

FORAGE CULTIVAR TRIALS

PUBLICATION NO. 80-16B 1980

PREPARED BY

NORTHERN RESEARCH GROUP
CANADA AGRICULTURE RESEARCH BRANCH
RESEARCH STATION, BEAVERLODGE, ALBERTA

IN CO-OPERATION WITH



FORAGE CULTIVAR TRIALS
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1980

FOREWORD

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

The objective is to provide relative information on seed production capability and general adaptability of named foreign cultivars of perennial grasses and legumes to assist 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-W6)
Soil type Esher-Hythe. Texture is medium fine, medium organic matter. Subsoil has poor permeability.
2. Beaverlodge B. Foster Farm (SE-25-71-10-W6)
Near Beaverlodge, Alberta. Soil type Goose-Codner. High organic matter and very fertile. Orthic humic Gleysol. Clay loam to sandy loam.
3. Falher, Beaupre Farm (NW-1-78-21-W5)
Near Falher, Alberta. Soil type Falher-Nampa. Fine textured with medium to low organic matter. Poor moisture penetration and percolation. Subject to crusting. Luvisol lacustrine clay loam to clay.

4. Fort Vermilion. Experimental Farm (NW-13-108-13-W5)
Soil type Leith-Culp. Coarse textured with medium to low organic matter. Subsoil very permeable and calcareous.
5. High Level. Fedeyko Farm (NW-1-35-109-17-W5)
Near High Level, Alberta. Soil type Davis-Tangent. Orthic and Dark Gray Luvisol. Medium textured with low to medium organic matter. Good permeability. Moderately calcareous lacustrine loam to silt loam.

Plots comprise two rows, 30.5 cm (1 foot) apart, 6.1 metres (20 feet) long, and replicated 6 times. Weeds are controlled by both mechanical and chemical means. Plots are fertilized annually in the autumn.

Seed and herbage (dry matter) yields are expressed both 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 as a Hardiness Scale of 1 (poor) to 9 (best).

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

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Cultivar	Origin	Hardiness	Height (cm)	Date Ripe August			Seed Yield Data						Herbage Yield Data					
				1978	1979	1980	Yield kg/ha			% of Carlton			Yield (DM) t/ha			% of Carlton		
							1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Barton	USA	9	97	8	7	8	161	305	306	34	46	58	1.46	3.85	2.49	48	74	87
Beacon	USA	9	98	8	8	8	187	573	477	39	86	91	2.76	4.48	2.89	91	86	101
Carlton*	Canada	9	98	8	8	8	477	668	527	100	100	100	3.02	5.20	2.87	100	100	100
Kesto	Finland	9	98	8	8	8	286	516	523	60	77	99	2.69	4.79	2.58	89	92	90
Lyon	USA	9	94	8	8	8	95	380	290	20	57	55	2.28	3.86	2.40	75	74	84
Mandan 404	USA	9	91	8	8	8	125	418	308	26	63	58	1.75	5.06	2.71	58	97	94
Orfeu	Rumania	9	93	8	8	8	195	571	355	41	85	67	2.62	4.28	2.26	87	82	79
S-1733	Canada	9	99	8	8	8	293	525	480	61	79	91	2.06	3.38	2.40	68	65	84
S-8800	Canada	9	101	8	8	8	731	864	652	153	127	124	3.09	4.52	2.58	102	87	90
Tempo	Canada	9	93	8	8	8	171	391	317	36	59	60	1.90	3.36	2.26	63	65	79
Mean							272	520	423				2.34	4.28	2.53			
L.S.D. (P= .05)							55.41	59.68	60.41				0.16	0.19	0.20			

BROMEGRASS

Test Site: Beaverlodge (Foster's Farm)
Seeding Year: 1978

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Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Carlton		(DM)	t/ha	% of Carlton	
						1979	1980	1979	1980	1979	1980	1979	1980
Barton	USA	9	70	July 27	July 26	87	207	38	61	(1)	6.30	(1)	120
Carlton	Canada	9	69	July 27	July 30	227	340	100	100		5.23		100
Lyon	USA	9	65	July 27	July 30	75	227	33	67		5.78		111
Magna	Canada	9	74	July 27	July 30	165	429	72	126		5.54		106
Mandan 404	USA	9	65	July 27	July 30	146	223	64	66		4.64		89
Regar	USA	9	71	July 27	July 28	226	137	99	40		5.44		104
Tempo	Canada	9	65	July 27	July 30	112	232	49	68		3.84		73
S-7695	Canada	9	70	July 27	July 30	305	624	133	184		5.85		112
S-7855	Canada	9	67	July 27	July 30	104	211	45	62		4.91		94
S-8778	Canada	9	74	July 27	July 30	276	795	121	234		6.14		117
S-8792	Canada	9	74	July 27	July 30	188	365	82	103		5.30		101

Mean

174 345

5.36

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

29.34 79.07

0.52

(1) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha 1979	1980	% of Carlton 1979	1980	(DM) 1979	t/ha 1980	% of Carlton 1979	1980
Barton	USA	9	65	Aug. 1	Aug. 1	437	65	64	56	(1)	3.70	(1)	127
Carlton*	Canada	9	63	Aug. 1	Aug. 1	676	116	100	100		2.92		100
Lyon	USA	9	55	Aug. 1	Aug. 1	568	28	83	24		2.93		100
Magna	Canada	9	64	Aug. 1	Aug. 1	726	143	107	123		3.08		105
Mandan 404	USA	9	60	Aug. 1	Aug. 1	479	79	70	68		2.83		97
Regar	USA	9	66	Aug. 1	July 29	354	55	52	47		2.53		87
Tempo	Canada	9	57	Aug. 1	Aug. 1	503	46	74	48		2.25		77
S 7695	Canada	9	62	Aug. 1	Aug. 1	759	198	112	171		2.98		102
S 7855	Canada	9	59	Aug. 1	Aug. 1	556	63	82	54		2.98		102
S 8778	Canada	9	65	Aug. 1	Aug. 1	1062	245	156	211		3.42		117
S8792	Canada	9	71	Aug. 1	Aug. 1	672	139	99	120		2.95		101

Mean

617 108

2.96

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

100.35 34.29

0.36

(1) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha 1979	1980	% of Carlton 1979	1980	(DM) 1979	t/ha 1980	% of Carlton 1979	1980
Barton	USA	9	105	July 30	July 30	243	143	75	49	(1)	2.77		88
Carlton*	Canada	9	108	July 30	July 30	323	291	100	100		3.24		100
Lyon	USA	9	96	July 30	July 30	187	155	57	53		2.84		88
Magna	Canada	9	110	July 30	July 30	361	384	111	130		3.46		109
Mandan 404	USA	9	104	July 30	July 30	165	289	51	99		2.83		88
Regar	USA	9	103	July 30	July 10	306	36	94	12		2.55		81
Tempo	Canada	9	104	July 30	July 30	286	238	88	82		3.29		103
S-7695	Canada	9	105	July 30	July 30	544	485	168	167		3.63		113
S-7855	Canada	9	108	July 30	July 30	214	356	66	122		3.30		103
S-8778	Canada	9	113	July 30	July 30	284	482	150	166		3.51		109
S-8792	Canada	9	111	July 30	July 30	645	611	200	210		4.16		131

Mean

342 315

3.24

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

65.89 108.83

0.45

(1) Herbage not measured

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Falher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Ht cm	Yield t/ha	% of Carlton	Ht cm	Yield t/ha	% of Carlton	Ht cm	Yield t/ha	% of Carlton	Ht cm	Yield t/ha	% of Carlton	Ht cm	Yield t/ha	% of Carlton
Baylor	USA	9	98	3.80	79	76	3.85	67	75	3.69	77	111	9.17	89	86	3.22	71
Blair	USA	9	99	3.51	73	77	3.77	65	74	2.90	60	111	7.88	77	80	2.52	56
Carlton*	Canada	9	104	4.79	100	77	5.77	100	77	4.82	100	114	10.28	100	88	4.54	100
Jubilee	Canada	9	98	4.36	91	74	4.22	73	70	3.49	72	105	8.68	84	81	3.92	86
Kesto	Finland	9	105	4.60	96	77	5.01	87	74	4.15	86	106	9.13	89	88	4.40	97
Magna	Canada	9	109	4.98	104	79	5.75	100	74	4.49	93	111	10.15	99	85	4.52	100
Mandan 404	USA	9	95	4.66	97	70	4.50	78	62	3.08	64	105	8.10	79	79	3.05	67
Orfeu	Rumania	9	101	4.54	95	71	5.56	96	74	4.77	99	108	9.57	93	88	5.07	112
Redpatch	Canada	9	92	3.40	71	74	2.95	51	70	2.74	57	111	7.48	73	79	1.56	34
Regar	USA	9	96	3.72	78	86	3.78	66	102	3.00	62	110	6.78	66	86	3.37	74
S-8800	Canada	9	108	5.78	121	81	6.61	115	82	5.16	107	119	10.58	103	90	5.15	113
Svaja	Sweden	9	101	5.96	124	76	5.32	92	71	4.23	88	110	10.05	98	81	3.86	85
Tempo	Canada	9	99	3.83	80	70	3.71	64	64	2.73	57	109	8.20	80	81	3.31	73
WWF72	Sweden	9	99	5.24	109	70	5.13	89	70	4.50	93	105	8.99	87	80	4.98	110
Mean				4.51			4.71			3.84			8.93			3.82	
L.S.D. (P = .05)				0.56			0.44			0.35			1.05			0.50	
TIMOTHY TURF											% of Evergreen		% of Evergreen			% of Evergreen	
Baret	Netherlands	9	41	2.08	73	45	1.58	75	(1)	0.88	53	55	4.46	46		(2)	
Evergreen*	Sweden	9	48	2.83	100	50	2.12	100		1.66	100	88	9.68	100			
Piccolo	Netherlands	9	51	2.49	88	40	1.86	88		0.77	46	49	3.60	37			
Rali	Germany	9	50	3.15	111	50	1.99	94		1.11	67	53	5.95	127			
Rusadan	Denmark	9	46	3.64	129	45	1.17	55		0.36	22	45	4.19	43			
Mean				2.84			1.75			0.96			5.58				
L.S.D.				0.37			0.16			0.13			0.96				

(1) Falher height not measured

(2) Turf Timothy not seeded at High Level

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Falher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Date Ripe	Yield Kg/ha	% of Carlton	Date Ripe	Yield Kg/ha	% of Carlton	Date Ripe	Yield Kg/ha	% of Carlton	Date Ripe	Yield Kg/ha	% of Carlton	Date Ripe	Yield Data	% of Carlton
Baylor	USA	9	Aug.12	732	56	Aug. 2	592	40	Aug. 1	919	66	July30	627	58	July28	382	44
Blair	USA	9	Aug.12	334	26	July29	492	33	Aug. 1	475	34	July30	482	45	July28	257	30
Carlton	Canada	9	Aug.12	1299	100	Aug. 2	1478	100	Aug. 1	1397	100	July30	1077	100	July28	868	100
Jubilee	Canada	9	Aug.12	721	56	Aug. 1	720	49	Aug. 1	625	45	July30	488	45	July28	406	47
Kesto	Finland	9	Aug.12	884	68	Aug. 2	1024	69	Aug. 1	1050	75	July30	728	68	July28	663	76
Magna	Canada	9	Aug.12	1112	86	Aug. 2	1183	80	Aug. 1	1179	84	July30	962	89	July28	730	84
Mandan 404	USA	9	Aug.12	875	67	Aug. 2	906	61	Aug. 1	603	43	July30	551	52	July28	415	48
Orfeu	Rumania	9	Aug.12	1126	87	July29	1369	93	Aug. 1	1274	91	July30	819	76	July28	942	109
Redpatch	Canada	9	Aug.12	309	24	Aug. 2	345	23	Aug. 1	362	26	July30	634	59	July28	166	19
Regar	USA	9	Aug.12	479	37	July28	619	42	July23	457	33	July10	206	19	July10	331	38
S-8800	Canada	9	Aug.12	1388	107	July28	1754	119	July28	1513	108	July30	1146	106	July28	824	95
Svaja	Sweden	9	Aug.12	1161	89	Aug. 2	1156	78	Aug. 1	959	69	July30	780	72	July28	547	63
Tempo	Canada	9	Aug.12	654	50	Aug. 2	782	53	Aug. 1	498	36	July30	499	46	July28	352	41
WWF 72	Sweden	9	Aug.12	1098	85	Aug. 2	1053	71	Aug. 1	999	72	July30	652	61	July28	792	91
Mean				869			963			880			689			549	
L.S.D. (P = .05)				69.90			48.43			39.09			63.29			39.40	

