

FORAGE CULTIVAR TRIALS

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PREPARED BY

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IN CO-OPERATION WITH



FORAGE CULTIVAR TRIALS

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1981

FOREWORD

This report is the fourth 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-W6th)

Soil type Esher-Hythe. Texture is medium fine, medium organic matter. Subsoil has poor permeability.

2. Beaverlodge B. Foster Farm (SE-25-71-10-W6th)

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-W5th)

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-W5th)

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-W5th)

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.

INDEX

Grasses

Bromegrass (Bromus inermis Leyss.)

Beaverlodge A	1979 seeding	1
Beaverlodge B	1978 seeding	2
	1979 seeding	3
Falher	1978 seeding	4
	1979 seeding	5
Fort Vermilion	1978 seeding	6
	1979 seeding	7
High Level	1979 seeding	8

Fescue - Chewings (Festuca rubra var. fallax Thuillo)

Beaverlodge A	1979 seeding	9
Beaverlodge B	1978 seeding	10
	1979 seeding	11
Falher	1978 seeding	12
	1979 seeding	13
Fort Vermilion	1978 seeding	14
	1979 seeding	15

Fescue - Creeping Red (Festuca rubra L.)

Beaverlodge A	1979 seeding	16
Beaverlodge B	1978 seeding	18
	1979 seeding	17
Falher	1978 seeding	20
	1979 seeding	24
Fort Vermilion	1978 seeding	22
	1979 seeding	25
High Level	1979 seeding	26

Orchardgrass (Dactylis glomerata L.)

Beaverlodge A	1980 seeding	27
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Page

Grasses

Ryegrass - Perennial (Lolium perenne L.)

Page

28

Beaverlodge A 1980 seeding

Timothy - Turf (Phleum bertolonii)

Beaverlodge A	1979 seeding	32
Beaverlodge B	1978 seeding	34
	1979 seeding	32
Falher	1979 seeding	33
Fort Vermilion	1979 seeding	33

Timothy - Hay (Phleum pratense L.)

Beaverlodge A	1979 seeding	35
Beaverlodge B	1978 seeding	40
	1979 seeding	36
Falher	1978 seeding	42
	1979 seeding	37
Fort Vermilion	1978 seeding	44
	1979 seeding	38
High Level	1979 seeding	39

Legumes

Alsike Clover (Trifolium hybridum L.)

Page

46

Beaverlodge B 1978 seeding

Red Clover (Trifolium pratense L.)

Beaverlodge A	1979 seeding	47
Beaverlodge B	1978 seeding	48
	1979 seeding	50
Falher	1978 seeding	51
	1979 seeding	52
Fort Vermilion	1978 seeding	53
	1979 seeding	54

BROMEGRASS

Test Site: Beaverlodge Research Station
Seeding Year: 1979

Page 1

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	1980	1981	% Carlton	1980	1981	t/ha	1980	1981
Baylor	USA	9	98	Aug 12	Aug 5	732	499	56	92	3.80	4.44	79	90
Blair	USA	9	100	Aug 12	Aug 5	334	390	26	72	3.51	4.24	73	86
Carlton*	Canada	9	102	Aug 12	Aug 5	1299	544	100	100	4.79	4.93	100	100
Jubilee	Canada	9	98	Aug 12	Aug 5	721	374	56	69	4.36	4.91	91	100
Kesto	Finland	9	106	Aug 12	Aug 5	884	498	68	92	4.60	4.88	96	99
Magna	Canada	9	108	Aug 12	Aug 5	1112	521	86	96	4.98	4.77	104	97
Mandan 404	USA	9	97	Aug 12	Aug 5	875	483	67	89	4.66	5.19	97	105
Orfeu	Rumania	9	102	Aug 12	Aug 5	1126	558	87	103	4.54	4.79	95	97
Redpatch	Canada	9	96	Aug 12	Aug 5	309	299	24	55	3.40	4.04	71	82
Regar	USA	9	102	Aug 12	July 22	479	492	37	90	3.72	5.40	78	110
S-8800	Canada	9	106	Aug 12	Aug 5	1388	582	107	107	5.78	4.73	121	96
Svaja	Sweden	9	102	Aug 12	Aug 5	1161	479	89	88	5.96	4.58	124	93
Tempo	Canada	9	98	Aug 12	Aug 5	654	318	50	58	3.83	4.14	80	84
WWF 72	Sweden	9	97	Aug 12	Aug 5	1098	393	85	72	5.24	4.87	109	99
Mean						869	4.59			4.51	4.71		
L.S.D. (P = .05)						123.79	131.73			0.99	0.86		

BROMEGRASS

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

Page 2

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield Data					Herbage Yield Data								
				July 1979	July 1980	Aug 4	1979	Yield kg/ha	1980	1981	% of Carlton			1979	Yield (DM) t/ha	1980	1981	% of Carlton		
											1979	1980	1981	1979	1980	1981	1979	1980	1981	
Barton	USA	9	77	27	26	Aug 4	87	207	326	38	61	72	(1)	6.30	4.51	(1)	120	101		
Carlton	Canada	9	76	27	30	Aug 4	227	340	451	100	100	100		5.23	4.47		100	100		
Lyon	USA	9	72	27	30	Aug 4	75	227	406	33	67	90		5.78	4.97		111	111		
Magna	Canada	9	81	27	30	Aug 4	165	429	425	72	126	94		5.54	4.25		106	95		
Mandan 404	USA	9	72	27	30	Aug 4	146	223	329	64	66	73		4.64	4.13		89	92		
Regar	USA	9	76	27	28	July 22	226	137	337	99	40	75		5.44	4.60		104	103		
Tempo	Canada	9	72	27	30	Aug 4	112	232	273	49	68	61		3.84	3.65		73	82		
S-7695	Canada	9	78	27	30	Aug 4	305	624	535	133	184	119		5.85	4.41		112	99		
S-7855	Canada	9	75	27	30	Aug 4	104	211	330	45	62	73		4.91	4.38		94	98		
S-8778	Canada	9	81	27	30	Aug 4	276	795	671	121	234	149		6.14	5.04		117	113		
S-8792	Canada	9	83	27	30	Aug 4	188	365	425	82	103	94		5.30	4.23		101	95		

Mean

L.S.D. (= .05)

174 345 410

53.16 143.27 98.30

(1) Herbage not measured

BROMEGRASS

Test Site: Beaverlodge (Foster's Farm)
Seeding Year: 1979

Page 3

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	Kg/ha 1980	% of 1980	Carlton 1980	Yield t/ha 1980	t/ha 1981	% of 1980	Carlton 1981	Yield t/ha 1981
Baylor	USA	9	86	Aug. 2	Aug. 4	592	495	40	70	3.85	5.36	67	86
Blair	USA	9	85	July 29	Aug. 4	492	373	33	53	3.77	5.60	65	90
Carlton*	Canada	9	90	Aug. 2	Aug. 4	1478	710	100	100	5.77	6.23	100	100
Jubilee	Canada	9	82	Aug. 1	Aug. 4	720	412	49	58	4.22	5.57	73	89
Kesto	Finland	9	86	Aug. 2	Aug. 4	1024	527	69	74	5.01	5.32	87	85
Magna	Canada	9	90	Aug. 2	Aug. 4	1183	689	80	97	5.75	6.00	100	96
Mandan 404	USA	9	82	Aug. 2	Aug. 4	906	436	61	61	4.50	5.26	78	84
Orfeu	Rumania	9	83	July 29	Aug. 4	1369	599	93	84	5.56	5.53	96	89
Redpatch	Canada	9	82	Aug. 2	Aug. 4	345	330	23	46	2.95	4.98	51	80
Regar	USA	9	92	July 28	July 22	619	514	42	72	3.78	5.37	66	86
S-8800	Canada	9	92	July 28	Aug. 4	1754	847	119	119	6.61	6.38	115	102
Svaja	Sweden	9	87	Aug. 2	Aug. 4	1156	593	78	84	5.32	5.76	92	92
Tempo	Canada	9	80	Aug. 2	Aug. 4	782	380	53	54	3.71	4.34	64	70
WWF 72	Sweden	9	80	Aug. 2	Aug. 4	1053	473	71	67	5.13	6.08	89	98
Mean						963	527			4.71	5.56		
L.S.D. (P = .05)						85.77	142.90			0.78	0.86		

BROMEGRASS

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

Page 4

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe						Seed Yield Data			Herbage Yield Data							
				Aug. 1979	Aug. 1980	Aug. 1981	1979	Yield kg/ha		% of Carlton			1979	1980	t/ha	Yield (DM)		% of Carlton		
								1980	1981	1979	1980	1981				1979	1980	1981		
Barton	USA	9	65	1	1	6	437	65	217	64	56	46	(1)	3.70	4.21	(1)	127	114		
Carlton*	Canada	9	62	1	1	6	676	116	470	100	100	100		2.92	3.69		100	100		
Lyon	USA	9	57	1	1	6	568	28	256	83	24	54		2.93	3.83		100	104		
Magna	Canada	9	66	1	1	6	726	143	486	107	123	103		3.08	4.20		105	114		
Mandan 404	USA	9	60	1	1	6	479	79	314	70	68	67		2.83	3.59		97	97		
Regar	USA	9	65	1	July 29	July 24	354	55	243	52	47	52		2.53	3.79		87	103		
Tempo	Canada	9	58	1	1	6	503	46	226	74	48	48		2.25	3.01		77	82		
S-7695	Canada	9	65	1	1	6	759	198	553	112	171	118		2.98	3.92		102	106		
S-7855	Canada	9	61	1	1	6	556	63	270	82	54	57		2.98	3.52		102	95		
S-8778	Canada	9	68	1	1	6	1062	245	621	156	211	132		3.42	4.44		117	120		
S-8792	Canada	9	72	1	1	6	672	139	412	99	120	88		2.95	3.63		101	98		
Mean							617	108	370					2.96	3.80					
L.S.D. (P = .05)							181.83	62.13	112.64					0.65	0.68					

(1) Herbage not measured

BROMEGRASS

Test Site: Falher (Beaupre Farm)
Seeding Year: 1979

Page 5

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	Kg/ha 1980	Kg/ha 1981	% Carlton 1980	% Carlton 1981	Yield t/ha 1980	Yield t/ha 1981	% Carlton 1980	% Carlton 1981
Baylor	USA	9	84	Aug. 1	Aug. 4	919	546	66	83	3.69	6.78	77	103
Blair	USA	9	84	Aug. 1	Aug. 4	475	386	34	59	2.90	6.09	60	92
Carlton*	Canada	9	84	Aug. 1	Aug. 4	1397	657	100	100	4.82	6.59	100	100
Jubilee	Canada	9	78	Aug. 1	Aug. 4	625	441	45	67	3.49	6.27	72	95
Kesto	Finland	9	81	Aug. 1	Aug. 4	1050	597	75	91	4.15	6.45	86	98
Magna	Canada	9	84	Aug. 1	Aug. 4	1179	732	84	111	4.49	7.23	93	110
Mandan 404	USA	9	73	Aug. 1	Aug. 4	603	518	43	79	3.08	5.76	64	87
Orfeu	Rumania	9	81	Aug. 1	Aug. 4	1274	712	91	108	4.77	6.52	99	99
Redpatch	Canada	9	80	Aug. 1	Aug. 4	362	419	26	64	2.74	5.09	57	77
Regar	USA	9	89	July 23	July 22	457	527	33	80	3.00	5.21	62	79
S-8800	Canada	9	94	July 28	Aug. 4	1513	704	108	107	5.16	7.77	107	118
Svaja	Sweden	9	79	Aug. 1	Aug. 4	959	517	69	79	4.23	6.38	88	97
Tempo	Canada	9	74	Aug. 1	Aug. 4	498	436	36	66	2.73	5.11	57	78
WWF 72	Sweden	9	77	Aug. 1	Aug. 4	999	578	72	88	4.50	6.20	93	94
Mean						880	555			3.84	6.25		
L.S.D. (P = .05)						69.22	144.88			0.62	1.15		

BROMEGRASS

Test Site: Ft. Vermilion Experimental Farm
Seeding year: 1978

Page 6

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield Data			Herbage Yield Data			
				July 1979	July 1980	July 1981	Yield kg/ha	% of Carlton		Yield (DM) t/ha	% of Carlton		
								1979	1980	1981	1979	1980	
Barton	USA	9	97	30	30	29	243	143	264	75	49	70	(1) 2.77 3.95
Carlton*	Canada	9	101	30	30	29	323	291	379	100	100	100	3.24 4.48
Lyon	USA	9	84	30	30	29	187	155	177	57	53	47	2.84 3.22
Magna	Canada	9	101	30	30	29	361	384	271	111	130	72	3.46 4.33
Mandan 404	USA	9	96	30	30	29	165	289	265	51	99	70	2.83 3.91
Regar	USA	9	92	30	10	29	306	36	182	94	12	48	2.55 3.92
Tempo	Canada	9	94	30	30	29	286	238	215	88	82	57	3.29 3.85
S-7695	Canada	9	98	30	30	29	544	485	423	168	167	112	3.63 4.24
S-7855	Canada	9	99	30	30	29	214	356	263	66	122	69	3.30 4.07
S-8778	Canada	9	106	30	30	29	284	482	386	150	166	102	3.51 4.75
S-8792	Canada	9	108	30	30	29	645	611	494	200	210	130	4.16 5.94
Mean							342	315	302				3.24 4.24
L.S.D. (P = .05)							119.39	197.20	122.57				0.82 1.21

(1) Herbage not measured

BROMEGRASS

Test Site: Ft. Vermilion Experimental Farm
Seeding Year: 1979

Page 7

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	1980	1981	1980	1981	Yield t/ha	1980	1981	% Carlton
Baylor	USA	9	100	July 30	July 29	627	547	58	131	9.17	6.36	89	98
Blair	USA	9	101	July 30	July 29	482	456	45	109	7.88	6.00	77	93
Carlton*	Canada	9	102	July 30	July 29	1077	418	100	100	10.28	6.47	100	100
Jubilee	Canada	9	95	July 30	July 29	488	314	45	75	8.68	5.93	84	92
Kesto	Finland	9	96	July 30	July 29	728	447	68	107	9.13	5.72	89	88
Magna	Canada	9	103	July 30	July 29	962	627	89	150	10.15	7.50	99	116
Mandan 404	USA	9	95	July 30	July 29	551	343	52	82	8.10	6.07	79	94
Orfeu	Rumania	9	99	July 30	July 29	819	410	76	98	9.57	6.84	93	106
Redpatch	Canada	9	101	July 30	July 29	634	396	59	95	7.48	6.33	73	98
Regar	USA	9	99	July 10	July 19	206	231	19	55	6.78	4.82	66	74
S-8800	Canada	9	114	July 30	July 29	1146	701	106	168	10.58	7.22	103	112
Svaja	Sweden	9	102	July 30	July 29	780	373	72	89	10.05	7.64	98	118
Tempo	Canada	9	102	July 30	July 29	499	450	46	108	8.20	6.21	80	96
WWF 72	Sweden	9	94	July 30	July 29	652	196	61	47	8.99	6.18	87	96
Mean						689	422			8.93	6.38		
L.S.D. (P = .05)						112.09	117.42			1.86	1.24		

BROMEGRASS

Test Site: High Level (Fedeyko Farm)
Seeding Year: 1979

Page 8

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	Kg/ha		% of Carlton		Yield t/ha		% of Carlton	
						1980	1981	1980	1981	1980	1981	1980	1981
Baylor	USA	9	88	July 28	July 29	382	440	44	76	3.22	3.29	71	72
Blair	USA	9	87	July 28	July 29	257	341	30	59	2.52	3.22	56	71
Carlton*	Canada	9	88	July 28	July 29	868	579	100	100	4.54	4.54	100	100
Jubilee	Canada	9	80	July 28	July 29	406	327	47	56	3.92	3.89	86	86
Kesto	Finland	9	92	July 28	July 29	663	509	76	88	4.40	3.96	97	87
Magna	Canada	9	92	July 28	July 29	730	677	84	117	4.52	4.35	100	96
Mandan 404	USA	9	82	July 28	July 29	415	371	48	64	3.05	3.32	67	73
Orfeu	Rumania	9	89	July 28	July 29	942	609	109	105	5.07	4.71	112	104
Redpatch	Canada	9	85	July 28	July 29	166	306	19	53	1.56	2.64	34	58
Regar	USA	9	93	July 10	July 19	331	310	38	54	3.37	3.95	74	87
S-8800	Canada	9	94	July 28	July 29	824	834	95	144	5.15	5.00	113	110
Svaja	Sweden	9	86	July 28	July 29	547	431	63	74	3.86	4.31	85	95
Tempo	Canada	9	82	July 28	July 29	352	394	41	68	3.31	3.18	73	70
WWF 72	Sweden	9	82	July 28	July 29	792	358	91	62	4.98	4.60	110	101
Mean						549	463			3.82	3.93		
L.S.D. (P = .05)						69.78	133.59			0.89	0.92		

