baron	1.8	2.0
Birka	2.0	
Bono	2.0	
Bristol	2.0	
Eclipse	2.0	
Flyking		2.3
Glade	2.2	1.7
Gnome	2.0	1.7
Kenblue	2.9	
Merion		2.2
Newport		2.4
Nugget		1.5
Park	2.9	
Sydsport	1.9	
Touchdown	2.0	
Vantage	2.7	3.0
Victa	1.9	1.8
Windsor		2.0
LSD(.05)	0.3	

Rated 1–5, 5 = Highest Growth Habit

TABLE 24

Comparison of Leaf Texture of Ba 70-139 and Other Bluegrasses Under Mowed Turf Conditions.

Variety	St. Louis Missouri	Gervais Oregon
Ba 70-139	4.0	2.0
Adelphi	5.3	2.8
America	6.0	
Baron	4.6	
Birka	6.0	
Bono	5.6	
Bristol	5.3	3.0
Glade	6.0	
Gnome	4.3	
Merit	4.3	
Park	6.0	3.0
Ram I		3.0
Sydsport	5.0	
Touchdown	5.0	
Vantage	6.0	
Victa	4.4	1.7

TABLE 24-continued

Comparison of Leaf Texture of Ba 70-139 and Other Bluegrasses Under Mowed Turf Conditions.

Variety	St. Louis Missouri	Gervais Oregon
LSD(.05)	0.7	0.5

Rating: Largest number indicates finest texture

Ba 70-139 has a high level of seed yielding ability which should make it an economically feasible variety to produce for commercial markets. The low susceptibility of Ba 70-139 to rust and lodging under typical seed field conditions should aid in producing economical seed crops. Comparative results on seed yield, rust, and lodging are shown in Table 25 and Table 26.

TABLE 25

Seed Yield Comparisons of Ba 70-139 and Other Bluegrass Varieties in Oregon.

Variety	Year 1	Year 2	Mean
Ba 70-139	643	930	787
Ba 72-492	585	864	725
Ba 72-500	559	757	658
Victa	780	1394	1087
Newport	435	1256	846
Bristol	347	808	578
Mosa	322	1060	691
LSD(.05)	140	134	

Rating: Pounds per acre of conditioned seed.

TABLE 26

Plant Characteristics of Ba 70-139 and Other Bluegrass Varieties at Gervais, Oregon Under Seed Production Conditions.

		Lodging	
	Rust	Year 1	Year 2
Ba 70-139	2	2.5	0
Ba 72-500	1	2.5	0.2
Ba 72-492	1	2.5	0.2
Victa	2	2.0	0
Bristol	4	4.0	1
Newport	4	4.0	1
Mosa	4	2.0	0

Ratings
Rust: 1–4, 4 = very susceptible
Lodging: 0–5, 5 = severe lodging

What is claimed is:

1. A variety of Kentucky bluegrass plant, substantially as shown and described, characterized particularly by a high level of resistance to diseases, a desirable green color throughout the growing season, a high quality persistent turf under a wide range of environmental conditions including shady conditions, and a high level of seed yielding capacity.