TIMOTHY TURF

				% of Evergreen		% of Evergreen		% of Evergreen		% of Evergreen		% of Evergreen		% of Evergreen
Baret	Netherlands	9	Aug.26	167	66	Aug.11	370	95	Aug.12	181	62	Aug.19	66	31
Evergreen*	Sweden	9	Aug.26	252	100	Aug.11	389	100	Aug.12	291	100	Aug.19	216	100
Piccolo	Netherlands	9	Aug.26	173	69	Aug.11	430	111	Aug.12	146	50	Aug.19	32	15
Rali	Germany	9	Aug.26	204	81	Aug.11	418	107	Aug.12	235	81	Aug.19	128	59
Rusadan	Denmark	9	Aug.26	94	37	Aug.11	236	61	Aug.12	87	30	Aug.19	22	10
Mean				178		369		188		93				
L.S.D.				46.38		44.22		19.92		37.59				

(1) Turf Timothy not seeded at High Level

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield Data						Herbage Yield Data					
							Yield kg/ha			% of Oasis			Yield (DM) t/ha			% of Oasis		
				1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Agram	Netherlands	9	38	24	27	(1)	12	508	0	75	202	(1)	0.96	4.46	1.66	63	127	92
Atlanta	Netherlands	9	42	24	27		20	436	0	125	174		1.05	3.72	1.48	69	106	82
Banner	USA	9	41	24	27		30	519	0	188	207		1.39	3.85	1.66	91	110	92
Belmonte	Netherlands	9	38	24	27		25	387	0	156	194		1.41	3.90	1.43	93	111	79
Diamond	Netherlands	9	35	24	27		10	365	0	63	145		1.05	5.22	1.43	69	148	79
Faramir	Denmark	9	33	24	27		4	156	0	25	62		1.34	4.59	1.72	88	131	95
Halifax	Netherlands	9	37	24	27		3	230	0	19	92		0.78	3.43	1.25	51	97	69
Oasis*	Netherlands	9	38	24	27		16	251	0	100	100		1.52	3.52	1.81	100	100	100
Scarlet	Netherlands	9	38	24	27		27	486	0	169	194		1.19	4.32	1.46	78	123	81
Mean							17	382					1.19	4.11	1.55			
L.S.D. (P = .05)							7.03	61.76					0.47	0.62	0.20			

(1) Not Harvested - No Heads

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield		Herbage Yield					
								% of Oasis		(DM)		% of Oasis	
						1979	1980	1979	1980	1979	1980	1979	1980
Adonis	Netherlands	9	34	July 23	July 11	225	9	100	38	(1)	.50	(1)	33
Agram	Netherlands	9	32	July 23	July 11	196	9	87	38		.45		29
Belmonte	Netherlands	9	30	July 23	July 18	349	11	155	46		1.04		68
Cascade	USA	9	36	July 23	July 18	187	12	83	50		1.63		107
Dawson	Netherlands	9	36	July 23	July 18	251	85	112	354		2.08		136
Diamond	Netherlands	9	32	July 23	July 18	141	12	63	50		.83		54
Encota	Netherlands	9	34	July 23	July 11	155	17	69	71		.52		34
Famosa	Belgium	9	35	July 23	July 18	149	10	66	42		1.10		72
Flevo	Netherlands	9	37	July 23	July 11	262	46	116	192		.87		57
Frida	Netherlands	9	34	July 23	July 18	228	6	101	25		1.32		86
Highlight	Netherlands	9	34	July 23	July 11	256	42	114	175		.42		27
Ivalo	Denmark	9	31	July 23	July 18	194	40	86	167		1.12		73
Koket	Netherlands	9	35	July 23	July 18	353	51	157	213		1.23		80
Lifalla	Germany	9	34	July 23	July 11	245	49	109	204		.51		33
Lirouge	Germany	9	35	July 23	July 11	132	22	59	92		.65		42
Menuet	Netherlands	9	29	July 23	July 18	249	5	111	21		.97		63
Oasis*	Netherlands	9	34	July 23	July 3	225	24	100	100		1.53		100
Odra	Germany	9	40	July 23	July 11	345	46	153	192		.86		56
Rasengold	Germany	9	36	July 23	July 18	391	32	174	133		1.22		80
Rolax	Belgium	9	39	July 23	July 18	276	151	123	629		2.08		136
Scarlet	Netherlands	9	35	July 23	July 18	226	14	100	58		.90		59
Tamara	Denmark	9	39	July 23	July 18	279	26	124	108		1.22		80
Tatjana	Denmark	9	32	July 23	July 11	324	36	144	150		.47		31
Waldorf	Netherlands	9	35	July 23	July 20	220	25	98	104		1.02		67
Mean						244	33				1.02		
L.S.D. (P = .05)						49.02	11.46				0.17		
(1) Herbage not measured													

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Oasis		(DM)	t/ha	% of Oasis	
						1979	1980	1979	1980	1979	1980	1979	1980
Adonis	Netherlands	9	36	Aug. 1	July 4	(1)	48	(1)	155	(2)	0.15	(2)	19
Agram	Netherlands	9	36	Aug. 1	July 6	93	65		210		0.45		56
Belmonte	Netherlands	9	39	Aug. 1	July 8	188	71		229		0.35		43
Cascade	USA	9	44	Aug. 1	July 9	149	57		184		0.41		51
Dawson	Netherlands	9	36	Aug. 1	July 9	(1)	14		45		0.43		53
Diamond	Netherlands	9	41	Aug. 1	July 9	118	87		281		0.48		59
Encota	Netherlands	9	35	Aug. 1	July 2	181	83		268		0.55		68
Famosa	Belgium	9	37	Aug. 1	July 4	211	104		335		0.55		68
Flevo	Netherlands	9	40	Aug. 1	July 4	129	91		294		0.71		88
Frida	Netherlands	9	39	Aug. 1	July 9	(1)	32		103		0.17		21
Highlight	Netherlands	9	43	Aug. 1	July 4	158	147		474		0.52		64
Ivalo	Denmark	9	36	Aug. 1	July 4	141	106		342		0.64		79
Koket	Netherlands	9	44	Aug. 1	July 8	136	107		345		0.52		64
Lifalla	Germany	9	37	Aug. 1	July 4	180	136		439		0.62		77
Lirouge	Germany	9	35	Aug. 1	July 2	169	61		197		0.44		54
Menuet	Netherlands	9	44	Aug. 1	July 9	223	68		219		0.47		58
Oasis*	Netherlands	9	37	Aug. 1	July 4	(1)	31		100		0.81		100
Odra	Germany	9	47	Aug. 1	July 8	317	191		616		0.98		121
Rasengold	Germany	9	44	Aug. 1	July 9	245	174		561		0.68		84
Rolax	Belgium	9	49	Aug. 1	July 9	270	88		284		0.64		79
Scarlet	Netherlands	9	36	Aug. 1	July 9	171	57		184		0.31		38
Tamara	Denmark	9	42	Aug. 1	July 9	270	106		342		0.50		62
Tatjana	Denmark	9	40	Aug. 1	July 4	(1)	136		439		0.58		72
Waldorf	Netherlands	9	39	Aug. 1	July 8	102	109		352		0.62		77
Mean						163	90				0.52		
L.S.D. (P = .05)						50.48	31.52				0.18		

(1) Not established

(2) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Oasis		(DM)	t/ha	% of Oasis	
						1979	1980	1979	1980	1979	1980	1979	1980
Adonis	Netherlands	9	69	July 24	July 9	292	15	195	500	(1)	4.78	(1)	74
Agram	Netherlands	9	73	July 24	July 9	208	27	139	900		4.25		66
Belmonte	Netherlands	9	64	July 24	July 9	263	4	175	133		4.21		65
Cascade	USA	9	76	July 24	July 9	208	14	139	467		4.94		76
Dawson	Netherlands	9	51	July 24	July 9	253	1	169	33		3.71		57
Diamond	Netherlands	9	69	July 24	July 9	200	17	133	567		3.84		59
Encota	Netherlands	9	70	July 24	July 9	223	19	149	633		4.63		72
Famosa	Belgium	9	70	July 24	July 9	325	32	217	1067		2.77		43
Flevo	Netherlands	9	77	July 24	July 9	240	18	160	600		3.96		61
Frida	Netherlands	9	74	July 24	July 9	289	25	193	833		2.20		34
Highlight	Netherlands	9	67	July 24	July 9	269	28	179	933		4.93		76
Ivalo	Denmark	9	65	July 24	July 9	228	21	152	700		4.16		64
Koket	Netherlands	9	72	July 24	July 9	309	47	206	1567		3.36		52
Lifalla	Germany	9	70	July 24	July 9	195	70	130	2333		5.36		83
Lirouge	Germany	9	65	July 24	July 9	264	18	176	600		4.65		72
Menuet	Netherlands	9	74	July 24	July 9	250	9	167	300		4.74		73
Oasis*	Netherlands	9	55	July 24	July 9	150	3	100	100		6.46		100
Odra	Germany	9	73	July 24	July 9	454	18	303	600		4.16		64
Rasengold	Germany	9	78	July 24	July 9	318	28	212	933		6.11		95
Rolax	Belgium	9	64	July 24	July 9	343	6	229	200		4.87		75
Scarlet	Netherlands	9	65	July 24	July 9	377	11	251	367		3.18		49
Tamara	Denmark	9	73	July 24	July 9	405	21	270	700		3.84		59
Tatjana	Denmark	9	75	July 24	July 2	314	42	209	1400		3.66		57
Waldorf	Netherlands	9	65	July 24	July 9	278	38	185	1267		4.00		62
Mean						277	22				4.28		
L.S.D. (P = .05)						113.78	10.00				0.92		

(1) Herbage not measured.

Seeding Year: 1979

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Folher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Ht cm	Yield t/ha	% of Oasis	Ht cm	Yield t/ha	% of Oasis	Ht cm	Yield t/ha	% of Oasis	Ht cm	Yield t/ha	% of Oasis	Ht cm	Yield t/ha	% of Oasis
Adonis	Netherlands	9	43	2.49	68	36	0.47	35	33	0.27	42	54	2.96	50	(1)		
Agram	Netherlands	9	38	1.99	54	38	0.45	33	29	0.41	63	53	2.70	45			
Atlanta	Netherlands	9	36	2.43	66	36	0.40	30	32	0.29	45	56	3.13	53			
Bingo	Netherlands	9	40	2.72	74	36	0.88	65	30	0.39	60	48	2.63	44			
Fidelimo	Netherlands	9	40	1.84	50	36	0.90	67	27	0.45	69	53	2.77	46			
Ivalo	Denmark	9	35	2.17	59	35	1.16	86	28	0.43	66	45	2.25	38			
Lirouge	Germany	9	41	2.90	79	36	0.91	67	27	0.29	45	55	3.10	52			
Luster	Netherlands	9	29	1.74	48	36	1.01	75	29	0.55	85	53	3.30	55			
Oasis*	Netherlands	9	43	3.66	100	45	1.35	100	35	0.65	100	-	5.95	100			
Parita	Netherlands	9	46	2.73	75	40	0.86	64	30	0.37	57	50	3.66	62			
Puma	Denmark	9	43	3.10	85	34	1.29	96	35	0.57	88	45	2.65	45			
Scarlet	Netherlands	9	45	2.89	79	37	0.64	47	34	0.53	82	56	2.80	47			
Tatjana	Netherlands	9	44	2.30	63	38	1.25	93	32	0.75	115	53	3.18	53			
Valaska	Denmark	9	48	2.80	77	44	1.50	111	36	0.72	111	-	4.07	68			
Veni	Czechoslovakia	9	44	3.27	89	41	1.00	74	36	0.46	71	54	2.70	45			
Z-436	Denmark	9	41	2.42	66	38	0.43	32	32	0.42	65	50	3.08	52			
Mean				2.59			0.91			0.47			3.18				
L.S.D. (P = .05)				0.44			0.19			0.09			0.41				

