

MANITOBA

FORAGE CULTIVAR

EVALUATION

PROGRAM

2004 REPORT

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This report is a compilation of data to date, and as such, may contain information that may be amended through subsequent research.

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INTRODUCTION

2004 WF Forage Cultivar Evaluation Trials

Test Sites

Arborg	Forage Operated by: Manitoba Forage Council
Ste. Pierre	Forage Operated by: Manitoba Forage Council (New site: established in 1999)
Neepawa/Rosebank	Forage Operated by: Manitoba Forage Council (Contracted with Proven Seed) (New site: established in 2000)
Roblin	Forage Operated by: Parkland Crop Diversification Foundation

2004 Program Partners

Agricultural Research & Development Initiative	Parkland Crop Diversification Foundation
Covering New Ground – Agricultural Sustainability Initiative	Proven Seed
Manitoba Agriculture, Food and Rural Initiatives	S.S. Johnson Seeds
Manitoba Forage Council	University of Manitoba-Plant Science Dept.
Manitoba Forage Seed Association	The Western Forage Variety Testing System
Manitoba Rural Adaptation Council	

2004 TESTING PROGRAM

The Manitoba Forage Variety Testing Program is operated by the Manitoba Forage Council. This report of the 2004 Forage Cultivar Evaluation Program in Manitoba compiles data from trials located at Arborg, Neepawa, Roblin and St. Pierre. All forage trials reported have been inspected and approved by the Manitoba Forage Crop Committee Cultivar Sub-Committee. Trials were operated under guidelines approved by this committee. Results are used in both registration and recommendation, with a summary of results provided to Manitoba Agriculture for publication in Seed Manitoba 2005.

PROGRESS REPORT

The 2004 season marked the fourth year the Manitoba Forage Council has operated the Forage Variety Testing Program with four sites throughout Manitoba. These include, Arborg, St. Pierre, and Rosebank, which is operated by Proven. The newly established Rosebank site has replaced the previous site located in Neepawa, since 2003. The fourth testing site is operated by the Parkland Crop Diversification Foundation and is located in Roblin.

The 2004 season was another success with a number of Western Forage (WF) tests harvested, consisting of a combination of legume and grass trials. A brief summary of this year's harvest is as follows; WF Alfalfa trials seeded in 2001, 2002, and 2003 were harvested in Arborg, Neepawa and St. Pierre. Arborg reported three cuts from their alfalfa trials, with two cuts from Neepawa and St. Pierre. The WF 2002 Alfalfa test was completed this year at all three sites. Both Arborg and Neepawa reported yields twice as high as last year, with St. Pierre reporting yields slightly less than last year. To finish off the legume test summary for 2004, a two cut harvest from the WF 2002 Cicer Milkvetch was reported from Arborg and St. Pierre. St. Pierre and Neepawa took one cut from their 2001 Smooth and Meadow Bromegrass tests with Arborg reporting two cuts. Arborg and Neepawa experienced yields three to four times greater than reported last year; St. Pierre reported slightly less yields. The 2004 harvest of the 2001 Smooth and Meadow Bromegrass tests completed the three-year tests for all three sites. All three sites reported one harvest from the 2001 Timothy and 2002 Orchardgrass trials with yields in Neepawa and Arborg greater than last year. This year's harvest completed the WF 2001 Timothy trial in Neepawa. Arborg and St. Pierre also reported yields from the 2002 Timothy, 2001 and 2003 Tall Fescue tests. Finally to finish up this year's harvest, two cuts were taken from the 2004 WF Italian and Westerwold Ryegrasses from the Arborg site.

Once again, Mother Nature delivered some harsh effects on this year's variety testing sites. A late snowfall in early May delayed seeding, however, in spite of this setback the Neepawa and Arborg site managed a mid May planting. Trials established this year included; Alfalfa (10 varieties), Meadow Bromegrass (4 varieties), Meadow Fescue (2 varieties), Orchardgrass (4 varieties), Timothy (2 varieties), Italian and Westerwold Ryegrasses consisting of two varieties each. The extreme rainfall levels experienced in St. Pierre during May and early June resulted in an August establishment at this site. The young seedlings looked good in mid September, but heavy rains in the fall may have threatened their winter survival. Spring will tell! The cold weather conditions of this year's season delayed harvest, as the Alfalfa did not bloom well into July. Heavy rains provided adequate moisture for this year's crop, resulting in higher yields and harvest frequency; especially compared to last summer's

drought like conditions. St. Pierre was the exception, where high rainfall and persistent flooding stressed the crops, causing decreased yields compared to last year's harvest.

USING THIS REPORT

The Forage Dry Matter yield data for 2004 is reported in kilograms per hectare (kg/ha) for each cut. Total forage yields for 2004 and preceding years of test are presented in kg/ha and as a percentage of an appropriate check cultivar within each trial.

The statistics presented include a coefficient of variability (C.V.) and a value of least significant difference at the 0.05 level of probability [LSD (0.05)].

Presenting the yield of cultivars as a percentage of check provides a relative standard of comparison, and is not an absolute basis for differentiating cultivars. For example, a cultivar, which yields 105% of the check, may not be truly different from a cultivar, which yields 95% of the check. A more appropriate procedure of mean comparison is the LSD, which provides a minimum value that two cultivar mean yields must exceed, before they can be declared truly different. The probability level pertains to the degree of confidence associated with the mean comparison. At the $p(0.05)$ level, we can expect the LSD procedure to give us a true measure of the mean difference 95% of the time. The C.V. can be utilized to determine the relative precision between cuts or tests. Uncontrolled factors such as heavy weed infestation or uneven stands will tend to increase the C.V. of a test. A comparison of cultivars from different tests is not advisable, since tests vary in growing conditions.

ACKNOWLEDGEMENTS

The trial program could not be conducted without the help received from the *Program Partners*. The use of machinery and facilities of the Manitoba Forage Seed Association and University of Manitoba was invaluable. The continued assistance and dedication of S.S. Johnson Seeds has allowed the smooth operation of testing.

Thank-you to those that helped out this year, especially my part time help Tannis Tait whose flexible schedule, hard work, long hours and dedication to this project are much appreciated. Thank you to Lee Tait for your long hours on the road hauling and fixing equipment, as well as for being there whenever help was needed. **Also, special thanks to Marvin Johnston and Fern Berard whose assistance in times of emergency was much appreciated.** You were all indispensable in helping to make the 2004 season a success.

A Special thanks to Dave Campbell, of Manitoba Agriculture, Food and Rural Initiatives for your assistance and support. We wish you all the best in your retirement, but will greatly miss your dedication and expertise in the future success of this program. It has been a true pleasure working with you! Enjoy your retirement!

WINTER SURVIVAL IN ALFALFA

Winter survival is probably one of the most important characteristics for alfalfa production in Manitoba. In Canada, researchers have long sought to measure the ability of specific forage cultivars to survive the harsh winter conditions that are inherent with a high latitude and continental climate. Winter survival is not a difficult trait to measure given 5 to 10 years, but the rapid release of new cultivars, especially alfalfa, requires that winterhardness predictions be available in a much shorter time frame.

