

Western Canadian Grass Seed Testing Program



2010 Report

Coordinated by:



Peace Region Forage Seed Association
Sandra Burton

With Cooperating Research Sites in:
British Columbia

Alberta

Manitoba

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Introduction

This report provides a summary of the grass seed trials conducted under the Western Grass Seed Testing Program during 2010. The main objective of these trials is to determine the seed production potential and adaptability of grass varieties for contract seed production for the domestic and export market. All attempts have been made to ensure the success of these trials; however, at times environmental conditions may adversely affect the yield results regardless of the management practices followed.

We thank the following companies and agencies for their seed entries and sponsorship of our 2010 research endeavours:

Barenbrug USA
BrettYoung
Moore Seed Processors
Pickseed Canada
Secan
Snow Brand Seeds
Viterra

The following groups and agencies are also thanked for cooperating with the program and managing the research sites:

Alberta Agriculture and Rural Development
Agriculture & Agri-Food Canada
Manitoba Forage Seed Association
Peace Region Forage Seed Association

We thank the following for their partnership and help with custom seeding, spraying and mowing at the Fort St. John, BC site:

Calvin Yoder, Alberta Agriculture
Parkland Strasky Farms
Owen Lee, Agriculture & Agri-Food Canada
BC Grain Producers Association Research Team

We especially appreciate the collaboration to hire/ share summer students and jointly share warehouse space for the last three seasons with:

Peace River Forage Association of BC

WGST Co-operating Research Sites and Contacts

Fort St. John, BC	Sandra Burton, PRFSA Coordinator Peace Region Forage Seed Association Box 6135, Fort St. John, BC V1J 4H6 Phone 877 630 2198 or (250) 789 6885 Fax (250) 789 6884 Email : coordinator@peaceforageseed.ca	Talon Johnson, Summer Student c/o Peace Region Forage Seed Association Box 6135, Fort St. John, BC V1J 4H6 Phone 877 630 2198 or (250) 789 6885 Fax (250) 789 6884 Email : coordinator@peaceforageseed.ca
Beaverlodge, AB	Sandra Burton (<i>interim contact</i>) Peace Region Forage Seed Association Box 6135, Fort St. John, BC V1J 4H6 Phone 877 630 2198 or (250) 789 6885 Fax (250) 789 6884 Email : coordinator@peaceforageseed.ca	Owen Lee, Forage Technician Agriculture & AgriFood Canada Box 29, Beaverlodge, AB. T0M 0C0 Phone (780) 354-5140 Fax (780) 354-8171 Email : leo@agr.gc.ca
Arborg, MB	Heather McBey, MFSA Administrator Manitoba Forage Seed Association Box 2000 Arborg, MB. R0C 0A0 Phone (204) 376-3309 Fax (204) 376-3311 Email: hmcbey@forageseed.mb.ca	

Date Collection Procedures

Seed Yield	reported on a clean seed basis in kg per ha (yield in lb / ac = kg per ha divided by 1.1)
Harvest Date	date the variety was swathed or cut
Plant Height	measured in centimeters and is the height of the plant at harvest from ground level to the tip of the seed head (height in inches = cm / 2.54)

Trial Procedures

For information on specific trial procedures, contact the respective location representative listed on this page.

* Please Note * Statistical Analysis Procedures *

Some varieties in this report have been tested for shorter periods of time than others. It is advised not to use average yield figures to make variety comparisons for single year data. Only after a **minimum of 3 years of testing**, should data be considered as 90% reliable. In some cases, data may not be reported due to extreme variations that cannot be accounted for in the statistical design.

Statistical information for this report was generated through an Analysis of Variance (ANOVA). Least significant difference (LSD) values are presented at the bottom of each table, when statistically significant differences are present at the 5% level of significance. This means there is a 95% probability that you can reject the hypothesis that the treatments are the same; in other words there is only a 5% probability that the treatment differences occurred by chance. If the difference in treatment values is less than the LSD value, the treatments are not considered to be significantly different.

Disclaimer

Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement is implied.

