

Peace Region Grass Seed Testing Program

Coordinated by:

Peace Region Forage Seed Association
Agriculture and Agri-Food Canada



2012 Report

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Sites in: **Alberta and British Columbia**

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Barenbrug USA

BrettYoung

Moore Seed Processors

Pickseed Canada

SeCan

Snow Brand Seeds

Viterra

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Peace Region Forage Seed Association

Agriculture and Agri-Food Canada

Alberta Agriculture and Rural Development

We thank the following for their partnership and technical assistance at the Fort St. John, BC site:

Calvin Yoder, Alberta Agriculture

Parkland Strasky Farms

Owen Lee, Agriculture and Agri-Food Canada

BC Grain Producers Association Research Team

We especially appreciate the collaboration and support provided by the Peace River Forage Association of BC

PRGST Co-operating Research Sites and Contacts

<p>Fort St. John, BC</p>	<p>Sandra Burton, PRFSA Coordinator Peace Region Forage Seed Association Box 685, Taylor, BC V0C 2K0 Phone 877 630 2198 or (250) 789 6885 Fax (250) 789 6884 Email : coordinator@peaceforageseed</p>	<p>Talon Johnson, Summer Student c/o Peace Region Forage Seed Association Box 685, Taylor, BC V0C 2K0 Phone 877 630 2198 or (250) 789 6885 Fax (250) 789 6884 Email : coordinator@peaceforageseed.ca</p>
<p>Beaverlodge, AB</p>	<p>Rahman Azooz Seed Production Program Agriculture and Agri-Food Canada Box 29, Beaverlodge, AB. T0H 0C0 Phone (780) 354-5114 Cell (780) 832-5947 Fax (780) 354-5150 Email : azoozr@agr.gc.ca</p>	<p>Pat Gansevles, Forage Seed Technician Agriculture and AgriFood Canada Box 29, Beaverlodge, AB. T0H 0C0 Phone (780) 354-5121 Fax (780) 354-5150 Email : Gansevlesp@agr.gc.ca</p>

Protocol for Peace Region Grass Seed Testing Program (PRGST)

Revised February 2013

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 Peace Region Grass Seed Testing Program.

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**.

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.

Peace Region Grass Seed Testing (PRGST) Program

2013 Application for Entry

1. Company: _____ Telephone: _____

Contact person: _____ Fax: _____

Mailing address: _____ Email: _____

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

There is only one testing site at Beaverlodge Alberta.

Send no later than April 1, 2013 to:

1- Sandra Burton, Coordinator
Peace Region Forage Seed Association
Box 685
Taylor, British Columbia
Canada V0C 2K0
Telephone 1 877 630 2198 or (250) 789 6885
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2- Rahman Azooz
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Agriculture and Agri-Food Canada
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Introduction:

Several Peace Region Grass seed testing (PRGST) trials were conducted at Beaverlodge, AB (lat. 55°12'N) and Fort St John, BC. (Lat. 56°14'N, Long. 120°44'W). The trials were established in 2009, 2010, 2011 and 2012. The forage grass seeds varieties that tested in the trials were for Timothy (*Phleum pratense* L.), creeping red fescue (*Festuca rubra* L. var. *rubra*), smooth brome grass (*Bromus inermis* Leyss) and meadow brome grass (*Bromus biebersteinii*). These trials were conducted to evaluate the forage seed varieties for their agronomic performance and seed production potential under the peace region soil and weather conditions. The high quality seed production in the region are adversely affect by weeds affecting competition and dockage, insect pests, lack of registered herbicides/ insecticides and availability of registered herbicides and insecticides plus the availability of regionally adapted species and varieties. There is a need to increase potential seed production of widely adapted varieties in the region. Additionally, common seed quality standards, seed certification and registered herbicide and pesticide certification must be developed. The main objectives of forage grass seed varieties testing trail are to increase the consistency, quality and marketability of turf and forage grass seed in an internationally important growing region and to increase the opportunities for contract seed production of American and European turf and forage seed cultivars and to generate seed yield data for varieties grown at regional sites under local growing conditions. Ultimately, all included varieties that perform well are directed for domestic and international markets