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	Kg/ha		% of Oasis		(DM)		t/ha	
						1980	1981	1980	1981	1980	1981	1980	1981
Adonis	Netherlands	9	53	July 17	July 14	44	204	200	91	2.49	2.87	68	81
Agram	Netherlands	9	50	--	July 18	34	289	155	128	1.99	2.40	54	68
Atlanta	Netherlands	9	47	July 17	July 14	32	158	145	70	2.43	2.30	66	65
Bingo	Netherlands	9	48	July 17	July 11	30	173	136	77	2.72	2.52	74	71
Fidelimo	Netherlands	9	50	July 17	July 11	47	206	214	92	1.84	2.66	50	75
Ivalo	Denmark	9	48	July 14	July 14	24	310	109	138	2.17	2.98	59	84
Lirouge	Germany	9	41	July 14	July 8	28	165	127	73	2.90	2.74	79	78
Luster	Netherlands	9	29	July 17	July 8	23	128	105	57	1.74	2.61	48	74
Oasis*	Netherlands	9	43	July 10	July 8	22	225	100	100	3.66	3.53	100	100
Parita	Netherlands	9	53	July 17	July 15	49	235	223	104	2.73	3.10	75	88
Puma	Denmark	9	49	July 15	July 11	50	198	227	88	3.10	2.88	85	82
Scarlet	Netherlands	9	54	July 15	July 11	77	182	350	81	2.89	3.11	79	88
Tatjana	Denmark	9	52	July 12	July 9	64	234	291	104	2.30	2.93	63	83
Valaska	Czechoslovakia	9	62	July 10	July 8	70	184	318	82	2.80	3.49	77	99
Veni	Denmark	9	44	July 17	July 8	69	145	314	64	3.27	3.41	89	97
Z-436	Netherlands	9	51	July 17	July 15	42	216	191	96	2.42	2.69	66	76
Mean						44	203			2.59	2.89		
L.S.D. (P = .05)						24.26	111.33			0.74	0.64		

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield						Herbage Yield					
				July 1979	July 1980	July 1981	Yield Kg/ha			% of Oasis			(DM)	t/ha	% of Oasis			
							1979	1980	1981	1979	1980	1981			1979	1980	1981	
Adonis	Netherlands	9	43	23	11	13	225	9	184	100	38	79	(1)	0.50	2.02	(1)	33	80
Agram	Netherlands	9	39	23	11	15	196	9	207	87	38	89		0.45	1.85		29	73
Belmonte	Netherlands	9	38	23	18	12	349	11	188	155	46	81		1.04	2.04		68	81
Cascade	U.S.A.	9	46	23	18	13	187	12	165	83	50	71		1.63	2.23		107	88
Dawson	Netherlands	9	44	23	18	10	251	85	304	112	354	130		2.08	3.08		136	122
Diamond	Netherlands	9	39	23	18	16	141	12	247	63	50	106		0.83	1.93		54	77
Encota	Netherlands	9	42	23	11	9	155	17	132	69	71	57		0.52	1.88		34	75
Famosa	Belgium	9	35	23	18	7	149	10	157	66	42	67		1.10	2.18		72	87
Flevvo	Netherlands	9	37	23	11	7	262	46	204	116	192	88		0.87	2.43		57	96
Frida	Netherlands	9	40	23	18	15	228	6	235	101	25	101		1.32	1.84		86	73
Highlight	Netherlands	9	34	23	11	7	256	42	178	114	175	76		0.42	2.07		27	82
Ivalo	Denmark	9	31	23	18	7	194	40	166	86	167	71		1.12	2.10		73	83
Koket	Netherlands	9	35	23	18	7	353	51	264	157	213	113		1.23	2.63		80	104
Lifalla	Germany	9	45	23	11	9	245	49	209	109	204	90		0.51	2.36		33	94
Lirouge	Germany	9	45	23	11	9	132	22	144	59	92	62		0.65	2.06		42	82
Menuet	Netherlands	9	39	23	18	12	249	5	207	111	21	89		0.97	2.04		63	81
Oasis*	Netherlands	9	34	23	3	7	225	24	233	100	100	100		1.53	2.52		100	100
Odra	Germany	9	48	23	11	9	345	46	184	153	192	79		0.86	2.07		56	82
Rasengold	Germany	9	45	23	18	12	391	32	290	174	133	124		1.22	2.61		80	104
Rolax	Belgium	9	46	23	18	17	276	151	367	123	629	158		2.08	3.26		136	129
Scarlet	Netherlands	9	43	23	18	10	226	14	172	100	58	74		0.90	2.10		59	83
Tamara	Denmark	9	46	23	18	12	279	26	289	124	108	124		1.22	2.61		80	104
Tatjana	Denmark	9	39	23	11	10	324	36	278	144	150	119		0.47	2.17		31	86
Waldorf	Netherlands	9	43	23	20	12	220	25	228	98	104	98		1.02	2.11		67	84

Mean

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

(1) Herbage not measured

244 33 218

1.02 2.26

81.91 19.15 74.39

0.28 0.52

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe 1980	Date Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	Oasis 1981	(DM) 1980	t/ha 1981	% of 1980	Oasis 1981
Adonis	Netherlands	9	48	July 18	July 13	142	315	107	108	0.47	4.69	35	87
Agram	Netherlands	9	44	July 18	July 13	157	378	118	129	0.45	4.89	33	90
Atlanta	Netherlands	9	45	July 18	July 13	124	260	93	89	0.40	4.35	30	80
Bingo	Netherlands	9	49	July 10	July 13	148	381	111	130	0.88	4.87	65	90
Fidelimo	Netherlands	9	46	July 10	July 13	159	390	120	134	0.90	5.03	67	92
Ivalo	Denmark	9	44	July 8	July 13	298	316	224	108	1.16	4.63	86	86
Lirouge	Germany	9	41	July 8	July 8	131	131	98	45	0.91	4.88	67	90
Luster	Netherlands	9	40	July 10	July 13	167	309	126	106	1.01	4.52	75	84
Oasis*	Netherlands	9	43	July 3	July 8	133	292	100	100	1.35	5.41	100	100
Parita	Netherlands	9	52	July 10	July 13	145	366	109	125	0.86	5.04	64	93
Puma	Denmark	9	48	July 10	July 13	195	373	147	128	1.29	4.71	96	87
Scarlet	Netherlands	9	49	July 18	July 13	222	424	167	145	0.64	5.14	47	95
Tatjana	Denmark	9	50	July 10	July 12	307	404	231	138	1.25	4.20	93	78
Valaska	Czechoslovakia	9	52	July 3	July 8	198	172	149	59	1.50	4.94	111	91
Veni	Denmark	9	50	July 18	July 13	365	384	274	132	1.00	5.24	74	97
Z-436	Netherlands	9	49	July 18	July 13	148	373	111	128	0.43	4.97	32	92
Mean						190	330			0.91	4.84		
L.S.D. (P = .05)						96.48	75.94			0.32	0.52		

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield			Herbage Yield					
				Aug. 1979	July 1980	July 1981	Yield Kg/ha		% of Oasis	(DM) 1979	t/ha 1980	1981	1979		
							1979	1980	1981				1980	% of Oasis	
													1981		
Adonis	Netherlands	9	39	1	4	14	(1)	48	190	(1)	155	124	(2)	19	90
Agram	Netherlands	9	41	1	6	14	93	65	195	210	127	0.45	1.56	56	77
Belmonte	Netherlands	9	43	1	8	14	188	71	191	229	125	0.35	1.84	43	91
Cascade	U.S.A.	9	48	1	9	14	149	57	141	184	92	0.41	1.74	51	86
Dawson	Netherlands	9	41	1	9	14	(1)	14	241	45	156	0.43	1.97	53	98
Diamond	Netherlands	8	45	1	9	14	118	87	230	281	150	0.48	1.94	59	96
Encota	Netherlands	9	36	1	2	7	181	83	97	268	63	0.55	1.47	68	73
Famosa	Belgium	9	42	1	4	14	211	104	231	335	151	0.55	1.94	68	96
Flevo	Netherlands	9	41	1	4	14	129	91	184	294	120	0.71	1.99	88	99
Frida	Netherlands	9	42	1	9	14	(1)	32	169	103	110	0.17	1.62	21	80
Highlight	Netherlands	9	43	1	4	14	158	147	192	474	125	0.52	1.16	64	57
Ivalo	Denmark	9	39	1	4	14	141	106	151	342	99	0.64	1.55	79	77
Koket	Netherlands	9	42	1	8	14	136	107	245	345	160	0.52	1.70	64	84
Lifalla	Germany	9	39	1	4	14	180	136	217	439	142	0.62	1.70	77	84
Lirouge	Germany	9	38	1	2	7	169	61	113	197	74	0.44	1.30	54	64
Menuet	Netherlands	9	45	1	9	14	223	68	210	219	137	0.47	1.96	58	97
Oasis*	Netherlands	9	41	1	4	7	(1)	31	153	100	100	0.81	2.02	100	100
Odra	Germany	9	52	1	8	14	317	191	241	616	158	0.98	1.71	121	85
Rasengold	Germany	9	45	1	9	14	245	174	302	561	197	0.68	2.12	84	105
Rolax	Belgium	9	49	1	9	14	270	88	241	284	158	0.64	2.22	79	110
Scarlet	Netherlands	9	40	1	9	14	171	57	195	184	127	0.31	1.44	38	71
Tamara	Denmark	9	47	1	9	14	270	106	266	342	174	0.50	2.32	62	115
Tatjana	Denmark	9	41	1	4	14	(1)	136	280	439	183	0.58	1.76	72	87
Waldorf	Netherlands	9	42	1	8	14	102	109	188	352	123	0.62	1.50	77	74

Mean

163 90 203

0.52 1.76

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

84.35 52.67 64.33

0.30 0.42

(1) Not established.

(2) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	Kg/ha 1980	% of 1980	Oasis 1980	(DM) 1980	t/ha 1981	% of 1980	Oasis 1981	
Adonis	Netherlands	9	41	July 9	July 13	59	338	64	97	0.27	3.06	42	80
Agram	Netherlands	9	36	July 4	July 13	57	316	62	91	0.41	2.80	63	73
Atlanta	Netherlands	9	40	July 9	July 15	46	233	50	67	0.29	2.57	45	67
Bingo	Netherlands	9	38	July 4	July 13	52	252	57	72	0.39	3.30	60	87
Fidelimo	Netherlands	9	35	July 2	July 13	83	305	90	88	0.45	2.51	69	66
Ivalo	Denmark	9	36	July 2	July 13	51	111	55	32	0.43	2.17	66	57
Lirouge	Germany	9	34	July 2	July 15	42	137	46	39	0.29	2.52	45	66
Luster	Netherlands	9	34	July 4	July 13	68	140	74	40	0.55	2.48	85	65
Oasis*	Netherlands	9	41	June 30	July 7	92	348	100	100	0.65	3.81	100	100
Parita	Netherlands	9	38	July 9	July 13	103	314	112	90	0.37	2.99	57	78
Puma	Denmark	9	38	July 2	July 15	82	233	89	67	0.57	2.65	88	70
Scarlet	Netherlands	9	41	July 4	July 15	92	321	100	92	0.53	2.91	82	76
Tatjana	Denmark	9	37	July 4	July 15	126	308	137	89	0.75	2.55	115	67
Valaska	Czechoslovakia	9	40	June 30	July 7	114	215	124	62	0.72	2.90	111	76
Veni	Denmark	9	46	July 9	July 15	120	365	130	105	0.46	3.39	71	89
Z-436	Netherlands	9	40	July 4	July 13	67	378	73	109	0.42	2.79	65	73
Mean						78	270			0.47	2.84		
L.S.D. (P = .05)						23.16	71.24			0.15	0.45		

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield			Herbage Yield								
				July 1979	July 1980	July 1981	1979	Yield kg/ha		% of Oasis		(DM) 1979	Yield t/ha 1980					
								1980	1981	1979	1980							
Adonis	Netherlands	9	69	24	9	(2)	292	15	(2)	195	500	(2)	(1)	4.78	1.16	(1)	74	73
Agram	Netherlands	9	73	24	9		208	27		139	900			4.25	1.72		66	108
Belmonte	Netherlands	9	64	24	9		263	4		175	133			4.21	1.31		65	82
Cascade	U.S.A.	9	76	24	9		208	14		139	467			4.94	1.50		76	94
Dawson	Netherlands	9	51	24	9		253	1		169	33			3.71	1.87		57	117
Diamond	Netherlands	9	69	24	9		200	17		133	567			3.84	1.39		59	87
Encota	Netherlands	9	70	24	9		223	19		149	633			4.63	1.26		72	79
Famosa	Belgium	9	70	24	9		325	32		217	1067			2.77	1.41		43	88
Flevvo	Netherlands	9	77	24	9		240	18		160	600			3.96	1.86		61	116
Frida	Netherlands	9	74	24	9		289	25		193	833			2.20	1.29		34	81
Highlight	Netherlands	9	67	24	9		269	28		179	933			4.93	1.59		76	99
Ivalo	Denmark	9	65	24	9		228	21		152	700			4.16	1.26		64	79
Koket	Netherlands	9	72	24	9		309	47		206	1567			3.36	1.39		52	87
Lifalla	Germany	9	70	24	9		195	70		130	2333			5.36	1.27		83	79
Lirouge	Germany	9	65	24	9		264	18		176	600			4.65	1.38		72	86
Menuet	Netherlands	9	74	24	9		250	9		167	300			4.74	1.51		73	94
Oasis*	Netherlands	9	55	24	9		150	3		100	100			6.46	1.60		100	100
Odra	Germany	9	73	24	9		454	18		303	600			4.16	1.67		64	104
Rasengold	Germany	9	78	24	9		318	28		212	933			6.11	1.65		95	103
Rolax	Belgium	9	64	24	9		343	6		229	200			4.87	2.59		75	162
Scarlet	Netherlands	9	65	24	9		377	11		251	367			3.18	1.04		49	65
Tamara	Denmark	9	73	24	9		405	21		270	700			3.84	1.87		59	117
Tatjana	Denmark	9	75	24	2		314	42		209	1400			3.66	1.33		57	83
Waldorf	Netherlands	9	65	24	9		278	38		185	1267			4.00	1.69		62	106
Mean							277	22						4.28	1.53			
L.S.D. (P = .05)							190.13	16.71						1.54	0.50			

(1) Herbage not measured.

(2) Seed heads not formed.

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	Oasis 1981	(DM) 1980	t/ha 1981	% of 1980	Oasis 1981
Adonis	Netherlands	9	60	July 10	July 13	45	196	100	408	2.96	3.70	50	70
Agram	Netherlands	9	55	July 10	July 16	94	218	209	454	2.70	2.86	45	59
Atlanta	Netherlands	9	56	July 10	July 18	49	99	109	206	3.13	3.17	53	66
Bingo	Netherlands	9	55	July 4	July 11	24	295	53	615	2.63	3.58	44	74
Fidelimo	Netherlands	9	57	July 10	July 12	118	194	262	404	2.77	3.14	46	65
Ivalo	Denmark	9	51	June 29	July 11	19	217	42	452	2.25	2.96	38	62
Lirouge	Germany	9	58	June 29	July 9	35	233	78	485	3.10	3.68	52	77
Luster	Netherlands	9	55	July 10	July 9	87	191	193	398	3.30	3.20	55	67
Oasis*	Netherlands	9	59	June 25	July 11	45	48	100	100	5.95	4.81	100	100
Parita	Netherlands	9	56	July 10	July 15	75	299	167	623	3.66	4.03	62	84
Puma	Denmark	9	53	July 10	July 9	55	249	122	519	2.65	3.21	45	67
Scarlet	Netherlands	9	58	July 10	July 16	163	208	362	433	2.80	2.76	47	58
Tatjana	Denmark	9	58	July 2	July 10	177	341	393	710	3.18	3.64	53	76
Valaska	Czechoslovakia	9	65	June 25	July 7	94	207	209	431	4.07	3.29	68	68
Veni	Denmark	9	62	July 10	July 17	57	197	127	410	2.70	3.91	45	81
Z-436	Netherlands	9	56	July 10	July 15	21	191	47	398	3.08	3.07	52	64
Mean						72	211			3.18	3.44		
L.S.D. (P = .05)						71.12	62.52			0.69	0.59		