A testing procedure for winterhardness has been developed in Manitoba that provides test results available within approximately 15 months. It involves transplanting 8 to 12 week old alfalfa seedlings from the greenhouse to the field in late May. The individual plants are maintained as space plants and frequently clipped at the early to mid-bud stage until mid-September. This clipping regime forces the plant to enter the winter in a stressed condition, allowing for more consistent winter injury even in mild to moderate winters. Plants are then rated on a 1-5 scale (1 -vigorous, healthy plant; 5 - dead plant) the following spring. These actual injury scores have been converted into a winter survival index (WSI) for the sake of presentation on the following pages. A WSI of 1 means that the cultivar survives Manitoba winters very well, and alternatively, a WSI of 6 means a cultivar does not survive Manitoba winters. **Cultivars with a WSI of 1 to 3 are considered acceptable for Manitoba conditions. Numbers of site-years tested in Manitoba are listed in brackets beside the cultivar name. Please note that data is more reliable when 2 or more site years of data have been collected. Please also note that no winterhardness test was conducted in the 2002 season.**

**ARBORG & ROSEBANK MB WINTERHARDINESS ALFALFA RESULTS
2000 ESTABLISHED TEST**

CULTIVAR	WINTER INJURY SCALE: 1 (Healthy) – 5 (Dead)		2001 MB MEAN	RANK
	2001 Results			
	Arborg	Rosebank		
5301	2.7	4.1	3.4	38
A5-5-4241	2.5	3.7	3.1	27
ABLE	2.2	3.9	3.1	26
ABSOLUTE	2.2	3.7	3.0	21
AC CARIBOU	2.2	2.8	2.5	5
AC LONGVIEW	2.3	4.2	3.3	35
ALGONQUIN	2.4	3.5	3.0	20
APICA	2.4	3.7	3.0	23
ARABIAN OXS	5.0	5.0	5.0	49
ARROW	3.0	3.7	3.4	37
BEAVER	2.2	2.7	2.3	3
BY 1	2.3	2.7	2.6	7
BY 2	2.2	2.8	2.5	4
BY 3	2.7	3.7	3.2	32
CUF 101	4.7	5.0	4.9	48
GALA	2.4	3.3	2.8	17
GENEVA	2.4	3.9	3.2	30
HAYGRAZER	3.0	4.4	3.7	40
HEINRICHS	2.1	3.2	2.6	11
KEY	3.0	4.7	3.8	41
LAHONTAN	3.4	4.7	4.1	44
LIVE	2.0	3.2	2.6	9
MESILLA	3.5	4.9	4.2	45
MOAPA 69	4.4	5.0	4.8	46
ND 79 OXS	4.5	5.0	4.8	47
OAC MINTO	2.6	2.8	2.8	14
PHI 5929	4.8	5.0	5.0	50
PICKSEED 8920MF	2.4	3.5	2.9	19
PICKSEED 8925MF	2.7	3.8	3.2	33
RAM	3.0	4.8	3.9	42
RANGELANDER	2.2	2.8	2.5	6
RUNNER	2.3	3.2	2.8	12
SARANAC	2.5	3.9	3.2	31
SPREDOR 2	2.2	2.1	2.1	1

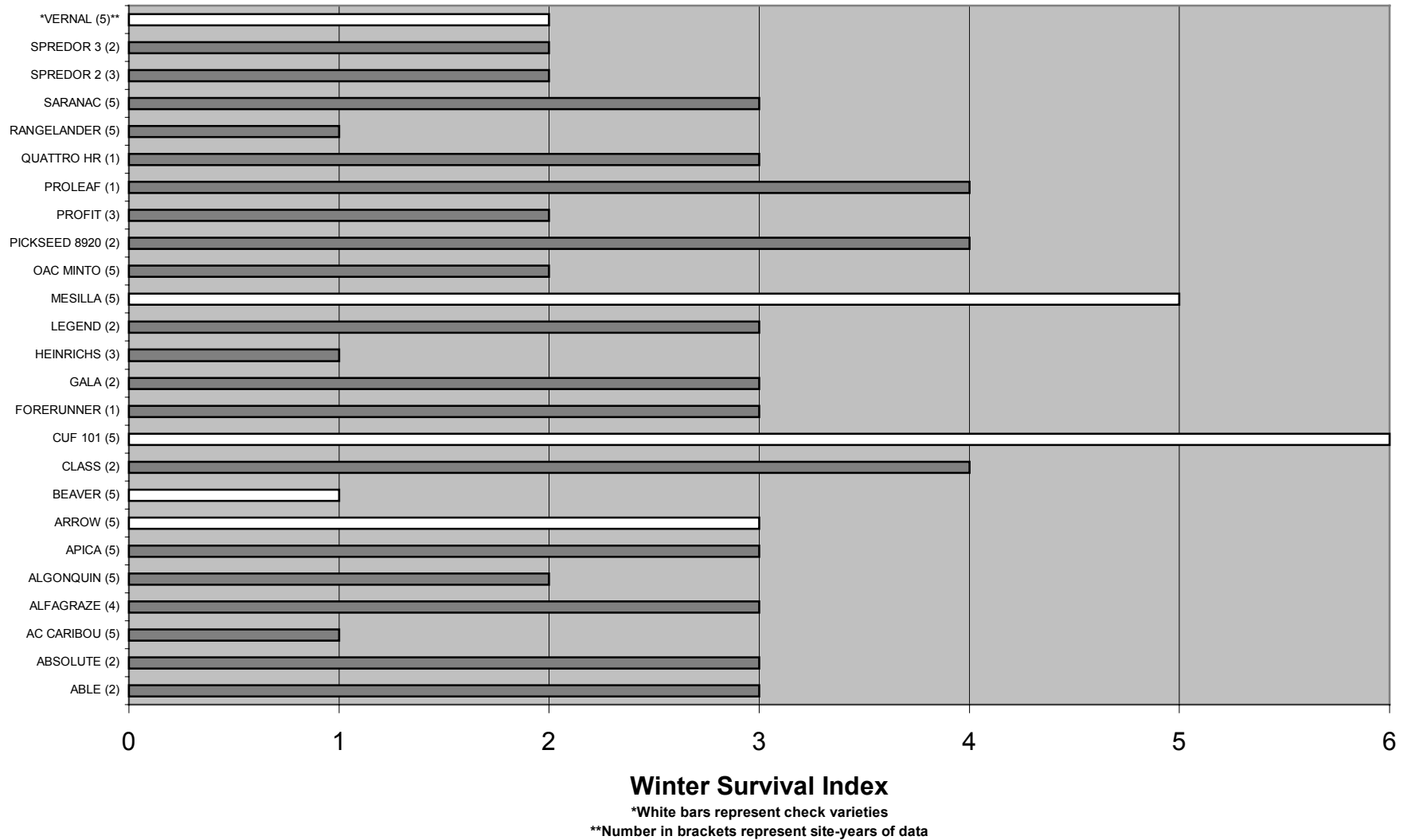
CULTIVAR	Arborg	Rosebank	MB Mean	Rank
SPREDOR 3	2.1	2.5	2.3	2
SUTTER	3.7	4.5	4.0	43
VECTOR	2.7	4.3	3.5	39
VERNAL	2.5	3.6	3.0	25
ZC 9640A	2.4	3.8	3.1	28
ZC 9851A	2.4	4.1	3.3	36
ZC 9854A	2.2	3.5	2.8	15
ZG 9834	2.0	3.2	2.6	8
ZG 9910	2.5	3.2	2.8	16
ZG 9920	2.1	3.1	2.6	10
ZG 9930	2.3	3.5	3.0	22
ZG 9931	2.1	3.6	2.9	18
ZG 9940	2.3	3.2	2.8	13
ZG 9941	2.0	4.2	3.1	29
ZM 9939	2.7	3.8	3.2	34
ZN 9833	2.5	3.6	3.0	24
MEAN	2.7	3.7	3.2	
C.V.	15.9	12.9	14.3	
LSD (0.05)	0.6	0.7	0.5	

