

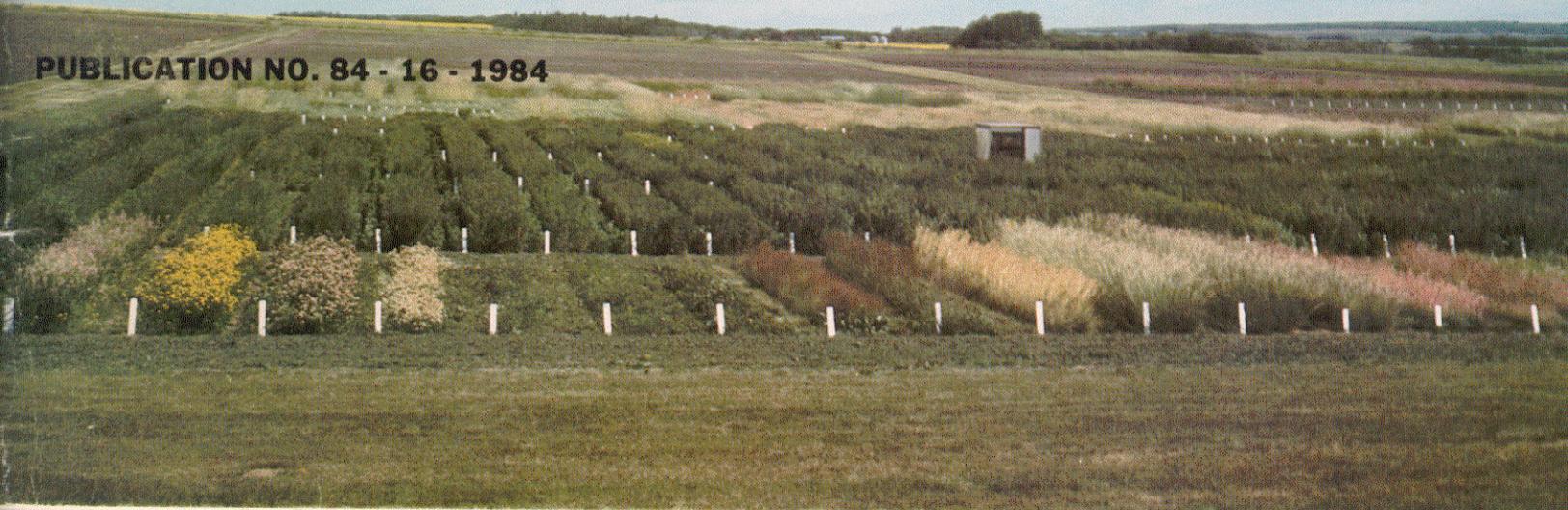
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IN CO-OPERATION WITH

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FORAGE CULTIVAR TRIALS

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FORAGE CULTIVAR TRIALS

H.G. Najda

1984

FOREWORD

This report is the seventh for a special series of field trials conducted by the Agriculture Canada Research Station at Beaverlodge in cooperation with Alberta Agriculture.

The objective of this program is to provide relative information on seed production capability and general adaptability of named foreign cultivars of perennial grasses and legumes in northern Alberta. The information assists the Canadian forage seed industry in the development of production contracts and seed export markets. Emphasis is on crops economically suitable for the region and which currently form part of Canada's forage seed export industry.

The following test sites were selected to represent the major agronomic soils of the region.

1. Beaverlodge A. Research Station (SE-1-72-10-W6th)
Dark Gray Solod (Esher clay) to Dark Gray Luvisol (Hythe fine loam).
2. Beaverlodge B. Foster Farm (SE-25-71-10-W6th)
Near Beaverlodge, Alberta. Orthic Humic Gleysol (Goose fine loam to Codner clay).
3. Falher. Beaupre Farm (NW-1-78-21-W5th)
Near Falher, Alberta. Dark Gray Solod (Falher clay) to Solonetzic Gray Luvisol (Nampa clay).

4. Fort Vermilion. Experimental Farm (NW-13-108-13-W5th)
Dark Gray Luvisol (Leith coarse loam) to Orthic Gray Luvisol (Culp coarse loam).
5. Gimle. Driedger Farm (SW-30-72-10-W6th)
Near Beaverlodge, Alberta. Solonetzic Dark Gray Chernozemic (Albright clay) to Solonetzic Gray Luvisol (Hazelmere clay).
6. High Level. Fedeyko Farm (NW-35-109-17-W5th)
Near High Level, Alberta. Orthic Gray Luvisol (Davis fine loam) to Dark Gray Luvisol (Tangent fine loam).

Section A

Data presented in this section has been collected from stands established at the various test sites described above.

Plots comprise of four rows, 30.5 cm (1 foot) apart, 6.1 metres (20 feet) long, and are replicated 4 times. Weeds are controlled by mechanical and chemical means. Plots are fertilized annually in the autumn.

Seed and herbage (dry matter) yields are expressed as actual production per hectare and as a percent of a designated (*) standard. The Least Significant Difference at the 5% level is also presented for each test. Winter

survival is shown by a hardiness scale of 0 to 9, with 9 being the best.

Section B

Data presented in this section has been collected from screening trials established at the Beaverlodge Research Station. The purpose of these trials is to determine which cultivars should be tested at the various test sites of Part A.

Plots comprise of two rows, 30.5 cm (1 foot) apart, 6.1 metres (20 feet) long, and are replicated 3 times. Plot maintenance is the same as for Part A.

Seed and herbage yields are expressed by a 0 to 5 performance scale, with 5 being best. Winter hardiness is shown by a hardiness scale of 0 to 5, with 5 being best. Cultivars rated above 3 in the above three categories will be considered for further testing in Part A.

Section C

Data presented in this section contains a summary of forage seed yields collected from the various test sites established in northern Alberta. Only those cultivars licensed in Canada and cultivars eligible for certification under the OECD scheme are listed.

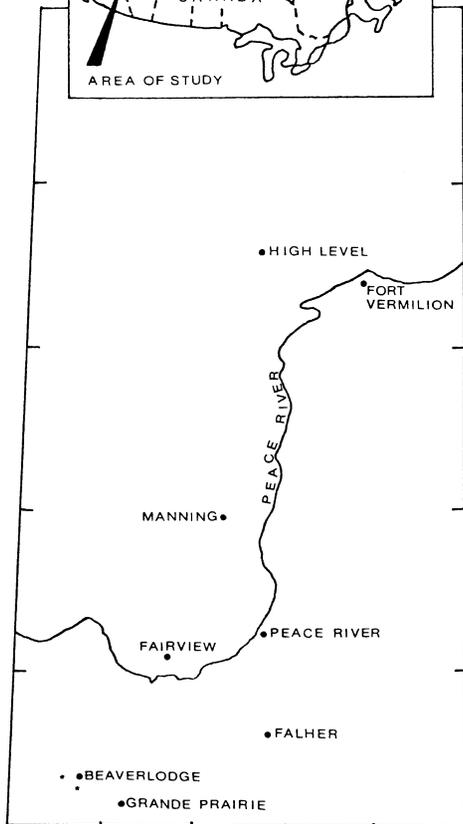
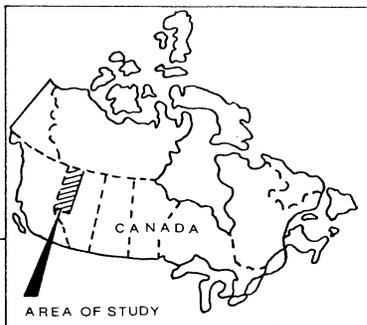
This publication will supplement "Forage Introductions Publication No. 79-16A-1979" which reports on all forages introduced since 1969.

Environmental data prepared by Mr. Peter Mills, Beaverlodge Research Station.

The author acknowledges the contributions of the following people to the program: L. Burgess, T. Cramer, A. Heggelund, R. Martin, M. Matheson and G. O'Neill.

Evaluation of this publication and suggestions for improvements will be greatly appreciated and should be directed to:

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ENVIRONMENTAL DATA FOR SELECTED SITES IN THE STUDY AREA

		Beaverlodge		Fairview		Fort Vermilion	
		1951-80	1984	1951-80	1984	1951-80	1984
Growing Degree Days							
Above 5°C	- May - Aug	988.8	971.8	1078.0	1172.6	1110.3	1105.8
Total Hours	- Annual	2125.5		2059.9		2106.9	
Bright Sun	May - Aug	1111.8	1079.2	1060.3	1104.5	1134.9	1050.4
Total Precip..	- Annual	467.0		446.6		382.5	
(mm)	May - Aug	235.2	206.5	236.8	339.4	201.7	355.9
Temperature (°C)							
Mean	- Annual	1.6		1.3		-1.2	
	May - Aug	13.0	12.8	13.7	14.5	13.9	14.0
Mean Maximum	- Annual	7.0		6.3		4.5	
	May - Aug	19.2	19.4	19.6	21.2	20.5	20.0
Mean Minimum	- Annual	-3.7		-3.6		-6.9	
	May - Aug	6.7	6.3	7.8	7.8	7.4	8.0
Photoperiod	- June 22	17:25		17:38		18:18	
Last Spring Frost	(0°C)	May 24	May 25	May 19	May 11	May 28	May 23
First Fall Frost	(0°C)	Sep 7	Sep 14	Sep 16	Aug 27	Sep 3	Sep 10
Frost Free Period	(days)	105	112	119	108	97	110

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A

Bromegrass

Test Site: Gimle
Seeding Year: 1982

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield			
				1983	1984	kg/ha		% of Carlton	
						1983	1984	1983	1984
Beacon	Canada	9.0	94	Aug 12	Aug 9	93	195	33	90
Carlton*	Canada	9.0	95	Aug 12	Aug 9	279	216	100	100
Jubilee	Canada	9.0	96	Aug 12	Aug 9	136	169	49	78
Signal (S-8800)	Canada	9.0	105	Aug 12	Aug 9	429	339	156	157
Svaja	Sweden	9.0	96	Aug 12	Aug 9	146	167	52	77
Mean						216	217		
L.S.D. (P = .05)						109	52		