MATERIALS AND METHODS

Several trials were conducted at two main locations in western Canada at Beaverlodge, AB and Fort St John, BC. The trials highlighted here were established in 2009, 2010, 2011 and 2012. The varieties in the trials were evaluated according to their agronomic performance that required two harvested years of seed production for fine fescue and three harvested years of seed production Timothy and Brome grass. The forage grass varieties and the checks included in the trials were obtained from Canadian and international seed companies and their foreign associates. At Beaverlodge, AB, the site had been fallowed for at least two crop years before seeding. At Fort St. John, the site preparation was modified to conserve soil moisture and the site is cropped in canola or cereal for two years prior to seeding. At all sites, the trials are direct seeded and fertilizer is applied in the fall and/or spring according to results from the soil testing laboratory. During the trials, weeds were controlled by a combination of trimming, inter-row cultivation, and recommended herbicides. Individual experimental plots were comprised of four rows, each 6 m long with row spacing of 30 cm apart. The yield was collected from the central two rows. The experimental design for each species was a randomized complete block with four replications.

Timothy trial was established in 2009 at Beaverlodge site. The trial is commitment to companies from 2009 to 2012. Nine varieties of Timothy from Snow Brand Seeds (Japan) were tested for their seed production potential and adaptability. The varieties were Hokuei, Horizon, Sirius, Zepher, SBT0001, SBT0301, SBT0308, SBT0309 and SBT0310. These varieties were compared to Climax as the check variety

Timothy trials were established in 2010 at Beaverlodge and Fort St. John sites. The trials are commitment to companies from 2010 to 2013. Three Moore Seed Processors varieties of timothy were tested and compared to Climax including: Alma, APH1001 & APH1002.

Smooth and Meadow Brome grass trials were established in 2010 at Beaverlodge and Fort St. John sites. The trials are commitment to companies from 2010 to 2013. Two varieties of brome grass from Barenbrug USA were tested: BAR BiF1GRL (Smooth) & BAR BcF1FRRL ((Meadow)). Two varieties from Viterra; AC Knowles (Hybrid) & AC Rocket (Smooth), and two

SeCan varieties: AC Armada (Meadow) & AC Admiral (Meadow) were also tested. These 6 entries were compared to check varieties: Fleet (Meadow) and Carlton (Smooth).

Timothy Trials were established in 2011 and 2012 at Beaverlodge site. The trials are commitment to companies from 2011 to 2014 and 2012 to 2015. Ten timothy varieties are being tested for seed production potential and adaptability at Beaverlodge. The new varieties for 2011 include 4 new ones from Snow Brand Seeds entered by Dr. Hideki Yatsu: Horizon, SBT0002, SBT0314, & SBT1005. In addition, there are 3 AAFC varieties entered by Dr. Bruce Coleman: S9520, S9537 & BRF LAL1. Three Moore Seed Processors varieties of timothy are being reseeded (due to dry conditions and poor emergence in 2010 seeding) including: Alma, APH1001 & APH1002. A total of 10 different varieties in this trial are being compared to Climax as the check.

Bromegrass Trials were established in 2011 at Beaverlodge and Fort St. John sites. The trials commitment to companies: 2011 to 2014. Bromegrass varieties are being tested for seed production potential and adaptability. At Beaverlodge site, a new entry of hybrid bromegrass S9478B variety from AAFC entered by Dr. Bruce Coleman was added to the 6 varieties (to be reseeded from 2010 trial) including two varieties of bromegrass from Barenbrug USA: BAR BIF1GRL (Meadow) & BAR BcF1FRRL (Smooth); two varieties from Viterra; AC Knowles (Hybrid) & AC Rocket (Smooth), and two SeCan varieties: AC Armada (Meadow) & AC Admiral (Meadow). These entries were compared to check varieties: Fleet (Meadow) & Carlton (Smooth). At Fort St. John site, the varieties were being tested S9478B from AAFC and AC Knowles from Viterra.

