POTATO VARIETY TRIALS 2005

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Introduction

New potato varieties were evaluated for their productivity and suitability for processing. Potatoes are grown under contract in Malheur County for potato processors to produce frozen products for grocery outlets and the food service industry. There is very little production for fresh pack or open market, and very few growers have potato storage buildings on their farms. There is also no production of varieties for making potato chips.

The varieties grown for processing in Malheur County, Oregon, are mainly 'Ranger Russet', 'Shepody', and 'Russet Burbank'. Harvest begins in July, providing potatoes to processing plants directly from the field. Yield of harvests later than mid-August may be limited by the "early die" syndrome, which causes early senescence of the vines of susceptible varieties, especially Shepody and Russet Burbank. Early die is caused by a complex of soil pathogens, including bacteria, nematodes, and fungi, particularly Verticillium wilt. Early die is worse when the rotation between potato crops is shorter.

Small acreages of new varieties or advanced selections are sometimes grown under contract to study the feasibility of expanding their use. To displace an existing processing variety, a new potato variety needs to have several outstanding characteristics. The yield should be at least as high as the yield of the currently contracted varieties. The tubers need to have low reducing sugars for light fry color, and high specific gravity. A new variety should be resistant to tuber defects or deformities caused by disease, water stress, or heat. It should begin tuber bulking early and rapidly if it is a variety for early harvest. Late-harvest varieties should be resistant to early die.

Potato variety development trials at the Malheur Experiment Station (MES) in 2005 included the Western Regional Early Harvest Trial with 22 entries, the Western Regional Late Harvest Trial with 22 entries, the Oregon Statewide Trial with 23 entries, the Oregon Preliminary Yield Trial with 120 entries, a Malheur Preliminary Yield Trial of 4 lines selected in previous 8-Hill trials at MES, an 8-Hill trial of 55 clones from the USDA Agricultural Research Service (ARS) potato breeding program at Aberdeen, Idaho, and a Specialty Trial of 28 colored-flesh potato varieties. Through these trials and active cooperation with other scientists in Idaho, Oregon, and Washington, promising new lines are bred, evaluated, and eventually released as new varieties.

Materials and Methods

Seven potato variety trials were grown under sprinkler irrigation on Owyhee silt loam, where winter wheat was the previous crop and potato had not been grown for the past 17 years. A soil test on September 16, 2004 showed 48 lb nitrogen (N)/acre in the top 2 ft of soil, and 52 lb available phosphate (P_2O_5), 1,462 lb soluble potash (K_2O), 48 lb Sulfate (SO_4), 3,348 ppm calcium (Ca), 491 ppm magnesium (Mg), 125 ppm sodium (Na), 3 ppm zinc (Zn), 7 ppm iron (Fe), 6 ppm manganese (Mn), 0.5 ppm copper (Cu), 0.6 ppm boron (B), organic matter 4.2 percent, and pH 8.2 in the top foot of soil. The soil was too wet to work or fumigate in the fall due to 0.56 inch of rain in September followed by 2.03 inch of rain in October. Vapam® was applied on March 9 at 75 gal/acre using solid set sprinklers and 1.12 inch of water to apply and seal the fumigant. Fertilizer N at 110 lb/acre and sulfur (S) at 100 lb/acre were broadcast on April 6, and the field was bedded on 36-inch row spacing.

Seed of all varieties was hand cut into 1.2- to 1.5-oz seed pieces and treated with Tops-MZ®+Gaucho® dust 1-2 weeks before planting and placed in storage to suberize. Potato seed pieces were planted in single row plots using a 2-row cup planter with 9-inch seed spacing in 36-inch rows. Red potatoes were planted at the end of each plot as markers to separate the potato plots at harvest, except in the colored-flesh trial where 'Russet Norkotah' was used as the marker.

The Western Regional Early Harvest Trial was planted on April 13, 2005. The Statewide Trial, the Malheur Preliminary Yield Trial, the 8-Hill Trial, and the Oregon Preliminary Yield Trial were planted on April 18. The Western Regional Late Harvest and the Specialty Trial were planted on April 19. The 8-Hill trial was unreplicated with plots 8 seed pieces long, the Oregon Preliminary Yield Trial and the Specialty Trial plots were 20 seed pieces long with 2 replicates, and the Statewide, Western Regional Early Harvest, and Western Regional Late Harvest Trials each had 4 replicates with plots 30 seed pieces long.

After planting, hills were reformed over the rows with a Lilliston rolling cultivator. Prowl® at 1 lb ai/acre plus Dual® at 2 lb ai/acre were applied as a tank mix for weed control on May 2 and were incorporated with 1.7 inch of rain over the next 10 days. Irrigation was applied 27 times (Fig. 1), from June 6 to September 9, with scheduling based on crop evapotranspiration (ET_c) estimated by the U.S. Bureau of Reclamation using data from an AgriMet weather station at MES. Water was measured using an inline flow meter (McCrometer, Hemet, CA).

Fungicide applications to control early blight and prevent late blight infection started with an aerial application of Ridomil Gold® and Bravo® at 1.5 pt product/acre on June 13. On June 18 Endura® fungicide at 10 oz product/acre plus Dithane® at 2 lb product/acre plus Folo Spray 20-20-20 was applied. Dithane at 2 lb product/acre plus liquid sulfur at 6 lb S/acre was applied on June 28. Bravo at 1.5 pt product/acre was applied on July 20. Dithane at 2 lb product/acre plus Tanos® at 8 oz product/acre was applied on July 28, and on September 6 Bravo was applied at 1.5 pt product/acre. On

August 20, liquid sulfur at 6 lb S/acre was applied to prevent two-spotted spider mite infestation.

Petiole tests were taken every 2 weeks from June 17 and fertilizer was injected into the sprinkler system during irrigation to supply the crop nutrient needs. A total of 142 lb N/acre, 17 lb P_2O_5/acre, 32 lb K_2O/acre, 45 lb SO_4/acre, 7.5 lb Mg/acre, and 0.4 lb Zn/acre were applied through the sprinkler lines.

