



VEGETABLE CULTIVAR AND CULTURAL TRIALS 2000

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Agronomics of New Potato Cultivars

This trial was designed to evaluate some of the basic agronomic characteristics and management parameters required by 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 1m apart. Irrigated plots were watered once soil water potentials rose above -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.

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.*

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

The 2000 growing season was fairly typical in terms of temperature, number of frost free days and rainfall. Late season drought reduced the yields of the slow maturing types in the dryland trials.

Norland was consistently higher yielding than either AC Peregrine Red or Cherry Red at both harvests in both the dryland and irrigated trials. None of the new russet lines were as early, high yielding or uniform in appearance as Russet Norkotah. All of the new russet lines produced final yields better than or equal to Russet Burbank. Umatilla was particularly early and high yielding. Specific gravities of the new russet lines were often higher than Russet Burbank, indicating excellent processing ability but also suggesting the potential for problems with blackspot bruising. The average tuber size of Legend was considerably larger than the other new russet varieties.

Table 1. New red-skinned potato cultivar yields in 2000.

	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>	13	13.3	147	1.072	15	15.6	165	1.095
<i>AC Peregrine Red</i>	8.5	10.9	96	1.076	10.2	15.3	104	1.074
<i>Cherry Red</i>	10.2	10.9	145	1.083	13.4	13.5	164	1.099
	<i>IRRIGATED</i>				<i>IRRIGATED</i>			
<i>Norland</i>	18.5	19.1	170	1.072	20.6	19.8	175	1.077
<i>AC Peregrine Red</i>	11.9	14.9	102	1.074	17.6	19.1	128	1.082
<i>Cherry Red</i>	14	14.6	163	1.078	18.2	16.8	185	1.09

Table 2. Yields for new russet-skinned lines in 2000.

	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>	6.4	8.9	122	1.074	10.4	12.1	156	1.098
<i>Russet Norkotah</i>	10.6	11.9	177	1.078	14.2	14.6	210	1.093
<i>Gem Russet</i>	2.9	7.8	88	1.096	9	12.1	118	1.114
<i>Umatilla</i>	8.4	10.9	124	1.081	11.5	13.2	158	1.104
<i>Legend</i>	6.5	6.5	133	1.092	9.5	8.8	174	1.103
	<i>IRRIGATED</i>				<i>IRRIGATED</i>			
<i>Russet Burbank</i>	8.2	10.9	120	1.078	15.8	17.1	170	1.097
<i>Russet Norkotah</i>	13.1	14.6	174	1.079	20.1	19.8	200	1.085
<i>Gem Russet</i>	8.4	11.4	119	1.09	17.6	19.2	171	1.103
<i>Umatilla</i>	10.8	13.5	138	1.076	19.2	20.6	172	1.096
<i>Legend</i>	10.5	10.4	165	1.091	17.2	16.2	185	1.099