AGRI-FACTS
Practical Information for Alberta's Agriculture Industry

January 2017 Agdex 120/32-1

Silage Varieties for Alberta

An important component of the annual feed supply for Alberta's cattle producers comes in the form of silage, green feed and swath grazing. It could be argued that there is more grain forage than cereal grain fed to take many market animals from conception to plate.

Selection of annual crop varieties that produce the highest forage yield and/or nutritional quality becomes increasingly important.

Participating organizations

- 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
- Mackenzie Applied Research Association, Fort Vermilion, AB 780-927-3776
- North Peace Applied Research Association, Manning AB, 780-836-5230
- Peace Country Beef and Forage, Fairview, AB, 780-836-3354
- Smoky Applied Research and Demonstration Association, Falher, AB, 780-837-2900
- West-Central Forage Association, Evansburg, AB, 780-727-4447

Select crop varieties that produce high forage yield and/or nutritional quality

Major sponsors

- Government of Alberta, Agriculture and Forestry: Doug Mcaulay, Agriculture Opportunity Fund Co-ordinator
- A & L Canada Laboratories Inc.
- Davidson Seeds, Degenhardt Farms, Dyck Seed Farm, Kevin Elmy, Fabian Seeds, Lindholm Seed Farm, Mastin Seeds, Solick Seeds, H. Warkington

Trial information

Applied research and forage associations performed regional silage trials at 8 locations throughout the province in 2016. Data from additional sites grown during the past five years has been included in the variety summaries below. The trials are intended to determine yield and nutritional values of various cereal crops and cereal/pea combinations.

The tables below show a summary of data from 2012 through 2016 as compared to the control variety (in bold). Yield of the test varieties are expressed as wet tons/acre (i.e. 65% moisture, typical of silage production). Data sets that did not meet minimum quality standards and 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. The cereal trials (barley, oats and triticale) were seeded at recommended seeding density rates with 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, while the monoculture cereal comparison plots were fertilized with 50 percent of the recommended fertilizer rates. Peas were seeded at 75 percent of their recommended seeding rate and cereals at 50 percent when in mixtures.

Growing conditions at the trial sites in 2016 ranged from dryer than normal to excessive moisture.

Maturity, plant height and lodging were not measured in the trials as these factors are reported in the Cereal Regional Variety Testing (RVT) program tables in the *Varieties of Cereal and Oilseed Crops* for Alberta factsheet, Agdex 100-32.

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. This presentation allows for comparison with the check when growing conditions, management regimes or target yields are anticipated to be of low, medium or high productivity.

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.

It should also 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. As yield is not the only factor that affects net return, other important agronomic and disease resistance characteristics should be considered. The genetic yield potential of a variety can be influenced by various management and environmental factors.

Nutritional analysis

Nutrition was assessed using NIRS for macro-nutrient assessments and wet chemistry for the micro-nutrients. Full nutritional analysis was done on each sample; however, only six nutritional categories are reported:

- crude protein (CP)
- total digestible nutrients (TDN), an estimate of energy
- calcium (Ca)
- phosphorus (P)
- potassium (K)
- magnesium (Mg)

More information

For additional information, including varieties not listed in this publication, please call the Alberta Ag-Info Centre toll-free at 310-FARM (3276), or check the Alberta Agriculture and Forestry website at agriculture.alberta.ca/rvt