Protocol for Western Grass Seed Testing (WGST) Program

Revised February 2010

1. Research Sponsorship

The research sponsorship of **\$240 CAN/entry/year/location** is requested on an annual basis, as years of production will vary with the species being tested, and applies to the establishment year as well. The Peace Region Forage Seed Association will administer funds for the Western Grass Seed Testing Program.

The Peace Region Forage Seed Association and Manitoba Forage Seed Association will honour the commitment made to companies for entries prior to 2009, and will continue to collect data on those entries for the originally agreed upon \$120 CAN/entry/year/location.

2. Eligibility of Entries

Released and experimental lines of all tame and native grass species will be considered if they are of interest to commercial seed companies. We reserve the right not to initiate tests:

- if seed arrives late
- if there is lack of space in any year at a particular location
- if there are too few entries in any year for a particular location

3. Seed Requirements and Deadline for Seed Entry

The applicant will provide for **EACH TEST LOCATION**:

- 50 gm of bentgrass, Kentucky bluegrass or timothy
- 100 gm of orchardgrass; creeping red, chewings, hard, meadow, sheep or tall fescue; annual or perennial ryegrass
- 200 gm of meadow or smooth bromegrass, wheatgrasses

Submitted seed shall be supplied by **March 31** of the establishment year and **will include the percent germination and relative maturity** (early, medium or late) of each variety. Please indicate whether the submission is **a forage or turf type**. For fescues please indicate whether the submission is a creeping, chewings, hard, meadow, sheep or tall fescue.

4. Use of Seed

Seed submitted will only be used to establish the agreed upon trials. The seed will **NOT** be used for increase, selection or distribution.

5. Test Locations in 2010

1. Fort St. John, British Columbia
2. Beaverlodge, Alberta
3. Arborg, Manitoba

The applicant selects the locations where their material is to be tested.



6. Test Description

Due to plot equipment differences and land availability at the various test sites, certain conditions must be met in establishing trials. Each test will be a randomized complete block consisting of a minimum of 4 replicates. No test will have more than 25 entries of a particular species. Plots will be seeded at appropriate seeding rates for the species being tested and normal cultural practices for the area will be carried out. A minimum of 3 sq. m will be harvested.

Species, check varieties and years of testing (establishment year and seed production years):

Bentgrasses - 18th Green - 4 yrs.	Tall fescue - Courtenay - 4 yrs
Kentucky bluegrass - Abbey - 4 yrs	Orchardgrass - Kay - 3 yrs
Meadow brome grass - Fleet - 3 yrs	Annual ryegrass - Aubade - 1 yr
Smooth brome grass - Carlton - 4 yrs	Perennial ryegrass - Norlea - 2 yr
Meadow fescue - Mimer - 4 yrs	Timothy - Climax - 4 yrs
Red fescue - Boreal - 3 yrs	

Information to be recorded will include clean seed yield, % stand in fall and spring, plant height, harvest date and if available, climatic data for each test site.

7. Publication of Results

Data will undergo appropriate statistical analyses and each applicant will be provided with an annual report. Information on varieties will be made available in various annual reports and to seed producers upon request. Results will be posted by the end of the fiscal year on the research page of the website www.peaceforageseed.ca

8. All reasonable care will be taken to ensure a successful test, however, a guarantee cannot be made that a particular test will be successful. If required a test will be reseeded.

9. For further information, contact:

Sandra Burton, Coordinator
Peace Region Forage Seed Association
Box 6135
Fort St. John, British Columbia
Canada V1J 4H6
Telephone 1 877 630 2198 or (250) 789 6885
Fax (250) 789-6884
coordinator@peaceforageseed.ca

Western Grass Seed Testing (WGST) Program

2010 Application for Entry

1. Company: _____ Telephone: _____
 Contact person: _____ Fax: _____
 Mailing address: _____ Email: _____

2. 2009 entries: Please fill out this table completely. (if you wish to add more entries, please attach another sheet)

Species	Type forage or turf	Variety name/code	% Germ	Relative maturity early, medium, late

3. Please indicate at which locations you wish your entries tested (refer to map). The applicant will be invoiced once test sites for the current test year are finalized.

