Forage Cultivar Trials

Northern Research Group
Canada Agriculture Research Branch
Research Station, Beaverlodge, AB

Publication NRG No. 89-19

1989 Bulletin
In cooperation with

Alberta
AGRICULTURE, FOOD AND
RURAL DEVELOPMENT

FORAGE CULTIVAR TRIALS: 1989 BULLETIN

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Cover:

Dunvegan Bridge over the Peace River in north-west Alberta

with insets of red fescue and red clover

Publication: NRG 89-19

In co-operation with Alberta Agriculture

CONTENTS

INTRODUCTION

This bulletin provides information on the performance of forage cultivars in the Peace River region of Canada. It is the twelfth in a series of reports published cooperatively by Agriculture Canada's Research Station at Beaverlodge and Alberta Agriculture.

The primary objective is to provide agronomic information on the seed production potential of forage cultivars certified by the Organization for Economic Co-operation and Development (OECD) for moving in international trade. This information assists Canadian primary producers and agribusiness in developing contracts for the production of seed of these OECD-certified, foreign cultivars; the seed being destined primarily for export from Canada to countries where the cultivar is adapted for herbage production or amenity use.

The secondary objective is to identify OECD-certified forage cultivars that are suitable for herbage and/or amenity use within Canada.

ABBREVIATIONS AND NOMENCLATURE

In the tables of results, the code letters used for the countries of origin are in the Alpha-3 format designated by the International Organization for Standardization. These codes are specified in their publication: "Codes for the representation of names of countries", i.e., their Reference No. ISO 3166-1974(E). The number given in parentheses after the three-letter country-of-origin code identifies the maintainer, or agent, of the seed of the cultivar. The addresses pertaining to these code numbers are given in Appendix I.

ACKNOWLEDGMENTS

The trials were supported financially by Agriculture Canada and Alberta Agriculture. They were established and conducted under the supervision of Murray Howe until April 1989. They were conducted with the technical assistance of Tom Cramer, Margaret Baird, Kim White, Ashley Heggelund, Candice and Marlene Probst, and Lois Connelly, and with the secretarial/clerical assistance of Jose Woods, Barbara Neumeier and Faye Swanson. Land was provided by Norm Foster of Beaverlodge. Agrometeorological data were provided by Peter Mills and George Clayton. Each contribution is gratefully acknowledged.

TYPES OF TRIALS AND EXPERIMENTAL PROCEDURES

Two types of cultivar trials were conducted, Screening Trials and Evaluation Trials, and specific details for each of these are given below. This bulletin contains results for completed trials only, i.e. those seeded in 1987 that have now been harvested for two production years. This is a departure from recent bulletins; it allows all the results from an individual trial to be published in one document, rather than in annual increments, and thus avoids the necessity for reprinting the same information in successive bulletins. Hence, the 1990 bulletin will contain the results from all trials established in 1988.

At each site, the legume species were pollinated by native insects (Bombus and Megachile spp., and Apis). In addition, at the Beaverlodge Research Station site, leafcutting bees (Megachile rotundata) were provided.

SCREENING TRIALS:

These were conducted at Beaverlodge Research Station (55 12'N, 119 24'W) on a soil classified as a Dark Gray Solod (Esher clay) to Dark Gray Luvisol (Hythe fine loam) which had been fallow for at least two crop years. The objective was to determine the basic adaptation and agronomic suitability of each cultivar for seed production in the Peace River region of Canada. Selected cultivars, with winter hardiness ratings greater than 5 (see below for scale), are then advanced for more extensive assessment in the Evaluation Trials.

The experimental design was a randomized complete block with three replications. Individual experimental plots were comprised of two rows, each 6.1 m long, spaced 30.5 cm apart. Information was recorded for two production years after the year of seeding, including: a spring rating of winter hardiness (scale 0 to 9 with the latter being complete survival); mature plant height (from soil to tip of uppermost extended seedhead, or to tip of uppermost extended leaf if plants had no seedheads); date of seed maturity (and harvest); and cleaned seed yield from the total area of each individual plot. Weeds were controlled by inter-row cultivation. Nitrogen fertilizer (as 34:0:0) was applied in the autumn of 1988, just prior to soil freeze-up, at a rate of 55 kg/ha N.

EVALUATION TRIALS:

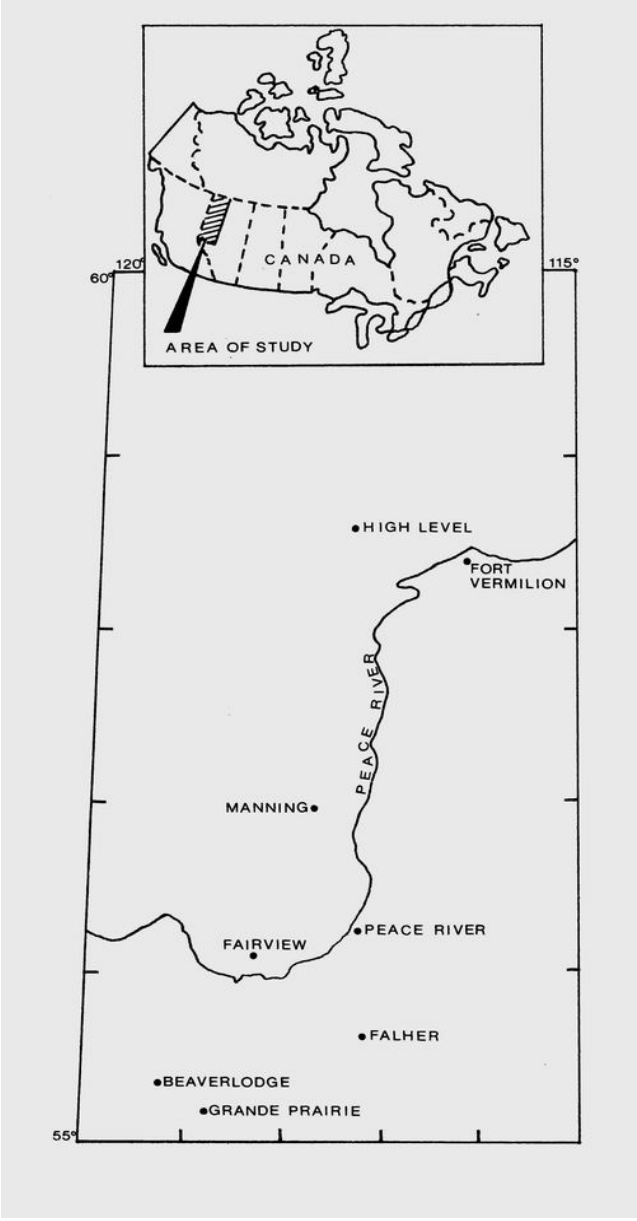
These were conducted at three sites in the region: at Beaverlodge Research Station as for the Screening Trials above; at Foster's Farm near Beaverlodge (55 10'N, 119 23'W) on a soil classified as an Orthic Humic Gleysol (Goose fine loam to Codner clay); and at Fort Vermilion Experimental Farm (58 23'N, 116 02'W) on a soil classified as a Dark Gray Luvisol (Leith coarse loam) to an Orthic Gray Luvisol (Culp coarse loam). Previous cropping, weed control and fertilizer application at each location was as for the Screening Trials.

The experimental design at each location was a randomized complete block with four replications. Individual experimental plots were comprised of four rows, each 6.1 m long, spaced 30.5 cm apart. Information on both seed and herbage production was recorded for two production years after the year of seeding. Seed production information was collected from two of the four rows in each experimental plot as described above for the Screening Trials. Herbage production information was collected, on two occasions in each production year, from the other two rows in each experimental plot.

DATA ANALYSIS:

Experimental results were analyzed statistically using Genstat 5 Release 1.3 (Lawes Agricultural Trust, Rothamsted Experimental Station). The models used for the analyses of variance compensate automatically for missing values. This has allowed estimates of treatment means to be included in multi-year/single site or multi-year/multi-site tables of results for a cultivar where no information was available for at least one of the year/site combinations. Where the inclusion of such a value has been deemed inappropriate (for biological reasons), no value has been reported and a '-' has been inserted in the table in place of the treatment mean. The same symbol has been used for truly missing values and where no information could be collected because the plants had died from natural causes.