* * * * *

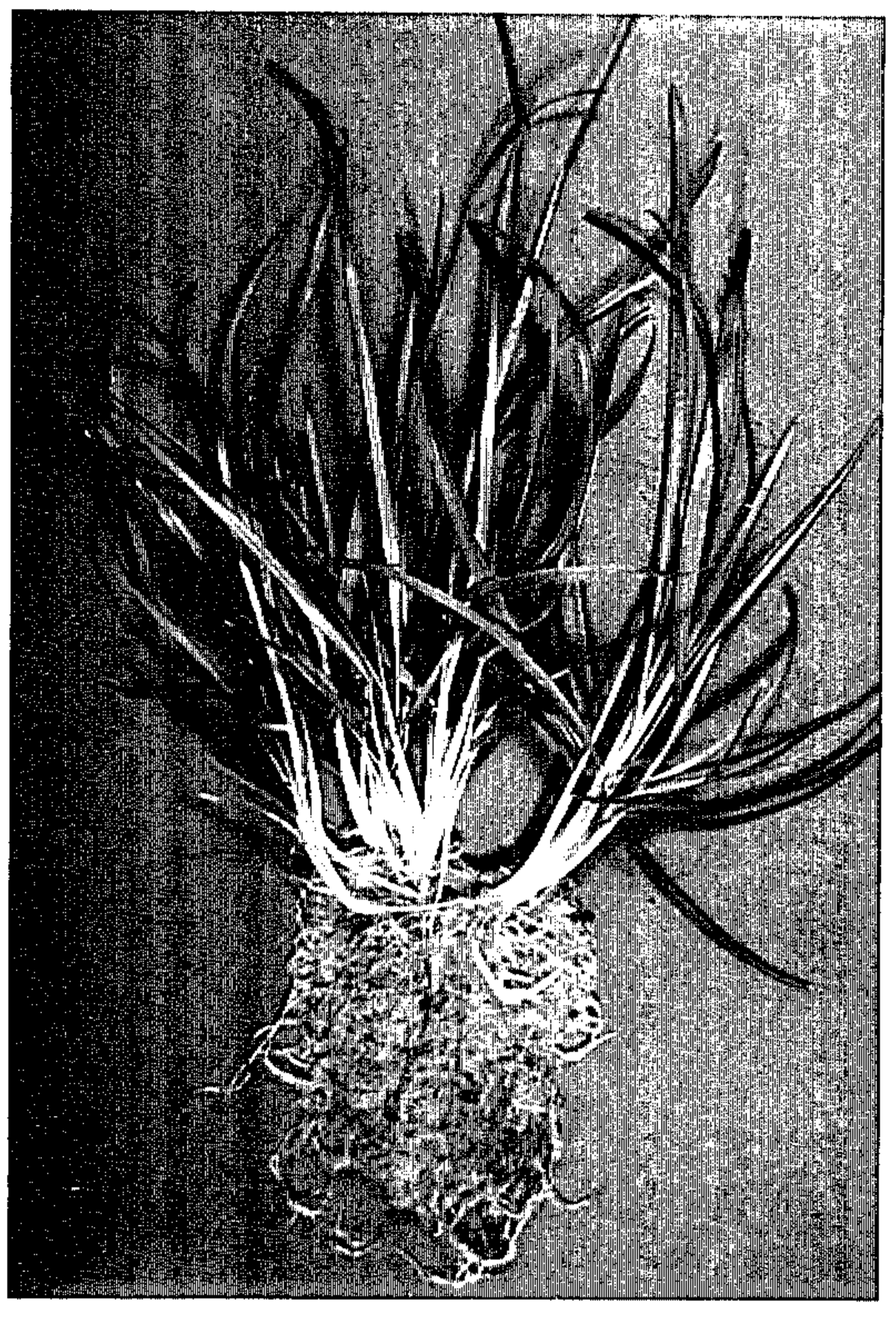

FIG. 1