Vines were flailed in the Western Regional Early Harvest Trial on August 15. Western Regional Early Harvest Trial potatoes were lifted August 22 with a two-row digger that laid the tubers back onto the soil in each row. Visual evaluations included observations of desirable traits, such as a high yield of large, smooth, uniformly shaped and sized, oblong to long, attractively russetted tubers, with shallow eyes evenly distributed over the tuber length. Notes were also made of tuber defects such as growth cracks, knobs, curved or irregularly shaped tubers, pointed ends, stem-end decay, stolons that remained attached, folded bud ends, rough skin due to excessive russetting, pigmented eyes, or any other defect. Notes to keep or discard the clone were recorded based on the overall appearance of the tubers.

Tubers were placed into burlap sacks and hauled to a barn where they were kept under tarps until grading. After grading, a 20-tuber sample from each plot in the Western Regional Early Harvest Trial was evaluated for tuber quality traits for processing. Specific gravity was measured using the weight-in-air, weight-in-water method. Ten tubers per plot were cut lengthwise and the 10 center slices were fried for 3.5 min in 375°F soybean oil. Percent light reflectance was measured on the stem and bud ends of each slice using a Photovolt Reflectance Meter model 577 (Seradyn, Inc., Indianapolis, IN) with a green tristimulus filter, calibrated to read 0 percent light reflectance on the black standard cup and 73.6 percent light reflectance on the white porcelain standard plate.

The vines were flailed on the late harvest trials on September 27. The vines of most entries had died by August 30. Potatoes in the Western Regional Late Harvest Trial were dug on October 4. The Specialty Trial tubers were dug on October 5, the Oregon Preliminary Yield Trial on October 5-6, the 8-Hill Trial on October 6-7, and the Statewide Trial on October 7. At each harvest, the potatoes in each plot were visually evaluated as described above. Tubers were graded and a 20-tuber sample from each plot was placed into storage. The storage temperature was gradually reduced to 45°F. Tubers were removed from storage November 2 through 17 and evaluated for tuber quality traits, specific gravity, and fry color as described above. Data from all trials were analyzed with the General Linear Models analysis of variance procedure in NCSS (Number Cruncher Statistical Systems, Kaysville, UT) using Fisher's Protected LSD means separation at the 95 percent confidence level.

Results and Discussion

Spring weather at MES in 2005 was cool and wet, followed by summer weather similar to 2004, and similar to the 10- and 60-year averages. No disease or mite problems were observed in the field. Compared to 2004 potato trials at this location, overall yields were greater by about 33 percent, and specific gravity of the tubers was higher.

Precipitation for May 1 through September 30 was 1.57 inch, the crop ET_c for the late-harvest trials totaled 30.2 inch, and the trials received 28.58 inch of irrigation plus precipitation, or 94.6 percent of ET_c (Fig. 1). The incremental increases in the irrigation plus rainfall curve show the 27 sprinkler irrigations applied during the growing season.

Soil water potential at the seedpiece depth was allowed to become drier at the end of the growing season, after the vines died on the early maturing entries, by applying frequent sprinkler irrigations of short duration, as shown in Figure 1. This was necessary to avoid swollen lenticels and the associated possibility of rotting tubers of early maturing entries, while continuing to supply a portion of the ET_c requirement for late maturing entries in shallow moisture increments.

All Trials

Hollow heart, brown center, internal brownspot, and vascular discoloration are common potato internal defects that vary by variety. These defects often do not occur at MES and were not observed in any of the potato varieties tested at Ontario in 2005.

Western Regional Early Harvest Trial

In the Western Regional Early Harvest Trial, the clone producing the highest total yield was 'MWTX2609-2Ru' with a total yield of 802 cwt/acre (Table 1). That clone had specific gravity below 1.080 g cm^{-3}, a desirable level for processing. The clones that were among the highest in production of marketable tubers for processing (U.S. No.1 plus U.S. No. 2 grades) were 'AO96164-1' with marketable yield of 651 cwt/acre, 'A95409-1' with marketable yield of 641 cwt/acre, and 'TXA549-1Ru' with marketable yield of 634 cwt/acre. Those three clones also had acceptable specific gravity for processing, of 1.080 g cm^{-3} or higher.

Western Regional Late Harvest Trial

The highest total yield In the Western Regional Late Harvest Trial was produced by MWTX2609-2Ru, with 722 cwt/acre (Table 2). 'ATX91137-1Ru', 'A93157-6LS', TXA549-1, AO96164-1, 'A92030-5', 'Ranger Russet', 'AO96160-3', and 'CO95086-8Ru' were among the highest clones in production of U.S. No. 1 tubers, ranging from 92 to 80 percent. In production of total U.S. No. 1 tubers, among the highest were TXA549-1Ru, A93157-6LS, Ranger Russet, A95409-1, 'A96104-2', AO96164-1, and ATX91137-1Ru ranging from 570 to 495 cwt/acre. MWTX2609-2Ru and Russet Burbank produced significantly more U.S. No. 2 tubers than other clones in this trial. In this late-harvest trial, specific gravity of A92294-6 and 'CO95172-3Ru' were among the highest, and all clones except Russet Norkotah, which is not a processing variety, had specific gravity

acceptable for processing into frozen potato products. The clone A93157-6LS has advanced to imminent release.

Oregon Statewide Trial

In the Oregon Statewide Trial, six clones marked with an asterisk were retained by the variety selection committee (Table 3). The clone AO96160-3 will stay in the Statewide trial and in the Western Regional Trial, 'AO96141-3' will advance to the Western Regional Trial, and AO96305-3, 'AO96365-2', and 'AO98282-5' will be maintained in the Statewide Trial in 2006. At this location in 2005, AO98205-5, AO96370-2, Russet Burbank, AO99108-5, Ranger Russet, and AO96365-2 produced among the highest total yields. Among the clones producing a high percentage of U.S. No. 1 tubers were AO99099-3, AO96305-3, AO98133-2, AO98307-6, AO98123-2, COO00254-9, AO96164-1, and AO98268-5. Russet Burbank produced 84 cwt/acre cull tubers, significantly more culls than any other entry, and had 13 percent sugar ends.

