

2009 Potato Cultivar Yield and Postharvest Quality Evaluations

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WSU Potato Research Group

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On the cover: Raul (Rudy) Garza Jr. drives the John Deere tractor during a 2009 planting at the Othello Research Center.

INTRODUCTION

The 2009 Washington “Potato Cultivar Yield and Postharvest Quality Evaluations” annual report provides detailed information about promising new potato clones and cultivars grown in Washington. The data in this report are the result of intensive in-field and postharvest research conducted by the Washington State University (WSU) Potato Variety Development Program. Our objective is to identify new potato varieties that will provide profitable, sustainable production for the grower, improved competitiveness for the Washington potato industry, a healthy, inexpensive food supply for American consumers, and contributions towards a healthy environment.

This book reports potato clone and cultivar performance within five research trials: Red and Specialty, Early-Harvest Tri-State, Early-Harvest Regional, Late-Harvest Tri-State, and Late-Harvest Regional. The Tri-State trials evaluate the newest clones coming from the Tri-State program (Washington, Oregon, and Idaho) and the Regional Trials evaluate advanced clones that have graduated from the Tri-State in addition to advanced clones from other programs. Our goal is to provide meaningful information that can be used by growers, processors, fresh-pack sheds, researchers, and other industry personnel.

The majority of the potato clones and cultivars evaluated in this report came from USDA/ARS funded breeding programs located at Aberdeen, ID and Prosser, WA. Additional clones and cultivars came from Oregon State University, Colorado State University, Texas A&M University, North Dakota State University, University of Minnesota, USDA/ARS Beltsville, and Vauxhall, Alberta, Canada. The WSU Potato Variety Development Program is aided in research, administrative detail, and funding by the Washington State Potato Commission, the Northwest (Tri-State) Potato Variety Development Program (Idaho, Oregon, and Washington, USDA/ARS), the Western Coordinating Committee 27 (WERA-27), and other members of the U.S. potato industry. In 2005 the state potato commissions of Washington, Oregon, and Idaho launched a nonprofit corporation called the Potato Variety Management Institute (PVMI) to handle the licensing and royalty collection on Tri-State potato varieties. PVMI's main mission is to promote new varieties of potatoes and insure that the funds generated are returned to the Tri-State potato breeding program. Information on Tri-State released varieties can be found at www.pvmi.org.

Recent Accomplishments: The effect of the Tri-State Potato Variety Development Program on the Northwest potato industry has been substantial. The fresh market industry, french fry processors and chippers have incorporated many varieties developed through the Tri-State variety development program into their businesses. Ranger Russet, Premier Russet, Western Russet, Umatilla Russet, and Alturas are examples of russet cultivars released from the Tri-State program that have greatly benefited the Northwest potato industry, being the 2nd, 4th, 5th, 6th and 8th most widely grown cultivars in Idaho in 2009, respectively (NASS, Crop Production, November, 2009), and accounting for 23% of the planted acreage in Idaho in 2009. Ranger, Umatilla, Alturas, and Premier Russet were the 3rd, 4th, 5th, and 7th most widely grown cultivars in WA in 2009, respectively, accounting for 37% of total acreage. In OR, these cultivars ranked 3rd, 8th, 5th, and 4th, respectively, and accounted for 35% of total acreage. Ranger Russet, Umatilla Russet, Alturas, Premier Russet, and Western Russet were also the 3rd, 5th, 7th, 10th, and 11th most widely grown potato varieties in the United States in 2008, with Tri-State varieties representing about 20% of the fall crop nationally. Varieties recently released by the Tri-State program are now produced on over 140,000 acres in the Pacific Northwest with value to growers estimated at approximately \$505 million.

ADVANCED LINES - REGIONAL TRIAL
Fresh Market Value Merit Scores - Washington
(Entries ranked according to performance)

Scores based on 1 to 5 (5 = Best) and are averaged across multiple trials, unless bolded. Values of bolded entries are from one year only.

