

LONG-TERM POTATO CULTIVAR TRIALS

This trial evaluates the long-term yield and quality characteristics of standard potato varieties relative to some recently introduced types under Saskatchewan growing conditions. Trials are conducted on irrigated land in Saskatoon. Varieties are planted with an in-row spacing of 25 cm and 1 m between rows. Nitrogen is applied preplant (170 #/acre total). Phosphorus is band-applied at seeding (120 #/acre total). Standard pest control measures are employed. The trial is planted in mid-May and harvested 90 (early) and 120 (final) days later. Crop vigour and disease reactions are monitored throughout the season. The crop is graded and rated for yields, appearance, disease reactions and specific gravities.

Long term average data is based on at least 6 site years of tests conducted from 1991 onwards.

Despite record-setting rainfall during spring and early summer, the 2010 potato variety trials were planted and maintained on schedule. The crop appeared to thrive in the wet and cool conditions and no problems with disease were observed through mid-summer. Temperatures were below normal throughout the 2010 growing season. About 34 cm of rainfall was received from June 1 - Aug 31 of 2010 (normal = 17 cm). Due to steady rainfall, the 2010 crop only needed to be irrigated on two occasions in late July/early August (5 cm total). The cool, wet conditions experienced through most of the 2010 growing season were near-ideal for the development and spread of Late Blight (*Phytophthora infestans*). Although the plot area was treated with fungicides on five occasions, by mid-August most cultivars had been effectively killed by the blight. This limited the yield potential and specific gravities of all lines in the 2010 trial. Shepody was clearly the most blight sensitive of the established lines.

Performance of SSPGA varieties and other new varieties of local interest

- Pacific Russet - this SSPGA/EPG line is targeted at the fresh market. Pacific Russet substantially out-yielded the industry standard Norkotah at both the 90 and 120 day harvests.
- Peregrine Red - this SSPGA exclusive line continues to show exceptional yield potential, superior red skin color and small uniform tubers. Scab sensitivity appears to be the only major shortcoming of Peregrine.
- GemStar - this slow maturing line did not performed well in the cool 2009 and 2010 growing seasons.

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	LONG-TERM AVERAGE		2010 RESULTS				LONG-TERM AVERAGE				
	Marketable Yield (t/a)	Specific Gravity	Marketable Yield (t/a)		Specific Gravity		Uniformity	Eye Depth	Skin Colour	Flesh Colour	Scab %
			Early	Final	Early	Final					
RUSSETS											
Pacific Russets	18.7	1.081	21.4	21.6	1.062	1.070	Good	S	R	W	trace
Amisk / Ranger	18.0	1.092	-	-	-	-	Good	S	R	W/Y	16
Russet Burbank	16.6	1.085	12.2	14.4	1.064	1.070	Poor	M	R	W/Y	5
Gemstar	18.0	1.089	9.4	9.8	1.071	1.075	Good	S	R	W	trace
Goldrush	18.9	1.084	-	-	-	-	Good	S	R	W	trace
Norkotah	18.2	1.080	15.0	16.1	1.063	1.070	V. Good	M	R	W/Y	10
Shepody	18.2	1.081	14.6	15.2	1.062	1.072	Medium	S	L R	W/Y	26
Umatilla	19.9	1.089	-	-	-	-	Good	S	R	W/Y	trace
REDS											
Peregrine Red	22.9	1.081	19.9	22.4	1.063	1.064	Good	S	D Red	W	30
Cherry Red	19.7	1.088	-	-	-	-	Medium	S	D Red	W	16
Chieftain	22.2	1.079	-	-	-	-	Good	M	L Red	W	18
Norland	20.8	1.071	17.6	19.8	1.061	1.062	Medium	M	Red	W	11
DR Norland	20.7	1.074	-	-	-	-	Medium	M	D Red	W/Y	8
Pontiac	24.1	1.075	-	-	-	-	Fair	D	Red	W/Y	37
Sangre	21.5	1.075	-	-	-	-	Good	M	D Red	W	19
Viking	21.2	1.074	-	-	-	-	Medium	S	Red	W	14
CHIPPERS											
Atlantic	21.0	1.095	-	-	-	-	Good	S	L R	W/Y	20
Snowden	19.3	1.095	-	-	-	-	Medium	M	L R	W/Y	14
OTHER											
AC Ptarmigan	22.6	1.073	-	-	-	-	Medium	S	L R	W/Y	18
Alpha	17.4	1.096	12.5	16.2	1.065	1.078	Medium	S	L R	Y	13
Bintje	20.3	1.088	-	-	-	-	Good	M	W	Y	12
Yukon Gold	20.1	1.091	14.0	14.4	1.075	1.079	Medium	M	W	Y	22

Early and Late = 90 and 120 Days respectively.

Eye Depth : S=Shallow, M=Medium, D=Deep

Colour: D Red=Dark red, R=Russet, W=White, Y=Yellow, L=Light

Scab % = % of tubers graded out due to excessive scab (>5% surface area affected) in a severely infected field.