*** Please note: Some of these varieties have only one year of data – use with caution.**

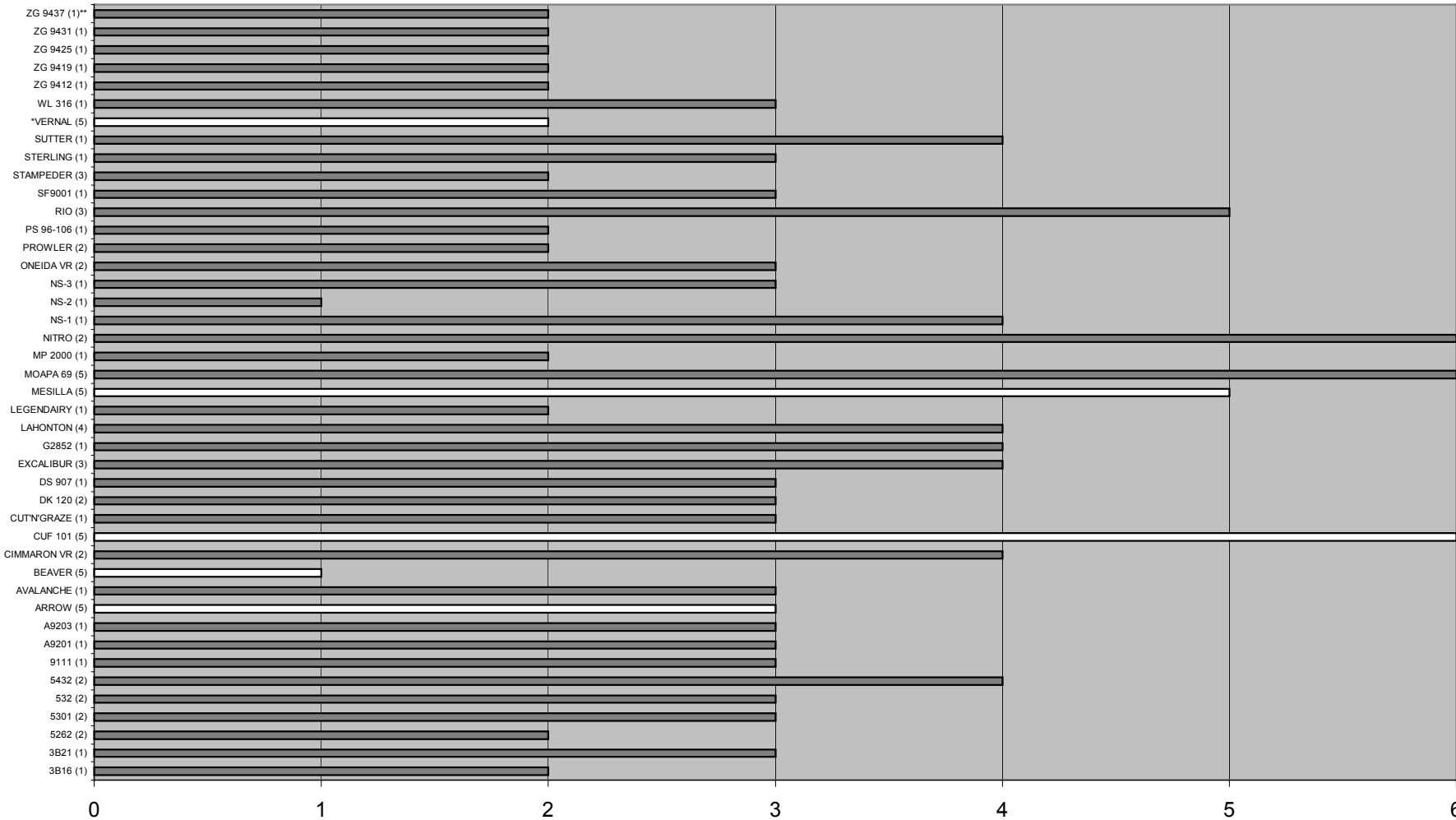
WINTERHARDINESS RATINGS FOR ALFALFA CHECK VARIETIES
ESTABLISHED TESTS 1994 - 2000
 (First Year After Establishment Comparison)

CULTIVAR	WINTER INJURY SCALE: 1 (healthy) – 5 (dead)										TOTAL MB MEAN
	1995 (Est. 1994)		1996 (Est. 1995)		1997 (Est.1996)		1998 (Est. 1997)		2001 (Est. 2000)		
	ARB	CAR	ARB	CAR	ARB	CAR	ARB	CAR	ARB	ROS	
AC CARIBOU	2.1	2.3	1.7	1.6	1.9	1.7	1.9	1.9	2.2	2.8	2.0
ALFAGRAZE	3.9	2.8	1.9	1.9	2.5	1.8	1.9	2.1	-	-	2.4
ALGONQUIN	2.2	2.2	1.6	1.6	1.6	1.7	1.8	2.0	2.4	3.5	2.1
APICA	3.3	2.5	1.8	2.0	2.1	1.8	1.9	2.3	2.4	3.7	2.4
ARROW	3.7	2.9	1.9	2.3	2.6	1.9	2.2	2.4	3.0	3.7	2.7
BEAVER	2.7	2.2	1.7	1.5	1.7	1.6	1.9	1.8	2.2	2.7	2.0
CUF 101	5.0	4.3	4.6	5.0	5.0	4.7	4.0	4.8	4.7	5.0	4.7
MESILLA	4.8	4.4	2.7	4.3	4.8	3.1	2.8	4.1	3.5	4.9	3.9
MOAPA 69	5.0	4.9	4.5	4.9	5.0	4.6	3.5	4.4	4.4	5.0	4.6
OAC MINTO	3.7	2.2	1.9	2.4	1.9	1.7	1.8	2.0	2.6	2.8	2.3
RANGELANDER	2.1	1.7	1.5	1.5	1.7	1.6	1.7	1.8	2.2	2.8	1.9
SARANAC	3.7	2.3	1.8	2.3	2.3	2.0	1.9	2.4	2.5	3.9	2.5
VERNAL	2.9	2.9	1.9	1.8	2.1	1.8	1.9	2.1	2.5	3.6	2.4
MEAN	3.5	3.0	2.3	2.5	2.7	2.3	2.2	2.6	2.9	3.7	
C.V.	14.8	19.2	8.58	9.5	13.5	12.1	11.9	9.3	15.9	12.9	
LSD (0.05)	0.7	0.7	0.2	0.3	0.4	0.3	0.3	0.3	0.6	0.7	

Manitoba Winter Survival Index For Selected Alfalfa Cultivars Listed in Seed Manitoba



Manitoba Winter Survival Index For Registered and Non-Registered Alfalfa Cultivars



Winter Survival Index

*White bars represent check varieties
 ** Number in brackets represents site-years of data