Rank	Entry	Early Harvest		Late Harvest	
		Merit	Rank	Entry	Merit
1	Russet Norkotah	4.2	1	A0008-1TE	3.2
2	A0008-1TE	4.0	2	AO96365-2	3.1
3	PA99N2-1	3.7	3	PA00N14-2	3.0
4	CO99100-1Ru	3.2	4	AO96305-3	2.9
5	PA00N14-2	3.1	5	PA99N2-1	2.9
6	AO96305-3	3.0	6	Russet Norkotah	2.7
7	AO96365-2	3.0	7	CO98067-7Ru	2.7
8	Ranger Russet	3.0	8	A98345-1	2.6
9	CO97087-2Ru	2.9	9	A96814-65LB	2.6
10	CO99053-4Ru	2.4	10	CO99100-1Ru	2.3
11	A96814-65LB	2.3	11	AC99375-1Ru	2.3
12	PA99N82-4	2.3	12	CO97087-2Ru	2.3
13	CO99053-3Ru	2.3	13	Ranger Russet	2.2
14	A98345-1	2.2	14	A97066-42LB	2.1
15	CO98067-7Ru	2.2	15	CO99053-3Ru	2.0
16	CO98368-2Ru	2.1	16	CO99053-4Ru	2.0
17	Russet Burbank	2.1	17	Russet Burbank	1.8
18	AC99375-1Ru	2.0	18	CO98368-2Ru	1.4
19	A97066-42LB	1.3	19	PA99N82-4	1.0

For more information on these cultivars, see the Early and Late Harvest Regional Trial Sections in This Book.

NEWEST ENTRIES - TRI-STATE TRIAL
Fresh Market Value Merit Scores - Washington
(Entries ranked according to performance)

Scores based on 1 to 5 (5 = Best) and are averaged across multiple trials, unless bolded. Values of bolded entries are from one year only.

Rank	Entry	Early Harvest		Late Harvest	
		Merit	Rank	Entry	Merit
1	Russet Norkotah	4.2	1	AO02183-2	4.8
2	AO00057-2	3.6	2	Russet Norkotah	2.7
3	Ranger Russet	3.0	3	A01010-1	2.3
4	A00727-1	2.6	4	Ranger Russet	2.2
5	Russet Burbank	2.1	5	AO00057-2	1.9
6	AO02183-2	1.9	6	Russet Burbank	1.8
7	A01010-1	1.3	7	A00324-1	1.5
8	A00324-1	1.2	8	A00727-1	1.3

For more information on these cultivars, see the Early and Late Harvest Tri-State Trial Sections in This Book.

ADVANCED LINES - REGIONAL TRIAL
Process Market Merit Scores - Washington
(Entries ranked according to WA field performance)

Scores based on 1 to 5 (5 = Best) and are averaged across multiple trials, unless bolded.
Values of bolded entries are from one year only.

Rank	Entry	Early Harvest Merit	Entry	Late Harvest	
				Field Performance Merit	Post-Harvest Processing Merit (3-State)
1	PA00N14-2	4.4	A98345-1* (read below)	4.2	4.4*
2	A96814-65LB	3.4	CO99053-3Ru	3.6	3.4
3	AO96305-3	3.4	Ranger Russet	3.5	3.5
4	A0008-1TE	3.3	PA99N2-1	3.4	3.8
5	Ranger Russet	3.3	AO96305-3	3.4	4.5
6	CO97087-2Ru	3.3	AO96365-2	3.4	3.6
7	Russet Norkotah	3.3	AC99375-1Ru	3.2	4.6
8	A98345-1	3.2	CO97087-2Ru	3.1	4.3
9	PA99N2-1	3.2	PA00N14-2	2.9	3.6
10	CO99100-1Ru	3.0	A97066-42LB	2.9	3.6
11	Russet Burbank	2.9	A0008-1TE	2.7	3.4
12	AC99375-1Ru	2.9	Russet Burbank	2.5	2.5
13	AO96365-2	2.8	PA99N82-4	2.4	4.1
14	A97066-42LB	2.8	A96814-65LB	2.4	4.0
15	CO98368-2Ru	2.8	CO98067-7Ru	1.9	2.4
16	CO99053-4Ru	2.5	CO98368-2Ru	1.8	fresh only
17	CO98067-7Ru	2.5	Russet Norkotah	1.5	fresh only
18	PA99N82-4	2.4	CO99053-4Ru	1.1	3.2
19	CO99053-3Ru	1.7	CO99100-1Ru	1.0	2.8

For more information on these cultivars, see the Early and Late Harvest Regional Trial Sections in This Book. *In Columbia Basin, severely mottles after 44 days in storage.

