Crop Varieties for Irrigation

Canada-Saskatchewan Irrigation Diversification Centre

Cereals

Oilseeds

Pulses

Forages

Specialty Crops

January 2006

Canada

ICDC
Irrigation Crop Diversification Corporation

Saskatchewan

Canada-Saskatchewan
Irrigation
Diversification
Centre

The Canada-Saskatchewan Irrigation Diversification Centre (CSIDC) is managed and funded by the federal and provincial governments, and by industry. The federal contribution is provided by Agriculture and Agri-Food Canada. The provincial partner is Saskatchewan Agriculture and Food (SAF). Industry is represented by the Irrigation Crop Diversification Corporation (ICDC) and the Saskatchewan Irrigation Projects Association (SIPA).

The goal of CSIDC is to promote economic security and sustainable rural development primarily through diversified cropping and more intensive management of irrigated cropland.

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Canada

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Saskatchewan

Using the Variety Guide

Introduction

The yield comparison tables are compiled from irrigated yield tests conducted by the Canada-Saskatchewan Irrigation Diversification Centre (CSIDC). The data used in the tables are from irrigated co-operative (pre-registration) trials, regional yield trials, agronomic and observational trials, and producer funded yield trials.

The trials are conducted on small replicated plots using specialized plot equipment. A high level of management is applied to eliminate differences caused by soil variability, weed pressure, or disease. The aim is to make conditions as uniform as possible so that yield differences are due to the varieties themselves, and not some other factor. The yield of small, uniform plots is generally greater than field yields; however, the relative ranking of varieties will be the same. Emphasis is placed on testing those varieties with good lodging tolerance, suitable disease resistance, and ease of harvest under irrigated production.

Crop varieties respond differently from year to year. The highest yielding variety one year may be one of the lowest yielding in another year (for example, it may mature late and be at risk of frost). Choosing the highest yielding variety is no guarantee that it will give the highest yield for this season, or for your farm. Selecting one of the higher ranked varieties may be suitable, especially if some other characteristic, such as disease resistance or early maturity, is desired.

Interpreting the Tables

Site years

One site year is a test performed for one year at one site. A test conducted over 10 years at one site, or one year at 10 sites equals 10 site years in both cases. Results from less than six site years are reported for those cases where data is limited and producer interest in those crops is high.

Relative yield of varieties

All varieties are compared as a percent of a standard “check” variety. This variety is included in all tests. All other varieties are compared to it. This allows comparisons from year to year, from site to site, and from test to test.

A well-run test performed over a large number of site years can detect yield differences of 2 or 3 percent. Consider four varieties that yield 108, 107, 106, and 102 percent of the check. The top three have produced comparable yields, and will outyield the fourth. Where site years are limited, varieties within 6 or 8 percent cannot be said to be different based on the available data. Further testing will then be needed to rank the varieties more precisely.

Lodging ratings

Lodging ratings are reported on a four point subjective scale. Varieties within the same lodging class will have had similar lodging ratings on the 1 to 9 scale used previously. The ratings are based on both numerical ratings and on general field observations throughout the growing season. Lodging varies widely from year to year and from site to site.

Interpreting the Tables (continued)

Lodging ratings are subjective, based on the judgement of the researcher. The rankings at CSIDC have been performed using a consistent method wherever possible. This improves the accuracy of the ranking of the varieties, but does not predict results for any given year, field, or level of management.

Agronomic information

Agronomic information includes plant height, days to flowering or maturity, seed size and quality measurements. Crop height, for example, varies widely from year to year. Therefore, the agronomic information is useful only as a comparison between varieties. Find a variety you are familiar with and compare others to it to determine whether it is likely to be different.

Disease ratings

CSIDC does not routinely collect disease ratings for each variety. **Please consult Varieties of grain crops 2006, a publication of Saskatchewan Agriculture and Food, for detailed disease ratings of specific varieties.**

A Word of Caution

Occasionally the comparison with the check variety can be misleading. In some years the check may have an exceptionally low or high yield, skewing the rankings. For example, a new variety with limited site years of data (compared to the long term check) may rank unusually high if the check performed much worse than average during one year. Further testing will even out the variability and the ranking of the varieties will more closely reflect performance in the field.

Management practices may have a greater impact on yield than choice of variety. For example, seeding date experiments for irrigated flax show a 20 percent yield reduction for late May seeding as compared to early May. This 20 percent spread is greater than the yield difference between flax varieties.