SUMMARY OF ALFALFA YIELDS: 2001 – 2004 DATA NON-REGISTERED VARIETIES

Cultivar	Arborg					ST.PIERRE						NEEPAWA				
	99 WF	00 WF	01 WF	02 WF	03 WF	98 WF	99 WF	00 WF	01 WF	02 WF	03 WF	98 WF	99 WF	00 WF	01 WF	02 WF
	01 02 03	01 02 03	02 03 04	03 04	04	00 01 02	00 01 02	01 02 03	02 03 04	03 04	04	99 00 01	01 02 03	01 02 03	02 03 04	03 04
4241	99 99 87						89 112 105						87 78 90			
4321						107 95 102						93 91 100				
55V05				92 94						100 101						79 118
9603		88 107 96						105 101 100						92 96 100		
Anchor	98 101 98					110 100 100	93 120 94					98 98 103	90 111 108			
C227	108 102 83							100 111 99					100 92 93			
C304	102 103 88						119 110 115						98 87 97			
CW 4223	116 108 102						116 110 113						92 89 101			
CW 5302						105 102 103						110 91 109				
CW 6408	102 103 90						110 113 110						74 87 106			
CW 73038		98 105 93						103 102 102						79 105 104		
DK 124		81 102 91						103 103 99						92 88 101		
DK 134		104 100 85						98 110 102						84 101 103		
DS 233				88 89						103 105						89 107
DS 234				92 97						101 96						76 112
DS 235				105 97						106 107						91 106
DS 236				95 95						106 107						91 118
DS 335					105						90					
DS 336					97						88					
DS 337					92						99					
DS 2000		99 111 95						106 104 102						88 100 101		
DS 9924	101 100 88						118 112 115						87 94 97			
DS 9925	111 106 102						94 110 107						92 103 101			
DS 9928	104 96 104						99 125 112						95 100 101			
DS 9929	99 100 98						108 111 109						92 105 107			

SUMMARY OF ALFALFA YIELDS: 2001 – 2004 DATA NON-REGISTERED VARIETIES

Cultivar	Arborg					ST. PIERRE						NEEPAWA				
	99 WF	00 WF	01 WF	02 WF	03 WF	98 WF	99 WF	00 WF	01 WF	02 WF	03 WF	98 WF	99 WF	00 WF	01 WF	02 WF
	01 02 03	01 02 03	02 03 04	03 04	04	00 01 02	00 01 02	01 02 03	02 03 04	03 04	04	99 00 01	01 02 03	01 02 03	02 03 04	03 04
DS027-BY		102 102 95						100 102 103						89 107 101		
DS028-BY		101 103 100						104 105 104						101 107 104		
DS029-BY		100 98 94						97 97 92						91 107 99		
DS030-BY		92 102 95						93 103 97						89 118 99		
DS380-BY		101 100 97						103 103 102						83 108 112		
EX 101		107 107 102						101 98 99						90 93 98		
LOSAP			91 84 84						99 91 84						73 77 83	
LRC 01CR				98 90						102 101						87 100
NS01DA			101 97 100						104 98 99						90 93 82	
NS01M5			95 103 106						100 92 106						86 90 88	
NS01M7			90 93 99						98 92 100						76 84 90	
NS02CK				101 96						91 101						86 104
Pickseed 3008		83 106 85						108 102 105						81 79 91		
Pickseed 3030	103 108 93						101 104 101						93 97 99			
R801						101 95 101						91 90 93				
R922	98 103 88						97 109 116						91 87 97			
R923	99 103 103						103 122 99						88 87 100			
SL 9900	101 95 90						111 122 108						74 92 101			
SL 9901	101 101 98						110 111 105						95 90 110			
SL 9902	102 88 93						105 105 102						94 96 103			
SW LU8407					90						105					
WL 232HQ						93 100 103						95 83 101				
ZG 9711C						107 110 106						98 92 113				
ZG 9831	109 102 95						106 110 105						95 87 94			

SUMMARY OF ALFALFA YIELDS: 2001 – 2004 DATA REGISTERED VARIETIES

Cultivar	Arborg					ST.PIERRE						NEEPAWA					
	99 WF	00 WF	01 WF	02 WF	03 WF	98 WF	99 WF	00 WF	01 WF	02 WF	03 WF	98 WF	99 WF	00 WF	01 WF	02 WF	
	01 02 03	01 02 03	02 03 04	03 04	04	00 01 02	00 01 02	01 02 03	02 03 04	03 04	04	99 00 01	01 02 03	01 02 03	02 03 04	03 04	
53Q60						104 93 102						95 98 96					
54Q25				105 94						101 107						78 112	
54V46					104						94						
54V54		106 105 101						100 102 104						92 97 106			
AC Blue J		102 96 93	98 93 96	94 97	98			106 95 99	97 100 94	103 101	106			92 100 99	89 98 89	82 98	
AC Longview			106 100 101						96 103 101						93 105 94		
AmeriStand 201+Z						114 94 105						91 86 116					
Beaver	100 100 100	100 100 100	100 100 100	100 100	100	100 100 100	100 100 100	100 100 100	100 100 100	100 100	100	100 100 100	100 100 100	100 100 100	100 100 100	100 100	
Forecast 1001	109 106 97						108 102 105						81 91 92				
Geneva	109 109 104						106 120 111						82 81 94				
Gibraltar	106 99 98						116 119 112						102 91 96				
HybriForce - 400	103 100 92						110 104 107						81 91 92				
Multi 5301						112 94 105						98 93 101					
Pickseed 2065MF	96 102 94						89 111 99						96 91 90				
Rambler	120 99 91	106 97 104	99 102 101	97 95	93	87 94 99	70 110 99	103 100 96	97 88 101	103 100	90	92 87 102	86 98 107	88 109 106	101 96 89	98 106	
Rangelander		106 100 100	104 105 96	99 93	93			103 103 96	97 95 92	107 112	97			100 99 102	101 90 91	98 120	
Spredor 4						107 95 101						93 93 100					
Starbuck			105 105 94						106 91 93						80 86 96		
Stockwell			108 93 103						112 100 100						93 102 94		
WinterGold						93 100 103						94 82 93					

NOTES: All numbers given are percentages of Beaver. For actual yield numbers, see the yield data or yield summary for the particular test.

98 WF Western Forage was seeded in 1998 in Neepawa, and 1999 in St.Pierre

02 WF was seeded in 2002, Arborg, St.Pierre and Neepawa

99 WF was seeded in 1999, in St.Pierre, and in 2000, in Arborg and Neepawa

03 WF was seeded in 2003, Arborg, St.Pierre and Neepawa

00 WF was seeded in 2000, in Arborg St.Pierre and Neepawa

**2001 WF ALFALFA TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JUNE 29	CUT 2 AUG 08	CUT 3 OCT 09
AC BLUE J	96	8413	4148	2806	1459
AC LONGVIEW	101	8809	4617	2876	1317
BEAVER	100	8728	4319	3117	1292
LOSAP	84	7331	3403	2857	1071
NS01DA	100	8735	4420	2949	1367
NS01M5	106	9274	4904	2967	1403
NS01M7	99	8657	4806	2602	1249
RAMBLER	101	8805	4491	3028	1286
RANGELANDER	96	8343	4321	2550	1471
STARBUCK	94	8167	4327	2591	1249
STOCKWELL	103	9018	4739	2703	1576
MEAN		8571	4409	2822	1340
C.V.		9.1	10.9	13.3	22.5
LSD (0.05)		1129	697	541	435

