

NATIONAL TURFGRASS EVALUATION PROGRAM 2005 KENTUCKY BLUEGRASS CULTIVAR TRIAL

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OBJECTIVE

The objective of this research project is to evaluate commercial and experimental cultivars of Kentucky bluegrass in various locations across North America. The 2005 Kentucky bluegrass trial at the GTI is a medium maintenance trial, with mowing height at 50 mm, N rate at 1.5 kg 100 m⁻², irrigation to prevent dormancy, and pesticide (fungicide, insecticide and herbicide) only to prevent stand loss.

EXPERIMENTAL DESIGN / METHODS

Seed of 110 commercial and experimental Kentucky bluegrass cultivars was seeded

September 12, 2005 at a rate of 11.1 g m⁻² into 1.5 x 1.5 m plots in a randomized complete block design on a sandy loam soil plot area at the Guelph Research Station (Figure 1). Plots were rated for germination and cover establishment during fall 2005 (Tables 1 - 3, following). Germination was rated visually on a scale of 0-10 on two dates, 10 and 15 days after seeding, and was estimated by using on Spectrum CM1000 chlorophyll meter on 4 dates, 10, 16, 21, and 24 days after seeding (Table 2, Figure 2). There were significant differences observed among the cultivars in speed of germination and cover development, and a significant correlation between visual germination estimates and cover development estimated by chlorophyll index (Figure 3).



Figure 1. Hand seeding 1.5m x 1.5m plots of Kentucky bluegrass.

Table 1. Visual germination rate of Kentucky bluegrass cultivars 10 (Sept. 22) and 15 (Sept. 27) days after seeding.