NEWEST ENTRIES - TRI-STATE TRIAL
Process Market Merit Scores - Washington
(Entries ranked according to WA field performance)

Scores based on 1 to 5 (5 = Best) and are averaged across multiple trials, unless bolded.
Values of bolded entries are from one year only.

Rank	Entry	Early Harvest Merit	Entry	Late Harvest	
				Field Performance Merit	Post-Harvest Processing Merit (3-State)
1	AO00057-2	3.4	AO02183-2	4.4	4.4
2	Ranger Russet	3.3	A01010-1	3.9	3.4
3	Russet Norkotah	3.3	A00324-1	3.7	3.6
4	A00727-1	2.9	Ranger Russet	3.5	3.5
5	Russet Burbank	2.9	AO00057-2	2.5	4.2
6	A00324-1	2.5	Russet Burbank	2.5	2.5
7	AO02183-2	2.0	A00727-1	2.0	2.2
8	A01010-1	1.2	Russet Norkotah	1.5	fresh only

For more information on these cultivars, see the Early and Late Harvest Tri-State Trial Sections in This Book.

2009 Red & Specialty Potato Clones - Washington State University

RANKED ACCORDING TO 2009 US #1 Yield						
US #1 Yield						
	2009		2008		(See also Red & Specialty Section near end of book)	
US#1 Yield CWT/A	0-6 oz -----%-----	6-10oz	US#1 Yield CWT/A	Comments		
<u>Red Skin/White Flesh*</u>						
Dark Red Norland	296	35	32	486	Pink, large, deep eyes.	
Red LaSoda	387	13	29	485	Deep eyes, rough, some growth cracks.	
ATTX98453-6R	296	50	36		Red, large, rough, sticky stolons**.	
BTX2332-1R	392	37	44		Shallow eyes, nice deep red.	
COTX94216-1R	229	87	13		Dark red, nice, sticky stolons**, medium to small.	
COTX94218-1R	218	78	20		Nice red color, sticky stolons**, typy.	
NDTX4784-7R	329	36	41		Dark red, severe growth cracks, discard!	
<u>Red or Purple Skin/Yellow Flesh</u>						
A99326-1PY	335	22	36		Purple, large, deep eyes, rough.	
AC99329-7PW/Y	297	57	33	427	Sticky stolons**, some pointy ends.	
AC99330-1P/Y	344	90	10	322	Nice dark purple, smaller, many tubers, standout	
POR01PG45-5	246	87	12	457	Small, purple, pointy ends, sticky stolons**.	
POR03PG80-2	317	33	48		Large, looks like a purple baker, oblong.	
<u>Red Skin/Red Flesh</u>						
PA96RR1-193	381	93	7	475	Deep eyes, nice, dark red, sticky stolons**.	
POR03PG23-1	226	88	11	291	Attractive red and yellow, has some rot issues.	
<u>Purple Skin/Purple Flesh</u>						
Purple Majesty	380	86	13	385	Nice size and shape, deep purple.	
OR00068-11	359	94	5	431	Purple, nice, uniform size, standout.	
<u>Yellow Flesh - Skin Color/Type Vary</u>						
Yukon Gold	380	12	28	322	Large, yellow, a bit rough shaped.	
A00286-3Y	320	77	22	335	Smaller, oblong to round, standout.	
A00293-2Y	319	73	22		Pointy, some nice, small, smooth.	
CO00412-5W/Y	293	61	31		Nice size and shape, but flakey skin.	
CO99045-1W/Y	329	42	35	426	Oblong, yellow, skin not smooth.	
POR02PG37-2	421	51	36	429	Nice, typy, looks like a smaller version of Yukon Gold.	

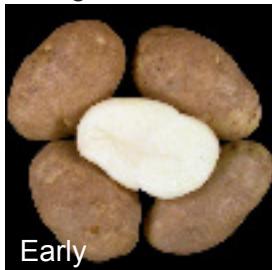
*Skin/Flesh Color: R = Red, W = White, Y = Yellow, P = Purple, Rus = Russet, Buff = off-white with or without light russetting.