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	1980	1981	(DM)	t/ha	% of	Boreal	1980	1981
Ballade	France	8	45	(1)	July 21	20	73	6	10	4.11	2.19	81	53
Banner	U.S.A.	9	59	July 17	July 21	76	339	23	46	2.97	3.58	58	87
Bastide	France	7	35	(1)	July 21	20	131	6	18	3.62	1.49	71	36
Boreal*	Canada	9	65	July 17	July 21	330	741	100	100	5.09	4.12	100	100
Carlawn	Canada	9	63	July 17	July 21	280	488	85	66	3.76	3.79	74	92
Chomade	France	8	58	July 17	July 21	81	198	25	27	2.52	2.65	50	64
Corona	Netherlands	9	49	(1)	July 21	76	160	23	22	4.49	2.88	88	70
Ensylva	Netherlands	9	54	July 17	July 21	95	217	29	29	4.24	2.70	83	66
Envira	Netherlands	9	60	July 17	July 21	242	472	73	64	4.33	3.33	85	81
Enzet	Netherlands	9	65	July 17	July 21	328	541	99	73	4.50	3.69	88	90
Epaulette	United Kingdom	8	46	(1)	July 21	40	76	12	10	3.90	3.19	77	77
Fess	United Kingdom	7	31	(1)	July 21	20	90	6	12	4.10	1.64	81	40
Fortress	U.S.A.	9	59	July 17	July 21	149	406	45	55	4.11	3.74	81	91
Hackle	United Kingdom	7	44	(1)	July 21	20	85	6	11	4.02	1.69	79	41
Keszthelyi 2	Hungary	9	65	July 17	July 21	152	278	46	38	4.45	3.26	87	79
Leik	Norway	9	64	July 17	July 13	330	464	100	63	4.40	5.87	86	142
Maxim	Sweden	8	57	July 17	July 21	88	367	27	50	2.49	2.75	49	67
Milda	France	9	61	July 17	July 21	92	317	28	43	4.64	3.67	91	89
Moncorde	Netherlands	9	54	July 17	July 19	157	483	48	65	4.15	3.39	82	82
Oriflamme	United Kingdom	9	57	July 17	July 15	42	149	13	20	3.59	3.28	71	80
Patio	Netherlands	8	62	July 17	July 21	131	451	40	61	4.30	4.40	84	107
Pernille	Denmark	8	57	July 17	July 21	114	303	35	41	4.70	3.48	92	84
Pollux	Denmark	9	62	July 17	July 21	144	386	44	52	4.16	3.87	82	94
Rapid	Netherlands	9	62	July 17	July 21	146	489	52	66	3.76	3.88	74	94
Reptans	Sweden	9	68	July 17	July 21	171	488	52	66	4.75	4.17	93	101
Roland 21	Germany	9	65	July 17	July 21	171	276	52	37	5.27	4.33	104	105
Skot	Denmark	8	53	July 17	July 21	93	91	28	12	4.70	3.19	92	77
Zernickower	East Germany	9	61	July 17	July 21	266	335	81	45	4.85	3.96	95	96
Mean						138	318			4.14	3.36		
L.S.D. (P = .05)						67.19	108.87			1.02	0.81		

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						Kg/ha		% of Boreal		(DM)		t/ha	
						1980	1981	1980	1981	1980	1981	1980	1981
Ballade	France	9	42	July 18	July 22	36	256	3	34	1.53	7.03	35	83
Banner	U.S.A.	9	51	July 21	July 22	176	503	17	66	1.43	7.79	32	92
Bastide	France	9	43	July 11	July 22	61	339	6	45	0.48	7.01	11	83
Boreal*	Canada	9	54	July 21	July 22	1036	759	100	100	4.42	8.44	100	100
Carlawn	Canada	9	58	July 21	July 22	878	865	85	114	3.79	8.58	86	102
Chomade	France	9	49	July 18	July 22	155	325	15	43	1.31	6.92	30	82
Corona	Netherlands	9	47	July 18	July 22	94	420	9	55	2.38	8.17	54	97
Ensvyla	Netherlands	9	47	July 18	July 22	414	302	40	40	2.41	7.49	55	89
Envira	Netherlands	9	57	July 21	July 22	806	788	78	104	3.35	8.37	76	99
Enzet	Netherlands	9	59	July 19	July 22	767	791	74	104	3.26	9.01	74	107
Epaulette	United Kingdom	9	45	July 18	July 13	59	190	6	25	2.29	7.01	52	83
Fess	United Kingdom	9	35	July 18	July 22	59	247	6	33	1.93	6.40	44	76
Fortress	U.S.A.	9	55	July 21	July 22	565	695	55	92	3.48	8.76	79	104
Hackle	United Kingdom	9	36	July 18	July 22	28	131	3	17	2.20	5.88	50	70
Keszthelyi 2	Hungary	9	61	July 21	July 22	614	563	59	74	3.50	8.39	79	99
Leik	Norway	9	58	July 18	July 22	630	687	61	91	3.62	9.60	82	114
Maxim	Sweden	9	53	July 21	July 22	471	600	45	79	2.59	7.98	59	95
Milda	France	9	57	July 18	July 22	325	523	31	69	2.73	8.69	62	103
Moncorde	Netherlands	9	49	July 21	July 22	557	494	54	65	3.09	8.31	70	98
Oriflamme	United Kingdom	9	48	July 11	July 22	121	255	12	34	1.30	7.71	29	91
Patio	Netherlands	9	56	July 18	July 22	568	636	55	84	3.07	9.60	69	114
Pernille	Denmark	9	49	July 21	July 13	397	386	38	51	3.22	7.46	73	88
Pollux	Denmark	9	53	July 21	July 22	633	621	61	82	3.78	8.88	86	105
Rapid	Netherlands	9	57	July 18	July 22	589	763	57	101	2.67	8.59	60	102
Reptans	Sweden	9	58	July 21	July 22	649	720	63	95	3.58	9.24	81	109
Roland 21	Germany	9	57	July 18	July 22	541	717	52	94	3.48	9.95	78	118
Skot	Denmark	9	47	July 11	July 22	67	258	6	34	1.40	7.45	32	88
Zernickower	East Germany	9	58	July 18	July 22	703	810	68	107	3.17	9.82	72	116
Mean						429	523			2.69	8.19		
L.S.D. (P = .05)						92.61	115.93			0.50	0.82		

CREEPING RED FESCUE

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

Page 18

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield						Herbage Yield											
				July		July		July		Kg/ha 1979	1980	1981	% of 1979	1980	Boreal 1981	(DM) 1979	t/ha		% of 1979	1980	Boreal 1981
				1979	1980	1980	1981	1980	1981							1980	1981				
Banner	U.S.A.	9	42	27	18	22	282	17	247	37	6	40	(1)	1.68	2.37	(1)	63	84			
Barante	Netherlands	8	34	27	18	22	102	70	249	13	25	40		1.74	2.57		65	91			
Barbara	Netherlands	9	37	27	18	22	67	126	231	9	45	37		1.32	1.81		49	64			
Bastide	France	8	34	27	18	22	91	20	143	12	7	23		1.46	2.41		54	86			
Boreal*	Canada	9	49	27	18	20	760	280	622	100	100	100		2.68	2.81		100	100			
Brasov	Rumania	9	50	27	18	15	376	235	340	49	84	55		2.52	2.06		94	73			
Carlawn	Canada	9	49	27	18	18	616	111	409	81	40	66		2.21	2.74		82	98			
Checker	U.S.A.	9	44	27	18	20	131	76	282	17	27	45		1.73	2.10		65	75			
Chomade	France	9	40	27	18	22	128	10	202	17	4	32		1.16	2.47		43	88			
Corona	Netherlands	9	42	27	18	20	170	15	241	22	5	39		1.55	3.19		58	114			
Engina	Netherlands	9	48	27	18	22	636	445	787	84	159	127		2.62	2.99		98	106			
Ensylva	Netherlands	9	42	27	18	18	600	53	184	79	19	30		1.88	3.64		70	130			
Envira	Netherlands	9	61	27	18	22	749	243	607	99	87	98		2.42	3.24		90	115			
Enzet	Netherlands	9	54	27	18	22	627	303	577	83	108	93		2.49	2.92		93	104			
Fortress	U.S.A.	9	47	27	18	22	755	89	432	99	32	69		2.38	2.36		89	84			
Grelo	Denmark	9	40	27	18	22	206	42	167	27	15	27		2.38	2.43		89	86			
Keszthelyi 2	Hungary	9	52	27	18	22	520	71	384	68	25	62		2.30	2.94		86	105			
Manoir	France	8	33	27	18	22	109	84	227	14	30	36		1.76	2.45		66	87			
Marga	Netherlands	9	42	27	18	22	106	40	258	14	14	41		1.48	2.83		55	101			
Mariet	Netherlands	9	44	27	18	22	189	69	328	25	25	53		1.27	2.49		47	87			
Merlin	United Kingdom	9	41	27	18	20	123	25	190	16	9	31		2.28	3.07		85	109			
Moncorde	Netherlands	9	45	27	18	20	533	105	424	70	38	68		2.51	3.26		94	116			
Monica	Netherlands	9	42	27	18	22	438	26	221	58	9	36		2.28	3.78		85	135			
Patio	Netherlands	9	52	27	18	22	560	160	574	74	57	92		2.62	2.97		98	106			
Pernille	Denmark	9	45	27	18	22	437	54	235	58	19	38		2.28	3.64		85	130			
Pollux	Denmark	9	51	27	18	22	679	87	420	89	31	68		2.32	2.37		87	84			
Puma	Denmark	9	41	27	18	15	132	63	289	17	23	46		1.31	2.69		49	96			
Rapid	Netherlands	9	49	27	18	22	659	276	693	87	99	111		2.49	2.98		93	106			

CREEPING RED FESCUE
(cont'd)Test Site: Beaverlodge (Foster's Farm)
Seeding Year: 1978

Page 19

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield					Herbage Yield						
				July 1979	July 1980	July 1981	1979	Kg/ha 1980	1981	% of Boreal			(DM) 1979	t/ha 1980	1981	1979	% of Boreal 1980	1981
										1979	1980	1981						
Skot	Denmark	9	40	27	18	20	128	12	154	17	4	25	(1)	2.04	3.31	(1)	76	118
Sonnet	Netherlands	9	36	27	18	22	175	7	118	23	3	19		2.04	3.12		76	111
Veni	Denmark	9	44	27	18	20	231	15	261	30	5	42		1.41	2.19		53	78
Mean							370	104	338					2.02	2.78			
L.S.D. (P = .05)							637	66.57	103.24					0.42	0.42			

(1) Herbage not measured.

NOTE: The following varieties classified as creeping red fescue are in fact slender or non-creeping varieties:

Ballade	Chomade	Hackle	Oriflamme
Banner	Corona	Manoir	Puma
Barbara	Epaulette	Marga	Skot
Bastide	Fess	Mariet	Sonnet
Checker	Grelo	Merlin	Veni

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield						Herbage Yield						
				Aug. 1979	July 1980	July 1981	1979	Kg/ha		% of 1980	Boreal 1981	(DM) 1979	t/ha		1981	1979	% of 1980		Boreal 1981
								1980	1981				1979	1980	1981				
Banner	U.S.A.	9	43	1	8	14	281	119	418	27	91	9	(1)	0.54	2.05	(1)	45	89	
Barante	Netherlands	8	25	1	8	14	2	6	116	0.19	5	25		0.26	1.59		22	69	
Barbara	Netherlands	8	27	1	8	14	13	10	115	1.20	8	25		0.30	2.08		25	90	
Bastide	France	8	32	1	11	14	16	11	92	1.50	8	20		0.43	1.97		36	87	
Boreal*	Canada	9	46	1	14	14	1043	131	459	100	100	100		1.20	2.30		100	100	
Brasov	Rumania	9	44	1	14	14	411	70	371	39	53	81		0.72	1.86		60	81	
Carlawn	Canada	8	44	1	14	14	510	65	309	49	50	67		0.83	2.16		69	94	
Checker	U.S.A.	8	43	1	2	14	174	40	218	17	31	47		0.42	1.54		35	67	
Chomade	France	8	42	1	14	14	71	40	149	7	31	32		0.64	1.85		53	80	
Corona	Netherlands	8	40	1	14	14	44	2	196	4	2	43		0.51	2.05		43	89	
Engina	Netherlands	8	44	1	14	14	340	215	546	33	164	119		1.51	2.55		126	111	
Ensylva	Netherlands	8	33	1	14	14	261	7	103	25	5	22		0.29	2.04		24	89	
Envira	Netherlands	8	49	1	14	14	758	239	451	73	182	98		1.39	2.44		116	106	
Enzet	Netherlands	8	49	1	14	14	335	221	518	32	169	113		0.89	1.85		74	80	
Fortress	U.S.A.	8	46	1	14	14	445	38	233	43	29	51		0.60	2.13		50	97	
Grela	Denmark	8	37	1	14	14	17	6	87	1.60	5	19		0.77	2.10		64	91	
Keszthelyi 2	Hungary	8	50	1	14	14	510	102	367	49	78	80		1.46	1.98		122	86	
Manoir	France	8	32	1	14	14	21	13	75	2	10	16		0.48	2.21		40	96	
Marga	Netherlands	8	39	1	14	14	54	46	215	5	35	47		0.48	2.16		40	94	
Mariet	Netherlands	9	38	1	8	14	220	57	229	21	44	50		0.55	1.79		46	78	
Merlin	United Kingdom	8	42	1	14	14	17	3	144	1.60	2	31		0.43	2.21		36	96	
Moncorde	Netherlands	8	42	1	14	14	617	63	287	59	48	63		0.92	2.26		77	98	
Monica	Netherlands	8	41	1	14	14	455	17	176	44	13	38		0.93	2.87		78	125	
Patio	Netherlands	8	47	1	14	14	521	53	439	50	40	96		0.99	2.24		83	97	
Pernille	Denmark	8	43	1	14	14	334	35	153	32	27	33		0.83	2.15		69	93	
Pollux	Denmark	8	46	1	14	14	629	48	266	60	37	58		1.13	1.95		94	85	
Puma	Denmark	8	35	1	2	14	156	63	220	15	48	48		0.40	1.96		33	85	
Rapid	Netherlands	9	45	1	14	14	619	155	568	59	118	124		1.32	2.52		110	110	

CREEPING RED FESCUE
(cont'd)Test Site: Falher (Beaupre Farm)
Seeding Year: 1978

Page 21

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield						Herbage Yield					
				Aug. 1979	July 1980	July 1981	1979	1980	1981	1979	1980	% of Boreal 1981	(DM)	t/ha 1979	t/ha 1980	t/ha 1981	1979	1980
Skot	Denmark	8	40	1	14	14	78	5	118	7	4	26	(1)	0.54	2.71	(1)	45	118
Sonnet	Netherlands	8	37	1	14	14	50	4	63	5	3	14		0.69	2.60		58	113
Veni	Denmark	8	41	1	8	14	385	34	236	37	26	51		0.61	1.71		51	74
Mean							302	62	256					0.74	2.13			
L.S.D. (P = .05)							130.44	50.83	77.28					0.40	0.72			

(1) Herbage not measured.

NOTE: The following varieties classified as creeping red fescue are in fact slender or non-creeping varieties:

Ballade	Chomade	Hackle	Oriflamme
Banner	Corona	Manoir	Puma
Barbara	Epaulette	Marga	Skot
Bastide	Fess	Mariet	Sonnet
Checker	Grello	Merlin	Veni

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield			Herbage Yield								
				July 1979	July 1980	Ripe 1981	Yield kg/ha 1979	1980	1981	% of Boreal 1979	1980	1981	% of Boreal 1979					
Banner	U.S.A.	9	83	25	9	(2)	249	12	(2)	20	92	(2)	(1)	3.18	2.08	(1)	91	87
Barante	Netherlands	9	54	25	9		26	7		2	54			3.97	1.68		113	70
Barbara	Netherlands	9	55	25	9		39	2		3	15			2.87	1.57		82	65
Bastide	France	9	58	25	9		27	1		2	8			2.74	1.14		78	48
Boreal*	Canada	9	71	25	9		1224	13		100	100			3.50	2.40		100	100
Brasov	Rumania	9	70	25	9		423	19		35	146			4.00	2.65		114	110
Carlawn	Canada	9	75	25	9		1052	16		86	123			3.59	1.94		103	81
Checker	U.S.A.	9	71	25	9		413	27		34	208			3.02	1.76		86	73
Chomade	France	9	71	25	9		170	15		14	115			2.62	1.53		75	64
Corona	Netherlands	9	45	25	9		160	1		13	8			2.30	1.27		66	53
Engina	Netherlands	9	75	25	9		874	10		71	77			4.08	2.35		117	98
Ensylva	Netherlands	9	65	25	9		474	3		38	23			3.19	1.42		91	59
Envira	Netherlands	9	79	25	9		720	20		59	154			4.55	3.01		130	125
Enzet	Netherlands	9	79	25	9		710	13		58	100			3.84	2.66		110	111
Fortress	U.S.A.	9	73	25	9		671	8		55	62			4.53	2.39		129	100
Grelo	Denmark	9	50	25	9		140	1		11	8			4.02	1.46		115	61
Keszthelyi 2	Hungary	9	71	25	9		445	5		36	38			4.52	2.78		129	116
Manoir	France	9	56	25	9		136	2		11	15			3.06	1.43		87	60
Marga	Netherlands	9	72	25	9		94	27		8	208			2.35	1.74		67	73
Mariet	Netherlands	9	70	25	9		146	38		12	292			3.00	2.07		86	86
Merlin	United Kingdom	9	66	25	9		92	1		8	8			3.22	1.87		92	80
Moncorde	Netherlands	9	69	25	9		756	11		62	85			3.65	2.36		104	98
Monica	Netherlands	9	65	25	9		428	3		35	23			4.88	2.38		139	99
Patio	Netherlands	9	76	25	9		404	4		33	31			4.18	2.59		119	108
Pernille	Denmark	9	70	25	9		401	2		33	15			4.50	2.45		129	102
Pollux	Denmark	9	79	25	9		615	7		50	54			4.95	2.44		141	102
Puma	Denmark	9	64	25	9		230	47		19	362			2.85	1.38		81	58
Rapid	Netherlands	9	73	25	9		623	13		51	100			4.81	2.49		137	104

CREEPING RED FESCUE
(cont'd)Test Site: Ft. Vermilion Experimental Farm
Seeding Year: 1978

Page 23

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield			Herbage Yield		
				July 1979	July 1980	1981	1979	1980	1981	1979	1980	1981
Skot	Denmark	9	48	25	9	(2)	44	1	(2)	4	8	(2)
Sonnet	Netherlands	9	40	25	9		138	1		11	8	
Veni	Denmark	9	80	25	9		300	29		25	223	
Mean							394	12			3.58	1.97
L.S.D. (P = .05)							174.59	12.08			1.00	0.68

(1) Herbage not measured.

