

## Evaluation of Fine Leaf Fescue Cultivars

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### Summary

Thirty fine leaf fescues cultivars and two blends were seeded in early September 2010. The grasses established rapidly in the spring and summer the following year and by the fall turfgrass quality was very good to excellent. Many of the grasses had a superior rating, too many to mention. This trial will be rated for at least one more growing season.

### Introduction

Fine leaf fescues are grasses that provide a good quality turf under conditions of regular mowing. As the name implies, these fescues have thin, fine leaves that have a 'bunch type' growth habit or produce short weak rhizomes (underground runners). Bunch type grasses grow in a clump and reproduce by seed or establish new plants when individual tillers break away from the parent plant. The sheep, chewings and hard fescues are considered to be bunch type grasses, while the creeping red fescues have rhizomes that spread underground from the parent plant and can establish new plants from nodes on the rhizomes. Rhizomes help to produce a turf that will hold together and produce good sod strength. Fine leaf fescues are considered to have moderate drought tolerance and a lower fertility requirement than Kentucky bluegrass. Although they are not considered to be very tolerant of traffic they do produce a high quality turf with fewer inputs.

Considerable plant breeding has taken place within the fescue species and some of the creeping red varieties are thought to have strong creeping tendencies. The objective of this study is to assess the turf quality of some of these new fescues. Those cultivars that show good quality will be evaluated for sod strength.

### Materials and Methods

Thirty cultivars of fine leaf fescue (*Festuca sp.*) were selected from seed lots provided by several North America seed producers. In addition, two commercially available fescue blends, Irish Links Blend and Scottish Links Blend were included in the study (Table 1).

The trial was established on September 2, 2010 at Eagle Lake Turf Farms in Strathmore, Alberta. Plots measuring 1.5 by 2 meters were arranged in a randomized complete block design (RCBD) and replicated four times. The plots were seeded using shaker bottles at a rate of 2.0kg/100m<sup>2</sup>. Following seeding each plot was lightly raked to ensure good seed to soil contact. Irrigation was provided on a regular basis in order to assist in the establishment of the grasses.

Table 1: List of fine leaf fescues in the trial

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<u>Chewings:</u> ACF266 Ambrose Culumbra II M139-9-F13 PST-4CH6 SR 5130 Tiffany	<u>Creeping Red:</u> Aruba M139-9-F10 M80-8-73 Pathfinder RaZor Sea Breeze GT Shademaster III (48Y7) Wendy Jean	<u>Hard Fescue:</u> Ambassador Aurora Gold Aurora II Big Horn GT B09-2 B09-3 M139-9-F4 Oxford Predator
<u>Red Fescue:</u> B09-1 Fortitude PST-8000	<u>Strong Creeping:</u> Epic (M146-6-612) Foxy II Miser (M22-7-502) SR 5250	
<u>Fescue Blends:</u> Irish Links Blend - Hard Fescue - Sheep Fescue - Side Oats - Light Blue Star Fescue - Gold Star Idaho Fescue		
Scottish Links Blend -Hard Fescue - Creeping Red Fescue - Sheep Fescue - Chewings Fescue		

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Individual plots were evaluated three times in the spring, summer and fall for three quality factors: colour, density and area cover. These ratings were based on the National Turfgrass Evaluation Program ([www.ntep.org](http://www.ntep.org)) protocols where numeric values were observed and assigned to individual plots where 9 was best, 1 was poorest, and 6 was considered acceptable. Colour was evaluated by 1 was a brown dormant turf and 9 was a very uniform dark green colour. Turf density, a measure of the number of shoots per unit area, was rated based on 1 was a thin, weak turf stand and 9 was a very dense tight-knit stand. The third quality factor was area cover where values range 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.

## Results and Discussion

The grasses established very well over the spring and summer of 2011 after seeding the previous September. All grasses were quite similar in their establishment and by the fall all grasses in the trial had complete cover.

Table 2 - Establishment ratings as measured by area cover, 2011.