Oregon Preliminary Yield Trial

In the Preliminary Yield Trial, 116 numbered clones were compared to Russet Burbank, Ranger Russet, Shepody, and Russet Norkotah (Table 4). The Oregon potato variety selection committee kept 14 clones, based on their performance at Hermiston, Klamath Falls, Powell Butte, and Ontario, to advance to the Statewide Trial for 2006. The clones that were advanced were: 'AO98086-1', 'AO98104-1', 'AO98129-4', 'AO98170-4', 'AO99178-2', 'AO99179-1', 'AO99179-4', 'AO99192-2', 'AO00018-3', 'AO00024-7', 'AO00057-2', 'AO00076-4' – depending on taste evaluation, 'AO00088-11', and 'AO01012-4'. These clones yielded well across the four locations (Hermiston, Klamath Falls, and Powell Butte data are not shown in this report), had a low incidence of undesirable characteristics, had high percent U.S. No. 1 grade tubers, and had high specific gravity, light fry color, and resistance to developing sugar ends in response to stress.

Malheur Preliminary Trial

This was the third year for the Malheur Preliminary Trial, a cooperative project by MES and the USDA/ARS. Four clones from previous 8-Hill trials at Malheur were selected for their adaptation to the high early die disease pressure, heavy soil texture, and the hot, dry climate of Treasure Valley. These clones were compared to Russet Burbank, Ranger Russet, and Shepody (Table 5). The clones 'A00551-50LB', 'A0068-5', 'A97320-1', and 'COA00329-1' had specific gravity above 1.080 g cm^{-3}, a level desirable for processing. The clone 'COA00329-1' produced 5 percent sugar ends.

8-Hill Trial

Eight hills were grown of each of 55 clones selected for long, russet tubers from the Aberdeen ARS potato breeding program, including 4 clones with the LB suffix signifying that they were bred for resistance to late blight. The 55 clones were evaluated for tuber type, yield, grade, and processing quality (Table 6). The clones 'A99093-14', 'A01025-19', 'A01024-7', 'COA01082-4', 'A01302-64LB', 'A01010-3', 'A01007-2', 'A01590-60', 'A01010-1', 'A99109-5', 'A01025-13', and 'A99076-7' had high total yield and produced

80 percent or higher of U.S. No. 1 tubers, with specific gravity higher than 1.080 g cm^{-3} and light fry color suitable for processing.

Specialty Preliminary Trial

This was the first year for a colored-flesh potato variety trial at MES (Table 7). Potato tubers with red to yellow carotinoid or red, blue, and purple anthocyanin pigments are of interest because of the anti-oxidant properties of those pigments in human nutrition. The clones 'POR01PG20-12', 'POR01PG22-1', 'PA97B36-3', 'POR00PG4-1', 'POR01PG16-1', 'POR01PG45-5', 'POR02PG2-4', 'POR02PG5-1', 'POR02PG12-1', 'POR02PG26-11', and 'POR02PG37-2' will advance to the Statewide Specialty Trial for 2006.The clones 'POR02PG26-6' and 'POR02PG2-4' had the highest yields of the 26 clones, far higher than the check varieties 'Yukon Gold' and 'All Blue'. The clone POR02PG26-6 produced 1,339 cwt/acre of tubers that were irregular shapes, with yellow skin with pink eyes, and a light yellow flesh. The clone POR02PG2-4 produced 1,174 cwt/acre of round tubers with a purple-red skin and purple-red to mottled-red flesh. Both clones had a good size distribution for fresh market, but both also had tubers that adhered to the stolons.