(1) Chewings Fescue not seeded at High Level

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Faher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Date Ripe	Yield Kg/ha	% of Oasis	Date Ripe	Yield Kg/ha	% of Oasis	Date Ripe	Yield Kg/ha	% of Oasis	Date Ripe	Yield Data	% of Oasis	Date Ripe	Yield Kg/ha	% of Oasis
Adonis	Netherlands	9	July 17	44	200	July 18	142	107	July 9	59	64	July 10	45	100			
Agram	Netherlands	9	-	34	155	July 18	157	118	July 4	57	62	July 10	94	209			
Atlanta	Netherlands	9	July 17	32	145	July 18	124	93	July 9	46	50	July 10	49	109			
Bingo	Netherlands	9	July 17	30	136	July 10	148	111	July 4	52	57	July 4	24	53			
Fidelimo	Netherlands	9	July 17	47	214	July 10	159	120	July 2	83	90	July 10	118	262			
Ivalo	Denmark	9	July 14	24	109	July 8	298	224	July 2	51	55	June 29	19	42			
Lirouge	Germany	9	July 14	28	127	July 8	131	98	July 2	42	46	June 29	35	78			
Luster	Netherlands	9	July 17	23	105	July 10	167	126	July 4	68	74	July 10	87	193			
Oasis*	Netherlands	9	July 10	22	100	July 3	133	100	June 30	92	100	June 25	45	100			
Parita	Netherlands	9	July 17	49	223	July 10	145	109	July 9	103	112	July 10	75	167			
Puma	Denmark	9	July 15	50	227	July 10	195	147	July 2	82	89	July 10	55	122			
Scarlet	Netherlands	9	July 15	77	350	July 18	222	167	July 4	92	100	July 10	163	362			
Tatjana	Netherlands	9	July 12	64	291	July 10	307	231	July 4	126	137	July 2	177	393			
Valaska	Denmark	9	July 10	70	318	July 3	198	149	June 30	114	124	June 25	94	209			
Veni	Czechoslovakia	9	July 17	69	314	July 18	365	274	July 9	120	130	July 10	57	127			
Z-436	Denmark	9	July 17	42	191	July 18	148	111	July 4	67	73	July 10	21	47			
Mean				44			190			78			72				
L.S.D. (P = .05)				14.52			57.74			13.86			42.56				

Note: Chewings Fescue not seeded at High Level

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield Data						Herbage Yield Data					
				July			Yield			% of			Yield			% of		
				1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
#60	Netherlands	9	43	24	31	(1)	40	195	8	9	69	44	0.78	1.90	1.12	30	80	70
Barbara	Netherlands	9	44	24	31	(1)	3.36	206	7	1	73	36	0.82	1.64	-	32	169	(2)
Bastide	France	9	41	24	31	(1)	6.72	68	9	1	24	47	0.72	1.61	-	29	68	(2)
Barante	Netherlands	9	38	24	31	(1)	4.48	121	13	1	43	68	1.16	1.50	-	45	63	(2)
Bergond	Denmark	9	50	24	31	25	112	174	12	24	61	64	1.75	1.99	1.23	68	84	77
Boreal*	Canada	9	56	24	31	25	461	283	19	100	100	100	2.58	2.37	1.59	100	100	100
Brasov	Rumania	9	48	24	31	25	76	212	9	16	75	47	1.86	2.78	1.39	72	117	87
Carlawn	Canada	9	49	24	31	25	338	198	15	73	70	79	2.28	1.93	1.48	88	81	93
Checker	USA	9	43	24	31	(1)	45	326	13	10	115	72	0.94	2.80	0.96	36	118	60
Engina	Netherlands	9	43	24	31	25	195	347	18	42	123	98	1.50	2.78	1.52	58	117	96
Ensylva	Netherlands	9	38	24	31	(1)	148	156	9	32	55	48	1.01	2.20	1.19	39	92	75
Envira	Netherlands	9	43	24	31	25	311	269	11	67	95	57	2.42	2.73	1.46	94	115	92
Enzet	Netherlands	9	50	24	31	25	368	394	19	80	139	105	2.84	3.18	1.44	110	134	90
Fortress	USA	9	53	24	31	25	125	248	11	27	88	62	1.86	2.44	1.48	72	103	93
Frida	Netherlands	9	36	24	31	(1)	45	77	5	10	27	29	0.74	1.23	1.03	29	52	65
Grampian	U.K.	9	35	24	31	(1)	49	39	7	11	14	36	1.41	1.30	1.12	55	55	70
Grelo	Denmark	9	36	24	31	25	63	73	7	14	26	36	1.41	1.75	1.28	55	74	81
Jade	Netherlands	9	36	24	31	(1)	38	217	9	8	77	48	0.96	2.22	1.06	37	93	66
Laverdure	France	9	42	24	31	25	58	160	10	13	57	56	1.68	2.11	1.59	65	89	100
Manoir	France	9	33	24	31	(1)	17	44	7	4	16	38	0.94	1.50	0.95	36	63	60
Mariet	Netherlands	9	42	24	31	(1)	34	241	13	7	85	69	0.72	2.64	1.03	28	111	65
Marga	Netherlands	9	47	24	31	(1)	20	207	5	4	73	29	1.12	1.97	0.95	43	83	59
Merlin	U.K.	9	39	24	31	(1)	25	75	2	5	27	12	1.52	2.31	1.12	59	97	70
Moncorde	Netherlands	9	48	24	31	(1)	248	129	13	54	46	69	1.97	1.99	1.61	76	84	101
Monica	Netherlands	9	31	24	31	(1)	83	65	6	18	23	32	2.24	1.95	1.29	87	82	81
Nora	Germany	9	43	24	31	25	40	326	11	9	115	58	1.28	2.44	1.15	50	103	72
Patio	Netherlands	9	48	24	31	25	184	273	15	40	96	79	2.20	2.42	1.46	85	102	92
Puma	Denmark	9	43	24	31	(1)	28	282	7	6	100	36	1.05	2.46	0.97	41	104	60

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield Data						Herbage Yield Data					
				July			Yield			% of			Yield			% of		
				1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Pp. 15E	USA	9	40	24	31	25	52	388	11	11	137	58	1.30	2.46	1.14	50	104	72
Reptans	Sweden	9	53	24	31	25	320	252	20	69	89	107	2.58	2.87	1.79	100	121	113
Roland 21	Germany	9	52	24	31	25	188	217	14	41	77	79	2.73	3.05	1.59	106	128	100
Rubina-Roskilde	Denmark	9	52	24	31	25	220	208	16	48	73	85	1.90	2.53	1.45	74	107	92
RS 512	Sweden	9	39	24	31	(1)	150	216	9	33	76	48	2.02	2.37	1.23	78	100	77
Skot	Denmark	9	38	24	31	(1)	34	62	7	7	22	36	1.97	2.60	1.55	76	109	97
Sonnet	Netherlands	9	40	24	31	(1)	30	65	7	7	23	36	1.64	1.79	1.20	64	75	75
Svalbard	Norway	9	48	24	31	(1)	87	178	7	19	63	36	1.52	2.55	1.30	59	108	82
Taca	Denmark	9	38	24	31	25	234	209	18	51	74	98	2.58	2.31	1.74	100	97	110
Turf	Sweden	9	38	24	31	25	157	241	11	34	85	58	2.02	2.46	1.39	78	104	87
Veni	Denmark	9	38	24	31	25	54	232	8	12	82	42	1.72	2.33	1.20	67	98	75
Mean							120	197	11				1.64	2.24	1.31			
L.S.D. (P = .05)							41.22	42.87	5.67				0.17	0.18	0.19			

(1) Seed not harvested, yield estimated

(2) Herbage not measured

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(1) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Boreal		(DM)	t/ha	% of Boreal	
						1979	1980	1979	1980	1979	1980	1979	1980
Banner	USA	9	39	Aug. 1	July 8	281	119	27	91	(1)	0.54	(1)	45
Barante	Netherlands	9	20	Aug. 1	July 8	2	6	0.19	5		0.26		22
Barbara	Netherlands	9	24	Aug. 1	July 8	13	10	1.20	8		0.30		25
Bastide	France	9	31	Aug. 1	July 11	16	11	1.50	8		0.43		36
Boreal*	Canada	9	42	Aug. 1	July 14	1043	131	100	100		1.20		100
Brasov	Rumania	9	40	Aug. 1	July 14	411	70	39	53		0.72		60
Carlawn	Canada	9	40	Aug. 1	July 14	510	65	49	50		0.83		69
Checker	USA	9	40	Aug. 1	July 2	174	40	17	31		0.42		35
Chomade	France	9	40	Aug. 1	July 14	71	40	7	31		0.64		53
Corona	Netherlands	9	36	Aug. 1	July 14	44	2	4	2		0.51		43
Engina	Netherlands	9	39	Aug. 1	July 14	340	215	33	164		1.51		126
Ensylva	Netherlands	9	31	Aug. 1	July 14	261	7	25	5		0.29		24
Envira	Netherlands	9	45	Aug. 1	July 14	758	239	73	182		1.39		116
Enzet	Netherlands	9	45	Aug. 1	July 14	335	221	32	169		0.89		74
Fortress	USA	9	43	Aug. 1	July 14	445	38	43	29		0.60		50
Grelo	Denmark	9	34	Aug. 1	July 14	17	6	1.6	5		0.77		64
Keszthelyi 2	Hungary	9	46	Aug. 1	July 14	510	102	49	78		1.46		122
Manoir	France	9	32	Aug. 1	July 14	21	13	2	10		0.48		40
Marga	Netherlands	9	36	Aug. 1	July 14	54	46	5	35		0.48		40
Mariet	Netherlands	9	33	Aug. 1	July 8	220	57	21	44		0.55		46
Merlin	U.K.	9	36	Aug. 1	July 14	17	3	1.6	2		0.43		36
Moncorde	Netherlands	9	38	Aug. 1	July 14	617	63	59	48		0.92		77
Monica	Netherlands	9	37	Aug. 1	July 14	455	17	44	13		0.93		78
Patio	Netherlands	9	42	Aug. 1	July 14	521	53	50	40		0.99		83
Pernille	Denmark	9	40	Aug. 1	July 14	334	35	32	27		0.83		69
Pollux	Denmark	9	42	Aug. 1	July 14	629	48	60	37		1.13		94
Puma	Denmark	9	31	Aug. 1	July 2	156	63	15	48		0.40		33
Rapid	Netherlands	9	40	Aug. 1	July 14	619	155	59	118		1.32		110
Skot	Denmark	9	36	Aug. 1	July 14	78	5	7	4		0.54		45
Sonnet	Netherlands	9	34	Aug. 1	July 14	50	4	5	3		0.69		58
Veni	Denmark	9	35	Aug. 1	July 8	385	34	37	26		0.61		51
Mean						302	62				0.74		
L.S.D. (P = .05)						78.96	30.42				0.24		

(1) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1979	1980	Kg/ha		% of Boreal		(DM)	t/ha	% of Boreal	
						1979	1980	1979	1980	1979	1980	1979	1980
Banner	USA	9	83	July 25	July 9	249	12	20	92	(1)	3.18	(1)	91
Barante	Netherlands	9	54	July 25	July 9	26	7	2	54		3.97		113
Barbara	Netherlands	9	55	July 25	July 9	39	2	3	15		2.87		82
Bastide	France	9	58	July 25	July 9	27	1	2	8		2.74		78
Boreal*	Canada	9	71	July 25	July 9	1224	13	100	100		3.50		100
Brasov	Rumania	9	70	July 25	July 9	423	19	35	146		4.00		114
Carlawm	Canada	9	75	July 25	July 9	1052	16	86	123		3.59		103
Checker	U.S.A.	9	71	July 25	July 9	413	27	34	208		3.02		86
Chomade	France	9	71	July 25	July 9	170	15	14	115		2.62		75
Corona	Netherlands	9	45	July 25	July 9	160	1	13	8		2.30		66
Engina	Netherlands	9	75	July 25	July 9	874	10	71	77		4.08		117
Ensylva	Netherlands	9	65	July 25	July 9	474	3	38	23		3.19		91
Envira	Netherlands	9	79	July 25	July 9	720	20	59	154		4.55		130
Enzet	Netherlands	9	79	July 25	July 9	710	13	58	100		3.84		110
Fortress	USA	9	73	July 25	July 9	671	8	55	62		4.53		129
Grelo	Denmark	9	50	July 25	July 9	140	1	11	8		4.02		115
Keszthelyi 2	Hungary	9	71	July 25	July 9	445	5	36	38		4.52		129
Manoir	France	9	56	July 25	July 9	136	2	11	15		3.06		87
Marga	Netherlands	9	72	July 25	July 9	94	27	8	208		2.35		67
Mariet	Netherlands	9	70	July 25	July 9	146	38	12	292		3.00		86
Merlin	U.K.	9	66	July 25	July 9	92	1	8	8		3.22		92
Moncorde	Netherlands	9	69	July 25	July 9	756	11	62	85		3.65		104
Monica	Netherlands	9	65	July 25	July 9	428	3	35	23		4.88		139
Patio	Netherlands	9	76	July 25	July 9	404	4	33	31		4.18		119
Pernille	Denmark	9	70	July 25	July 9	401	2	33	15		4.50		129
Pollux	Denmark	9	79	July 25	July 9	615	7	50	54		4.95		141
Puma	Denmark	9	64	July 25	July 9	230	47	19	362		2.85		81
Rapid	Netherlands	9	73	July 25	July 9	623	13	51	100		4.81		137
Skot	Denmark	9	48	July 25	July 9	44	1	4	8		3.24		93
Sonnet	Netherlands	9	40	July 25	July 9	138	1	11	8		2.50		71
Veni	Denmark	9	80	July 25	July 9	300	29	25	223		3.30		94
Mean						394	12				3.58		
L.S.D. (P = .05)						104.48	7.23				0.60		