Fine Fescue Trials were established in 2011 at Beaverlodge and Fort St. John sites. The trials commitment to companies: 2011 to 2013. Fine fescue varieties are being tested for seed production potential and adaptability at Beaverlodge. At Beaverlodge site, the new entries of fine fescue were BRF B1 & BRF B2 from AAFC and SR5250 & Garnet from Pickseed Canada. At Fort St. John site, the varieties were being tested are BRF B1 & BRF B2 from AAFC. Each variety was compared to Boreal as the check.

Fescue Establishment, Aberdeen Trials were established in 2011 and 2012 at Beaverlodge site and in 2011 at Fort St. John site. Trials commitment to companies: 2011 to 2013 and from 2012 to 2014. The fescue establishment trial is testing for more effective methods of establishing fine fescues in this region. The seeding methods include Aberdeen seed alone, Aberdeen seed with application of 30 kg P ha⁻¹, Aberdeen coated seed, Aberdeen coated seed with application of 30 kg P ha⁻¹ from BrettYoung Seed Company.

Fine fescue trial was established in 2012 at Beaverlodge site. The trials commitment to companies: from 2012 to 2014. The new entries (2012) of fine fescue were Two varieties BRF B1 and BRF B2 from AAFC, two varieties SR5250 and Garnet from Pickseed Canada, and six varieties MS0112, MSM0212, MS0312, MSG0412, MST0512 AND MSR0612 from Moore Seed Processors. Each variety was compared to Boreal as the check.

Results

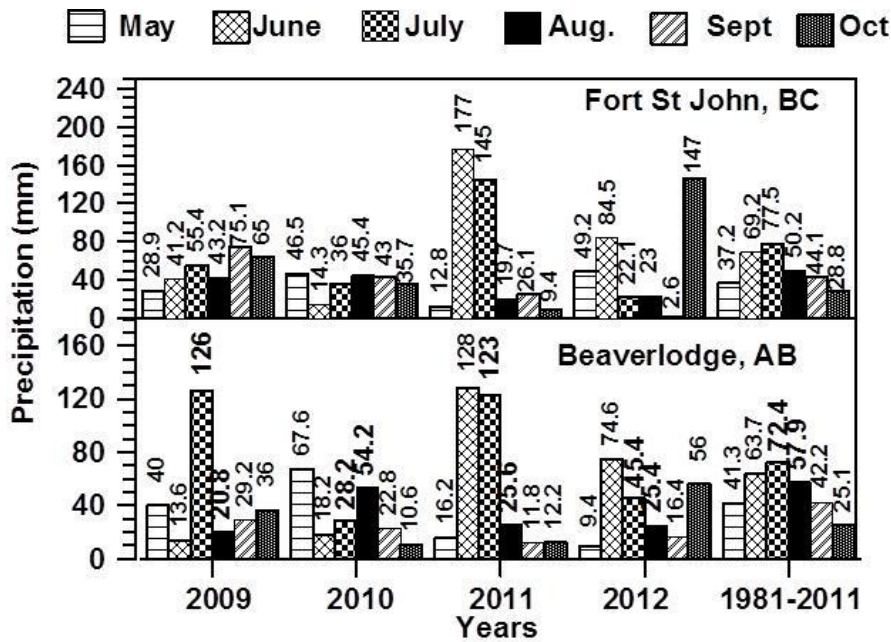


Fig. (1). Total monthly precipitation during the growing season of 2009 to 2012 and 30-yr monthly average at Beaverlodge, AB and Fort St. John, BC

