2015 Regional Silage Variety Trials

ANNUAL forages make up a large component of the yearly feed supply for many cattle producers in the form of silage, green feed and swath grazing. Selection of varieties which produce the highest forage yield and/or nutritional quality becomes increasingly important. Silage is an integral forage source in feedlots across the province and has become more prevalent in cow herds as well. With many producers trying to lower production costs, swath grazing of cow herds has increased dramatically in the last few years. It could be argued that there is more grain forage than cereal grain fed to take many market animals from conception to plate.

Participating Organizations

Eight applied research groups performed the project at 12 locations throughout the province.

Battle River Research Group, Forestburg, AB, (780) 582-7308
Chinook Applied Research Association, Oyen, AB, (403) 664-3777
Gateway Research Organization, Westlock, AB, (780) 349-4546
Lakeland Agricultural Research Association, Bonnyville, AB, (780) 826-7260
Smoky Applied Research and Demonstration Association, Falher, AB, (780) 837-2900
West-Central Forage Association, Evansburg, AB, (780) 727-4447
North Peace Applied Research Association, Manning, AB, (780) 836-5230
Peace Country Beef and Forage, Fairview, AB, (780) 836-3354

Major Sponsors

Government of Alberta (ARD) — Fred Young AOF Coordinator
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Alberta Seed Growers' Association
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Trial Information

This is the seventh year the regional silage trials have been conducted by groups across Alberta. The objective of the trials was to determine yield and nutritional values of the various crops and cereal/pulse combinations. The tables below show a summary of data from 2012 through 2015 as compared to the control variety (in bold). Yield of the test varieties are expressed as wet tons/acre (ie. 65 per cent moisture, typical of silage production). Data sets which did not meet minimum quality standards (variance levels) were excluded.

Varieties of barley, oats, triticale and peas commonly used for silage, green feed and swath grazing were included in the trial, as well as new varieties showing good potential for these uses. The cereal trials, (barley, oats and triticale), were seeded at recommended seeding density rates and recommended fertility.

The pulse mixture trial looked at increasing the nutritional value of silage, with a potential side benefit of decreasing future nitrogen costs. The pulse mix plots were seeded with 50 pounds of 11-52-0-0 only, while the monoculture cereal comparison plots were fertilized with 50 per cent of the recommended cereal rates. Peas were seeded at 75 per cent of their recommended seeding rate and cereals at 50 percent when in mixtures.

Test Yield Categories

The defined range for each Test Yield Category is provided in tons per acre. Variety yields are reported as average yields in Low, Medium and High Test Yield Categories for comparison with the check for productivity regimes and environments that may be anticipated. Varieties that are statistically higher (+) or lower (–) yielding than the standard check are indicated. No symbol after the yield figure indicates that there is no statistical difference. Caution is advised when interpreting the data with respect to new varieties that have not been fully tested.

Maturity, plant height and lodging were not measured in the trials as they are extensively reported on in the Cereal RVT program.

To make effective use of the yield comparison tables, producers first need to decide if their target yield for the season fits within the Low, Medium or High Test Yield categories. It should be noted that the indicated yield levels are those from small plot trials, which are often 15 to 20 per cent higher than yields expected under commercial production. Also remember that yield is not the only factor that affects net return. Be sure to consider the other important agronomic and disease resistance characteristics. The genetic yield potential of a variety is often masked by various crop management factors, some of which can be controlled.

Site Information

There were 11 sites across the province, representing various agro-ecological zones. Sites were located near Castor, Stettler, Fort Kent, Lac La Biche, High Prairie, Wildwood, Hanna, Manning, Fairview, St. Paul and Westlock. The pulse mixes were not seeded at all sites. The Fairview site contained only the barley and pulse mix trials.

Yield at most sites was reduced in 2015 due to early season drought conditions. Data from the Manning and High Prairie sites were not reported due to poor growth from lack of moisture and grasshopper pressure.

Nutritional Analysis

Nutrition was assessed using wet chemistry analysis. Full nutritional analysis was done on each sample, but only six nutritional categories are reported: crude protein (CP), total digestible nutrients (TDN) which is an estimation of energy, calcium (Ca), phosphorus (P), potassium (K) and magnesium (Mg).

OATS

Variety	Overall Station Years of Testing	Overall Yield	Area (t/ac) 2	3	4	5	6	Yield Category Low < 7.0 (t/ac)	Medium 7.1-10.0 (t/ac)	High > 10.1 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2015 trials (Yield, significant differences and agronomic data only directly comparable to CDC Baler)																
CDC Baler (t/ac)		**9.9**	**7.9**	**10.7**	**7.8**	**11**	**6.4**	**5.6**	**9.1**	**12.6**	**9.2**	**61.8**	**0.3**	**0.2**	**1.8**	**0.2**
CDC Baler		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
AC Morgan	26	101	101	100	90	98	129	114	95-	101	99	102	100	114	98	96
AC Mustang	27	100	101	97	95	102	105	98	100	101	104	99	98	106	102	100
CDC Haymaker	22	99	110	96	98	97	100	108+	94	100	98	100	99	103	105	99
CDC SO-I	27	95-	84-	102	82-	95	103	96	96	94-	105	103	97	108	97	105
Previously tested varieties: 2012-2014 (Yield, significant differences and agronomic data only directly comparable to Murphy)																
Murphy (t/ac)		**9.5**	**8.7**	**9.2**	**6**	**11.2**	**5.4**	**5.9**	**9.1**	**12.2**	**8.5**	**58.9**	**0.3**	**0.2**	**1.8**	**0.2**
Murphy		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
AC Juniper	18	95	99	97	XX	86-	125	112	83	96	123	107	100	118	101	108
Everleaf	5	89	XX	98	106	67-	XX	104	68	67	118	103	112	110	98	102
Foothills	22	97	99	95	101	96	97	95	94	100	122	103	106	110	100	101
Jordan	21	97	103	92	88	97	112	96	100	96	120	105	100	107	97	114
Waldern	21	100	100	104	94	100	104	98	105	98	112	105	109	106	94	97