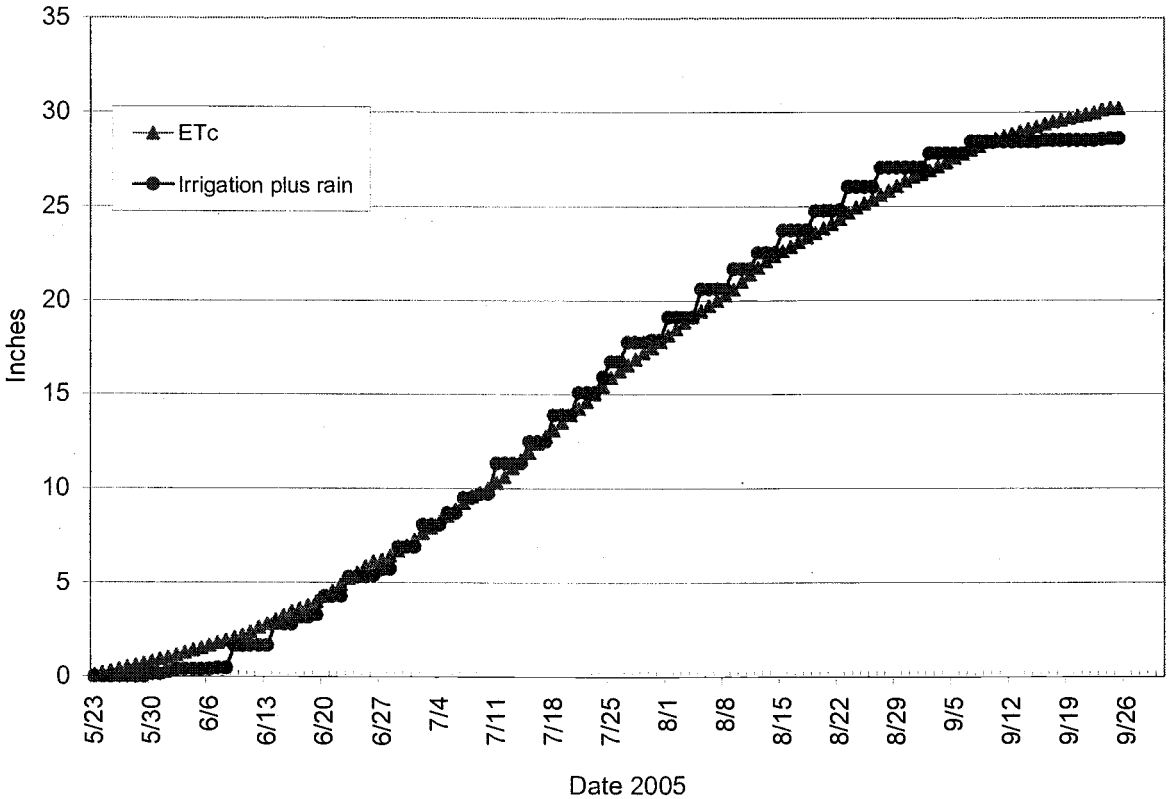

Figure 1. Crop evapotranspiration (ET_c) and sprinkler irrigation applied (plus rain) to potato variety trials, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Table 1. Western Regional Early Harvest Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total No. 1	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
Ranger Russet	589	77	451	195	223	33	114	565	22	2	1.8	1.0843	50	0.0
Russet Burbank	679	62	418	129	242	47	183	601	65	12	1.5	1.0780	47	0.0
Russet Norkotah	546	88	477	113	310	54	29	506	37	3	1.8	1.0756	51	0.0
Shepody	665	55	369	150	195	24	213	582	32	45	1.7	1.0828	55	0.0
A92030-5	535	82	437	278	135	24	61	498	33	2	1.5	1.0906	54	0.0
A92294-6	644	70	454	106	305	43	148	602	40	2	2.0	1.0909	57	0.0
A93157-6LS	606	88	533	128	339	66	23	556	50	0	1.8	1.0868	49	0.0
A95109-1	552	92	509	230	258	20	32	541	10	0	2.0	1.0837	56	0.0
A95409-1	660	88	579	358	201	20	62	641	18	0	1.7	1.0878	52	0.0
A96095-3	628	70	441	292	137	12	162	604	20	3	1.7	1.0750	51	0.0
A96104-2	729	81	592	165	347	80	79	671	56	0	1.7	1.0798	51	0.0
AO96160-3	593	83	493	70	349	74	46	538	55	0	1.9	1.0896	57	0.0
AO96164-1	692	82	568	324	212	33	82	651	35	2	1.7	1.0889	54	0.0
AOA95154-1	474	85	402	19	315	68	18	420	54	0	1.6	1.0861	54	0.0
AOA95155-7	478	83	396	61	286	49	22	418	59	2	1.6	1.0751	57	0.0
ATX91137-1Ru	591	93	551	246	286	19	17	568	18	4	1.7	1.0748	48	0.0
CO94035-15Ru	518	90	467	206	232	29	28	495	24	0	1.8	1.0770	53	0.0
CO95086-8Ru	559	80	447	99	286	62	52	498	56	4	1.8	1.0850	54	0.0
CO95172-3Ru	648	85	549	137	359	53	37	586	59	1	1.7	1.0826	49	0.0
MWTX2609-2Ru	802	83	667	335	299	33	92	758	40	4	1.8	1.0798	47	0.0
PA97B3-2	517	82	427	70	284	72	30	456	59	0	1.6	1.0888	54	0.0
TXA549-1Ru	682	84	574	155	350	69	61	634	37	0	1.7	1.0869	48	0.0
Mean	608	81	491	176	270	45	72	563	40	4	1.9	1.0832	52	0.0
LSD (0.05)	67.5	7.2	74.5	66.6	50.7	19.8	43.9	68.5	14.9	8.6	0.1	0.0041	3.1	NS*

*NS = not significant.

Table 2. Western Regional Late Harvest Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1					U.S. No. 2	Marketable	< 4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
		Percent No. 1	Total No. 1	>12 oz	6-2 oz	4-6 oz								
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
Ranger Russet	650	81	526	223	263	40	62	587	38	26	1.7	1.0943	46.8	2.5
Russet Burbank	650	39	255	88	129	39	181	436	74	140	1.8	1.0849	42.0	0.0
Russet Norkotah	435	79	346	76	213	57	31	376	51	8	1.8	1.0797	42.2	5.0
Shepody	615	59	359	147	180	33	128	487	25	103	1.6	1.0962	50.2	0.0
A92030-5	457	82	372	211	134	28	52	424	30	3	1.7	1.0942	52.1	0.0
A92294-6	666	71	476	91	335	50	116	592	52	22	1.7	1.1067	54.9	0.0
A93157-6LS	614	87	529	166	311	52	27	556	45	14	1.7	1.0978	47.5	0.0
A95109-1	492	78	386	148	218	21	82	468	20	5	1.7	1.0973	50.4	0.0
A95409-1	661	78	515	314	180	21	117	632	26	4	1.7	1.0959	46.0	0.0
A96095-3	575	66	384	183	173	29	88	472	30	73	1.9	1.0827	48.6	0.0
A96104-2	688	74	509	145	278	86	43	552	104	33	1.7	1.0854	48.2	0.0
AO96160-3	559	80	451	68	294	90	51	503	56	0	1.6	1.1032	55.8	0.0
AO96164-1	603	83	497	208	245	45	67	564	39	0	1.7	1.0995	53.2	0.0
AOA95154-1	477	79	375	62	246	67	25	400	75	3	1.6	1.1000	51.8	0.0
AOA95155-7	565	74	414	122	246	46	101	515	44	6	1.7	1.0896	50.9	0.0
ATX91137-1Ru	540	92	495	211	256	27	22	517	20	4	1.7	1.0845	47.3	0.0
CO94035-15Ru	562	79	439	172	218	49	70	510	41	12	1.6	1.0832	47.2	0.0
CO95086-8Ru	529	80	427	90	265	71	32	459	70	0	1.7	1.0971	51.2	0.0
CO95172-3Ru	648	75	483	116	286	82	85	569	78	1	1.6	1.1022	45.4	0.0
MWTX2609-2Ru	722	65	473	147	281	45	187	659	57	6	1.7	1.0894	39.9	0.0
PA97B3-2	427	71	304	12	222	71	21	325	99	3	1.5	1.0976	52.4	0.0
TXA549-1Ru	671	85	570	223	296	51	54	625	47	0	1.5	1.0978	48.8	0.0
Mean	582.0	75.1	435.5	146.4	239.4	49.8	74.6	510.2	50.9	21.1	1.68	1.0936	48.8	0.3
LSD (0.05)	62.0	11.8	93.8	69.1	63.9	22.6	52.6	79.2	25.7	38.5	0.16	0.0066	3.3	NS*

*NS = not significant.