Fort St. John, BC _____
 Beaverlodge, AB _____
 Arborg, MB _____

Send no later than April 1, 2010 to:
 Sandra Burton, Coordinator
 Peace Region Forage Seed Association
 Box 6135
 Fort St. John, British Columbia
 Canada V1J 4H6
 Telephone 1 877 630 2198 or (250) 789 6885
 Fax (250) 789-6884
coordinator@peaceforageseed.ca

Fine Fescue Trials

Fine Fescue Trials Established in 2008 Fort St. John, BC: 2010 Seed Production Results

Company	Variety	Yield (kg /ha)	Harvest Date	Height (cm)
Brett Young	IS FRR 23	116	19-Jul	56
	IS FRR 29	134	19-Jul	49
Check	Boreal	231	19-Jul	47
	Mean	160		51
	CV (%)	26.5		6.1
	LSD (0.05)	73.6		5.3

*** extremely dry conditions in summer/fall 2008 & in summer 2009 & 2010

Fine Fescue Trials Established in 2009 Fort St. John, BC: 2010 Seed Production Results

Company	Variety	Seed Yield (kg /ha)	Harvest Date	Plant Height (cm)
Pickseed	Garnet	524	19-Jul	62
	SR 5250	501	19-Jul	59
Check	Boreal	588	19-Jul	63
	Mean	538		61
	CV (%)	39		5
	LSD (0.05)	NS		NS

** extremely dry conditions in summer/ fall 2008 & in summer 2009 & 2010

Summary of Seed Yield (kg per ha) for Fine Fescues in Western Canada WGST 2008- 2010

Year of seeding	Species	Company	Variety	Seed yield / production year			
				Fort St. John		Beaverlodge	
				1	2	1	2
2008	Hard fescue	Barenbrug USA	Hardtop				
			Creeping red	Brett Young	IS FRR 23	505	116
			IS FRR 29	530	134		
		Check	Boreal	630	231		
2009	Creeping red	Pickseed	Garnet	524		-	
			SR 5250	501		-	
			Check	Boreal	588		-

- Beaverlodge fine fescue trial seeded in 2008 discontinued; fine fescue trial 2009 entries to be reseeded

Tall Fescue Trials

Tall Fescue Trials Established in 2008 Fort St. John, BC 2010: Seed Production Results

Company	Variety	Seed Yield (kg/ha)	Harvest Date	Plant Height (cm)
Barenbrug USA	BARFA 1005	523	20-Jul	48
	BAR 3FABRT9	387	20-Jul	64
	Bariane	279	20-Jul	65
	Barcarella	371	20-Jul	63
Check	Courtenay	507	20-Jul	68
Mean		413		67
CV (%)		23.2		5.2
LSD (0.05)		148.2		5.0

*** extremely dry conditions in summer/fall 2008 & in summer 2009 & 2010

Tall Fescue Trials Reseeded in 2008 Arborg, MB: 2010 Seed Production Results

Company	Variety	Seed Yield (kg/ha)	Harvest Date	Plant Height (cm)
Barenbrug USA	BARFA 1005	39	26-Jul	107
	BAR 3FABRT9	40	26-Jul	108
	Bariane	26	26-Jul	108
	Barcarella	32	26-Jul	112
Check	Courtenay	108	26-Jul	122
Mean		47		111
CV (%)		91.6		8.5
LSD (0.05)		NS		NS

*very wet conditions in fall 2008 & spring/ summer 2009

Summary of Seed Yield (kg per ha) for Tall Fescues in Western Canada WGST 2007-2010

Year of seeding	Company	Variety	Type	Seed yield / production year			Beaverlodge		
				1	2	3	1	2	3
2007	Barenbrug USA	BARFA 1005	Turf				1305	454	-
		BAR 3FABRT9	Forage				780	420	-
		Bariane	Forage				713	503	-
		Barcarella	Forage				903	381	-
	Check	Courtenay	Forage				982	814	-
2008	Barenbrug USA	BARFA 1005	Turf	555	523		2072	39	
		BAR 3FABRT9	Forage	496	387		1314	40	
		Bariane	Forage	651	279		1102	26	
		Barcarella	Forage	383	371		1395	32	
	Check	Courtenay	Forage	387	507		2430	108	