Variety tables

Crop **Page**

01/17

B A R L E Y

Variety	Overall Yield	Overall Station Years of Testing	Area: 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 2016 trials (Yield and agronomic data only directly comparable to CDC Austenson)																
CDC Austenson (t/ac)	10.8		11.8	12.1	11	11.5	8	6.7	9.3	12.8	10.1	67.9	0.3	0.2	1.3	0.2
CDC Austenson	100	35	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Amisk	90-	23	102	92-	91	88-	83-	85	93	90-	104	99	132	106	107	109
CDC Coalition	92-	27	92	93	92	86-	102	92	92	92-	102	100	104	107	106	99
CDC Cowboy	102	27	102	103	98	103	100	106	99	100	95	98	117	107	110	115
CDC Maverick	103	29	105	96	96	104	108	111+	102	101	95	98	123	106	96	116
CDC Meredith	102	16	114	106	93	99	103	111	102	100	95	97	97	98	101	91
Canmore	98	16	105	99	93	99	97	101	93	99	100	99	119	103	98	104
Champion	102	16	104	97	100	102	106+	106	101	101	98	99	105	97	104	100
Claymore	100	16	114	102	97	100	94	106	87	103	93	96	122	93	98	100
Conlon	86-	21	82	95	86	79-	92	80-	80-	91-	99	101	128	111	101	104
Gadsby	100	27	103	106	94	100	101	104	101	98	95	99	129	99	100	103
Sundre	92-	27	97	93	87-	88-	96	86-	96	93-	102	99	134	104	114	115
TR13740	100	16	103	92	99	99	107	95	99	101	99	97	105	97	104	92
Previously tested varieties (Yield and agronomic data only directly comparable to CDC Austenson)																
Busby	93-	19	91	98	71	96	88	86-	95	97	105	99	128	100	100	103
Chigwell	90-	19	80	95	87	86-	97	91-	82-	91-	106	99	152	101	105	116
Muskwa	90-	13	101	93	XX	86-	91	86-	91	91-	114	100	167	107	121	127
Ponoka	96	19	90	100	100	96	95	96	94	97	101	99	148	103	104	115
Ranger	95	13	104	99	XX	96	88	85-	97	99	109	98	171	101	128	131
Seebe	96-	19	95	103	92	95-	95	95	96	97	109	96	136	109	113	103
Trochu	88-	18	XX	91	73	91-	85-	82-	89	92-	103	101	139	107	109	119
Vivar	93-	19	95	99	78	92-	93	90-	98	93	108	100	144	99	104	123
Xena	95-	19	87	101	84	92-	101	96	90	95	106	99	111	105	102	106

OATS

Variety	Overall Yield	Overall Station Years of Testing	Area: 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 2016 trials (Yield, significant differences and agronomic data only directly comparable to CDC Baler)																
CDC Baler (t/ac)	10.1		12.4	10.7	8.6	10.8	8	5.8	9.1	12.9	9.3	61.7	0.3	0.2	1.8	0.2
CDC Baler	100	33	100	100	100	100	100	100	100	100	100	100	100	100	100	100
AC Juniper	94-	23	91	98	98	87	103	111	84-	93	101	102	92	112	102	106
AC Morgan	100	32	102	100	92-	96	114	108	96-	101	99	101	100	114	99	97
AC Mustang	98	33	99	97	95	100	97	95	97	100	103	99	99	106	102	99
CDC Haymaker	99	28	105	96	100	97	99	105	94	100	97	100	98	100	104	98
CDC Seabiscuit	94	6	91	XX	108	78	96	78	96	99	96	100	89	94	100	100
CDC SO-1	94-	33	84	102	88	93-	96	92	94	95-	103	102	96	105	97	104
Derby	96	6	100	XX	106	89	94	89	93	101	89	100	98	99	100	110
Murphy	103	27	106	104	102	103	103	104	104	102	91	95	95	96	102	99
Waldern	104	26	100	104	98	101	115	101	112+	99	93	99	105	106	94	99
Previously tested varieties (Yield, significant differences and agronomic data only directly comparable to CDC Baler)																
Everleaf	94	5	XX	113	106	72	XX	108	76	67	96	98	105	97	110	92
Foothills	99	21	103	95	101	99	103	99	96	102	99	98	103	103	102	100
Jordan	100	20	107	92	88	100	121	102	102	96	97	100	96	105	97	112

