2013 Regional Silage Variety Trials

CATTLE producers grow ever-increasing amounts of annual crops for feed (silage, green feed and swath grazing), and measuring those that produce the highest forage yield 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 also be argued that there is more grain forage than cereal grain fed to take a market animal from conception to plate.

Participating Organizations

Under the umbrella of the Agricultural Research and Extension Council of Alberta, eight applied research groups performed the project at twelve locations throughout the province.

- Agricultural Research and Extension Council of Alberta, Sherwood Park, Alta., (780) 416-6046
- Battle River Research Group, Forestburg, Alta., (780) 582-7308
- Chinook Applied Research Association, Oyen, Alta., (403) 664-3777
- Gateway Research Organization, Westlock, Alta., (780) 349-4546
- Lakeland Agricultural Research Association, Bonnyville, Alta., (780) 826-7260
- Smoky Applied Research and Demonstration Association, Falher, Alta., (780) 837-2900
- West Central Forage Association, Evansburg, Alta., (780) 727-4447
- North Peace Applied Research Association, Manning Alta., (780) 836-5230
- Peace Country Beef and Forage, Fairview, Alta., (780) 835-6799

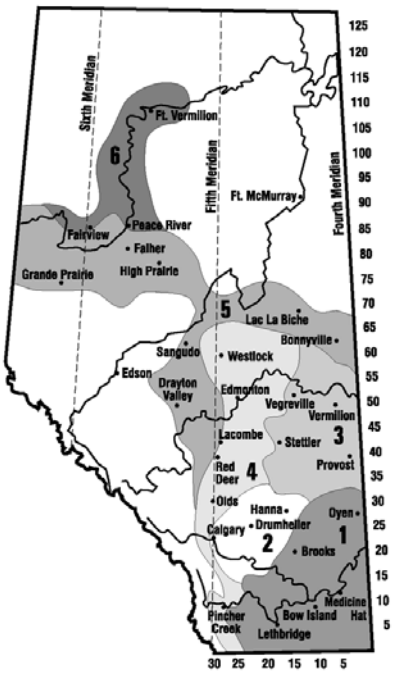
Major Sponsors

- Government of Alberta (ARD)
- A & L Canada Laboratories Inc.
- Association of Alberta Co-op Seed Cleaning Plants
- Alberta Seed Growers' Association

Trial Information

This is the fifth year the groups have conducted forage testing of various varieties. The tables show the summaries from the last two years as compared to the control variety (in bold). Test yield categories are similar to the crop variety tables and are further explained below.

Varieties of barley, oats, triticale and peas commonly used for silage, greenfeed 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 at recommended



fertility; and its objective was to determine yield and nutritional values. The pulse mixture trial looked at increasing the nutritional value of silage, as well as decreasing nitrogen costs. Thus, 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 per cent when in mixtures. The monoculture cereal comparison plots were seeded at 100 per cent the recommended seeding rate.

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.

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 12 sites across the province, representing various agrological zones. Sites were located near Castor, Stettler, Fort Kent, High Prairie, Evansburg, Hanna, Manning, Fairview, St. Paul, Stony Plain and Neerlandia. The Fairview site only seeded the barley trial. Maturity, plant height and lodging were not measured in the trials as it was felt that most have already gone through the Cereal RVT program, and have been extensively reported on.

Nutritional Analysis

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

TRITICALE

Variety	Overall Yield	Overall Station Years of Testing	Yield Category (% Pronghorn) Low < 3.0 (t/ac)	Medium 3.0-4.5 (t/ac)	High > 4.5 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2012-2013 trials (Yield and agronomic data only directly comparable to Pronghorn)											
Pronghorn (t/ac)	**4.4**		**2.9**	**3.9**	**5.3**	**9.6**	**62.7**	**0.2**	**0.2**	**1.5**	**0.1**
Pronghorn	**100**	**17**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Bunker	100	17	99	104	98	95	98	118	94	97	104
Sunray	101	8	86	103	102	103	99	121	99	102	94
Taza	100	17	105	98	100	99	101	112	107	95	98
Tyndal	95-	17	89	96	97	94	99	102	102	94	94