** The term "sticky stolons" refers to tubers that stay attached to the plant during harvest. This may not be a problem if plants are vine killed or fully matured prior to harvest, however, it generally indicates late maturation.

At-Harvest Grading Comments & Fresh Market Appearance

Newest Lines - 2009 Tri-State Trials		
Clone	Fresh Market	Comments
	Appearance	
Early Harvest Tri- State		
Ranger Russet	3.0	Very large, blocky, mostly typy.
Russet Burbank	3.0	Mostly typy, a bit rough.
Russet Norkotah	4.0	Mostly typy, eyes somewhat deep, a bit flat.
A00324-1	2.0	Large, rough shape, some pointy ends.
A00727-1	3.0	Somewhat pear-shaped, some pointy ones.
A01010-1	3.5	Small, skinny, eyes a bit deep, typy.
AO00057-2	4.0	Large, blocky, nice dark russetting, typy.
AO02183-2	3.3	Typy, but many prominent eyes; some dumbbells, poor skin set.
Late Harvest Tri- State		
Ranger Russet	3.0	Mostly typy, some large, some irregular shapes.
Russet Burbank	2.8	Mostly typy, some irregular shapes, a few rough ones.
Russet Norkotah	4.0	Nice, typy, uniform, baker size.
A00324-1	2.3	Very large tubers (too large), some rough; ugly skin, deep eyes.
A00727-1	3.3	Many undersized tubers, some typy.
A01010-1	4.0	Nice, uniform baker size, but puffed wheat skin, mostly typy.
AO00057-2	3.5	Mostly typy, plump girth, very dark skin.
AO02183-2	3.8	Eyes a bit deep; otherwise, uniform shape; fresh pack potential.