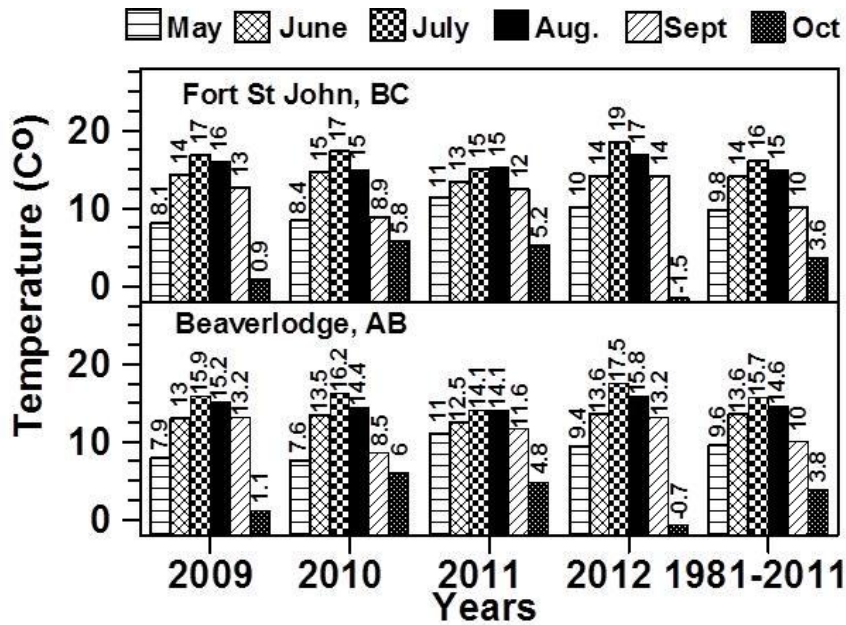


Fig. (2). Monthly average temperature (C°) during the growing season of 2007 to 2011(mm) and 30-yr monthly average at Beaverlodge, AB and Fort St. John, BC .

Fine Leaved Fescue Seed Yield Trials:

Table 1. Seed Yield in 2012 for the Fine Fescue Trials Established in 2011 at Beaverlodge AB. and Fort St. John, BC.

Company	Variety	kg ha ⁻¹		% of Boreal	
		Beaverlodge	Fort St. John	Beaverlodge	Fort St. John
AAFC	BRF B1	1090	1746	98	104
	BRF B2	1103	1786	99	106
Pickseed	Garnet*	627		57	
	SR 5250	719		65	
Check	Boreal	1111	1685	100	100
CV%		8	2		
LSD _{0.05}		112	64		

The harvesting date was 25-Jul in 2012 at Beaverlodge and 23-Jul in 2012 at Fort St. John



Table 2. Plant Height in 2012 for the Fine Fescue Trials Established in 2011 at Beaverlodge AB. and Fort St. John, BC

Company	Variety	cm	
		Beaverlodge	Fort St. John
AAFC	BRF B1	59	64
	BRF B2	61	64
Pickseed	Garnet	57	
	SR 5250	59	
Check	Boreal	63	64
CV%		6	3
LSD _{0.05}		6	3

Establish Fescue Seed Yield Trials:

Table 3. Seed yield in 2012 for seed coated and seed placed phosphate trial using Aberdeen creeping red fescue that established in 2011 at Beaverlodge, AB. and Fort St. John, BC

Company	Variety	Beaverlodge	Fort St. John	Beaverlodge	Fort St. John
		2012	2012	2012	2012
		kg ha ⁻¹		% of Aberdeen	
BrettYoung	Aberdeen	862	1163	100	100
	Aberdeen coated	883	1163	102	100
	Aberdeen coated+30P	931	1221	108	105
	Aberdeen+30P	896	1174	104	101
CV%		7	11		
LSD _{0.05}		102	203		

The harvesting date was 25-Jul in 2012 at Beaverlodge and 23-Jul in 2012 at Fort St. John

Table 4. Plant Height in 2012 for seed coated and seed placed phosphate trial using Aberdeen creeping red fescue that established in 2011 at Beaverlodge AB. and Fort St. John, BC

Company	Variety	cm	
		Beaverlodge	Fort St. John
BrettYoung	Aberdeen	57	64
	Aberdeen coated	59	64
	Aberdeen coated+30P	59	60
	Aberdeen+30P	58	60
CV%		6	4
LSD _{0.05}		6	4

Bromegrass Seed Yield Trials:

Table 5. Seed Yield in 2011 and 2012 for the Bromegrass Trials Established in 2010 at Fort St. John, BC.