(1) Herbage not measured

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Falher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Ht cm	Yield t/ha	% of Boreal	Ht cm	Yield t/ha	% of Boreal	Ht cm	Yield t/ha	% of Boreal	Ht cm	Yield t/ha	% of Boreal	Ht cm	Yield t/ha	% of Boreal
Ballade	France	9	34	4.11	81	33	1.53	35	30	0.87	38	59	4.02	74	48	1.06	39
Banner	USA	9	46	2.97	58	39	1.43	32	33	0.72	32	51	2.89	53	45	0.61	23
Bastide	France	9	24	3.62	71	33	0.48	11	25	0.38	17	45	2.53	47	59	0.33	12
Boreal*	Canada	9	54	5.09	100	48	4.42	100	38	2.28	100	76	5.44	100	33	2.69	100
Carlawn	Canada	9	54	3.76	74	48	3.79	86	41	2.11	93	73	5.56	102	86	2.51	93
Chomade	France	9	48	2.52	50	37	1.31	30	32	0.56	25	57	2.11	39	47	0.51	19
Corona	Netherlands	9	38	4.49	88	37	2.38	54	32	1.01	44	56	4.48	82	49	1.13	42
Ensylva	Netherlands	9	48	4.24	83	39	2.41	55	32	0.97	43	64	4.11	76	49	1.60	59
Envira	Netherlands	9	48	4.33	85	46	3.35	76	42	1.87	82	68	6.28	115	60	2.62	97
Enzet	Netherlands	9	54	4.50	88	49	3.26	74	41	2.18	96	70	5.72	105	56	2.91	108
Epaulette	U.K.	9	40	3.90	77	39	2.29	52	32	0.95	42	54	3.72	68	49	1.65	61
Fess	U.K.	9	28	4.10	81	32	1.93	44	34	0.67	29	58	3.09	57	50	0.64	24
Fortress	USA	9	50	4.11	81	48	3.48	79	38	1.77	78	68	4.90	90	59	2.10	78
Hackle	U.K.	9	41	4.02	79	30	2.20	50	34	0.88	39	53	1.88	35	38	0.88	33
Keszthelyi 2	Hungary	9	56	4.45	87	50	3.50	79	43	1.77	78	68	4.76	88	59	2.22	83
Leik	Norway	9	55	4.40	86	48	3.62	82	50	1.67	73	76	6.11	112	68	2.84	106
Maxim	Sweden	9	54	2.49	49	41	2.59	59	36	1.06	46	61	4.01	74	54	1.10	41
Milda	France	9	50	4.64	91	48	2.73	62	36	1.46	64	60	4.64	85	52	2.06	77
Moncorde	Netherlands	9	41	4.15	82	42	3.09	70	36	1.31	57	63	5.54	102	50	1.71	64
Oriflame	U.K.	9	48	3.59	71	38	1.30	29	40	0.57	25	58	4.43	81	-	1.31	49
Patio	Netherlands	9	53	4.30	84	48	3.07	69	39	1.68	74	66	5.12	94	55	1.89	70
Pernille	Denmark	9	49	4.70	92	42	3.22	73	33	1.57	69	60	4.30	79	56	2.17	81
Pollux	Denmark	9	50	4.16	82	44	3.78	86	38	1.89	83	65	4.98	92	56	3.36	125
Rapid	Netherlands	9	53	3.76	74	48	2.67	60	39	1.46	64	70	5.78	106	55	2.77	103
Reptans	Sweden	9	56	4.75	93	48	3.58	81	43	1.97	86	71	5.71	105	58	2.95	110
Roland 21	Germany	9	55	5.27	104	46	3.48	78	42	2.33	102	71	5.71	105	60	2.19	81
Skot	Denmark	9	40	4.70	92	37	1.40	32	32	0.99	43	56	4.24	78	46	1.53	57
Zernickower	East Germany	9	51	4.85	95	46	3.17	72	41	1.47	64	70	5.88	108	60	3.57	133
Mean				4.14			2.69			1.37			4.57			1.89	
L.S.D. (P = .05)				0.61			0.30			0.19			0.60			0.26	

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Falher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Date	Yield	% of	Date	Yield	% of	Date	Yield	% of	Date	Yield	% of	Date	Yield	% of
			Ripe	Kg/ha	Boreal	Ripe	Kg/ha	Boreal	Ripe	Kg/ha	Boreal	Ripe	Kg/ha	Boreal	Ripe	Kg/ha	Boreal
Ballade	France	9	(1)	20	6	July18	36	3	July14	9	2	July9	75	18	(1)	7	2
Banner	USA	9	July17	76	23	July21	176	17	July14	62	11	July9	121	30	July11	36	9
Bastide	France	9	(1)	20	6	July11	61	6	July14	7	1	July9	26	6	(1)	3	1
Boreal*	Canada	9	July17	330	100	July21	1036	100	July14	566	100	July9	410	100	July10	386	100
Carlawn	Canada	9	July17	280	85	July21	878	85	July14	490	87	July9	525	128	July10	438	113
Chomade	France	9	July17	81	25	July18	155	15	July12	59	10	July9	112	27	July10	44	11
Corona	Netherlands	9	(1)	76	23	July18	94	9	July14	22	4	July9	73	18	July10	59	15
Ensylva	Netherlands	9	July17	95	29	July18	414	40	July 4	149	26	July9	85	21	July10	159	41
Envira	Netherlands	9	July17	242	73	July21	806	78	July14	486	86	July9	337	82	July10	418	108
Enzet	Netherlands	9	July17	328	99	July19	767	74	July14	553	98	July9	395	96	July10	520	135
Epaulette	U.K.	9	(1)	40	12	July18	59	6	July14	7	1	July9	46	11	July10	21	5
Fess	U.K.	9	(1)	20	6	July18	59	6	July14	34	6	(1)	61	15	(1)	5	1
Fortress	USA	9	July17	149	45	July21	565	55	July14	178	31	July9	147	36	July10	172	45
Hackle	U.K.	9	(1)	20	6	July18	28	3	July14	15	3	(1)	0	0	(1)	3	1
Keszthelyi 2	Hungary	9	July17	152	46	July21	614	59	July14	262	46	July9	63	15	July10	104	27
Leik	Norway	9	July17	330	100	July18	630	61	July 4	344	61	July9	952	232	July10	460	119
Maxim	Sweden	9	July17	88	27	July21	471	45	July14	178	31	July9	145	35	July10	152	39
Milda	France	9	July17	92	28	July18	325	31	July14	145	26	July9	96	23	July10	135	35
Moncorde	Netherlands	9	July17	157	48	July21	557	54	July14	178	31	July9	253	31	July10	153	40
Oriflame	U.K.	9	July17	42	13	July11	121	12	June30	96	17	July9	96	23	June24	92	24
Patio	Netherlands	9	July17	131	40	July18	568	55	July14	269	48	July9	127	31	July10	202	52
Pernille	Denmark	9	July17	114	35	July21	397	38	July14	185	33	July9	75	18	July10	171	44
Pollux	Denmark	9	July17	144	44	July21	633	61	July14	342	60	July9	112	27	July10	291	75
Rapid	Netherlands	9	July17	146	52	July18	589	57	July14	375	66	July9	389	95	July10	406	105
Reptans	Sweden	9	July17	171	52	July21	649	63	July14	381	67	July9	299	73	July10	373	97
Roland 21	Germany	9	July17	171	52	July18	541	52	July14	324	57	July9	143	35	July10	215	56
Skot	Denmark	9	July17	93	28	July11	67	6	July 4	56	10	July9	42	10	July10	90	23
Zernickower	E. Germany	9	July17	266	81	July18	703	68	July4	278	49	July9	229	56	July10	510	132
Mean				138			429			216			194			201	
L.S.D. (P = .05)				40.21			55.42			48.25			55.57			49.40	

(1) Seed not harvested, yield estimated.

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe August			Seed Yield Data						Herbage Yield Data					
							Yield kg/ha			% of S.50			Yield (DM) t/ha			% of S.50		
				1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Barbino	Netherlands	9	40	15	22	26	190	312	10	108	149	67	0.94	4.14	0.96	79	109	65
Baret	Netherlands	9	46	16	21	23	325	276	28	185	132	187	1.19	4.44	1.59	100	117	107
Barosa	Netherlands	9	44	17	21	26	233	308	19	132	147	127	1.00	4.01	1.03	84	106	70
Evergreen	Sweden	9	54	15	21	26	365	283	38	207	135	253	2.10	4.95	1.79	176	131	121
Holea	Germany	9	48	17	25	26	150	216	13	85	103	87	1.30	3.76	1.43	109	99	97
Maris Paviour	U.K.	9	25	22	29	26	87	130	2	49	62	13	0.45	2.44	0.78	38	64	53
Mortel	Netherlands	9	48	10	21	23	414	404	89	235	193	593	1.95	5.42	1.72	164	143	116
Nobis	Denmark	9	40	17	22	26	192	189	15	109	90	100	1.64	3.85	1.52	138	102	103
Nodora	Germany	9	49	17	22	25	304	274	33	173	131	220	2.20	4.77	1.23	185	126	83
Piccolo	Netherlands	9	50	14	21	26	231	223	33	131	107	220	1.39	3.85	1.75	117	102	118
Rall	Germany	9	47	14	22	20	325	231	54	185	111	360	1.72	5.00	1.82	145	132	122
S-50*	U.K.	9	43	17	24	26	176	209	15	100	100	100	1.19	3.79	1.48	100	100	100
Teno	Denmark	9	43	17	24	26	244	248	13	139	119	87	1.64	3.36	1.27	138	89	86
Mean							249	254	28				1.43	4.14	1.41			
L.S.D. (P = .05)							39.96	36.18	9.01				0.24	0.38	0.18			

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of S.50		(DM) t/ha		% of S.50	
						1979	1980	1979	1980	1979	1980	1979	1980
Barbino	Netherlands	9	36	Aug.22	Aug.14	420	59	109	111	(1)	.66	(1)	78
Baret	Netherlands	9	38	Aug.22	Aug.14	385	141	100	266		1.18		139
Barosa	Netherlands	9	30	Aug.22	Aug.14	324	104	84	196		.82		96
Evergreen	Sweden	9	38	Aug.22	Aug.14	330	120	86	226		1.48		174
Holea	Germany	9	46	Aug.22	Aug.14	360	80	94	151		1.16		136
Maris Paviour	U.K.	9	15	Aug.22	Aug.14	205	3	53	6		.13		15
Nobis	Denmark	9	41	Aug.22	Aug.14	259	54	67	102		.75		88
Piccolo	Netherlands	9	48	Aug.22	Aug.14	361	72	94	136		1.01		119
Rali	Germany	9	38	Aug.22	Aug.14	267	207	69	391		1.48		174
S.50*	U.K.	9	42	Aug.22	Aug.14	385	53	100	100		.85		100
Sport	France	9	42	Aug.22	Aug.14	250	61	65	115		.77		91
Teno	Denmark	9	44	Aug.22	Aug.14	293	56	76	106		.81		98
Mean						320	84				.92		
L.S.D. (P = .05)						45.22	18.16				0.19		