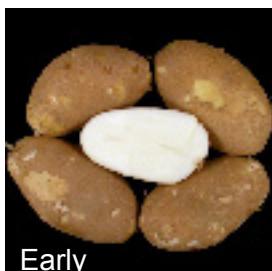
Ranger Russet



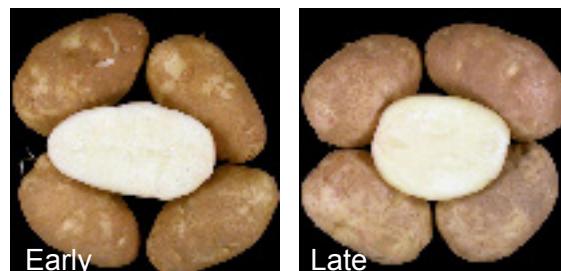
AO02183-2



A00324-1



A00727-1



A01010-1



AO00057-2



At-Harvest Grading Comments & Fresh Market Appearance

Advanced Lines - 2009 Regional Trials		
Clone	Fresh Market	
	Appearance	Comments
Early Harvest Regional		
Ranger Russet	3.0	Very large, blocky, mostly typy.
Russet Burbank	3.0	Mostly typy, a bit rough.
Russet Norkotah	4.0	Mostly typy, eyes somewhat deep, a bit flat.
A96814-65LB	1.0	Large, ugly skin, spotty russetting, a bit rough.
A97066-42LB	1.0	Ugly skin, spotty russetting, a bit pointy.
A98345-1	1.0	Large, ugly skin, rough, light russetting.
A0008-1TE	4.0	Large, blocky, typy, light russetting, some cracks and knobs.
AC99375-1Ru	3.7	Large, nice russet skin, a bit rough, mostly typy.
AO96305-3	2.7	Long, skinny, spotty russetting, ugly skin, poor skin set.
AO96365-2	4.0	Nice russet skin, blocky, somewhat round.
CO97087-2Ru	2.0	Irregular shape, a bit rough, looks like a rough Norkotah.
CO98067-7Ru	2.7	Rough, non-uniform shape, some typy ones.
CO98368-2Ru	2.7	Small, irregular shape, pointy ends, somewhat typy.
CO99053-3Ru	3.0	Mostly typy, some curves, long.
CO99053-4Ru	3.0	Mostly typy, some curves, pointy, light russetting.
CO99100-1Ru	3.5	Large, blocky, irregular shape, a few cracks, typy.
PA00N14-2	2.3	Long, skinny; light, feathery skin, flakey russetting, uniform.
PA99N2-1	3.3	Round, mostly typy.
PA99N82-4	1.3	Large, round, irregular shape, growth cracks - discard.
Late Harvest Regional		
Ranger Russet	3.0	Mostly typy, some large, some irregular shapes.
Russet Burbank	2.8	Mostly typy, some irregular shapes, a few rough ones.
Russet Norkotah	4.0	Nice, typy, uniform, baker size.
A96814-65LB	2.3	Large, plump girth, a bit round, ugly skin, a lot of green.
A97066-42LB	2.0	Large, some irregular shapes, ugly skin, some shatter.
A98345-1	2.5	Large, plump; ugly, light skin; a lot of shatter.
A0008-1TE	3.7	Mostly typy, light russet skin, uniform size and shape.
AC99375-1Ru	2.3	Small, irregular shape, puffed wheat skin.
AO96305-3	4.0	Typy, smaller, uniform size and shape, spotty russetting.
AO96365-2	2.5	Large size range, a bit round/plump, some puffed wheat skin.
CO97087-2Ru	1.5	Small; rough, irregular shape - discard.
CO98067-7Ru	2.0	Small, flat, many round and pear-shaped.
CO98368-2Ru	2.8	Some typy, but many flat or pear-shaped - discard.
CO99053-3Ru	2.8	Mostly typy, very large, flat; puffed wheat skin.
CO99053-4Ru	2.3	Small, flat, many pear-shaped.
CO99100-1Ru	2.3	Many pear-shaped, some very large, knobs on ends.
PA00N14-2	4.0	Long, skinny, smooth, yellow tint to skin, mostly typy.
PA99N2-1	2.5	Plump, mostly round; light skin.
PA99N82-4	1.0	Very large (football-sized), growth cracks, ugly - discard.

2009 Early Harvest Tri-State Trial

Summaries

ENTRY	TOTAL YIELD			US # 1's*	US # 2's*	Culls*	CARTON YIELD		PROCESS YIELD	
	CWT/A	STATS**	Tons/A	> 4 oz	> 4 oz	& < 4 oz	% of Total Yield	100-50 count (US 1's 7-18 oz)	Tons/A	US 1's and 2's
										> 6 oz
Ranger Russet	475	AB	23.8	96	2	3	65	15.5	92	21.9
Russet Burbank	457	AB	22.9	86	2	12	68	15.5	76	17.3
Russet Norkotah	518	A	25.9	93	1	6	77	20.1	87	22.7
A00324-1	501	AB	25.1	88	6	6	55	13.8	90	22.6
A00727-1	530	A	26.5	86	2	12	64	16.9	75	19.9
A01010-1	445	AB	22.3	90	2	8	63	14.0	75	16.7
AO00057-2	496	AB	24.8	95	2	3	68	17.0	92	22.7
AO02183-2	480	AB	24.0	88	1	11	65	15.6	72	17.3

ENTRY	US # 1 YIELD						> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%)		
	> 4 oz CWT/A	STATS**	Tons/A	> 4 oz	4-7 oz*	7-14 oz*		% HH	% BC	% IBS
				%						
Ranger Russet	456	AB	22.8	11	43	46	1.077	0	0	0
Russet Burbank	392	ABC	19.6	23	59	18	1.079	0	0	3
Russet Norkotah	482	AB	24.1	14	54	32	1.070	0	0	0
A00324-1	439	ABC	22.0	6	33	61	1.070	0	0	0
A00727-1	458	AB	22.9	25	58	17	1.076	0	0	0
A01010-1	399	ABC	20.0	31	68	2	1.067	0	0	3
AO00057-2	469	AB	23.4	10	49	41	1.077	0	0	0
AO02183-2	423	ABC	21.1	30	60	9	1.074	0	0	0

