

# Evaluation of Alternative Grasses for Turfgrass Use

J.B. Ross and M.A. Anderson

## Summary

Six individual grasses and two grass blends were established in order to test their suitability for use as turfgrass. NaturePro Turf and Nuttall's Alkali Grass showed the best establishment. In year one, best overall quality ratings were attributed to NaturePro Turf, Nuttall's and Fult's alkali grass, and Eagle Lake Acreage Mix. NaturePro Turf showed the best colour at that time, while the Violet Wheatgrass was quite light green. NaturePro Turf, Nuttall's Alkali Grass, Fult's Alkali Grass, and Eagle Lake Acreage Mix had the highest area cover and density ratings.

In year two, NaturePro Turf, Eagle Lake Turf Acreage Mix and Nuttall's weeping alkaligrass were the top rated grasses/mixes for overall quality. Early bluegrass, Eagle Lake Turf Acreage Mix and NaturePro Turf showed the best colour when ratings were combined for the year. NaturePro Turf, Eagle Lake Turf Acreage Mix and Nuttall's weeping alkaligrass were the top rated grasses/mixes when density was compared.

## Introduction

A number of grasses are native to the western rangelands of Alberta that are not found in other areas of North America. Many of these grasses have never been examined for use as turfgrass. This study was initiated in order to examine some of these grasses for their turfgrass qualities.

## Materials and Methods

Six individual grasses and two blends were selected for entry into this trial. 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. 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/100m<sup>2</sup> (1.2 lb N/1000ft<sup>2</sup>) per growing month. Table 1

Table 1 – List of alternative grasses in study, Strathmore.

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Grasses	Seeding Rate
Idaho fescue	2.0kg/100m <sup>2</sup>
Alkali bluegrass	0.5kg/100m <sup>2</sup>
Early bluegrass	0.5kg/100m <sup>2</sup>
Nuttall's weeping alkaligrass	0.7kg/100m <sup>2</sup>
Fult's weeping alkaligrass	0.5kg/100m <sup>2</sup>
Violet wheatgrass	1.5kg/100m <sup>2</sup>
Eagle Lake Turf Acreage Mix	2.3 kg/100m <sup>2</sup>
NaturePro Turf	4.0 kg/100m <sup>2</sup>

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Composition of the two blends were:

NaturePro Turf

- 22% Transist 2200 Transitional Ryegrass
- 45% Violet Wheatgrass
- 22% Rocky Mountain Fescue
- 9% Junegrass
- 2% Ticklegrass

Eagle Lake Turf Acreage Mix

- 30% Creeping Red Fescue
- 30% Hard Fescue
- 30% Sheep's Fescue
- 10% Fiesta III Perennial Ryegrass

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 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.

In the second year of the trial, ratings were conducted on a monthly basis. To compare the overall turf quality, colour, density and area cover ratings from each rating date were combined to produce a single value. Data was analyzed using the MSTAT statistical analysis program.

### **Results and Discussion**

The initial rating 28 days after seeding revealed that NaturePro Turf, Nuttall's Alkali Grass, Violet Wheatgrass and Eagle Lake Acreage Mix established more quickly than did the other grasses (Table 2). At the 60 day rating period NaturePro Turf and Nuttall's Alkali Grass showed the best establishment.

At the last rating date three quality factors were rated and then were combined to produce an overall quality rating. The NaturePro Turf showed the best colour at that time, while the Violet Wheatgrass was quite light green. NaturePro Turf, Nuttall's Alkali Grass, Fult's Alkali Grass, and Eagle Lake Acreage Mix had the highest area cover and density ratings. These same four entries had the best overall quality, with the NaturePro Mix having the best rating. It appeared that the Transitional Ryegrass component of this mix established most rapidly thus giving this entry the higher rating.

Table 2 – Alternative grasses for turf, Strathmore 2007.

Cultivar	Days After Seeding		Final Seasonal Turf Quality Rating				
	28 Days	60 Days	Area Cover	October 23 <sup>rd</sup>			
	Area Cover			Colour	Density	Overall Quality	
— 1-9 scale —		— 1-9 scale —			Mean		
NaturePro Turf	3.3a*	6.7a	7.3a	8.0a	7.0a	7.3a	
Nuttall's Alkali Grass	3.0ab	6.3ab	7.3a	6.7a	6.7a	7.0ab	
Fult's Alkali Grass	1.0c	3.7cd	6.0abc	6.0a	5.7ab	6.0abc	
Eagle Lake Turf Acreage Mix	1.3bc	4.3bc	6.3ab	6.0a	5.7ab	5.7abcd	
Alkali Bluegrass	0.7c	2.7cde	4.7cd	6.3a	4.7bcd	5.3bcd	
Violet Wheatgrass	1.7abc	4.3bc	5.3bc	3.7a	5.0bc	4.7cd	
Idaho Fescue	0.3c	1.7de	3.7de	6.0a	4.0cd	4.7cd	
Early Bluegrass	0.1c	1.3e	2.7e	6.3a	3.3d	4.0d	
LSD <sub>0.05</sub> =		1.7	2.1	1.5	n/s	1.5	1.7

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

In year two of the study, NaturePro Turf, Eagle Lake Turf Acreage Mix and Nuttall's weeping alkaligrass were the top rated grasses/mixes for overall quality. It is interesting to note that the overall quality in year two was lower than the final rating in year one.

Early bluegrass, Eagle Lake Turf Acreage Mix and NaturePro Turf showed the best colour when ratings were combined for the year.

NaturePro Turf, Eagle Lake Turf Acreage Mix and Nuttall's weeping alkaligrass were the top rated grasses/mixes when density was compared. Typically, grass mixtures will perform better than a single grass by itself, so it is of significance that the Nuttall's rated as high as it did for density.

Table 3 – Alternative grasses for turf, Strathmore 2008.

Cultivar	Colour	Density	AC	Overall Quality	
	— 1-9 scale —			mean	
NaturePro Turf	6.2a*	6.3a	6.9a	6.5a	
Eagle Lake Turf Acreage Mix	6.3a	6.2a	6.7a	6.4a	
Nuttall's weeping alkaligrass	5.7b	6.2a	6.6ab	6.2a	
Fult's weeping alkaligrass	5.6b	5.6b	6.1bc	5.8b	
Violet wheatgrass	5.5b	5.1cd	5.6cd	5.5bc	
Alkali bluegrass	5.6b	5.3bc	5.3d	5.5bc	
Early bluegrass	6.6a	4.8d	4.7e	5.4cd	
Idaho fescue	5.5b	4.4d	5.2de	5.1d	
LSD <sub>0.05</sub> =		0.4	0.4	0.5	0.3

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

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