Summary of Bromegrass Seed Yields
 1982 Seeding Year
 (Yields are shown as % of Carlton)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Beacon	Canada	47	66	(a)		(b)		49	40	33	90	(b)		43	65
Carlton*	Canada	100	100					100	100	100	100			100	100
Jubilee	Canada	16	105					37	64	49	78			34	82
Signal (S-8800)	Canada	137	141					103	168	156	157			132	155
Svaja	Sweden	39	106					56	55	52	77			49	79
Carlton Yield in kg/ha		847	605					758	750	279	216			628	524

(a) Not seeded in 1982

(b) No stand establishment in 1982

Bromegrass

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield					
		Day Cut		(DM)	t/ha	% of Carlton		Day Cut		(DM)	t/ha	% of Carlton	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Beacon	Canada	Jun 23	Jun 14	2.17	1.69	83	87	Aug 11	Aug 16	2.06	0.92	89	90
Carlton*	Canada	Jun 23	Jun 14	2.63	1.94	100	100	Aug 11	Aug 16	2.31	1.02	100	100
Jubilee	Canada	Jun 23	Jun 14	0.43	1.37	16	71	Aug 11	Aug 16	1.35	0.76	58	75
Signal (S-8800)	Canada	Jun 23	Jun 14	1.84	1.74	70	90	Aug 11	Aug 16	2.31	0.87	100	85
Svaja	Sweden	Jun 23	Jun 14	1.52	2.25	58	116	Aug 11	Aug 16	2.31	0.90	100	88
Mean				1.72	1.80					2.09	0.89		
L.S.D. (P = .05)				0.59	0.33					0.52	0.23		

Test Site: Fort Vermilion Experimental Farm
Seeding Year: 1982

Beacon	Canada	Jun 27	Jun 11	4.27	4.54	82	88	Aug 15	Aug 13	0.42	3.19	58	96
Carlton*	Canada	Jun 27	Jun 11	5.19	5.14	100	100	Aug 15	Aug 13	0.73	3.34	100	100
Jubilee	Canada	Jun 27	Jun 11	2.45	5.33	47	104	Aug 15	Aug 13	0.67	3.84	92	115
Signal (S-8800)	Canada	Jun 27	Jun 11	6.00	5.91	116	115	Aug 15	Aug 13	0.81	3.62	111	108
Svaja	Sweden	Jun 27	Jun 11	4.75	5.62	92	109	Aug 15	Aug 13	0.75	3.28	103	98
Mean				4.53	5.31					0.68	3.45		
L.S.D. (P = .05)				0.87	1.14					0.26	1.15		

Bromegrass

Test Site: Gimle
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield					
		Day Cut		(DM)	t/ha	% of Carlton		Day Cut		(DM)	t/ha	% of Carlton	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Beacon	Canada	Jun 22	Jun 14	1.02	1.31	68	131	Aug 18	Aug 16	0.91	0.76	120	103
Carlton*	Canada	Jun 22	Jun 14	1.49	1.00	100	100	Aug 18	Aug 16	0.76	0.74	100	100
Jubilee	Canada	Jun 22	Jun 14	0.88	1.04	59	104	Aug 18	Aug 16	0.80	0.62	105	82
Signal (S-8800)	Canada	Jun 22	Jun 14	1.51	0.99	101	99	Aug 18	Aug 16	0.85	0.84	112	114
Svaja	Sweden	Jun 22	Jun 14	1.16	1.24	78	124	Aug 18	Aug 16	1.03	0.94	136	127
Mean				1.21	1.12					0.87	0.78		
L.S.D. (P = .05)				0.63	0.28					0.43	0.24		

Summary of Bromegrass Herbage Yields
 1982 Seeding Year - 1983 Harvest
 (Yields are shown as % of Carlton)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Beacon	Canada	83	89	(a)		(b)		82	58	68	120	(b)		78	89
Carlton*	Canada	100	100					100	100	100	100			100	100
Jubilee	Canada	16	58					47	92	59	105			41	85
Signal (S-8800)	Canada	70	100					116	111	101	112			96	108
Svaja	Sweden	58	100					92	103	78	136			76	113
Carlton Yield in (DM) t/ha		2.63	2.31					5.19	0.73	1.49	0.76			3.10	1.27

(a) Not seeded in 1982

(b) No stand establishment in 1982

Summary of Bromegrass Herbage Yields
 1982 Seeding Year - 1984 Harvest
 (Yields are shown as % of Carlton)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Beacon	Canada	87	90	(a)		(b)		88	96	131	103	(b)		102	96
Carlton*	Canada	100	100					100	100	100	100			100	100
Jubilee	Canada	71	75					104	115	104	82			93	91
Signal (S-8800)	Canada	90	85					115	108	99	114			101	102
Svaja	Sweden	116	88					109	98	124	127			116	104
Carlton Yield in (DM) t/ha		1.94	1.02					5.14	3.34	1.00	0.74			2.69	1.70

(a) Not seeded in 1982

(b) No stand establishment in 1982

Red Fescue

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield			
				1983	1984	kg/ha		% of Boreal	
						1983	1984	1983	1984
Boreal*	(3) Canada	9.0	73	Jul 28	Jul 25	261	1346	100	100
Carlawn	(3) Canada	9.0	71	Jul 28	Jul 25	359	1049	138	78
Fidelimo	(1) Netherlands	9.0	57	Jul 19	Jul 23	19	777	7	58
Leik	(3) Norway	9.0	76	Jul 26	Jul 23	152	1433	58	106
Luster	(1) Netherlands	9.0	60	Jul 22	Jul 19	6	379	2	28
Milda	(3) France	9.0	69	Jul 26	Jul 25	51	530	20	39
Oasis	(2) Netherlands	9.0	69	Jul 19	Jul 19	22	434	8	32
Valaska	(4) Czechoslovakia	9.0	69	Jul 19	Jul 19	203	771	78	57
Zernickower	(3) East Germany	9.0	76	Jul 28	Jul 25	183	813	70	60
Mean						140	837		
L.S.D. (P = .05)						207	270		

- (1) Rhizomes absent or rudimentary
(2) Slender rhizomes
(3) Strong rhizomes
(4) Unclassified

Red Fescue

Test Site: Gimle
Seeding Year: 1982

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield			
				1983	1984	kg/ha		% of Boreal	
						1983	1984	1983	1984
Boreal*	(3) Canada	9.0	76	Jul 23	Jul 24	412	775	100	100
Carlawn	(3) Canada	9.0	74	Jul 23	Jul 24	335	657	81	85
Fidelimo	(1) Netherlands	9.0	66	Jul 18	Jul 24	58	374	14	48
Leik	(3) Norway	9.0	77	Jul 23	Jul 24	262	868	64	112
Luster	(1) Netherlands	9.0	60	Jul 18	Jul 19	49	498	12	64
Milda	(3) France	9.0	71	Jul 22	Jul 24	122	408	30	53
Oasis	(2) Netherlands	9.0	64	Jul 18	Jul 24	72	361	17	47
Valaska	(4) Czechoslovakia	9.0	72	Jul 18	Jul 19	141	418	34	54
Zernickower	(3) East Germany	9.0	76	Jul 23	Jul 24	346	702	84	91
Mean						200	562		
L.S.D. (P = .05)						128	128		

- (1) Rhizomes absent or rudimentary
(2) Slender rhizomes
(3) Strong rhizomes
(4) Unclassified

Summary of Red Fescue Seed Yields
1982 Seeding Year
(Yields are shown as % of Boreal)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Boreal*	(3) Canada	100	100	(a)		(b)		100	100	100	100	(b)		100	100
Carlawn	(3) Canada	138	78					89	82	81	85			103	82
Fidelimo	(1) Netherlands	7	58					2	36	14	48			8	47
Leik	(3) Norway	58	106					101	55	64	112			74	91
Luster	(1) Netherlands	2	28					3	26	12	64			7	39
Milda	(3) France	20	39					1	34	30	53			17	42
Oasis	(2) Netherlands	8	32					7	14	17	47			11	31
Valaska	(4) Czechoslovakia	78	57					41	38	34	54			51	50
Zernickower	(3) East Germany	70	60					93	65	84	91			82	72
Boreal Yield in kg/ha		261	1346					103	1268	412	775			259	1130

(1) Rhizomes absent or rudimentary
(2) Slender rhizomes

(3) Strong rhizomes
(4) Unclassified

(a) Not seeded in 1982
(b) No stand establishment in 1982

Red Fescue

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield						
		Day Cut		(DM)	t/ha	% of Boreal		Day Cut		(DM)	t/ha	% of Boreal		
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	
Boreal*	(3)	Canada	Jun 16	Jun 14	0.39	2.33	100	100	Aug 11	Aug 16	1.90	0.76	100	100
Carlawn	(3)	Canada	Jun 16	Jun 14	0.43	1.80	110	77	Aug 11	Aug 16	1.38	1.00	73	132
Fidelimo	(1)	Netherlands	Jun 16	Jun 14	0.12	2.46	31	106	Aug 11	Aug 16	0.29	0.76	15	100
Leik	(3)	Norway	Jun 16	Jun 14	0.72	2.88	185	124	Aug 11	Aug 16	1.05	0.82	55	108
Luster	(1)	Netherlands	Jun 16	Jun 14	0.03	2.05	8	88	Aug 11	Aug 16	0.26	0.88	14	116
Milda	(3)	France	Jun 16	Jun 14	0.11	1.29	28	55	Aug 11	Aug 16	0.86	0.85	45	112
Oasis	(2)	Netherlands	Jun 16	Jun 14	0.06	1.80	15	77	Aug 11	Aug 16	1.01	1.12	53	147
Valaska	(4)	Czechoslovakia	Jun 16	Jun 14	0.35	3.61	90	155	Aug 11	Aug 16	0.69	0.71	36	93
Zernickower	(3)	East Germany	Jun 16	Jun 14	0.28	1.72	72	74	Aug 11	Aug 16	1.27	1.09	67	143
Mean					0.28	2.22					0.97	0.89		
L.S.D. ($P = .05$)					0.32	0.68					0.50	0.27		

- (1) Rhizomes absent or rudimentary
(2) Slender rhizomes
(3) Strong rhizomes
(4) Unclassified