Plant Breeder's Rights

Plant Breeders' Rights (PBR) ensure that private sector and institutional crop breeders are afforded reasonable control of their varieties and fair compensation for their efforts. Plant breeders may apply under the Plant Breeders' Rights Act to obtain certain controls over seed increase and seed sales of their varieties.

Sale or any other transfer of ownership of seed protected under the act is prohibited without the written permission of the breeder or the breeder's agent, and without payment of a royalty to the breeder or the agent. Under PBR, bona fide farmers are allowed to keep seed of the variety for use on their own farms only.

PBR
Progress through Research

Varieties for which Plant Breeders' Rights are in effect at the time of printing are identified by the symbol PBR. Varieties for which Plant Breeders' Rights have been applied for are identified by the symbol ❁.

For more detailed information on specific varieties, refer to the Saskatchewan Agriculture and Food publication Varieties of grain crops 2006.

Canola (*B. napus*)

Variety	Herbicide Tolerance	Varietal Kind	Site years	Yield as % of 46A65	Lodging rating	Height (cm)	Days to maturity
5030	LL	HYB	10	135	VG	138	98
45H24	RR	HYB	6	133	G	127	98
5070	LL	HYB	10	132	VG	132	99
45H21	RR	HYB	15	126	G	123	99
1841	RR	HYB	14	126	VG	131	98
5020	LL	HYB	10	123	VG	118	97
1818 ❁	RR	OP	6	122	G	109	98
45H72	CL	HYB	6	121	G	127	98
46H02	conventional	HYB	12	119	G	119	99
v1031*	RR	HYB	10	119	F	127	98
SP 451 RR	RR	HYB	5	118	G	119	96
SP Desirable RR	RR	S	9	116	G	118	96
46H70	CL	HYB	6	115	G	125	99
v1030*	RR	HYB	9	114	G	126	97
Prairie 719RR	RR	OP	5	111	G	116	98
SW GladiatoRR	RR	S	10	109	G	122	97
46H23	RR	HYB	13	107	G	120	98
Nex 830 CL*	CL	OP	5	106	G	125	100
34-55	RR	OP	9	105	G	121	98
1849	RR	OP	8	104	VG	118	98
AV 9505	RR	HYB	8	103	G	134	100
SP Banner	RR	OP	10	101	G	119	98
IMC209RR*	RR	OP	5	101	G	127	100
46A65	conventional	OP	15	100	G	118	99
35-85	RR	OP	7	97	G	122	99
SW 6802	RR	S	6	96	F	121	97
Nex 824 CL*	CL	OP	5	92	F	119	100
SP Craven	RR	OP	5	89	F	114	98
Millennium 03**	conventional	OP	7	83	P	111	97

Average plot yield of 46A65 (check): 3,700 kg/ha (66 bu/ac)

LL = Liberty Link CL = CLEARFIELD RR = Roundup Ready
HYB=Hybrid S=Synthetic OP=Open Pollinated
Lodging: P = poor F = fair G = good VG = very good

PBR in effect
❁ PBR applied for
* Low linolenic variety
** High Erucic Acid Rapeseed

Grow varieties that are resistant to blackleg. The use of treated, laboratory certified blackleg-free seed in a minimum four year rotation (three rotation crops between canola crops) will help prevent the spread of virulent blackleg. Consult **Varieties of grain crops 2006** for further information.

Conventional and herbicide tolerant varieties are grown in the same test using conventional management. This ensures that all varieties are compared to the check. The relative ranking of the herbicide tolerant canola varieties in the table will not be affected.

The Canola Council of Canada has recommended that malathion **not be used** in canola storage facilities. Canola will absorb malathion from the bin walls for a period of time after insecticide application. The presence of malathion residues has become an issue for export of canola.

Flax and Solin

Variety	Site years	Yield as % of CDC Bethune	Lodging rating	Days to maturity
Oilseed flax				
CDC Bethune	23	100	G	112
Prairie Blue ❁	11	97	G	116
Macbeth	10	95	G	113
CDC Mons	11	93	G	114
Taurus	14	93	G	112
Hanley	10	93	G	111
Lightning	15	92	G	113
AC Watson	18	92	G	112
CDC Arras	23	90	F	112
Vimy	17	83	P	112
Solin				
2090 ❁	9	91	G	114
2047	11	86	G	113
CDC Gold ❁	11	76	G	112

Average plot yield of CDC Bethune (check): 3,312 kg/ha (53 bu/ac)
Lodging: P = poor F = fair G = good

❁ PBR applied for
PBR in effect

2090, 2047 and **CDC Gold** are solin types. They are yellow seeded and have less than 5% linolenic acid in the oil. Solin produces food quality oil; therefore, the grain must be handled and stored separate from oilseed flax. Production is under contract only.