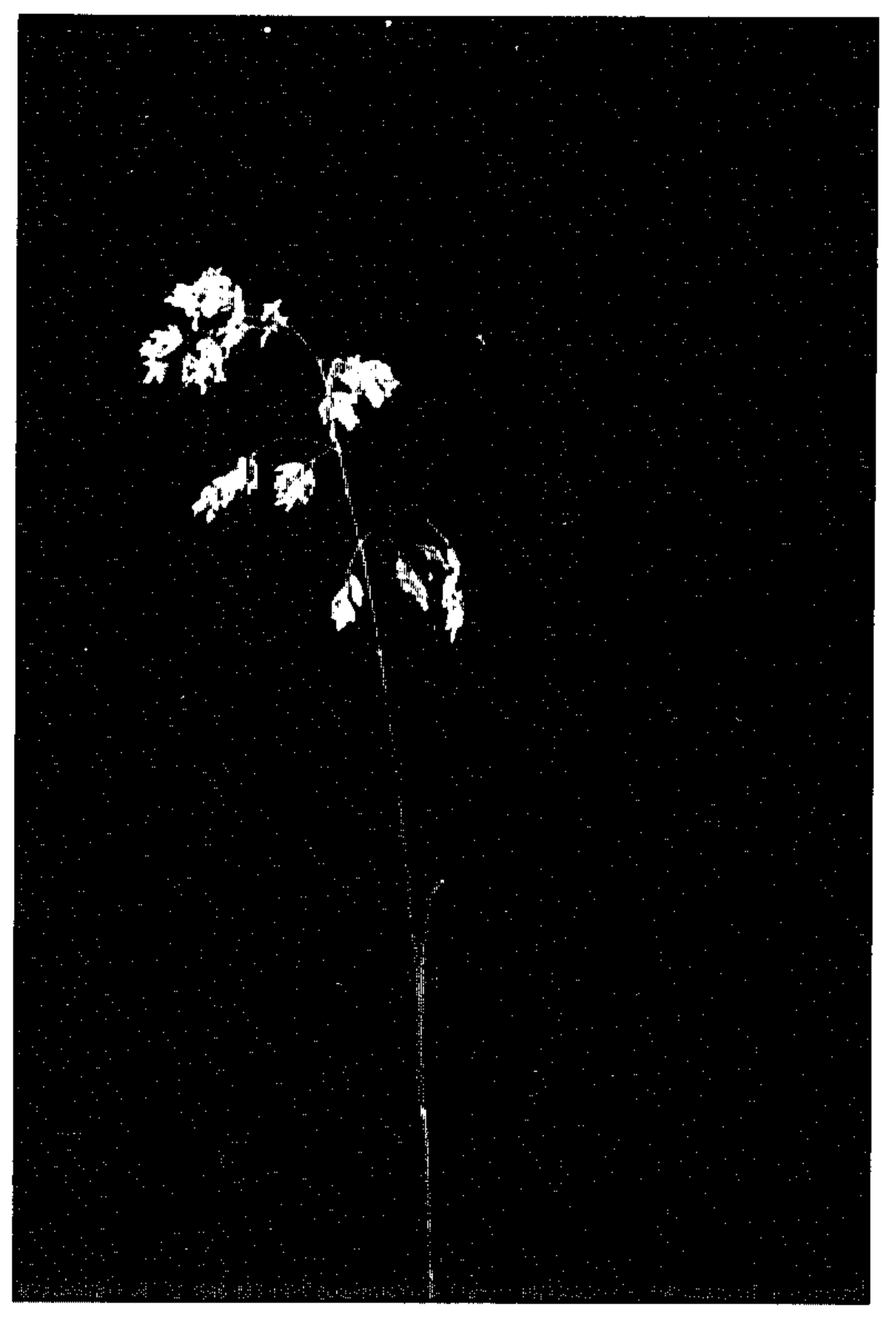

FIG. 2

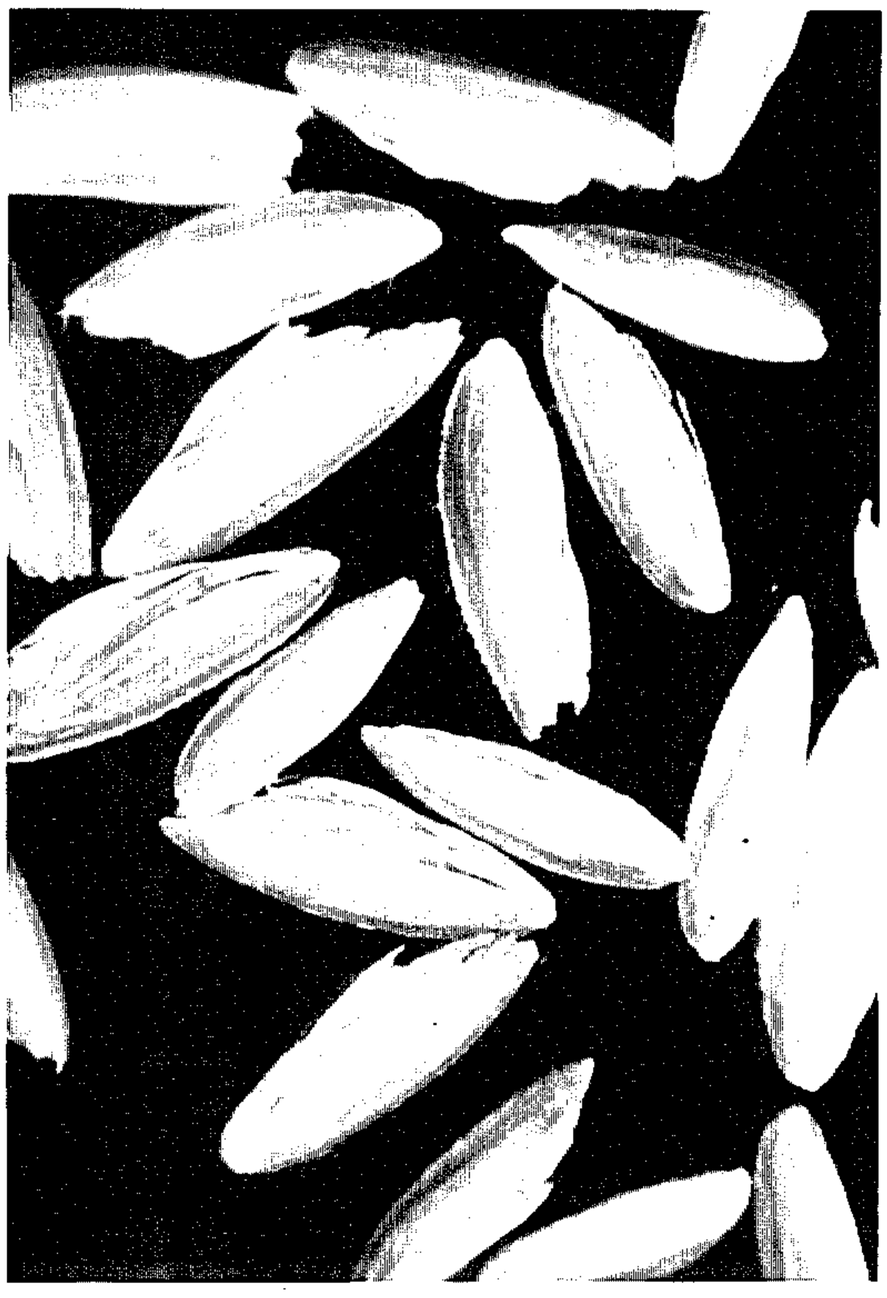

