

Evaluation of Kentucky Bluegrass Cultivars

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Introduction

This trial was established in 2007 for display at the Turf Producers International Conference and Show which was held in Calgary in July of 2008. The best grasses for overall quality were Glenmont, Shamrock, Hallmark, Harmonie, AKB 287, ELT Blend, Jacklin 94-1466, Princeton 105, Delight, Cheetah, Julia, SR2284, and A00-247. Only two grasses, Shamrock and Princeton 105, were in the bluegrass trial that was completed in 2000. This would indicate that new varieties are outperforming grasses from the previous trial.

Materials and Methods

Forty-seven cultivars of Kentucky bluegrass (*Poa pratensis*) were received from Turfgrass Producers International for entry into this trial. In addition, five other grasses were seeded including the Eagle Lake Turf (ELT) Farm standard entry, which was used in their local sod fields.

The trial was established at Eagle Lake Turf Farms in Strathmore, Alberta in the summer of 2007. Plots, that measured 2 by 2 meters, were arranged in a randomized complete block design (RCBD) and replicated three times. The trial was seeded by drop spreader on July 5, 2007 to uniformly distribute the seed over the plots. The Kentucky bluegrasses were seeded at a rate of 0.5kg/100m² (1.2 lb/1000ft²) and then following seeding, each plot was lightly raked to ensure good seed to soil contact. The plots were mowed twice per week at a height of 5.0cm (2"). The plots were fertilized at a rate of 0.5kg N/100m² (1.2 lb N/1000ft²) per growing month.

In year one, the plots were rated for turf establishment on two occasions by determining area cover. Following establishment the plots were evaluated at the end of the season for three quality factors, colour, density and area cover. These ratings were based on the National Turfgrass Evaluation Program (NTEP) protocols where numeric values are assigned to individual plots where 9 is best and 1 is poorest, and 6 is considered acceptable. Colour was evaluated by 1 is a brown dormant turf and 9 is a very uniform dark green colour. Turf density, a visual estimate of the number of shoots per unit area, was rated based on 1 is a thin, weak turf stand and 9 is a very dense tight-knit stand. The third factor rated was area cover and values ranged from a 1 for a complete absence of turf to a 9 for complete cover with the desired turf. The presence of weeds or voids in the turf reduced this rating. To compare the overall turf quality, colour, density and area cover scores for each plot were combined to give a single value. In future, individual rating date scores during spring, summer and fall will be combined to produce a single value. Data was analyzed using the MSTATC statistical analysis program.

Results and Discussion

The results show that there were no significant differences in establishment for any of the three ratings dates (Table 1). However, when the data was combined there were a number of grasses that were significantly better than others. All those with a designation "a" are considered to be similar in their establishment and are better than those that are designated "b" or lower.

Table 1 – Turfgrass establishment, Strathmore 2007.