	Spring 2011	Summer 2011	Fall 2011	
	1 – 9 scale			
Ambrose Chewings Fescue	4.7a	7.5ab	9.0a	
Culumbra II Chewings	4.2a	7.7ab	9.0a	
Foxy II Strong Creeping	5.2a	7.5ab	9.0a	
Epic Strong Creeping (M146-6-612)	5.0a	7.7ab	9.0a	
Miser Strong Creeping (M22-7-502)	4.7a	7.2bc	9.0a	
Scottish Links Blend	4.7a	6.7c	9.0a	
Fortitude Red Fescue	4.7a	7.0bc	9.0a	
PST-4CH6 Chewings Fescue	5.0a	7.2bc	9.0a	
Shademaster III (48Y7) Creeping Red Fescue	4.0a	7.5ab	9.0a	
Sea Breeze GT Creeping Red Fescue	4.5a	8.0a	9.0a	
PST-8000 Red Fescue	4.7a	7.5ab	9.0a	
SR 5250 Strong Creeping Red	5.0a	7.7ab	9.0a	
SR 5130 Chewings Fescue	4.5a	7.2bc	9.0a	
Ambassador Hard Fescue	4.7a	7.2bc	9.0a	
Oxford Hard Fescue	4.7a	7.0bc	9.0a	
Pathfinder Creeping Red Fescue	5.5a	7.5ab	9.0a	
RaZor Creeping Red Fescue	4.7a	7.7ab	9.0a	
ACF266 Chewings Fescue	4.7a	7.2bc	9.0a	
Predator Hard Fescue	5.2a	7.5bc	9.0a	
Wendy Jean Creeping Red Fescue	4.2a	7.7ab	9.0a	
Aurora Gold Hard Fescue	5.0a	6.7c	9.0a	
Aurora II Hard Fescue	4.5a	6.7c	9.0a	
Tiffany Chewings Fescue	5.0a	7.5ab	9.0a	
Big Horn GT Hard Fescue	5.2a	7.2bc	9.0a	
M139-9-F13 Chewings Fescue	5.0a	7.7ab	9.0a	
Aruba M139-9-F10 Creeping Red Fescue	5.2a	7.0bc	9.0a	
M80-8-73 Creeping Red Fescue	5.0a	7.7ab	9.0a	
M139-9-F4 Hard Fescue	5.5a	7.2bc	9.0a	
B09-1 Red Fescue	5.2a	7.0bc	9.0a	
B09-2 Hard Fescue	4.7a	6.7c	9.0a	
B09-3 Hard Fescue	4.2a	7.5ab	9.0a	
Irish Links Blend	4.2a	7.5ab	9.0a	
	LSD <sub>0.05</sub> =	n/s	0.7	n/s

\* Values that have the same letter as a suffix are not significant from each other.

Colour ratings in spring and summer were very good, but declined in the fall. Approximately half of the grasses had superior colour on both rating dates in spring and summer.

Table 3 - Turf colour ratings, 2011.