PULSE MIXTURES

Variety	Overall Yield	Overall Station Years of Testing	Area: 2	3	4	5	6	Yield Category: Low < 8.0 (t/ac)	Medium 8.1 - 10.0 (t/ac)	High > 10.1 (t/ac)	Nutritional Data: CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2016 trials (Yield and agronomic data only directly comparable to CDC Austenson)																
CDC Austenson (t/ac)	**7.4**		**5.3**	**XX**	**XX**	**7.2**	**8.7**	**5.2**	**8.9**	**XX**	**10**	**65.9**	**0.3**	**0.2**	**1.4**	**0.2**
CDC Austenson	**100**	**5**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
CDC Baler	116	5	111	XX	XX	108+	126	111+	119	XX	95	96	113	110	106	124
Taza	109	5	110	XX	XX	104	114	109	110	XX	86	96	77	104	103	89
CDC Austenson/CDC Horizon	105	5	109	XX	XX	100	107	108	102	XX	101	97	156	102	111	133
CDC Austenson/CDC Meadow	101	5	105	XX	XX	96	104	104	99	XX	113	77	165	106	106	164
CDC Baler/CDC Horizon	101	5	111	XX	XX	102	96	113	94	XX	109	94	173	101	123	145
CDC Baler/CDC Meadow	103	5	105	XX	XX	102	103	108	100	XX	107	96	164	105	120	144
Taza/CDC Horizon	108	5	96	XX	XX	105	119	104	111	XX	116	96	179	106	106	137
Taza/CDC Meadow	100	5	99	XX	XX	97	104	104	98	XX	101	95	194	98	103	145
Varieties tested in the 2012 - 2014 trials (Yield and agronomic data only directly comparable to Vivar)																
Vivar (t/ac)	**8.6**		**7.9**	**11.2**	**4.4**	**9**	**8**	**5.8**	**9.7**	**10.3**	**9.4**	**63.5**	**0.5**	**0.2**	**1.2**	**0.2**
Vivar	**100**	**19**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Murphy	119+	18	102	106	158	123+	100	129	108	125+	88	94	77	99	129	88
Pronghorn	111	19	98	96	109	116	114	106	105	122	96	101	63	105	103	75
Murphy/40-10	105	12	XX	90	132	102	92	122	86	113	142	98	161	129	117	141
Pronghorn/40-10	104	12	XX	97	112	105	93	110	88	122	125	98	150	115	103	134
Vivar/40-10	97	12	XX	68	108	92	121	114	84	97	140	98	170	107	108	141
Murphy/CDC Horizon	112	19	82	106	144	113	102	121	97	120+	114	94	130	100	124	114
Pronghorn/CDC Horizon	111	19	85	98	133+	111	117	120	101	112	125	98	143	105	105	106
Vivar/CDC Horizon	98	19	94	99	112	96	94	103	87-	105	128	97	162	101	107	116
Murphy/CDC Meadow	105	7	74	105	XX	117+	103	96	94	119+	104	95	116	101	123	95
Pronghorn/CDC Meadow	101	7	81	91	XX	109	118	107	95	101	122	99	124	113	105	95
Vivar/CDC Meadow	99	7	92	94	XX	104	98	101	98	98	115	100	187	89	98	119

TRITICALE

Variety	Overall Yield	Overall Station Years of Testing	Area: 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 2016 trials (Yield and agronomic data only directly comparable to Taza)																
Taza (t/ac)	10.7		12.3	12.3	8.8	10.4	9.5	6.3	10.7	14.5	8.8	62.8	0.2	0.2	1.3	0.1
Taza	100	37	100	100	100	100	100	100	100	100	100	100	100	100	100	100
94I043057	100	7	103	XX	110	93	101	89	103	100	106	102	91	102	90	108
Bunker	99	29	99	93	111+	99	100	106	98	98	103	99	111	96	97	115
Sunray	101	30	97	100	105	100	105	99	102	100	104	104	105	103	103	109
Tyndal	99	36	98	105	109	96-	96	100	98	99	103	101	101	102	97	105
Previously tested varieties (Yield and agronomic data only directly comparable to Taza)																
AAC Chiffon	111	8	124	123	118	92	126	105	113	114	97	101	88	97	106	108
AAC Innova	104	8	121	119	123	83	102	95	107	107	108	100	87	106	109	107
AAC Ryley	97	8	108	104	87	87	110	86	100	101	103	100	95	106	89	117
AC Ultima	103	7	104	98	120	100	XX	109	100	104	110	100	101	93	97	122
Pasteur	94	8	110	96	97	84	103	91	99	91	107	103	96	99	107	117
Pronghorn	102	21	107	103	114	99	101	108+	99	103	103	100	102	99	109	106
Sadash	102	8	111	102	109	91	121	101	108	97	99	99	88	91	110	105