Red Fescue

Test Site: Fort Vermilion Experimental Farm
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield						
		Day Cut		(DM)	t/ha	% of Boreal		Day Cut		(DM)	t/ha	% of Boreal		
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	
Boreal*	(3)	Canada	Jun 27	Jun 11	0.40	3.62	100	100	(a)	Aug 13		2.65		100
Carlawn	(3)	Canada	Jun 27	Jun 11	0.30	3.31	75	91		Aug 13		2.68		101
Fidelimo	(1)	Netherlands	Jun 27	Jun 11	0.06	1.34	15	37		Aug 13		0.75		28
Leik	(3)	Norway	Jun 27	Jun 11	0.54	3.07	135	85		Aug 13		2.46		93
Luster	(1)	Netherlands	Jun 27	Jun 11	0.07	2.03	18	56		Aug 13		0.78		29
Milda	(3)	France	Jun 27	Jun 11	0.16	1.88	40	52		Aug 13		1.97		74
Oasis	(2)	Netherlands	Jun 27	Jun 11	0.07	1.60	18	44		Aug 13		2.65		100
Valaska	(4)	Czechoslovakia	Jun 27	Jun 11	0.16	3.38	40	93		Aug 13		1.58		60
Zernickower	(3)	East Germany	Jun 27	Jun 11	0.54	3.39	135	94		Aug 13		2.53		95
Mean					0.25	2.62						2.01		
L.S.D. (P = .05)					0.27	0.54						0.45		

- (1) Rhizomes absent or rudimentary
(2) Slender rhizomes
(3) Strong rhizomes
(4) Unclassified

(a) Second cut not taken

Red Fescue

Test Site: Gimle
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield						
		Day Cut		(DM)	t/ha	% of Boreal		Day Cut		(DM)	t/ha	% of Boreal		
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	
Boreal*	(3)	Canada	Jun 22	Jun 14	0.69	1.88	100	100	Aug 19	Aug 16	0.57	0.48	100	100
Carlawn	(3)	Canada	Jun 22	Jun 14	0.81	1.48	117	79	Aug 19	Aug 16	0.56	0.58	98	121
Fidelimo	(1)	Netherlands	Jun 22	Jun 14	0.23	1.82	33	97	Aug 19	Aug 16	0.15	0.42	26	87
Leik	(3)	Norway	Jun 22	Jun 14	0.90	2.14	130	114	Aug 19	Aug 16	0.32	0.41	56	85
Luster	(1)	Netherlands	Jun 22	Jun 14	0.31	2.18	45	116	Aug 19	Aug 16	0.18	0.36	32	75
Milda	(3)	France	Jun 22	Jun 14	0.56	1.44	81	77	Aug 19	Aug 16	0.80	0.67	140	140
Oasis	(2)	Netherlands	Jun 22	Jun 14	0.36	1.45	52	77	Aug 19	Aug 16	0.45	0.53	79	110
Valaska	(4)	Czechoslovakia	Jun 22	Jun 14	0.68	2.84	99	151	Aug 19	Aug 16	0.32	0.31	56	65
Zernickower	(3)	East Germany	Jun 22	Jun 14	0.75	1.72	109	91	Aug 19	Aug 16	0.59	0.51	104	106
Mean					0.59	1.88					0.44	0.48		
L.S.D. (P = .05)					0.20	0.31					0.24	0.14		

- (1) Rhizomes absent or rudimentary
(2) Slender rhizomes
(3) Strong rhizomes
(4) Unclassified

Summary of Red Fescue Herbage Yields
1982 Seeding Year - 1983 Harvest
(Yields are shown as % of Boreal)

Cultivar		Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
			1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Boreal*	(3)	Canada	100	100	(a)		(b)		100	(c)	100	100	(b)		100	100
Carlawn	(3)	Canada	110	73					75		117	98			101	86
Fidelimo	(1)	Netherlands	31	15					15		33	26			26	21
Leik	(3)	Norway	185	55					135		130	56			150	56
Luster	(1)	Netherlands	8	14					18		45	32			24	23
Milda	(3)	France	28	45					40		81	140			50	93
Oasis	(2)	Netherlands	15	53					18		52	79			28	66
Valaska	(4)	Czechoslovakia	90	36					40		99	56			76	41
Zernickower	(3)	East Germany	72	67					135		109	104			105	86
Boreal Yield in (DM) t/ha			0.39	1.90					0.40		0.69	0.57			0.49	1.24

(1) Rhizomes absent or rudimentary
(2) Slender rhizomes

(3) Strong rhizomes
(4) Unclassified

(a) Not seeded in 1982
(b) No stand establishment in 1982
(c) Second cut not taken due to drought

Summary of Red Fescue Herbage Yields
 1982 Seeding Year - 1984 Harvest
 (Yields are shown as % of Boreal)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Boreal*	(3) Canada	100	100	(a)		(b)		100	100	100	100	(b)		100	100
Carlawn	(3) Canada	77	132					91	101	79	121			82	118
Fidelimo	(1) Netherlands	106	100					37	28	97	87			80	72
Leik	(3) Norway	124	108					85	93	114	85			108	95
Luster	(1) Netherlands	88	116					56	29	116	75			87	73
Milda	(3) France	55	112					52	74	77	140			61	109
Oasis	(2) Netherlands	77	147					44	100	77	110			66	119
Valaska	(4) Czechoslovakia	155	93					93	60	151	65			133	73
Zernickower	(3) East Germany	74	143					94	95	91	106			86	115
Boreal Yield in (DM) t/ha		2.33	0.76					3.62	2.65	1.88	0.48			2.61	1.30

(1) Rhizomes absent or rudimentary
 (2) Slender rhizomes

(3) Strong rhizomes
 (4) Unclassified

(a) Not seeded in 1982
 (b) No stand establishment in 1982

Timothy

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield			
				1983	1984	kg/ha		% of Climax	
						1983	1984	1983	1984
Alpage	France	9.0	94	Aug 27	Aug 14	143	771	92	118
Climax*	Canada	9.0	95	Aug 30	Aug 14	156	653	100	100
Hokusyu	Japan	9.0	88	Aug 22	Aug 17	232	612	149	94
Korpa	Iceland	9.0	91	Aug 17	Aug 11	700	1235	449	189
Lacombe Composite	Canada	9.0	99	Aug 17	Aug 9	277	922	178	141
Ludor	France	9.0	87	Sep 6	Aug 15	87	530	56	81
Melora	Netherlands	9.0	83	Aug 20	Aug 17	304	583	195	89
Nosappu	Japan	9.0	98	Aug 27	Aug 9	280	927	179	142
Salvo	Canada	9.0	92	Sep 1	Aug 9	75	340	48	52
Mean						250	730		
L.S.D. (P = .05)						135	183		

Test Site: Fort Vermilion Experimental Farm
Seeding Year: 1982

Alpage	France	9.0	79	Aug 15	Aug 8	213	486	121	116
Climax*	Canada	9.0	83	Aug 15	Aug 8	176	420	100	100
Hokusyu	Japan	9.0	73	Aug 15	Aug 8	196	415	111	99
Korpa	Iceland	9.0	75	Aug 15	Aug 8	368	543	209	129
Lacombe Composite	Canada	9.0	82	Aug 15	Aug 8	283	520	161	124
Ludor	France	9.0	75	Aug 15	Aug 8	68	251	39	60
Melora	Netherlands	9.0	72	Aug 15	Aug 8	145	365	82	87
Nosappu	Japan	9.0	87	Aug 15	Aug 8	188	456	109	109
Salvo	Canada	9.0	83	Aug 15	Aug 8	86	283	49	67
Mean						191	415		
L.S.D. (P = .05)						48	80		

Timothy

Test Site: Gimle
Seeding Year: 1982

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield			
				1983	1984	kg/ha		% of Climax	
						1983	1984	1983	1984
Alpage	France	9.0	90	Aug 18	Aug 15	356	392	124	107
Climax*	Canada	9.0	95	Aug 10	Aug 15	288	368	100	100
Hokusyu	Japan	9.0	80	Aug 18	Aug 16	196	272	68	74
Korpa	Iceland	9.0	93	Aug 10	Aug 9	567	543	197	148
Lacombe Composite	Canada	9.0	97	Aug 18	Aug 15	542	524	188	142
Ludor	France	9.0	86	Aug 18	Aug 15	169	231	59	63
Melora	Netherlands	9.0	82	Aug 18	Aug 16	306	257	106	70
Nosappu	Japan	9.0	98	Aug 10	Aug 9	324	426	113	116
Salvo	Canada	9.0	91	Aug 5	Aug 9	162	230	56	63
Mean						323	360		
L.S.D. (P = .05)						91	49		

Summary of Timothy Seed Yields
 1982 Seeding Year
 (Yields are shown as % of Climax)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Alpage	France	92	118	(a)		(b)		121	116	124	107	(b)		112	114
Climax*	Canada	100	100					100	100	100	100			100	100
Hokussyu	Japan	149	94					111	99	68	74			109	89
Korpa	Iceland	449	189					209	129	197	148			285	155
Lacombe Composite	Canada	178	141					161	124	188	142			176	136
Ludor	France	56	81					39	60	59	63			51	68
Melora	Netherlands	195	89					82	87	106	70			128	82
Nosappu	Japan	179	142					109	109	113	116			134	122
Salvo	Canada	48	52					49	67	56	63			51	61
Climax Yield in kg/ha		156	653					176	420	288	368			207	480

(a) Not seeded in 1982

(b) No stand establishment in 1982

Timothy

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield					
		Day Cut		(DM) t/ha		% of Climax		Day Cut		(DM) t/ha		% of Climax	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Alpage	France	Jun 23	Jun 14	0.50	1.85	57	102	Aug 18	Aug 16	3.18	1.22	106	90
Climax*	Canada	Jun 23	Jun 14	0.88	1.81	100	100	Aug 18	Aug 16	2.99	1.36	100	100
Hokussyu	Japan	Jun 23	Jun 14	0.91	1.36	103	75	Aug 18	Aug 16	3.11	1.31	104	96
Korpa	Iceland	Jun 23	Jun 14	0.34	1.31	39	72	Aug 18	Aug 16	1.27	1.15	42	85
Lacombe Composite	Canada	Jun 23	Jun 14	1.61	2.23	183	123	Aug 18	Aug 16	3.24	1.15	108	85
Ludor	France	Jun 23	Jun 14	0.11	1.00	13	55	Aug 18	Aug 16	1.99	0.94	67	69
Melora	Netherlands	Jun 23	Jun 14	0.38	1.32	43	73	Aug 18	Aug 16	2.53	1.16	85	85
Nosappu	Japan	Jun 23	Jun 14	0.74	1.97	84	109	Aug 18	Aug 16	3.52	1.10	118	81
Salvo	Canada	Jun 23	Jun 14	0.60	2.20	68	122	Aug 18	Aug 16	3.50	1.43	117	105
Mean				0.67	1.67					2.81	1.20		
L.S.D. (P = .05)				0.39	0.40					1.31	0.43		

