

FORAGE CULTIVAR TRIALS

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PREPARED BY

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IN CO-OPERATION WITH



FORAGE CULTIVAR TRIALS
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FOREWORD

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

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

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

1. Beaverlodge A. Research Station (SE-1-72-10-W6)
Soil type Esher-Hythe. Texture is medium fine, medium organic matter. Subsoil has poor permeability.
2. Beaverlodge B. Foster Farm (SE-25-71-10-W6)
Near Beaverlodge, Alberta. Soil type Goose-Codner. High organic matter and very fertile. Orthic humic Gleysol. Clay loam to sandy loam.
3. Falher, Beaupre Farm (NW-1-78-21-W5)
Near Falher, Alberta. Soil type Falher-Nampa. Fine textured with medium to low organic matter. Poor moisture penetration and percolation. Subject to crusting. Luvisol lacustrine clay loam to clay.

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

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

Seed and herbage (dry matter) yields are expressed both as actual production per hectare and as a percent of a designated (*) standard. The Least Significant Difference at the 5% level is also presented for each test. Winter survival is shown as a Hardiness Scale of 1 (poor) to 9 (best).

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

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Cultivar	Origin	Hardiness	Height (cm)	Date Ripe August			Seed Yield Data						Herbage Yield Data					
				1978	1979	1980	Yield kg/ha			% of Carlton			Yield (DM) t/ha			% of Carlton		
							1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
Barton	USA	9	97	8	7	8	161	305	506	34	46	58	1.46	3.85	2.49	48	74	87
Beacon	USA	9	96	8	8	8	187	575	477	59	86	91	2.76	4.48	2.89	91	86	101
Carlton*	Canada	9	98	8	8	8	477	668	527	100	100	100	3.02	5.20	2.87	100	100	100
Kesto	Finland	9	98	8	8	8	286	516	523	60	77	99	2.69	4.79	2.58	89	92	90
Lyon	USA	9	94	8	8	8	95	380	290	20	57	55	2.28	3.86	2.40	75	74	84
Mandan 404	USA	9	91	8	8	8	125	418	508	26	65	58	1.75	5.06	2.71	58	97	94
Orfeu	Romania	9	93	8	8	8	195	571	355	41	85	67	2.62	4.28	2.26	87	82	79
S-1755	Canada	9	99	8	8	8	293	525	480	61	79	91	2.06	5.38	2.40	68	65	84
S-8800	Canada	9	101	8	8	8	731	864	652	153	127	124	3.09	4.52	2.58	102	87	90
Tompo	Canada	9	93	8	8	8	171	591	317	36	59	60	1.90	5.36	2.26	63	65	79
Mean							272	520	423				2.34	4.28	2.53			
L.S.D. (P= .05)							55.41	59.68	60.41				0.16	0.19	0.20			

BROMEGRASS

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

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Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Carlton		(DM)	t/ha	% of Carlton	
						1979	1980	1979	1980	1979	1980	1979	1980
Barton	USA	9	70	July 27	July 26	87	207	38	61	(1)	6.30	(1)	120
Carlton	Canada	9	69	July 27	July 30	227	340	100	100		5.23		100
Lyon	USA	9	65	July 27	July 30	75	227	33	67		5.78		111
Magna	Canada	9	74	July 27	July 30	165	429	72	126		5.54		106
Mandan 404	USA	9	65	July 27	July 30	146	223	64	66		4.64		89
Regar	USA	9	71	July 27	July 28	226	137	99	40		5.44		104
Tempo	Canada	9	65	July 27	July 30	112	232	49	68		3.84		73
S-7695	Canada	9	70	July 27	July 30	305	624	133	184		5.85		112
S-7855	Canada	9	67	July 27	July 30	104	211	45	62		4.91		94
S-8778	Canada	9	74	July 27	July 30	276	795	121	234		6.14		117
S-8792	Canada	9	74	July 27	July 30	188	365	82	103		5.30		101
Mean						174	345				5.36		
L.S.D. (P = .05)						29.34	79.07				0.52		

(1) Herbage not measured

BROMEGRASS

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

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Cultivar	Origin	Hardiness	Height (cm)	Date 1979	Ripe 1980	Seed Yield				Herbage Yield			
						Kg/ha		% of Carlton		(DM) t/ha		% of Carlton	
						1979	1980	1979	1980	1979	1980	1979	1980
Barton	USA	9	65	Aug. 1	Aug. 1	437	65	64	56	(1)	3.70	(1)	127
Carlton*	Canada	9	63	Aug. 1	Aug. 1	676	116	100	100		2.92		100
Lyon	USA	9	55	Aug. 1	Aug. 1	568	28	83	24		2.93		100
Magna	Canada	9	64	Aug. 1	Aug. 1	726	143	107	123		3.08		105
Mandan 404	USA	9	60	Aug. 1	Aug. 1	479	79	70	68		2.83		97
Regar	USA	9	66	Aug. 1	July 29	354	55	52	47		2.53		87
Tempo	Canada	9	57	Aug. 1	Aug. 1	503	46	74	48		2.25		77
S 7695	Canada	9	62	Aug. 1	Aug. 1	759	198	112	171		2.98		102
S 7855	Canada	9	59	Aug. 1	Aug. 1	556	63	82	54		2.98		102
S 8778	Canada	9	65	Aug. 1	Aug. 1	1062	245	156	211		3.42		117
S8792	Canada	9	71	Aug. 1	Aug. 1	672	139	99	120		2.95		101
Mean						617	108				2.96		
L.S.D. (P = .05)						100.35	34.29				0.36		
(1) Herbage not measured													