Company	Variety		2011	2012	Total	2011	2012
						kg ha ⁻¹	
SeCan	AC Admiral	Meadow	871	854	1725	73	98
SeCan	AC Armada	Meadow	1171	717	1888	98	82
Barenbrug USA	BAR BcF1FRRL	Meadow	1056	591	1647	88	68
Viterra	AC Knowles	Hybrid	490	601	1091	41	69
Check	Fleet	Meadow	1197	871	2068	100	100
						% of Carlton	
Viterra	AC Knowles	Hybrid	490	601	1091	91	79
Viterra	AC Rocket	Smooth	868	856	1724	162	112
Barenbrug USA	BAR BiF1GRL	Smooth	213	443	656	40	58
Check	Carlton	Smooth	537	764	1301	100	100
CV%			28	30	22		
LSD _{0.05}			343	316	494		

The harvesting date 1 Aug., 2011 and 26 July, 2012



Table 6. Seed Yield in 2011 and 2012 for the Bromegrass Trials Established in 2010 at Beaverlodge, AB.

Company	Variety		2011	2012	Total	2011	2012
			kg ha ⁻¹			% of Fleet	
SeCan	AC Admiral	Meadow	1105	84	1189	77	22
SeCan	AC Armada	Meadow	1212	102	1315	84	27
Barenbrug USA	BAR BcF1FRRL	Meadow	1134	138	1273	79	36
Viterra	AC Knowles	Hybrid	833	285	1118	58	75
Check	Fleet	Meadow	1442	381	1823	100	100
						% of Carlton	
Viterra	AC Knowles	Hybrid	833	285	1118	79	232
Viterra	AC Rocket	Smooth	656	121	777	62	99
Barenbrug USA	BAR BiF1GRL	Smooth	368	24	392	35	20
Check	Carlton	Smooth	1058	123	1181	100	100
CV%			42	41	30		
LSD _{0.05}			599	100	515		

The harvesting date was 9 Aug for AC Armada and Fleet, 10 Aug for AC Admiral and BAR BcF1FRRL and 11 Aug the remaining varieties in 2011 and the harvesting date was 30 July, 2012 for all varieties.

Table 7. Plant Height in 2011 and 2012 for the Bromegrass Trials Established in 2010 at Beaverlodge, AB. and Fort St. John, BC.

Company	Variety		Beaverlodge	Fort St John	Fort St John
			2012	2011	2012
			cm		
SeCan	AC Admiral	Meadow	108	125	121
SeCan	AC Armada	Meadow	112	123	120
Barenbrug USA	BAR BcF1FRRL	Meadow	108	128	120
Viterra	AC Knowles	Hybrid	115	126	124
Check	Fleet	Meadow	111	119	119
Viterra	AC Knowles	Hybrid	115	126	124
Viterra	AC Rocket	Smooth	114	127	121
Barenbrug USA	BAR BiF1GRL	Smooth	111	119	116
Check	Carlton	Smooth	121	121	119
CV%			6	8	6
LSD _{0.05}			10	14	11

Table 8. Seed Yield in 2012 for the Bromegrass Trials Established in 2011 at Beaverlodge, AB and Fort St. John, BC.

Company	Variety		Beaverlodge	Fort St John	Beaverlodge	Fort St John
			2012	2012	2012	2012
			kg ha ⁻¹		% of Fleet	
SeCan	AC Admiral	Meadow	1318		105	
SeCan	AC Armada	Meadow	1309		104	
Barenbrug USA	BAR BcF1FRRL	Meadow	1227		98	
Viterra	AC Knowles	Hybrid	1165	788	93	48
AAFC	S9478B	Hybrid	1131	1153	90	70
Check	Fleet	Meadow	1254	1647	100	100
					% of Carlton	
AAFC	S9478B	Hybrid	1131	1153	96	142
Viterra	AC Knowles	Hybrid	1165	788	99	97
Viterra	AC Rocket	Smooth	1325		112	
Barenbrug USA	BAR BiF1GRL	Smooth	708		60	
Check	Carlton	Smooth	1181	814	100	100
CV%			11	14		
LSD _{0.05}			191	286		

The harvesting date was 30 July, 2012 at Beaverlodge and 26 July, 2012 at Fort St. John.

Table 9. Plant height in 2012 for the Bromegrass Trials Established in 2011 at Beaverlodge, AB and Fort St. John, BC.