Test Site: Fort Vermilion Experimental Farm
Seeding Year: 1982

Alpage	France	Jun 27	Jun 11	1.64	3.17	99	93	Aug 15	Aug 13	0.39	2.19	100	88
Climax*	Canada	Jun 27	Jun 11	1.66	3.40	100	100	Aug 15	Aug 13	0.39	2.50	100	100
Hokussyu	Japan	Jun 27	Jun 11	1.28	2.46	77	72	Aug 15	Aug 13	0.33	2.76	85	110
Korpa	Iceland	Jun 27	Jun 11	2.63	3.23	158	95	Aug 15	Aug 13	0.22	2.16	56	86
Lacombe Composite	Canada	Jun 27	Jun 11	2.26	3.55	136	104	Aug 15	Aug 13	0.43	2.31	110	92
Ludor	France	Jun 27	Jun 11	1.13	2.68	68	79	Aug 15	Aug 13	0.22	2.51	56	100
Melora	Netherlands	Jun 27	Jun 11	1.31	2.74	79	81	Aug 15	Aug 13	0.16	2.39	41	96
Nosappu	Japan	Jun 27	Jun 11	1.53	3.62	92	106	Aug 15	Aug 13	0.50	2.50	128	100
Salvo	Canada	Jun 27	Jun 11	1.36	3.35	82	99	Aug 15	Aug 13	0.32	2.55	82	102
Mean				1.64	3.13					0.33	2.43		
L.S.D. (P = .05)				0.52	0.49					0.17	0.46		

Timothy

 Test Site: Gimle
 Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield					
		Day Cut		(DM)	t/ha	% of Climax		Day Cut		(DM)	t/ha	% of Climax	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Alpage	France	Jun 22	Jun 14	1.29	0.98	101	90	Aug 19	Aug 16	1.06	0.64	73	96
Climax*	Canada	Jun 22	Jun 14	1.28	1.09	100	100	Aug 19	Aug 16	1.45	0.67	100	100
Hokusyu	Japan	Jun 22	Jun 14	0.87	0.80	68	73	Aug 19	Aug 16	1.65	1.06	114	158
Korpa	Iceland	Jun 22	Jun 14	1.30	0.76	102	70	Aug 19	Aug 16	0.43	0.56	30	84
Lacombe Composite	Canada	Jun 22	Jun 14	1.53	1.04	120	95	Aug 19	Aug 16	1.02	0.63	70	94
Ludor	France	Jun 22	Jun 14	0.94	0.97	73	89	Aug 19	Aug 16	1.31	0.71	90	106
Melora	Netherlands	Jun 22	Jun 14	1.05	0.76	82	70	Aug 19	Aug 16	1.42	0.67	98	100
Nosappu	Japan	Jun 22	Jun 14	1.36	1.42	106	130	Aug 19	Aug 16	1.14	0.49	79	73
Salvo	Canada	Jun 22	Jun 14	1.30	1.54	102	141	Aug 19	Aug 16	1.68	0.66	116	99
Mean				1.21	1.04					1.24	0.68		
L.S.D. (P = .05)				0.31	0.23					0.48	0.22		

Summary of Timothy Herbage Yields
 1982 Seeding Year - 1983 Harvest
 (Yields are shown as % of Climax)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Alpage	France	57	106	(a)		(b)		99	100	101	73	(b)		86	93
Climax*	Canada	100	100					100	100	100	100			100	100
Hokusyu	Japan	103	104					77	85	68	114			83	101
Korpa	Iceland	39	42					158	56	102	30			100	43
Lacombe Composite	Canada	183	108					136	110	120	70			146	96
Ludor	France	13	67					68	56	73	90			51	71
Melora	Netherlands	43	85					79	41	82	98			68	75
Nosappu	Japan	84	118					92	128	106	79			94	108
Salvo	Canada	68	117					82	82	102	116			84	105
Climax Yield in (DM) t/ha		0.88	2.99					1.66	0.39	1.28	1.45			1.27	1.61

(a) Not seeded in 1982

(b) No stand establishment in 1982

Summary of Timothy Herbage Yields
 1982 Seeding Year - 1984 Harvest
 (Yields are shown as % of Climax)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Alpage	France	102	90	(a)		(b)		93	88	90	96	(b)		95	91
Climax*	Canada	100	100					100	100	100	100			100	100
Hokusyu	Japan	75	96					72	110	73	158			73	121
Korpa	Iceland	72	85					95	86	70	84			79	85
Lacombe Composite	Canada	123	85					104	92	95	94			107	90
Ludor	France	55	69					79	100	89	106			74	92
Melora	Netherlands	73	85					81	96	70	100			75	94
Nosappu	Japan	109	81					106	100	130	73			115	85
Salvo	Canada	122	105					99	102	141	99			121	102
Climax Yield in (DM) t/ha		1.81	1.36					3.40	2.50	1.09	0.67			2.10	1.51

(a) Not seeded in 1982

(b) No stand establishment in 1982

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe	Seed Yield	
					kg/ha 1984	% of Beaver
Anik	Canada	9	58	Sep 19	280	151
Backa	Yugoslavia	9	68	Sep 19	56	30
Baker	United States	9	67	Sep 19	197	106
Banat	Yugoslavia	9	65	Sep 19	71	38
Beaver*	Canada	9	65	Sep 19	186	100
Belfeuil	France	9	65	Sep 19	176	95
Cayuga	United States	9	60	Sep 19	30	16
Cherokee	United States	9	62	Sep 19	118	63
Delta	Italy	9	65	Sep 19	19	10
Derby	France	9	73	Sep 19	245	132
DuPuits	France	9	63	Sep 19	211	113
Euver	France	9	62	Sep 19	124	67
Everest	France	9	63	Sep 19	153	82
Jade	France	9	63	Sep 19	199	107
Kara	France	9	67	Sep 19	324	174
KM-Hybridalfa	Hungary	9	60	Sep 19	39	21
Lutece	France	9	67	Sep 19	146	78
O.A.C. Minto	Canada	9	70	Sep 19	222	119
Orchesienne	France	9	68	Sep 19	173	93
Peace	Canada	9	60	Sep 19	131	70
Perry	United States	9	63	Sep 19	161	87
Prescot	Denmark	9	60	Sep 19	95	51
Ranger	United States	9	65	Sep 19	76	41
Saranac	United States	9	65	Sep 19	286	154
Sitel	France	9	62	Sep 19	206	111
Spredor 2	United States	9	63	Sep 19	139	75
Szarvasi 1	Hungary	9	67	Sep 19	186	100
Szarvasi 6	Hungary	9	58	Sep 19	56	30
Teton	United States	9	55	Sep 19	147	79
Trumpetor	Canada	9	68	Sep 19	205	110
Veko	Denmark	9	63	Sep 19	131	70
Vela	Denmark	9	65	Sep 19	335	180
Verko	Hungary	9	62	Sep 19	78	42
Verneuil	France	9	68	Sep 19	114	61
Vrsac	Yugoslavia	9	68	Sep 19	54	29
Zia	United States	9	65	Sep 19	52	28
123	United States	9	62	Sep 19	143	77

Mean

150

L.S.D. (P = .05)

97

Test Site: Beaverlodge Research Station
Seeding Year: 1983

Alfalfa

Cultivar	Origin	1st Herbage Yield			2nd Herbage Yield		
		Day Cut	(DM) t/ha	% of Beaver	Day Cut	(DM) t/ha	% of Beaver
Anik	Canada	Jun 25	2.75	75	Sep 17	0.53	37
Backa	Yugoslavia	Jun 25	2.78	76	Sep 17	1.45	101
Baker	United States	Jun 25	3.07	84	Sep 17	1.33	93
Banat	Yugoslavia	Jun 25	2.75	75	Sep 17	1.26	88
Beaver*	Canada	Jun 25	3.65	100	Sep 17	1.43	100
Belfeuil	France	Jun 25	3.88	106	Sep 17	1.79	125
Cayuga	United States	Jun 25	2.57	70	Sep 17	0.91	64
Cherokee	United States	Jun 25	2.81	77	Sep 17	1.41	99
Delta	Italy	Jun 25	2.68	73	Sep 17	1.16	81
Derby	France	Jun 25	3.34	92	Sep 17	1.30	91
DuPuits	France	Jun 25	3.14	86	Sep 17	1.58	110
Euver	France	Jun 25	2.91	80	Sep 17	1.53	107
Everest	France	Jun 25	3.06	84	Sep 17	1.31	92
Jade	France	Jun 25	2.80	77	Sep 17	1.45	101
Kara	France	Jun 25	2.81	77	Sep 17	1.49	104
KM-Hybridalfa	Hungary	Jun 25	3.09	85	Sep 17	1.14	80
Lutece	France	Jun 25	3.82	105	Sep 17	1.58	110
O.A.C. Minto	Canada	Jun 25	2.94	81	Sep 17	1.44	101
Orchesienne	France	Jun 25	3.24	89	Sep 17	1.53	107
Peace	Canada	Jun 25	4.24	116	Sep 17	1.20	84
Perry	United States	Jun 25	3.67	101	Sep 17	1.34	94
Prescot	Denmark	Jun 25	3.56	98	Sep 17	1.37	96
Ranger	United States	Jun 25	2.70	74	Sep 17	1.09	76
Saranac	United States	Jun 25	3.14	86	Sep 17	1.48	103
Sitel	France	Jun 25	3.09	85	Sep 17	1.36	95
Spredor 2	United States	Jun 25	2.85	78	Sep 17	1.07	75
Szarvasi 1	Hungary	Jun 25	3.41	93	Sep 17	1.39	97
Szarvasi 6	Hungary	Jun 25	2.62	72	Sep 17	1.15	80
Teton	United States	Jun 25	2.88	79	Sep 17	0.68	48
Trumpetor	Canada	Jun 25	3.34	92	Sep 17	2.13	149
Veko	Denmark	Jun 25	3.72	102	Sep 17	1.44	101
Vela	Denmark	Jun 25	3.29	90	Sep 17	1.53	107
Verko	Hungary	Jun 25	4.17	114	Sep 17	1.71	120
Verneuill	France	Jun 25	3.19	87	Sep 17	1.63	114
Vrsac	Yugoslavia	Jun 25	3.26	89	Sep 17	1.29	90
Zia	United States	Jun 25	2.43	66	Sep 17	0.82	57
123	United States	Jun 25	2.31	63	Sep 17	1.30	91
Mean			3.15			1.34	
L.S.D. (P = .05)			0.94			0.49	