Table 3. Oregon Statewide Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
Russet Burbank	700	80	548	284	229	35	120	667	32	1	1.9	1.1129	52	0
Ranger	709	75	532	151	306	74	124	656	53	0	2.0	1.1108	55	0
Norkotah	506	73	365	106	212	47	96	461	44	1	1.8	1.1096	51	0
AO96160-3*	511	76	390	77	244	69	72	462	49	0	1.5	1.1082	44	0
AO96164-1*	934	74	697	366	290	41	183	880	50	3	1.7	1.1082	49	0
AO96141-3*	625	80	497	131	302	65	69	567	58	0	1.6	1.1062	54	0
AO98133-2	649	62	392	132	221	39	210	602	33	0	1.9	1.1053	53	0
AO96162-1	710	81	566	432	115	19	120	686	25	0	1.8	1.1029	50	0
AO99099-3	786	72	569	390	153	26	182	751	31	4	1.7	1.1005	46	0
COO00254-9	713	91	642	452	164	26	54	695	18	0	1.6	1.0981	50	0
AO96305-3*	768	74	564	187	313	64	154	718	50	0	1.6	1.0980	53	0
AO96365-2*	570	72	412	112	226	75	63	475	95	0	1.9	1.0972	51	0
AO96370-2	785	78	613	301	252	60	114	727	57	0	1.5	1.0969	43	0
AO98123-2	566	65	370	215	132	23	174	544	21	1	1.5	1.0967	44	0
AO98268-5	558	77	429	214	188	27	101	529	23	5	1.7	1.0954	54	0
AO98282-5*	923	69	641	344	262	35	220	861	62	0	1.6	1.0925	42	0
AO98307-6	640	72	461	277	166	18	154	615	20	5	1.6	1.0920	41	3
AO99081-1	794	49	392	279	97	16	345	738	27	27	1.8	1.0918	45	0
AO99108-5	701	79	551	303	216	32	120	672	29	0	1.8	1.0903	50	0
AO99111-9	617	81	498	228	228	42	73	572	43	3	2.1	1.0891	52	0
OR00002-7	895	47	430	214	180	36	322	751	60	84	2.0	1.0816	37	13
OR00043-5	588	79	467	135	261	72	39	506	80	2	1.1	1.0769	45	0
OR00061-4	471	79	371	89	237	45	53	424	47	0	1.9	1.0733	38	0
Mean	683	73	496	236	217	43	137	633	44	7	1.7	1.0971	48	0.7
LSD (0.05)	158.8	12.2	144.4	119.7	58.1	21.4	84.5	163.9	17.4	5.5	0.11	0.0121	2.8	NS

*Retained for further testing.

Table 4. Oregon Preliminary Yield Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
Russet Burbank	694	37	258	90	103	66	365	623	71	0	2.0	1.0871	41.8	0.0
Ranger	663	77	512	281	178	53	122	634	29	0	1.8	1.0997	48.6	0.0
Shepody	741	45	332	133	161	38	243	575	36	131	1.5	1.0911	46.1	0.0
Norkotah	485	79	383	94	219	70	47	429	44	12	1.8	1.0723	37.1	0.0
AO98081-1	466	80	365	272	88	7	88	453	14	0	2.0	1.0834	46.9	0.0
AO98086-1*	713	77	551	374	146	32	125	677	37	0	1.7	1.0901	45.5	0.0
AO98088-1	715	82	588	191	311	87	54	641	74	0	1.8	1.0849	40.3	0.0
AO98104-1*	1013	61	617	483	122	12	295	912	44	58	1.8	1.0977	39.2	0.0
AO98112-2	466	71	333	185	122	27	83	416	48	2	1.5	1.0834	38.6	5.0
AO98115-4	467	62	294	129	72	93	99	392	75	0	1.8	1.0917	45.2	0.0
AO98115-6	695	34	236	98	105	34	300	535	19	138	1.5	1.1029	49.4	0.0
AO98129-1	497	63	313	111	149	54	147	461	36	0	1.7	1.0861	46.2	0.0
AO98129-4*	750	77	586	355	195	37	124	709	34	8	1.8	1.0886	45.1	0.0
AO98136-1	641	82	525	338	159	29	98	623	14	5	1.7	1.0899	46.5	0.0
AO98149-1	928	59	544	248	227	70	323	867	52	10	2.0	1.0918	43.0	0.0
AO98155-2	438	31	129	8	71	51	115	244	68	127	2.0	1.0766	38.1	20.0
AO98169-3	494	72	354	157	158	40	75	429	39	27	1.9	1.1140	56.5	0.0
AO98170-3	652	43	269	83	157	29	336	604	48	0	2.0	1.1054	47.1	0.0
AO98170-4*	517	67	346	177	124	45	121	467	32	19	2.0	1.0951	51.0	0.0
AO98170-9	626	84	525	312	151	62	63	587	39	0	1.6	1.1008	40.7	0.0
AO98186-1	655	38	248	181	49	18	372	620	17	19	2.1	1.0870	44.3	0.0
AO98191-4	525	49	256	101	110	45	164	421	48	57	1.9	1.0871	42.8	0.0
AO98192-1	595	69	412	194	154	64	148	560	35	0	1.7	1.0893	56.4	0.0
AO98194-3	584	83	485	284	177	26	78	563	19	2	1.8	1.0933	46.5	0.0

Table 4, continued. Oregon Preliminary Yield Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
AO98196-2	501	58	286	161	97	29	197	484	17	0	1.6	1.1116	55.4	0.0
AO98198-2	1160	56	627	437	159	32	409	1035	44	79	1.8	1.0843	40.1	0.0
AO98209-2	563	84	473	177	226	71	28	501	63	0	1.9	1.0898	53.1	0.0
AO98212-3	492	69	343	151	122	71	120	463	29	0	1.8	1.0896	46.3	0.0
AO98213-1	691	43	304	37	210	58	316	622	67	4	1.8	1.1077	53.3	0.0
AO98214-2	819	69	579	403	153	23	227	806	13	0	2.0	1.1020	46.2	0.0
AO98223-1	586	73	433	173	206	54	118	551	36	0	1.8	1.1006	48.0	0.0
AO98226-2	550	77	427	263	145	20	99	526	11	15	1.9	1.0870	41.2	0.0
AO98226-3	777	82	638	494	113	31	119	757	21	0	1.6	1.0955	48.2	0.0
AO98226-6	775	86	672	213	386	73	54	726	49	0	1.6	1.0926	46.8	0.0
AO98228-3	627	82	512	284	157	71	92	303	27	0	1.6	1.0895	36.2	10.2
AO98247-2	688	54	393	200	167	27	239	632	53	4	2.1	1.0957	38.4	5.0
AO98250-2	629	84	526	162	285	79	48	574	54	0	1.7	1.0821	48.2	0.0
AO98251-2	734	87	638	446	166	27	47	685	34	15	1.8	1.0966	49.9	0.0
AO98251-3	318	80	257	192	60	6	45	302	13	3	1.7	1.0929	52.6	0.0
AO98252-1	644	76	489	276	180	34	112	601	43	0	1.7	1.0926	53.3	0.0
AO98254-1	700	41	283	217	55	12	361	643	18	39	2.1	1.0868	41.6	5.0
AO99034-3	390	77	298	107	157	35	57	355	30	6	1.9	1.0854	51.7	0.0
AO99053-1	877	66	573	323	206	44	272	844	26	7	1.8	1.0902	40.8	0.0
AO99053-2	677	44	295	209	57	29	349	644	21	12	2.0	1.0846	44.0	0.0
AO99053-4	732	64	464	317	128	19	233	696	12	24	1.7	1.0863	44.4	0.0
AO99053-8	481	84	402	221	113	69	36	438	44	0	1.9	1.0898	47.9	0.0
AO99054-1	428	73	320	207	92	22	93	412	16	0	1.5	1.0885	49.0	0.0
AO99097-3	645	91	585	331	232	22	42	626	17	3	1.6	1.0993	46.7	0.0