	Spring 2011	Summer 2011	Fall 2011	
	1 – 9 scale			
Ambrose Chewings Fescue	8.0a	7.5ab	6.7a	
Culumbra II Chewings	8.0a	8.0a	6.7a	
Foxy II Strong Creeping	8.0a	7.7ab	7.0a	
Epic Strong Creeping (M146-6-612)	8.0a	7.2bc	6.5a	
Miser Strong Creeping (M22-7-502)	7.7ab	8.0a	6.7a	
Scottish Links Blend	7.7ab	7.7ab	6.7a	
Fortitude Red Fescue	8.0a	8.0a	6.7a	
PST-4CH6 Chewings Fescue	7.7ab	7.0bc	6.5a	
Shademaster III (48Y7) Creeping Red Fescue	7.7ab	7.7ab	6.5a	
Sea Breeze GT Creeping Red Fescue	7.2bc	6.5c	6.2a	
PST-8000 Red Fescue	7.7ab	8.0a	6.5a	
SR 5250 Strong Creeping Red	7.2bc	6.7c	6.5a	
SR 5130 Chewings Fescue	8.0a	7.5ab	7.0a	
Ambassador Hard Fescue	8.0a	7.2bc	6.7a	
Oxford Hard Fescue	7.5bc	7.0bc	6.5a	
Pathfinder Creeping Red Fescue	8.0a	7.2bc	6.5a	
RaZor Creeping Red Fescue	8.0a	8.0a	7.0a	
ACF266 Chewings Fescue	8.0a	8.0a	7.0a	
Predator Hard Fescue	7.5bc	7.7ab	6.7a	
Wendy Jean Creeping Red Fescue	7.7ab	8.2a	7.0a	
Aurora Gold Hard Fescue	7.7ab	7.5ab	6.7a	
Aurora II Hard Fescue	8.0a	7.2bc	6.5a	
Tiffany Chewings Fescue	8.0a	7.0bc	6.2a	
Big Horn GT Hard Fescue	7.5bc	7.7ab	6.7a	
M139-9-F13 Chewings Fescue	8.0a	7.7ab	6.7a	
Aruba M139-9-F10 Creeping Red Fescue	7.2cd	7.0bc	6.7a	
M80-8-73 Creeping Red Fescue	8.0a	7.5ab	6.5a	
M139-9-F4 Hard Fescue	7.0d	6.5c	6.2a	
B09-1 Red Fescue	7.5bc	7.2bc	6.7a	
B09-2 Hard Fescue	8.0a	7.2bc	6.7a	
B09-3 Hard Fescue	8.0a	7.2bc	6.2a	
Irish Links Blend	8.0a	7.2bc	7.0a	
	LSD <sub>0.05</sub> =	0.4	0.7	n/s

\* Values that have the same letter as a suffix are not significant from each other.

Density ratings continued to increase into the fall rating period. All were very similar at this time for density.

Table 4 - Turf density ratings, 2011.

	Spring 2011	Summer 2011	Fall 2011
	1 – 9 scale		
Ambrose Chewings Fescue	4.7b	6.2a	7.0a
Culumbra II Chewings	5.0ab	6.0a	7.0a
Foxy II Strong Creeping	5.2ab	5.7a	7.0a
Epic Strong Creeping (M146-6-612)	4.7b	6.5a	7.0a
Miser Strong Creeping (M22-7-502)	5.0ab	6.7a	7.0a
Scottish Links Blend	4.7b	6.2a	7.0a
Fortitude Red Fescue	5.0ab	6.0a	7.0a
PST-4CH6 Chewings Fescue	5.0ab	6.2a	7.0a
Shademaster III (48Y7) Creeping Red Fescue	3.7c	6.7a	7.0a
Sea Breeze GT Creeping Red Fescue	4.7b	6.2a	7.0a
PST-8000 Red Fescue	5.0ab	6.7a	7.0a
SR 5250 Strong Creeping Red	5.2ab	6.2a	7.0a
SR 5130 Chewings Fescue	4.7b	6.2a	7.0a
Ambassador Hard Fescue	5.2ab	6.0a	7.0a
Oxford Hard Fescue	5.0ab	6.0a	7.0a
Pathfinder Creeping Red Fescue	5.7a	6.5a	7.0a
RaZor Creeping Red Fescue	5.0ab	6.7a	7.0a
ACF266 Chewings Fescue	5.2ab	6.5a	7.0a
Predator Hard Fescue	5.2ab	6.5a	7.0a
Wendy Jean Creeping Red Fescue	5.0ab	6.5a	7.0a
Aurora Gold Hard Fescue	5.2ab	6.0a	7.0a
Aurora II Hard Fescue	4.7b	6.5a	7.0a
Tiffany Chewings Fescue	5.0ab	6.2a	7.0a
Big Horn GT Hard Fescue	5.2ab	6.0a	7.0a
M139-9-F13 Chewings Fescue	5.2ab	6.5a	7.0a
Aruba M139-9-F10 Creeping Red Fescue	5.2ab	6.0a	7.0a
M80-8-73 Creeping Red Fescue	5.5ab	6.2a	7.0a
M139-9-F4 Hard Fescue	5.5ab	6.2a	7.0a
B09-1 Red Fescue	5.5ab	5.7a	7.0a
B09-2 Hard Fescue	5.0ab	5.7a	7.0a
B09-3 Hard Fescue	4.7b	6.0a	7.0a
Irish Links Blend	4.7b	6.5a	7.0a
	LSD <sub>0.05</sub> =	0.7	n/s
			n/s

\* Values that have the same letter as a suffix are not significant from each other.

