

Barley Varieties for Forage Production in the Lakeland

A summary of 10 years of research trials

Forages, both annual and perennial, make up the largest portion of livestock feed on the Canadian prairies. While annual forages are not typically utilized in conventional systems as a grazing resource, they are often heavily used as a preserved forage for winter feeding including greenfeed and silage.

Background

Lakeland Agricultural Research Association (L.A.R.A.) has been growing barley varieties for forage production for the past 10 years to help assess the regional adaptability of each variety.

The trials are seeded prior to May 25 of each year using a zero-till drill with a 9 inch row spacing to a depth of 0.5 to 1 inch. Spring soil tests are used to develop a unique blend fertilizer each year that is side-banded during seeding. Seeding rate is for a targeted 300 plants/m².

Prior to seeding, the trial site is sprayed with a glyphosate based herbicide and one to two in crop herbicide applications are done depending on weed pressure. No fungicides are used.

The barley trials are aimed to be harvested at the soft dough stage with an average moisture content of 65%. The trials are seeded in the MD of Bonnyville, County of St. Paul and Lac La Biche County.

Yield Results

Table 1 summarizes the average yield results from the 2008 growing season to the 2017 growing season. The yields displayed in table 1 should not be used to determine how much a variety will yield, **but rather as a comparison of how one variety will yield in relation to another.**

Table 1. Average yield by location.

Variety	Average Dry Matter Yield		
	St. Paul (ton/ac)	Fort Kent (ton/ac)	Lac La Biche (ton/ac)
CDC Austenson	4.98 ⁷	4.88 ⁷	4.57 ⁴
CDC Cowboy	4.89 ⁹	5.02 ⁹	4.31 ⁶
Busby	4.30 ⁵	4.76 ⁵	4.42 ⁴
Seebe	4.26 ⁷	4.89 ⁷	4.20 ⁶
Ponoka	4.43 ⁷	4.94 ⁷	4.19 ⁶
Vivar	4.10 ⁷	4.84 ⁷	3.92 ⁶
Xena	4.04 ⁷	4.94 ⁷	4.01 ⁶
Trochu	3.74 ⁷	4.65 ⁷	3.62 ⁶
Lacombe	4.14 ³	4.51 ³	4.01 ³
Stockford	3.76 ⁵	4.65 ⁵	3.79 ⁴
Chigwell	4.12 ⁵	4.68 ⁵	4.03 ⁴
Ranger	4.05 ⁸	4.44 ⁸	3.71 ⁶
Sundre	4.23 ⁹	4.32 ⁹	3.80 ⁶
Yorkton	3.25 ⁵	4.33 ⁵	3.37 ⁶
CDC Maverick	5.07 ⁵	5.24 ⁵	4.41 ²
Muskwa	3.77 ²	5.09 ²	3.53 ²
Gadsby	5.58 ⁵	4.45 ⁵	4.27 ²
CDC Coalition	4.74 ⁵	4.20 ⁵	3.39 ²
Conlon	3.80 ⁵	4.11 ⁵	3.01 ³
Champion	5.43 ³	5.27 ³	*
CDC Meredith	5.20 ³	4.18 ³	*
Amisk	5.22 ³	4.10 ³	*
Canmore	5.29 ³	5.04 ³	*
Claymore	6.34 ²	3.75 ²	*
Altorado	6.44 ¹	4.63 ¹	*
Tradition	3.14 ²	4.93 ²	2.84 ³
Standard	2.58 ²	4.10 ²	2.66 ³
Westford	2.76 ¹	4.20 ¹	1.68 ²

* these varieties have never been tested in Lac La Biche County.

indicates the number of years each variety has been tested at a given site.

Quality Results

During harvest, composite samples are taken from each variety, frozen and sent to an accredited laboratory for wet chemistry analysis. The average forage quality results are illustrated in table 2. No significant variations in quality between sites were noted over the past ten years. Therefore, all three site locations

were compiled and averaged for variety comparison.

The data presented should not be used as a replacement for individual crop feed tests. A detailed forage analysis should always be done prior to feeding and a mineral program should be developed to ensure adequate nutrition for your livestock each year.

Table 2. Barley variety quality results.

Variety	CP (%)	ADF (%)	NDF (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
CDC Austenson ²	9.63	29.67	48.03	65.80	0.35	0.16	1.81	0.20
CDC Cowboy ⁹	10.20	26.68	43.82	68.04	0.31	0.21	1.73	0.21
Busby ⁵	10.01	27.04	45.91	67.79	0.42	0.17	0.89	0.16
Seebe ⁷	9.21	31.74	49.15	64.20	0.42	0.18	1.03	0.18
Ponoka ⁷	9.77	27.24	44.42	67.69	0.56	0.15	0.96	0.21
Vivar ⁷	10.55	31.25	50.26	64.56	0.59	0.14	1.14	0.25
Xena ⁷	9.38	29.35	49.75	66.04	0.35	0.16	0.96	0.16
Trochu ⁷	9.52	24.44	39.99	69.87	0.43	0.19	1.20	0.23
Lacombe ³	9.44	26.40	45.60	68.30	0.43	0.14	1.10	0.23
Stockford ⁵	10.07	31.20	53.19	64.60	0.57	0.17	1.09	0.21
Chigwell ⁵	9.68	27.84	45.16	67.22	0.52	0.16	1.18	0.21
Ranger ⁸	9.37	28.71	49.33	66.47	0.51	0.21	1.97	0.25
Sundre ⁹	10.76	30.37	50.75	65.25	0.53	0.17	1.82	0.20
Yorkton ⁵	10.25	30.80	48.61	64.90	0.71	0.25	1.00	0.19
CDC Maverick ⁵	8.77	28.17	46.16	66.96	0.35	0.17	1.57	0.63
Muskwa ²	9.60	28.50	45.06	65.20	0.63	0.17	1.74	0.16
Gadsby ⁵	9.10	30.31	51.34	64.95	0.40	0.15	1.13	0.15
CDC Coalition ⁵	9.82	28.97	48.35	66.33	0.34	0.18	1.76	0.20
Conlon ⁵	8.90	27.97	47.87	67.11	0.41	0.19	1.47	0.19
Champion ³	11.46	30.06	52.82	65.87	0.33	0.39	1.75	0.17
CDC Meredith ³	8.14	30.48	51.56	66.92	0.35	0.27	1.89	0.18
Amisk ³	9.16	28.14	47.69	67.93	0.43	0.22	1.78	0.19
Canmore ³	10.86	29.28	50.18	67.66	0.38	0.28	1.65	0.17
Claymore ²	9.80	32.99	54.35	63.06	0.34	0.16	1.22	0.15
Altorado ¹	11.22	29.58	50.95	65.82	0.30	0.33	1.70	0.18
Tradition ²	12.87	34.35	54.89	56.10	0.61	0.18	1.89	0.23
Stander ²	11.18	37.45	53.70	60.15	0.51	0.17	1.87	0.23
Westford ¹	13.06	33.73	52.65	55.90	0.52	0.19	2.13	0.23

[#] indicates the number of years each variety has been tested.

* CP = Crude Protein, ADF = Acid Detergent Fiber, NDF = Neutral Detergent Fiber, TDN = Total Digestible Nutrients, Ca = Calcium, P = Phosphorous, K = Potassium, Mg = Magnesium

These trials and publication were made possible by:

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