Spring wheat

Canada Western Red Spring

Superb has a shorter stature and larger seed size than **AC Barrie**.

McKenzie has high yield potential under irrigation but has lower lodging resistance and tends to have lower protein content.

Prodigy has an exceptionally heavy test weight.

CDC Imagine is tolerant to the CLEARFIELD® herbicide ADRENALIN.

Lillian is a solid stem variety offering some resistance to wheat stem sawfly.

The new varieties **Somerset, CDC Go, CDC Alsask** and **CDC Osler** show high yield potential in limited testing (data not shown).

Limited quantities of seed of the new variety **5602HR** will be available in 2006.

Seed of the new varieties **Infinity, Somerset, CDC Go, CDC Alsask, CDC Osler** and **Peace** will not be available in 2006.

Canada Western Amber Durum

All durum wheat varieties are susceptible to two new races of loose smut. Seed treatment will provide control.

Kyle and **AC Morse** have lower pigment content in the grain than other varieties. **AC Morse** and **Napoleon** have lower test weight than **Kyle**.

Commander and **AC Navigator** have extra strong gluten properties and semidwarf stature. They are grown only under contract.

Limited quantities of the seed of the new variety **Commander** will be available in 2006.

Canada Prairie Spring

AC Crystal and **5701PR** have improved quality compared to **AC Taber** and **AC Foremost**.

Canada Western Extra Strong

Seed of the new varieties **Burnside** and **CDC Walrus** will not be available in 2006. Limited quantities of seed of **CDC Rama** will be available in 2006.

Canada Western Soft White Spring

AC Reed and **AC Phil** are moderately resistant to shattering, powdery mildew and common root rot; moderately susceptible to leaf and stem rust; and susceptible to common bunt.

AC Nanda has improved resistance to common bunt, powdery mildew, and black point.

All soft white spring wheat varieties are eligible for both domestic and export markets except **AC Andrew**, which is not accepted in the domestic market.

Soft white spring wheat may have potential demand as a feedstock in the production of ethanol.

Winter Wheat

Consult the SAF publication **Varieties of grain crops 2006** for information on varieties of winter wheat under irrigation.

Irrigated areas in south and central Saskatchewan are susceptible to fusarium infestations. Fusarium was present in all irrigation districts in 2005 but levels were relatively low. Use fusarium tested seed to prevent new infestations of irrigated land. Durum and CWES are the most susceptible wheat types followed by CWSWS, CPS and CWRS. Consult **Varieties of grain crops 2006** for further information on resistance levels in wheat varieties.

Spring Wheat

Variety	Site years	Yield as % of AC Barrie	Lodging rating	Height (cm)	Days to maturity	% Protein +/- AC Barrie	Head Awns Present
Canada Western Red Spring							
Infinity ✿	7	110	G	90	105	+0.3	N
McKenzie	22	107	F	89	104	-0.5	Y
5602HR	9	106	G	90	107	+0.7	Y
Superb	23	106	G	85	106	-0.4	Y
Prodigy	19	102	G	94	104	+1.0	Y
Lillian	9	101	F	88	104	+0.3	N
AC Barrie	36	100	G	90	104	15.3%	N
CDC Imagine	11	99	G	88	104	-0.2	N
Journey	13	98	G	87	105	+1.0	N
Lovitt	14	97	G	92	103	+0.3	N
Peace	6	96	F	92	103	0.0	N
Harvest	13	94	G	85	102	-0.2	N
Canada Western Hard White							
Snowbird	18	94	G	92	105	-0.3	N
Kanata	12	82	G	86	103	+0.1	N
Canada Western Amber Durum							
Commander ✿	11	111	F	72	108	-1.0	Y
Napoleon ✿	17	110	G	90	106	-0.7	Y
Strongfield	15	108	F	87	106	0.0	Y
AC Morse	24	106	G	83	107	-0.4	Y
AC Avonlea	34	105	G	87	106	0.0	Y
AC Navigator	33	103	F	78	108	-1.1	Y
Kyle	18	99	P	104	107	-0.1	Y
Canada Prairie Spring White							
AC Vista	33	121	F	81	106	---	Y
Canada Prairie Spring Red							
AC Crystal	36	113	G	81	106	---	Y
5701PR	17	103	G	77	106	---	Y
Canada Western Extra Strong							
Burnside	8	107	F	96	106	---	N
CDC Walrus	8	105	F	96	107	---	N
CDC Rama	17	101	G	96	106	---	Y
Glenavon	13	101	F	100	107	---	N
Canada Western Soft White Spring							
AC Andrew	21	125	G	81	107	---	Y
AC Meena	15	120	G	83	108	---	Y
AC Phil	20	117	G	77	106	---	Y
Bhishaj	17	116	G	82	106	---	Y
AC Reed	26	115	G	76	106	---	Y
AC Nanda	22	112	G	85	109	---	Y