GEOGRAPHICAL LOCATION OF THE STUDY SITES



AGROMETEOROLOGICAL INFORMATION FOR BEAVERLODGE RESEARCH STATION

		DAILY AIR TEMPERATURE(C)			MEAN DAILY SOIL TEMPERATURE	PRECIPITATION(mm)			MEAN DAILY	
YEAR	MONTH	MEAN	MAXIMUM	MINIMUM	(C AT 10cm)	RAIN	SNOW(water)	TOTAL	SUN(h)	WIND(km)
1987	JANUARY	-5.8	-1.0	-10.5	-2.8	1.2	10.5	11.7	2.8	129
1987	FEBRUARY	-5.4	-1.3	-9.5	-2.4	0.0	23.8	23.8	3.1	117
1987	MARCH	-8.1	-3.2	-13.0	-2.2	0.0	25.2	25.2	4.3	142
1987	APRIL	6.3	12.9	-0.3	3.3	8.4	8.3	16.7	8.2	220
1987	MAY	10.5	17.5	3.6	10.1	45.5	0.0	45.5	9.4	249
1987	JUNE	14.8	21.0	8.6	14.6	60.0	0.0	60.0	10.0	253
1987	JULY	16.0	22.4	9.7	16.7	91.2	0.0	91.2	8.2	190
1987	AUGUST	12.3	18.0	6.6	14.5	69.1	0.0	69.1	7.0	156
1987	SEPTEMBER	12.8	20.3	5.3	12.0	3.3	0.0	3.3	6.9	200
1987	OCTOBER	6.3	12.5	0.0	6.3	12.0	0.0	12.0	5.1	216
1987	NOVEMBER	0.3	4.6	-3.9	1.1	1.4	3.8	5.2	3.4	116
1987	DECEMBER	-5.1	-1.0	-9.1	-4.0	0.0	11.5	11.5	2.1	138
	1987	4.6	10.3	-1.0	5.6	292.1	83.1	375.2	5.9	177
1988	JANUARY	-12.2	-7.6	-16.9	-4.4	0.0	37.5	37.5	2.2	142
1988	FEBRUARY	-9.0	-3.7	-14.3	-3.3	0.0	29.8	29.8	3.5	198
1988	MARCH	1.1	6.0	-3.8	0.1	0.3	9.3	9.6	4.9	182
1988	APRIL	6.3	12.7	0.0	4.3	5.3	0.0	5.3	8.0	249
1988	MAY	10.9	18.1	3.6	10.0	28.1	0.0	28.1	8.4	274
1988	JUNE	13.3	19.0	7.5	14.0	101.6	0.0	101.6	8.4	219
1988	JULY	14.7	21.1	8.3	15.2	64.4	0.0	64.4	9.0	230
1988	AUGUST	14.9	22.1	7.7	14.3	45.5	0.0	45.5	8.1	209
1988	SEPTEMBER	10.4	16.9	3.8	10.8	34.1	0.3	34.4	6.6	211
1988	OCTOBER	6.4	13.2	-0.4	6.1	3.4	0.6	4.0	5.5	174
1988	NOVEMBER	-6.2	-2.2	-10.1	-0.2	6.5	16.6	23.1	1.4	154
1988	DECEMBER	-7.8	-3.3	-12.4	-3.6	0.0	15.8	15.8	2.5	146
	1988	3.6	9.4	-2.2	5.3	289.2	109.9	399.1	5.7	198
1989	JANUARY	-9.2	-4.7	-13.8	-4.6	0.0	25.1	25.1	2.8	267
1989	FEBRUARY	-13.5	-7.6	-19.3	-6.1	0.0	6.2	6.2	5.5	130
1989	MARCH	-11.1	-5.3	-16.9	-5.0	0.0	25.3	25.3	5.5	142
1989	APRIL	5.2	12.0	-1.6	3.0	0.0	6.3	6.3	9.4	193
1989	MAY	9.7	16.4	3.0	9.1	57.4	1.6	59.0	8.7	261
1989	JUNE	14.6	21.6	7.6	14.6	68.4	0.0	68.4	10.5	214
1989	JULY	15.6	22.1	9.2	17.4	101.4	0.0	101.4	10.5	172
1989	AUGUST	14.8	20.5	9.2	17.0	103.8	0.0	103.8	6.3	156
1989	SEPTEMBER	10.3	16.5	4.2	11.1	62.0	0.0	62.0	5.7	179
1989	OCTOBER	3.5	8.9	-2.1	5.2	9.4	10.6	20.0	4.1	169
1989	NOVEMBER	-3.7	1.3	-8.6	1.0	2.4	14.4	16.8	3.3	198
1989	DECEMBER	-5.6	-0.9	-10.3	-1.2	0.4	17.3	17.7	2.0	175
	1989	2.6	8.5	-3.2	5.2	405.2	106.8	512.0	6.2	188

AGROMETEOROLOGICAL INFORMATION FOR FORT VERMILION EXPERIMENTAL FARM

YEAR	MONTH	DAILY AIR TEMPERATURE(C) MEAN	MAXIMUM	MINIMUM	MEAN DAILY SOIL TEMPERATURE (C AT 10cm)	PRECIPITATION(mm) RAIN	SNOW(water)	TOTAL	MEAN DAILY SUN(h)	WIND(km)
1987	JANUARY	-13.7	-8.9	-18.6	*	0.0	22.6	22.6	*	*
1987	FEBRUARY	-10.1	-5.5	-14.7	*	0.0	26.3	26.3	*	*
1987	MARCH	-10.4	-4.9	-15.8	*	3.4	45.3	48.7	*	*
1987	APRIL	2.5	5.3	-0.4	*	2.8	12.0	14.8	*	*
1987	MAY	10.6	17.6	3.6	*	26.2	0.0	26.2	*	*
1987	JUNE	14.2	19.9	8.5	*	83.8	0.0	83.8	*	*
1987	JULY	16.7	22.5	10.8	*	39.2	0.0	39.2	*	*
1987	AUGUST	12.9	19.3	6.6	12.6	67.8	0.0	67.8	*	*
1987	SEPTEMBER	12.2	20.8	4.6	10.9	32.9	0.0	32.9	*	*
1987	OCTOBER	2.9	8.0	-1.3	4.4	13.0	0.0	13.0	*	*
1987	NOVEMBER	-4.7	-0.9	-8.5	0.5	33.0	0.0	33.0	*	*
1987	DECEMBER	-10.5	-7.0	-14.8	-0.8	0.0	0.0	0.0	*	*
1987	JAN.-DEC.	1.8	7.2	-3.3	*	302.1	106.2	408.3	*	*
1988	JANUARY	-19.5	-15.5	-24.1	-2.4	0.0	31.6	31.6	*	*
1988	FEBRUARY	-14.2	-9.5	-18.8	-1.9	0.0	14.6	14.6	*	*
1988	MARCH	-4.3	1.9	-9.6	-0.9	0.0	27.2	27.2	*	*
1988	APRIL	3.5	9.7	-2.5	0.2	4.2	4.2	8.4	*	*
1988	MAY	9.3	15.1	3.4	6.8	36.0	0.3	36.3	*	*
1988	JUNE	15.5	21.1	9.8	14.0	67.6	0.0	67.6	*	*
1988	JULY	16.1	21.7	11.4	16.4	59.0	0.0	59.0	*	*
1988	AUGUST	15.7	22.1	9.8	15.4	87.2	0.0	87.2	*	*
1988	SEPTEMBER	8.6	14.7	2.7	9.9	22.2	0.0	22.2	*	*
1988	OCTOBER	*	*	*	*	35.1	2.5	37.6	*	*
1988	NOVEMBER	-12.4	-9.1	-16.4	-1.0	48.5	5.0	53.5	*	*
1988	DECEMBER	-15.7	-11.7	-20.6	-3.4	11.7	1.5	13.2	*	*
1988	JAN.-DEC.	*	*	*	*	371.5	86.9	458.4	*	*
1989	JANUARY	-21.0	-15.7	-26.4	-1.6	0.0	17.4	17.4	*	*
1989	FEBRUARY	-14.9	-8.9	-21.6	-2.8	0.0	2.0	2.0	*	*
1989	MARCH	-14.9	-8.1	-21.5	-2.6	0.0	13.7	13.7	*	*
1989	APRIL	1.9	8.6	-5.2	-0.3	0.0	9.2	9.2	*	*
1989	MAY	10.8	17.3	3.8	6.9	60.2	1.0	61.2	*	*
1989	JUNE	16.0	22.4	10.1	14.6	30.2	3.6	33.8	*	*
1989	JULY	18.5	25.0	11.9	17.2	40.8	0.0	40.8	*	*
1989	AUGUST	17.3	23.1	12.1	16.3	59.0	4.6	63.6	*	*
1989	SEPTEMBER	8.8	15.2	2.8	10.0	13.6	9.0	22.6	*	*
1989	OCTOBER	1.4	6.1	2.9	4.3	18.4	13.2	31.6	*	*
1989	NOVEMBER	-15.4	-11.0	-20.2	1.1	1.6	39.7	41.3	*	*
1989	DECEMBER	-17.6	-13.0	-22.1	-0.8	0.6	9.2	9.8	*	*
1989	JAN.-DEC.	-0.8	5.1	-6.1	5.3	224.4	122.6	347.0	*	*