FIG. 3

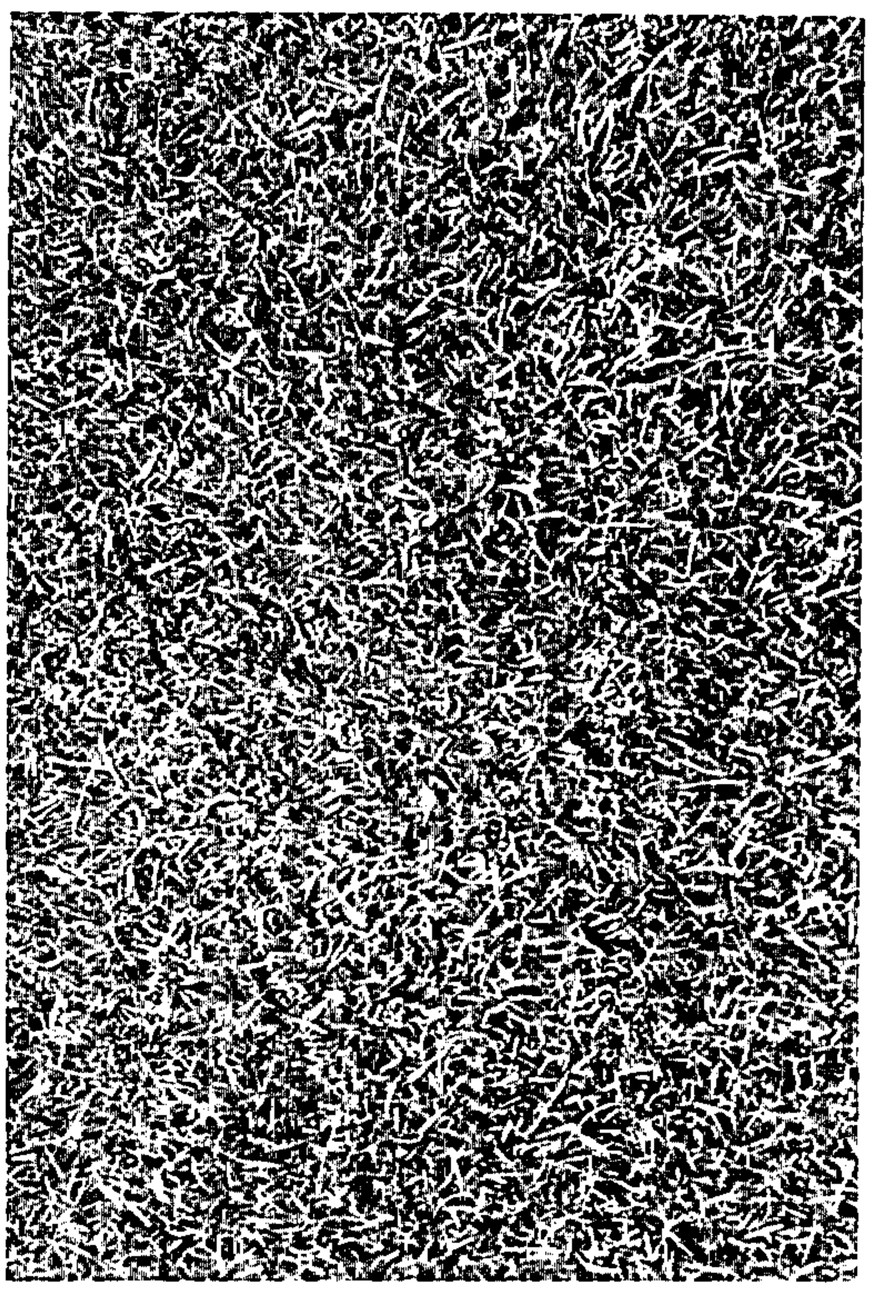

FIG. 4