Red Clover

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	Hardiness		Height (cm)	Date Ripe		Seed Yield			
		1983	1984		1983	1984	kg/ha		% of Altaswede	
							1983	1984	1983	1984
Altaswede*	Canada	7.8	7.0	65	Sep 21	(a)	396	(a)	100	(a)
Florex	United States	4.3	1.3	45	Sep 21		124		31	
Florie	United States	3.5	0.8	44	Sep 21		68		17	
Gollum	Denmark	7.0	2.5	54	Sep 21		337		85	
Marino	East Germany	4.8	1.0	41	Sep 21		138		35	
Palna	Denmark	5.8	2.3	53	Sep 21		360		91	
Sara 4n	Sweden	5.3	1.0	58	Sep 21		146		37	
Tristan	United States	3.5	1.3	35	Sep 21		85		21	
Mean							207			
L.S.D. (P = .05)							88			

Test Site: Gimle
Seeding Year: 1982

Altaswede*	Canada	9.0	8.3	76	Sep 20	Aug 20	206	441	100	100
Florex	United States	9.0	6.0	59	Sep 20	Aug 20	65	536	32	122
Florie	United States	8.8	4.5	50	Sep 20	Aug 20	48	293	23	66
Gollum	Denmark	9.0	6.0	70	Sep 20	Aug 20	126	449	61	102
Marino	East Germany	8.8	4.5	59	Sep 20	Aug 20	80	216	39	49
Palna	Denmark	8.8	6.8	71	Sep 20	Aug 20	124	503	60	114
Sara 4n	Sweden	8.8	3.8	74	Sep 20	Aug 20	51	332	25	75
Tristan	United States	9.0	5.0	54	Sep 20	Aug 20	79	350	38	79
Mean							97	390		
L.S.D. (P = .05)							58	112		

(a) Seed not harvested

Summary of Red Clover Seed Yields
1982 Seeding Year
(Yields are shown as % of Altaswede)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Altaswede*	Canada	100	(d)	(a)		(b)		(c)		100	100	(b)		100	100
Florex	United States	31								32	122			32	122
Florie	United States	17								23	66			20	66
Gollum	Denmark	85								61	102			73	102
Marino	East Germany	35								39	49			37	49
Palna	Denmark	91								60	114			76	114
Sara 4n	Sweden	37								25	75			31	75
Tristan	United States	21								38	79			30	79
Altaswede Yield in kg/ha		396								206	441			301	441

- (a) Not seeded in 1982
 (b) No stand establishment in 1982
 (c) Complete winterkill
 (d) Seed not harvested

Red Clover

Test Site: Beaverlodge Research Station
Seeding Year: 1982

Cultivar	Origin	1st Herbage Yield						2nd Herbage Yield							
		Day Cut		(DM)	t/ha		% of Altaswede		Day Cut		(DM)	t/ha		% of Altaswede	
		1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984
Altaswede*	Canada	Jul 19	(a)	3.45		100		Sep 21	(a)	2.41		100			
Florex	United States	Jul 8		0.99		29		Sep 21		3.81		158			
Florie	United States	Jul 5		0.30		9		Sep 21		2.64		110			
Gollum	Denmark	Jul 19		1.76		51		Sep 21		1.57		65			
Marino	East Germany	Jun 30		0.31		9		Sep 21		3.73		155			
Palna	Denmark	Jul 13		1.75		51		Sep 21		2.59		107			
Sara 4n	Sweden	Jul 19		2.39		69		Sep 21		1.88		78			
Tristan	United States	Jun 30		0.22		6		Sep 21		3.29		137			
Mean				1.39						2.74					
L.S.D. (P = .05)				1.05						1.13					

Test Site: Gimle
Seeding Year: 1982

Altaswede*	Canada	Jul 13	Jun 28	4.32	3.51	100	100	Sep 19	Aug 20	1.64	0.87	100	100
Florex	United States	Jun 29	Jun 28	2.22	1.74	51	50	Sep 19	Aug 20	3.42	1.13	209	130
Florie	United States	Jun 29	Jun 28	1.23	1.00	28	28	Sep 19	Aug 20	3.82	1.41	233	162
Gollum	Denmark	Jul 13	Jun 28	2.96	1.06	69	30	Sep 19	Aug 20	1.87	0.89	114	102
Marino	East Germany	Jun 29	Jun 28	1.25	0.87	29	25	Sep 19	Aug 20	2.00	1.48	122	170
Palna	Denmark	Jul 13	Jun 28	2.97	1.44	69	41	Sep 19	Aug 20	2.26	0.88	138	101
Sara 4n	Sweden	Jul 13	Jun 28	3.97	0.67	92	19	Sep 19	Aug 20	1.62	0.80	99	92
Tristan	United States	Jun 29	Jun 28	1.24	1.22	29	35	Sep 19	Aug 20	3.27	1.50	199	172
Mean				2.52	1.44					2.49	1.12		
L.S.D. (P = .05)				0.65	0.81					1.49	0.35		

(a) Herbage not taken

Summary of Red Clover Herbage Yields
 1982 Seeding Year - 1983 Harvest
 (Yields are shown as % of Altaswede)

Cultivar	Origin	B'lodge A		B'lodge B		Falher		Fort Vermilion		Gimle		High Level		All Locations (Average)	
		1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut	1st Cut	2nd Cut
Altaswede*	Canada	100	100	(a)		(b)		(c)		100	100	(b)		100	100
Florex	United States	29	158							51	209			40	184
Florie	United States	9	110							28	233			19	172
Gollum	Denmark	51	65							69	114			60	90
Marino	East Germany	9	155							29	122			19	139
Palna	Denmark	51	107							69	138			60	123
Sara 4n	Sweden	69	78							92	99			81	89
Tristan	United States	6	137							29	199			18	168
Altaswede Yield in (DM) t/ha		3.45	2.41							4.32	1.64			3.89	2.03

(a) Not seeded in 1982

(b) No stand establishment in 1982

(c) Complete winterkill

B

Cultivar Screening Trial
Seeding Year: 1982

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating		Herbage Yield Rating	
					1983	1984	1983	1984
Bluegrass, Kentucky (<u>Poa pratensis</u> L.)								
	Barzan	Netherlands	5.0	48	3.0	3.0	1.0	2.0
	Bono	Canada	5.0	61	2.0	3.5	3.0	3.0
	Entopper	Netherlands	5.0	55	2.0	5.0	2.0	3.0
	Glade	United States	5.0	59	1.0	3.0	1.0	2.0
	#171	Finland	5.0	63	3.5	5.0	3.5	4.0
	Park*	United States	5.0	71	4.0	3.5	3.5	4.5
	Petit	Denmark	5.0	59	2.0	3.0	2.0	2.5
	Reubens (1)	United States	5.0	50	4.0	5.0	3.5	3.5
	Ryosti	Finland	5.0	70	5.0	5.0	5.0	3.0

* Park (Yield in kg/ha)

522

(1) Canada Bluegrass (Poa compressa L.)

Bromegrass, Smooth (Bromus inermis Leyss.)

	Bromex	United States	5.0	111	4.5	1.5	4.0	3.5
	Carlton*	Canada	5.0	113	5.0	4.0	5.0	4.5
	Lofar	Norway	5.0	115	3.5	3.5	4.0	4.5
	S-8778	Canada	5.0	119	4.5	3.5	4.5	4.5
	S-8792	Canada	5.0	123	5.0	3.0	5.0	4.5
	WWF 73	Sweden	4.0	115	2.0	4.5	2.0	4.0
	WWF 74	Sweden	5.0	113	1.5	3.5	2.5	4.0
	WWF 75	Sweden	2.8	108	1.5	1.5	1.0	2.0
	WWF 76	Sweden	5.0	107	1.5	3.0	2.0	3.0

* Carlton (Yield in kg/ha)

552

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating		Herbage Yield Rating		
					1983	1984	1983	1984	
Fescue, Meadow (<i>Festuca pratensis</i> Huds.; <i>F. elatior</i> auct.)									
	Barnardo	Netherlands	5.0	85	3.0	4.5	3.5	3.5	
	Barracuda	Netherlands	5.0	88	3.0	5.0	2.0	3.5	
	First	Japan	5.0	103	5.0	4.5	5.0	4.5	
	Kalevi	Finland	5.0	94	5.0	4.5	5.0	4.0	
	Lifesta	West Germany	5.0	93	4.5	5.0	4.5	4.5	
	Mimer*	Sweden	5.0	96	4.5	4.0	4.0	5.0	
	N 208	West Germany	5.0	97	4.5	4.5	4.5	4.5	
	N 209	West Germany	5.0	94	3.5	4.5	4.0	5.0	
	N 211	West Germany	5.0	87	4.0	4.0	3.5	4.0	
	VG 01259	Sweden	4.8	90	4.5	5.0	4.0	5.0	
	WWAS 6-70	Sweden	5.0	92	3.0	3.5	3.5	4.0	
	* Mimer (Yield in kg/ha)					842			
Fescue, Red (<i>Festuca rubra</i> L.)									
	BAR FRC 78 (3)	Netherlands	5.0	67	2.0	3.5	2.0	4.5	
	Boreal* (3)	Canada	5.0	78	5.0	4.5	4.5	5.0	
	Dorado (1)	West Germany	5.0	71	1.0	4.5	1.5	4.5	
	Feru 0305 (3)	Iceland	5.0	59	1.0	4.0	1.5	2.5	
	FRT 3 (3)	Netherlands	5.0	49	3.0	2.5	3.0	3.0	
	Islandic (3)	Netherlands	5.0	75	3.5	3.5	3.5	4.5	
	Leik (3)	Norway	5.0	76	3.5	5.0	4.5	5.0	
	Lovisa (2)	Sweden	5.0	65	3.0	4.0	3.0	4.5	
	Ludivine (1)	France	5.0	64	1.0	4.0	2.0	5.0	
	M6-8537 (4)	United Kingdom	5.0	62	1.0	1.0	1.5	2.0	
	M6-8754 (4)	United Kingdom	5.0	55	1.0	2.0	1.0	1.5	
	M6-8755 (4)	United Kingdom	5.0	54	1.0	1.5	1.0	2.0	
	Meldal (3)	Norway	5.0	73	1.0	4.0	1.0	4.0	
	MOM FRR 25 (3)	Netherlands	5.0	64	1.0	4.0	1.0	4.0	