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 PRODUCTION YEAR: 1988

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	CUT 1(-) (% check)	CUT 2(-) kg/ha	CUT 2(-) (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	8.0	48	789	86	74	1660	31	2609	430	4268	71
ALTASWEDE(*)	CAN(6)	8.3	65	914	100	74	5417	100	606	100	6023	100
FAVORINA(4N)	CSK(?)	8.3	59	483	53	74	2439	45	3122	515	5561	92
GKT JUNIOR	HUN(32)	8.0	51	989	108	74	1553	29	2418	399	3971	66
HAYAKITA(4N)	JPN(37)	6.8	50	361	39	74	1132	21	1947	321	3079	51
HUNGAROTETRA(4N)	HUN(30)	7.0	50	464	51	74	1923	36	2603	430	4527	75
JUBILATKA(4N)	POL(48)	7.8	54	415	45	74	1836	34	2923	482	4759	79
KARIM	FRA(25)	7.5	58	828	91	74	1535	28	2282	377	3687	61
MANETA(4N)	DDR(14)	8.0	53	400	44	74	1732	32	2349	388	4081	68
MISTRAL	FRA(25)	7.5	55	688	75	74	1755	32	3076	508	4831	80
NESSONAS	GRC(28)	1.2	42	228	25	74	129	2	833	137	962	16
NIKE	POL(47)	7.5	50	814	89	74	1396	26	2242	370	3638	60
PARKA	POL(48)	8.3	51	841	92	74	2194	41	2732	451	4926	82
REICHERSBERGER NEU	AUT(2)	8.0	54	677	74	74	1812	33	2454	405	4265	71
SELECT 1	ROM(50)	7.3	54	784	86	74	1351	25	2074	342	3425	57
STANDARD ERROR OF DIFFERENCE =		0.5	3	67	-	0	446	-	349	-	629	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: BEAVERLODGE (FOSTER'S FARM)
SEEDING YEAR: 1987 PRODUCTION YEAR: 1988

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	CUT 1(-) (% check)	CUT 2(-) kg/ha	CUT 2(-) (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	7.3	50	622	79	78	1430	22	2417	367	3847	53
ALTASWEDE(*)	CAN(6)	9.0	65	787	100	78	6650	100	658	100	7308	100
FAVORINA(4N)	CSK(?)	7.5	51	448	57	78	1313	20	2456	373	3770	52
GKT JUNIOR	HUN(32)	7.0	54	814	103	78	1184	18	2212	336	3396	46
HAYAKITA(4N)	JPN(37)	4.5	45	237	30	78	553	8	1582	240	2134	29
HUNGAROTETRA(4N)	HUN(30)	4.3	46	380	48	78	566	9	1604	244	2170	30
JUBILATKA(4N)	POL(48)	7.5	51	335	43	78	907	14	1506	229	2413	33
KARIM	FRA(25)	6.0	53	609	77	78	944	14	1980	301	2925	40
MANETA(4N)	DDR(14)	7.8	56	402	51	78	1549	23	1965	299	3514	48
MISTRAL	FRA(25)	6.0	49	583	74	78	813	12	2158	328	2971	41
NESSONAS	GRC(28)	1.0	40	62	8	78	188	3	299	46	487	7
NIKE	POL(47)	8.0	51	747	95	78	1834	28	2428	369	4262	58
PARKA	POL(48)	8.5	49	818	104	78	2337	35	3026	460	5363	73
REICHERSBERGER NEU	AUT(2)	8.0	53	582	74	78	1599	24	2465	375	4064	56
SELECT 1	ROM(50)	6.8	54	676	86	78	1210	18	1863	283	3073	42
STANDARD ERROR OF DIFFERENCE =		0.4	2	60	-	0	282	-	241	-	425	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: FORT VERMILION EXPERIMENTAL FARM
SEEDING YEAR: 1987 PRODUCTION YEAR: 1988

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	CUT 1(-) (% check)	CUT 2(-) kg/ha	CUT 2(-) (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	7.0	68	331	43	76	2515	31	3968	177	6484	62
ALTASWEDE(*)	CAN(6)	8.5	98	774	100	76	8160	100	2246	100	10406	100
FAVORINA(4N)	CSK(?)	9.0	74	180	23	76	5679	70	4312	192	9991	96
GKT JUNIOR	HUN(32)	6.0	73	588	76	76	2377	29	3665	163	6043	58
HAYAKITA(4N)	JPN(37)	7.3	74	140	18	76	3038	37	3452	154	6490	62
HUNGAROTETRA(4N)	HUN(30)	6.0	71	179	23	76	1731	21	2770	123	4501	43
JUBILATKA(4N)	POL(48)	7.3	75	217	28	76	4687	57	3942	176	8630	83
KARIM	FRA(25)	4.8	70	338	44	76	1750	21	3509	156	5259	51
MANETA(4N)	DDR(14)	7.3	79	181	23	76	4457	55	3568	159	8026	77
MISTRAL	FRA(25)	6.3	71	383	49	76	2175	27	3837	171	6012	58
NESSONAS	GRC(28)	0.0	-	0	0	-	0	0	0	0	0	0
NIKE	POL(47)	7.3	75	374	48	76	3287	40	4056	181	7343	71
PARKA	POL(48)	8.0	78	671	87	76	4649	57	4888	218	9537	92
REICHERSBERGER NEU	AUT(2)	7.8	73	290	38	76	4172	51	4274	190	8446	81
SELECT 1	ROM(50)	5.8	70	318	41	76	2146	26	3364	150	5510	53
STANDARD ERROR OF DIFFERENCE =		0.6	8	107	-	0	394	-	343	-	568	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 PRODUCTION YEAR: 1989

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	HERBAGE DRY MATTER YIELD CUT 1(-) (% check)	HERBAGE DRY MATTER YIELD CUT 2(-) kg/ha	HERBAGE DRY MATTER YIELD CUT 2(-) (% check)	HERBAGE DRY MATTER YIELD ANNUAL TOTAL kg/ha	HERBAGE DRY MATTER YIELD ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	0.0	-	0	-	-	0	-	0	-	0	-
ALTASWEDE(*)	CAN(6)	0.0	-	0	-	-	0	-	0	-	0	-
FAVORINA(4N)	CSK(?)	0.0	-	0	-	-	0	-	0	-	0	-
GKT JUNIOR	HUN(32)	0.0	-	0	-	-	0	-	0	-	0	-
HAYAKITA(4N)	JPN(37)	0.0	-	0	-	-	0	-	0	-	0	-
HUNGAROTETRA(4N)	HUN(30)	0.0	-	0	-	-	0	-	0	-	0	-
JUBILATKA(4N)	POL(48)	0.0	-	0	-	-	0	-	0	-	0	-
KARIM	FRA(25)	0.0	-	0	-	-	0	-	0	-	0	-
MANETA(4N)	DDR(14)	0.0	-	0	-	-	0	-	0	-	0	-
MISTRAL	FRA(25)	0.0	-	0	-	-	0	-	0	-	0	-
NESSONAS	GRC(28)	0.0	-	0	-	-	0	-	0	-	0	-
NIKE	POL(47)	0.0	-	0	-	-	0	-	0	-	0	-
PARKA	POL(48)	0.0	-	0	-	-	0	-	0	-	0	-
REICHERSBERGER NEU	AUT(2)	0.0	-	0	-	-	0	-	0	-	0	-
SELECT 1	ROM(50)	0.0	-	0	-	-	0	-	0	-	0	-
STANDARD ERROR OF DIFFERENCE =		0.0	-	0	-	-	0	-	0	-	0	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: BEAVERLODGE (FOSTER'S FARM)
SEEDING YEAR: 1987 PRODUCTION YEAR: 1989

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	CUT 1(-) (% check)	CUT 2(-) kg/ha	CUT 2(-) (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	0.0	-	0	-	-	0	-	0	-	0	-
ALTASWEDE(*)	CAN(6)	0.0	-	0	-	-	0	-	0	-	0	-
FAVORINA(4N)	CSK(?)	0.0	-	0	-	-	0	-	0	-	0	-
GKT JUNIOR	HUN(32)	0.0	-	0	-	-	0	-	0	-	0	-
HAYAKITA(4N)	JPN(37)	0.0	-	0	-	-	0	-	0	-	0	-
HUNGAROTETRA(4N)	HUN(30)	0.0	-	0	-	-	0	-	0	-	0	-
JUBILATKA(4N)	POL(48)	0.0	-	0	-	-	0	-	0	-	0	-
KARIM	FRA(25)	0.0	-	0	-	-	0	-	0	-	0	-
MANETA(4N)	DDR(14)	0.0	-	0	-	-	0	-	0	-	0	-
MISTRAL	FRA(25)	0.0	-	0	-	-	0	-	0	-	0	-
NESSONAS	GRC(28)	0.0	-	0	-	-	0	-	0	-	0	-
NIKE	POL(47)	0.0	-	0	-	-	0	-	0	-	0	-
PARKA	POL(48)	0.0	-	0	-	-	0	-	0	-	0	-
REICHERSBERGER NEU	AUT(2)	0.0	-	0	-	-	0	-	0	-	0	-
SELECT 1	ROM(50)	0.0	-	0	-	-	0	-	0	-	0	-
STANDARD ERROR OF DIFFERENCE =		0.0	-	0	-	-	0	-	0	-	0	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: FORT VERMILION EXPERIMENTAL FARM
SEEDING YEAR: 1987 PRODUCTION YEAR: 1989