**2001 WF ALFALFA TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL
AC BLUE J	96	6597	96	8413	93	4106	98	7272
AC LONGVIEW	102	7027	101	8809	100	4406	106	7866
BEAVER	100	6870	100	8728	101	4472	100	7410
LOSAP	86	5932	84	7331	84	3708	91	6756
NS01DA	99	6828	100	8735	97	4292	101	7458
NS01M5	101	6955	106	9274	103	4519	95	7072
NS01M7	94	6484	99	8657	93	4097	90	6698
RAMBLER	100	6888	100	8805	102	4492	99	7368
RANGELANDER	101	6877	95	8343	103	4558	104	7731
STARBUCK	101	6853	93	8167	105	4647	105	7746
STOCKWELL	101	7035	103	9018	93	4085	108	8003
MEAN				8571		4307		7398
C.V.				9.1		12.1		11.8
LSD (0.05)				1129		754		1259

**2001 WF ALFALFA TEST NEEPAWA, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JULY 16	CUT 2 AUG 24
AC BLUE J	89	10860	7093	3767
AC LONGVIEW	94	11514	7274	4241
BEAVER	100	12194	8010	4184
LOSAP	83	10177	6481	3696
NS01DA	82	10031	6171	3860
NS01M5	88	10749	6823	3926
NS01M7	90	10926	6819	4107
RAMBLER	89	10899	7425	3474
RANGELANDER	91	11082	7249	3833
STARBUCK	96	11675	7540	4134
STOCKWELL	94	11467	7384	3950
MEAN		11052	7115	3925
C.V.		13.6	17.3	15.7
LSD (0.05)		2168	1782	890

**2001 WF ALFALFA TEST NEEPAWA, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL
AC BLUE J	92	9020	89	10860	98	6940	89	9260
AC LONGVIEW	97	9530	94	11514	105	7402	93	9675
BEAVER	100	9876	100	12194	100	7069	100	10364
LOSAP	78	7742	83	10177	77	5437	73	7613
NS01DA	88	8646	82	10031	93	6555	90	9351
NS01M5	88	8666	88	10749	90	6336	86	8913
NS01M7	83	8247	90	10926	84	5911	76	7904
RAMBLER	95	9382	89	10899	96	6789	101	10459
RANGELANDER	94	9361	91	11082	90	6391	102	10610
STARBUCK	87	8702	96	11675	86	6091	80	8339
STOCKWELL	96	9425	94	11467	102	7219	93	9589
MEAN				11052		6558		9280
C.V.				13.6		7.8		11.4
LSD (0.05)				2168		734		1275

**2001 WF ALFALFA TEST ST.PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JULY 12	CUT 2 AUG 17
AC BLUE J	94	6953	4148	2806
AC LONGVIEW	101	7492	4617	2876
BEAVER	100	7436	4319	3117
LOSAP	84	6260	3403	2857
NS01DA	99	7369	4420	2949
NS01M5	106	7870	4904	2967
NS01M7	100	7409	4806	2602
RAMBLER	101	7520	4491	3028
RANGELANDER	92	6871	4321	2550
STARBUCK	93	6918	4327	2591
STOCKWELL	100	7442	4739	2703
MEAN		7231	4409	2822
C.V.		9.4	10.9	13.3
LSD (0.05)		982	697	541

**2001 WF ALFALFA TEST ST.PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL
AC BLUE J	97	8623	94	6953	100	9012	97	9904
AC LONGVIEW	100	8885	101	7492	103	9335	96	9827
BEAVER	100	8896	100	7436	100	9027	100	10225
LOSAP	91	8195	84	6260	91	8173	99	10153
NS01DA	100	8948	99	7369	98	8802	104	10672
NS01M5	99	8785	106	7870	92	8294	100	10191
NS01M7	97	8571	100	7409	92	8335	98	9969
RAMBLER	95	8438	101	7520	88	7925	97	9869
RANGELANDER	96	8551	92	6871	95	8566	100	10216
STARBUCK	97	8675	93	6918	91	8218	106	10889
STOCKWELL	104	9303	100	7442	100	9008	112	11459
MEAN				7231		8608		10307
C.V.				9.4		8.3		10.1
LSD (0.05)				982		1037		1505

**2002 WF ALFALFA TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JUNE 29	CUT 2 AUG 08	CUT 3 OCT 08
54Q25	94	7067	3581	1742	1743
55V05	94	7077	3382	1908	1788
AC Blue J	97	7284	2894	2186	2204
Beaver	100	7542	3512	2017	2013
DS233	89	6719	3449	1767	1505
DS234	97	7318	3147	1954	2217
DS235	97	7296	3285	2080	1931
DS236	95	7136	3280	1939	1918
LRC 01CR	90	6786	2937	2119	1730
NS02CK	96	7248	3149	1932	2166
Rambler	95	7170	3643	1887	1641
Rangelander	93	7043	3589	1925	1529
MEAN		7140	3321	1955	1865
C.V.		8.4	11.8	16.7	14.2
LSD (0.05)		865	562	469	381

**2002 WF ALFALFA TEST ARBORG, MB
2004 TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL
54Q25	100	5969	94	7067	105	4871
55V05	93	5663	94	7077	92	4248
AC Blue J	96	5823	97	7284	94	4361
Beaver	100	6081	100	7542	100	4620
DS233	89	5384	89	6719	88	4049
DS234	95	5775	97	7318	92	4231
DS235	101	6070	97	7296	105	4844
DS236	95	5768	95	7136	95	4400
LRC 01CR	94	5654	90	6786	98	4522
NS02CK	99	5947	96	7248	101	4645
Rambler	96	5836	95	7170	97	4502
Rangelander	96	5812	93	7043	99	4581
MEAN				7140		4489
C.V.				8.4		11.4
LSD (0.05)				865		738

**2002 WF ALFALFA TEST NEEPAWA, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JULY 16	CUT 2 AUG 24
54Q25	112	12288	7842	4445
55V05	118	13031	8741	4132
AC Blue J	98	10828	6934	3894
Beaver	100	11016	6816	4199
DS233	107	11839	7598	4241
DS234	112	12350	7590	4863
DS235	106	11719	7304	4416
DS236	118	13033	8025	5008
LRC 01CR	100	10962	6998	3964
NS02CK	104	11488	7152	4336
Rambler	106	11724	8040	3684
Rangelander	120	13254	8687	4567
MEAN		11961	7644	4312
C.V.		10.9	14.9	15.6
LSD (0.05)		1879	1639	971

**2002 WF ALFALFA TEST NEEPAWA, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL
54Q25	95	9435	112	12288	78	6581
55V05	99	9855	118	13031	79	6679
AC Blue J	90	8890	98	10828	82	6951
Beaver	100	9750	100	11016	100	8484
DS233	98	9674	107	11839	89	7509
DS234	94	9398	112	12350	76	6446
DS235	99	9741	106	11719	91	7762
DS236	105	10389	118	13033	91	7745
LRC 01CR	94	9151	100	10962	87	7340
NS02CK	95	9404	104	11488	86	7319
Rambler	101	9928	106	11724	96	8131
Rangelander	109	10786	120	13254	98	8317
MEAN				11961		7439
C.V.				10.9		12.2
LSD (0.05)				1879		1307

**2002 WF ALFALFA TEST ST.PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JULY 12	CUT 2 AUG 17
54Q25	107	8125	4665	3460
55V05	101	7709	4606	3103
AC Blue J	101	7650	4280	3369
Beaver	100	7606	4419	3187
DS233	105	8001	4912	3090
DS234	96	7333	4188	4003
DS235	107	8171	4442	3729
DS236	107	8112	4655	3456
LRC 01CR	101	7713	4313	3400
NS02CK	101	7705	4182	3524
Rambler	100	7586	4106	3480
Rangelander	112	8539	4928	3612
MEAN		7854	4475	3451
C.V.		9.4	13.8	10.7
LSD (0.05)		1062	885	530