(2) No seed heads formed.

NOTE: The following varieties classified as creeping red fescue are in fact slender or non-creeping varieties:

Ballade	Chomade	Hackle	Oriflamme
Banner	Corona	Manoir	Puma
Barbara	Epaulette	Marga	Skot
Bastide	Fess	Mariet	Sonnet
Checker	Grelo	Merlin	Veni

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	1980	1981	Boreal	Boreal	(DM)	t/ha	1980	1981
Ballade	France	8	37	July 14	July 15	9	106	2	13	0.87	3.76	38	78
Banner	U.S.A.	9	41	July 14	July 15	62	419	11	50	0.72	3.10	32	64
Bastide	France	8	31	July 14	July 15	7	136	1	16	0.38	2.44	17	51
Boreal*	Canada	9	46	July 14	July 15	566	844	100	100	2.28	4.82	100	100
Carlawn	Canada	9	46	July 14	July 15	490	687	87	81	2.11	4.68	93	97
Chomade	France	9	39	July 12	July 15	59	296	10	35	0.56	2.53	25	52
Corona	Netherlands	9	39	July 14	July 15	22	305	4	36	1.01	3.83	44	79
Ensylva	Netherlands	8	37	July 4	July 15	149	249	26	30	0.97	2.95	43	61
Envira	Netherlands	9	48	July 14	July 15	486	845	86	100	1.87	4.66	82	97
Enzet	Netherlands	9	47	July 14	July 15	553	855	98	101	2.18	4.36	96	101
Epaulette	United Kingdom	9	38	July 14	July 15	7	144	1	17	0.95	3.00	42	62
Fess	United Kingdom	9	33	July 14	July 15	34	130	6	15	0.67	2.94	29	61
Fortress	U.S.A.	9	44	July 14	July 15	178	525	31	62	1.77	4.35	78	91
Hackle	United Kingdom	8	33	July 14	July 15	15	36	3	4	0.88	2.51	39	52
Keszthelyi 2	Hungary	9	48	July 14	July 15	262	476	46	56	1.77	4.33	78	90
Leik	Norway	9	54	July 4	July 15	344	566	61	67	1.67	5.18	73	107
Maxim	Sweden	9	41	July 14	July 24	178	424	31	50	1.06	1.76	46	37
Milda	France	9	44	July 14	July 15	145	418	26	50	1.46	4.04	64	84
Moncorde	Netherlands	9	41	July 14	July 15	178	373	31	44	1.31	3.48	57	72
Oriflamme	United Kingdom	9	41	July 1	July 7	96	155	17	18	0.57	1.08	25	22
Patio	Netherlands	9	47	July 14	July 15	269	708	48	84	1.68	5.27	74	109
Pernille	Denmark	9	40	July 14	July 15	185	349	33	41	1.57	4.45	69	92
Pollux	Denmark	9	47	July 14	July 15	342	599	60	71	1.89	4.91	83	102
Rapid	Netherlands	9	46	July 14	July 15	375	691	66	82	1.46	4.45	64	92
Reptans	Sweden	9	50	July 14	July 15	381	741	67	88	1.97	5.23	86	109
Roland 21	Germany	9	47	July 14	July 15	324	655	57	78	2.33	4.70	102	98
Skot	Denmark	9	40	July 14	July 15	56	235	10	28	0.99	3.96	43	82
Zernickower	East Germany	9	47	July 14	July 15	278	578	49	68	1.47	3.34	64	69
Mean						216	448			1.37	3.81		
L.S.D. (P = .05)						80.63	123.09			0.32	0.76		

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe				Seed Yield				Herbage Yield			
				1980	1981	Boreal	Boreal	(DM) 1980	t/ha 1981	% of Boreal 1980	Boreal 1981	(DM) 1980	t/ha 1981	% of Boreal 1980	Boreal 1981
						1980	1981					1980	1981		
Ballade	France	9	55	July 9	July 15	75	33	18	15	4.02	2.97	74	64		
Banner	U.S.A.	9	57	July 9	July 15	121	261	30	119	2.89	3.48	53	75		
Bastide	France	9	44	July 9	July 15	26	22	6	10	2.53	2.58	47	56		
Boreal*	Canada	9	67	July 9	July 15	410	219	100	100	5.44	4.61	100	100		
Carlawn	Canada	9	65	July 9	July 15	525	199	128	91	5.56	4.24	102	92		
Chomade	France	9	57	July 9	July 15	112	152	27	69	2.11	2.55	39	55		
Corona	Netherlands	9	52	July 9	July 15	73	46	18	21	4.48	3.96	82	86		
Ensylva	Netherlands	9	56	July 9	July 15	85	57	21	26	4.11	4.00	76	87		
Envira	Netherlands	9	67	July 9	July 15	337	216	82	99	6.28	4.89	115	106		
Enzet	Netherlands	9	68	July 9	July 15	395	266	96	121	5.72	6.08	105	132		
Epaulette	United Kingdom	9	55	July 9	July 15	46	34	11	16	3.72	4.12	68	89		
Fess	United Kingdom	9	56	(1)	July 15	61	52	15	24	3.09	2.75	57	60		
Fortress	U.S.A.	9	64	July 9	July 15	147	117	36	53	4.90	4.93	90	107		
Hackle	United Kingdom	9	57	(1)	July 15	0	48	0	22	1.88	2.88	35	62		
Keszthelyi 2	Hungary	9	67	July 9	July 15	63	88	15	40	4.76	4.51	88	98		
Leik	Norway	9	75	July 9	July 15	952	338	232	154	6.11	4.99	112	108		
Maxim	Sweden	9	56	July 9	July 15	145	22	35	10	4.01	2.79	74	61		
Milda	France	9	59	July 9	July 15	96	52	23	24	4.64	4.51	85	98		
Moncorde	Netherlands	9	59	July 9	July 15	253	117	31	53	5.54	4.77	102	103		
Oriflamme	United Kingdom	9	55	July 9	July 15	96	98	23	45	4.43	2.91	81	63		
Patio	Netherlands	9	66	July 9	July 15	127	196	31	89	5.12	5.10	94	111		
Pernille	Denmark	9	58	July 9	July 15	75	80	18	37	4.30	5.21	79	113		
Pollux	Denmark	9	64	July 9	July 15	112	106	27	48	4.98	5.01	92	109		
Rapid	Netherlands	9	65	July 9	July 15	389	175	95	80	5.78	4.43	106	96		
Reptans	Sweden	9	67	July 9	July 15	299	175	73	80	5.71	5.18	105	112		
Roland 21	Germany	9	68	July 9	July 15	143	173	35	79	5.71	5.82	105	126		
Skot	Denmark	9	54	July 9	July 15	42	40	10	18	4.24	4.03	78	87		
Zernickower	East Germany	9	69	July 9	July 15	229	243	56	111	5.88	5.15	108	112		
Mean						194	129			4.57	4.23				
L.S.D. (P = .05)						92.86	58.69			1.00	1.01				

(1) Seed not harvested, yield estimated.

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe		Seed Yield				Herbage Yield			
				1980	1981	Kg/ha 1980	% of 1980	Boreal 1980	(DM) 1980	t/ha 1981	% of 1980	Boreal 1981	
Ballade	France	9	45	(1)	July 9	7	53	2	13	1.06	2.85	39	67
Banner	U.S.A.	9	43	July 11	July 9	36	125	9	32	0.61	1.89	23	44
Bastide	France	8	48	(1)	July 9	3	83	1	21	0.33	1.55	12	36
Boreal*	Canada	9	45	July 10	July 9	386	393	100	100	2.69	4.28	100	100
Carlawn	Canada	9	71	July 10	July 9	438	340	113	87	2.51	3.71	93	87
Chomade	France	9	44	July 10	July 9	44	81	11	21	0.51	1.50	19	35
Corona	Netherlands	9	51	July 10	July 9	59	138	15	35	1.13	3.64	42	85
Ensvyla	Netherlands	9	46	July 10	July 9	159	166	41	42	1.60	2.99	59	70
Envira	Netherlands	9	60	July 10	July 9	418	467	108	119	2.62	4.24	97	99
Enzet	Netherlands	9	56	July 10	July 9	520	494	135	126	2.91	4.51	108	105
Epaulette	United Kingdom	9	46	July 10	July 9	21	64	5	16	1.65	4.30	61	100
Fess	United Kingdom	9	38	(1)	July 9	5	62	1	16	0.64	2.02	24	47
Fortress	U.S.A.	9	58	July 10	July 9	172	281	45	72	2.10	4.20	78	98
Hackle	United Kingdom	9	37	(1)	July 12	3	18	1	5	0.88	2.08	33	49
Keszthelyi 2	Hungary	9	60	July 10	July 9	104	231	27	59	2.22	4.38	83	102
Leik	Norway	9	64	July 10	July 9	460	486	119	124	2.84	5.30	106	124
Maxim	Sweden	9	51	July 10	July 10	152	199	39	51	1.10	2.81	41	66
Milda	France	9	52	July 10	July 9	135	173	35	44	2.06	3.05	77	71
Moncorde	Netherlands	9	49	July 10	July 9	153	219	40	56	1.71	3.94	64	92
Oriflamme	United Kingdom	9	55	June 24	June 29	92	327	24	83	1.31	2.54	49	59
Patio	Netherlands	9	55	July 10	July 9	202	355	52	90	1.89	4.07	70	95
Pernille	Denmark	9	52	July 10	July 9	171	252	44	64	2.17	4.23	81	99
Pollux	Denmark	9	54	July 10	July 9	291	201	75	51	3.36	4.78	125	112
Rapid	Netherlands	9	58	July 10	July 9	406	500	105	127	2.77	4.46	103	104
Reptans	Sweden	9	58	July 10	July 9	373	346	97	88	2.95	4.99	110	117
Roland 21	Germany	9	59	July 10	July 9	215	313	56	80	2.19	4.48	81	105
Skot	Denmark	9	48	July 10	July 9	90	83	23	21	1.53	3.45	57	81
Zernickower	East Germany	9	56	July 10	July 9	510	514	132	131	3.57	5.25	133	123
Mean						201	249			1.89	3.63		
L.S.D. (P = .05)						82.55	69.68			0.43	0.82		

(1) Seed not harvested, yield estimated.

Cultivar	Origin	Hardiness	Height (cm.)	Date Ripe 1981	Seed Yield kg/ha	% of Kay	Herbage Yield (DM) t/ha	% of Kay
Akimidori	Japan	3	-	-	0	0	0.33	16
Anita	Netherlands	1	-	-	0	0	0	0
Aonami	Japan	3	-	-	0	0	0.27	13
Cambria	United Kingdom	0	-	-	0	0	0	0
Crown	U.S.A.	5	-	-	0	0	0.37	17
Hallmark	U.S.A.	3	60	July 22	5.5	3	0.36	17
Hawk	U.S.A.	5	70	July 22	17.5	8	0.50	24
Ina	Canada	5	72	July 22	36.0	17	0.54	25
Juno	Canada	5	65	July 22	30.0	14	1.03	49
Kay *	Canada	9	80	July 22	211.0	100	2.12	100
MLM 14012	Canada	4	70	July 22	6.5	3	0.47	22
Napier	U.S.A.	6	62	July 22	43.0	20	0.51	24
Nika	Poland	8	70	July 22	39.0	18	0.83	39
Okamidori	Japan	7	77	July 22	86.5	41	1.51	71
OK-WH-19	Canada	8	80	July 22	265.0	126	1.45	68
OR-WH	Canada	8	75	July 22	113.0	54	1.17	55
Plano	Netherlands	1	-	-	0	0	0	0
Porto	Australia	0	-	-	0	0	0	0
Saberto	United Kingdom	0	-	-	0	0	0	0
Sumas	Canada	8	72	July 22	121.5	58	1.00	47
Mean					48.73		0.62	

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

37.57

0.43

PERENNIAL RYEGRASS

Test Site: Beavertodge Research Station
Seeding Year: 1980

Page 28

Cultivar	Origin	Hardiness	Height (cm.)	Date Ripe 1981	Seed Yield kg/ha	% of Norlea	Comments
Aerou	United Kingdom	2	-	-	0	0	
Agresso	Netherlands	1	-	-	0	0	tetraploid
Albi	Denmark	3	32	Aug. 15	193	43	
Alex	German Demo. Repub.	1	40	Aug. 14	53	12	tetraploid
Angela	Netherlands	3	31	Aug. 19	242	54	
Augusta	United Kingdom	1	-	-	0	0	tetra hybrid
Barenza	Netherlands	3	35	Aug. 14	173	39	
Barrage	Netherlands	2	30	Aug. 20	43	10	
Barry	Netherlands	4	26	Aug. 14	273	61	
Barstella	Netherlands	2	35	Aug. 14	25	6	
Bianca	Netherlands	2	25	Aug. 20	31	7	
Caprice	Netherlands	2	30	Aug. 17	127	28	
Caravelle	Netherlands	1	-	-	0	0	
Combi	Netherlands	2	32	Aug. 18	106	24	
Dasas	Denmark	1	-	-	0	0	
Derby	U.S.A.	4	29	Aug. 14	256	57	
Elrond	Denmark	2	35	Aug. 17	66	27	
Endura	Netherlands	1	-	-	0	0	
Ensporta	Netherlands	2	28	Aug. 16	101	23	
Falcon	Netherlands	1	-	-	0	0	

PERENNIAL RYEGRASS

Test Site: Beaverlodge Research Station
Seeding Year: 1980

Page 29

Cultivar	Origin	Hardiness	Height (cm.)	Date Ripe 1981	Seed Yield kg/ha	% of Norlea	Comments
Fingal	Ireland	1	-	-	0	0	
Frances	Netherlands	1	-	-	0	0	
Grandstand	Netherlands	2	35	Aug. 16	60	13	
Gremie	Netherlands	4	31	Aug. 14	113	25	
Grimalda	Netherlands	1	35	Aug. 14	45	10	tetraploid
Hora	Netherlands	2	30	Aug. 17	44	10	
Houba	Netherlands	2	31	Aug. 20	54	12	
Hunter	Netherlands	4	30	Aug. 16	201	45	
Karin	Netherlands	2	30	Aug. 16	94	21	
Kiyosato	Japan	1	-	-	0	0	
Kosta	Netherlands	1	-	-	0	0	
Lamora	Netherlands	2	35	Aug. 17	56	13	
Lenta	Denmark	2	36	Aug. 14	113	25	
Leri	United Kingdom	0	-	-	0	0	tetra hybrid
Loretta	Germany	5	30	Aug. 14	343	77	
Majestic	Netherlands	4	33	Aug. 14	300	67	
Mantilla	United Kingdom	1	38	Aug. 14	54	12	
Mascot	United Kingdom	1	35	Aug. 14	27	6	
Massa	Netherlands	2	-	-	0	0	tetraploid
Medea	Australia	1	-	-	0	0	

PERENNIAL RYEGRASS

Test Site: Beaverlodge Research Station
Seeding Year: 1980

Page 30

Cultivar	Origin	Hardiness	Height (cm.)	Date Ripe 1981	Seed kg/ha	Yield % of Norlea	Comments
Melino	Belgium	1	-	-	0	0	
Meltra	Belgium	1	-	-	0	0	
Mercator	Netherlands	2	38	Aug. 16	122	27	
Meritra	Belgium	1	-	-	0	0	tetraploid
Midas	Netherlands	1	40	Aug. 14	69	15	
Mombassa	Netherlands	2	37	Aug. 16	104	23	
Morenne	Netherlands	2	30	Aug. 14	29	6	
Moretti	Netherlands	2	32	Aug. 19	108	24	
Norlea*	Canada	5	40	Aug. 14	448	100	
Pablo	Netherlands	2	40	Aug. 20	45	10	
Parcour	Germany	2	32	Aug. 14	113	25	
Perma	Netherlands	2	33	Aug. 16	102	23	
Player	Netherlands	1	25	Aug. 20	42	9	
Preference	Netherlands	2	30	Aug. 20	33	7	
Regal	U.S.A.	2	25	Aug. 16	22	5	
Rex	Netherlands	2	32	Aug. 14	322	72	
Royal	Netherlands	2	28	Aug. 14	59	13	
Sabel	United Kingdom	1	-	-	0	0	tetra hybrid
Sabrina	United Kingdom	1	-	-	0	0	tetra hybrid
Score	Netherlands	2	30	Aug. 16	235	52	