Entry	Sept. 22	Sept. 27	Entry	Sept. 22	Sept. 27	Entry	Sept. 22	Sept. 27
POPR 04594	3.7 a ¹	5.0 a	A01-299	2.0 cd	2.7 efg	SPTR 2LM95	1.0 efg	2.3 fgh
Bd 98-2108	3.0 ab	4.3 ab	A97-1287	1.7 de	2.7 efg	A00-1254	1.3 def	2.0 ghi
CPP 817	3.0 ab	4.3 ab	A98-999	1.3 def	2.7 efg	A95-410	1.0 efg	2.0 ghi
Washington	2.7 bc	4.3 ab	A99-3119	1.7 de	2.7 efg	BAR VK 0710	1.3 def	2.0 ghi
Beyond	2.0 cd	4.0 bc	Argos	1.3 def	2.7 efg	BAR VV 0665	0.0 h	2.0 ghi
Bd 03-84	3.0 ab	3.7 bcd	BAR VV 9634	1.0 efg	2.7 efg	Bd 98-1358	1.0 efg	2.0 ghi
Bd 99-2103	1.7 de	3.7 bcd	Blueberry	1.0 efg	2.7 efg	Bewitched	1.0 efg	2.0 ghi
CP 76-9068	2.0 cd	3.7 bcd	Bluestone	1.0 efg	2.7 efg	CPP 822	1.3 def	2.0 ghi
DP 76-9066	2.0 cd	3.7 bcd	Diva	1.0 efg	2.7 efg	J-1334	0.3 gh	2.0 ghi
Everglade	1.3 def	3.7 bcd	Dynamo	0.7 fgh	2.7 efg	J-2404	0.7 fgh	2.0 ghi
America	1.7 de	3.3 cde	LTP 2949	1.3 def	2.7 efg	J-2791	1.0 efg	2.0 ghi
BAR VV 0709	1.0 efg	3.3 cde	MSP 3722	1.7 de	2.7 efg	Mystere	1.0 efg	2.0 ghi
Bd 03-159	2.0 cd	3.3 cde	Nu Destiny	1.3 def	2.7 efg	Prosperity	1.0 efg	2.0 ghi
Bd 95-1930	1.7 de	3.3 cde	PSG 366	1.0 efg	2.7 efg	RAD-0AN64	1.3 def	2.0 ghi
Belissimo	2.0 cd	3.3 cde	PSG 711	1.0 efg	2.7 efg	RAD-504	0.7 fgh	2.0 ghi
CPP 821	2.0 cd	3.3 cde	PST-109-752	1.3 def	2.7 efg	Reveille	0.3 gh	2.0 ghi
Excursion	1.3 def	3.3 cde	PST-1A1-899	1.3 def	2.7 efg	Rhythm	0.7 fgh	2.0 ghi
Glenmont	2.0 cd	3.3 cde	RAD-343	1.3 def	2.7 efg	Shamrock	0.7 fgh	2.0 ghi
MSP 3723	1.7 de	3.3 cde	Rugby II	1.0 efg	2.7 efg	SPTR 2959	1.0 efg	2.0 ghi
MSP 3724	1.7 de	3.3 cde	STR 23180	1.0 efg	2.7 efg	STR 2485	0.7 fgh	2.0 ghi
1QG-38	1.3 def	3.0 def	STR 2553	1.0 efg	2.7 efg	A01-349	1.0 efg	1.7 hij
A97-890	1.0 efg	3.0 def	STR 2703	1.0 efg	2.7 efg	A98-689	0.3 gh	1.7 hij
BAR VV 8536	1.3 def	3.0 def	Avid	1.3 def	2.3 fgh	A98-948	0.7 fgh	1.7 hij
Baron	1.0 efg	3.0 def	Award	1.0 efg	2.3 fgh	A99-2559	1.3 def	1.7 hij
DLF 76-9075	1.0 efg	3.0 def	BAR VV 9630	1.0 efg	2.3 fgh	AKB449	0.3 gh	1.7 hij
Everest	1.3 def	3.0 def	DP 76-9081	0.0 h	2.3 fgh	Bariris	1.0 efg	1.7 hij
H94-305	1.0 efg	3.0 def	H98-701	1.0 efg	2.3 fgh	Barrister	0.0 h	1.7 hij
Harmonie	1.0 efg	3.0 def	J-1326	0.7 fgh	2.3 fgh	J-2024	0.3 gh	1.7 hij
Impact	1.3 def	3.0 def	J-1466	1.0 efg	2.3 fgh	NA-3248	0.3 gh	1.7 hij
Julia	1.7 de	3.0 def	J-2399	1.0 efg	2.3 fgh	NA-3259	0.3 gh	1.7 hij
Kenblue	1.3 def	3.0 def	J-2502	1.0 efg	2.3 fgh	PST-101-73	1.0 efg	1.7 hij
LTP-73	1.7 de	3.0 def	J-2870	1.0 efg	2.3 fgh	Skye	0.3 gh	1.7 hij
Midnight	1.3 def	3.0 def	J-3429	1.3 def	2.3 fgh	NA-3249	0.7 fgh	1.3 ij
NuGlade	1.0 efg	3.0 def	NA-3271	1.0 efg	2.3 fgh	NA-3257	0.3 gh	1.3 ij
SW AG 514	1.3 def	3.0 def	PST-101-390	1.3 def	2.3 fgh	LTP-149	0.3 gh	1.0 j
A00-1400	1.7 de	2.7 efg	PST-Y2K-169	1.0 efg	2.3 fgh	NA-3261	0.0 h	1.0 j
A00-247	1.3 def	2.7 efg	RAD-762	0.7 fgh	2.3 fgh	lsd p=0.05	0.780	0.887