By the summer rating a number of the fescues appeared superior in quality. These included: Culumbra II Chewings, Miser Strong Creeping (M22-7-502), Shademaster III (48Y7) Creeping Red Fescue, PST-8000 Red Fescue, Pathfinder Creeping Red Fescue, RaZor Creeping Red Fescue, ACF266 Chewings Fescue, Predator Hard Fescue, Wendy Jean Creeping Red Fescue, M139-9-F13 Chewings Fescue, and M80-8-73 Creeping Red Fescue. By the fall all were quite similar in their overall turf quality.

Table 5 - Overall turf quality ratings, 2011.

	Spring 2011	Summer 2011	Fall 2011
	mean of the three turf quality factors		
Ambrose Chewings Fescue	5.8a	7.0bcdef	7.6a
Culumbra II Chewings	5.7a	7.2abcd	7.6a
Foxy II Strong Creeping	6.1a	7.0bcdef	7.7a
Epic Strong Creeping (M146-6-612)	5.9a	7.1abcde	7.5a
Miser Strong Creeping (M22-7-502)	5.8a	7.3abc	7.6a
Scottish Links Blend	5.7a	6.9cdefg	7.6a
Fortitude Red Fescue	5.9a	6.9cdefg	7.6a
PST-4CH6 Chewings Fescue	5.9a	6.8defg	7.5a
Shademaster III (48Y7) Creeping Red Fescue	5.1a	7.3abc	7.5a
Sea Breeze GT Creeping Red Fescue	5.5a	6.9cdefg	7.4a
PST-8000 Red Fescue	5.8a	7.4ab	7.5a
SR 5250 Strong Creeping Red	5.8a	6.9cdefg	7.5a
SR 5130 Chewings Fescue	5.7a	7.0bcdef	7.7a
Ambassador Hard Fescue	6.0a	6.8defg	7.6a
Oxford Hard Fescue	5.7a	6.6fg	7.5a
Pathfinder Creeping Red Fescue	6.4a	7.1abcde	7.5a
RaZor Creeping Red Fescue	5.9a	7.5a	7.7a
ACF266 Chewings Fescue	6.0a	7.2abcd	7.7a
Predator Hard Fescue	6.0a	7.2abcd	7.6a
Wendy Jean Creeping Red Fescue	5.6a	7.5a	7.7a
Aurora Gold Hard Fescue	6.0a	6.7efg	7.6a
Aurora II Hard Fescue	5.7a	6.8defg	7.5a
Tiffany Chewings Fescue	6.0a	6.9cdefg	7.4a
Big Horn GT Hard Fescue	6.0a	7.0bcdef	7.6a
M139-9-F13 Chewings Fescue	6.0a	7.3abc	7.6a
Aruba M139-9-F10 Creeping Red Fescue	5.9a	6.6fg	7.6a
M80-8-73 Creeping Red Fescue	6.2a	7.1abcde	7.5a
M139-9-F4 Hard Fescue	6.0a	6.6fg	7.4a
B09-1 Red Fescue	6.1a	6.6fg	7.6a
B09-2 Hard Fescue	5.9a	6.5g	7.6a
B09-3 Hard Fescue	5.6a	6.9cdefg	7.4a
Irish Links Blend	5.6a	7.0bcdef	7.7a
	LSD <sub>0.05</sub> =	n/s	0.4
			n/s

\* Values that have the same letter as a suffix are not significant from each other.