PERENNIAL RYEGRASS

Test Site: Beaverton Research Station
Seeding Year: 1980

Page 31

Cultivar	Origin	Hardiness	Height (cm.)	Date Ripe 1981	Seed Yield kg/ha	% of Norlea	Comments
Silian	United Kingdom	2	31	Aug. 20	87	19	
Splendor	Netherlands	4	30	Aug. 15	247	55	
Spirit	Netherlands	1	-	-	0	0	
Springfield	Netherlands	2	32	Aug. 20	87	19	
Sturdy	Netherlands	2	28	Aug. 18	165	37	
Talbot	Netherlands	2	33	Aug. 16	117	26	
Taptoe	Netherlands	2	35	Aug. 14	28	6	tetraploid
Terhoy	Netherlands	1	-	-	0	0	tetraploid
Tove	Denmark	1	-	-	0	0	
Verna	Denmark	4	33	Aug. 14	226	50	
Vigor	Belgium	2	32	Aug. 20	102	23	
Viris	Sweden	1	-	-	0	0	
Viva	Sweden	2	36	Aug. 14	232	52	
Wendy	Netherlands	2	35	Aug. 18	152	34	
Wewo	Netherlands	1	-	-	0	0	Italian ryegrass
Yatsugane	Japan	1	35	Aug. 20	10	2	
Mean					86		
L.S.D. (P = .05)					101.75		

TIMOTHY - TURF

Test Site: Beaverton (Foster's Farm)
Seeding Year: 1979

Page 32

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						Kg/ha 1980	Kg/ha 1981	% of Evergreen 1980	% of Evergreen 1981	(DM) 1980	t/ha 1981	% of Evergreen 1980	% of Evergreen 1981
Baret	Netherlands	9	41	Aug.11	Aug.13	370	325	95	98	1.58	4.32	75	82
Evergreen*	Sweden	9	48	Aug.11	Aug.13	389	333	100	100	2.12	5.25	100	100
Piccolo	Netherlands	9	51	Aug.11	Aug.13	430	262	111	79	1.86	4.46	88	85
Rali	Germany	9	50	Aug.11	Aug.13	418	361	107	108	1.99	5.64	94	107
Rusadan	Denmark	9	46	Aug.11	Aug.13	236	198	61	59	1.17	2.95	55	56
Mean						369	296			1.75	4.52		
L.S.D.						78.80	51.42			0.29	0.65		

Test Site: Beaverton Research Station

Baret	Netherlands	9	41	Aug.26	Aug.13	167	149	66	84	2.08	1.66	73	54
Evergreen*	Sweden	9	48	Aug.26	Aug.13	252	177	100	100	2.83	3.09	100	100
Piccolo	Netherlands	9	46	Aug.26	Aug.13	173	143	69	81	2.49	1.35	88	44
Rali	Germany	9	49	Aug.26	Aug.13	204	121	81	68	3.15	1.95	111	63
Rusadan	Denmark	9	45	Aug.26	Aug.13	94	98	37	55	3.64	0.66	129	21
Mean						178	137			2.84	1.74		
L.S.D.						82.64	61.12			0.66	0.43		

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	Kg/ha	% of Evergreen 1980	1981	(DM)	t/ha	% of Evergreen 1980	1981
Baret	Netherlands	9	35	Aug.12	Aug.26	181	293	62	68	0.88	3.53	53	63
Evergreen*	Sweden	9	46	Aug.12	Aug.26	291	431	100	100	1.66	5.61	100	100
Piccolo	Netherlands	9	36	Aug.12	Aug.26	146	298	50	69	0.77	2.99	46	53
Rali	Germany	9	31	Aug.12	Aug.26	235	64	81	15	1.11	2.73	67	49
Rusadan	Denmark	9	33	Aug.12	Aug.26	87	100	30	23	0.36	2.02	22	36
Mean						188	237			0.96	3.38		
L.S.D.						35.50	47.64			0.23	0.50		

Test Site: Ft. Vermilion Experimental Farm

Baret	Netherlands	9	43	Aug.19	Aug.10	66	114	31	58	4.46	1.62	46	52
Evergreen*	Sweden	9	66	Aug.19	Aug.10	216	196	100	100	9.68	3.14	100	100
Piccolo	Netherlands	9	41	Aug.19	Aug.10	32	92	15	47	3.60	1.97	37	63
Rali	Germany	9	45	Aug.19	Aug.10	128	89	59	45	5.95	1.78	127	57
Rusadan	Denmark	9	38	Aug.19	Aug.10	22	59	10	30	4.19	2.18	43	69
Mean						93	110			5.58	2.14		
L.S.D.						66.99	40.02			1.71	0.37		

TIMOTHY - TURF

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

Page 34

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield			Herbage Yield											
				Date Ripe	Yield kg/ha			Yield (DM) t/ha			1979	1980	1981					
					1979	1980	1981	1979	1980	1981	1979	1980	1981					
Barbino	Netherlands	9	36	Aug. 22	Aug. 14	Aug. 13	420	59	198	109	111	161	(1)	0.66	1.93	(1)	78	111
Baret	Netherlands	9	38	Aug. 22	Aug. 14	Aug. 13	385	141	170	100	266	138		1.18	2.37		139	136
Barosa	Netherlands	9	30	Aug. 22	Aug. 14	Aug. 13	324	104	304	84	196	247		0.82	2.07		96	119
Evergreen	Sweden	9	38	Aug. 22	Aug. 14	Aug. 13	330	120	163	86	226	133		1.48	2.38		174	137
Holea	Germany	9	46	Aug. 22	Aug. 14	Aug. 13	360	80	118	94	151	96		1.16	1.93		136	111
Maris Paviour	United Kingdom	9	15	Aug. 22	Aug. 14	Aug. 13	205	3	54	53	6	44		0.13	0.75		15	43
Nobis	Denmark	9	41	Aug. 22	Aug. 14	Aug. 13	259	54	116	67	102	94		0.75	2.22		88	128
Piccolo	Netherlands	9	48	Aug. 22	Aug. 14	Aug. 13	361	72	105	94	136	85		1.01	1.79		119	103
Rali	Germany	9	38	Aug. 22	Aug. 14	Aug. 13	267	207	147	69	391	120		1.48	1.98		174	114
S.50*	United Kingdom	9	42	Aug. 22	Aug. 14	Aug. 13	385	53	123	100	100	100		0.85	1.74		100	100
Sport	France	9	42	Aug. 22	Aug. 14	Aug. 13	250	61	156	65	115	127		0.77	1.57		91	90
Teno	Denmark	9	44	Aug. 22	Aug. 14	Aug. 13	293	56	95	76	106	77		0.81	1.68		98	97
Mean							320	84	146					0.92	1.87			
L.S.D. (P = .05)							81.22	32.62	83.06					0.32	0.46			

(1) Herbage not measured in 1979

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	Climax 1981	1980	1981	% of 1980	Climax 1981
Alpage	France	9	80	Aug. 18	Aug. 5	384	204	105	109	5.21	3.30	98	104
Asterix	Netherlands	8	53	Sept. 6	Aug. 16	465	63	127	34	6.28	1.69	118	53
Bartimi	Netherlands	9	76	Aug. 12	Aug. 5	405	260	110	138	5.11	3.59	96	114
Basho	Canada	9	74	Aug. 20	Aug. 7	192	87	52	46	3.71	2.71	70	86
Bilbo	Denmark	9	82	Aug. 16	Aug. 5	309	219	84	116	4.84	3.00	91	95
Bottnia 11	Sweden	9	83	Aug. 12	Aug. 5	703	432	192	230	4.89	4.83	92	153
Bounty	Canada	9	81	Aug. 19	Aug. 11	218	158	59	84	4.51	2.77	85	88
Champ	Canada	9	79	Aug. 12	Aug. 5	353	202	96	107	5.05	3.57	95	113
Climax*	Canada	9	82	Aug. 12	Aug. 13	367	188	100	100	5.30	3.16	100	100
Engmo	Norway	9	82	Aug. 12	Aug. 5	571	414	156	220	4.63	5.03	87	159
Erecta	Belgium	9	79	Aug. 13	Aug. 5	469	228	128	121	5.64	3.15	106	100
Goliath	Netherlands	9	79	Aug. 12	Aug. 5	407	233	111	124	5.58	3.18	105	101
Hokushu	Japan	9	75	Aug. 19	Aug. 13	443	295	121	157	6.60	3.61	125	114
Itasca	Sweden	9	87	Aug. 12	Aug. 5	268	155	73	82	5.05	3.50	95	111
Korpa	Iceland	9	84	Aug. 12	Aug. 5	792	401	216	213	4.61	3.96	87	125
Ludor	France	9	73	Aug. 19	Aug. 13	131	104	36	55	4.81	1.93	91	61
Melora	Netherlands	9	74	Aug. 16	Aug. 11	363	210	99	112	5.80	5.21	109	165
Mino	Denmark	9	76	Aug. 16	Aug. 13	304	251	82	134	5.33	2.72	101	86
Nosappu	Japan	9	88	Aug. 12	Aug. 5	496	332	135	177	5.28	4.25	100	134
Otto	Finland	9	87	Aug. 12	Aug. 5	537	308	146	164	4.41	4.00	83	127
Polka	United Kingdom	9	84	Aug. 13	Aug. 5	431	201	117	107	5.07	3.05	96	97
Pota	Denmark	9	85	Aug. 12	Aug. 5	406	206	111	110	5.50	3.39	104	107
Pronto	U.S.A.	9	83	Aug. 13	Aug. 5	403	229	110	122	5.48	3.55	103	112
Purlieu	United Kingdom	9	78	Aug. 16	Aug. 5	358	147	98	78	5.04	2.88	95	91
Rasant	Germany	9	85	Aug. 12	Aug. 5	607	348	165	185	5.01	3.78	95	120
Richmond	Canada	9	82	Aug. 16	Aug. 5	319	186	87	99	4.81	2.99	91	95
RVP 251F	Belgium	9	79	Aug. 16	Aug. 11	272	138	74	73	5.94	2.93	112	93
Salvo	Canada	9	78	Aug. 13	Aug. 5	225	60	61	32	4.47	1.85	84	59
Sigma	Netherlands	9	53	Aug. 26	Aug. 17	671	262	183	139	6.10	3.14	115	99
Titi	Finland	9	85	Aug. 12	Aug. 5	631	382	172	203	5.50	4.07	104	129
Tilda	Denmark	9	80	Aug. 12	Aug. 5	358	288	98	153	4.77	3.97	90	126
Topas Otofte	Denmark	9	83	Aug. 12	Aug. 5	399	258	109	137	5.51	3.48	104	110
Verdant	U.S.A.	9	88	Aug. 12	Aug. 13	410	326	112	173	6.17	4.09	116	129
Mean						404	236			5.16	3.32		
L.S.D. (P = .05)						154.75	63.10			0.95	1.27		

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	Climax 1981	1980	1981	% of 1980	Climax 1981
Alpage	France	9	67	Aug. 5	Aug. 13	358	239	105	84	4.22	4.35	98	93
Asterix	Netherlands	9	56	Aug. 25	Aug. 17	114	63	34	22	4.11	3.66	95	78
Bartimi	Netherlands	9	63	Aug. 11	Aug. 13	406	386	119	136	4.29	5.60	99	119
Basho	Canada	9	64	Aug. 5	Aug. 10	352	148	104	52	3.68	3.37	85	72
Bilbo	Denmark	9	66	Aug. 5	Aug. 4	433	255	127	90	4.49	4.50	104	96
Bottnia II	Sweden	9	68	July 30	Aug. 7	498	311	146	110	5.54	5.20	129	111
Bounty	Canada	9	69	Aug. 11	Aug. 11	291	176	86	62	4.27	4.08	99	87
Champ	Canada	9	64	July 30	Aug. 6	304	159	89	56	4.01	4.17	93	89
Climax*	Canada	9	69	Aug. 5	Aug. 13	340	283	100	100	4.31	4.70	100	100
Engmo	Norway	9	69	Aug. 5	Aug. 7	639	213	188	75	5.28	4.31	123	92
Erecta	Belgium	9	65	Aug. 5	Aug. 13	369	260	109	92	4.30	4.40	100	94
Goliath	Netherlands	9	66	Aug. 5	Aug. 4	354	268	104	95	4.77	4.89	111	104
Hokushu	Japan	9	59	Aug. 11	Aug. 14	219	307	64	108	5.22	5.09	121	108
Itasca	Sweden	9	66	July 30	Aug. 4	295	159	87	56	4.44	4.90	103	104
Korpa	Iceland	9	67	July 30	Aug. 4	274	289	81	102	5.70	4.86	132	103
Ludor	France	8	61	Aug. 11	Aug. 13	181	162	53	57	3.70	3.12	86	66
Melora	Netherlands	9	61	Aug. 11	Aug. 13	269	274	79	97	4.78	4.21	111	90
Mino	Denmark	9	64	Aug. 11	Aug. 13	306	286	90	101	4.63	4.48	107	95
Nosappu	Japan	9	67	July 30	Aug. 4	506	247	149	87	5.06	4.61	117	98
Otto	Finland	9	66	July 30	Aug. 4	501	252	147	89	4.53	4.73	105	101
Polka	United Kingdom	9	68	Aug. 5	Aug. 13	384	217	113	77	4.06	4.04	94	86
Pota	Denmark	9	70	Aug. 5	Aug. 9	436	284	128	101	4.80	5.17	111	110
Pronto	U.S.A.	9	68	Aug. 5	Aug. 4	389	223	114	79	4.79	4.51	111	96
Purlieu	United Kingdom	9	66	Aug. 11	Aug. 13	334	301	98	106	5.22	4.56	121	97
Ramona	Netherlands	8	32	Aug. 11	Aug. 16	205	132	60	47	2.36	1.98	55	42
Rasant	Germany	9	65	July 30	Aug. 4	558	289	164	102	4.85	4.88	113	104
Richmond	Canada	9	61	July 30	Aug. 4	422	182	124	64	4.42	3.85	103	82
RVP25IF	Belgium	9	62	Aug. 11	Aug. 13	180	153	53	54	3.97	4.07	92	87
Salvo	Canada	8	56	July 30	Aug. 4	275	80	81	28	3.54	2.47	82	53
Sigma	Netherlands	9	53	Aug. 25	Aug. 16	332	268	98	95	3.63	4.40	84	94
Tiiti	Finland	9	66	July 30	Aug. 13	437	337	129	119	5.64	5.05	131	107
Tilda	Denmark	9	66	Aug. 5	Aug. 4	517	235	152	83	5.14	4.96	119	105
Topas Otofte	Denmark	9	67	Aug. 5	Aug. 8	486	248	143	88	4.98	4.71	116	100
Verdant	U.S.A.	9	74	Aug. 5	Aug. 13	358	301	105	106	5.11	5.04	119	93
Mean						371	235			4.53	4.38		
L.S.D. (P = .05)						84.63	66.21			0.85	0.56		

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	Climax 1981	Yield 1980	t/ha 1981	% of 1980	Climax 1981
Alpage	France	9	52	Aug. 6	Aug. 6	148	212	116	150	1.82	3.33	92	108
Asterix	Netherlands	8	35	Aug. 20	Aug. 14	28	109	46	77	0.69	2.93	35	95
Bartimi	Netherlands	9	50	Aug. 6	Aug. 11	186	257	145	182	1.83	3.59	92	116
Basho	Canada	9	45	Aug. 6	July 31	79	49	62	35	1.44	2.10	73	68
Bilbo	Denmark	9	55	July 29	Aug. 14	176	164	138	116	1.94	3.04	98	98
Bottnia 11	Sweden	9	57	July 29	July 31	206	344	161	244	2.34	4.22	118	137
Bounty	Canada	9	55	Aug. 6	Aug. 14	104	91	81	65	1.43	2.31	72	75
Champ	Canada	9	44	Aug. 6	Aug. 14	107	93	84	66	1.50	2.47	76	80
Climax*	Canada	9	52	Aug. 6	Aug. 11	128	141	100	100	1.98	3.09	100	100
Engmo	Norway	9	56	Aug. 6	July 31	222	372	173	264	2.07	3.92	105	127
Erecta	Belgium	9	56	July 29	July 31	120	241	94	171	1.86	3.39	94	110
Goliath	Netherlands	9	52	July 29	Aug. 8	150	268	117	190	1.96	3.29	99	106
Hokushu	Japan	9	54	Aug. 8	Aug. 12	164	353	128	250	2.07	3.86	105	125
Itasca	Sweden	9	52	July 29	Aug. 11	108	120	84	85	1.91	3.10	96	100
Korpa	Iceland	9	55	July 29	July 31	245	290	191	207	2.02	3.73	102	121
Ludor	France	9	47	Aug. 6	Aug. 14	62	91	48	65	1.55	2.71	78	88
Melora	Netherlands	9	46	Aug. 8	Aug. 14	81	200	63	142	1.87	3.21	94	104
Mino	Denmark	9	47	Aug. 8	Aug. 14	153	169	120	120	1.93	2.45	97	79
Nosappu	Japan	9	50	Aug. 6	July 31	165	142	129	101	2.01	3.30	102	107
Otto	Finland	9	57	July 29	July 31	265	304	207	216	2.32	3.91	117	127
Polka	United Kingdom	9	51	Aug. 6	Aug. 6	172	135	134	96	1.92	2.97	97	96
Pota	Denmark	9	55	July 29	Aug. 6	133	159	104	113	2.20	3.65	111	118
Pronto	U.S.A.	9	49	Aug. 6	Aug. 14	155	157	121	111	1.85	3.14	95	102
Purlieu	United Kingdom	9	51	Aug. 12	Aug. 14	135	193	105	137	1.44	2.89	73	94
Rasant	Germany	9	58	July 29	Aug. 11	323	421	252	299	2.27	4.23	115	137
Richmond	Canada	9	51	July 29	July 31	139	200	109	142	1.85	2.75	93	89
RVP 251F	Belgium	9	49	Aug. 8	Aug. 14	70	154	55	109	1.75	3.00	88	97
Salvo	Canada	9	41	July 29	July 31	56	92	44	65	1.42	1.88	72	61
Sigma	Netherlands	8	39	Aug. 12	Aug. 11	189	339	148	240	1.70	3.24	86	105
Tiiti	Finland	9	60	July 29	Aug. 6	272	373	213	265	2.45	4.09	124	132
Tilda	Denmark	9	56	July 29	Aug. 6	196	180	153	128	2.00	3.47	101	112
Topas Otofte	Denmark	9	54	Aug. 6	July 31	174	156	136	111	2.06	3.18	104	103
Verdant	U.S.A.	9	52	Aug. 6	Aug. 14	139	181	109	128	1.97	3.68	99	119
Mean						149	205			1.82	3.14		
L.S.D. (P = .05)						61.96	72.24			0.41	0.64		