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(10th July) kg/ha	CUT 1 (% check)	CUT 2(11th Sept) kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	6.8	67	84	31	74	2535	39	1807	115	4342	54
ALTASWEDE(*)	CAN(6)	8.0	77	267	100	74	6535	100	1567	100	8102	100
FAVORINA(4N)	CSK(?)	8.0	68	113	42	74	4468	68	2957	189	7424	92
GKT JUNIOR	HUN(32)	6.8	66	182	68	74	2788	43	1435	92	4223	52
HAYAKITA(4N)	JPN(37)	7.0	63	71	27	74	3727	57	1828	117	5555	69
HUNGAROTETRA(4N)	HUN(30)	6.0	68	81	31	74	2267	35	1549	99	3816	47
JUBILATKA(4N)	POL(48)	5.3	76	102	38	74	2326	36	1905	122	4231	52
KARIM	FRA(25)	5.8	67	85	32	74	2607	40	1294	83	3902	48
MANETA(4N)	DDR(14)	7.3	75	82	31	74	3267	50	2228	142	5495	68
MISTRAL	FRA(25)	6.3	74	67	25	74	2571	39	1371	87	3942	49
NESSONAS	GRC(28)	0.0	-	0	0	-	0	0	0	0	0	0
NIKE	POL(47)	7.0	73	132	49	74	3664	56	1750	112	5413	67
PARKA	POL(48)	7.5	67	239	89	74	3940	60	2744	175	6684	82
REICHERSBERGER NEU	AUT(2)	6.8	80	124	46	74	3303	51	1801	115	5104	63
SELECT 1	ROM(50)	6.0	66	92	35	74	2620	40	1394	89	4014	50
STANDARD ERROR OF DIFFERENCE =		0.5	8	40	-	0	513	-	327	-	684	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT*** HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY*** (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 kg/ha	CUT 1 (% check)	CUT 2 kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	4.0	48	394	86	74	830	31	1304	430	2134	71
ALTASWEDE(*)	CAN(6)	4.1	65	457	100	74	2708	100	303	100	3011	100
FAVORINA(4N)	CSK(?)	4.1	59	242	53	74	1220	45	1561	515	2781	92
GKT JUNIOR	HUN(32)	4.0	51	494	108	74	777	29	1209	399	1986	66
HAYAKITA(4N)	JPN(37)	3.4	50	180	39	74	566	21	974	321	1540	51
HUNGAROTETRA(4N)	HUN(30)	3.5	50	232	51	74	962	36	1302	430	2263	75
JUBILATKA(4N)	POL(48)	3.9	54	208	45	74	918	34	1462	482	2379	79
KARIM	FRA(25)	3.7	57	414	91	74	768	28	1141	377	1844	61
MANETA(4N)	DDR(14)	4.0	52	200	44	74	866	32	1175	388	2041	68
MISTRAL	FRA(25)	3.7	55	344	75	74	878	32	1538	508	2416	80
NESSONAS	GRC(28)	0.6	42	114	25	74	64	2	417	137	481	16
NIKE	POL(47)	3.7	50	407	89	74	698	26	1121	370	1819	60
PARKA	POL(48)	4.1	51	421	92	74	1097	41	1366	451	2463	82
REICHERSBERGER NEU	AUT(2)	4.0	54	338	74	74	906	33	1227	405	2133	71
SELECT 1	ROM(50)	3.6	54	392	86	74	675	25	1037	342	1712	57
STANDARD ERROR OF DIFFERENCE =		0.2	3	33	-	0	223	-	173	-	313	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT
*** 1988 RESULTS ONLY

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: BEAVERLODGE (FOSTER'S FARM)
SEEDING YEAR: 1987 PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT*** HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY*** (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 kg/ha	CUT 1 (% check)	CUT 2 kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	3.6	50	311	79	78	715	22	1209	367	1924	53
ALTASWEDE(*)	CAN(6)	4.5	65	394	100	78	3325	100	329	100	3654	100
FAVORINA(4N)	CSK(?)	3.7	51	224	57	78	657	20	1228	373	1885	52
GKT JUNIOR	HUN(32)	3.5	54	407	103	78	592	18	1106	336	1698	46
HAYAKITA(4N)	JPN(37)	2.2	45	119	30	78	276	8	791	240	1067	29
HUNGAROTETRA(4N)	HUN(30)	2.1	46	190	48	78	283	9	802	244	1085	30
JUBILATKA(4N)	POL(48)	3.7	51	168	43	78	453	14	753	229	1206	33
KARIM	FRA(25)	3.0	52	305	77	78	472	14	990	301	1462	40
MANETA(4N)	DDR(14)	3.9	56	201	51	78	775	23	982	299	1757	48
MISTRAL	FRA(25)	3.0	49	292	74	78	407	12	1079	328	1485	41
NESSONAS	GRC(28)	0.5	40	31	8	78	94	3	150	46	244	7
NIKE	POL(47)	4.0	51	374	95	78	917	28	1214	369	2131	58
PARKA	POL(48)	4.3	49	409	104	78	1169	35	1513	460	2681	73
REICHERSBERGER NEU	AUT(2)	4.0	52	291	74	78	799	24	1233	375	2032	56
SELECT 1	ROM(50)	3.4	54	338	86	78	605	18	932	283	1537	42
STANDARD ERROR OF DIFFERENCE =		0.2	2	30	-	0	141	-	121	-	213	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT
*** 1988 RESULTS ONLY

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) LOCATION: FORT VERMILION EXPERIMENTAL FARM
SEEDING YEAR: 1987 PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 kg/ha	CUT 1 (% check)	CUT 2 kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	6.9	67	207	40	75	2525	34	2887	151	5413	58
ALTASWEDE(*)	CAN(6)	8.3	87	520	100	75	7347	100	1906	100	9254	100
FAVORINA(4N)	CSK(?)	8.5	71	146	28	75	5073	69	3634	191	8708	94
GKT JUNIOR	HUN(32)	6.4	69	385	74	75	2583	35	2550	134	5133	55
HAYAKITA(4N)	JPN(37)	7.1	68	106	20	75	3382	46	2640	138	6023	65
HUNGAROTETRA(4N)	HUN(30)	6.0	70	130	25	75	1999	27	2160	113	4158	45
JUBILATKA(4N)	POL(48)	6.3	75	160	31	75	3507	48	2924	153	6430	69
KARIM	FRA(25)	5.3	68	211	41	75	2179	30	2402	126	4580	49
MANETA(4N)	DDR(14)	7.3	77	132	25	75	3862	53	2898	152	6760	73
MISTRAL	FRA(25)	6.3	73	225	43	75	2373	32	2604	137	4977	54
NESSONAS	GRC(28)	0.0	-	0	0	-	0	0	0	0	0	0
NIKE	POL(47)	7.1	74	253	49	75	3476	47	2903	152	6378	69
PARKA	POL(48)	7.8	72	455	87	75	4295	58	3816	200	8110	88
REICHERSBERGER NEU	AUT(2)	7.3	76	207	40	75	3737	51	3038	159	6775	73
SELECT 1	ROM(50)	5.9	68	205	39	75	2383	32	2379	125	4762	51
STANDARD ERROR OF DIFFERENCE =		0.4	5	57	-	0	323	-	237	-	445	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: CLOVER, RED (Trifolium pratense L.) — LOCATION: THREE-SITE MEAN
SEEDING YEAR: 1987 — PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 kg/ha	CUT 1 (% check)	CUT 2 kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
ALBATROS	FRA(25**)	4.8	57	304	67	75	1357	30	1800	213	3157	59
ALTASWEDE(*)	CAN(6)	5.6	68	457	100	75	4460	100	846	100	5306	100
FAVORINA(4N)	CSK(?)	5.5	61	204	45	75	2317	52	2141	253	4458	84
GKT JUNIOR	HUN(32)	4.6	59	429	94	75	1317	30	1622	192	2939	55
HAYAKITA(4N)	JPN(37)	4.3	54	135	30	75	1408	32	1468	174	2876	54
HUNGAROTETRA(4N)	HUN(30)	3.9	57	184	40	75	1081	24	1421	168	2502	47
JUBILATKA(4N)	POL(48)	4.6	63	178	39	75	1626	36	1713	202	3339	63
KARIM	FRA(25)	4.0	61	310	68	75	1139	26	1511	179	2629	50
MANETA(4N)	DDR(14)	5.0	63	178	39	75	1834	41	1685	199	3519	66
MISTRAL	FRA(25)	4.3	62	287	63	75	1219	27	1740	206	2959	56
NESSONAS	GRC(28)	0.4	49	48	11	75	53	1	189	22	241	5
NIKE	POL(47)	5.0	60	344	75	75	1697	38	1746	206	3443	65
PARKA	POL(48)	5.4	57	428	94	75	2187	49	2231	264	4418	83
REICHERSBERGER NEU	AUT(2)	5.1	65	279	61	75	1814	41	1832	217	3647	69
SELECT 1	ROM(50)	4.3	60	312	68	75	1221	27	1449	171	2670	50
STANDARD ERROR OF DIFFERENCE =		0.2	2	24	-	0	139	-	106	-	195	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.) LOCATION: BEAVERLODGE (FOSTER'S FARM)
SEEDING YEAR: 1987 PRODUCTION YEAR: 1988