Table 4, continued. Oregon Preliminary Yield Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
AO99100-7	445	82	363	100	198	64	42	404	41	0	1.8	1.0804	45.0	0.2
AO99110-2	822	57	467	333	105	29	302	769	24	30	1.8	1.1098	51.0	0.0
AO99115-2	553	75	411	278	112	21	123	534	19	0	2.1	1.0844	42.2	0.0
AO99118-2	690	87	597	171	370	58	56	653	36	0	1.7	1.1136	51.4	0.0
AO99118-3	581	76	439	305	105	30	123	562	20	0	1.8	1.1006	45.5	5.0
AO99134-2	543	84	451	310	112	30	68	519	24	0	1.7	1.0901	43.2	0.0
AO99178-2*	883	70	620	313	251	57	217	837	46	0	1.8	1.0993	48.2	0.0
AO99179-1*	625	72	452	291	115	47	148	600	25	0	2.0	1.0829	49.5	0.0
AO99179-4*	750	68	509	466	36	7	233	742	9	0	1.8	1.0784	44.8	0.0
AO99186-3	395	92	363	234	101	29	17	380	15	0	1.8	1.0811	33.0	0.0
AO99192-2*	693	78	535	106	326	103	85	619	74	0	1.9	1.1038	47.9	0.0
AO00003-1	804	79	634	405	188	42	143	777	27	0	1.7	1.0927	38.9	0.0
AO00010-2	607	78	476	189	218	69	70	546	62	0	1.5	1.0899	51.0	0.0
AO00017-2	841	70	585	392	151	42	201	786	24	31	1.7	1.1037	41.3	0.0
AO00018-3*	502	74	357	173	154	31	128	484	19	0	2.0	1.0880	46.2	0.0
AO00024-6	574	53	309	141	127	41	200	509	36	30	1.8	1.1090	48.0	0.0
AO00024-7*	853	82	693	502	151	40	144	836	17	0	1.7	1.0819	42.9	0.0
AO00048-4	422	68	285	130	127	30	91	377	31	15	1.9	1.0688	36.6	0.0
AO00049-3	327	58	189	64	105	21	104	293	34	0	1.7	1.0812	43.4	0.0
AO00050-1	814	46	373	165	156	52	356	728	34	27	2.1	1.0783	45.6	0.0
AO00050-2	653	86	562	162	306	94	36	597	57	0	1.7	1.1094	51.7	0.0
AO00051-2	716	39	280	155	97	28	400	680	35	0	1.4	1.0868	45.8	0.0
AO00051-3	769	22	174	86	50	38	551	725	45	0	2.0	1.0855	40.9	0.0
AO00051-8	844	93	777	427	285	65	39	816	28	0	1.6	1.0966	49.1	0.0
AO00055-3	456	84	379	208	159	12	40	419	34	2	1.6	1.0876	43.3	0.0

Table 4, continued. Oregon Preliminary Yield Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
AO00056-2	595	71	423	93	255	76	125	547	48	0	1.6	1.0929	43.3	0.0
AO00057-1	477	75	357	108	208	42	93	451	27	0	1.8	1.0954	55.5	0.0
AO00057-2*	523	89	467	219	203	45	21	488	28	7	1.7	1.0950	48.3	0.0
AO00063-2	613	61	372	311	50	12	229	600	13	0	2.1	1.0913	40.3	0.0
AO00065-5	383	77	289	45	131	113	24	313	71	0	1.9	1.0915	52.0	0.0
AO00066-2	464	79	365	68	236	61	44	409	56	0	1.6	1.0838	50.0	0.0
AO00066-13	988	80	770	447	270	53	135	905	44	13	1.8	1.0833	40.2	0.0
AO00067-3	516	67	343	207	113	23	144	485	33	0	1.9	1.0800	37.6	0.0
AO00068-3	663	90	598	456	122	21	56	654	8	0	1.5	1.1064	43.9	0.0
AO00069-1	659	78	511	239	195	78	114	625	34	0	1.6	1.1041	50.0	0.0
AO00069-2	731	75	555	390	140	25	111	666	33	16	1.6	1.0914	42.2	0.0
AO00076-4*	894	82	729	340	302	87	104	832	63	0	1.7	1.1059	48.1	0.0
AO00077-6	440	83	364	143	182	40	42	406	34	0	1.6	1.0909	54.9	0.0
AO00077-8	645	69	414	248	135	32	197	611	34	0	1.7	1.0996	46.5	0.0
AO00078-3	501	74	367	90	200	78	87	454	47	0	1.8	1.0790	39.1	0.0
AO00078-4	553	87	482	297	154	31	47	528	25	0	1.4	1.0933	49.2	0.0
AO00079-1	480	71	336	188	113	34	115	450	31	0	1.8	1.0960	48.0	0.0
AO00081-1	426	65	267	123	94	50	113	379	17	30	2.0	1.0852	46.4	0.0
AO00085-1	444	76	337	240	78	20	75	412	13	20	2.1	1.0900	44.7	0.0
AO00085-2	534	78	416	185	186	46	79	495	39	0	1.9	1.1010	49.8	0.0
AO00087-2	726	76	550	74	354	123	105	655	72	0	1.7	1.1025	47.8	0.0
AO00088-5	597	91	542	302	226	15	33	574	21	2	1.9	1.0917	52.4	0.0
AO00088-11*	716	87	621	296	270	55	78	699	17	0	1.7	1.0973	46.5	0.0
AO00088-12	730	65	473	87	276	111	158	630	98	2	1.7	1.0921	45.7	0.0
AO00088-14	474	72	342	35	213	94	28	370	105	0	1.8	1.0807	38.2	5.0