Table 2. Chlorophyll index of Kentucky bluegrass cultivars

Entry	22-Sep		28-Sep		3-Oct		6-Oct		Entry		22-Sep		28-Sep		3-Oct		6-Oct	
	10 DAS	16 DAS	16 DAS	21 DAS	21 DAS	24 DAS	24 DAS	24 DAS	10 DAS	16 DAS	16 DAS	10 DAS	16 DAS	21 DAS	21 DAS	24 DAS	24 DAS	
IQG-38	68.2 ¹	80.8	89.0	124.2	J-1326	68.5	79.6	84.4	106.6	J-2399	68.5	79.5	82.5	98.4				
Bd 03-159	69.1	89.3	97.7	123.5	DP 76-9066	68.1	85.3	89.3	106.4	BAR VV 0665	68.1	76.8	87.5	98.0				
Rugby II	69.2	81.9	89.5	122.4	H94-305	68.3	81.0	89.0	106.0	H98-701	68.1	78.2	85.2	98.0				
Beyond	68.9	90.9	94.7	121.9	A00-247	68.5	81.7	85.2	105.9	AKB449	68.3	77.0	82.6	97.5				
Washington	69.6	90.0	93.9	118.6	Glenmont	68.6	82.2	89.5	105.9	A98-689	68.3	78.7	81.4	97.4				
Impact	68.4	82.9	89.3	116.2	Midnight	68.7	87.3	94.2	105.7	PSG 711	68.5	80.4	84.6	97.0				
POPR 04594	69.2	96.9	101.2	115.9	LTP 2949	68.0	80.4	89.3	105.5	STR 2703	67.7	79.8	83.5	96.9				
Award	68.2	79.9	87.1	115.7	MSP 3722	69.0	80.9	85.1	104.9	Baron	67.9	77.9	85.3	96.2				
Bd 99-2103	68.3	85.3	93.0	115.7	A00-1254	67.8	79.0	79.7	104.4	Dynamo	67.9	78.0	84.3	96.2				
SW AG 514	69.5	84.4	94.8	115.5	J-1334	68.2	78.8	83.2	104.3	Bd 98-1358	68.1	79.0	82.4	96.0				
CPP 817	70.6	91.1	93.7	115.2	Skye	68.0	75.1	81.6	103.4	SPTR 2959	68.7	77.5	83.0	96.0				
Julia	69.6	85.5	90.8	115.2	Harmonie	68.7	83.0	88.4	103.4	Mystere	67.9	77.7	82.2	96.0				
Everglade	68.4	88.4	94.7	114.8	MSP 3723	68.9	82.5	89.3	103.4	Avid	68.1	78.4	84.3	95.6				
Bd 98-2108	70.2	90.9	93.6	113.1	MSP 3724	67.6	81.0	86.0	103.3	A99-2559	68.4	77.2	77.4	95.4				
RAD-343	68.7	77.5	85.9	113.0	PST-101-390	67.2	80.1	85.6	103.2	STR 2485	68.3	76.8	81.4	95.2				
BAR VK 0710	68.4	77.8	88.2	112.3	RAD-762	68.7	76.6	80.1	103.0	PST-Y2K-169	68.2	79.3	85.4	95.1				
BAR VV 9634	68.0	79.2	86.5	112.1	PST-109-752	68.1	79.9	85.4	102.9	J-3429	68.1	80.1	82.8	94.9				