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	HERBAGE DRY MATTER YIELD CUT 1(-) (% check)	HERBAGE DRY MATTER YIELD CUT 2(-) kg/ha	HERBAGE DRY MATTER YIELD CUT 2(-) (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
AND-182	POL(?**)	9.0	61	1054	78	18	2715	104	3843	101	6558	102
BOREAL(*)	CAN(4)	9.0	61	1352	100	17	2606	100	3798	100	6404	100
B7733	CAN(12)	9.0	64	1561	115	18	2907	112	3256	86	6163	96
CIBEL	FRA(24)	9.0	53	153	11	14	663	25	1670	44	2333	36
ELANOR	DNK(16)	9.0	54	385	28	18	1308	50	2873	76	4181	65
ENJOY	NLD(40)	9.0	50	462	34	14	1210	46	2088	55	3298	51
ESTICA	NLD(40)	9.0	59	441	33	14	2381	91	3547	93	5928	93
FRANKLIN	NLD(11)	9.0	55	1204	89	18	2342	90	2747	72	5090	79
FURORE	NLD(44)	9.0	44	272	20	14	959	37	1365	36	2324	36
GONDOLIN	DNK(16)	9.0	66	1187	88	14	3125	120	3933	104	7058	110
GRASSLANDS COOK	NZL(45)	9.0	43	210	15	14	736	28	1170	31	1906	30
GRASSLANDS TASMAN	NZL(45)	9.0	59	304	23	14	1624	62	3105	82	4729	74
HECTOR	DEU(19)	9.0	61	1130	84	20	2727	105	2841	75	5568	87
JUPITER	GBR(27)	9.0	55	273	20	14	1414	54	2870	76	4284	67
NAPSA	FIN(51)	9.0	55	395	29	15	774	30	1413	37	2187	34
STERNA	SWE(52)	9.0	45	129	10	14	332	13	1099	29	1431	22
SUZETTE	DNK(15)	9.0	61	335	25	14	2171	83	3241	85	5412	85
STANDARD ERROR OF DIFFERENCE =		0.0	3	107	-	1	275	-	269	-	458	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.) — LOCATION: FORT VERMILION EXPERIMENTAL FARM
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1988

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1(-) kg/ha	CUT 1(-) (% check)	CUT 2(-) kg/ha	CUT 2(-) (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
AND-182	POL(?**)	9.0	75	767	86	26	4764	103	2626	124	7390	109
BOREAL(*)	CAN(4)	9.0	72	896	100	26	4640	100	2115	100	6755	100
B7733	CAN(12)	9.0	71	1420	159	26	5385	116	2218	105	7602	113
CIBEL	FRA(24)	9.0	66	156	17	26	2227	48	2108	100	4334	64
ELANOR	DNK(16)	9.0	69	361	40	26	2545	55	2427	115	4972	74
ENJOY	NLD(40)	9.0	61	451	50	26	3389	73	1052	50	4441	66
ESTICA	NLD(40)	9.0	59	212	24	26	2921	63	2373	112	5294	78
FRANKLIN	NLD(11)	9.0	75	1000	112	26	4428	95	1494	71	5923	88
FURORE	NLD(44)	9.0	62	328	37	26	2527	54	703	33	3230	48
GONDOLIN	DNK(16)	9.0	83	638	71	26	4127	89	3056	145	7183	106
GRASSLANDS COOK	NZL(45)	9.0	65	249	28	26	2676	58	1002	47	3678	54
GRASSLANDS TASMAN	NZL(45)	9.0	69	128	14	26	2652	57	2303	109	4956	73
HECTOR	DEU(19)	9.0	80	852	95	26	4365	94	1737	82	6102	90
JUPITER	GBR(27)	9.0	60	114	13	26	2175	47	2923	138	5098	75
NAPSA	FIN(51)	9.0	56	244	27	26	2371	51	2096	99	4467	66
STERNA	SWE(52)	9.0	66	254	28	26	1399	30	1395	66	2794	41
SUZETTE	DNK(15)	9.0	62	161	18	26	3344	72	3166	150	6510	96
STANDARD ERROR OF DIFFERENCE =		0.0	3	72	-	0	418	-	403	-	692	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.) LOCATION: BEAVERLODGE (FOSTER'S FARM)
SEEDING YEAR: 1987 PRODUCTION YEAR: 1989

				SEED HARVEST			HERBAGE DRY MATTER YIELD					
		WINTER HARDINESS	PLANT HEIGHT	YIELD		MATURITY	CUT 1(29th June)		CUT 2(14th Sept)		ANNUAL TOTAL	
CULTIVAR	ORIGIN	RATING	(cm)	kg/ha	(% check)	(Day 1=July 1)	kg/ha	(% check)	kg/ha	(% check)	kg/ha	(% check)
AND-182	POL(?**)	8.3	42	11	31	19	1508	111	2923	91	4431	97
BOREAL(*)	CAN(4)	8.3	38	37	100	19	1358	100	3222	100	4580	100
B7733	CAN(12)	8.0	38	32	85	19	1104	81	3305	103	4410	96
CIBEL	FRA(24)	8.0	20	0	0	-	1067	79	3812	118	4879	107
ELANOR	DNK(16)	8.5	24	0	0	-	1128	83	3007	93	4136	90
ENJOY	NLD(40)	8.0	35	24	65	17	856	63	2948	91	3804	83
ESTICA	NLD(40)	7.5	24	3	7	14	841	62	2906	90	3746	82
FRANKLIN	NLD(11)	8.8	40	62	168	19	1384	102	4219	131	5603	122
FURORE	NLD(44)	8.3	25	10	26	14	692	51	2428	75	3120	68
GONDOLIN	DNK(16)	8.8	42	30	80	18	1110	82	4073	126	5182	113
GRASSLANDS COOK	NZL(45)	8.5	27	17	46	14	1059	78	2019	63	3077	67
GRASSLANDS TASMAN	NZL(45)	7.8	34	22	58	16	1279	94	3280	102	4559	100
HECTOR	DEU(19)	8.5	42	75	201	19	1341	99	3480	108	4821	105
JUPITER	GBR(27)	7.5	22	0	0	-	884	65	3080	96	3963	87
NAPSA	FIN(51)	7.3	39	130	348	17	937	69	3223	100	4160	91
STERNA	SWE(52)	7.3	32	53	143	18	908	67	3842	119	4750	104
SUZETTE	DNK(15)	8.0	27	6	16	14	956	70	3089	96	4045	88
STANDARD ERROR OF DIFFERENCE =		0.4	5	16	-	1	207	-	546	-	570	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.) — LOCATION: FORT VERMILION EXPERIMENTAL FARM
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1989

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 (19th June) kg/ha	CUT 1 (% check)	CUT 2 (11th Sept) kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
AND-182	POL(?**)	8.5	77	108	42	26	3133	91	1832	118	4965	100
BOREAL(*)	CAN(4)	8.3	78	254	100	26	3432	100	1554	100	4986	100
B7733	CAN(12)	8.5	77	372	146	26	3317	97	1626	105	4943	99
CIBEL	FRA(24)	7.0	75	61	24	26	1409	41	1241	80	2650	53
ELANOR	DNK(16)	8.5	66	15	6	10	2081	61	1447	93	3527	71
ENJOY	NLD(40)	8.0	76	312	123	26	3183	93	1052	68	4235	85
ESTICA	NLD(40)	6.8	64	58	23	10	1614	47	1332	86	2946	59
FRANKLIN	NLD(11)	8.3	77	353	139	26	2820	82	1373	88	4193	84
FURORE	NLD(44)	7.8	83	272	107	26	2898	84	886	57	3784	76
GONDOLIN	DNK(16)	8.0	84	245	96	26	3501	102	1596	103	5097	102
GRASSLANDS COOK	NZL(45)	7.8	70	161	63	26	3005	88	985	63	3990	80
GRASSLANDS TASMAN	NZL(45)	7.3	78	74	29	26	2311	67	1299	84	3610	72
HECTOR	DEU(19)	8.0	85	336	132	26	2801	82	1207	78	4008	80
JUPITER	GBR(27)	7.8	69	9	4	10	1693	49	1898	122	3591	72
NAPSA	FIN(51)	7.0	68	480	189	26	3539	103	1295	83	4834	97
STERNA	SWE(52)	6.5	77	299	118	26	2498	73	1273	82	3771	76
SUZETTE	DNK(15)	7.8	62	19	7	10	2297	67	1800	116	4098	82
STANDARD ERROR OF DIFFERENCE =		0.4	4	45	-	0	427	-	252	-	528	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.)
SEEDING YEAR: 1987

LOCATION: BEAVERLODGE (FOSTER'S FARM)
PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