BARLEY

Variety	Overall Yield	Overall Station Years of Testing	Yield Category (% Vivar) Low < 2.0 (t/ac)	Medium 2.0-4.0 (t/ac)	High > 4.0 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2012-2013 trials (Yield and agronomic data only directly comparable to Vivar)											
Vivar (t/ac)	**4.3**		**1.5**	**3.1**	**5.3**	**10.4**	**66.2**	**0.4**	**0.2**	**1.3**	**0.2**
Vivar	**100**	**17**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Busby	101	17	101	99	102	101	99	100	103	98	92
CDC Austenson	111+	17	125	108	111	108	100	87	105	108	94
CDC Coalition	101	17	97	103	100	104	100	82	104	104	88
CDC Cowboy	110+	17	133	108	109	98	97	100	107	114	105
CDC Maverick	99	7	XX	106	94	97	97	97	104	109	101
Chigwell	96	17	104	96	96	104	97	109	100	106	100
Conlon	94	7	XX	101	88	98	98	86	107	97	88
Gadsby	110+	17	148	105	110	100	99	101	106	98	97
Muskwa	99	7	XX	103	97	104	97	104	103	124	97
Ponoka	106	17	120	100	109	97	98	118	107	106	98
Ranger	101	7	XX	96	104	101	99	103	115	125	104
Seebe	105	17	118	103	106	109	97	103	118	115	91
Sundre	96	17	102	97	95	107	98	104	108	120	103
Trochu	96	17	112	92	97	105	100	108	108	111	107
Xena	105	17	111	108+	103	104	100	82	116	98	89

OATS

Variety	Overall Yield	Overall Station Years of Testing	Yield Category (% Murphy) Low < 2.0 (t/ac)	Medium 2.0-4.0 (t/ac)	High > 4.0 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2012-2013 trials (Yield and agronomic data only directly comparable to Murphy)											
Murphy (t/ac)	**3.7**		**1.5**	**3.3**	**4.5**	**8.9**	**59.4**	**0.3**	**0.2**	**1.9**	**0.2**
Murphy	**100**	**17**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
AC Juniper	103	12	108	97	109	126	104	104	110	105	108
AC Morgan	104	17	97	102	108	116	106	107	109	95	96
AC Mustang	98	17	108	93	104	130	104	104	105	100	101
CDC Baler	98	17	93	95	103	129	105	108	109	105	101
CDC Haymaker	101	9	XX	99	104	128	104	108	107	111	98
CDC So-i	95	17	89	91	101	123	105	105	94	106	106
Foothills	101	17	111	94	108	121	102	102	103	101	98
Jordan	100	17	100	95	107	122	103	99	99	104	109
Waldern	103	17	126	101	102	113	103	117	98	98	99

PULSE MIXTURES

Variety	Overall Yield	Overall Station Years of Testing	Yield Category (% Vivar) Low < 2.0 (t/ac)	Medium 2.0-4.0 (t/ac)	High > 4.0 (t/ac)	Nutritional Data CP (%)	TDN (%)	Ca (%)	P (%)	K (%)	Mg (%)
Varieties tested in the 2012-2013 trials (Yield and agronomic data only directly comparable to Vivar)											
Vivar (t/ac)	**4.1**		**2.5**	**3.5**	**5.3**	**9.6**	**63.1**	**0.5**	**0.2**	**1.5**	**0.2**
Vivar	**100**	**18**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Murphy	117	17	129	119	92	91	95	85	103	122	97
Pronghorn	112	18	109	116	108	106	103	61	116	96	80
40-10 /Murphy	96	18	105	97	75	130	98	153	122	119	133
40-10 /Pronghorn	95	18	99	94	92	125	97	148	117	103	126
40-10 /Vivar	94	18	101	94	83	143	99	174	112	106	137
CDC Horizon/Murphy	107	18	117	107	89	109	95	129	103	118	117
CDC Horizon/Pronghorn	106	18	112	108	89	127	99	136	109	104	110
CDC Horizon/Vivar	95	18	96	99	81	134	99	146	111	105	121