Bluestone	68.8	79.9	88.6	111.5	PSG 366	68.5	82.6	84.7	102.8	J-2791	68.0	79.1	78.7	94.6				
NuGlade	68.3	80.1	88.4	111.4	LTP-73	69.1	82.0	86.6	102.4	Bewitched	68.1	77.1	80.5	94.4				
Belissimo	68.7	83.7	89.4	111.3	J-2502	68.7	81.0	85.4	102.2	DP 76-9081	68.1	77.4	78.9	94.4				
A97-890	69.3	82.7	87.6	110.8	America	68.5	82.0	87.7	102.2	CPP 822	68.6	80.9	83.8	93.8				
CP 76-9068	68.5	90.4	95.4	110.7	J-2024	67.9	77.5	83.1	101.8	NA-3257	68.0	74.8	79.0	92.2				
Blueberry	68.4	83.2	90.6	109.9	A97-1287	68.5	82.2	89.5	101.7	RAD-0AN64	68.0	76.5	77.6	91.9				
Everest	68.4	82.8	86.1	109.5	Diva	67.7	78.2	89.0	101.4	RAD-504	67.4	75.1	78.9	91.5				
Excursion	68.4	83.2	92.4	109.5	A01-299	68.7	81.3	94.8	101.2	PST-101-73	67.8	75.7	79.2	91.2				
Bd 95-1930	69.3	86.1	90.4	109.3	DLF 76-9075	68.0	82.8	88.0	101.0	Shamrock	68.3	80.9	83.2	90.0				
SPTR 2LM95	68.7	80.5	84.3	109.3	Kenblue	67.9	81.5	85.9	100.9	A00-1400	69.3	81.9	87.8	89.7				
Bd 03-84	70.0	87.3	92.4	108.7	PST-1A1-899	68.0	80.4	85.0	100.9	NA-3248	67.2	75.5	77.7	88.7				
J-1466	67.6	78.0	84.4	108.5	STR 2553	68.8	78.1	82.4	100.3	LTP-149	68.2	75.6	78.8	88.5				
NuDestiny	69.0	81.4	88.2	108.5	STR 23180	67.6	77.9	83.0	100.0	Barrister	67.3	74.9	76.9	88.4				
BAR VV 9630	68.4	76.9	86.8	108.4	CPP 821	69.0	85.6	88.5	99.9	Rhythm	67.1	75.7	80.0	88.1				
A98-999	68.1	76.2	86.2	108.2	A95-410	67.9	76.1	84.5	99.3	Bariris	67.4	77.4	78.0	88.1				
A98-948	67.9	79.5	86.4	108.0	J-2404	67.9	78.6	84.9	99.3	NA-3271	68.3	78.6	81.2	88.1				
BAR VV 0709	68.8	78.9	86.3	107.7	A99-3119	67.4	80.4	83.1	99.2	NA-3259	67.7	75.5	77.5	87.7				
Argos	69.2	80.3	88.5	107.1	Reveille	68.8	76.1	79.5	99.2	NA-3261	67.5	74.4	75.1	85.1				
Prosperity	69.5	79.5	86.1	107.1	J-2870	68.5	80.1	84.6	98.9	NA-3249	67.4	74.6	73.1	81.9				
BAR VV 8536	68.8	83.5	90.2	106.6	A01-349	68.7	75.8	82.2	98.5	Isd p=0.05	0.9	3.2	4.4	8.5				