				SEED HARVEST			HERBAGE DRY MATTER YIELD					
		WINTER HARDINESS	PLANT HEIGHT	YIELD		MATURITY	CUT 1		CUT 2		ANNUAL TOTAL	
CULTIVAR	ORIGIN	RATING	(cm)	kg/ha	(% check)	(Day 1=July 1)	kg/ha	(% check)	kg/ha	(% check)	kg/ha	(% check)
AND-182	POL(?**)	8.6	51	533	77	18	2112	107	3383	96	5494	100
BOREAL(*)	CAN(4)	8.6	49	695	100	18	1982	100	3510	100	5492	100
B7733	CAN(12)	8.5	51	796	115	18	2006	101	3281	93	5286	96
CIBEL	FRA(24)	8.5	36	77	11	15	865	44	2741	78	3606	66
ELANOR	DNK(16)	8.8	39	192	28	19	1218	61	2940	84	4158	76
ENJOY	NLD(40)	8.5	42	243	35	16	1033	52	2518	72	3551	65
ESTICA	NLD(40)	8.3	41	222	32	14	1611	81	3226	92	4837	88
FRANKLIN	NLD(11)	8.9	47	633	91	18	1863	94	3483	99	5346	97
FURORE	NLD(44)	8.6	34	141	20	14	826	42	1896	54	2722	50
GONDOLIN	DNK(16)	8.9	54	608	88	16	2117	107	4003	114	6120	111
GRASSLANDS COOK	NZL(45)	8.8	35	113	16	14	898	45	1594	45	2492	45
GRASSLANDS TASMAN	NZL(45)	8.4	46	163	23	15	1451	73	3193	91	4644	85
HECTOR	DEU(19)	8.8	51	602	87	19	2034	103	3161	90	5195	95
JUPITER	GBR(27)	8.3	39	137	20	15	1149	58	2975	85	4124	75
NAPSA	FIN(51)	8.1	47	262	38	16	855	43	2318	66	3173	58
STERNA	SWE(52)	8.1	39	91	13	16	620	31	2471	70	3091	56
SUZETTE	DNK(15)	8.5	44	170	25	14	1563	79	3165	90	4728	86
STANDARD ERROR OF DIFFERENCE =		0.2	3	54	-	1	172	-	304	-	366	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.) — LOCATION: FORT VERMILION EXPERIMENTAL FARM
SEEDING YEAR: 1987 — PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD (% check)	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 kg/ha	CUT 1 (% check)	CUT 2 kg/ha	CUT 2 (% check)	ANNUAL TOTAL kg/ha	ANNUAL TOTAL (% check)
AND-182	POL(?**)	8.8	76	437	76	26	3949	98	2229	121	6178	105
BOREAL(*)	CAN(4)	8.6	75	575	100	26	4036	100	1834	100	5871	100
B7733	CAN(12)	8.8	74	896	156	26	4351	108	1922	105	6273	107
CIBEL	FRA(24)	8.0	70	109	19	26	1818	45	1674	91	3492	59
ELANOR	DNK(16)	8.8	67	188	33	18	2313	57	1937	106	4250	72
ENJOY	NLD(40)	8.5	68	381	66	26	3286	81	1052	57	4338	74
ESTICA	NLD(40)	7.9	61	135	23	18	2267	56	1853	101	4120	70
FRANKLIN	NLD(11)	8.6	76	676	118	26	3624	90	1434	78	5058	86
FURORE	NLD(44)	8.4	72	300	52	26	2712	67	795	43	3507	60
GONDOLIN	DNK(16)	8.5	83	442	77	26	3814	94	2326	127	6140	105
GRASSLANDS COOK	NZL(45)	8.4	67	205	36	26	2841	70	993	54	3834	65
GRASSLANDS TASMAN	NZL(45)	8.1	73	101	18	26	2482	61	1801	98	4283	73
HECTOR	DEU(19)	8.5	82	594	103	26	3583	89	1472	80	5055	86
JUPITER	GBR(27)	8.4	64	62	11	18	1934	48	2410	131	4345	74
NAPSA	FIN(51)	8.0	62	362	63	26	2955	73	1696	92	4650	79
STERNA	SWE(52)	7.8	71	277	48	26	1948	48	1334	73	3282	56
SUZETTE	DNK(15)	8.4	62	90	16	18	2821	70	2483	135	5304	90
STANDARD ERROR OF DIFFERENCE =		0.2	3	43	-	0	299	-	238	-	435	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN EVALUATION TRIALS

CROP: FESCUE, RED (Festuca rubra L.) — LOCATION: TWO-SITE MEAN
SEEDING YEAR: 1987 — PRODUCTION YEAR: 2-YEAR MEAN (1988 AND 1989)

CULTIVAR	ORIGIN	WINTER HARDINESS RATING	PLANT HEIGHT (cm)	SEED HARVEST YIELD kg/ha	SEED HARVEST YIELD % check	SEED HARVEST MATURITY (Day 1=July 1)	HERBAGE DRY MATTER YIELD CUT 1 kg/ha	CUT 1 % check	CUT 2 kg/ha	CUT 2 % check	ANNUAL TOTAL kg/ha	ANNUAL TOTAL % check
AND-182	POL(?**)	8.7	64	485	76	22	3030	101	2806	105	5836	103
BOREAL(*)	CAN(4)	8.6	62	635	100	22	3009	100	2672	100	5681	100
B7733	CAN(12)	8.6	62	846	133	22	3178	106	2601	97	5780	102
CIBEL	FRA(24)	8.3	53	93	15	21	1341	45	2208	83	3549	62
ELANOR	DNK(16)	8.8	53	190	30	15	1765	59	2439	91	4204	74
ENJOY	NLD(40)	8.5	55	312	49	21	2159	72	1785	67	3944	69
ESTICA	NLD(40)	8.1	51	178	28	16	1939	64	2539	95	4479	79
FRANKLIN	NLD(11)	8.8	62	655	103	22	2744	91	2458	92	5202	92
FURORE	NLD(44)	8.5	53	220	35	20	1769	59	1346	50	3114	55
GONDOLIN	DNK(16)	8.7	69	525	83	21	2965	99	3165	118	6130	108
GRASSLANDS COOK	NZL(45)	8.6	51	159	25	20	1869	62	1294	48	3163	56
GRASSLANDS TASMAN	NZL(45)	8.3	60	132	21	20	1967	65	2497	93	4464	79
HECTOR	DEU(19)	8.6	67	598	94	23	2808	93	2316	87	5125	90
JUPITER	GBR(27)	8.3	51	99	16	13	1541	51	2693	101	4234	75
NAPSA	FIN(51)	8.1	54	312	49	21	1905	63	2007	75	3912	69
STERNA	SWE(52)	7.9	55	184	29	21	1284	43	1902	71	3187	56
SUZETTE	DNK(15)	8.4	53	130	21	16	2192	73	2824	106	5016	88
STANDARD ERROR OF DIFFERENCE =		0.1	2	34	-	0	173	-	193	-	284	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN SCREENING TRIALS

CROP: ALFALFA/LUCERNE (Medicago sativa L.) LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
ACCLAIM	USA(7**)	9.0	7.7	8.3	58	55	57	84	87	86	615	201	408	85	52	73
ADMIRAL	USA(7)	9.0	7.7	8.3	58	60	59	84	87	86	675	214	445	94	55	80
ARGENTA	ITA(34)	9.0	6.7	7.8	53	55	54	84	87	86	468	131	299	65	34	54
ARROW	USA(7)	9.0	7.0	8.0	65	74	70	84	87	86	881	555	718	122	143	129
AWARD	USA(57)	9.0	6.3	7.7	60	59	60	84	87	86	399	255	327	55	66	59
BARRIER	CAN(4)	9.0	7.0	8.0	58	60	59	84	87	86	711	313	512	99	80	92
BEAVER(*)	CAN(4)	9.0	8.0	8.5	57	62	59	84	87	86	721	389	555	100	100	100
COSSACK	USA(54)	9.0	7.7	8.3	60	58	59	84	87	86	623	249	436	86	64	79
DEDINOVSKAYA	SUN(9)	9.0	7.0	8.0	52	44	48	84	87	86	100	274	187	14	70	34
EAGLE	USA(56)	9.0	8.0	8.5	60	69	65	84	87	86	777	205	491	108	53	88
EXCALIBUR	USA(8)	9.0	6.7	7.8	63	57	60	84	87	86	795	314	555	110	81	100
MAYA	FRA(22)	9.0	7.3	8.2	65	70	67	84	87	86	772	444	608	107	114	110
NADEJDA 2	BGR(3)	9.0	7.3	8.2	65	69	67	84	87	86	729	380	555	101	98	100
NAGYSZENASI	HUN(29)	9.0	8.3	8.7	53	57	55	84	87	86	434	178	306	60	46	55
NOBLE	USA(57)	9.0	8.3	8.7	57	59	58	84	87	86	726	278	502	101	71	90
OKI-I	HUN(29)	9.0	7.0	8.0	58	64	61	84	87	86	559	230	395	78	59	71
ONEIDA VR	USA(7)	9.0	7.7	8.3	62	58	60	84	87	86	692	235	463	96	60	83
SUNTER	TUR(53)	9.0	7.3	8.2	70	70	70	84	87	86	752	353	552	104	91	99
SURPASS	CAN(9)	9.0	6.7	7.8	60	67	64	84	87	86	1032	591	811	143	152	146
UFIMOVSKAYA	SUN(9)	9.0	7.7	8.3	58	63	61	84	87	86	616	690	653	85	177	118
88	USA(7)	9.0	7.3	8.2	58	63	61	84	87	86	750	296	523	104	76	94
STANDARD ERROR OF DIFFERENCE =		0.0	0.7	0.3	4	7	4	0	0	0	147	124	96	-	-	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN SCREENING TRIALS

