

## Western Forage Variety Testing System

**Partners:** Alberta Agriculture and Rural Development  
Agriculture and Agri-Foods Canada

### Objectives:

1. To obtain agronomic information on new forage varieties and compare with approved check varieties.
2. To coordinate research with other parts of Alberta, Saskatchewan and Manitoba to provide sufficient data for consideration of variety registration.

### Trial Information:

The Western Forage Variety Testing System (WFTEST) was developed in 1994 as a way to coordinate the research and testing required for registration of forage cultivars across Alberta, Saskatchewan and Manitoba. LARA has been involved with AARD regional forage trials since 1991 and entered the WFTEST in 1995.

Locations across Alberta representing different soil and agronomic zones are used in the WFTEST. The LARA plots are located at Fort Kent and represent area 4. Data is collected throughout the year and sent to AARD for analysis.

### Method:

In 2012, a block of plots were established at the LARA farm in Fort Kent. Alfalfa (9 varieties) plots were seeded on July 17, 2012. Meadow Brome (2 varieties), Tall Fescue (2 varieties), Timothy (3 varieties), Orchard Grass (2 varieties) and Hybrid Brome (2 varieties) were established on June 26, 2012. The plots were seeded using the LARA five-row Fabro zero-till drill in a complete randomized block design to an area of 1.15m by 6m per plot. The legume plots were inoculated and seeded with 50 lbs/ac of 11-52-0-0 and the grass plots were seeded with the recommended rate of 32-11-7-0. All plots were seeded to a depth of 0.5-0.75" except Meadow Brome and Smooth Brome which were seeded to a depth of 1".

No harvest data was collected in the establishment year of both trials. There were some weed issues in the legume plots with broad-leaf weeds (white cockle, Narrow-leafed hawksbeard). The plots were hand weeded once in 2013.

The plots were harvested using the LARA alfalfa-Omega self-propelled forage harvester. A second cut was taken on the alfalfa trials in mid-August. Plot weight was recorded and a sample was taken to determine dry-matter content. Fresh samples were also taken from each variety, frozen and sent to A & L Canada Laboratories for wet chemistry analysis. Statistical analysis was done using ARM 9,  $p = 0.05$ .

### Results:

This was the second year that data was collected on the plots established in 2012. The trials looked excellent in the spring with minimal winter kill occurring in the alfalfa trial. Regrowth was high after harvest on July 22, 2014.

In contrast to the results in 2013, the highest yielding Orchard Grass cultivar was OG426 by 2357 lbs/acre (Table 1). In 2013, Kay out-yielded OG426 by 1171 lbs/acre. After two years of data, OG426 yields, on average, higher than Kay.

**Table 1.** Orchard Grass Data, 2013-2014.

Variety	2014 DM Yield (lbs/acre)		2013 DM Yield (lbs/acre)		Average DM Yield (lbs/acre)	Average DM Yield as % of Kay	2014 Quality			
	CP (%)	TDN (%)	ADF (%)	NDF (%)						
Kay	4891	b	7174	a	6033	100	12.56	65.93	34.38	59.23
OG426	7248	a	6003	a	6626	110	10.51	63.94	37.46	60.59
Average	6070		6589		6329	105	11.54	64.94	35.92	59.91
CV	12.68		6.72							

Hybrid Bromegrass is a fairly common forage developed as a dual purpose hay-pasture grass with high yields similar to Smooth bromegrass coupled with the increased regrowth potential seen in Meadow bromegrass. The highest yielding variety in 2014 (Table 2) remained consistent with the results seen in 2013 with S9478B yielding higher than the check variety AC Knowles.