Average plot yield of AC Barrie (check): 5,334 kg/ha (79 bu/ac)
Lodging: P = poor F = fair G = good

PBR in effect
✿ PBR applied for
--- Data not available

Barley

Six-Row Malt Barley

Legacy, **Excel, Tradition, Robust** and **CDC Battleford** are recommended for 2006-2007 by the Malting Barley Industry Group. The newer six-row varieties Legacy, CDC Battleford and Tradition show increasing demand, while Excel and Robust show declining demands. Irrigators should consult with their malt barley buyer(s) about variety demand.

Two-Row Malt Barley

AC Metcalfe, CDC Kendall, CDC Copeland, Harrington, Stein and **Merit** are recommended for 2006-2007 by the Malting Barley Industry Group. For the two-row varieties, the market shares of AC Metcalfe, CDC Kendall and CDC Copeland are on the increase, while the demand for Harrington continues to decline. Merit and Stein have lower yet stable market demand. Irrigators should consult with their malt barley buyer(s) about variety demand.

Information on recommended malting barley varieties for 2006-07 can be found on the Canadian Malting Barley Technical Centre website at **www.cmbtc.com**.

Feed Barley

The six-row variety **Manny** has yielded higher than **AC Harper** in limited testing. The two-row varieties **Ponoka** and **McLeod** have yielded equal to **CDC Helgason** in limited testing (data not shown).

Variety	2 or 6 row	Site years	Yield as % of AC Metcalfe	Lodging rating	Height (cm)	Maturity rating	Awn type
Malt							
CDC Yorkton	6	6	120	G	84	L	S
Excel	6	9	115	F	88	M	S
Tradition	6	3	114	G	83	VL	S
Robust	6	6	106	P	105	E	S
CDC Sisler	6	10	106	P	100	E	S
CDC Battleford	6	4	102	P	84	M	S
Legacy	6	3	101	G	86	M	S
CDC Copeland	2	6	117	P	91	M	R
Newdale	2	3	117	G	81	M	R
AC Bountiful	2	7	113	G	93	M	R
CDC Stratus	2	9	107	G	91	M	R
AC Metcalfe	2	13	100	F	95	M	R
Merit	2	3	100	F	94	VL	R
CDC Kendall	2	10	100	P	97	M	R
Stein	2	4	94	P	96	E	R
Harrington	2	11	84	P	90	M	R
Feed							
AC Rosser	6	7	129	P	95	M	S
AC Harper	6	6	105	F	90	M	S
Trochu	6	3	102	P	85	M	S
Xena	2	6	121	F	95	L	R
CDC Bold	2	5	121	P	79	M	R
CDC Trey	2	3	115	G	86	M	R
CDC Helgason	2	4	108	F	83	M	R
CDC Dolly	2	9	105	P	88	M	R
Rivers	2	4	105	F	87	L	R
Niobe	2	3	100	F	83	M	R
CDC Fleet	2	8	100	G	96	M	R
Semi-dwarf Feed							
CDC Earl	6	6	115	VG	89	E	R
Vivar	6	4	104	G	77	M	R
Kasota	6	5	98	G	85	E	S
Niska	6	4	94	P	74	L	S
Mahigan	6	5	88	G	84	E	S
Hulless							
AC Bacon	6	8	88	G	91	M	R
Peregrine	6	4	70	G	63	L	R
CDC Gainer	2	6	97	G	95	L	R
CDC Dawn	2	9	92	P	98	M	R
CDC McGwire	2	5	91	F	90	VL	R
CDC Freedom	2	7	89	F	89	VL	R

Average plot yield of AC Metcalfe (check): 5,708 kg/ha (106 bu/ac)

Lodging: P = poor F = fair G = good VG = very good

Maturity: E = early M = medium L = late VL = very late
M = Harrington = 100 days

PBR in effect

R = rough
S = smooth

Field Pea

All Green, Yellow and Maple varieties listed in the table are semi-leafless types.

Normal leaf type varieties are not normally recommended for irrigated production due to greater potential for disease development within the thick crop canopy typical of these varieties.