¹ Chlorophyll index (0-1000) estimates chlorophyll content by absorption of light at 740 nm. Significant differences were observed among cultivars on all dates.



Table 3. Visual color of Kentucky bluegrass cultivars October 26, 2005 (44 days after seeding)

Entry	Color	Entry	Color	Entry	Color
J-3429	9.0 a ¹	Excursion	8.0 cd	A98-999	7.7 de
PST-Y2K-169	9.0 a	Impact	8.0 cd	BAR VV 0665	7.7 de
Blueberry	8.7 ab	J-1326	8.0 cd	BAR VV 8536	7.7 de
A99-2559	8.3 bc	J-1334	8.0 cd	Baron	7.7 de
Bd 03-159	8.3 bc	J-1466	8.0 cd	Bd 95-1930	7.7 de
Bd 03-84	8.3 bc	J-2399	8.0 cd	DP 76-9081	7.7 de
Everest	8.3 bc	J-2404	8.0 cd	H94-305	7.7 de
Mystere	8.3 bc	J-2502	8.0 cd	MSP 3724	7.7 de
Prosperity	8.3 bc	J-2791	8.0 cd	RAD-0AN64	7.7 de
PST-101-390	8.3 bc	J-2870	8.0 cd	SPTR 2LM95	7.7 de
RAD-504	8.3 bc	Julia	8.0 cd	STR 2553	7.7 de
STR 2703	8.3 bc	LTP 2949	8.0 cd	Washington	7.7 de
A00-1254	8.0 cd	LTP-149	8.0 cd	1QG-38	7.3 ef
A00-1400	8.0 cd	LTP-73	8.0 cd	America	7.3 ef
A97-1287	8.0 cd	Midnight	8.0 cd	CP 76-9068	7.3 ef
A97-890	8.0 cd	MSP 3722	8.0 cd	Diva	7.3 ef
A98-689	8.0 cd	NA-3248	8.0 cd	Glenmont	7.3 ef
A98-948	8.0 cd	NA-3249	8.0 cd	H98-701	7.3 ef
A99-3119	8.0 cd	NA-3257	8.0 cd	J-2024	7.3 ef
AKB449	8.0 cd	NA-3259	8.0 cd	RAD-343	7.3 ef
Argos	8.0 cd	NA-3261	8.0 cd	A00-247	7.0 fg
Avid	8.0 cd	NA-3271	8.0 cd	Belissimo	7.0 fg
Award	8.0 cd	Nu Destiny	8.0 cd	CPP 822	7.0 fg
BAR VK 0710	8.0 cd	NuGlade	8.0 cd	Harmonie	7.0 fg
BAR VV 0709	8.0 cd	PSG 366	8.0 cd	Kenblue	7.0 fg
Bariris	8.0 cd	PST-109-752	8.0 cd	MSP 3723	7.0 fg
Barrister	8.0 cd	PST-1A1-899	8.0 cd	POPR 04594	7.0 fg
Bd 98-1358	8.0 cd	RAD-762	8.0 cd	PSG 711	7.0 fg
Bd 98-2108	8.0 cd	Rhythm	8.0 cd	STR 23180	7.0 fg
Bd 99-2103	8.0 cd	Rugby II	8.0 cd	STR 2485	7.0 fg
Bewitched	8.0 cd	Shamrock	8.0 cd	BAR VV 9634	6.7 gh
Beyond	8.0 cd	Skye	8.0 cd	CPP 821	6.7 gh
Bluestone	8.0 cd	SPTR 2959	8.0 cd	DLF 76-9075	6.7 gh