Cultivar	Days After Seeding			Turf
	Area Cover			Establishment
	28 Days	60 Days	112 Days	in 2007
	1-9 scale			Mean
A00-247	2.7a*	6.0a	7.3a	6.6a
Julia	3.3a	6.0a	7.0a	6.5a
Delight	2.7a	6.0a	7.0a	6.5a
Bluestone	2.3a	6.0a	6.7a	6.3ab
Excursion	2.3a	5.3a	7.0a	6.1abc
A98-948	2.3a	5.7a	6.7a	6.1abc
Shamrock	2.7a	6.0a	6.3a	6.1abc
A00-891	2.0a	5.7a	6.3a	6.1abc
Glenmont	3.3a	6.3a	6.0a	6.1abc
Shiraz	2.0a	5.3a	6.7a	6.0abc
Hallmark	2.7a	5.7a	6.3a	6.0abc
A98-1254	2.0a	5.3a	6.3a	5.8abcd
Rhythm	2.3a	5.7a	6.0a	5.8abcd
Bewitched	2.3a	5.3a	6.0a	5.8abcd
SR2284	3.0a	5.7a	5.8a	5.8abcd
Harmonie	2.3a	5.0a	6.3a	5.6abcde
Ulysses	2.7a	5.0a	6.0a	5.6abcde
AKB 287	2.0a	5.3a	6.0a	5.6abcde
A101-349	1.7a	5.3a	6.0a	5.6abcde
Diva	3.0a	5.3a	5.7a	5.6abcde
Cheetah	1.7a	5.3a	6.3a	5.5abcde
A98-999	2.7a	5.0a	6.0a	5.5abcde
Ultra 3-D	1.7a	5.3a	6.0a	5.5abcde
Jacklin 93-3429	2.0a	5.0a	6.0a	5.5abcde
Award	2.3a	5.0a	5.8a	5.5abcde
ELT Blend	2.7a	5.3a	5.7a	5.5abcde
Princeton 105	2.3a	5.3a	5.7a	5.5abcde
Y2K 136	2.3a	5.0a	5.3a	5.5abcde
Mallard	1.7a	4.7a	6.0a	5.3abcdef
Bluetastic	2.3a	5.0a	5.7a	5.3abcdef
Arrowhead	1.7a	5.0a	5.7a	5.3abcdef
Blue velvet	2.3a	5.0a	5.3a	5.3abcdef
Mystere	2.0a	5.0a	5.3a	5.3abcdef
Bandera	2.0a	5.0a	6.0a	5.1bcdef
Argos	1.3a	5.0a	5.7a	5.1bcdef
Blue Riffic	2.0a	5.0a	5.3a	5.1bcdef
Absolute	2.0a	5.0a	5.3a	5.1bcdef
Jacklin 94-1466	2.3a	4.7a	5.3a	5.0bcdef
Courtyard	1.7a	4.7a	5.1a	5.0bcdef
Langara	1.7a	4.7a	5.0a	5.0bcdef
Bedazzled	1.7a	4.3a	6.3a	4.8cdef
Spitfire	2.0a	4.3a	5.7a	4.8cdef
Blackberry	2.0a	4.7a	5.3a	4.8cdef
Moonshadow	1.7a	4.7a	5.3a	4.8cdef
Tsunami	1.0a	4.3a	5.3a	4.8cdef
Nu Destiny	1.7a	4.3a	5.3a	4.8cdef
Zinfandel	1.7a	4.7a	5.0a	4.8cdef
Blueridge	1.3a	4.7a	5.0a	4.8cdef
Thermal Blue Blaze	1.3a	3.7a	5.3a	4.5def
Blueberry	2.3a	4.3a	6.0a	4.3ef
Avalanche	1.3a	4.0a	5.3a	4.3ef
Agryle	1.3a	4.0a	5.3a	4.1f

LSD_{0.05} = n/s n/s n/s 1.3

* Values that have the same letter as a suffix are not considered to be significantly different from each other

In year two of this study, the grasses became fully established and showed very well for the Turfgrass Producer's International Conference and Show on July 26-27, 2008.

The best grasses for overall quality were Glenmont, Shamrock, Hallmark, Harmonie, AKB 287, ELT Blend, Jacklin 94-1466, Princeton 105, Delight, Cheetah, Julia, SR2284, and A00-247.

Those that rated highest for turfgrass colour were Harmonie, Jacklin 94-1466, AKB 287, Cheetah, Arrowhead, Thermal Blue Blaze, Glenmont, Shamrock, Hallmark, ELT Blend, Bedazzled, Nu Destiny, A98-1254, Moonshadow, Blackberry, Blue Riffic, Blueridge, Spitfire, and Courtyard.

Grasses that rated highest for density were Glenmont, Shamrock, Hallmark, Delight, AKB 287, ELT Blend, Julia, Bluestone, Harmonie, Jacklin 94-1466, Princeton 105, A00-247, Ultra 3-D, Y@K 136, Bluetastic, Bewitched, and Zinfandel.

Table 1 – Ratings for Kentucky bluegrass trial, Strathmore 2008.