Note - Beaverlodge tall fescue trials seeded in 2007 discontinued

Orchard Grass Trials

Orchard Grass Trials Established in 2007 Arborg, Manitoba: 2010 Seed Production Results

Company	Variety	Seed Yield (kg/ha)	Harvest Date	Plant Height (cm)
Barenbrug USA	Baridana	27	19-Jul	98
	Intensiv	40	19-Jul	103
Check	Kay	74	19-Jul	114
	Mean	47		105
	CV (%)	67.4		4.0
	LSD (0.05)	NS		7.2

**very wet conditions in fall 2008 & spring/ summer 2009*

Orchard Grass Trials Established in 2008 Fort St. John, British Columbia: 2010 Seed Production Results

Company	Variety	Seed Yield (kg/ha)	Harvest Date	Plant Height (cm)
Barenbrug USA	Baridana	272	20-Jul	73
	Intensiv	234	20-Jul	69
Check	Kay	320	20-Jul	75
	Mean	275		72
	CV (%)	16.7		4.1
	LSD (0.05)	NS		NS

**** extremely dry conditions in summer/fall 2008 & in summer 2009 & 2010*

Summary of Seed Yield (kg per ha) for Orchard Grass in Western Canada WGST 2007- 2010

Year of seeding	Company	Variety	Type	Seed yield / production year					
				Beaverlodge			Arborg		
				1	2	3	1	2	3
2007	Barenbrug USA	Baridana	Forage	346	54	-	320	132	27
		Intensiv	Forage	351	58	-	373	248	40
	Check	Kay	Forage	346	167	-	368	271	74
2008	Barenbrug USA	Baridana	Forage	107	272				
		Intensiv	Forage	102	234				
		Check	Kay	Forage	112	320			

- *Beaverlodge orchard grass trial seeded in 2007 discontinued*

Timothy Trials

Timothy Trials Established in 2007

Arborg, Manitoba: 2010 Seed Production Results

Company	Variety	Seed Yield (kg/ha)	Harvest Date	Plant Height (cm)
Barenbrug USA	Bor 9911	386	11-Aug	108
	Bor 2005	347	11-Aug	109
Check	Climax	369	11-Aug	117
	Mean	367		111
	CV (%)	15.9		3.7
	LSD (0.05)	NS		NS

Timothy Trials Established in 2008

Arborg, Manitoba: 2010 Seed Production Results

Company	Variety	Seed Yield (kg /ha)	Harvest Date	Plant Height (cm)
Snow Brand Seeds	Hokuei	416	27-Jul	133
	Horizon	441	27-Jul	131
	Sirius	335	27-Jul	130
	Zepher	242	27-Jul	127
	SBT0001	266	27-Jul	125
	SBT0301	239	27-Jul	127
	SBT0308	398	27-Jul	130
	SBT0309	408	27-Jul	134
	SBT0310	457	27-Jul	132
Check	Climax	338	27-Jul	116
	Mean	354		129
	CV (%)	31.4		3.2
	LSD (0.05)	NS		NS

**very wet conditions at Arborg site in fall 2008 & in spring/ summer 2009*

Timothy Trials Established in 2009

Beaverlodge, AB: 2010 Seed Production Results

Company	Variety	Seed Yield (kg /ha)	Harvest Date	Plant Height (cm)
Snow Brand Seeds	Hokuei	289	11-Aug	103
	Horizon	350	11-Aug	93
	Sirius	237	11-Aug	97
	Zepher	195	11-Aug	90
	SBT0001	245	11-Aug	87
	SBT0301	204	11-Aug	86
	SBT0308	307	11-Aug	95
	SBT0309	261	11-Aug	87
	SBT0310	400	11-Aug	98
	Check	Climax	470	11-Aug
	Mean	296		93
	CV (%)	20.4		5.8
	LSD (0.05)	87.4		7.8