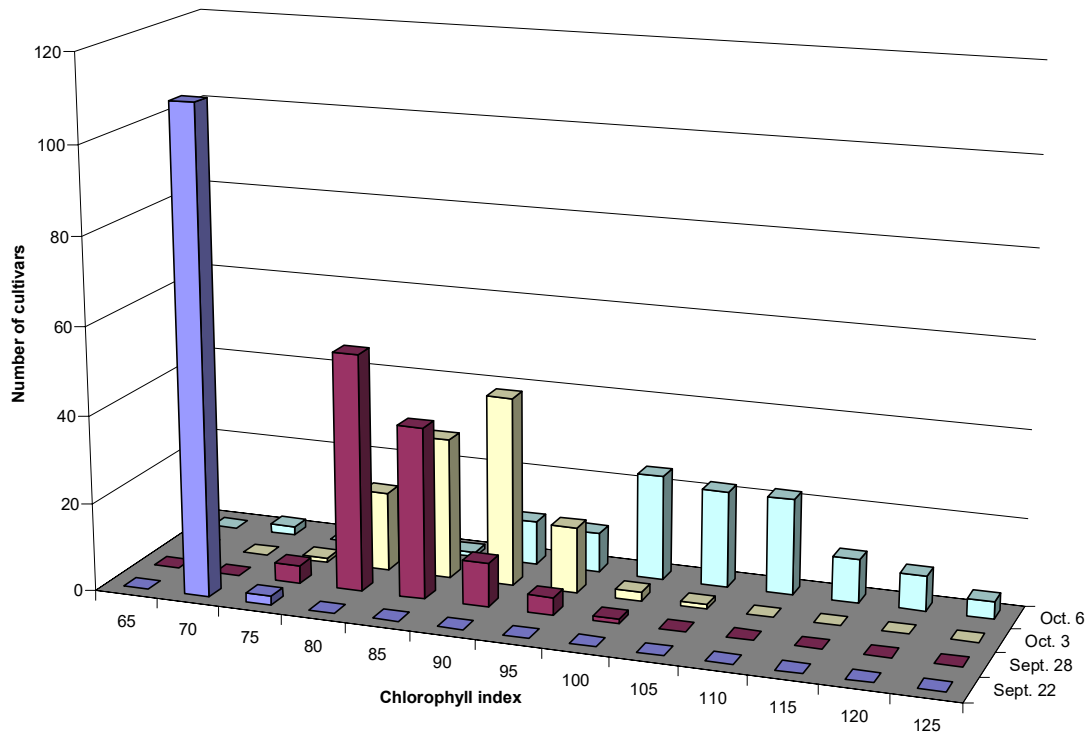


Figure 2. Distribution of chlorophyll index readings among cultivars between 10 days after seeding (Sept. 22) and 24 days after seeding (Oct. 6). The chlorophyll index of bare soil is ~68.

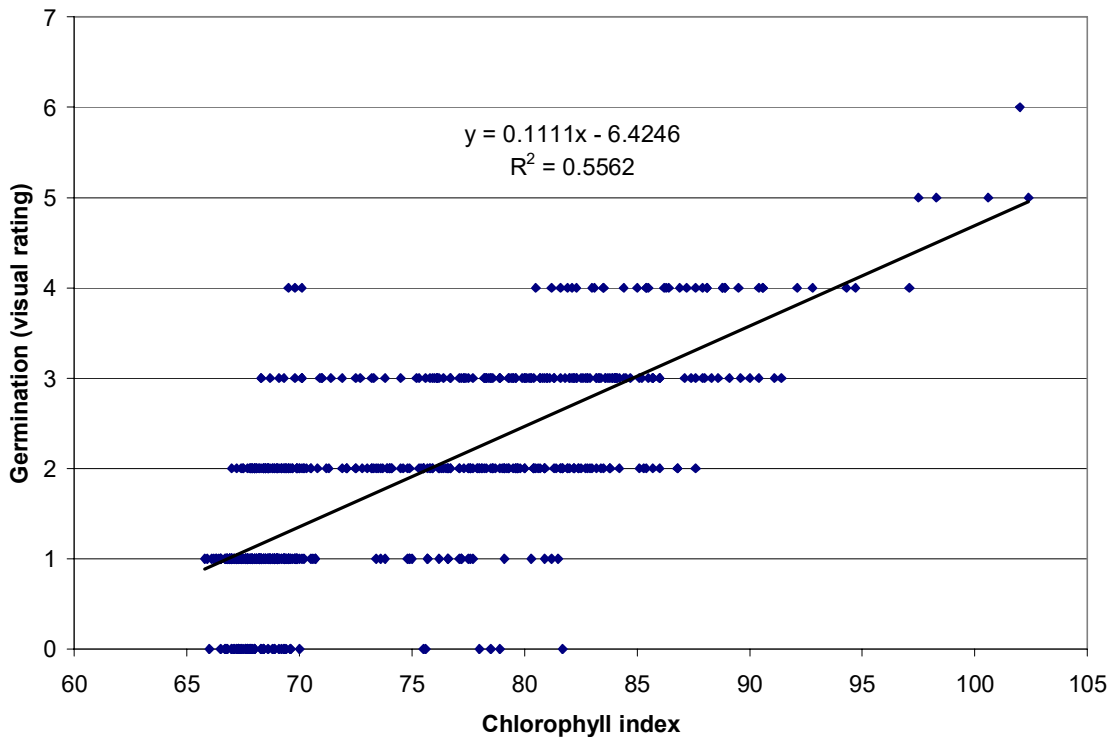


Figure 3. Association between chlorophyll index and visual germination rating.