Cultivar	Colour	Density	Area Cover	Overall Quality
	1-9 scale			Mean
Glenmont	7.2abcde*	7.0a	7.2abc	7.2a
Shamrock	7.2abcde	6.9ab	7.2abc	7.1ab
Hallmark	7.2abcde	6.9ab	7.1abcd	7.1ab
Harmonie	7.6a	6.7abcd	6.9bcdef	7.0abc
AKB 287	7.4abc	6.8abc	6.9bcdef	7.0abc
ELT Blend	7.2abcde	6.8abc	6.7defgh	7.0abc
Jacklin 94-1466	7.5ab	6.7abcd	6.7defgh	7.0abc
Princeton 105	7.1bcdef	6.7abcd	7.0abcde	7.0abc
Delight	7.0cdefg	6.9ab	7.4a	7.0abc
Cheetah	7.3abcd	6.6bcde	6.9bcdef	6.9abcd
Julia	7.1bcdef	6.8abc	7.0abcde	6.9abcd
SR2284	7.0cdefg	6.6bcde	7.0abcdef	6.9abcd
A00-247	6.7fgh	6.7abcd	7.3ab	6.9abcd
Bedazzled	7.2abcdefgh	6.6bcde	7.1abcd	6.8bcde
Nu Destiny	7.2abcde	6.6bcde	6.8cdefg	6.8bcde
Arrowhead	7.3abcd	6.5cdef	6.7defgh	6.8bcde
Ulysses	7.0cdefg	6.6bcde	7.0abcde	6.8bcde
A98-948	7.0cdefg	6.6bcde	6.8cdefg	6.8bcde
A98-999	7.0cdefg	6.6bcde	6.7defgh	6.8bcde
Argos	7.0cdefg	6.5cdef	6.9bcdef	6.8bcde
Ultra3-D	6.8efgh	6.7abcd	7.0abcde	6.8bcde
Y2K 136	6.8efgh	6.7abcd	7.0abcde	6.8bcde
Bluetastic	6.8efgh	6.7abcd	7.0abcde	6.8bcde
Jacklin 93-3429	6.8efgh	6.5cdef	6.8cdefg	6.8bcde
Bewitched	6.7fgh	6.7abcd	7.1abcd	6.8bcde
Bluestone	6.6gh	6.8abc	7.2abc	6.8bcde
Shiraz	6.5h	6.6bcde	7.2abc	6.8bcde
A98-1254	7.2abcde	6.6bcde	6.7defgh	6.7cde
Moonshadow	7.2abcde	6.4defg	6.7defgh	6.7cde
Blackberry	7.2abcde	6.4defg	6.5fghi	6.7cde
Zinfandel	7.1bcdef	6.7abcd	6.7defgh	6.7cde
Diva	7.1bcdef	6.6bcde	6.8cdefg	6.7cde
Absolute	7.1bcdef	6.5cdef	6.7defgh	6.7cde
Blueberry	7.1bcdef	6.3efgh	6.5fghi	6.7cde

Tsunami	7.0cdefg	6.4defg	6.7defgh	6.7cde
Mystere	6.9defgh	6.5cdef	6.8cdefg	6.7cde
A00-891	6.7fgh	6.6bcde	7.1abcd	6.7cde
Excursion	6.7fgh	6.6bcde	6.8cdefg	6.7cde
Blue Riffic	7.2abcde	6.3efgh	6.7defgh	6.6def
Blueridge	7.2abcde	6.3efgh	6.5fghi	6.6def
Spitfire	7.2abcde	6.3efgh	6.6efghi	6.6def
Bandera	6.8efgh	6.4defg	6.8cdefg	6.6def
Blue velvet	6.8efgh	6.3efgh	6.7defgh	6.6def
Rhythm	6.7fgh	6.6bcde	6.9bcdef	6.6def
A101-349	6.7fgh	6.5cdef	6.6efghi	6.6def
Award	6.5h	6.4defg	6.7defgh	6.6def
Thermal Blue Blaze	7.3abcd	6.1gh	6.5fghi	6.5ef
Courtyard	7.2abcde	6.2fgh	6.3hi	6.5ef
Mallard	7.1bcdef	6.4defg	6.7defgh	6.5ef
Langara	7.0cdefg	6.4defg	6.3hi	6.5ef
Argyle	7.0cdefg	6.2fgh	6.2i	6.5ef
Avalanche	6.7fgh	6.0h	6.4ghi	6.3f
LSD _{0.05} =	0.4	0.3	0.4	0.3

* Values that have the same letter as a suffix are not considered to be significantly different from each other

The Prairie Turfgrass Research Centre would like to acknowledge the LANTA Sod Grower's Commodity Group for support of this trial. In addition, Eagle Lake Turf Farms provided the site and performed all the maintenance for this trial, which showed very well for the conference in July, 2008. Thanks to Eric Heuver and John Hudon of Eagle Lake for their assistance.