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating		Herbage Yield Rating		
					1983	1984	1983	1984	
Fescue, Red (<i>Festuca rubra</i> L.) cont'd									
	N 105	(3)	West Germany	5.0	70	2.0	3.5	3.0	4.0
	N 106	(3)	West Germany	5.0	67	2.0	4.0	2.0	4.5
	N 120	(3)	West Germany	5.0	69	3.0	4.0	3.5	5.0
	N 124	(3)	West Germany	5.0	70	4.0	3.0	4.5	3.5
	N 125	(3)	West Germany	5.0	72	3.5	3.5	3.0	3.5
	Oasis	(2)	Netherlands	5.0	70	2.5	3.0	3.0	4.0
	Regand	(1)	West Germany	5.0	58	1.0	2.5	1.5	4.0
	Satin	(2)	Sweden	5.0	72	4.5	3.0	4.0	4.5
	Singsas	(3)	Norway	5.0	68	2.5	5.0	2.5	4.0
	WWS 107	(3)	Sweden	5.0	68	2.5	5.0	2.0	5.0
	WWS 108	(3)	Sweden	5.0	63	2.5	4.0	2.5	3.5
	WWS 110	(3)	Sweden	5.0	63	2.5	3.5	3.0	3.0
	WWS 111	(3)	Sweden	5.0	67	1.5	3.0	1.5	2.5
	WWS 112	(3)	Sweden	5.0	68	3.0	5.0	3.5	4.0
	WWS 113	(3)	Sweden	5.0	63	2.5	3.0	3.0	3.5
	WWS 114	(1)	Sweden	5.0	70	2.5	4.5	3.5	4.0

* Boreal (Yield in kg/ha)

(1) Rhizomes absent or rudimentary

(2) Slender rhizomes

(3) Strong rhizomes

(4) Unclassified

937

Orchardgrass (*Dactylis glomerata* L.)

Barata	Netherlands	4.0	92	1.0	1.0	2.0	2.5
Comet	United Kingdom	5.0	101	2.0	1.5	3.0	4.5
Conrad	United States	0	0	0	0	1.0	0
Dakta	Denmark	5.0	98	1.5	1.0	2.5	2.5
Hayking	Japan	5.0	102	3.0	2.0	3.5	3.5

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating		Herbage Yield Rating		
					1983	1984	1983	1984	
Orchardgrass (<u>Dactylis glomerata</u> L.) cont'd									
	ISI80 A	Netherlands	5.0	99	2.0	2.0	3.0	3.5	
	ISI80 B	Netherlands	4.5	99	1.0	3.5	2.5	3.5	
	ISI80 C	Netherlands	4.5	98	2.0	2.0	4.0	3.5	
	Kay*	Canada	5.0	111	3.5	4.0	4.0	4.5	
	Lucyle	France	5.0	100	2.0	1.5	2.5	3.0	
	Mobite	Netherlands	5.0	101	3.0	1.5	3.0	3.5	
	Orion	United States	5.0	110	4.5	3.5	4.0	4.5	
	Sparta	Denmark	5.0	95	1.0	1.0	2.5	3.0	
	* Kay (Yield in kg/ha)					503			

Cultivar Screening Trial
Seeding Year: 1983

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Clover, Red (<u>Trifolium pratense</u> L.)						
	Alpilles	France	1.7		1.0	1.3
	Altaswede*	Canada	5.0		5.0	5.0
	Bjorn	Sweden	5.0		5.0	5.0
	Cremonese	Italy	1.0		1.0	0.7
	Dell'Italia Centrale	Italy	0		0	0
	Fertodi M	Hungary	3.7		3.3	4.3
	Grasslands Turoa	New Zealand	2.0		1.0	1.7
	Kenland	United States	4.0		4.0	3.7
	Noe	France	2.3		1.3	2.3
	Norlac	Canada	5.0		5.0	5.0
	Piemontese	Italy	1.0		1.0	1.0
	Pradi	Norway	5.0		5.0	5.0
	Rajana 4n	Denmark	4.3		4.0	4.0
	Triel	France	2.3		2.0	2.3
	Trifomo 4n	Netherlands	4.3		4.0	4.0
	Vesta Daehnfeldt	Denmark	5.0		5.0	4.7

* Altaswede (Yield in kg/ha)

117

Clover, White (Trifolium repens L.)

	Aran	Ireland	4.0	20	1.7	1.7
	Donna	United Kingdom	4.0	17	3.0	1.0
	Gandalf	Denmark	4.7	32	4.3	3.0
	Karina	West Germany	4.7	25	5.0	2.7
	Lirepa	West Germany	5.0	30	5.0	2.7
	Menna	United Kingdom	4.3	20	4.3	1.7
	Nesta	United Kingdom	5.0	27	4.0	2.3
	Nora*	Sweden	4.7	25	4.7	2.7

* Nora (Yield in kg/ha)

315

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Bromegrass, Smooth (<u>Bromus inermis</u> Leys.)						
	Bellegarde (1)	France	0	0	0	0
	Carlton*	Canada	5.0	110	5.0	5.0
	Lubro (2)	France	4.0	75	2.3	2.0
	Szarvasi 52	Hungary	5.0	107	3.7	4.3
	* Carlton (Yield in kg/ha)				1057	
	(1) Rescue or Prairie Grass (<u>Bromus willdenowii</u> Kunth; <u>B. catharticus</u>)					
	(2) <u>Bromus sitchensis</u> Bong					
Fescue, Hard (<u>Festuca duruiscula</u> auct.)						
	Biljart*	Netherlands	5.0	43	2.0	1.0
	Crystal	Netherlands	5.0	50	1.3	1.0
	Hartina	Netherlands	5.0	47	1.7	1.0
	Scaldis	Netherlands	5.0	52	1.7	1.0
	Tournament	Netherlands	5.0	45	1.7	1.0
	Trol	Netherlands	5.0	47	1.3	1.0
	Valda	Netherlands	5.0	43	1.0	1.0
	Waldina	Netherlands	5.0	48	1.3	1.0
	* Biljart (Yield in kg/ha)				177	
Fescue, Meadow (<u>Festuca pratensis</u> Huds.; <u>F. elatior</u> auct.)						
	Barverte	Netherlands	5.0	103	4.0	4.0
	Beaumont	United States	5.0	102	5.0	4.0
	Djebebina	Tunisia	0	0	0	0
	Else	Denmark	5.0	102	5.0	5.0
	Maldo	Denmark	5.0	103	5.0	5.0
	Mimer*	Sweden	5.0	103	4.7	4.7
	NFG	West Germany	5.0	95	5.0	4.3
	Otava	Czechoslovakia	5.0	107	5.0	4.7
	Predix	Switzerland	5.0	98	5.0	4.7

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Fescue, Meadow (<i>Festuca pratensis</i> Huds.; <i>F. elatior</i> auct.) cont'd						
	Prefest	Switzerland	5.0	98	5.0	4.0
	Remko	Netherlands	5.0	97	4.7	4.0
	Salfat	Denmark	5.0	103	4.7	5.0
	Szarvasi 54	Hungary	5.0	100	4.7	5.0
	920	Canada	5.0	102	5.0	5.0
	930	Canada	5.0	107	4.7	4.7
	* Mimer (Yield in kg/ha)				1007	

Fescue, Red (*Festuca rubra* L.)

Accent	(3)	Netherlands	5.0	80	5.0	5.0
Artist	(2)	Netherlands	5.0	65	3.7	3.7
Bar Frc 77-1	(1)	Netherlands	5.0	85	4.7	5.0
Bellamy	(1)	Netherlands	5.0	75	4.3	4.7
Boreal*	(3)	Canada	5.0	82	5.0	5.0
Center	(1)	Netherlands	5.0	70	3.3	3.7
Ceres	(1)	Netherlands	5.0	73	3.3	4.0
Claret	(1)	Netherlands	5.0	73	3.3	3.7
Contour	(1)	Netherlands	5.0	73	4.3	5.0
Countess	(1)	Ireland	5.0	67	4.0	4.0
Feru 0301	(3)	Iceland	5.0	53	2.3	2.3
Feru 0313	(3)	Iceland	5.0	60	3.0	2.7
FR HJA 37/13	(3)	Finland	5.0	63	4.0	3.3
Logro FRT	(4)	Ireland	5.0	50	3.0	2.7
Lovisa	(2)	Sweden	5.0	62	4.3	4.0
Mars	(1)	Netherlands	5.0	80	3.7	4.3
Mary	(1)	Netherlands	5.0	77	4.7	4.7
Milan	(1)	West Germany	5.0	67	2.7	3.0
Osiris	(1)	Netherlands	5.0	63	4.3	3.7
Pharus	(1)	Netherlands	5.0	68	2.3	2.7
Rodeo	(1)	Netherlands	5.0	68	3.0	4.0
Wilma	(1)	Sweden	5.0	70	4.3	4.3