All pea varieties will lodge under irrigation. Those with better lodging resistance will stand later into the season. These varieties tend to be less affected from disease, to fill more fully, and to produce a generally higher yield with superior seed quality.

Variety	Site years	Yield as % of CDC Mozart	Lodging rating	Days to mature	Vine length (cm)	Seed weight (g/1000)
Green						
Cooper ❁	11	107	G	103	82	250
Camry ❁	10	102	F	102	67	243
Nessie	13	102	F	98	74	263
CDC Striker	15	100	F	99	78	217
Stratus	10	99	P	101	74	239
SW Parade	19	98	F	102	77	171
CDC Sage	11	95	F	100	95	175
Madoc	15	93	G	99	70	191
Vortex	14	92	P	97	77	170
Nitouche	32	87	F	101	80	231
CDC Montero	6	77	G	102	83	207
Yellow						
SW Carousel ❁	11	108	P	99	84	224
Tudor ❁	11	106	F	101	88	255
SW Midas	11	105	F	97	77	193
Topeka	7	104	P	98	71	219
Eclipse	34	101	G	102	78	232
CDC Golden	18	101	F	99	82	195
CDC Mozart	34	100	F	100	73	207
SW Marquee ❁	6	98	G	98	81	194
SW Salute	7	96	P	99	79	192
Alfetta	24	96	VP	98	68	250
Cutlass	22	95	G	100	79	206
CDC Bronco	18	94	G	102	81	186
DS-Stalwarth	18	90	G	101	80	206
Miser	14	89	F	101	83	174
SW Circus	9	88	G	97	74	189
CDC Handel	12	87	P	101	75	---
DS-Admiral	9	79	G	100	78	223
Maple						
Courier	11	70	P	103	76	169
CDC Acer	3	51	VP	102	82	121
Forage/Silage						
CDC Sonata	3	47	VP	103	80	190
40-10	3	40	P	100	85	97

Average plot yield of CDC Mozart (check): 5,145 kg/ha (76 bu/ac)
Lodging: VP = very poor P = poor F = fair G = good

PBR in effect
❁ PBR applied for
--- Data not available

Dry Bean

Variety	Plant type	Site years	Yield as % of Othello	Days to maturity	Seed weight (g/1000)	2005 Seed quality
Pinto						
Winchester	II	5	103	104	348	U
Othello	III	29	100	107	346	U
CDC Minto	III	5	99	109	416	---
CDC Pinnacle	III	14	93	108	369	U
CDC Pintium	I	11	85	97	364	A
CDC Altiro	III	5	82	100	367	---
Black						
AC Black Diamond	II	14	92	106	263	A
CDC Jet	II	6	70	112	171	U
Black Violet	II	8	69	106	178	U
CDC Expresso	I	13	63	105	188	---
Great Northern						
AC Polaris	II	13	104	107	325	U
CDC Polar Bear	III	8	95	108	365	U
US 1140	III	29	92	111	319	U
Alert	II	7	86	109	345	U
Pink						
CDC Rosalee	III	5	102	103	265	---
Early Rose	II	7	97	101	297	U
Viva	III	25	97	109	258	U
Small Red						
AC Earlired	III	10	111	100	314	---
AC Redbond	II	13	109	102	324	U
NW-63	III	14	90	108	302	---

Average plot yield of Othello (check): 3,096 kg/ha (2,759 lb/ac)
A = acceptable < 15% frost damage
U = unacceptable > 15% frost damage
--- = not in 2005 trials

Wide Row Trials

Commercial row crop production is typically on 55 cm (22 in.) or 75 cm (30 in.) centers. The wide row bean trials are grown on 60 cm (24 in.) rows to evaluate varieties under conditions similar to conventional practice.

Yield and days to maturity are important factors when choosing a bean variety. Spring or fall frost can destroy a dry bean crop. It is important to select a variety that will mature in the normal frost-free season for your region.

Winchester is a mid-season, upright pinto variety that has shown earlier maturity and yield equal to or greater than Othello in limited testing.

2005 Seed Quality

2005 was a challenging year for dry beans. Some varieties in both the wide row and narrow row trials did not fully mature due to the cool growing season. **CDC Pintium, AC Black Diamond, CDC Expresso** and **Envoy** were the only varieties that had less than 15% visual frost damage. Frost damage included severe seedcoat wrinkling and/or discolored seed.

Narrow Row Trials

The narrow row dry bean trials are sown on 20 cm (8 in.) row spacing to evaluate performance in a solid seeding management practice. The pod clearance rating is a measure of the proportion of pods held 5 cm (2 in.) or more above ground level. This gives an indication of the suitability for harvest using a direct cut harvest system. Varieties with higher pod clearance ratings will normally have lower harvest losses.