**2002 WF ALFALFA TEST ST.PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% BEAVER	TOTAL	% BEAVER	TOTAL	% BEAVER	TOTAL
54Q25	104	9036	107	8125	101	9946
55V05	101	8813	101	7709	100	9917
AC Blue J	102	8905	101	7650	103	10160
Beaver	100	8742	100	7606	100	9877
DS233	104	9075	105	8001	103	10149
DS234	99	8667	96	7333	101	10000
DS235	107	9320	107	8171	106	10469
DS236	107	9282	107	8112	106	10451
LRC 01CR	102	8899	101	7713	102	10084
NS02CK	96	8356	101	7705	91	9007
Rambler	102	8892	100	7586	103	10197
Rangelander	110	9561	112	8539	107	10583
MEAN				7854		10070
C.V.				9.4		9.9
LSD (0.05)				1062		1427

**2003 WF ALFALFA TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JUNE 29	CUT 2 AUG 08	CUT 3 OCT 08
3M49	89	10176	4560	2187	4639
54V46	104	11926	5290	2024	4612
AC Blue J	98	11299	5054	2032	4214
Beaver	100	11497	5398	2035	4063
DS 335	105	12014	5197	2274	4544
DS 336	97	11181	5153	2118	3911
DS 337	92	10575	4928	1948	3700
Rambler	93	10701	5537	2387	4379
Rangelander	93	10687	5508	1997	3182
SW LU8407	90	10300	5260	2078	2963
MEAN		11035	5188	2108	4021
C.V.		11.1	5.7	13.0	10.7
LSD (0.05)		1776	429	397	625

**2003 WF ALFALFA TEST ST. PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% BEAVER	TOTAL 2004	CUT 1 JULY 12	CUT 2 AUG 17	CUT 3 OCT 05
3M49	94	10662	5246	3675	1742
54V46	94	10573	5026	3715	1833
AC Blue J	106	11964	6161	4113	1691
Beaver	100	11292	5557	4120	1615
DS 335	90	10153	4752	3961	1440
DS 336	88	9981	4717	4201	2120
DS 337	99	11222	5072	4745	2693
Rambler	90	10169	4963	4025	1181
Rangelander	97	10992	5603	4232	1158
SW LU8407	105	11817	5780	4108	1929
MEAN		10882	5287	4089	1740
C.V.		13.2	13.3	9.1	20.2
LSD (0.05)		2089	1021	543	509

**2002 WF CICER MILKVETCH TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% OXLEY	TOTAL	CUT 1	CUT 2
		2004	JUNE 29	OCT 08
OXLEY	100	3451	2033	1417
LRC 94-1	102	3504	2056	1448
MEAN		3478	2045	1433
C.V.		8.9	8.1	12.6
LSD (0.05)		1087	581	636

**2002 WF CICER MILKVETCH TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% OXLEY	TOTAL	% OXLEY	TOTAL	% OXLEY	TOTAL
OXLEY	100	2897	100	3451	100	2342
LRC 94-1	110	3135	102	3504	118	2765
MEAN				3478		2553
C.V.				8.9		14.8
LSD (0.05)				1087		1323

**2002 WF CICER MILKVETCH TEST ST. PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% OXLEY	TOTAL	CUT 1	CUT 2
		2004	JULY 5	AUG 18
OXLEY	100	5330	4513	817
LRC 94-1	99	5298	4209	1090
MEAN		5314	4361	953
C.V.		4.8	7.2	8.3
LSD (0.05)		902	1101	278

**2002 WF CICER MILKVETCH TEST ST. PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% OXLEY	TOTAL	% OXLEY	TOTAL	% OXLEY	TOTAL
OXLEY	100	4508	100	5330	100	3868
LRC 94-1	101	4630	99	5298	102	3962
MEAN				5314		3915
C.V.				4.8		10.8
LSD (0.05)				902		1487

**2001 WF MEADOW BROMEGRASS TEST ARBORG, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	TOTAL 2004		CUT 1 JUNE 29	CUT 2 OCT 08
	% FLEET			
95MD-2	108	9005	6140	2865
FLEET	100	8379	5727	2652
MEAN		8692	5933	2758
C.V.		8.5	10.3	5.6
LSD (0.05)		1667	1377	348

**2001 WF MEADOW BROMEGRASS TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% FLEET	TOTAL	% FLEET	TOTAL	% FLEET	TOTAL	% FLEET	TOTAL
95MD-2	100	7158	108	9005	93	2121	99	10349
FLEET	100	7038	100	8379	100	2281	100	10455
MEAN				8692		2201		10402
C.V.				8.5		4.1		10.0
LSD (0.05)				1667		201		1479

**2001 WF SMOOTH BROMEGRASS TEST ARBORG, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CARLTON		TOTAL 2004	CUT 1 JUNE 29	CUT 2 OCT 08
CARLTON	100		6680	4501	2178
SFB9001	104		6961	4877	2085
MEAN			6820	4689	2131
C.V.			11.4	12.6	19.9
LSD (0.05)			1745	1329	953

**2001 WF SMOOTH BROMEGRASS TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% CARLTON	TOTAL	% CARLTON	TOTAL	% CARLTON	TOTAL	% CARLTON	TOTAL
CARLTON	100	6493	100	6680	100	2579	100	10219
SFB9001	104	6750	104	6961	104	2688	104	10601
MEAN				6820		2634		10410
C.V.				11.4		4.5		4.1
LSD (0.05)				1745		269		966

**2001 WF MEADOW BROMEGRASS TEST NEEPAWA, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% FLEET	TOTAL 2004	CUT 1 JULY 3
95MD-2	95	5485	5485
FLEET	100	5804	5804
MEAN		5644	5644
C.V.		5.2	5.2
LSD (0.05)		664	664

**2001 WF MEADOW BROMEGRASS TEST NEEPAWA, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% FLEET	TOTAL	% FLEET	TOTAL	% FLEET	TOTAL	% FLEET	TOTAL
95MD-2	103	4406	95	5485	99	4677	116	3056
FLEET	100	4388	100	5804	100	4724	100	2636
MEAN				5644		4700		3172
C.V.				5.2		12.6		13.9
LSD (0.05)				664		1330		819

**2001 WF SMOOTH BROMEGRASS TEST NEEPAWA, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CARLTON	TOTAL 2004	CUT 1 JULY 12
CARLTON	100	8421	8421
SFB9001	94	7947	7947
MEAN		8184	8184
C.V.		2.1	2.1
LSD (0.05)		385	385

**2001 WF SMOOTH BROMEGRASS TEST NEEPAWA, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% CARLTON	TOTAL	% CARLTON	TOTAL	% CARLTON	TOTAL	% CARLTON	TOTAL
CARLTON	100	4721	100	8421	100	2350	100	3393
SFB9001	100	4615	94	7947	109	2567	98	3331
MEAN				8184		2459		3362
C.V.				2.1		14.4		5.9
LSD (0.05)				385		1240		702

**2001 WF MEADOW BROMEGRASS TEST ST.PIERRE, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% FLEET	TOTAL 2004	CUT 1 JULY 12
95MD-2	104	945	945
FLEET	100	909	909
MEAN		927	927
C.V.		7.6	7.6
LSD (0.05)		246	246