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	1981	1980	1981	% of 1980	1981
Alpage	France	9	74	July 30	Aug. 10	239	243	89	155	8.04	3.61	80	107
Asterix	Netherlands	9	47	Aug. 19	Aug. 10	133	118	49	75	6.91	2.68	69	79
Bartimi	Netherlands	9	77	July 30	Aug. 10	346	335	128	213	10.13	4.70	101	139
Basho	Canada	9	74	July 30	Aug. 10	95	92	35	59	6.91	3.30	69	98
Bilbo	Denmark	9	80	July 30	Aug. 10	292	233	108	148	9.50	4.26	94	126
Bottnia 11	Sweden	9	87	July 30	July 29	960	547	356	348	17.53	7.23	174	214
Bounty	Canada	9	77	July 30	Aug. 10	325	187	120	119	9.02	2.83	90	84
Champ	Canada	9	79	July 30	Aug. 10	240	116	89	74	11.19	4.29	111	127
Climax*	Canada	9	79	July 30	Aug. 10	270	157	100	100	10.06	3.38	100	100
Engmo	Norway	9	87	July 30	July 29	955	570	354	363	16.05	6.39	160	189
Erecta	Belgium	9	74	July 30	Aug. 10	307	174	114	111	7.72	3.34	77	99
Goliath	Netherlands	9	77	July 30	Aug. 10	393	278	146	177	12.42	4.01	123	119
Hokushu	Japan	9	79	July 30	Aug. 10	215	298	80	190	9.79	4.77	97	141
Itasca	Sweden	9	82	July 30	Aug. 10	276	159	102	101	11.48	4.57	114	135
Korpa	Iceland	9	82	July 30	July 29	949	451	351	287	14.54	5.66	145	167
Ludor	France	9	72	July 30	Aug. 10	174	100	64	64	10.42	3.47	104	103
Melora	Netherlands	9	71	July 30	Aug. 10	158	208	59	132	8.53	4.16	85	123
Mino	Denmark	9	79	July 30	Aug. 10	153	214	57	136	6.94	3.70	69	109
Nosappu	Japan	9	84	July 30	Aug. 10	312	270	116	172	12.50	5.43	124	161
Otto	Finland	9	84	July 30	Aug. 1	737	369	273	235	13.71	4.61	136	136
Polka	United Kingdom	9	80	July 30	Aug. 10	282	263	104	168	9.72	4.53	97	134
Pota	Denmark	9	82	July 30	Aug. 10	315	235	117	150	12.51	4.84	124	143
Pronto	U.S.A.	9	74	July 30	Aug. 10	284	207	105	132	10.17	4.25	101	126
Purlieu	United Kingdom	9	72	July 30	Aug. 10	122	274	45	175	7.70	4.63	77	137
Rasant	Germany	9	75	July 30	July 29	421	394	156	251	9.78	3.87	97	114
Richmond	Canada	9	78	July 30	Aug. 1	208	247	77	157	9.11	4.19	91	124
RVP 251F	Belgium	9	72	July 30	Aug. 10	177	207	66	132	11.17	4.15	111	123
Salvo	Canada	9	68	Aug. 9	July 29	166	110	62	70	7.96	3.94	79	117
Sigma	Netherlands	9	63	Sept. 1	Aug. 10	509	399	189	254	9.39	3.90	93	115
Tiiti	Finland	9	72	July 30	Aug. 10	725	500	269	318	14.40	5.88	143	174
Tilda	Denmark	9	81	July 30	Aug. 10	461	296	171	189	11.86	4.73	118	140
Topas Otofote	Denmark	9	80	July 30	Aug. 10	365	334	135	213	12.29	4.90	122	145
Verdant	U.S.A.	9	86	July 30	Aug. 10	332	270	123	172	11.80	5.46	117	162
Mean						350	268			10.64	4.41		
L.S.D. (P = .05)						124.22	109.08			2.72	1.31		

Cultivar	Origin	Hardiness	Height (cm)	Date 1980	Ripe 1981	Seed Yield				Herbage Yield			
						1980	1981	% of 1980	Climax 1981	1980	1981	% of 1980	Climax 1981
Alpage	France	8	60	July 28	Aug. 1	169	154	92	101	1.44	2.09	84	83
Asterix	Netherlands	8	42	Aug. 2	Aug. 11	137	204	75	134	1.72	2.38	100	94
Bartimi	Netherlands	8	61	July 28	Aug. 1	141	133	98	88	1.51	1.67	88	66
Basho	Canada	8	63	July 28	July 29	53	70	29	46	0.66	1.48	38	58
Bilbo	Denmark	8	69	July 28	Aug. 7	177	248	86	163	2.02	2.03	117	80
Bottnia 11	Sweden	8	73	July 28	July 29	576	389	313	256	3.14	3.62	183	143
Bounty	Canada	8	70	Aug. 2	Aug. 11	114	114	62	75	1.54	1.69	90	67
Champ	Canada	8	63	July 28	Aug. 8	144	88	83	58	1.59	2.03	92	80
Climax*	Canada	8	67	Aug. 2	Aug. 11	184	152	100	100	1.72	2.53	100	100
Engmo	Norway	8	64	July 28	July 29	538	361	292	238	2.81	3.05	163	121
Erecta	Belgium	8	61	July 28	July 29	217	194	118	128	1.55	2.11	90	83
Goliath	Netherlands	8	65	July 28	Aug. 11	307	220	167	145	2.29	2.35	133	93
Hokushu	Japan	8	67	Aug. 7	Aug. 11	248	331	135	218	2.33	2.76	135	109
Itasca	Sweden	8	62	Aug. 2	Aug. 11	161	175	62	115	1.18	2.14	69	85
Korpa	Iceland	8	66	July 28	July 29	582	333	250	219	3.14	2.13	183	84
Ludor	France	8	61	July 28	Aug. 11	90	87	49	57	1.50	1.62	87	64
Melora	Netherlands	8	60	Aug. 2	Aug. 11	143	169	82	111	1.68	1.91	98	75
Mino	Denmark	8	69	July 28	Aug. 11	147	245	111	161	1.71	2.78	99	110
Nosappu	Japan	8	67	July 28	Aug. 8	201	171	95	113	1.99	2.26	116	89
Otto	Finland	8	65	July 28	July 29	390	282	212	186	2.31	2.91	134	115
Polka	United Kingdom	8	65	July 28	Aug. 11	176	104	96	68	1.79	1.81	104	72
Pota	Denmark	8	66	July 28	July 29	141	124	77	82	1.51	1.99	88	79
Pronto	U.S.A.	8	69	July 28	Aug. 5	293	187	159	123	2.33	3.04	135	120
Purlieu	United Kingdom	8	62	Aug. 13	Aug. 8	108	198	125	130	1.28	2.13	74	84
Rasant	Germany	8	65	July 28	July 29	403	306	219	201	1.97	2.73	115	108
Richmond	Canada	8	68	July 28	July 29	157	183	85	120	2.31	2.27	134	90
RVP 251F	Belgium	8	62	July 28	Aug. 11	123	137	92	90	1.57	2.35	91	93
Salvo	Canada	8	62	July 28	Aug. 1	65	121	35	80	1.90	1.96	110	77
Sigma	Netherlands	8	54	Aug. 13	Aug. 11	418	420	215	276	1.13	2.55	66	101
Tiiti	Finland	8	69	July 28	July 29	456	279	248	184	2.07	2.75	120	109
Tilda	Denmark	8	70	July 28	Aug. 1	306	161	166	106	2.90	2.75	169	109
Topas Otofte	Denmark	8	71	July 28	July 29	224	188	97	124	2.40	2.25	140	89
Verdant	U.S.A.	8	70	July 28	Aug. 11	230	174	125	114	1.94	1.84	113	73
Mean						237	203			1.91	2.30		
L.S.D. (P = .05)						95.64	99.84			0.66	0.85		

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Data								Herbage Yield Data							
				Date Ripe	1979	1980	1981	Yield kg/ha		% of Climax		(DM)	1979	1980	1981	Yield t/ha		% of Climax	
								1979	1980	1981	1979					1979	1980	1981	1979
Asterix	Netherlands	9	45	Sept. 4	Aug. 14	Aug. 17	318	7	62	77	3	39	(1)	4.06	1.77	(1)	88	56	
Barmidi	Netherlands	9	61	Aug. 15	Aug. 5	Aug. 9	335	169	128	81	65	82		5.56	2.46		120	78	
Barmoti	Netherlands	9	63	Aug. 9	Aug. 25	Aug. 4	456	388	198	110	143	126		4.35	2.52		94	80	
Bartimi	Netherlands	9	62	Aug. 15	Aug. 5	Aug. 4	431	221	225	104	84	143		5.35	2.79		116	89	
Barvanti	Netherlands	9	53	Aug. 22	Aug. 25	Aug. 17	326	106	78	79	40	50		3.37	1.91		73	61	
Basho	Canada	9	61	Aug. 9	July 24	Aug. 4	284	185	110	69	71	70		3.17	1.79		68	57	
Bodin	Norway	9	67	Aug. 9	July 30	July 29	590	441	261	143	168	166		5.99	3.25		129	104	
Bottnia 11	Sweden	9	68	Aug. 9	July 30	Aug. 4	461	278	177	112	106	113		4.77	3.15		103	100	
Champlain	Netherlands	9	80	Aug. 19	Aug. 11	Aug. 11	336	202	193	81	77	123		4.84	2.51		105	80	
Climax*	Canada	9	70	Aug. 12	July 30	Aug. 4	413	262	157	100	100	100		4.63	3.14		100	100	
Deploy	United Kingdom	9	31	Aug. 22	Aug. 14	Aug. 17	168	36	102	41	14	65		3.70	1.59		80	51	
Engmo	Norway	9	70	Aug. 9	July 30	July 29	552	337	233	134	129	148		5.22	3.34		113	106	
Erecta	Belgium	9	63	Aug. 11	July 30	Aug. 3	349	159	153	85	61	97		4.20	2.58		91	82	
Farol	Netherlands	9	58	Aug. 22	Aug. 11	Aug. 13	343	100	186	83	38	118		3.57	2.15		77	68	
Flemar	Netherlands	9	60	Aug. 11	July 30	July 29	446	247	166	108	94	106		3.23	2.79		70	89	
Forus	Norway	9	63	Aug. 9	July 30	Aug. 4	441	295	219	107	113	139		4.01	2.52		87	80	
Georgikon	Hungary	9	69	Aug. 9	Aug. 2	Aug. 4	450	290	174	109	111	111		4.29	2.80		93	89	
Goliath	Netherlands	9	64	Aug. 17	July 30	Aug. 4	504	209	149	122	80	95		4.98	2.86		108	91	
Grindstad	Norway	9	65	Aug. 12	July 30	Aug. 4	549	312	158	133	119	101		4.95	3.16		107	101	
Gusto	Netherlands	9	57	Sept. 4	Aug. 25	Aug. 17	401	48	61	97	18	39		7.34	2.68		159	85	
Hokua	Japan	9	63	Aug. 9	July 30	Aug. 4	353	294	117	85	112	75		3.96	2.50		86	80	
Korpa	Iceland	9	63	Aug. 9	July 30	July 29	598	382	304	145	146	194		6.20	3.79		134	121	
Mahndorfer	Germany	9	62	Aug. 11	July 30	Aug. 4	501	317	135	121	121	86		5.00	2.49		108	79	
Megas	Netherlands	9	61	Aug. 14	July 30	Aug. 4	287	104	115	69	40	73		3.99	2.85		86	91	
Meson	Netherlands	9	56	Aug. 22	Aug. 14	Aug. 11	302	67	182	73	26	116		4.29	2.50		93	80	
Mino	Denmark	9	52	Aug. 20	Aug. 11	Aug. 13	409	155	194	99	59	124		5.14	2.11		111	67	
Motim	Netherlands	9	63	Aug. 20	Aug. 5	Aug. 5	367	64	139	89	24	88		4.92	2.50		106	80	
N.F.G.	Germany	9	63	Aug. 9	July 30	Aug. 4	493	366	171	119	140	109		3.68	2.13		79	68	
Otto	Finland	9	68	Aug. 11	July 30	July 29	551	364	239	133	139	152		5.07	3.38		110	108	

(1) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield Data						Herbage Yield Data								
				1979	Date Ripe	1980	1981	Yield kg/ha		% of Climax		(DM)	t/ha	Yield (DM)		% of Climax		
								1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	
Palermo	Netherlands	9	28	Aug. 22	Aug. 14	Aug. 13	221	145	94	54	55	60	(1)	1.83	1.19	(1)	40	38
Para	Poland	9	62	Aug. 9	Aug. 5	Aug. 4	339	305	233	82	116	148		3.44	2.83		74	90
Pedion	Netherlands	9	56	Aug. 22	Aug. 14	Aug. 14	292	53	157	71	20	100		3.34	2.19		72	70
Pet	Germany	9	65	Aug. 9	July 30	Aug. 4	448	348	193	108	133	123		4.54	2.68		98	85
Phlewiola	Germany	9	65	Aug. 9	July 30	Aug. 4	335	217	166	81	83	106		4.26	2.62		92	83
Pota	Denmark	9	66	Aug. 12	July 30	Aug. 4	458	303	135	111	116	86		5.17	2.73		112	87
Pronto	U.S.A.	9	63	Aug. 15	July 30	Aug. 6	371	192	167	90	73	106		5.69	3.04		123	97
Ramona	Netherlands	9	24	Aug. 22	Aug. 11	Aug. 13	185	121	78	45	46	50		2.56	1.06		55	34
Rasant	Germany	9	69	Aug. 9	July 30	July 29	414	358	314	100	137	200		4.00	3.42		86	109
Richmond	Canada	9	63	Aug. 9	July 30	July 29	398	336	169	96	128	108		4.56	3.24		98	103
Rotenberg	Sweden	9	67	Aug. 9	July 30	Aug. 4	442	338	331	107	129	211		4.65	3.34		100	106
RVP 251F	Belgium	9	58	Aug. 17	Aug. 4	Aug. 12	309	52	135	75	20	86		4.72	2.74		102	87
Sabre	United Kingdom	9	56	Aug. 22	Aug. 25	Aug. 17	356	137	92	86	52	59		5.02	2.35		108	75
Sigma	Netherlands	9	46	Aug. 22	Aug. 14	Aug. 17	304	36	131	74	14	83		3.29	2.11		71	67
Suceava	Rumania	9	63	Aug. 9	July 30	July 31	407	342	184	99	131	117		4.18	2.80		90	89
Surprise	Netherlands	9	59	Aug. 17	Aug. 5	Aug. 13	449	202	135	109	77	86		5.40	3.06		117	97
Tammiesto	Finland	9	70	Aug. 9	July 30	Aug. 4	457	341	247	111	130	157		4.03	3.03		87	96
Tapio 800	Hungary	9	66	Aug. 9	July 30	July 29	390	306	209	94	117	133		4.35	3.12		95	99
Tarmo	Finland	9	66	Aug. 9	July 30	July 29	561	369	230	136	141	146		4.90	3.02		106	96
Tilda	Denmark	9	60	Aug. 11	Aug. 2	July 29	365	200	162	88	76	103		3.58	2.48		77	79
Timfor	U.S.A.	9	64	Aug. 9	July 30	July 29	328	255	160	79	97	102		4.39	2.36		95	75
Topas Otofte	Denmark	9	65	Aug. 12	July 30	Aug. 4	357	231	164	86	88	104		4.38	2.87		95	91
Vallo	Sweden	9	64	Aug. 11	July 30	July 29	534	393	198	129	150	126		4.49	2.67		97	85
Verdant	U.S.A.	9	70	Aug. 15	Aug. 1	Aug. 3	382	226	214	92	86	136		5.06	3.44		109	110
Mean							399	230	171.37					4.45	2.65			
L.S.D. (P = .05)							69.70	63.72	57.99					0.96	0.50			