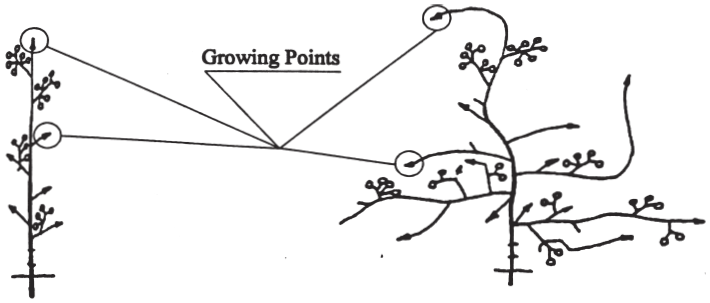
The narrow row variety trials are a separate test from the wide row trials. These tests are not designed to compare conventional and solid seeded management. **Yields and variety rankings cannot be compared between the tables.**

Variety	Market Class	Site years	Yield as % of Othello	Pod clearance rating*	Days to maturity	2005 Seed Quality
Check						
Othello	P	14	100	59	106	U
Plant type I: Determinate bush						
CDC Pintium	P	14	104	88	98	A
CDC Camino	P	10	96	85	104	---
Morden 003	N	4	85	80	106	---
Envoy	N	9	75	74	103	A
CDC Expresso	B	12	64	75	102	A
Plant type II: Indeterminate short vine						
AC Black Diamond	B	6	116	81	103	A
AC Polaris	GN	10	109	76	106	---
AC Redbond	SR	10	109	78	103	---
Resolute	GN	5	108	81	101	---
CDC Whitecap	N	7	84	82	110	---
CDC Rio	B	5	77	77	109	U
CDC Jet	B	8	60	81	110	U

Average plot yield of Othello (check): 3,337 kg/ha (2,973 lb/ac)
B = Black GN = Great Northern N = Navy P = Pinto SR = Small Red
*Pod clearance rating = % of pods on the plant that are held >5 cm (2 in.) above the soil surface.

Dry Bean Plant Type

Type I
Determinate bush
The main stem and branches end in flowers. Flowering lasts 10 to 20 days with fairly uniform pod maturity.



Type II
Indeterminate short vine
The main stem is erect. The stem and branches end in vegetative buds. Flowering lasts 10 to 30 days with uneven pod maturity.

Type III
Indeterminate sprawling vine
The stems are semi-prostrate with well developed branches and a dense canopy. Flowering is similar to Type II plants.

Graphic courtesy Colorado Dry Bean Production and IPM Bulletin 548A. Colorado State University Co-operative Extension and Agricultural Experimental Station. 1990.

Faba Bean

Variety	Site Years	Yield as % of CDC Fatima	Height (cm)	Days to maturity	Seed weight (g/1000)
Aladin	9	104	139	116	435
CDC Fatima	9	100	130	114	535
CDC Blitz	6	98	135	118	445
Orion	6	91	124	120	360

Average plot yield of CDC Fatima (check), 1990 to 2000: 5,590 kg/ha (4,980 lb/ac)

Faba bean is late maturing, and should be sown early for best results.

CDC Fatima combines early maturity and shorter height with high yield potential. Its large seed size is preferred in some markets.

Hybrid Oilseed Sunflower

Variety	Site Years	Yield as % of AV 6111	Height (cm)	Days to maturity
SF270	3	102	150	124
SF187	3	101	160	124
AV 6111	4	100	134	121
63A81	3	82	172	128

Results for irrigated co-operative yield trials, 1997 to 2000 and 2004.
Average plot yield of AV 6111 (check): 3,422 kg/ha (3,049 lb/ac)

The early maturing, short stature (EMSS) variety **63A21**, grown using solid seeded management practices (20 cm/8 in. row spacing), has yielded higher than **AV 6111** in limited testing (data not shown).

The varieties **63A70** and **63M02** have yielded higher than **AV 6111** in limited testing (data not shown).

Corn

The Alberta Corn Committee (ACC) irrigated grain and silage corn variety trials were conducted at CSIDC, Outlook, Saskatchewan in 2003, 2004 and 2005. Results from the 2005 trials are available on the ACC website at **www.albertacorn.com.** The CSIDC data presented is for one year. Use with caution.

Select a variety with a Corn Heat Unit rating suitable to your area. A corn heat unit map of Saskatchewan is available on the SAF website at **www.agr.gov.sk.ca/docs/crops/irrigation/irrigation2003.asp**.