(1) herbage not measured in 1979

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe August			Seed Yield Data						Herbage Yield Data					
				1978	1979	1980	Yield kg/ha			% of Climax			Yield (DM) t/ha			% of Climax		
							1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Barmidi	Netherlands	9	73	9	14	12	290	264	123	87	67	42	2.28	4.88	1.77	88	92	107
Barvanti	Netherlands	9	53	20	29	26	280	339	84	84	104	29	2.58	5.02	1.41	100	95	84
Basho	Canada	9	70	6	9	10	140	389	175	42	119	60	0.90	4.21	1.88	35	79	113
Bilbo	Denmark	9	75	7	10	11	539	398	289	162	122	98	3.14	5.29	2.37	122	100	143
Bottnia II	Sweden	9	81	8	10	10	520	473	317	157	145	108	2.69	5.35	2.04	104	101	123
Castella	Netherlands	9	76	15	18	17	368	254	105	111	78	36	1.57	4.17	1.46	61	78	88
Champlain	Netherlands	9	82	12	20	13	291	230	150	88	71	51	2.42	4.97	1.90	94	94	114
Clair	USA	9	67	6	11	10	227	370	144	68	113	49	1.68	5.24	1.97	65	99	119
Climax*	Canada	9	85	9	12	9	332	326	294	100	100	100	2.58	5.31	1.66	100	100	100
Deploy	U.K.	9	73	16	21	17	149	180	88	45	55	30	0.83	2.73	1.10	32	51	66
Dolema	Germany	9	52	21	29	26	175	268	61	53	82	21	3.20	5.47	1.93	124	103	116
Engmo	Norway	9	74	6	10	10	736	538	362	222	168	123	3.70	5.44	2.17	143	103	131
Fleamar	Netherlands	9	69	6	10	11	384	380	265	116	117	90	2.24	4.75	1.93	87	89	116
Goliath	Netherlands	9	70	8	11	12	449	361	258	135	111	88	3.36	6.32	2.06	130	119	124
Gusto	Netherlands	9	63	24	29	24	178	260	82	54	80	28	3.14	4.73	2.02	122	89	122
Herma	Netherlands	9	78	10	18	11	353	375	213	106	115	76	1.97	4.84	1.84	76	91	111
Hokua	Japan	9	70	4	10	11	289	379	229	87	116	78	2.51	5.22	2.17	97	98	131
Marcia	Netherlands	9	73	15	18	17	291	284	122	88	87	42	1.50	4.39	1.03	58	83	62
Megas	Netherlands	9	73	9	17	15	263	293	166	79	90	57	2.91	5.73	2.17	113	108	131
Meson	Netherlands	9	67	18	21	24	205	227	115	62	70	39	1.72	4.01	1.34	67	76	81
Mino	Denmark	9	66	10	18	14	330	321	175	99	98	60	2.91	5.42	2.20	113	102	133
Motim	Netherlands	9	72	10	18	15	308	363	180	93	111	61	2.06	5.20	1.99	80	98	120
Motterwitzer	E. Germany	9	81	6	9	9	402	477	272	121	146	93	2.17	4.79	1.84	84	90	111
Pajbjerg 75	Denmark	9	75	8	13	12	306	319	256	95	98	87	2.96	5.02	2.28	115	95	137
Palermo	Netherlands	9	49	18	24	18	115	205	73	35	63	25	0.67	2.93	1.48	26	55	89
Pedion	Netherlands	9	63	19	25	21	309	231	117	93	71	40	2.31	4.82	1.46	90	91	88
Pet	Germany	9	80	5	9	10	354	441	266	107	135	90	2.31	5.29	2.13	90	100	128
Polka	U.K.	9	78	8	12	10	376	374	290	113	115	99	2.76	5.40	2.44	107	102	147
Pota	Denmark	9	83	7	12	12	316	405	198	95	124	67	2.51	5.98	2.08	97	113	125
Pronto	USA	9	79	8	11	13	329	311	219	99	95	74	2.96	5.38	2.06	115	101	124
Purlieu	U.K.	9	73	11	16	15	383	131	243	115	96	83	2.91	5.33	2.37	113	100	143

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe August			Seed Yield Data						Herbage Yield Data					
				1978	1979	1980	Yield kg/ha			% of Climax			Yield (DM) t/ha			% of Climax		
							1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Rasant	Germany	9	78	3	10	12	491	553	412	148	170	140	2.84	6.00	2.76	110	113	166
Ref. Bd. 3062	Belgium	9	61	20	29	21	395	370	131	119	113	45	2.73	4.52	1.81	106	85	109
Rvpf 735.1	Belgium	9	73	9	12	12	216	244	151	65	75	51	2.42	5.35	1.79	94	101	108
Rvpf 735.2	Belgium	9	68	10	18	18	365	445	193	110	137	66	2.69	5.00	1.75	104	94	105
Rvpf 735.3	Belgium	9	70	8	14	14	261	283	183	79	87	62	3.47	5.62	2.28	134	106	137
Rvpf 735.4	Belgium	9	72	9	14	13	265	300	236	80	92	80	2.62	5.98	2.42	102	113	146
Rvpf 735.5	Belgium	9	69	9	14	11	258	241	177	78	74	60	2.35	5.27	2.20	91	103	133
Sabre	U.K.	9	58	15	23	23	360	297	137	108	91	47	2.24	4.68	2.08	87	88	125
Suceava	Rumania	9	73	3	10	11	365	531	273	110	163	93	2.96	5.49	2.40	115	103	145
Surprise	Netherlands	9	71	8	13	14	304	291	175	92	89	60	3.20	5.69	2.11	124	107	127
Syn IA	U.K.	9	68	6	9	9	196	405	192	59	124	65	1.97	5.06	1.97	76	95	119
Syn IB	U.K.	9	73	6	10	10	228	439	227	69	135	77	2.46	5.53	2.26	95	104	136
Syn IC	U.K.	9	73	7	9	10	224	398	242	67	122	82	2.17	5.53	2.02	84	104	122
Syn II	U.K.	9	73	8	13	11	282	336	172	85	103	59	2.73	5.89	1.64	106	111	99
Syn IIIA	U.K.	9	76	8	13	13	314	227	175	95	70	60	2.76	4.59	2.08	107	86	125
Timfor	USA	9	77	7	10	10	269	381	230	81	117	78	2.08	4.64	1.90	81	87	114
Topas Ototte	Denmark	9	77	6	11	11	422	484	300	127	148	102	2.69	6.29	2.69	104	119	162
TT 3-70	Netherlands	9	73	17	24	20	231	237	131	70	73	45	1.97	4.77	1.55	76	90	93
TW 4-70	Netherlands	9	62	16	23	26	404	307	107	122	94	36	2.24	5.08	1.32	87	96	80
Verdant	USA	9	81	11	15	12	328	316	224	99	97	76	3.58	6.63	2.55	139	125	154
Winda	Netherlands	9	63	22	28	23	149	162	30	45	50	10	2.84	4.46	1.32	110	84	80
Mean							312	339	193				2.49	5.11	1.95			
L.S.D. (P = .05)							62.41	38.52	38.40				0.16	0.22	0.38			

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Climax		(DM)	t/ha	% of Climax	
						1979	1980	1979	1980	1979	1980	1979	1980
Asterix	Netherlands	9	50	Sept. 4	Aug. 14	318	7	77	3	(1)	4.06	(1)	88
Barmidi	Netherlands	9	69	Aug. 15	Aug. 5	335	169	81	65		5.56		120
Barmoti	Netherlands	9	66	Aug. 9	Aug. 25	456	388	110	148		4.35		94
Bartimi	Netherlands	9	69	Aug. 15	Aug. 5	431	221	104	84		5.35		116
Barvanti	Netherlands	9	61	Aug. 22	Aug. 25	326	106	79	40		3.37		73
Basho	Canada	9	62	Aug. 9	July 24	284	185	69	71		3.17		68
Bodin	Norway	9	71	Aug. 9	July 30	590	441	143	168		5.99		129
Bottnia II	Sweden	9	72	Aug. 9	July 30	461	278	112	106		4.77		103
Champlain	Netherlands	9	90	Aug. 19	Aug. 11	336	202	81	77		4.84		105
Climax*	Canada	9	75	Aug. 12	July 30	413	262	100	100		4.63		100
Deploy	U.K.	9	29	Aug. 22	Aug. 14	168	36	41	14		3.70		80
Engmo	Norway	9	74	Aug. 9	July 30	552	337	134	129		5.22		113
Erecta	Belgium	9	67	Aug. 11	July 30	349	159	85	61		4.20		91
Farol	Netherlands	9	64	Aug. 22	Aug. 11	343	100	83	38		3.57		77
Fleamar	Netherlands	9	61	Aug. 11	July 30	446	247	108	94		3.23		70
Forus	Norway	9	65	Aug. 9	July 30	441	295	107	113		4.01		87
Georgikon	Hungary	9	72	Aug. 9	Aug. 2	450	290	109	111		4.29		93
Goliath	Netherlands	9	70	Aug. 17	July 30	504	209	122	80		4.98		108
Grinstad	Norway	9	67	Aug. 12	July 30	549	312	133	119		4.95		107
Gusto	Netherlands	9	65	Sept. 4	Aug. 25	401	48	97	18		7.34		159
Hokua	Japan	9	64	Aug. 9	July 30	353	294	85	112		3.96		86
Korpa	Iceland	9	68	Aug. 9	July 30	598	382	145	146		6.20		134
Mandorfer	Germany	9	65	Aug. 11	July 30	501	317	121	121		5.00		108
Megas	Netherlands	9	67	Aug. 14	July 30	287	104	69	40		3.99		86
Meson	Netherlands	9	62	Aug. 22	Aug. 14	302	67	73	26		4.29		93
Mino	Denmark	9	53	Aug. 20	Aug. 11	409	155	99	59		5.14		111
Motim	Netherlands	9	71	Aug. 20	Aug. 5	367	64	89	24		4.92		106
N.F.G.	Germany	9	64	Aug. 9	July 30	493	366	119	140		3.68		79
Otto	Finland	9	70	Aug. 11	July 30	551	364	133	139		5.07		110

(1) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Climax		(DM)	t/ha	% of Climax	
						1979	1980	1979	1980	1979	1980	1979	1980
Palermo	Netherlands	9	25	Aug.22	Aug. 14	221	145	54	55	(1)	1.83	(1)	40
Para	Poland	9	66	Aug. 9	Aug. 5	339	305	82	116		3.44		74
Pedion	Netherlands	9	62	Aug.22	Aug. 14	292	53	71	20		3.34		72
Pet	Germany	9	66	Aug. 9	July 30	448	348	108	133		4.54		98
Philewola	Germany	9	67	Aug. 9	July 30	335	217	81	83		4.26		92
Pota	Denmark	9	69	Aug.12	July 30	458	303	111	116		5.17		112
Pronto	USA	9	67	Aug.15	July 30	371	192	90	73		5.69		123
Ramona	Netherlands	9	20	Aug.22	Aug. 11	185	121	45	46		2.56		55
Rasant	Germany	9	71	Aug. 9	July 30	414	358	100	137		4.00		86
Richmond	Canada	9	66	Aug. 9	July 30	398	336	96	128		4.56		98
Rotenberg	Sweden	9	70	Aug. 9	July 30	442	338	107	129		4.65		100
RVP251F	Belgium	9	60	Aug.17	Aug. 4	309	52	75	20		4.72		102
Sabre	U.K.	9	66	Aug.22	Aug. 25	356	137	86	52		5.02		108
Sigma	Netherlands	9	53	Aug.22	Aug. 14	304	36	74	14		3.29		71
Suceava	Rumania	9	65	Aug. 9	July 30	407	342	99	131		4.18		90
Surprise	Netherlands	9	66	Aug.17	Aug. 5	449	202	109	77		5.40		117
Tammisto	Finland	9	74	Aug. 9	July 30	457	341	111	130		4.03		87
Tapio 800	Hungary	9	69	Aug. 9	July 30	390	306	94	117		4.35		95
Tarmo	Finland	9	69	Aug. 9	July 30	561	369	136	141		4.90		106
Tilda	Denmark	9	62	Aug.11	Aug. 2	365	200	88	76		3.58		77
Timfor	USA	9	65	Aug. 9	July 30	328	255	79	97		4.39		95
Topas Otofte	Denmark	9	67	Aug.12	July 30	357	231	86	88		4.38		95
Vallo	Sweden	9	65	Aug.11	July 30	534	393	129	150		4.49		97
Verdant	USA	9	76	Aug.15	Aug. 1	382	226	92	86		5.06		109
Mean						399	230				4.45		
L.S.D. (P = .05)						42.04	38.43				0.58		