ENTRY	30 DAY STAND	40 DAY STAND	50 DAY STAND	STEMS PER PLANT	AVERAGE TUBER WEIGHT		SKIN SET	TUBER SHAPE	BRUISE (%)	
	% Emerged	% Emerged	% Emerged	Above Ground	Ounces	Tubers/Plant	1 = Poor 5 = Good	1 = Round 5 = Long	(8-12 oz tubers)	
									BLACKSPOT	SHATTER
Ranger Russet	0	82	100	1.5	10.7	4.6	3	4	20	32
Russet Burbank	0	87	98	1.5	7.8	6.1	4	3	20	7
Russet Norkotah	0	91	98	1.9	9.6	5.6	4	3	3	10
A00324-1	0	80	100	2.2	12.5	4.2	4	3	25	10
A00727-1	0	71	96	1.8	6.9	8.0	4	3	23	20
A01010-1	0	67	87	2.1	6.7	6.9	4	3	13	13
AO00057-2	0	18	91	1.2	10.9	4.7	4	3	20	27
AO02183-2	0	62	98	1.7	7.2	7.0	4	3	3	17

* Percent values may not total 100% due to rounding

**Numbers followed by the same letter are not significantly different at the 5% level using Tukey's HSD Test

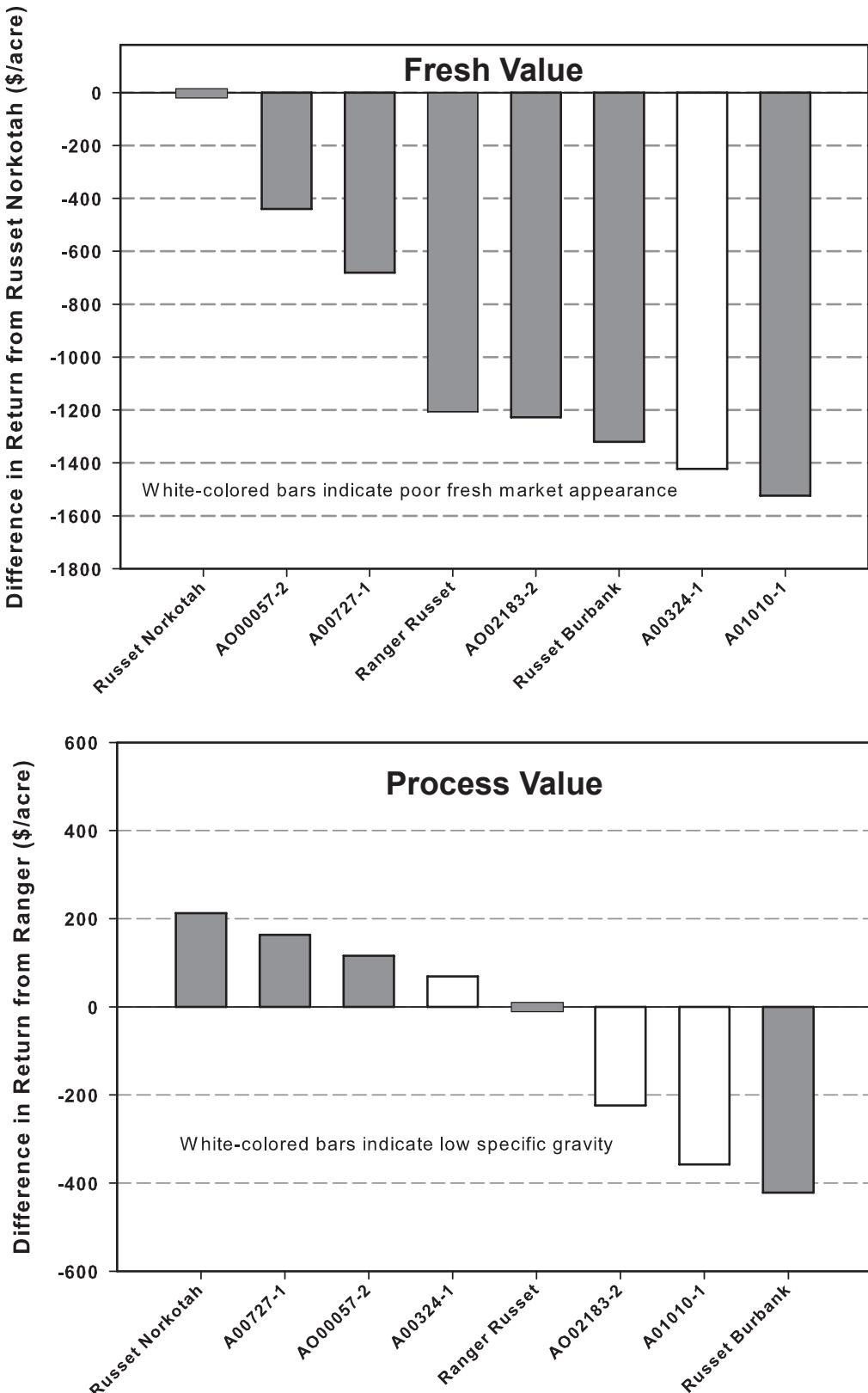


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry.

Figure 2 (Bottom). Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet from the gross return of the particular entry.

2009 Late Harvest Tri-State Trial

Summaries

ENTRY	TOTAL YIELD			US # 1's*	US # 2's*	Culls*	CARTON YIELD		PROCESS YIELD	
	CWT/A	STATS**	Tons/A	> 4 oz	> 4 oz	& < 4 oz	% of Total Yield	100-50 count (US 1's 7-18 oz)	Tons/A	US 1's and 2's
										> 6 oz
Ranger Russet	814	ABCD	40.7	89	4	7	48	19.6	87	35.4
Russet Burbank	852	ABCD	42.6	88	5	8	59	25.0	85	36.1
Russet Norkotah	663	CD	33.1	91	0	9	65	21.6	77	25.5
A00324-1	1029	AB	51.4	96	1	3	32	16.4	95	48.8
A00727-1	663	CD	33.2	89	1	10	52	17.1	80	26.7