(1) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield			Herbage Yield											
				Date Ripe	1979	1980	1981	Yield kg/ha	% of Climax	(DM)	Yield t/ha	% of Climax						
Asterix	Netherlands	9	45	Aug. 20	Aug. 20	Aug. 14	(1)	102	73	(1)	39	51	(2)	0.98	1.41	(2)	48	77
Barmidi	Netherlands	9	61	Aug. 15	Aug. 2	Aug. 6		128	161		48	112		1.84	1.94		90	107
Barmoti	Netherlands	9	62	Aug. 15	Aug. 2	Aug. 6		232	260		88	181		1.68	1.88		82	103
Bartimi	Netherlands	9	54	Aug. 15	July 29	Aug. 8		156	206		59	143		1.81	1.95		88	107
Barvanti	Netherlands	9	49	Aug. 19	Aug. 12	Aug. 11		102	151		39	105		1.82	1.84		89	101
Basho	Canada	9	65	Aug. 17	July 29	Aug. 6		164	129		62	90		1.66	1.70		81	93
Bodin	Norway	9	69	Aug. 17	July 29	July 30		386	336		146	233		2.48	2.68		121	147
Bottnia 11	Sweden	9	67	Aug. 15	July 29	Aug. 6		258	284		98	197		2.40	2.52		117	138
Champlain	Netherlands	9	68	Aug. 15	Aug. 4	Aug. 11		175	153		66	106		2.10	2.08		102	114
Climax*	Canada	9	71	Aug. 15	July 29	Aug. 15		264	144		100	100		2.05	1.82		100	100
Deploy	United Kingdom	7	31	Aug. 17	Aug. 12	Aug. 16		40	77		15	53		0.83	1.12		40	62
Engmo	Norway	9	66	Aug. 15	July 29	July 27		358	260		137	181		2.60	2.32		127	127
Erecta	Belgium	9	64	Aug. 15	July 29	Aug. 6		162	169		63	117		1.59	1.59		78	87
Farol	Netherlands	9	60	Aug. 15	Aug. 12	Aug. 11		132	108		50	75		1.42	1.98		69	109
Forus	Norway	9	65	Aug. 15	July 29	Aug. 27		295	184		112	128		2.14	1.72		104	95
Georgikon	Hungary	9	69	Aug. 15	July 29	Aug. 27		349	249		132	173		2.26	2.13		110	117
Goliath	Netherlands	9	57	Aug. 15	July 29	Aug. 12		177	239		67	159		1.68	2.03		82	112
Grindstad	Norway	9	62	Aug. 15	July 29	Aug. 4		204	155		77	108		1.79	1.81		87	99
Gusto	Netherlands	9	59	Aug. 20	Aug. 12	Aug. 14		70	143		27	99		2.27	2.49		111	137
Hokua	Japan	9	54	Aug. 15	July 29	Aug. 14		163	82		62	57		1.37	1.31		67	72
Korpa	Iceland	9	66	Aug. 15	July 29	July 27		482	327		183	227		3.16	2.59		154	142
Mahndorfer	Germany	9	64	Aug. 15	July 29	Aug. 6		237	226		90	157		1.83	1.91		89	105
Megas	Netherlands	9	63	Aug. 15	Aug. 12	Aug. 10		123	123		47	85		1.40	1.91		68	105
Meson	Netherlands	9	62	Aug. 17	Aug. 12	Aug. 10		183	206		69	143		2.03	1.90		99	104
Mino	Denmark	9	49	Aug. 15	Aug. 6	Aug. 14		48	137		18	95		0.90	1.41		44	77
Motim	Netherlands	9	53	Aug. 15	Aug. 6	Aug. 14		153	232		58	161		1.74	1.78		85	98

(1) Harvested seeds destroyed by fire.

(2) Herbage not measured.

Cultivar	Origin	Hardiness	Height (cm)	Date Ripe			Seed Yield			Herbage Yield							
				1979	1980	1981	1979	1980	1981	1979	1980	1981					
N.F.G.	Germany	9	63	Aug. 15	July 29	Aug. 6 (1)	289	160	(1)	109	111	(2)	1.84	1.92	(2)	90	105
Otto	Finland	9	72	Aug. 15	July 29	July 27	445	297		169	206		2.86	2.81		140	154
Palermo	Netherlands	8	22	Aug. 15	July 29		83	7		31	5		0.61	0.68		30	37
Pedion	Netherlands	9	57	Aug. 15	Aug. 12	Aug. 14	118	233		45	162		1.65	2.49		80	137
Pet	Germany	9	65	Aug. 15	July 29	Aug. 6	268	253		102	177		2.05	1.99		100	109
Phlewiola	Germany	9	64	Aug. 15	July 29	Aug. 6	245	153		93	106		2.08	1.89		101	104
Pota	Denmark	9	65	Aug. 15	July 29	Aug. 8	196	219		74	152		1.91	2.30		93	126
Pronto	U.S.A.	9	67	Aug. 15	July 29	Aug. 9	219	137		83	95		2.13	2.16		104	119
Ramona	Netherlands	7	19	Aug. 15	Aug. 6		36	3		14	2		0.38	0.44		19	24
Rasant	Germany	9	65	Aug. 15	July 29	July 27	347	274		131	190		2.37	2.32		116	127
Richmond	Canada	9	63	Aug. 15	July 29	July 27	220	160		83	111		2.13	1.86		104	102
Rotenberg	Sweden	9	71	Aug. 15	July 29	July 30	412	260		156	181		2.21	2.22		108	122
RVP 251F	Belgium	9	58	Aug. 15	Aug. 6	Aug. 8	147	142		56	99		2.15	1.91		105	105
Sabre	United Kingdom	9	53	Aug. 19	Aug. 20	Aug. 10	178	129		67	90		1.19	1.55		58	85
Sigma	Netherlands	9	42	Aug. 20	Aug. 12	Aug. 14	162	244		61	169		1.44	2.01		70	110
Suceava	Rumania	9	56	Aug. 15	July 23	July 27	214	153		81	106		1.70	1.67		83	92
Surprise	Netherlands	9	54	Aug. 17	Aug. 6	Aug. 10	229	185		87	128		2.30	2.22		112	122
Tammiesto	Finland	9	70	Aug. 15	July 29	Aug. 6	350	337		133	234		2.40	2.36		117	130
Tapiol 800	Hungary	9	66	Aug. 15	July 29	Aug. 6	266	197		101	137		2.01	2.00		98	110
Tarmo	Finland	9	68	Aug. 15	July 29	July 27	436	246		165	171		2.47	2.40		120	132
Tilda	Denmark	9	69	Aug. 15	July 29	Aug. 6	204	158		77	110		1.56	2.45		76	135
Timfor	U.S.A.	9	60	Aug. 15	July 29	Aug. 5	247	145		94	101		2.03	2.28		99	125
Topas Otofte	Denmark	9	71	Aug. 15	July 29	(3)	137	(3)		52	(3)		1.12	(3)		55	(3)
Vallo	Sweden	9	67	Aug. 15	July 29	July 27	358	212		136	147		2.26	2.05		110	113
Verdant	U.S.A.	9	71	Aug. 15	July 29	Aug. 6	229	216		87	150		2.52	2.32		123	127
Mean							219	186.44					1.87	1.96			
L.S.D. (P = .05)							91.17	61.86					0.60	0.41			

(1) Harvested seeds destroyed by fire.

(2) Herbage not measured.

(3) Not measured in 1981.

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield						Herbage Yield								
				Date Ripe			Yield kg/ha	1980	1981	% of Climax	1980	1981	Yield (DM) t/ha	1980	1981			
				1979	1980	1981												
Asterix	Netherlands	9	62	Aug. 15	Aug. 19	Aug. 10	(1)	40	29	(1)	11	35	(2)	5.72	1.47	(2)	85	60
Barmidi	Netherlands	9	82	Aug. 15	July 30	(3)		132	(3)	36	(3)			2.79	2.63		41	108
Barmoti	Netherlands	9	83	Aug. 15	July 30	Aug. 10		284	102	77	123			3.00	2.06		44	85
Bartimi	Netherlands	9	84	Aug. 15	July 30	Aug. 10		191	100	51	120			4.00	2.39		59	98
Baryanti	Netherlands	9	45	Aug. 15	Aug. 19	Aug. 10		61	40	16	48			4.47	1.91		66	79
Bodin	Norway	9	94	Aug. 15	July 30	Aug. 1		554	208	149	251			4.37	2.85		65	117
Bottnia 11	Sweden	9	92	Aug. 15	July 30	July 29		497	139	134	167			4.62	2.05		68	84
Champlain	Netherlands	9	90	Aug. 15	July 30	Aug. 10		95	112	26	135			3.51	2.68		52	110
Climax*	Canada	9	95	Aug. 15	July 30	Aug. 10		371	83	100	100			6.76	2.43		100	100
Engmo	Norway	9	93	Aug. 15	July 30	Aug. 1		491	186	132	224			4.36	2.67		65	110
Erecta	Belgium	9	79	Aug. 15	July 30	Aug. 7		116	104	31	125			2.11	2.04		31	84
Flemar	Netherlands	8	79	Aug. 15	July 30	Aug. 10		161	100	43	120			2.42	1.43		36	60
Forus	Norway	9	82	Aug. 15	July 30	Aug. 10		364	118	98	142			4.58	2.01		68	83
Georgikon	Hungary	9	87	Aug. 15	July 30	July 29		327	121	88	146			4.67	2.65		69	109
Goliath	Netherlands	9	80	Aug. 15	July 30	Aug. 10		171	109	46	131			2.93	2.27		43	93
Grindstad	Norway	9	90	Aug. 15	July 30	July 29		317	132	85	159			4.88	2.79		72	115
Gusto	Netherlands	9	56	Aug. 15	Aug. 19	Aug. 10		58	52	16	63			3.37	1.87		50	77
Hokua	Japan	9	86	Aug. 15	July 30	Aug. 4		256	89	69	107			5.80	1.92		86	79
Korpa	Iceland	9	92	Aug. 15	July 30	Aug. 7		554	254	149	306			6.11	2.99		90	123
Mahndorfer	Germany	9	88	Aug. 15	July 30	July 29		196	109	53	131			3.49	2.41		52	99
Megas	Netherlands	9	77	Aug. 15	July 30	Aug. 10		116	126	31	152			3.51	2.19		52	90
Meson	Netherlands	9	72	Aug. 15	Aug. 19	Aug. 10		134	81	36	98			4.75	1.66		70	68
Mino	Denmark	8	81	Aug. 15	July 30	Aug. 10		93	86	25	104			5.17	3.15		76	130
Motim	Netherlands	8	83	Aug. 15	Aug. 19	Aug. 10		86	104	23	125			2.38	2.13		35	88
N.F.G.	Germany	9	83	Aug. 15	July 30	Aug. 10		299	118	81	142			3.17	2.12		47	87
Otto	Finland	9	90	Aug. 15	July 30	July 29		428	184	115	222			6.82	2.64		101	26

(1) Harvested seeds destroyed by fire

(2) Herbage not measured

(3) Seed not harvested in 1981

Cultivar	Origin	Hardiness	Height (cm)	Seed Yield				Herbage Yield										
				Date Ripe	1979	1980	1981	Yield kg/ha		% of Climax		(DM) 1979	t/ha 1980	1981	% of Climax			
								1979	1980	1979	1980				1979	1980		
Palermo	Netherlands	7	63	Aug. 15	Aug. 19	--	(1)	15	27	(1)	4	33	(2)	2.17	1.70	(2)	32	70
Pedion	Netherlands	9	61	Aug. 15	Aug. 19	Aug. 10		116	44		31	53		4.52	2.44		67	100
Pet	Germany	9	84	Aug. 15	July 30	July 29		258	160		70	193		1.93	2.38		29	98
Phlewiola	Germany	9	81	Aug. 15	July 30	Aug. 10		417	56		112	67		5.26	2.44		79	100
Pota	Denmark	8	85	Aug. 15	July 30	Aug. 10		268	116		72	140		4.32	2.16		64	89
Pronto	U.S.A.	9	82	Aug. 15	July 30	Aug. 10		130	114		35	137		2.98	2.27		44	93
Ramona	Netherlands	9	64	Aug. 15	Aug. 19	(3)		110	(3)		30	(3)		1.55	1.53		23	63
Rasant	Germany	9	86	Aug. 15	July 30	July 29		344	188		93	227		3.34	2.58		49	106
Richmond	Canada	9	87	Aug. 15	July 30	July 29		212	131		57	158		3.81	2.51		56	103
Rotenberg	Sweden	9	91	Aug. 15	July 30	Aug. 7		457	187		123	225		4.61	3.16		68	130
RVP 251F	Belgium	9	78	Aug. 15	July 30	Aug. 10		53	85		14	102		4.42	1.95		65	80
Sabre	United Kingdom	9	67	Aug. 15	Aug. 19	Aug. 10		74	70		20	84		3.13	1.63		46	67
Sigma	Netherlands	9	57	Aug. 15	Aug. 19	Aug. 10		126	73		34	88		2.94	1.48		43	61
Suceava	Rumania	9	84	Aug. 15	July 30	Aug. 10		141	128		38	154		2.41	2.87		36	118
Surprise	Netherlands	9	78	Aug. 15	Aug. 19	Aug. 10		122	75		33	90		4.10	2.16		61	89
Tammiisto	Finland	9	92	Aug. 15	July 30	Aug. 10		553	162		149	195		5.77	2.48		85	102
Tapio 800	Hungary	9	94	Aug. 15	July 30	Aug. 10		284	157		77	189		2.92	2.71		43	112
Tarmo	Finland	9	90	Aug. 15	July 30	Aug. 4		338	153		91	184		4.42	2.17		65	89
Timfor	U.S.A.	9	86	Aug. 15	July 30	July 29		188	104		51	125		3.71	2.16		55	89
Topas Otofte	Denmark	9	84	Aug. 15	July 30	Aug. 10		248	88		67	106		4.22	2.13		62	88
Vallo	Sweden	8	83	Aug. 15	July 30	Aug. 10		404	118		109	142		6.67	2.32		99	95
Verdant	U.S.A.	9	91	Aug. 15	July 30	Aug. 10		157	111		42	134		3.25	2.66		48	109
Mean								237.74	113.83					3.99	2.28			
L.S.D. (P = .05)								172.37	48.23					3.15	0.72			

(1) Harvested seeds destroyed by fire

(2) Herbage not measured

(3) Seed not harvested in 1981

Cultivar	Origin	Height (cm)	Seed Yield									Herbage Yield					
			Hardiness			Yield kg/ha	% of Aurora			(DM)	Yield t/ha			% of Aurora	1979	1980	1981
			1979	1980	1981		1979	1980	1981		1979	1980	1981				
Aldan Trifolium	Denmark	(1)	7	4	4	460	86	16	83	90	38	4.35	0.34	0.41	110	57	87
Alpo	Norway		7	0	-	556	0	-	100	0	-	3.77	0	-	95	0	-
Aurora*	Canada		8	5	5	556	96	42	100	100	100	3.99	0.60	0.47	100	100	100
Dawn	Canada		8	5	5	624	128	34	112	133	81	4.51	0.40	0.42	113	67	89
Ermo Otofte	Denmark		6	4	4	450	104	44	81	108	105	3.14	-	0.44	78	-	94
Hogsta	Sweden		9	6	4	484	109	30	87	114	71	4.03	0.43	0.26	100	72	55
Iso Tetra	Finland		9	7	4	524	100	32	94	104	76	4.55	0.36	0.47	113	60	100
Jeno Daehnfeldt	Denmark		6	3	2	353	54	24	63	56	57	4.17	-	0.28	105	-	60
Odenwalder	Germany		8	6	5	487	187	18	88	195	43	4.25	0.27	0.37	105	45	79
Otofte	Denmark		4	1	-	506	43	-	91	45	-	2.85	-	-	73	-	-
Otofte 4N	Denmark		8	6	5	516	104	33	93	108	79	3.91	0.22	0.43	98	37	91
Stena 4N	Sweden		9	5	3	413	36	0	74	38	0	4.18	0.16	0	105	27	0
Strain II	Canada		7	5	5	492	139	31	88	145	74	5.02	0.36	0.43	125	60	91
Tetra	Sweden		9	7	5	569	139	48	102	145	114	4.36	0.38	0.49	110	63	104