(1) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Climax		(DM) t/ha		% of Climax	
						1979	1980	1979	1980	1979	1980	1979	1980
Asterix	Netherlands	9	47	Aug. 20	Aug. 20	(1)	102	(1)	39	(2)	.98	(2)	48
Barmidi	Netherlands	9	66	Aug. 15	Aug. 2		128		48		1.84		90
Barmoti	Netherlands	9	64	Aug. 15	Aug. 2		232		88		1.68		82
Bartimi	Netherlands	9	54	Aug. 15	July 29		156		59		1.81		88
Barvanti	Netherlands	9	54	Aug. 19	Aug. 12		102		39		1.82		89
Basho	Canada	9	69	Aug. 17	July 29		164		62		1.66		81
Bodin	Norway	9	71	Aug. 17	July 29		386		146		2.48		121
Bottnia II	Sweden	9	69	Aug. 15	July 29		258		98		2.40		117
Champlain	Netherlands	9	73	Aug. 15	Aug. 4		175		66		2.10		102
Climax*	Canada	9	74	Aug. 15	July 29		264		100		2.05		100
Deploy	U.K.	9	27	Aug. 17	Aug. 12		40		15		.83		40
Engmo	Norway	9	70	Aug. 15	July 29		358		137		2.60		127
Erecta	Belgium	9	69	Aug. 15	July 29		162		63		1.59		78
Farol	Netherlands	9	63	Aug. 15	Aug. 12		132		50		1.42		69
Forus	Norway	9	68	Aug. 15	July 29		295		112		2.14		104
Georgikon	Hungary	9	71	Aug. 15	July 29		349		132		2.26		110
Goliath	Netherlands	9	59	Aug. 15	July 29		177		67		1.68		82
Grindstad	Norway	9	63	Aug. 15	July 29		204		77		1.79		87
Gusto	Netherlands	9	64	Aug. 20	Aug. 12		70		27		2.27		111
Hokua	Japan	9	56	Aug. 15	July 29		163		62		1.37		67
Korpa	Iceland	9	69	Aug. 15	July 29		482		183		3.16		154
Mahndorfer	Germany	9	64	Aug. 15	July 29		237		90		1.83		89
Megas	Netherlands	9	67	Aug. 15	Aug. 12		123		47		1.40		68
Meson	Netherlands	9	67	Aug. 17	Aug. 12		183		69		2.03		99
Mino	Denmark	9	49	Aug. 15	Aug. 6		48		18		.90		44
Motim	Netherlands	9	54	Aug. 15	Aug. 6		153		58		1.74		85

(1) Harvested seeds destroyed by fire.

(2) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Climax		(DM) t/ha		% of Climax	
						1979	1980	1979	1980	1979	1980	1979	1980
N.F.G.	Germany	9	65	Aug. 15	July 29	(1)	289	(1)	109	(2)	1.84	(2)	90
Otto	Finland	9	76	Aug. 15	July 29		445		169		2.86		140
Palermo	Netherlands	9	22	Aug. 15	July 29		83		31		.61		30
Pedion	Netherlands	9	59	Aug. 15	Aug. 12		118		45		1.65		80
Pet	Germany	9	68	Aug. 15	July 29		268		102		2.05		100
Phlewiola	Germany	9	66	Aug. 15	July 29		245		93		2.08		101
Pota	Denmark	9	66	Aug. 15	July 29		196		74		1.91		93
Pronto	USA	9	69	Aug. 15	July 29		219		83		2.13		104
Ramona	Netherlands	9	19	Aug. 15	Aug. 6		36		14		.38		19
Rasant	Germany	9	66	Aug. 15	July 29		347		131		2.37		116
Richmond	Canada	9	64	Aug. 15	July 29		220		83		2.13		104
Rotenberg	Sweden	9	73	Aug. 15	July 29		412		156		2.21		108
RVP251F	Belgium	9	57	Aug. 15	Aug. 6		147		56		2.15		105
Sabre	U.K.	9	57	Aug. 19	Aug. 20		178		67		1.19		58
Sigma	Netherlands	9	44	Aug. 20	Aug. 12		162		61		1.44		70
Suceava	Rumania	9	56	Aug. 15	July 23		214		81		1.70		83
Surprise	Netherlands	9	55	Aug. 17	Aug. 6		229		87		2.30		112
Tammisto	Finland	9	72	Aug. 15	July 29		350		133		2.40		117
Tapio 800	Hungary	9	67	Aug. 15	July 29		266		101		2.01		98
Tarmo	Finland	9	71	Aug. 15	July 29		436		165		2.47		120
Tilda	Denmark	9	74	Aug. 15	July 29		204		77		1.56		76
Timfor	USA	9	61	Aug. 15	July 29		247		94		2.03		99
Topas Otofte	Denmark	9	71	Aug. 15	July 29		137		52		1.12		55
Vallo	Sweden	9	71	Aug. 15	July 29		358		136		2.26		110
Verdant	USA	9	72	Aug. 15	July 29		229		87		2.52		123
Mean							219				1.87		
L.S.D. (P = .05)							54.99				0.36		

(1) Harvested seeds destroyed by fire.

(2) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Climax		(DM)	t/ha	% of Climax	
						1979	1980	1979	1980	1979	1980	1979	1980
Asterix	Netherlands	9	69	Aug. 15	Aug. 19	(1)	40	(1)	11	(2)	5.72	(2)	85
Barmidi	Netherlands	9	98	Aug. 15	July 30		132		36		2.79		41
Barmoti	Netherlands	9	95	Aug. 15	July 30		284		77		3.00		44
Bartimi	Netherlands	9	99	Aug. 15	July 30		191		51		4.00		59
Barvanti	Netherlands	9	46	Aug. 15	Aug. 19		61		16		4.47		66
Bodin	Norway	9	108	Aug. 15	July 30		554		149		4.37		65
Bottnia II	Sweden	9	107	Aug. 15	July 30		497		134		4.62		68
Champlain	Netherlands	9	103	Aug. 15	July 30		95		26		3.51		52
Climax*	Canada	9	106	Aug. 15	July 30		371		100		6.76		100
Engmo	Norway	9	106	Aug. 15	July 30		491		132		4.36		65
Erecta	Belgium	9	89	Aug. 15	July 30		116		31		2.11		31
Fleamar	Netherlands	9	93	Aug. 15	July 30		161		43		2.42		36
Forus	Norway	9	96	Aug. 15	July 30		364		98		4.58		68
Georgikon	Hungary	9	101	Aug. 15	July 30		327		88		4.67		69
Goliath	Netherlands	9	92	Aug. 15	July 30		171		46		2.93		43
Grindstad	Norway	9	100	Aug. 15	July 30		317		85		4.88		72
Gusto	Netherlands	9	59	Aug. 15	Aug. 19		58		16		3.37		50
Hokua	Japan	9	96	Aug. 15	July 30		256		69		5.80		86
Korpa	Iceland	9	105	Aug. 15	July 30		554		149		6.11		90
Mahndorfer	Germany	9	100	Aug. 15	July 30		196		53		3.49		52
Megas	Netherlands	9	92	Aug. 15	July 30		116		31		3.51		52
Meson	Netherlands	9	82	Aug. 15	Aug. 19		134		36		4.75		70
Mino	Denmark	9	95	Aug. 15	July 30		93		25		5.17		76
Motim	Netherlands	9	95	Aug. 15	Aug. 19		86		23		2.38		35
N.F.G.	Germany	9	96	Aug. 15	July 30		299		81		3.17		47
Otto	Finland	9	103	Aug. 15	July 30		428		115		6.82		101

(1) Harvested seeds destroyed by fire

(2) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Climax		(DM) t/ha		% of Climax	
						1979	1980	1979	1980	1979	1980	1979	1980
Palermo	Netherlands	9	63	Aug. 15	Aug. 19	(1)	15	(1)	4	(2)	2.17	(2)	32
Pedion	Netherlands	9	68	Aug. 15	Aug. 19		116		31		4.52		67
Pet	Germany	9	94	Aug. 15	July 30		258		70		1.93		29
Phlewiola	Germany	9	93	Aug. 15	July 30		417		112		5.26		79
Pota	Denmark	9	97	Aug. 15	July 30		268		72		4.32		64
Pronto	USA	9	94	Aug. 15	July 30		130		35		2.98		44
Ramona	Netherlands	9	66	Aug. 15	Aug. 19		110		30		1.55		23
Rasant	Germany	9	96	Aug. 15	July 30		344		93		3.34		49
Richmond	Canada	9	98	Aug. 15	July 30		212		57		3.81		56
Rotenberg	Sweden	9	106	Aug. 15	July 30		457		123		4.61		68
RVP251F	Belgium	9	90	Aug. 15	July 30		53		14		4.42		65
Sabre	U.K.	9	78	Aug. 15	Aug. 19		74		20		3.13		46
Sigma	Netherlands	9	63	Aug. 15	Aug. 19		126		34		2.94		43
Suceava	Rumania	9	96	Aug. 15	July 30		141		38		2.41		36
Surprise	Netherlands	9	90	Aug. 15	Aug. 19		122		33		4.10		61
Tammisto	Finland	9	106	Aug. 15	July 30		553		149		5.77		85
Tapio 800	Hungary	9	105	Aug. 15	July 30		284		77		2.92		43
Tarmo	Finland	9	104	Aug. 15	July 30		338		91		4.42		65
Timfor	USA	9	99	Aug. 15	July 30		188		51		3.71		55
Topas Otofte	Denmark	9	95	Aug. 15	July 30		248		67		4.22		62
Vallo	Sweden	9	95	Aug. 15	July 30		404		109		6.67		99
Verdant	USA	9	106	Aug. 15	July 30		157		42		3.25		48