Company	Variety		Beaverlodge	Fort St John
			2012	2012
			cm	
SeCan	AC Admiral	Meadow	121	
SeCan	AC Armada	Meadow	121	
Barenbrug USA	BAR BcF1FRRL	Meadow	120	
Viterra	AC Knowles	Hybrid	119	147
AAFC	S9478B	Hybrid	114	138
Check	Fleet	Meadow	117	130
AAFC	S9478B	Hybrid	114	138
Viterra	AC Knowles	Hybrid	119	147
Viterra	AC Rocket	Smooth	111	
Barenbrug USA	BAR BiF1GRL	Smooth	113	
Check	Carlton	Smooth	114	134
CV%			4	3
LSD _{0.05}			7	7

Table 10. Summary of Seed Yield (% of Fleet or Carlton) in 2012 for the Bromegrass Trials Established in 2010 and 2011 at Beaverlodge, AB and Fort St. John, BC.

Seeding	Company	Variety	Beaverlodge		Fort St John			
			2011	2012	2011	2012		
				% of Fleet				
2010	SeCan	AC Admiral	Meadow	77	22	73	98	
	SeCan	AC Armada	Meadow	84	27	98	82	
	Barenbrug USA	BAR BcF1FRRL	Meadow	79	36	88	68	
	Viterra	AC Knowles	Hybrid	58	75	41	69	
	Check	Fleet	Meadow	100	100	100	100	
					% of Carlton			
		Viterra	AC Knowles	Hybrid	79	232	91	79
		Viterra	AC Rocket	Smooth	62	99	162	112
		Barenbrug USA	BAR BiF1GRL	Smooth	35	20	40	58
		Check	Carlton	Smooth	100	100	100	100
				Seed yield (kg ha ⁻¹)				
		Fleet	Meadow	1442	381	1197	871	
		Carlton	Smooth	1058	123	537	764	
				2012		2013		
				% of Fleet				
2011	SeCan	AC Admiral	Meadow	105				
	SeCan	AC Armada	Meadow	104				
	Barenbrug USA	BAR BcF1FRRL	Meadow	98				
	Viterra	AC Knowles	Hybrid	93		48		
	AAFC	S9478B	Hybrid	90		70		
	Check	Fleet	Meadow	100		100		
					% of Carlton			
		AAFC	S9478B	Hybrid	96		142	
		Viterra	AC Knowles	Hybrid	99		97	
		Viterra	AC Rocket	Smooth	112			
	Barenbrug USA	BAR BiF1GRL	Smooth	60				
	Check	Carlton	Smooth	100		100		
				Seed yield (kg ha ⁻¹)				
		Fleet	Meadow	1254		1647		
		Carlton	Smooth	1181		814		

Timothy Seed Yield Trials:

Table 11. Seed Yield in 2010, 2011 and 2012 for the Timothy Trials Established in 2009 at Beaverlodge, AB.

Company	Variety	2010	2011	2012	Total	2010	2011	2012	
		kg ha ⁻¹					% of Climax		
Snow Brand Seed	Hokuei	449	186	199	834	61	35	48	
	Horizon	545	726	414	1685	75	138	100	
	Sirius	368	295	257	919	50	56	62	
	Zepher	303	524	160	986	41	100	38	
	SBT0001	381	588	187	1156	52	112	45	
	SBT0301	317	437	138	891	43	83	33	
	SBT0308	477	480	263	1219	65	91	63	
	SBT0309	405	505	279	1190	55	96	67	
	SBT0310	622	586	344	1552	85	112	83	
Check	Climax	731	525	416	1672	100	100	100	
CV%		20	14	14	11				
LSD _{0.05}		136	99	52	178				

The harvesting date was 11-Aug in 2010 and 19 Aug for SBT0001, Zepher and SBT0301 and 22 Aug for Hokuei and Sirius and 24 Aug in 2011 for the remaining varieties and the harvesting date was 7 August in 2012

Table 12. Plant height in 2010, 2011 and 2012 for the Timothy Trials Established in 2009 at Beaverlodge AB.