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Fescue, Red (<u>Festuca rubra</u> L.) cont'd						
	WRS 116	(3) Sweden	5.0	75	4.0	4.7
	WRS 121	(3) Sweden	5.0	73	4.0	4.7
	* Boreal (Yield in kg/ha)				1292	
	(1) Rhizomes absent or rudimentary					
	(2) Slender rhizomes					
	(3) Strong rhizomes					
	(4) Unclassified					
Fescue, Sheep's (<u>Festuca ovina</u> L. <u>sensu lato</u>)						
	Fertalia*	Belgium	5.0	40	2.7	1.7
	HM 102	Norway	5.0	37	2.3	1.0
	Livina	West Germany	5.0	45	4.3	1.7
	Liwally	West Germany	5.0	40	3.7	1.7
	Ridu	Denmark	5.0	53	3.0	1.0
	Rosette	United Kingdom	5.0	35	2.3	1.3
	Triana	Denmark	5.0	57	3.3	1.0
	Urial	France	5.0	30	1.3	1.0
	*Fertalia (Yield in kg/ha)				110	
Fescue, Tall (<u>Festuca arundinacea</u> Schreb.)						
	Barcel	Netherlands	5.0	95	3.7	3.3
	Conway	United Kingdom	5.0	93	2.7	4.7
	Dovey	United Kingdom	5.0	92	2.7	3.3
	Grasslands Roa	New Zealand	5.0	90	2.0	3.3
	Kenhy	United States	5.0	98	4.0	4.7
	Kentucky 31*	United States	5.0	97	4.3	5.0
	Lubrette	France	5.0	97	2.7	3.7

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Fescue, Tall (<i>Festuca arundinacea</i> Schreb.) cont'd						
	Monaco	Netherlands	5.0	95	3.0	4.0
	Nutex	West Germany	5.0	103	4.3	4.0
	Olympic	United States	5.0	90	3.0	3.0
	Ondine	France	5.0	95	3.0	4.3
	Pastelle	France	5.0	95	3.7	3.7
	Penna	Italy	5.0	92	3.0	4.7
	Raba	France	5.0	85	2.0	3.0
	Rebel	United States	5.0	87	3.0	2.7
	Sopline	France	5.0	98	3.3	3.7
	1039	Canada	5.0	103	5.0	4.7
	*Kentucky 31 (Yield in kg/ha)				974	

Orchardgrass (*Dactylis glomerata* L.)

	Amba	Denmark	4.3	93	1.3	3.7
	Angelkamp	West Germany	5.0	103	3.0	5.0
	Apelsvoll	Norway	5.0	110	4.0	5.0
	Barbridge	Netherlands	5.0	83	1.3	3.3
	Bartyle	Netherlands	4.7	88	2.0	4.0
	BC 6611	Canada	5.0	108	4.7	5.0
	B-15	Yugoslavia	3.0	72	0.7	2.3
	Dactus	Sweden	4.3	100	1.0	3.3
	Grassland Kara	New Zealand	2.0	45	0	1.7
	Grassland Wana	New Zealand	0	0	0	0
	Haka	Finland	5.0	105	3.0	5.0
	Hattfjelldal	Norway	5.0	108	5.0	5.0
	Hera Daehnfeldt	Denmark	5.0	97	1.3	4.0
	Karkloof	South Africa	2.3	68	0.7	1.7
	Kay*	Canada	5.0	102	2.7	5.0
	Lara	Switzerland	4.7	72	0.7	3.0
	LD 3015	Denmark	4.0	80	1.0	3.0
	Lemba R.v.P.	Belgium	4.7	80	1.0	3.0
	Lude	France	3.0	43	0.3	2.3

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Orchardgrass (<u>Dactylis glomerata</u> L.) cont'd						
	Lully	France	4.0	58	0.3	2.3
	Lutetia	France	3.7	68	0.7	2.3
	Milona	Czechoslovakia	4.3	83	1.0	3.0
	Ornehoj	Denmark	4.7	93	1.0	3.7
	Phyllox Daehnfeltd	Denmark	3.3	78	1.0	3.3
	Potomac	United States	5.0	95	1.0	4.0
	Predac	Switzerland	4.3	73	0.7	3.3
	Reda	Switzerland	5.0	88	1.0	4.0
	Sylvan	United Kingdom	3.3	85	1.0	3.0
	Szarvasi 51	Hungary	5.0	87	1.0	4.0
	Tareda	Switzerland	4.7	85	1.0	3.0
	Valido	Netherlands	3.7	62	0.7	2.3
	* Kay (Yield in kg/ha)				175	
Reed Canarygrass (<u>Phalaris arundinacea</u> L.)						
	Castor*	Canada	5.0	128	2.0	4.0
	Szarvasi 50	Hungary	5.0	118	1.0	4.0
	* Castor (Yield in kg/ha)				44	
Timothy (<u>Phleum pratense</u> L.)						
	Barliza	Netherlands	5.0	95	5.0	5.0
	Bero Daehnfeltd	Denmark	5.0	102	5.0	4.7
	Climax*	Canada	5.0	103	5.0	5.0
	Engmo	Norway	5.0	100	5.0	4.7
	Liam (1)	United Kingdom	5.0	55	5.0	1.0
	Php 9	Netherlands	5.0	97	5.0	5.0
	Saga	Sweden	5.0	102	5.0	5.0

Species	Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Rating	Herbage Yield Rating
Timothy (<u>Phleum pratense</u> L.) cont'd						
	SKI 49	West Germany	5.0	93	5.0	3.7
	Tiller	Netherlands	5.0	93	5.0	4.7
	Tirom	Rumania	5.0	103	5.0	5.0
	* Climax (Yield in kg/ha)				606	
	(1) Turf Timothy (<u>Phleum bertolonii</u> DC)					
Wheatgrass, Intermediate (<u>Agropyron intermedium</u> (Host) Beauv. ex Baumg.)						
	Chief*	Canada	5.0	127	5.0	3.7
	Clarke	Canada	5.0	118	5.0	4.0
	Oake	United States	5.0	135	5.0	4.7
	Sisagro	Italy	5.0	125	5.0	4.3
	* Chief (Yield in kg/ha)				535	
Wildrye, Russian (<u>Elymus junceus</u> Fisch.)						
	Cabree	Canada	5.0	30	0	1.0
	Sawki*	Canada	5.0	30	0	1.0
	* Sawki (Yield in kg/ha)				0	

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SUMMARY OF FORAGE SEED YIELDS IN NORTHERN ALBERTA

Species Cultivar	Origin	B'lodge A	B'lodge B	Falher	Fort Vermilion	Gimle	High Level	All Locations
Bromegrass, Smooth (<u>Bromus inermis</u> Leyss.) Yields shown as % of Carlton								
Baylor	United States	68(3)*	55(3)	73(3)	72(3)		56(3)	65(15)
Beacon	United States	65(5)			45(2)	62(2)		60(9)
Blair	United States	42(3)	41(3)	43(3)	52(3)		40(3)	44(15)
Carlton	Canada	100(8)	100(6)	100(6)	100(8)	100(2)	100(3)	100(33)
Jubilee	Canada	60(5)	55(3)	52(3)	51(5)	64(2)	51(3)	55(21)
Lyon	United States	46(3)	70(3)	68(3)	52(3)			59(12)
Magna	Canada	86(3)	92(6)	99(6)	108(6)		96(3)	98(24)
Orfeu	Rumania	81(6)	91(3)	94(3)	79(3)		107(3)	89(18)
Regar(1)	United States	47(3)	50(6)	45(6)	38(6)		38(3)	44(24)
Signal	Canada	124(8)	118(3)	105(3)	123(5)	157(2)	117(3)	123(24)
Svaja	Sweden	81(5)	78(3)	71(3)	69(5)	65(2)	64(3)	72(21)
Tempo	Canada	54(6)	56(6)	51(6)	67(6)			57(24)
Carlton (Yield in kg/ha)		691	624	611	563	248	601	598(33)

(1) Meadow Bromegrass - (Bromus biebersteinii Roem et Schult.)

* Data years.

Fescue, Red (Festuca rubra L.) Yields shown as % of Boreal

Agram	(1)	Netherlands	46(5)	28(6)	24(6)	29(4)		31(21)
Atlanta	(1)	Netherlands	34(5)	21(3)	20(3)	24(2)		24(13)
Ballade	(2)	France	9(3)	16(3)	8(3)	17(2)		11(13)
Banner	(1)	United States	56(5)	37(6)	43(6)	34(4)	8(2)	41(23)
Bastide	(2)	France	20(6)	19(6)	9(6)	4(4)	21(2)	14(24)
Bergond	(3)	Denmark	39(3)				11(2)	39(3)
Bingo	(1)	Netherlands	21(3)	30(3)	22(3)	51(2)		29(11)
Boreal	(3)	Canada	100(10)	100(6)	100(6)	100(6)	100(2)	100(32)
Cascade	(4)	United States		23(3)	21(3)	18(2)		21(8)
Checker	(4)	United States	50(3)	29(3)	26(3)	36(2)		35(11)
Chiwago	(2)	West Germany	36(2)					36(2)
Dawson	(2)	Netherlands		39(3)	43(2)	21(2)		35(7)
Diamond	(1)	Netherlands	50(2)	24(3)	27(3)	18(2)		29(10)
Eboli	(1)	Denmark	15(2)					15(2)