Information on corn production can be found in **Corn Production in Manitoba**, published by the Manitoba Corn Growers Association. To order the manual go to the Manitoba Agriculture website at **www.gov.mb.ca/agriculture/crops/specialcrops/bii01s00.html**.

Annual Cereal Forage

Variety	Site Years	Dry Matter Yield	CP	NDF	ADF	TDN	TDN % of Vivar
Barley		**% of AC Ranger**					
2-row							
CDC Copeland	5	103	11.0	52.7	34.6	61.1	95
6-row							
AC Ranger	5	100	12.6	54.0	35.1	60.5	94
AC Rosser	5	98	13.2	49.3	31.0	64.9	101
AC Hawkeye	5	97	12.5	53.0	33.7	62.0	97
CDC Bold	5	97	12.9	52.9	33.8	61.9	97
Vivar	5	97	11.7	50.3	31.7	64.1	100
CDC Battleford	5	95	12.1	51.1	33.3	62.4	97
Trochu	5	94	13.0	53.5	34.7	61.0	95
Dillon	4	89	12.8	53.9	34.5	61.3	96
Oats		**% of CDC Baler**					
Pinnacle	5	104	11.2	55.4	37.1	58.4	91
CDC Baler	5	100	11.4	59.4	39.2	56.2	88
AC Morgan	5	99	11.4	56.3	38.4	57.1	89
Calibre	5	98	11.6	56.2	38.9	56.5	88
CDC Bell	5	97	12.3	60.2	39.7	55.7	87
Triticale		**% of Pronghorn**					
Viking*	5	106	11.5	62.8	43.8	51.4	80
Comet*	5	106	11.8	61.5	43.8	51.4	80
Banjo	5	103	13.1	62.6	43.6	51.6	80
Pronghorn	5	100	13.5	63.2	43.3	51.9	81
AC Ultima	5	97	12.5	58.9	39.7	55.6	87

Average dry matter yield of check: AC Ranger = 14,788 kg/ha (6.59 t/ac)
CDC Baler = 14,658 kg/ha (6.53 t/ac)
Pronghorn = 12,545 kg/ha (5.59 t/ac)

PBR in effect

Barley and oat varieties harvested at soft dough; Triticale varieties harvested at flowering.

CP = Crude Protein; NDF = Neutral Detergent Fibre;
ADF = Acid Detergent Fibre; TDN = Total Digestible Nutrients

* Varieties not registered in Canada for seed production but are available for forage or feed production.

Barley, Oat and Triticale varieties were evaluated for relative performance when grown as forage. The trials were conducted at Outlook in 2003, 2004 and 2005 by CSIDC and at Swift Current in 2004 and 2005 by ICDC.

Forage quality analysis presented is the average of 4 site years from samples collected in 2004 and 2005.

Alfalfa

Variety	Site years	Yield as % of Beaver
Approved	3	114
Forecast 1001	3	112
Wintergold	3	112
WL 327	3	110
Pickseed 2065MF	6	109
Starbuck	3	109
WL 232HQ	3	109
AC Longview	6	108
Spredor 4	3	108
54V54	6	108
Gibraltar	3	107
Perfect	3	107
Geneva	6	107
Pickseed 8925MF	3	107
AC Blue J	8	107
Multi5301	3	107
Survivor	3	106
AmeriStand 201+Z	6	106
AC Grazeland Br	6	106
Gala	3	105
Hornet	3	105

Variety	Site years	Yield as % of Beaver
421	3	105
AgriMaster	3	105
53Q60	6	104
HybriForce-400	3	104
Renaissance	3	104
134	3	104
Atomic	3	104
StockWell	9	104
TOPHAND	3	103
Proleaf	3	102
Barrier	11	102
Magnum 3801 Wet	3	101
Quatro HR	3	101
Beaver	20	100
RHINO	3	98
Ranglander	8	98
Magnum III-Wet	3	97
Matrix	3	96
HayGrazer	3	96
Runner	6	93
Rambler	20	89

Average dry matter yield of Beaver (check): 12,298 kg/ha (5.48 tons/ac)

PBR in effect

The varieties were evaluated in the Western Forage Testing (WFT) System trials from 1996 to 2005 and in the ICDC/Saskatchewan Forage Council trials established under irrigation in 2002 at CSIDC, Outlook, Saskatchewan and in 2003 at Osler, Saskatchewan. WFT variety trials are established each year and forage yields are measured for each of the following three years. All data is for a two cut system except for 2001 to 2003 in which three cuts were taken.