Table 4, continued. Oregon Preliminary Yield Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
AO00098-10	499	77	385	231	107	47	60	444	55	0	1.6	1.0914	41.9	0.0
AO00098-11	543	78	423	286	118	19	98	521	23	0	1.7	1.0876	47.7	0.0
AO01012-4*	482	74	353	67	171	115	12	364	117	0	1.7	1.0922	46.6	0.0
AO01014-2	639	80	511	247	204	60	78	587	52	0	1.8	1.0860	47.2	0.0
AO01034-2	648	67	432	344	77	11	197	628	20	0	1.6	1.0845	47.0	0.0
AO01037-1	519	80	422	277	110	35	81	503	16	0	1.6	1.0980	51.0	0.0
AO01038-2	741	64	475	291	147	36	215	689	38	9	1.6	1.0951	45.8	0.0
AO01039-2	702	85	593	439	140	15	96	689	13	0	2.0	1.1015	44.8	0.0
AO01041-7	531	78	416	114	232	70	67	483	49	0	1.6	1.0857	41.4	0.0
AO01048-1	461	86	394	131	222	41	25	418	39	5	1.5	1.0894	51.5	0.0
AO01068-4	722	79	570	428	129	13	121	690	6	23	1.8	1.0877	36.3	5.0
AO01068-7	621	63	384	284	72	28	212	596	17	9	1.7	1.0926	35.3	40.0
AO01068-9	411	84	346	104	198	44	39	385	26	0	1.5	1.0977	50.5	0.0
AO01069-4	648	54	353	129	179	46	162	515	100	33	1.7	1.0807	42.1	0.0
AO01083-2	401	78	308	138	128	42	73	381	21	0	1.8	1.0854	41.9	0.0
AO01106-1	599	77	462	206	213	44	93	555	44	0	1.6	1.0849	50.3	0.0
AO01106-3	849	74	630	360	210	61	160	790	40	20	1.5	1.0851	40.3	0.0
AO01106-6	704	81	570	442	107	22	115	685	17	2	1.6	1.0890	43.0	0.0
AO01109-4	531	72	380	119	193	70	68	448	65	18	1.9	1.0893	54.3	0.0
AO01125-2	869	68	599	183	313	104	196	794	75	0	1.7	1.1005	43.4	0.0
OR01003-1	653	56	365	45	196	124	211	575	78	0	1.8	1.0817	40.9	0.0
OR01007-3	843	58	500	338	146	16	216	716	51	76	2.0	1.0891	39.1	0.0
Mean	625	71	439	228	165	46	138	574	37	10	1.8	1.0916	45.6	0.8
LSD (0.05)	235	18	199	153	97	34	135	238	29	45	0.2	0.0104	5.1	4.8

* Clones will advance to the Statewide Trial in 2006.

Table 5. Malheur Preliminary Trial potato yield, grade, and processing quality of early selections compared to several check entries grown at Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance	Sugar ends
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%	%
Russet Burbank	661	65	425	193	187	45	180	604	51	5	1.8	1.0950	47	0
Ranger Russet	655	75	483	284	157	41	128	611	37	7	1.7	1.0989	49	0
Shepody	714	51	365	160	167	38	272	637	44	32	1.8	1.0842	43	3
A00551-50LB	530	70	367	167	152	48	120	487	43	1	1.7	1.0905	47	0
A0068-5	706	72	498	311	156	31	152	650	38	14	1.6	1.0938	49	0
A97320-1	523	76	396	198	159	38	90	485	39	0	1.7	1.0935	48	0
COA00329-1	690	61	413	192	186	35	228	642	38	0	1.7	1.0904	47	5
Mean	640	67	421	215	166	39	167	588	41	8	1.7	1.0923	47	1
LSD (0.05)	NS*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

*NS = not significant.

Table 6. Unreplicated 8-Hill Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6-12 oz	U.S. No. 1 4-6 oz	U.S. No. 2	Marketable	<4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%
A98184-2	688	64	439	56	300	83	193	632	56	0	1.9	1.0817	43
A98199-7	749	78	584	251	248	85	90	674	74	0	1.3	1.0974	47
A98201-1	306	55	169	29	113	27	80	249	57	0	1.4	1.0958	46
A98201-2	74	37	27	0	27	0	20	48	26	0			
A98201-5	191	67	128	0	79	49	0	128	64	0	1.6	1.0779	52
A98218-3	246	88	216	21	148	47	0	216	30	0	1.5	1.0898	57
A99076-7	516	79	410	193	178	39	80	490	26	0	1.6	1.0836	57
A99076-9	404	72	291	65	186	40	60	351	53	0	1.6	1.0847	52
A99086-6	588	98	577	349	182	46	0	577	10	0	1.7	1.0969	52
A99093-14	601	89	537	123	375	38	35	572	29	0	1.5	1.0888	52
A99094-29	647	67	434	104	236	94	122	556	91	0	1.6	1.0959	47
A99094-34	406	61	248	69	80	100	80	328	79	0	1.6	1.0834	50
A99099-8	760	57	437	343	71	23	315	751	9	0	2.0	1.0934	49
A99108-3	388	76	294	99	152	43	47	341	47	0	1.9	1.0693	43
A99108-9	492	69	341	0	125	217	57	399	93	0	1.5	1.0936	60
A99109-5	554	80	442	154	238	50	80	522	32	0	1.9	1.1058	57
A0057-13	470	69	326	155	164	7	125	451	19	0	1.8	1.0904	54
A0057-4	542	64	349	137	182	30	166	514	28	0	1.9	1.0732	44
A0057-8	333	68	226	67	116	43	72	298	35	0	2.1	1.1008	44
A0067-3	432	68	295	86	130	78	93	388	45	0	1.6	1.0901	49
A0076-14	731	79	580	50	351	179	48	628	103	0	1.6	1.0934	48
A0076-16	430	46	199	0	97	102	0	199	231	0	1.4	1.0923	40
A0081-5	383	71	273	20	199	54	82	355	28	0	1.7	1.0937	50
A0098-10	402	32	128	0	67	62	128	257	91	54	1.7	1.0909	51
A0098-9	516	67	344	198	122	25	115	459	57	0	1.6	1.0903	50
A00105-1	327	72	234	0	151	83	12	245	81	0	1.6	1.0866	53
A00107-1	856	50	426	186	203	37	420	846	10	0	2.1	1.0776	42
A00115-3	652	76	497	354	143	0	123	620	32	0	1.4	1.0875	47

Table 6, continued. Unreplicated 8-Hill Trial potato yield, grade, and processing quality, Malheur Experiment Station, Oregon State University, 2005.