**2001 WF MEADOW BROMEGRASS TEST ST.PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% FLEET	TOTAL	% FLEET	TOTAL	% FLEET	TOTAL	% FLEET	TOTAL
95MD-2	98	2117	104	945	94	1951	95	3454
FLEET	100	2208	100	909	100	2075	100	3639
MEAN				927		2013		3547
C.V.				7.6		13.4		18.4
LSD (0.05)				246		946		1298

**2001 WF SMOOTH BROMEGRASS TEST ST. PIERRE, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CARLTON	TOTAL 2004	CUT 1 JULY 12
CARLTON	100	1781	1781
SFB9001	111	1970	1970
MEAN		1876	1876
C.V.		4.2	4.2
LSD (0.05)		277	277

**2001 WF SMOOTH BROMEGRASS TEST ST. PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% CARLTON	TOTAL	% CARLTON	TOTAL	% CARLTON	TOTAL	% CARLTON	TOTAL
CARLTON	100	2508	100	1781	100	2350	100	3393
SFB9001	106	2623	111	1970	109	2567	98	3331
MEAN				1876		2459		3362
C.V.				4.2		14.4		5.9
LSD (0.05)				277		1240		702

**2002 WF ORCHARDGRASS TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% KAY	TOTAL 2004	CUT 1 JULY 14
AC KILLARNEY	110	5165	5165
KAY	100	4685	4685
SOGO1	109	5094	5094
MEAN		4981	4981
C.V.		13.0	13.0
LSD (0.05)		1122	1122

**2002 WF ORCHARDGRASS TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% KAY	TOTAL	% KAY	TOTAL	% KAY	TOTAL
AC KILLARNEY	101	3587	110	5165	91	2008
KAY	100	3449	100	4685	100	2213
SOGO1	112	3817	109	5094	115	2539
MEAN				4981		2254
C.V.				13.0		12.8
LSD (0.05)				1122		498

**2002 WF ORCHARDGRASS TEST NEEPAWA, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% KAY	TOTAL 2004	CUT 1 JULY 16
AC KILLARNEY	135	3716	3716
KAY	100	2761	2761
SOGO1	92	2540	2540
MEAN		3005	3005
C.V.		26.3	26.3
LSD (0.05)		1366	1366

*PLEASE NOTE high CV; use this data with caution.

**2002 WF ORCHARDGRASS TEST NEEPAWA, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% KAY	TOTAL	% KAY	TOTAL	% KAY	TOTAL
AC KILLARNEY	128	2988	135	3716	121	2259
KAY	100	2314	100	2761	100	1866
SOGO1	119	2636	92	2540	146	2732
MEAN				3005		2286
C.V.				26.3		19.4
LSD (0.05)				1366		804

*PLEASE NOTE high CV for 2004; use this data with caution.

**2002 WF ORCHARDGRASS TEST ST.PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% KAY	TOTAL 2004	CUT 1 JULY 12
AC KILLARNEY	123	1447	1447
KAY	100	1180	1180
SOGO1	130	1528	1528
MEAN		1385	1385
C.V.		16.1	16.1
LSD (0.05)		385	385

**2002 WF ORCHARDGRASS TEST ST. PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% KAY	TOTAL	% KAY	TOTAL	% KAY	TOTAL
AC KILLARNEY	108	1489	123	1447	93	1530
KAY	100	1416	100	1180	100	1652
SOGO1	116	1606	130	1528	102	1683
MEAN				1385		1621
C.V.				16.1		12.2
LSD (0.05)				385		342

**2001 WF TALL FESCUE TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% COURTNEY		TOTAL 2004	CUT 1 JUNE 29	CUT 2 OCT 08
COURTNEY	100		4610	2937	1672
MAXIMIZE	104		4789	2883	1906
MEAN			4699	2910	1789
C.V.			9.1	4.7	20.8
LSD (0.05)			957	307	835

**2001 WF TALL FESCUE TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2002	
	% COURTNEY	TOTAL	% COURTNEY	TOTAL	% COURTNEY	TOTAL
COURTNEY	100	7581	100	4610	100	10551
MAXIMIZE	101	7488	104	4789	97	10186
MEAN				4699		10368
C.V.				9.1		8.3
LSD (0.05)				957		1012

**2001 WF TALL FESCUE TEST ST. PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% COURTNEY	TOTAL 2004	CUT 1 JULY 15
COURTNEY	100	1317	1317
MAXIMIZE	99	1303	1303
MEAN		1310	1310
C.V.		25.6	25.6
LSD (0.05)		755	755

*PLEASE NOTE high CV; use this data with caution.

**2001 WF TALL FESCUE TEST ST. PIERRE, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2002	
	% COURTNEY	TOTAL	% COURTNEY	TOTAL	% COURTNEY	TOTAL
COURTNEY	100	1417	100	1317	100	1516
MAXIMIZE	99	1398	99	1303	99	1493
MEAN				1310		1516
C.V.				25.6		18.8
LSD (0.05)				755		637

*PLEASE NOTE high CV for 2004; use this data with caution.

**2003 WF TALL FESCUE TEST ARBORG, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% COURTNEY	TOTAL 2004	CUT 1 JUNE 29	CUT 2 OCT 08
COURTNEY	100	12564	4528	8037
TF 10111	66	8311	3073	5238
UMTF	103	12935	4690	8245
MEAN		11270	4097	7173
C.V.		11.9	13.3	13.7
LSD (0.05)		2310	945	1700

**2003 WF TALL FESCUE TEST ST. PIERRE, MB
2004 FORAGE YIELDS (kg/ha)**

CULTIVAR	% COURTNEY	TOTAL 2004	CUT 1 JULY 15
COURTNEY	100	3603	3603
TF 10111	73	2625	2625
UMTF	113	4055	4055
MEAN		3428	3428
C.V.		14.6	14.6
LSD (0.05)		866	866

**2001 WF TIMOTHY FORAGE TEST ARBORG, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CLIMAX	TOTAL 2004	CUT 1 JUNE 29
BARNEE	77	2693	2693
BARTIMO	92	3210	3210
CLIMAX	100	3481	3481
DOLINA	89	3086	3086
EXPRESS	108	3757	3757
LPHL 458	104	3632	3632
NIKLAS	93	3250	3250
TUNDRA	85	2972	2972
MEAN		3260	3260
C.V.		13.0	13.0
LSD (0.05)		623	623

**2001 WF TIMOTHY FORAGE TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% CLIMAX	TOTAL	% CLIMAX	TOTAL	% CLIMAX	TOTAL
BARNEE	78	1954	77	2693	79	1214
BARTIMO	96	2373	92	3210	100	1535
CLIMAX	100	2506	100	3481	100	1531
DOLINA	85	2167	89	3086	81	1247
EXPRESS	111	2750	108	3757	114	1743
LPHL 458	100	2542	104	3632	95	1451
NIKLAS	87	2241	93	3250	80	1231
TUNDRA	87	2159	85	2972	88	1345
MEAN				3260		1412
C.V.				13.0		21.8
LSD (0.05)				623		455

*PLEASE NOTE high CV for 2003; use this data with caution.

**2001 WF TIMOTHY FORAGE TEST NEEPAWA, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CLIMAX	TOTAL 2004	CUT 1 JULY 15
BARFLEO	90	2817	2817
BARNEE	69	2143	2143
BARTIMO	78	2434	2434
CLIMAX	100	3122	3122
DOLINA	62	1928	1928
EXPRESS	74	2307	2307
LPHL 458	74	2306	2306
NIKLAS	76	2384	2384
TUNDRA	83	2588	2588
MEAN		2448	2448
C.V.		29.2	29.2
LSD (0.05)		1045	1045

*PLEASE NOTE high CV; use this data with caution.