Company	Variety	2010	2011	2012
	α	cm		
Snow Brand Seed	Hokuei	103	-	87
	Horizon	93	-	83
	Sirius	97	-	89
	Zepher	90	-	82
	SBT0001	87	-	85
	SBT0301	86	-	78
	SBT0308	95	-	74
	SBT0309	87	-	77
	SBT0310	98	-	83
Check	Climax	95	-	80
CV%		6		6
LSD _{0.05}		8		7

Table 13. Seed yield in 2011 and 2012 for the Timothy Trials Established in 2010 at Beaverlodge, AB

Company	Variety	2011	2012	Total	2011	2012
					kg ha ⁻¹	
Moore Seed Processors	Alma	716	544	1260	129	228
	APH001	587	401	988	105	169
	APH1002	676	255	931	121	107
Check	Climax	557	238	795	100	100
CV%		26	15	16		
LSD _{0.05}		290	106	288		

The harvesting date was 19-Aug in 2011 and 7-Aug in 2012

Table 14. Seed yield in 2011 for the Timothy Trials Established in 2010 at Fort St John BC.

Company	Variety	2011	2012	Total	2011	2012
					kg ha ⁻¹	
Moore Seed Processors	Alma	1143	223	1366	216	156
	APH001	813	213	1026	154	149
	APH1002	513	146	659	97	102
Check	Climax	528	143	671	100	100
CV%		20	29	17		
LSD _{0.05}		240	98	291		

The harvesting date was 16-Aug in 2011 and 3-Aug in 2012

Table 15. Plant Height in 2011 for the Timothy Trials Established in 2010 at Beaverlodge, AB and Fort St. John, BC.

Company	Variety	Beaverlodge		Fort St. John	
		2011	2012	2011	2012
Moore Seed Processors	Alma	-	85	103	93
	APH001	-	77	108	90
	APH1002	-	74	97	83
Check	Climax	-	85	109	93
CV%			7	4	7
LSD _{0.05}			9	7	10



Table 16. Seed yield and plant height in 2012 for the Timothy Trials Established in 2011 at Beaverlodge, AB

Company	Variety	Seed yield		Plant height
		2012	2012	2012
		kg ha ⁻¹	% of Climax	cm
Snow Brand Seed	Horizon	614	155	91
	SBT0002	475	120	92
	SBT0314	513	130	88
	SBT1005	286	72	90
Moore Seed Processors	Alma	717	181	84
	APH001	606	153	79
	APH1002	573	145	86
AAFC	BRF LAL1	667	169	88
	S9537	622	158	89
	S9520	714	181	89
Check	Climax	395	100	84
CV%		12		4
LSD _{0.05}		101		5

The harvesting date was 7-Aug in 2012

Table 17. Summary of Seed Yield (% of Climax) in 2012 for the Timothy Trials Established in 2009, 10 and 2011 at Beaverlodge and 2010 at Fort St. John, BC.

Seeding	Company	Variety	Beaverlodge			Fort St John			
			2010	2011	2012	2010	2011	2012	
2009	SBS*	Hokuei	61	35	48				
		Horizon	75	138	100				
		Sirius	50	56	62				
		Zepher	41	100	38				
		SBT0001	52	112	45				
		SBT0301	43	83	33				
		SBT0308	65	91	63				
		SBT0309	55	96	67				
		SBT0310	85	112	83				
	Check	Climax	100	100	100				
			kg ha ⁻¹						
	Check	Climax	731	525	416				
			2011	2012	2013	2011	2012	2013	
2010	MSP*	Alma	129	216		216	156		
		APH001	105	154		154	149		
		APH1002	121	97		97	102		
		Climax	100	100		100	100		
					kg ha ⁻¹				
	Check	Climax	557	238		528	143		
			2012	2013	2014	2012	2013	2014	
2011	SBS*	Horizon	155						
		SBT0002	120						
		SBT0314	130						
		SBT1005	72						
	MSP*	Alma	181						
		APH001	153						
		APH1002	145						
	AAFC	BRF LAL1	169						
		S9537	158						
	Check	S9520	181						
		Climax	100	Climax					
				kg ha ⁻¹					
	Climax	395							

Moore Seed Processors (MSP) and Snow Brand Seed (SBS)