Mean

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

237.74

103.96

3.99

1.90

(1) Harvested seeds destroyed by fire

(2) Herbage not measured

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Folher Beaupre Farm			Ft.Vermilion Experimental Farm			High Level Fedeyko Farm		
			Ht. cm	Yield t/ha	% of Climax	Ht. cm	Yield t/ha	% of Climax	Ht. cm	Yield t/ha	% of Climax	Ht. cm	Yield t/ha	% of Climax	Ht. cm	Yield t/ha	% of Climax
Alpage	France	9	81	5.21	98	71	4.22	98	55	1.82	92	88	8.04	80	66	1.44	84
Asterix	Netherlands	9	64	6.28	118	67	4.11	95	29	0.69	35	48	6.91	69	40	1.72	100
Bartimi	Netherlands	9	79	5.11	96	65	4.29	99	49	1.83	92	90	10.13	101	66	1.51	88
Basho	Canada	9	74	3.71	70	70	3.68	85	50	1.44	73	93	6.91	69	67	0.66	38
Bilbo	Denmark	9	85	4.84	91	70	4.49	104	63	1.94	98	94	9.50	94	73	2.02	117
Bottnia II	Sweden	9	85	4.89	92	71	5.54	129	59	2.34	118	104	17.53	174	83	3.14	183
Bounty	Canada	9	88	4.51	85	79	4.27	99	65	1.43	72	92	9.02	90	79	1.54	90
Champ	Canada	9	81	5.05	95	64	4.01	93	42	1.50	76	95	11.19	111	70	1.59	92
Climax*	Canada	9	90	5.30	100	75	4.31	100	52	1.98	100	95	10.06	100	74	1.72	100
Engmo	Norway	9	81	4.63	87	77	5.28	123	57	2.07	105	104	16.05	160	71	2.81	163
Erecta	Belgium	9	83	5.64	106	72	4.30	100	61	1.86	94	88	7.72	77	66	1.55	90
Goliath	Netherlands	9	83	5.58	105	67	4.77	111	55	1.96	99	94	12.42	123	71	2.29	133
Hokushu	Japan	9	83	6.60	125	66	5.22	121	59	2.07	105	98	9.79	97	77	2.33	135
Itasca	Sweden	9	91	5.05	95	71	4.44	103	56	1.91	96	100	11.48	114	70	1.18	69
Korpa	Iceland	9	85	4.61	87	70	5.70	132	59	2.02	102	99	14.54	145	76	3.14	183
Ludor	France	9	79	4.81	91	64	3.70	86	50	1.55	78	88	10.42	104	71	1.50	87
Melora	Holland	9	81	5.80	109	66	4.78	111	47	1.87	94	87	8.53	85	74	1.68	98
Mino	Denmark	9	83	5.33	101	65	4.63	107	50	1.93	97	94	6.94	69	78	1.71	99
Nosappu	Japan	9	90	5.28	100	69	5.06	117	52	2.01	102	96	12.50	124	71	1.99	116
Otto	Finland	9	91	4.41	83	70	4.53	105	63	2.32	117	99	13.71	136	70	2.31	134
Polka	U.K.	9	89	5.07	96	69	4.06	94	55	1.92	97	94	9.72	97	74	1.79	104
Pota	Denmark	9	86	5.50	104	72	4.80	111	59	2.20	111	95	12.51	124	70	1.51	88
Pronto	USA	9	89	5.48	103	74	4.79	111	49	1.85	95	90	10.17	101	79	2.33	135
Purlieu	U.K.	9	85	5.04	95	72	5.22	121	57	1.44	73	88	7.70	77	69	1.28	74
Ramona	Netherlands	9	48	3.27	62	20	2.36	55	18	0.59	30						
Rasant	Germany	9	86	5.01	95	68	4.85	113	65	2.27	115	86	9.78	97	71	1.97	115
Richmond	Canada	9	84	4.81	91	62	4.42	103	52	1.85	93	90	9.11	91	76	2.31	134
RVP251F	Belgium	9	83	5.94	112	65	3.97	92	49	1.75	88	89	11.17	111	64	1.57	91
Salvo	Canada	9	78	4.47	84	61	3.54	82	39	1.42	72	78	7.96	79	70	1.90	110
Sigma	Netherlands	9	60	6.10	115	62	3.63	84	39	1.70	86	76	9.39	93	61	1.13	66
Tiiti	Finland	9	88	5.50	104	71	5.64	131	62	2.45	124	78	14.40	143	76	2.07	120
Tilda	Denmark	9	83	4.77	90	70	5.14	119	60	2.00	101	96	11.86	118	79	2.90	169
Topas Otofte	Denmark	9	86	5.51	104	72	4.98	116	59	2.06	104	94	12.29	122	81	2.40	140
Verdant	USA	9	94	6.17	116	83	5.11	119	49	1.97	99	104	11.80	117	79	1.94	113
Mean				5.16			4.53			1.82			10.64			1.91	
L.S.D. (P = .05)				0.56			0.50			0.24			1.60			0.39	

Cultivar	Origin	Hardiness	Beaverlodge Research Station			Beaverlodge Foster's Farm			Falher Beaupre Farm			Ft. Vermilion Experimental Farm			High Level Fedeyko Farm		
			Date Ripe	Yield Kg/ha	% of Climax	Date Ripe	Yield Kg/ha	% of Climax	Date Ripe	Yield Kg/ha	% of Climax	Date Ripe	Yield Kg/ha	% of Climax	Date Ripe	Yield Kg/ha	% of Climax
Alpage	France	9	Aug.18	384	105	Aug. 5	358	105	Aug. 6	148	116	July30	239	89	July28	169	92
Asterix	Netherlands	9	Sept.6	465	127	Aug.25	114	34	Aug.20	28	46	Aug.19	133	49	Aug. 2	137	75
Bartimi	Netherlands	9	Aug.12	405	110	Aug.11	406	119	Aug. 6	186	145	July30	346	128	July28	141	98
Basho	Canada	9	Aug.20	192	52	Aug. 5	352	104	Aug. 6	79	62	July30	95	35	July28	53	29
Bilbo	Denmark	9	Aug.16	309	84	Aug. 5	433	127	July29	176	138	July30	292	108	July28	177	86
Bottnia II	Sweden	9	Aug.12	703	192	July30	498	146	July29	206	161	July30	960	356	July28	576	313
Bounty	Canada	9	Aug.19	218	59	Aug.11	291	86	Aug. 6	104	81	July30	325	120	Aug. 2	114	62
Champ	Canada	9	Aug.12	353	96	July30	304	89	Aug. 6	107	84	July30	240	89	July28	144	83
Climax*	Canada	9	Aug.12	367	100	Aug. 5	340	100	Aug. 6	128	100	July30	270	100	Aug. 2	184	100
Engmo	Norway	9	Aug.12	571	156	Aug. 5	639	188	Aug. 6	222	173	July30	955	354	July28	538	292
Erecta	Belgium	9	Aug.13	469	128	Aug. 5	369	109	July29	120	94	July30	307	114	July28	217	118
Goliath	Netherlands	9	Aug.12	407	111	Aug. 5	354	104	July29	150	117	July30	393	146	July28	307	167
Hokushu	Japan	9	Aug.19	443	121	Aug.11	219	64	Aug. 8	164	128	July30	215	80	Aug. 7	248	135
Itasca	Sweden	9	Aug.12	268	73	July30	295	87	July29	108	84	July30	276	102	Aug. 2	161	62
Korpa	Iceland	9	Aug.12	792	216	July30	274	81	July29	245	191	July30	949	351	July28	582	250
Ludor	France	9	Aug.19	131	36	Aug.11	181	53	Aug. 6	62	48	July30	174	64	July28	90	49
Melora	Netherlands	9	Aug.16	363	99	Aug.11	269	79	Aug. 8	81	63	July30	158	59	Aug. 2	143	82
Mino	Denmark	9	Aug.16	304	82	Aug.11	306	90	Aug. 8	153	120	July30	153	57	July28	147	111
Nosappu	Japan	9	Aug.12	496	135	July30	506	149	Aug. 6	165	129	July30	312	116	July28	201	95
Otto	Finland	9	Aug.12	537	146	July30	501	147	July29	265	207	July30	737	273	July28	390	212
Polka	U.K.	9	Aug.13	431	117	Aug. 5	384	113	Aug. 6	172	134	July30	282	104	July28	176	96
Pota	Denmark	9	Aug.12	406	111	Aug. 5	436	128	July29	133	104	July30	315	117	July28	141	77
Pronto	USA	9	Aug.13	403	110	Aug. 5	389	114	Aug. 6	155	121	July30	284	105	July28	293	159
Purlieu	U.K.	9	Aug.16	358	98	Aug.11	334	98	Aug.12	135	105	July30	122	45	Aug.13	108	125
Ramona	Netherlands	6	Aug.23	86	23	Aug.11	205	60	Aug.12	17	13	July30	0	0	July28	-	23
Rasant	Germany	9	Aug.12	607	165	July30	558	164	July29	323	252	July30	421	156	July28	403	219
Richmond	Canada	9	Aug.16	319	87	July30	422	124	July29	139	109	July30	208	77	July28	157	85
RVP 251F	Belgium	9	Aug.16	272	74	Aug.11	180	53	Aug. 8	70	55	July30	177	66	July28	123	92
Salvo	Canada	9	Aug.13	225	61	July30	275	81	July29	56	44	Aug. 9	166	62	July28	65	35
Sigma	Netherlands	9	Aug.26	671	183	Aug.25	332	98	Aug.12	189	148	Sept.1	509	189	Aug.13	418	215
Tiili	Finland	9	Aug.12	631	172	July30	437	129	July29	272	213	July30	725	269	July28	456	248
Tilda	Denmark	9	Aug.12	358	98	Aug. 5	517	152	July29	196	153	July30	461	171	July28	306	166
Topas Otofte	Denmark	9	Aug.12	399	109	Aug. 5	486	143	Aug. 6	174	136	July30	365	135	July28	224	97
Verdant	USA	9	Aug.12	410	112	Aug.5	358	105	Aug. 6	139	109	July30	332	123	July28	230	125
Mean				404			371			149			350			237	
L.S.D. (P = .05)				91.19			49.87			36.51			73.20			56.36	

ALSIKE CLOVER

Test Site: Beaverlodge (Foster's Farm)
Seeding Year: 1978

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Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Aurora		(DM)	t/ha	% of Aurora	
						1979	1980	1979	1980	1979	1980	1979	1980
Aldan Trifolium	Denmark	5	(1)	Sept.17	Sept.25	460	86	83	90	4.35	0.34	110	57
Alpo	Norway	4		Sept.17	Sept.25	556	0	100	0	3.77	0	95	0
Aurora *	Canada	7		Sept.17	Sept.25	556	96	100	100	3.99	0.60	100	100
Dawn	Canada	7		Sept.17	Sept.25	624	128	112	133	4.51	0.40	113	67
Ermo Otofte	Denmark	5		Sept.17	Sept.25	450	104	81	108	3.14	-	78	-
Hogsta	Sweden	8		Sept.17	Sept.25	484	109	87	114	4.03	0.43	100	72
Iso Tetra	Finland	8		Sept.17	Sept.25	524	100	94	104	4.55	0.36	113	60
Jeno Daehnfeldt	Denmark	4		Sept.17	Sept.25	353	54	63	56	4.17	-	105	-
Odenwalder	Germany	7		Sept.17	Sept.25	487	187	88	195	4.25	0.27	105	45
Ofofte	Denmark	4		Sept.17	Sept.25	506	43	91	45	2.85	-	73	-
Otofte 4N	Denmark	6		Sept.17	Sept.25	516	104	93	108	3.91	0.22	98	37
Stena 4N	Sweden	7		Sept.17	Sept.25	413	36	74	38	4.18	0.16	105	27
Strain II	Canada	6		Sept.17	Sept.25	492	139	88	145	5.02	0.36	125	60
Tetra	Sweden	8		Sept.17	Sept.25	569	139	102	145	4.36	0.38	110	63
Mean						499	95			4.08	0.32		
L.S.D. (P = .05)						68.46	37.20			0.85	0.16		

(1) Height not measured

RED CLOVER

Test Site: Beaverlodge (Foster's Farm)
Seeding Year: 1978

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Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Altaswede		(DM)	t/ha	% of Altaswede	
						1979	1980	1979	1980	1979	1980	1979	1980
Altaswede*	Canada	9	(1)	Sept. 17	Sept. 25	713	529	100	100	6.27	1.14	100	100
Arlington	USA	2		Sept. 17	Sept. 25	371	52	52	10	2.86	0.27	46	24
Astra	U.K.	3		Sept. 17	Sept. 25	260	179	36	34	3.30	0.48	53	42
Bjorn	Sweden	9		Sept. 17	Sept. 25	540	362	76	68	5.64	0.95	90	83
Duro	Denmark	2		Sept. 17	Sept. 25	616	0	86	0	3.49	0	56	0
Elbo	Denmark	7		Sept. 17	Sept. 25	618	434	87	82	3.71	0.90	59	79
Granta	U.K.	1		Sept. 17	Sept. 25	233	0	33	0	2.00	0	32	0
Gumpensteiner	Austria	1		Sept. 17	Sept. 25	92	0	13	0	1.43	0	23	0
Heges Hohenheimer	Germany	0		Sept. 17	Sept. 25	0	-	0	-	1.16	-	19	-
Krano	Denmark	7		Sept. 17	Sept. 25	784	337	110	64	3.80	0.56	61	49
Kuhn	Netherlands	2		Sept. 17	Sept. 25	287	64	40	12	3.39	0.21	54	18
Marcom	France	0		Sept. 17	Sept. 25	39	0	5	0	1.57	0	25	0
Maris Gemini	U.K.	.5		Sept. 17	Sept. 25	211	0	30	0	1.73	0	28	0
Merkur	Sweden	8		Sept. 17	Sept. 25	612	343	86	65	4.59	0.84	73	74
Monte-Calme	Switzerland	.5		Sept. 17	Sept. 25	148	0	21	0	2.22	0	35	0
Nava Trifolium	Denmark	7		Sept. 17	Sept. 25	877	351	123	66	4.22	0.71	67	62
Norlac	Canada	9		Sept. 17	Sept. 25	566	510	79	96	6.72	0.96	107	84
Norseman	U.K.	0		Sept. 17	Sept. 25	0	-	0	-	0.64	-	10	-
Olvi Otofte	Denmark	2		Sept. 17	Sept. 25	475	113	67	21	3.05	0.21	49	18
Pacific	Canada	0		Sept. 17	Sept. 25	0	-	0	-	1.07	-	17	-
Perenta	Rumania	3		Sept. 17	Sept. 25	150	76	21	14	2.66	0.33	42	29
Redhead	Germany	0		Sept. 17	Sept. 25	0	-	0	-	1.42	-	23	-
Redland	USA	1		Sept. 17	Sept. 25	273	0	38	0	2.57	0	41	0
S.123	U.K.	1		Sept. 17	Sept. 25	333	0	47	0	2.33	0	37	0
Taplanszentkeresztli	Hungary	0		Sept. 17	Sept. 25	83	0	12	0	1.38	0	22	0
Venia	Finland	6		Sept. 17	Sept. 25	675	377	95	71	5.63	0.92	90	81