Varieties with rapid regrowth after cutting are best suited to intensive management. For more information on alfalfa varieties, including disease resistance, consult the latest Saskatchewan Agriculture and Food publication, **Saskatchewan Forage Crop Production Guide**.

Timothy

Variety	Site Years	Yield as % of Climax
Dolina	3	114
EXPRESS	3	113
Richmond	6	109
AC Alliance	3	109
Joliette	3	108
Timfor	6	108
Grinstad	6	106
Turku	3	104
TimPro	3	102
TENHO	3	102
Alexander	6	101
Climax	6	100
Nike	6	100
Argus	6	97
Toro	6	97
Drummond	6	94
Carola	6	93
TOPI	3	91
Bottnia II	6	89
Tuukka	3	87

Average dry matter yield of Climax (check): 10,557 kg/ha (4.71 tons/ac)

Irrigated timothy trials were conducted at the CSIDC, Outlook, Saskatchewan and at the Semiarid Prairie Agricultural Research Centre (SPARC) in Swift Current from 1995 to 1997. Western Forage Testing (WFT) System trials were conducted at CSIDC from 1996 to 2005. Results from both trials are included in the table.

The trials were harvested in early July and in late August of each year. Export markets prefer high leaf content and long seed heads. **Drummond** had the longest seed heads and the second highest leaf content in the trials conducted from 1995 to 1997. **Richmond** had a lower fiber content and higher nutritive value making it better suited to the domestic dairy hay market than other varieties tested in the 1995 to 1997 trials.

Information on timothy production can be found in the **Timothy Production Handbook**, published by the Canadian Hay Association. To order the handbook go to the Canadian Hay Association website at **www.canadianhay.com**.

Perennial Forage

Birdsfoot Trefoil

AC Langille yielded 117% of the check variety **Leo** in a two cut harvest system in irrigated trials conducted from 1997 to 1999. The average plot yield of Leo was 10.7 t/ha (4.75 tons/ac).

Cicer Milkvetch

Irrigated trials with a two cut harvest were conducted at CSIDC in 1998 and 1999. **Windsor** yielded 101% of the check variety **Oxley**. **AC Oxley II** yielded 91% of Oxley. AC Oxley II has improved seedling vigor and faster regrowth compared to Oxley. The average plot yield of Oxley was 10.5 t/ha (4.65 tons/ac).

Crested Wheatgrass

The tetraploid varieties **AC Goliath** and **Kirk** were tested in irrigated trials in a two cut harvest system from 1999 to 2001. AC Goliath yielded 104% of the check variety Kirk. The average plot yield of Kirk crested wheatgrass was 13.0 t/ha (5.75 tons/ac).

Smooth Bromegrass

Radisson yielded 99% of the check variety **Carlton** in irrigated trials conducted from 1996 to 1998. Two cuts per year were taken. The average plot yield of Carlton was 16.3 t/ha (7.25 tons/ac).

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Potato

Variety	Consumption Grade (> 45 mm diameter tubers) Site years	Yield	Seed Grade (< 90 mm diameter tubers) Site years	Yield
Table potato		**% of Norland**		**% of Norland**
Atlantic	25	106	25	95
Shepody	34	102	35	92
Russet Norkotah	34	101	35	97
Norland	34	100	35	100
French Fry potato		**% of Russet Burbank**		**% of Russet Burbank**
Shepody	38	123	38	100
Ranger Russet	23	110	23	97
Russet Burbank	38	100	38	100
Chipping potato		**% of Atlantic**		**% of Atlantic**
AC Ptarmigan	3	108	2	111
Niska	3	102	2	112
Atlantic	3	100	2	100
Snowden	2	97	1	114
Norchip	2	93	1	97

Average consumption grade plot yield of check:
Norland = 43.7 t/ha (390 cwt/ac)
Russet Burbank = 36.8 t/ha (329 cwt/ac)
Atlantic = 38.2 t/ha (341 cwt/ac)

Average seed grade plot yield of check:
Norland = 45.8 t/ha (409 cwt/ac)
Russet Burbank = 43.1 t/ha (385 cwt/ac)
Atlantic = 37.9 t/ha (338 cwt/ac)

PBR in effect

The potato variety comparisons shown are based on varietal, agronomic, and fertility trials conducted at CSIDC from 1995 to 2004. The potatoes were grown using standard commercial practice under full irrigation.

Varieties which are commonly used in more than one market appear twice in the table. Shepody, for example, is used primarily as a French fry potato but is also grown for table use.