



VEGETABLE CULTIVAR AND CULTURAL TRIALS 2001

**PREPARED BY:
D. WATERER
J. BANTLE
K. LERAY**

**FUNDED BY:
AGRICULTURE DEVELOPMENT FUND &
AGRI-FOOD INNOVATION FUND**

*Department of Plant Sciences
University of Saskatchewan, 51 Campus Drive
Saskatoon, Saskatchewan, Canada, S7N 5A8
Telephone: (306) 966-5855 Fax: (306) 966-5015
E-mail: waterer@sask.usask.ca jmb127@duke.usask.ca*



Agronomics of New Potato Cultivars

This trial was designed to evaluate some of the basic agronomic characteristics and management parameters required for several newly released cultivars of interest to Saskatchewan's potato industry.

The trials were conducted on the Plant Sciences Department Potato Research plots located in Saskatoon utilizing standard production practices for commercial potatoes. The crop was seeded in mid-May, in rows 1 m apart. Irrigated plots were watered once soil water potentials fell below -60kPa. Typically, 2.5 cm of water was applied at each irrigation event. The dryland plots relied solely on rainfall. Yields were evaluated at 90 and 120 days after planting. At both harvests, the crop was graded into size categories; small = < 44 mm diam., 44 < medium < 88 mm and oversize = > 88 mm diam. Table stock yields included the medium and oversize categories while the seed category included the pooled yield of small and medium size tubers.

New Cultivars tested;

AC Peregrine Red is a newly released very dark red skinned variety under exclusive Canadian licence to the Saskatchewan Seed Potato Growers' Association.

Cherry Red this Colorado variety is exceptionally red and holds its colour well, but is late maturing.

Umatilla a new release from the Idaho breeding program, this russet skinned potato is believed to have superior processing and disease resistance characteristics to Russet Burbank.

Gem Russet a new release from the Oregon breeding program, this russet skinned potato is believed to have better yields and processing characteristics than Russet Burbank.

The 2001 growing season was excellent, providing supplemental irrigation was available. Less than 3" of rainfall was received over the growing season and the dryland plots were severely moisture stressed.

Norland was consistently higher yielding than either AC Peregrine Red or Cherry Red at both harvests in both the dryland and irrigated trials. The average tuber size of AC Peregrine was considerably smaller than Norland or Cherry Red. None of the new russet lines were as early, high yielding or uniform in appearance as Russet Norkotah. Neither of the new russet lines produced final yields or specific gravities better than Russet Burbank. Gem Russet produced relatively high numbers of small tubers.

Table 1. New red-skinned potato cultivar yields in 2001.

	EARLY HARVEST - 90 DAYS				FINAL HARVEST - 120 DAYS			
	Table (t/a)	Seed (t/a)	Average Tuber Wt. (g)	Specific gravity	Table (t/a)	Seed (t/a)	Average Tuber Wt. (g)	Specific gravity
	<i>DRYLAND</i>				<i>DRYLAND</i>			
<i>Norland</i>	3.2	4.3	88	---	2.0	3.1	71	---
<i>AC Peregrine Red</i>	0.1	0.3	31	---	0.1	0.4	48	---
<i>Cherry Red</i>	1.3	1.4	61	---	0.8	3.2	67	---
	<i>IRRIGATED</i>				<i>IRRIGATED</i>			
<i>Norland</i>	23.3	21.6	182	1.072	29.7	20.3	216	1.071
<i>AC Peregrine Red</i>	7.8	7.9	85	1.070	16.6	18.7	117	1.073
<i>Cherry Red</i>	14.4	15.6	131	1.074	21.3	18.2	169	1.082

Table 2. Yields for new russet-skinned lines in 2001.

	EARLY HARVEST - 90 DAYS				FINAL HARVEST - 120 DAYS			
	Table (t/a)	Seed (t/a)	Average Tuber Wt. (g)	Specific gravity	Table (t/a)	Seed (t/a)	Average Tuber Wt. (g)	Specific gravity
	<i>DRYLAND</i>				<i>DRYLAND</i>			
<i>Russet Burbank</i>	0	0.6	40	---	0	0.5	41	---
<i>Russet Norkotah</i>	0	1.9	64	---	0	1.7	56	---
<i>Umatilla</i>	0	0.3	57	---	0	0.9	56	---
<i>Gem Russet</i>	0	0.9	40	---	0	0.9	46	---
	<i>IRRIGATED</i>				<i>IRRIGATED</i>			
<i>Russet Burbank</i>	8.8	12.4	117	1.074	22.2	22.8	253	1.087
<i>Russet Norkotah</i>	15.3	17.5	156	1.074	24.8	20.5	219	1.077
<i>Umatilla</i>	6.7	9.6	112	1.076	19.8	15.9	223	1.085
<i>Gem Russet</i>	4.9	8.9	87	1.081	20.9	19.7	185	1.082