**Table 2.** Hybrid Bromegrass Data, 2013-2014.

Variety	2014 DM Yield (lbs/acre)		2013 DM Yield (lbs/acre)		Average DM Yield (lbs/acre)	Average DM Yield as % of AC Knowles	CP (%)	TDN (%)	ADF (%)	NDF (%)
	AC Knowles	7875	a	7222	a	7548	100	13.88	72.42	29.13
S9478B	8183	a	7705	a	7944	105	12.56	68.25	32.85	57.42
Average	8029		7464		7746	103	13.22	70.34	30.99	54.44
CV	3.26		8.72							

The highest yielding Meadow bromegrass variety was S9522 (7851 lbs/acre), the highest yielding Tall Fescue variety was Coutenay (6146 lbs/acre) and the highest yielding Timothy variety was AC Pratt at 7375 lbs/acre.

Tall Fescue has not typically been grown in Northern Alberta due to poor winter hardiness. However, recent research has looked into increased winter hardiness and the yields over the last two years indicate that winter kill was minimal.

**Table 3.** Meadow Bromegrass Data, 2013-2014.

Variety	2014 DM Yield (lbs/acre)		2013 DM Yield (lbs/acre)		Average DM Yield (lbs/acre)	Average DM Yield as % of Fleet	2014 Quality			
	CP (%)	TDN (%)	ADF (%)	NDF (%)						
Fleet	7701	a	6078	a	6890	100	15.83	70.27	34.88	47.94
S9522	7851	a	5979	a	6915	100	15.64	70.5	34.18	47.02
Average	7776		6033		6902	100	15.74	70.39	34.53	47.48
CV	5.54		3.03							

**Table 4.** Tall Fescue Data, 2013-2014.

Variety	2014 DM Yield (lbs/acre)		2013 DM Yield (lbs/acre)		Average DM Yield (lbs/acre)	Average DM Yield as % of Couteenay	2014 Quality			
		a		a			CP (%)	TDN (%)	ADF (%)	NDF (%)
Couteenay	6146	a	7270	a	6708	100	17.22	68.24	32.60	48.19
Swaj	5534	a	7505	a	6520	97	15.28	70.09	31.79	50.70
Average	5840		7388		6614	99	16.25	69.17	32.20	49.45
CV	6.76		27.74							

**Table 5.** Timothy Data, 2013-2014.

Variety	2014 DM Yield (lbs/acre)		2013 DM Yield (lbs/acre)		Average DM Yield (lbs/acre)	Average DM Yield as % of Climax	2014 Quality			
		a		a			CP (%)	TDN (%)	ADF (%)	NDF (%)
Climax	6667	a	5918	a	6293	100	15.02	66.31	35.38	53.61
AC Pratt	7475	a	6640	a	7058	112	13.85	67.11	35.46	55.2
ST 1	7028	a	5994	a	6675	106	15.33	70.21	36.33	46.26
Average	7056.667		6184		6675	106	14.73	67.88	35.72	51.69
CV	6.6		15.96							

**Table 6.** Alfalfa Data, 2013-2014.

Variety	2014 DM Yield (lbs/acre)		2013 DM Yield (lbs/acre)		Average DM Yield (lbs/acre)	Average DM Yield as % of Beaver	2014 Quality			
		a		a			CP (%)	TDN (%)	ADF (%)	NDF (%)
Beaver	7587	a	5600	a	6594	100	18.1	56.46	37.41	52.27
AC Blue Jay	6564	a	5535	a	6050	92	17.57	59.37	35.8	47.48
Rambler	6418	a	6089	a	6254	95	16.64	59.06	38.14	50.9
Rangelander	6636	a	5697	a	6167	94	15.98	56.26	43.16	55.85
LRC07 4151L	6483	a	6028	a	6256	95	13.56	56.14	42.75	55.05
AT05	6651	a	5638	a	6145	93	17.19	56.15	38.78	52.64
SC A101	6992	a	5774	a	6383	97	18.57	59.57	35.37	46.89
AC Totem	6376	a	5718	a	6047	92	16.71	54.93	41.45	55.57
AC Manitou	6238	a	5735	a	5987	91	16.84	55.43	42.52	54.05
Average	6661		5757		6209	94	17	57	39	52
CV	11.74		7.47							