Mean

499 95 29

4.08 0.32 0.37

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

116.18 63.13 31.03

1.44 0.27 0.29

(1) Height not measured

Cultivar	Origin	Height (cm)	Seed Yield				Herbage Yield			
			Hardiness		Kg/ha 1980	% of 1980	Altaswede 1981	(DM) 1980	t/ha	
			1980	1981					1981	1980
Altaswede*	Canada	46	9	8	573	166	100	100	4.21	2.02
Bjorn	Sweden	47	9	8	442	197	77	119	5.07	2.19
Florex	U.S.A.	45	8	6	529	128	92	77	4.53	1.77
Florie	U.S.A.	48	7	4	377	96	66	58	3.37	0.93
Gollum	Denmark	51	8	5	537	207	94	125	4.33	1.40
Granta	United Kingdom	56	8	1	447	39	78	23	3.43	0
Grasslands Pawera	New Zealand	45	8	3	169	85	29	51	4.28	0.82
Gumpensteiner	Austria	45	8	3	307	15	54	9	2.99	0.34
Krano	Denmark	50	9	6	679	304	118	183	4.33	1.88
Lossam 4N	France	55	8	1	161	0	28	0	3.28	0
Marino	East Germany	47	8	4	381	50	66	30	2.99	0.64
Merkur	Sweden	53	9	7	437	276	76	166	4.65	2.51
Mont-Calme	Switzerland	43	7	3	360	0	63	0	2.75	0.06
Norlac	Canada	45	9	8	645	208	113	125	4.78	2.64
Pacific	Canada	49	7	1	594	0	104	0	2.91	0
Palna	Denmark	49	9	6	594	252	104	152	5.14	2.18
Patavium	Italy	45	4	3	378	0	66	0	1.70	0
Perenta 4N	Rumania	47	8	3	218	22	38	13	2.72	0.30
Quinequeli	Chile	43	4	1	317	0	55	0	1.53	0
Rea 4N	Sweden	51	9	2	285	0	50	0	1.83	0
Sally 4N	Sweden	43	8	3	247	69	43	42	1.50	0.62
Sara 4N	Sweden	39	7	4	278	48	49	29	1.51	0.65
Taplanszentkereszti	Hungary	44	8	1	492	0	86	0	2.86	0
Temara 4N	Switzerland	49	9	1	93	0	16	0	0.98	0
Tristan	U.S.A.	44	9	5	494	130	86	78	3.50	1.21
Venla	Finland	47	9	6	479	190	84	114	4.45	1.97
Mean					404	95			3.29	0.93
L.S.D. (P = .05)					127.56	71.34			1.19	0.64

Cultivar	Origin	Height (cm)	Seed Yield									Herbage Yield					
			Hardiness			Yield kg/ha			% of Altaswede			(DM)			t/ha		
			1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Altaswede*	Canada	(1)	9	9	8	713	529	148	100	100	100	6.27	1.14	1.94	100	100	100
Arlington	U.S.A.	2	2	0	371	52	0	52	10	0	2.86	0.27	0	46	24	0	
Astra	United Kingdom	2	2	2	260	179	-	36	34	-	3.30	0.48	-	53	42	-	
Bjorn	Sweden	9	9	6	540	362	176	76	68	119	5.64	0.95	1.14	90	83	59	
Durdo	Denmark	3	0	-	616	0	-	86	0	-	3.49	0	-	56	0	-	
Elbo	Denmark	7	7	6	618	434	135	87	82	91	3.71	0.90	0.98	59	79	51	
Granta	United Kingdom	1	0	-	233	0	-	33	0	-	2.00	0	-	32	0	-	
Gumpensteiner	Austria	0	-	-	92	0	-	13	0	-	1.43	0	-	23	0	-	
Heges Hohenheimer	Germany	0	-	-	0	-	-	0	-	-	1.16	-	-	19	-	-	
Krano	Denmark	7	6	6	784	337	118	110	64	80	3.80	0.56	0.79	61	49	41	
Kuhn	Netherlands	3	2	0	287	64	0	40	12	0	3.39	0.21	0	54	18	0	
Marcom	France	0	-	-	39	0	-	5	0	-	1.57	0	-	25	0	-	
Maris Gemini	United Kingdom	1	-	-	211	0	-	30	0	-	1.73	0	-	28	0	-	
Merkur	Sweden	9	7	6	612	343	147	86	65	99	4.59	0.84	1.29	73	74	66	
Mont-Calme	Switzerland	1	0	-	148	0	-	21	0	-	2.22	0	-	35	0	-	
Nava Trifolium	Denmark	7	7	4	877	351	114	123	66	77	4.22	0.71	0.71	67	62	37	
Norlac	Canada	9	9	7	566	510	143	79	96	97	6.72	0.96	1.35	107	84	70	
Norseman	United Kingdom	0	-	-	0	-	-	0	-	-	0.64	-	-	10	-	-	
Olv Otofte	Denmark	3	2	0	475	113	0	67	21	0	3.05	0.21	0	49	18	0	
Pacific	Canada	0	-	-	0	-	-	0	-	-	1.07	-	-	17	-	-	
Redland	U.S.A.	1	-	-	273	0	-	38	0	-	2.57	0	-	41	0	-	
S 123	United Kingdom	2	0	-	333	0	-	47	0	-	2.33	0	-	37	0	-	
Taplanszentkere-szti	Hungary	0	-	-	83	0	-	12	0	-	1.38	0	-	22	0	-	
Venia	Finland	7	8	6	675	377	128	95	71	86	5.63	0.92	1.24	90	81	64	

(1) Height not measured

RED CLOVER - TETRAPLOID (cont'd) Test Site: Beaverlodge (Foster's Farm)
 Seeding Year: 1978

Page 49

Cultivar	Origin	Height (cm)	Seed Yield						Herbage Yield					
			Hardiness			Yield kg/ha			% of Altaswede			(DM) t/ha		
			1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Hamidori	Japan	(1)	2	-	-	66	0	-	9	0	-	1.43	0	-
Perenta	Rumania		3	4	0	150	76	0	21	14	0	2.66	0.33	0
Rea	Sweden		3	-	-	396	0	-	56	0	-	3.67	0	-
Red Head	Germany		0	-	-	0	-	-	0	-	-	1.42	-	-
Sally	Sweden		6	5	7	342	178	75	48	34	51	4.09	0.34	0.93
Temara	Switzerland		1	-	-	0	-	-	0	-	-	1.24	-	-
Tripo	Norway		7	6	7	450	241	60	63	46	41	4.50	0.42	1.22
Ulva	Sweden		5	4	0	374	61	0	52	12	0	4.97	0.14	0
Mean						331	156	83				3.09	0.35	0.77
L.S.D. (P = .05)						134.07	120.79	51.50				1.33	0.32	0.33

(1) Height not measured

Cultivar	Origin	Height (cm)	Hardiness		Seed Yield				Herbage Yield			
			1980	1981	kg/ha	% of 1980	Altaswede 1980	(DM)	t/ha	% of 1980	Altaswede 1981	
Altaswede*	Canada	(1)	8	8	677	300	100	5.40	3.36	100	100	
Bjorn	Sweden	8	8	487	271	72	90	4.95	2.30	92	68	
Florex	U.S.A.	8	7	476	318	70	106	5.35	2.49	99	74	
Florie	U.S.A.	7	6	398	196	59	65	4.77	1.56	88	46	
Gollum	Denmark	8	7	572	286	84	95	5.48	1.69	101	50	
Granta	United Kingdom	8	0	404	0	60	0	4.41	0	82	0	
Grasslands Pawera	New Zealand	6	3	278	154	41	51	5.23	0.86	97	26	
Gumpensteiner	Austria	6	4	319	114	47	38	4.37	0.58	91	17	
Krano	Denmark	8	7	705	364	104	121	4.13	1.46	76	43	
Lossam 4N	France	7	0	122	0	18	0	5.09	0	94	0	
Marino	East Germany	8	4	248	145	37	48	5.39	1.34	100	40	
Merkur	Sweden	8	7	776	348	115	116	6.83	2.52	126	75	
Mont-Calme	Switzerland	8	3	319	55	47	18	4.51	0.16	84	5	
Norlac	Canada	8	8	933	371	138	124	5.52	3.02	102	90	
Pacific	Canada	5	0	560	0	83	0	2.74	0	51	0	
Palna	Denmark	6	6	699	141	103	47	5.92	2.30	110	68	
Patavium	Italy	4	0	375	0	55	0	2.21	0	41	0	
Perenta 4N	Rumania	6	3	151	15	22	5	4.32	0.37	80	11	
Quinequeli	Chile	4	0	494	0	73	0	2.56	0	47	0	
Rea 4N	Sweden	8	5	492	369	73	123	8.09	1.88	150	56	
Sally 4N	Sweden	8	7	541	387	80	129	7.00	3.06	130	91	
Sara 4N	Sweden	8	6	486	430	72	143	7.09	2.76	131	82	
Taplanszentkereszti	Hungary	7	0	467	252	69	84	3.91	0	72	0	
Temara 4N	Switzerland	5	0	151	0	22	0	5.43	0	101	0	
Tristan	U.S.A.	8	6	400	0	59	0	5.63	1.29	104	38	
Venla	Finland	7	7	678	174	100	58	5.31	2.06	98	61	
Mean					470	180		5.06	1.35			
L.S.D. (P = .05)					114.91	104.16		1.09	0.69			

(1) Height not measured.

Cultivar	Origin	Height (cm)	Seed Yield									Herbage Yield					
			Hardiness			Yield kg/ha			% of Altaswede			(DM) t/ha			% of Altaswede		
			1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981	1979	1980	1981
Altaswede*	Canada	(1)	9	7	7	377	418	467	100	100	100	5.08	2.77	5.21	100	100	100
Arlington	U.S.A.		9	4	3	371	185	128	98	44	27	2.43	0.77	0.41	48	28	8
Astra	United Kingdom		9	3	2	202	74	48	54	18	10	4.10	0.51	0.35	81	18	7
Bjorn	Sweden		9	6	6	398	303	263	106	72	56	4.53	1.16	2.71	89	42	52
Elbo	Denmark		9	4	3	474	218	165	126	52	35	3.08	0.86	1.02	61	31	20
Krano	Denmark		9	5	3	362	317	196	96	76	42	3.73	1.36	2.08	73	49	40
Merkur	Sweden		9	6	4	329	272	208	129	65	45	5.33	1.68	1.60	105	61	31
Navat Trifolium	Denmark		9	3	1	526	114	0	140	27	0	2.99	0.53	0	59	19	0
Norlac	Canada		9	7	7	318	435	369	84	104	79	5.28	3.57	3.48	104	129	67
Olvi Otofte	Denmark		9	2	1	337	139	0	89	33	0	3.16	0.15	0	62	5	0
S 123	United Kingdom		9	0	-	374	0	-	99	0	-	2.14	0	-	42	0	-
Venla	Finland		9	4	4	365	227	188	97	54	40	4.31	0.87	2.00	85	31	38

RED CLOVER - TETRAPLOID

Rea	Sweden	9	2	-	324	17	-	86	4	-	3.87	0	-	76	0	-
Sally	Sweden	9	4	5	202	103	66	54	25	14	4.32	0.96	1.68	85	35	32
Tripo	Norway	9	5	7	183	255	263	49	61	56	4.55	1.56	1.83	90	56	35
Ulva	Sweden	9	6	4	147	116	108	39	28	23	4.60	1.60	1.23	91	58	24

Mean

331 198 177

3.97 1.08 1.69

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

126.78 141.37 160.34

1.51 0.88 1.51

(1) Height not measured

Cultivar	Origin	Height (cm)	Seed Yield				Herbage Yield			
			Hardiness		Kg/ha 1980	% of 1980	Altaswede		(DM) 1980	t/ha 1981
			1980	1981			1980	1981		
Altaswede*	Canada	(1)	8	8	509	504	100	100	1.98	4.08
Bjorn	Sweden	8	7	309	320	61	63	1.92	2.09	97
Florex	U.S.A.	5	2	203	0	40	0	0.78	0	39
Florie	U.S.A.	5	2	188	0	37	0	0.54	0	27
Gollum	Denmark	7	3	280	0	55	0	0.70	0.79	35
Granta	United Kingdom	5	1	174	0	34	0	0.28	0	14
Grasslands Pawera	New Zealand	2	-	22	-	4	-	0.14	-	7
Gumpensteiner	Austria	3	1	89	0	17	0	0.22	0	11
Krano	Denmark	5	2	222	150	44	30	0.89	0	45
Lossam 4N	France	3	1	26	0	5	0	0.07	-	4
Marino	East Germany	4	1	177	0	35	0	0.30	0	15
Merkur	Sweden	7	6	224	200	44	40	1.10	2.07	56
Mont-Calme	Switzerland	3	1	93	0	18	0	0.26	0	13
Norlac	Canada	8	7	400	469	79	93	1.87	3.15	94
Pacific	Canada	2	-	0	-	0	-	0	-	-
Palna	Denmark	5	2	235	0	46	0	0.76	0	38
Patavium	Italy	2	1	14	0	3	0	0.03	-	2
Perenta 4N	Rumania	4	2	130	0	26	0	0.39	0	20
Quinequeli	Chile	2	-	0	-	0	-	0.06	-	3
Rea 4N	Sweden	4	4	121	34	24	7	0.47	0.36	24
Sally 4N	Sweden	7	6	98	130	19	26	0.91	2.68	46
Sara 4N	Sweden	6	5	116	154	23	31	0.63	2.09	32
Taplanszentkereszti	Hungary	3	-	44	-	9	-	0.21	-	11
Temara 4N	Switzerland	4	1	44	0	9	0	0.25	0	13
Tristan	U.S.A.	7	1	187	0	37	0	0.61	0	31
Venla	Finland	7	4	325	190	64	38	1.13	1.41	57
Mean					163	86		0.64	0.94	
L.S.D. (P = .05)					100.46	107.11		0.47	0.85	

(1) Height not measured

Seed Yield

Cultivar	Origin	Height (cm)	Hardiness			Yield kg/ha			% of Altaswede		
			1979	1980	1981	1979	1980	1981	1979	1980	1981
Altaswede*	Canada	78	9	8	6	878	829	568	100	100	100
Arlington	U.S.A.	62	6	2	0	310	107	0	35	13	0
Astra	United Kingdom	68	8	2	0	615	129	0	70	16	0
Bjorn	Sweden	72	9	8	5	553	1116	318	63	135	56
Elbo	Denmark	72	8	3	1	812	182	0	92	22	0
Granta	United Kingdom	-	1	-	-	0	-	-	0	-	-
Gumpensteiner	Austria	-	0	-	-	0	-	-	0	-	-
Heges Hohenheimer	Germany	-	1	-	-	0	-	-	0	-	-
Kuhn	Netherlands	-	3	1	-	186	0	-	21	-	-
Marcom	France	-	0	-	-	0	-	-	0	-	-
Maris Gemini	United Kingdom	-	2	1	-	0	-	-	0	-	-
Merkur	Sweden	73	8	7	1	1071	617	0	122	74	0
Naval Trifolium	Denmark	66	8	2	0	1133	54	0	129	7	0
Norlac	Canada	71	9	8	7	1043	1155	390	119	139	69
Norseman	United Kingdom	-	0	-	-	0	-	-	0	-	-
Olvi Otofte	Denmark	65	6	2	0	837	172	0	95	21	0
Pacific	Canada	-	1	-	-	0	-	-	0	-	-
Taplanszentkereszti	Hungary	-	2	-	-	0	-	-	0	-	-

Mean

391 484 142

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

339.99 270.74 129.22

Note - Herbage not measured

Cultivar	Origin	Height (cm)	Seed Yield				Herbage Yield			
			Hardiness		kg/ha 1980	% of 1980	Altaswede 1981	(DM) 1980	t/ha	
			1980	1981					1981	1980
Altaswede*	Canada	54	8	7	1475	613	100	100	4.83	4.46
Bjorn	Sweden	58	8	7	1354	417	92	68	4.87	4.66
Florex	U.S.A.	49	6	2	987	0	67	0	3.63	0
Florie	U.S.A.	49	4	1	662	0	45	0	2.16	0
Gollum	Denmark	50	6	2	1014	0	69	0	3.51	0
Granta	United Kingdom	-	1	-	0	-	0	-	0	0
Grasslands Pawera	New Zealand	-	1	-	0	-	0	-	0	0
Gumpensteiner	Austria	40	1	-	103	-	7	-	0.32	7
Krano	Denmark	53	5	2	759	0	51	0	2.40	0
Lossam 4N	France	-	1	-	0	-	0	-	0	0
Marino	East Germany	54	6	2	866	0	59	0	3.09	0
Merkur	Sweden	54	7	4	1272	289	86	47	3.31	3.57
Mont-Calme	Switzerland	45	2	-	301	-	20	-	0.74	15
Norlac	Canada	50	8	7	1369	634	93	103	4.88	5.15
Pacific	Canada	-	1	-	59	-	4	-	0	0
Palna	Denmark	52	4	1	513	0	35	0	1.28	0
Patavium	Italy	-	1	-	0	-	0	-	0	0
Perenta 4N	Rumania	57	5	3	295	55	20	9	1.57	1.00
Quinequeli	Chile	-	1	-	0	-	0	-	0	0
Rea 4N	Sweden	58	5	3	414	130	28	21	1.90	2.05
Sally 4N	Sweden	54	6	4	627	292	43	48	3.79	4.05
Sara 4N	Sweden	55	6	5	790	209	54	34	4.46	4.13
Taplanszentkereszti	Hungary	-	1	-	32	-	2	-	0	0
Temara 4N	Switzerland	55	2	-	0	-	0	-	0	0
Tristan	U.S.A.	54	7	2	853	0	58	0	2.77	0
Venla	Finland	58	7	4	1306	189	89	31	4.38	3.62
Mean					579	188			2.07	2.04
L.S.D. (P = .05)					279.74	105.71			1.03	1.11