Variety	Total yield	U.S. No. 1 Percent No. 1	U.S. No. 1 Total	U.S. No. 1 >12 oz	U.S. No. 1 6 - 12 oz	U.S. No. 1 4 - 6 oz	U.S. No. 2	Marketable	< 4 oz	Cull	Length/ width	Specific gravity	Average fry color, light reflectance
	cwt/acre	%	cwt/acre								ratio	g cm^{-3}	%
A00121-1	620	67	418	246	134	38	162	581	40	0	1.7	1.0930	55
A00472-20LB	672	72	484	118	306	60	87	571	101	0	1.6	1.0949	47
A00686-2	644	54	347	19	242	86	161	508	136	0	1.5	1.1108	55
A01007-2	493	81	402	214	150	38	56	458	35	0	1.7	1.0864	53
A01010-1	669	80	536	41	381	114	70	606	63	0	2.0	1.0909	49
A01010-3	626	83	517	246	224	47	61	577	48	0	1.9	1.0977	45
A01023-10	438	58	256	0	244	12	137	393	45	0	2.0	1.0956	52
A01024-2	394	82	324	59	213	52	27	351	42	0	1.9	1.0912	50
A01024-7	446	88	391	107	231	52	0	391	55	0	1.6	1.0924	49
A01025-10	950	77	733	228	437	68	154	886	63	0	1.7	1.1319	47
A01025-13	613	80	489	18	388	82	61	550	63	0	1.5	1.1057	54
A01025-19	491	89	437	185	199	53	38	474	15	1	1.9	1.0896	45
A01025-4	602	73	436	200	166	70	140	576	25	0	1.9	1.0827	48
A01034-1	423	72	302	41	220	42	54	357	66	0	1.8	1.0869	56
A01036-3	394	52	203	0	149	54	142	345	49	0	1.7	1.0968	52
A01067-1	333	84	278	100	156	23	15	293	39	0	1.7	1.1173	50
A01136-4	598	72	433	139	213	80	116	549	50	0	1.7	1.1073	48
A01230-4	271	69	186	47	94	45	18	204	66	0	1.9	1.0923	49
A01281-53LB	746	59	438	0	256	182	206	644	102	0	1.5	1.1065	52
A01302-64LB	769	84	647	103	431	113	37	684	84	0	1.5	1.0947	53
A01590-52	565	78	439	39	310	89	106	545	20	0	1.3	1.0948	51
A01590-60	703	81	570	22	385	162	36	606	98	0	1.3	1.0913	53
A01595-78LB	304	42	127	0	88	39	49	175	128	0	1.3	1.0819	51
A01749-1	641	69	443	40	325	78	62	504	137	0	1.4	1.1039	53
COA01074-5	570	83	473	109	281	83	45	518	52	0	1.7	1.0786	43
COA01082-4	654	87	566	251	280	36	45	612	43	0	1.5	1.0840	54
COA01148-2	474	70	334	145	106	83	32	366	108	0	1.5	1.0970	43
Mean	523	71	376	106	205	65	87	462	60	1	1.7	1.0926	50

Table 7. Specialty Preliminary Trial potato yield and grade of colored flesh clones, Malheur Experiment Station, Oregon State University, Ontario, OR, 2005.

Variety	Total yield	<4-10 oz	4-10 oz	4-6 oz	6-10 oz	<4 oz	>10 oz	Twos	Cull	Twos plus culls	Rotten tubers
	cwt/acre										
All Blue	793	478	244	110	134	233	37	232	38	271	8
Yukon Gold	487	221	163	51	112	58	185	69	12	81	1
PA99P20-2	698	252	183	62	120	69	163	245	29	273	11
POR01PG20-12*	908	502	310	149	160	193	128	223	38	260	19
POR01PG22-1*	708	406	86	72	15	320	0	281	17	298	5
PA96RR1-193	556	473	226	143	83	247	40	7	23	30	12
PA97B36-3*	890	259	185	40	145	75	303	156	157	313	16
POR00PG4-1*	468	349	231	86	146	118	88	23	0	23	8
POR01PG10-1	455	340	70	54	17	270	6	76	31	106	4
POR01PG16-1*	474	380	83	72	11	298	50	37	2	39	4
POR01PG45-2	346	305	85	58	27	221	21	19	0	19	3
POR01PG45-5*	856	667	427	199	229	241	89	87	5	92	9
OR00068-9	923	462	145	110	36	317	15	376	68	444	4
OR00068-11	860	621	388	176	212	233	55	157	11	168	17
OR00068-29	420	304	114	74	41	190	0	114	0	114	3
OR00077-22	724	198	110	47	63	89	202	300	19	319	6
POR02PG2-4*	1174	1014	352	191	162	662	38	89	16	105	18
POR02PG4-2	257	249	38	35	4	210	0	6	0	6	4
POR02PG5-1*	875	201	163	34	129	38	267	93	298	391	18
POR02PG7-5	496	489	20	16	4	469	0	5	2	7	2
POR02PG10-1	589	540	193	131	62	347	7	31	10	40	4
POR02PG12-1*	412	383	43	34	9	340	0	19	2	20	9
POR02PG26-4	681	497	328	139	189	168	99	77	3	80	5
POR02PG26-5	915	669	462	189	274	208	70	165	2	167	8
POR02PG26-6	1339	1021	432	192	240	589	58	215	39	253	9
POR02PG26-11*	733	539	281	130	151	258	75	91	15	106	14
POR02PG37-2*	485	421	245	112	132	178	23	39	0	39	3
POR02PG37-4	547	406	247	103	145	159	83	37	14	52	8
Mean	681	451	209	100	109	242	75	117	30	147	8
LSD (0.05)	276	120	127	51	104	79	91	84	117	157	NS

* Clones will advance to the Statewide Specialty Trial in 2006.