CROP: TREFOIL, BIRDSFOOT (Lotus corniculatus L.) LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING			MATURE PLANT HEIGHT(cm)			SEED MATURITY DATE (Day 1=July 1)			SEED YIELD(kg/ha)			SEED YIELD(% check)		
		1988	1989	MEAN	1988	1989	MEAN	1988	1989	MEAN	1988	1989	MEAN	1988	1989	MEAN
LEO(*)	CAN(5**)	9.0	4.3	6.7	-	30	-	60	68	64	288	306	297	100	100	100
OBERHAUNSTADTER	DEU(21)	7.7	0.3	4.0	-	24	-	60	68	64	434	0	217	151	0	73
ROCCO	DEU(18)	8.7	1.3	5.0	-	19	-	60	68	64	344	45	195	120	15	66
STANDARD ERROR OF DIFFERENCE =		1.0	0.8	0.6	-	4	-	0	0	0	55	38	33	-	-	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN SCREENING TRIALS

CROP: BROMEGRASS, SMOOTH (Bromus inermis Leyss.) — LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
CARLTON(*)	CAN(4**)	9.0	6.3	7.7	103	82	93	46	39	43	1451	1209	1330	100	100	100
CHISMINCKY	SUN(9)	9.0	7.3	8.2	110	83	96	46	39	43	1797	1183	1490	124	98	112
HUNGARIA	HUN(33)	9.0	7.0	8.0	92	82	87	46	39	43	1234	915	1074	85	76	81
KESZTHELYI 51	HUN(31)	9.0	7.0	8.0	103	85	94	46	39	43	791	544	667	55	45	50
PERVOMAYSKY	SUN(9)	9.0	8.0	8.5	107	83	95	46	39	43	2139	1167	1653	147	97	124
SZARVASI 52	HUN(29)	9.0	8.0	8.5	107	82	94	46	39	43	950	562	756	65	46	57
UNA(B. willdenowii)	POL(46)	9.0	0.0	4.5	73	-	-	46	-	-	454	0	227	31	0	17
STANDARD ERROR OF DIFFERENCE =		0.0	0.6	0.3	4	2	2	0	0	0	202	162	130	-	-	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN SCREENING TRIALS

CROP: ORCHARDGRASS (Dactylis glomerata L.) — LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
AMPLY	FRA(23**)	9.0	0.0	4.5	72	-	-	25	-	-	65	0	33	13	0	12
BEPRO	POL(49)	9.0	2.3	5.7	83	45	64	18	23	20	233	0	116	46	0	43
DROGOBIRCHANKA	SUN(9)	9.0	3.7	6.3	88	53	71	18	24	21	372	7	189	73	19	69
KAY(*)	CAN(4)	9.0	6.0	7.5	90	67	79	18	24	21	512	35	273	100	100	100
MAKIBAMIDORI	JPN(35)	9.0	1.0	5.0	77	44	60	25	23	27	138	0	69	27	0	25
PERREVIA	GRC(28)	9.0	0.0	4.5	48	-	-	25	-	-	33	0	17	6	0	6
SVERDLOVSKAYA	SUN(9)	9.0	7.0	8.0	87	77	82	18	21	20	606	157	382	119	450	140
STANDARD ERROR OF DIFFERENCE =		0.0	0.8	0.4	3	9	4	0	0	0	79	14	40	-	-	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN SCREENING TRIALS

CROP: RYEGRASS, PERENNIAL (Lolium perenne L.)
SEEDING YEAR: 1987

LOCATION: BEAVERLODGE RESEARCH STATION
PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
ALL*STAR	USA(55**)	9.0	0.0	4.5	35	-	-	25	-	-	615	0	308	64	-	64
ALSINTO	GBR(26)	9.0	0.0	4.5	38	-	-	42	-	-	462	0	231	48	-	48
APUS	SWE(52)	9.0	0.0	4.5	45	-	-	36	-	-	1141	0	571	118	-	118
BARDETTA	NLD(38)	9.0	0.0	4.5	37	-	-	45	-	-	246	0	123	25	-	25
BARKATE	NLD(38)	9.0	0.0	4.5	35	-	-	28	-	-	99	0	49	10	-	10
BARLET	NLD(38)	9.0	0.0	4.5	43	-	-	38	-	-	512	0	256	53	-	53
BARMEGA	NLD(38)	9.0	0.0	4.5	37	-	-	36	-	-	521	0	261	54	-	54
BARNASSO	NLD(38)	9.0	0.0	4.5	42	-	-	36	-	-	226	0	113	23	-	23
CORONET	NZL(45)	9.0	0.0	4.5	35	-	-	25	-	-	322	0	161	33	-	33
CUPIDO	NLD(41)	9.0	0.0	4.5	42	-	-	38	-	-	529	0	265	55	-	55
EMIR	FRA(24)	9.0	0.0	4.5	30	-	-	43	-	-	270	0	135	28	-	28
ENTRAR	NLD(40)	9.0	0.0	4.5	40	-	-	38	-	-	672	0	336	69	-	69
HERCULES	NLD(43)	9.0	0.0	4.5	40	-	-	39	-	-	358	0	179	37	-	37
JUWEL	DEU(17)	9.0	0.0	4.5	37	-	-	27	-	-	570	0	285	59	-	59
LIDURA	DEU(17)	9.0	0.0	4.5	42	-	-	28	-	-	335	0	168	35	-	35
LIPARIS	DEU(17)	9.0	0.0	4.5	47	-	-	38	-	-	639	0	319	66	-	66
LIPERRY	DEU(17)	9.0	0.0	4.5	45	-	-	39	-	-	523	0	262	54	-	54
LIQUICK	DEU(17)	9.0	0.0	4.5	39	-	-	36	-	-	415	0	207	43	-	43
LOOK	FRA(24)	9.0	0.0	4.5	32	-	-	42	-	-	305	0	153	32	-	32
MERLINDA	BEL(26)	9.0	0.0	4.5	50	-	-	42	-	-	440	0	220	45	-	45
NIEDERRA	DEU(20)	9.0	0.0	4.5	42	-	-	36	-	-	593	0	297	61	-	61
NORLEA(*)	CAN(4)	9.0	0.0	4.5	47	-	-	36	-	-	967	0	484	100	-	100
PAVO	SWE(52)	9.0	0.0	4.5	42	-	-	33	-	-	929	0	464	96	-	96
PRELUDE	USA(10)	9.0	0.0	4.5	37	-	-	25	-	-	550	0	275	57	-	57
PRESIDENT	NLD(39)	9.0	0.0	4.5	33	-	-	38	-	-	683	0	341	71	-	71
PROFIT	NLD(40)	9.0	0.0	4.5	41	-	-	38	-	-	390	0	195	40	-	40
REPELL	USA(10)	9.0	0.0	4.5	45	-	-	33	-	-	896	0	448	93	-	93
SALEM	NLD(42)	9.0	0.0	4.5	48	-	-	36	-	-	434	0	217	45	-	45
SHERIFF	NLD(39)	9.0	0.0	4.5	38	-	-	25	-	-	509	0	254	53	-	53
TROUBADOUR	NLD(40)	9.0	0.0	4.5	40	-	-	40	-	-	488	0	244	50	-	50
STANDARD ERROR OF DIFFERENCE =		0.0	0.0	0.0	3	-	-	2	-	-	132	0	66	-	-	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

PERFORMANCE OF CULTIVARS IN SCREENING TRIALS

CROP: TIMOTHY (Phleum pratense L.) — LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
CLIMAX(*)	CAN(4**)	9.0	6.0	7.5	-	81	81	39	39	39	374	399	386	100	100	100
FLF-1	FRA(9)	9.0	7.3	8.2	-	76	76	35	39	37	428	471	450	115	118	116
HOKUSEN	JPN(36)	9.0	7.0	8.0	-	92	92	39	39	39	388	486	437	104	122	113
TUNDRA	DNK(9)	9.0	6.3	7.7	-	70	70	39	39	39	419	269	344	112	68	89
ZPO 448	NLD(?)	9.0	6.7	7.8	-	68	68	35	39	37	522	445	484	140	112	125
ZPO 450	NLD(?)	9.0	7.0	8.0	-	71	71	37	39	38	277	277	277	74	69	72
ZPO 1130	NLD(?)	9.0	6.7	7.8	-	73	73	39	39	39	391	481	436	105	121	113
81006	CAN(7)	9.0	6.3	7.7	-	76	76	39	39	39	255	329	292	68	83	76
STANDARD ERROR OF DIFFERENCE =		0.0	0.5	0.3	-	6	6	2	0	1	67	62	46	-	-	-

CROP: WHEATGRASS, CRESTED (Agropyron cristatum L.) — LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
FAIRWAY(*)	CAN(4**)	9.0	0.0	4.5	60	-	-	46	-	-	409	0	205	100	-	100
SZARVASI 55	HUN(29)	9.0	0.0	4.5	57	-	-	46	-	-	616	0	308	151	-	151
STANDARD ERROR OF DIFFERENCE =		0.0	0.0	0.0	2	-	-	0	-	-	207	0	104	-	-	-

CROP: WHEATGRASS, TALL (Agropyron elongatum Host) — LOCATION: BEAVERLODGE RESEARCH STATION
SEEDING YEAR: 1987 — PRODUCTION YEAR: 1988, 1989 & TWO-YEAR MEAN