RED CLOVER - TETRAPLOID

Hamidori 4N	Japan	1	(1)	Sept. 17	Sept. 25	66	0	9	0	1.43	0	23	0
Rea	Sweden	2		Sept. 17	Sept. 25	396	0	56	0	3.67	0	59	0
Sally	Sweden	6		Sept. 17	Sept. 25	342	178	48	34	4.09	0.34	65	30
Temara 4N	Switzerland	.5		Sept. 17	Sept. 25	0	-	0	-	1.24	-	20	-
Tripo	Norway	7		Sept. 17	Sept. 25	450	241	63	46	4.50	0.42	72	37
Ulva	Sweden	5		Sept. 17	Sept. 25	374	61	52	12	4.97	0.14	79	12
Mean						331	156			3.09	0.35		
L.S.D. (P = .05)						80.86	72.85			0.80	0.19		

(1) Height not measured

RED CLOVER

Test Site: Falher (Beaupre Farm)
Seeding Year: 1978

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Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha	% of Altaswede		(DM)	t/ha	% of Altaswede		
						1979	1980	1979	1980	1979	1980	1979	1980
Altaswede*	Canada	8	(1)	Sept. 25	Oct. 8	377	418	100	100	(1)	2.77	(1)	100
Arlington	USA	6		Sept. 25	Oct. 8	371	185	98	44		0.77		28
Astra	U.K.	6		Sept. 25	Oct. 8	202	74	54	18		0.51		18
Bjorn	Sweden	7		Sept. 25	Oct. 8	398	303	106	72		1.16		42
Elbo	Denmark	7		Sept. 25	Oct. 8	474	218	126	52		0.86		31
Krano	Denmark	7		Sept. 25	Oct. 8	362	317	96	76		1.36		49
Kuhn	Netherlands	4		Sept. 25	Oct. 8	487	0	129	0		0		0
Merkur	Sweden	7		Sept. 25	Oct. 8	329	272	87	65		1.68		61
Nava Trifolium	Denmark	7		Sept. 25	Oct. 8	526	114	140	27		0.53		19
Norlac	Canada	8		Sept. 25	Oct. 8	318	435	84	104		3.57		129
Olvi Otofte	Denmark	6		Sept. 25	Oct. 8	337	139	89	33		0.15		5
S.123	U.K.	4		Sept. 25	Oct. 8	374	0	99	0		0		0
Venla	Finland	7		Sept. 25	Oct. 8	365	227	97	54		0.87		31

RED CLOVER - TETRAPLOID

Rea	Sweden	8	(1)	Sept. 25	Oct. 8	324	17	86	4	(1)	0	(1)	0
Sally	Sweden	7		Sept. 25	Oct. 8	202	103	54	25		0.96		35
Tripo	Norway	7		Sept. 25	Oct. 8	183	255	49	61		1.56		56
Ulva	Sweden	8		Sept. 25	Oct. 8	147	116	39	28		1.60		58

Mean 340 198 1.08

L.S.D. (P = .05) 74.71 79.33 0.52

(1) Herbage not measured

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1979	1980	Kg/ha		% of Altaswede		(DM)	t/ha	% of Altaswede	
						1979	1980	1979	1980	1979	1980	1979	1980
Altaswede*	Canada	8	78	Sept. 12	Sept. 30	878	829	100	100	(1)	(1)	(1)	(1)
Arlington	USA	4	62	Sept. 12	Sept. 30	310	107	35	13				
Astra	U.K.	4	68	Sept. 12	Sept. 30	615	129	70	16				
Bjorn	Sweden	8	72	Sept. 12	Sept. 30	553	1116	63	135				
Elbo	Denmark	5	72	Sept. 12	Sept. 30	812	182	92	22				
Granta	U.K.	1		Sept. 12	Sept. 30	0	-	0	-				
Gumpensteiner	Austria	0		Sept. 12	Sept. 30	0	-	0	-				
Heges Hohenheimer	Germany	1		Sept. 12	Sept. 30	0	-	0	-				
Kuhn	Netherlands	2		Sept. 12	Sept. 30	186	-	21	-				
Marcom	France	0		Sept. 12	Sept. 30	0	-	0	-				
Maris Gemini	U.K.	1		Sept. 12	Sept. 30	0	-	0	-				
Merkur	Sweden	7	73	Sept. 12	Sept. 30	1071	617	122	74				
Nava Trifolium	Denmark	5	66	Sept. 12	Sept. 30	1133	54	129	7				
Norlac	Canada	8	71	Sept. 12	Sept. 30	1043	1155	119	139				
Norseman	U.K.	0		Sept. 12	Sept. 30	0	-	0	-				
Olvi Otofte	Denmark	4	65	Sept. 12	Sept. 30	837	172	95	21				
Pacific	Canada	0		Sept. 12	Sept. 30	0	-	0	-				
Taplanszentkereszt	Hungary	1		Sept. 12	Sept. 30	0	-	0	-				
Mean						391	484						
L.S.D. (P = .05)						201.90	160.77						

Cultivar	Origin	Beaverlodge Research Station				Beaverlodge Foster's Farm				Father Beaupre Farm				Ft. Vermilion Experimental Farm			
		Hardi- ness	Ht. (cm)	(DM) t/ha	% of Altaswede	Hardi- ness	Ht. (cm)	(DM) t/ha	% of Altaswede	Hardi- ness	Ht. (cm)	(DM) t/ha	% of Altaswede	Hardi- ness	Ht. (cm)	(DM) t/ha	% of Altaswede
Altaswede*	Canada	9	54	4.21	100	8	(1)	5.40	100	8	(1)	1.98	100	8	54	4.83	100
Ejorn	Sweden	9	58	5.07	121	8		4.95	92	8		1.92	97	8	58	4.87	101
Florex	USA	8	49	4.53	107	8		5.35	99	5		0.78	39	7	49	3.63	75
Florie	USA	7	50	3.37	81	7		4.77	88	5		0.54	27	4	49	2.16	45
Gollum	Denmark	8	58	4.33	102	8		5.48	101	7		0.70	35	5	50	3.51	73
Granta	U.K.	8	56	3.43	81	8		4.41	82	5		0.28	14	1	-	0	0
Grasslands																	
Pawera	New Zealand	8	50	4.28	102	6		5.23	97	2		0.14	7	1	-	0	0
Gumpensteiner	Austria	8	50	2.99	69	6		4.37	91	3		0.22	11	1	40	0.32	7
Krano	Denmark	9	56	4.33	102	8		4.13	76	5		0.89	45	4	53	2.40	50
Lossam	France	8	55	3.28	79	7		5.09	94	3		0.07	4	1	-	0	0
Marino	East Germany	8	54	2.99	69	8		5.39	100	4		0.30	15	6	54	3.09	64
Merkur	Sweden	9	61	4.65	110	8		6.83	126	7		1.10	56	6	54	3.31	69
Monte-Calme	Switzerland	7	51	2.75	67	8		4.51	84	3		0.26	13	3	45	0.74	15
Norlac	Canada	9	55	4.78	112	8		5.52	102	8		1.87	94	8	50	4.88	101
Pacific	Canada	7	49	2.91	69	5		2.74	51	2		0	0	1	-	0	0
Palna	Denmark	9	59	5.14	121	6		5.92	110	5		0.76	38	4	52	1.28	27
Patavium	Italy	4	45	1.70	41	4		2.21	41	2		0.03	2	0	-	0	0
Perenta 4N	Rumania	8	59	2.72	64	6		4.32	80	4		0.39	20	4	57	1.57	33
Quinequeli	Chile	4	43	1.53	36	4		2.56	47	2		0.06	3	1	-	0	0
Rea 4N	Sweden	9	51	1.83	43	8		8.09	150	4		0.47	24	4	58	1.90	39
Sally 4N	Sweden	8	50	1.50	36	7		7.00	130	7		0.91	46	7	54	3.79	78
Sara 4N	Sweden	7	48	1.51	36	5		7.09	131	6		0.63	32	7	55	4.46	92
Taplanszen-																	
tkereszti	Hungary	8	44	2.86	69	8		3.91	72	3		0.21	11	1	-	0	3
Temara 4N	Switzerland	9	49	0.98	24	8		5.43	101	4		0.25	13	2	55	0	0
Tristan	USA	9	49	3.50	83	8		5.63	104	7		0.61	31	6	54	2.77	57
Venla	Finland	9	55	4.45	107	7		5.31	98	7		1.13	57	7	58	4.38	91
Mean				3.29				5.06				0.64				2.07	
L.S.D. (P = .05)				0.71				0.65				0.28				0.61	

(1) Height not measured

Cultivar	Origin	Beaverlodge Research Station			Beaverlodge Foster's Farm			Falter Beaupre Farm			Ft. Vermilion Experimental Farm		
		Hardi- ness	Yield Kg/ha	% of Altaswede	Hardi- ness	Yield Kg/ha	% of Altaswede	Hardi- ness	Yield Kg/ha	% of Altaswede	Hardi- ness	Yield Kg/ha	% of Altaswede
Altaswede*	Canada	9	573	100	8	677	100	8	509	100	8	1475	100
Bjorn	Sweden	9	442	77	8	487	72	8	309	61	8	1354	92
Florex	USA	8	529	92	8	476	70	5	203	40	6	987	67
Florie	USA	7	377	66	7	398	59	5	188	37	4	662	45
Gollum	Denmark	8	537	94	8	572	84	7	280	55	6	1014	69
Granta	U.K.	8	447	78	8	404	60	5	174	34	1	0	0
Grasslands	New												
Pawera	Zealand	8	169	29	6	278	41	2	22	4	1	0	0
Gumpensteiner	Austria	8	307	54	6	319	47	3	89	17	1	103	7
Krand	Denmark	9	679	118	8	705	104	5	222	44	5	759	51
Lossam	France	8	161	28	7	122	18	3	26	5	1	0	0
Marino	East Germany	8	381	66	8	248	37	4	177	35	6	866	59
Merkur	Sweden	9	437	76	8	776	115	7	224	44	7	1272	86
Mont-Calme	Switzerland	7	360	63	8	319	47	3	93	18	2	301	20
Norlac	Canada	9	645	113	8	933	138	8	400	79	8	1369	93
Pacific	Canada	7	594	104	5	560	83	2	0	0	1	59	4
Palna	Denmark	9	594	104	6	699	103	5	235	46	4	513	35
Patavium	Italy	4	378	66	4	375	55	2	14	3	1	0	0
Perenta 4N	Rumania	8	218	38	6	151	22	4	130	26	5	295	20
Quinequeli	Chile	4	317	55	4	494	73	2	0	0	1	0	0
Rea 4N	Sweden	9	285	50	8	492	73	4	121	24	5	414	28
Sally 4N	Sweden	7	247	43	8	541	80	7	98	19	6	627	43
Sara 4N	Sweden	8	278	49	8	486	72	6	116	23	6	790	54
Taplanszen-													
Tkereszt	Hungary	9	492	86	7	467	69	3	44	9	1	32	2
Temara 4N	Switzerland	9	93	16	5	151	22	4	44	9	2	0	0
Tristan	USA	8	494	86	8	400	59	7	187	37	7	853	58
Venla	Finland	9	479	84	7	678	100	7	325	64	7	1306	89
Mean			404			470			163			579	
L.S.D. (P = .05)			76.34			68.77			60.12			166.12	
Date Ripe:			September 29			September 25			October 8			September 30	