Summary of Seed Yield (kg per ha) for Timothy in Western Canada 2007-2010

Etabl.	Year	Company	Variety	Seed yield / production year								
				Fort St. John			Beaverlodge			Arborg		
				1	2	3	1	2	3	1	2	3
	2007	Barenbrug USA	Bor 9911	291	62	-				439	414	386
			Bor 2005	220	75	-				568	467	347
		BrettYoung	BY 19004	170	41	-						
			BY 98665	285	76	-						
			BY 98667	214	56	-						
			BY 99966	328	59	-						
			BY 99984	228	36	-						
			CT 70-9704	132	51	-						
			FLP07	103	21	-						
			INPH 9803	351	61	-						
		Check	Climax	283	64	-				516	593	369
	2008	Snow Brand Seeds	Hokuei	65	-					411	416	
			Horizon	72	-					958	441	
			Sirius	26	-					420	335	
			Zepher	124	-					816	242	
			SBT0001	89	-					792	266	
			SBT0301	75	-					732	239	
			SBT0308	79	-					702	398	
			SBT0309	68	-					602	408	
			SBT0310	93	-					787	457	
		Check	Climax	133	-					850	338	
	2009	Snow Brand Seeds	Hokuei				289					
			Horizon				350					
			Sirius				237					
			Zepher				195					
			SBT0001				245					
			SBT0301				204					
			SBT0308				307					
			SBT0309				261					
			SBT0310				400					
		Check	Climax				470					

< due to droughty conditions, no seed filling

Summary of all WGST Trials At 3 Sites Established 2006 - 2010

Company	Species	Variety	Fort St. John					Beaverlodge				Arborg			
			2006	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	
Barenbrug USA	Tall fescue	BARFA 1005			X				X				X	X	
	Tall fescue	BAR3FABRT9			X				X				X	X	
	Tall fescue	Bariane			X				X				X	X	
	Tall fescue	Barcarella			X				X				X	X	
	Hard fescue	Hardtop		X					X	X	X				
	Timothy	Bor 9911		X									X		
	Timothy	Bor 2005		X									X		
	Orchard grass	Baridana			X				X				X		
	Orchard grass	Intensiv			X				X				X		
	Bromegrass (mdw)	BAR BcF 1 FRRL					X					X			
Bromegrass (sm)	BAR BiF 1GRL					X					X				
BrettYoung	Timothy	19004	X	X											
	Timothy	98665	X	X											
	Timothy	98667	X	X											
	Timothy	99966	X	X											
	Timothy	99984	X	X											
	Timothy	CT70-9704	X	X											
	Timothy	FLP 07	X	X											
	Timothy	INPH 9803	X	X											
	Creeping red fescue	IS FRR 23			X				X	X	X				
Creeping red fescue	IS FRR 29			X				X	X	X					
Pickseed	Creeping red fescue	Garnet				X					X				
	Creeping red fescue	SR 5250				X					X				
Moore Seeds	Timothy	Alma					X				X				
	Timothy	APH1001					X				X				
	Timothy	APH1002					X				X				
Secan	Bromegrass (mdw)	AC Admiral					X				X				
	Bromegrass (mdw)	AC Armada					X				X				
Snow Brand	Timothy	Hokuei			X					X	X		X		
	Timothy	Horizon			X					X	X		X		
	Timothy	Sirius			X					X	X		X		
	Timothy	Zepher			X					X	X		X		
	Timothy	SBT0001			X					X	X		X		
	Timothy	SBT0301			X					X	X		X		
	Timothy	SBT0308			X					X	X		X		
	Timothy	SBT0309			X					X	X		X		
	Timothy	SBT0310			X					X	X		X		
Viterra	Bromegrass (hybrid)	AC Knowles					X				X				
	Bromegrass (sm)	AC Rocket					X				X				
Total Entries From All Years & All Co.		128	8	11	17	2	9		15	12	14	9	11	13	0
Total plots completed in 2009		23							15				1		
Total plots reseeded for co./ no charge		41	8	8	6					3	12		4		
Total 2007 Reseeding (N/C in 2007)		8		8											
Total 2008 Reseeding		13			6					3				4	
Total 2009 Reseeding		12									12				
Total 2010 plots with no seed or data		22		8	9						5				
Total Entries Invoiced for in 2010		54	0	0	8	2	9		0	0	9	9	4	13	0