CULTIVAR	ORIGIN	WINTER HARDINESS RATING 1988	1989	MEAN	MATURE PLANT HEIGHT(cm) 1988	1989	MEAN	SEED MATURITY DATE (Day 1=July 1) 1988	1989	MEAN	SEED YIELD(kg/ha) 1988	1989	MEAN	SEED YIELD(% check) 1988	1989	MEAN
ORBIT(*)	CAN(4**)	9.0	0.0	4.5	107	-	-	77	-	-	819	0	409	100	-	100
TYRELL	AUS(1)	9.0	0.0	4.5	105	-	-	88	-	-	773	0	387	94	-	94
STANDARD ERROR OF DIFFERENCE =		0.0	0.0	0.0	2	-	-	0	-	-	233	0	117	-	-	-

* CHECK CULTIVAR
** SEE APPENDIX I FOR IDENTIFICATION OF SEED MAINTAINER OR AGENT

APPENDIX I: IDENTIFICATION OF SEED MAINTAINERS AND AGENTS

ID#	ADDRESS
1	VICTORIAN DEPARTMENT OF AGRICULTURE AND RURAL AFFAIRS, P O BOX 500, EAST MELBOURNE, VICTORIA 3001, AUSTRALIA
2	OBEROTERREICHISCHE LANDES-SAATBAUGENOSSENSCHAFT, SCHIRMERSTRASSE 19, 4021 LINZ-HART, OBEROSTERREICH, AUSTRIA
3	INSTITUTE OF SEED SCIENCE AND SEED PRODUCTION, OBRASTZOV TCHIFLIK, RUSSE 7000, BULGARIA
4	SEED DIVISION, FOOD PRODUCTION AND INSPECTION BRANCH, AGRICULTURE CANADA, OTTAWA, ONTARIO, K1A 0C6, CANADA
5	MACDONALD COLLEGE OF MCGILL UNIVERSITY, STE. ANNE DE BELLEVUE, QUEBEC, H0A 1C0, CANADA
6	UNIVERSITY OF ALBERTA, DEPARTMENT OF PLANT SCIENCE, EDMONTON, ALBERTA, T6G 2P5, CANADA
7	OTTO PICK & SONS LTD., BOX 126, RICHMOND HILL, ONTARIO, L4C 4X9, CANADA
8	UNITED COOPERATIVES OF ONTARIO, BOX 1239, CHATMAM, ONTARIO, N7M 5R9, CANADA
9	OSECO INC., BOX 219, BRAMPTON, ONTARIO, L6V 2L2, CANADA
10	DAWSON SEED COMPANY LTD., 175 HARBOUR AVENUE, NORTH VANCOUVER, BRITISH COLUMBIA, V7J 2E7, CANADA
11	BRETT-YOUNG SEEDS LTD., BOX 99, ST. NORBERT POSTAL STATION, WINNIPEG, MANITOBA, R3V 1L5, CANADA
12	AGRICULTURE CANADA RESEARCH STATION, P.O. BOX 29, BEAVERLODGE, ALBERTA, T0H 0C0, CANADA
13	ADDRESS UNKNOWN BUT ASSOCIATED WITH ""VYSKUMNY"", CZECHOSLOVAKIA
14	VEB SAAT- UND PFLANZGUT, EX- UND IMPORT BERLIN, MOOSDORFSTRAASSE 7-9, 1193 BERLIN-TREPTOW, DDR
15	A/S L. DAEHNFELDT, POSTBOX 185, 5100 ODENSE C, DENMARK
16	DANSK PLANTEFORAEDLING A/S, BOELSHOJ, 4660 STORE-HEDDINGE, DENMARK
17	DEUTSCHE SAATVEREDELUNG LIPPSTADT-BREMEN GMBH ZU LIPPSTADT, 478 LIPPSTADT, POSTFACH 1407, FED. REP. OF GERMANY
18	SUDDEUTSCHE SAATZUCHT-UND SAATBAUGENOSSENSCHAFT EGMBH, 6935 WALDBRUNN 2, FEDERAL REPUBLIC OF GERMANY
19	MOMMERSTEEG INTERNATIONAL GMBH, 4054 NEETETAL 2, KALDENKIRCHEN, FEDERAL REPUBLIC OF GERMANY
20	DR. J. ESSER, LINDENALLEE 135, 4190 KLEVE, FEDERAL REPUBLIC OF GERMANY
21	ADDRESS UNKNOWN BUT ASSOCIATED WITH ""BAYER GRUNLANDSAAT"", FEDERAL REPUBLIC OF GERMANY
22	DESPREZ FLORIMOND, CAPPELLE-EN-PEVELE, 59242 TEMPLEUVE, FRANCE
23	R.A.G.T., 18, RUE SEGURET SAINCRIC, B.P. 326, 12003 RODEZ CEDEX, FRANCE
24	INSTITUT DE RECHERCHE VILMORIN, LA MENITRE, 49250, BEAUFORT-EN-VALLEE, FRANCE
25	GROUPEMENT D'INTERET ECONOMIQUE AMELIORATION FOURRAGERE, 1, RUE HEGESIPPE-MOREAU, 77160 PROVINS, FRANCE
26	NICKERSON RPB LTD., JOSEPH NICKERSON RESEARCH CENTRE, ROTHWELL, LINCOLNSHIRE, LN7 60T, UNITED KINGDOM
27	W.W. JOHNSON LTD., BOSTON, LINCOLNSHIRE, PE21 8AD, UNITED KINGDOM
28	FODDER PLANT RESEARCH INSTITUTE, 411 10 LARISSA, GREECE
29	ONTOZESI JUTATO INTEZET, SZARVAS, HUNGARY
30	GODOLLOI AGRARTUDOMANYI EGYETEM KUTATO INTEZET, KOMPOLT, HUNGARY
31	AGRARTUDOMANYI EGYETEM, KESZTHELY, HUNGARY
32	GKI KUTATO ALLOMAS TAPLANSZENTKERESZT, HUNGARY

continued on next page

APPENDIX I: IDENTIFICATION OF SEED MAINTAINERS AND AGENTS (continued)

ID#	ADDRESS
33	GYUMOLCS ES DISZNOVENY FEJLESZTO VALLALAT, BUDAPEST, HUNGARY
34	CONSORZIO AGRARIO PROVINCIALE - GROSSETO, ITALY
35	NATIONAL GRASSLAND RESEARCH INSTITUTE, NISHINASUNO-CHO, TOCHIGI-KEN, JAPAN
36	SNOW BRAND SEED COMPANY LTD. MISONO, SAPPORO, JAPAN
37	FEDERATION OF AGRICULTURAL COOP SOCIETIES OF HOKKAIDO, WEST 1, NORTH 4, SAPPORO, HOKKAIDO J, JAPAN
38	BARENBRUG HOLLAND B.V., POSTBUS 4, 6800 AA ARNHEM, NETHERLANDS
39	MOMMERSTEEG INTERNATIONAL B.V., POSTBUS 1, 5250 AA VLIJMEN, NETHERLANDS
40	VAN ENGELEN ZADEN B.V., POSTBUS 35, 5250 AA VLIJMEN, NETHERLANDS
41	J. JOORDENS ZAADHANDEL B.V., POSTBUS 7823, 5995 ZG KESSEL, NETHERLANDS
42	ZWAAN EN DE WILJES B.V., POSTBUS 2, 9679 ZG SCHEEMDA, NETHERLANDS
43	ZELDER B.V., POSTBUS 26, 6590 AA GENNEP, NETHERLANDS
44	B.V. LANDOUWBUREAU WIERSUM, POSTBUS 2028, 9704 CA GRONINGEN, NETHERLANDS
45	GRASSLANDS DIVISION, DSIR, PRIVATE BAG, PALMERSTON NORTH, NEW ZEALAND
46	POZNANSKA HODOWLA ROSLIN, UL. SARMACKA 7, 61-616 POZNAN, POLAND
47	HODOWLA BURAKA PASTEWNEGO, UL. SWIETEGO KRZYZA 17, 30-960 KRAKOW, POLAND
48	LUBELSKIE PRZEDSIEBIORSTWO HODOWLI ROSLIN I NASIENNICTWA, UL. JASNA 6, 20-950 LUBLIN, POLAND
49	ZAKLAD DOSWIADCZALNY HODOWLI I AKLIMATYZACJI ROSLIN BARTAZEK, 11-033 BARTAG, POLAND
50	INSTITUTL AGRONOMIC ""DR. PETRU GROZA"" CLUJ, STR. MANASTUR NR. 3, ROMANIA
51	HANKKIJA PLANT BREEDING INSTITUTE, SF-04300, HYRYLA, FINLAND
52	W. WEIBULL AB, BOX 520, S-261 24 LANDSKRONA, SWEDEN
53	TOHUM ISLAH VE URETME A.S., MITHATPASA CAD. 19/2, P.K. 19, YENISEHIR/ANKARA, TURKEY
54	MONTANA AGRICULTURAL EXPERIMENT STATION, BOZEMAN, MONTANA 59717, U.S.A.
55	INTERNATIONAL SEEDS INCORPORATED, P.O.BOX 168, 820 FIRST STREET, HALSEY, OREGON 97348, U.S.A.
56	W-L RESEARCH, 2000 OAK STREET, BAKERSFIELD, CALIFORNIA 93301, U.S.A.
57	DAIRYLAND SEED COMPANY INC., P.O.BOX 958, WEST BEND, WISCONSIN 53095, U.S.A.