**2001 WF TIMOTHY FORAGE TEST NEEPAWA, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003		2002	
	% climax	TOTAL	% climax	TOTAL	% climax	TOTAL	% climax	TOTAL
BARFLEO	117	3244	90	2817	140	3511	121	3404
BARNEE	91	2556	69	2143	69	1724	135	3800
BARTIMO	89	2484	78	2434	91	2282	97	2737
CLIMAX	100	2813	100	3122	100	2504	100	2812
DOLINA	88	2444	62	1928	99	2490	104	2914
EXPRESS	110	3059	74	2307	115	2869	142	4000
LPHL 458	90	2527	74	2306	85	2124	112	3151
NIKLAS	96	2681	76	2384	100	2497	112	3161
TUNDRA	102	2845	83	2588	121	3038	103	2909
MEAN				2448		2560		3210
C.V.				29.2		28.3		19.4
LSD (0.05)				1045		1068		755

*PLEASE NOTE high CV for 2003 and 2004; use this data with caution.

**2001 WF TIMOTHY FORAGE TEST ST. PIERRE, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CLIMAX	TOTAL 2004	CUT 1 JULY 15
BARNEE	102	5533	5533
BARTIMO	87	4715	4715
CLIMAX	100	5446	5446
DOLINA	94	5142	5142
EXPRESS	100	5454	5454
LPHL 458	90	4878	4878
NIKLAS	94	5098	5098
TUNDRA	94	5142	5142
MEAN		5176	5176
C.V.		19.1	19.1
LSD (0.05)		1455	1455

**2002 WF TIMOTHY FORAGE TEST ARBORG, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CLIMAX	TOTAL 2004	CUT 1 JUNE 29
45-214	98	3872	3872
CHARLTON	91	3604	3604
CLIMAX	100	3942	3942
JONATHON	108	4273	4273
NS2TY	87	3432	3432
MEAN		3824	3824
C.V.		13.1	13.1
LSD (0.05)		774	774

**2002 WF TIMOTHY FORAGE TEST ARBORG, MB
TEST SUMMARY (kg/ha)**

CULTIVAR	TEST AVERAGE		2004		2003	
	% CLIMAX	TOTAL	% CLIMAX	TOTAL	% CLIMAX	TOTAL
45-214	95	2741	98	3872	92	1610
CHARLTON	96	2693	91	3604	101	1781
CLIMAX	100	2851	100	3942	100	1760
JONATHON	111	3140	108	4273	114	2006
NS2TY	87	2478	87	3432	87	1524
MEAN				3824		1736
C.V.				13.1		12.7
LSD (0.05)				774		344

**2002 WF TIMOTHY FORAGE TEST ST. PIERRE, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% CLIMAX	TOTAL 2004	CUT 1 JULY 15
45-214	110	5206	5206
CHARLTON	99	4700	4700
CLIMAX	100	4728	4728
JONATHON	101	4769	4769
NS2TY	92	4348	4348
MEAN		4750	4750
C.V.		19.8	19.8
LSD (0.05)		774	774

**2004 WF ITALIAN RYEGRASS FORAGE TEST ARBORG, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	% MARIS LEDGER	TOTAL 2004	CUT 1 JUNE 29	CUT 2 OCT 08
MARIS LEDGER	100	6896	4083	3835
NS04-101	111	7652	3292	4361
MEAN		7274	3687	4098
C.V.		27.0	3.4	16.5
LSD (0.05)		4423	377	1525

*PLEASE NOTE high CV; use this data with caution.

**2004 WF WESTERWOLD RYEGRASS FORAGE TEST ARBORG, MB
2004 FORAGE YIELD (kg/ha)**

CULTIVAR	%AUBADE	TOTAL 2004	CUT 1 JUNE 29	CUT 2 OCT 08
AUBADE	100	6211	3325	2886
ELUNARIA	104	6464	3449	3015
MEAN		6337	3387	2951
C.V.		6.9	10.8	18.2
LSD (0.05)		984	826	1209

ANNUAL FORAGE TEST SUMMARY 1997-2001

CULTIVAR	SPECIES	% VIRDEN	NO. SITE YEARS
AC ALTA	TRITICALE	87	11
AC ASSINIBOIA	OAT	96	12
AC BACON	HULLESS BARLEY	96	11
AC CERTA	TRITICALE	84	11
AC HAWKEYE	HULLESS BARLEY	96	14
AC LACOMBE	BARLEY	99	14
AC MEDALLION	OAT	97	11
AC PINNACLE	OAT	104	11
BANJO	TRITICALE	87	12
BZ593152	BARLEY	99	12
BZ593159	BARLEY	102	13
CDC FREEDOM	HULLESS BARLEY	92	11
CDC PACER	OAT	102	11
CDC SISLER	BARLEY	96	11
CDC YORKTON	BARLEY	102	12
DUMONT	OAT	98	12
MERIT	BARLEY	101	12
ROBUST	BARLEY	96	12
SANDRO	TRITICALE	85	11
STANDSWELL	TRITICALE	88	13
SOMMERVILLE	BARLEY	95	12
TRAPPER	PEA	90	3
TRIPLE CROWN	OAT	109	11
VICTORIA	PEA	30	2
VIRDEN (AVERAGE YIELD 6968 KG/HA)	BARLEY	100	16
WESTFORD	BARLEY	102	12
WHERO	PEA	53	3
2 BU 4010/.5 BU AC LACOMBE	PEA/BARLEY	108	4
2 BU 4010/.5 BU AC ASSINIBOIA	PEA/OAT	96	4
2 BU 4010/.5 BU SANDRO	PEA/TRITICALE	99	4
.5 BU 4010/2BU AC LACOMBE	PEA/BARLEY	96	4
.5 BU 4010/2 BU AC ASSINIBOIA	PEA/OAT	108	4
.5 BU 4010/2 BU SANDRO	PEA/TRITICALE	96	4
1 BU 4010/1 BU AC LACOMBE	PEA/BARLEY	97	4
1 BU 4010/1 BU AC ASSINIBOIA	PEA/OAT	103	4
1 BU 4010/1 BU SANDRO	PEA/TRITICALE	96	4
40-10	PEA	63	5

2004 WEATHER DATA

(Courtesy of Manitoba Agriculture, Food and Rural Initiatives)

Monthly Number of Growing Degree Days: (Above 5 Degrees Celsius)

MONTH	Arborg	Neepawa	St. Pierre
APRIL	-83	-	-37
MAY	50	-	87
JUNE	256	-	284
JULY	391	-	408
AUGUST	280	-	286
SEPTEMBER	247	-	265

Forage plants have a base temperature below which growth and development will not occur. This base temperature is 5.0 degrees Celsius. Calculating the growing degree-days will demonstrate the amount of daily heat energy useful to the crop. Heat accumulated each day is determined by averaging the daily minimum and maximum temperatures. The base temperature is subtracted from this average; this value represents the daily heat useful to the crop. Results greater than zero are then added to give the weekly GDD accumulated.

Monthly Precipitation: (mm)

MONTH	Arborg	Neepawa	St. Pierre
APRIL	15	-	28
MAY	85	-	153
JUNE	49	-	90
JULY	50	-	85
AUGUST	67	-	140
SEPTEMBER	65	-	89