Species	Cultivar	Origin	B'lodge A	B'lodge B	Falher	Fort Vermilion	Gimle	High Level	All Locations
	Encota	(1) Netherlands		18(3)	22(3)	20(2)			20(8)
	Engina	(3) Netherlands	73(3)	112(3)	67(3)	71(2)			82(11)
	Ensylva	(3) Netherlands	33(6)	45(6)	25(6)	33(4)		42(2)	35(24)
	Envira	(3) Netherlands	72(6)	93(6)	92(6)	69(4)		114(2)	85(24)
	Enzet	(3) Netherlands	93(6)	91(6)	82(6)	74(4)		130(2)	90(24)
	Epaulette	(2) United Kingdom	11(3)	14(3)	11(3)	13(2)		11(2)	12(13)
	Falter	(1) West Germany	10(2)						10(2)
	Famosa	(1) Belgium		19(3)	33(3)	29(2)			27(8)
	Faramir	(2) Denmark	22(2)						22(2)
	Fidelimo	(1) Netherlands	28(5)	30(3)	28(3)	41(4)	31(2)		32(17)
	Fortress	(3) United States	51(6)	73(6)	47(6)	42(4)		58(2)	55(24)
	Frida	(1) Netherlands	17(3)	28(3)	34(2)	25(2)			25(10)
	Futuro	(3) West Germany	21(2)						21(2)
	Gavotte	(1) Netherlands	18(2)						18(2)
	Grelo	(2) Denmark	19(3)	25(3)	7(3)	11(2)			16(11)
	Hackle	(2) United Kingdom	11(3)	9(3)	4(3)	8(2)		3(2)	7(13)
	Hawk	(2) United Kingdom	75(2)						75(2)
	Highlight	(1) Netherlands		29(3)	30(3)	24(2)			28(8)
	Ivalo	(1) Denmark	32(2)	29(6)	19(6)	26(4)			26(19)
	Jade	(1) Netherlands	35(3)						35(3)
	Keszthelyi 2	(2) Hungary	45(3)	63(6)	57(6)	32(4)		43(2)	51(21)
	Koket	(1) Netherlands		40(3)	30(3)	29(2)			34(8)
	Leik	(3) Norway	80(5)	74(3)	66(3)	156(4)	88(2)	121(2)	98(19)
	Lifalla	(1) West Germany		30(3)	33(3)	21(2)			29(8)
	Lirota	(1) West Germany	13(2)						13(2)
	Lirouge	(1) West Germany	19(3)	17(6)	18(6)	29(4)			20(19)
	Lobi	(1) West Germany	36(2)						36(2)
	Luster	(1) Netherlands	18(5)	27(3)	15(3)	35(4)	38(2)		25(17)
	Manoir	(2) France	9(3)	25(3)	7(3)	11(2)			13(11)
	Menuet	(1) Netherlands		28(3)	31(3)	21(2)			27(8)
	Merlin	(2) United Kingdom	13(3)	20(3)	10(3)	8(2)			13(11)
	Milda	(3) France	37(5)	47(3)	39(3)	27(3)	42(2)		38(16)
	Moncorde	(3) Netherlands	55(6)	61(6)	50(6)	61(4)		40(2)	56(24)
	Oasis	(2) Netherlands	20(9)	26(6)	31(5)	13(6)	32(2)		23(28)
	Odra	(1) West Germany		35(3)	46(3)	38(2)			40(8)
	Oriflamme	(2) United Kingdom	18(3)	21(3)	17(3)	31(2)		54(2)	26(13)
	Parita	(1) Netherlands	28(3)	29(3)	30(3)	59(2)			34(11)
	Pernille	(3) Denmark	37(3)	43(6)	35(6)	30(4)		54(2)	38(21)
	Pollux	(3) Denmark		70(6)	62(6)	45(4)		63(2)	61(18)

Species	Cultivar	Origin	B'lodge A	B'lodge B	Falher	Fort Vermilion	Gimle	High Level	All Locations
	Puma	(1) Denmark	32(6)	31(6)	25(6)	31(4)			30(22)
	Rapid	(3) Netherlands	61(3)	87(6)	80(6)	64(4)		116(2)	80(21)
	Rasengold	(1) West Germany		43(3)	44(3)	28(2)			40(8)
	Reptans	(3) Sweden		76(3)	80(3)	75(2)		92(2)	80(19)
	Roland 21	(3) West Germany		72(3)	71(3)	50(2)		68(2)	67(10)
	Rolax	(1) Belgium		48(3)	37(3)	23(2)			39(8)
	Rubina Roskilde	(3) Denmark	58(3)						58(3)
	Scarlet	(1) Netherlands	42(5)	31(6)	28(6)	41(4)			35(21)
	Solfège	(1) France	25(2)						25(2)
	Sonnet	(2) Netherlands	13(3)	18(3)	7(3)	11(2)			12(11)
	Tamara	(1) Denmark		36(3)	39(3)	34(2)			37(8)
	Tatjana	(1) Denmark	30(3)	40(6)	43(5)	47(4)			41(18)
	Tridano	(3) Denmark	56(2)						56(2)
	Valaska	(4) Czechoslovakia	42(5)	23(3)	27(3)	45(4)	44(2)		37(17)
	Veni	(1) Denmark	31(6)	38(6)	38(6)	31(4)			35(22)
	Waldorf	(1) Netherlands		28(3)	24(3)	26(2)			26(8)
	Zernickower	(3) East Germany	62(5)	86(3)	64(3)	75(4)	88(2)	131(2)	79(19)
	Boreal (Yield in kg/ha)		454	585	511	540	594	390	510(32)

- (1) Rhizomes absent or rudimentary.
 (2) Slender rhizomes.
 (3) Strong rhizomes.
 (4) Unclassified.

Timothy (*Phleum pratense* L.) Yields shown as % of Climax

Alpage	France	109(5)	101(3)	137(3)	113(5)	116(2)	99(3)	112(21)
Barnidi	Netherlands	71(3)	76(3)	71(2)	36(1)			69(9)
Barmoti	Netherlands		125(3)	121(2)	85(2)			112(7)
Bartimi	Netherlands	125(3)	112(6)	119(5)	112(5)		83(3)	111(22)
Barvanti	Netherlands	74(3)	61(3)	62(2)	22(2)			57(10)
Basho	Canada	65(6)	77(6)	62(5)	46(3)		40(3)	62(23)
Bilbo	Denmark	119(6)	117(3)	130(3)	121(3)		129(3)	123(18)
Bodin	Norway		155(3)	177(2)	168(2)			165(7)
Bottnia II	Sweden	173(6)	125(6)	164(5)	232(5)		285(3)	185(25)
Bounty	Canada	70(3)	71(3)	72(2)	117(3)		72(3)	81(4)
Castella	Netherlands	76(3)						76(3)
Champ	Canada	109(3)	79(3)	75(2)	84(3)		71(3)	84(14)

Species	Cultivar	Origin	B'ldge A	B'ldge B	Falher	Fort Vermilion	Gimle	High Level	All Locations
	Clair	United States	78(3)						78(3)
	Climax	Canada	100(10)	100(6)	100(5)	100(7)	100(2)	100(3)	100(33)
	Dolema	West Germany	53(3)						53(3)
	Engmo	Norway	185(6)	138(6)	180(5)	239(5)		264(3)	193(25)
	Erecta	Belgium	124(3)	95(6)	104(5)	81(5)		125(3)	102(22)
	Farol	Netherlands		76(3)	59(2)				69(5)
	Forus	Norway		115(3)	117(2)	106(2)			113(7)
	Georgikon	Hungary		110(3)	147(2)	99(2)			117(7)
	Goliath	Netherlands	115(6)	105(6)	123(5)	112(5)		156(3)	119(25)
	Grindstad	Norway		122(3)	88(2)	99(2)			106(7)
	Hokuo	Japan	94(3)	92(3)	60(2)	76(2)			83(10)
	Hokusyu	Japan	124(5)	82(3)	190(3)	110(5)	71(2)	169(3)	125(21)
	Itasca	Sweden	79(3)	75(3)	84(3)	100(3)		101(3)	88(15)
	Korpa	Iceland	251(5)	138(6)	203(5)	222(7)	173(2)	270(3)	207(28)
	Ludor	France	52(5)	50(3)	58(3)	58(5)	61(2)	56(3)	55(21)
	Mannorfer	West Germany		115(3)	113(2)	67(2)			101(7)
	Melora	Netherlands	113(5)	81(3)	105(3)	81(5)	88(2)	90(3)	94(21)
	Mino	Denmark	91(6)	91(6)	77(5)	65(5)		117(3)	86(25)
	Motim	Netherlands	89(3)	69(3)	94(2)	42(2)			75(10)
	Motterwitzer	East Germany	121(3)						121(3)
	Nosappu	Japan	162(5)	126(3)	123(3)	127(5)	115(2)	117(3)	132(21)
	Otto	Finland	164(3)	134(6)	198(5)	194(5)		203(3)	176(22)
	Palermo	Netherlands	41(3)	55(3)	22(2)	9(2)			37(10)
	Para	Poland		105(3)					105(3)
	Phlewiola	West Germany		86(3)	98(2)	104(2)			95(7)
	Polka	United Kingdom	113(6)	101(3)	121(3)	128(3)		90(3)	111(18)
	Pota	Denmark	111(6)	111(6)	105(5)	105(5)		82(3)	105(25)
	Pronto	United States	98(6)	105(6)	100(5)	84(5)		144(3)	103(25)
	Purlieu	United Kingdom	84(6)	96(3)	122(3)	87(3)		92(3)	94(18)
	Ranona	Netherlands		47(6)	10(2)	30(1)			37(9)
	Rasant	West Germany	165(6)	140(6)	214(5)	161(5)		216(3)	174(25)
	Richmond	Canada	100(3)	107(6)	108(5)	97(5)		105(3)	104(22)
	Salvo	Canada	74(7)	68(3)	56(3)	62(5)	60(2)	60(3)	65(23)
	Tammisto	Finland		126(3)	168(2)	157(2)			147(7)
	Tarmo	Finland		139(3)	167(2)	108(2)			138(7)
	Tilda	Denmark	128(3)	108(6)	112(5)	169(3)		146(3)	127(20)
	Timfor	United States	92(3)	89(3)	96(2)	64(2)			86(10)
	Topas Otofte	Denmark	126(6)	105(6)	76(4)	120(5)		127(3)	111(24)
	Verdant	United States	109(6)	102(6)	116(5)	101(5)		120(3)	108(25)

Species	Cultivar	Origin	B'lodge A	B'lodge B	Falher	Fort Vermilion	Gimle	High Level	All Locations
	Sally 4n	Sweden	40(2)	62(6)	26(6)	44(3)			44(17)
	Sara 4n	Sweden	40(4)	86(3)	27(3)	49(3)	50(2)		50(15)
	Start	Czechoslovakia	41(2)						41(2)
	Temara 4n	Switzerland	13(2)	16(3)	4(2)	0(1)			10(8)
	Tripo 4n	Norway		54(3)	56(3)				55(6)
	Triton 4n	Sweden	47(2)						47(2)
	Atlaswede (Yield in kg/ha)		298	414	214	737	324		409(26)