BARLEY

Variety	Overall Station Years of Testing	Overall Yield	Area (t/ac) 2	3	4	5	6	Yield Category Low < 8.0 (t/ac)	Medium 8.1-12.0 (t/ac)	High > 12.1 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2015 trials (Yield and agronomic data only directly comparable to CDC Austenson)																
CDC Austenson (t/ac)		**10.5**	**7.2**	**12.1**	**9.7**	**12**	**6.7**	**6.6**	**9.6**	**12.5**	**10.3**	**68.2**	**0.3**	**0.2**	**1.3**	**0.2**
CDC Austenson	**27**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Amisk	15	90-	102	92-	97	88-	79	87	93	91-	105	99	132	104	106	111
CDC Maverick	21	103	108	96	101	104	105	111	101	101	97	98	130	104	98	120
CDC Meredith	8	106	127	106	99	101	XX	127	XX	102	95	95	102	92	99	97
Canmore	8	103	111	99	98	104	XX	111	XX	102	95	97	127	95	93	106
Champion	8	105	116	97	109	105	XX	116	XX	104	99	97	113	94	105	105
Tr12733	8	106	125	102	105	103	XX	125	XX	103	93	93	124	88	103	101
Tr13740	8	104	109	92	112	106	XX	109	XX	103	99	94	114	92	108	96
Varieties tested in the 2012-2014 trials (Yield and agronomic data only directly comparable to Vivar)																
Vivar (t/ac)		**8.9**	**8.5**	**10.2**	**5.9**	**10.3**	**6.3**	**6.1**	**9.5**	**10.8**	**10.5**	**66.2**	**0.4**	**0.2**	**1.3**	**0.2**
Vivar		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Busby	19	101	96	100	91	105+	96	96	97	105	98	100	93	103	97	86
CDC Coalition	19	99	97	95	115	94	108	104	90	97	100	100	78	109	103	84
CDC Cowboy	19	111+	106	106	134	112+	109+	115+	111	109	94	98	92	111	111	98
Chigwell	19	98	84	97	112	94-	106	103	84	98	99	100	108	103	102	96
Conlon	13	92-	72	92	XX	88-	103	96	76	94	91	99	89	109	95	84
Gadsby	19	110+	115	110	122	107	112	116+	110	107	95	100	94	103	97	88
Muskwa	13	95	106	90	XX	91-	101	97	93	95	99	100	111	107	116	101
Ponoka	19	105	95	103	129	105	104	108	96	104	95	99	108	105	101	96
Ranger	13	100	114	99	92	99	98	98	100	101	96	98	108	106	113	102
Seebe	19	105	100	106	118	104	103	107	98	104	101	97	97	111	110	85
Sundre	19	97	99	95	106	95	102	95	95	99	100	99	100	108	112	97
Trochu	18	96	XX	93	94	99	93	92	88	99	98	101	103	111	107	100
Xena	19	103	92	104	108	100	108	107+	92	102	99	100	83	108	98	88

TRITICALE

Variety	Overall Station Years of Testing	Overall Yield	Area (t/ac) 2	3	4	5	6	Yield Category Low < 8.0 (t/ac)	Medium 8.1-12.0 (t/ac)	High > 12.1 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2015 trials (Yield and agronomic data only directly comparable to Taza)																
Taza (t/ac)		**10.6**	**9.7**	**12.3**	**8.5**	**10.7**	**8.9**	**6.4**	**10.8**	**14.2**	**8.9**	**62.7**	**0.2**	**0.2**	**1.3**	**0.1**
Taza	**30**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
AAC Chiffon	8	111	124	123	118	92	126	105	113	114	97	101	88	97	106	108
AAC Innova	8	104	121	119	123	83	102	95	107	107	108	100	87	106	109	107
AAC Ryley	8	97	108	104	87	87	110	86	100	101	103	100	95	106	89	117
Pasteur	8	94	110	96	97	84	103	91	99	91	107	103	96	99	107	117
Sadash	8	102	111	102	109	91	121	101	108	97	99	99	88	91	110	105
Sunray	23	98	93	100	101	99	96	95	100	96	104	104	106	100	105	104
Tyndal	29	98	97	105	109	95-	96	101	98	98	103	101	102	103	98	105
Varieties tested in the 2012-2014 trials (Yield and agronomic data only directly comparable to Pronghorn)																
Pronghorn (t/ac)		**10.4**	**11.9**	**11.5**	**5.2**	**10.5**	**8.2**	**6.6**	**10.7**	**14.5**	**9.3**	**62.4**	**0.2**	**0.2**	**1.5**	**0.1**
Pronghorn	**21**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Bunker	21	98	89	92	101	102	98	98	99	94	103	98	116	98	93	110