A01010-1	832	ABCD	41.6	93	1	7	69	28.6	84	34.9
AO00057-2	678	CD	33.9	96	0	4	48	16.2	91	30.7
AO02183-2	864	ABCD	43.2	94	1	5	64	27.6	87	37.5

ENTRY	US # 1 YIELD						> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%)		
	> 4 oz CWT/A	STATS**	Tons/A	> 4 oz	4-7 oz*	7-14 oz*		% HH	% BC	% IBS
					%					
Ranger Russet	725	BCDE	36.2	11	34	56	1.081	0	0	0
Russet Burbank	748	ABCDE	37.4	17	47	37	1.080	3	0	0
Russet Norkotah	604	CDE	30.2	24	62	14	1.065	0	0	0
A00324-1	986	AB	49.3	4	20	75	1.082	0	0	0
A00727-1	588	CDE	29.4	17	39	44	1.080	0	0	0
A01010-1	772	ABCDE	38.6	16	56	28	1.082	0	0	0
AO00057-2	648	CDE	32.4	8	30	61	1.077	0	0	0
AO02183-2	812	ABCDE	40.6	15	48	37	1.089	0	0	0

ENTRY	30 DAY STAND	40 DAY STAND	50 DAY STAND	STEMS PER PLANT	AVERAGE TUBER WEIGHT		SKIN SET	TUBER SHAPE	BRUISE (%)	
	% Emerged	% Emerged	% Emerged	Above Ground	Ounces	Tubers/Plant	1 = Poor 5 = Good	1 = Round 5 = Long	(8-12 oz tubers)	
									BLACKSPOT	SHATTER
Ranger Russet	13	98	100	1.5	10.9	6.5	4	4	20	50
Russet Burbank	19	97	100	1.6	9.3	8.0	4	3	25	55
Russet Norkotah	10	93	97	1.9	7.4	7.8	4	3	15	23
A00324-1	0	91	100	2.1	15.5	5.8	3	3	26	56
A00727-1	0	75	95	1.7	8.3	6.9	3	3	25	70
A01010-1	67	93	99	2.0	8.6	8.5	4	3	13	53
AO00057-2	0	93	98	1.2	11.4	5.2	4	3	15	59
AO02183-2	1	91	100	2.1	9.3	8.0	4	3	5	50

* Percent values may not total 100% due to rounding

**Numbers followed by the same letter are not significantly different at the 5% level using Tukey's HSD Test

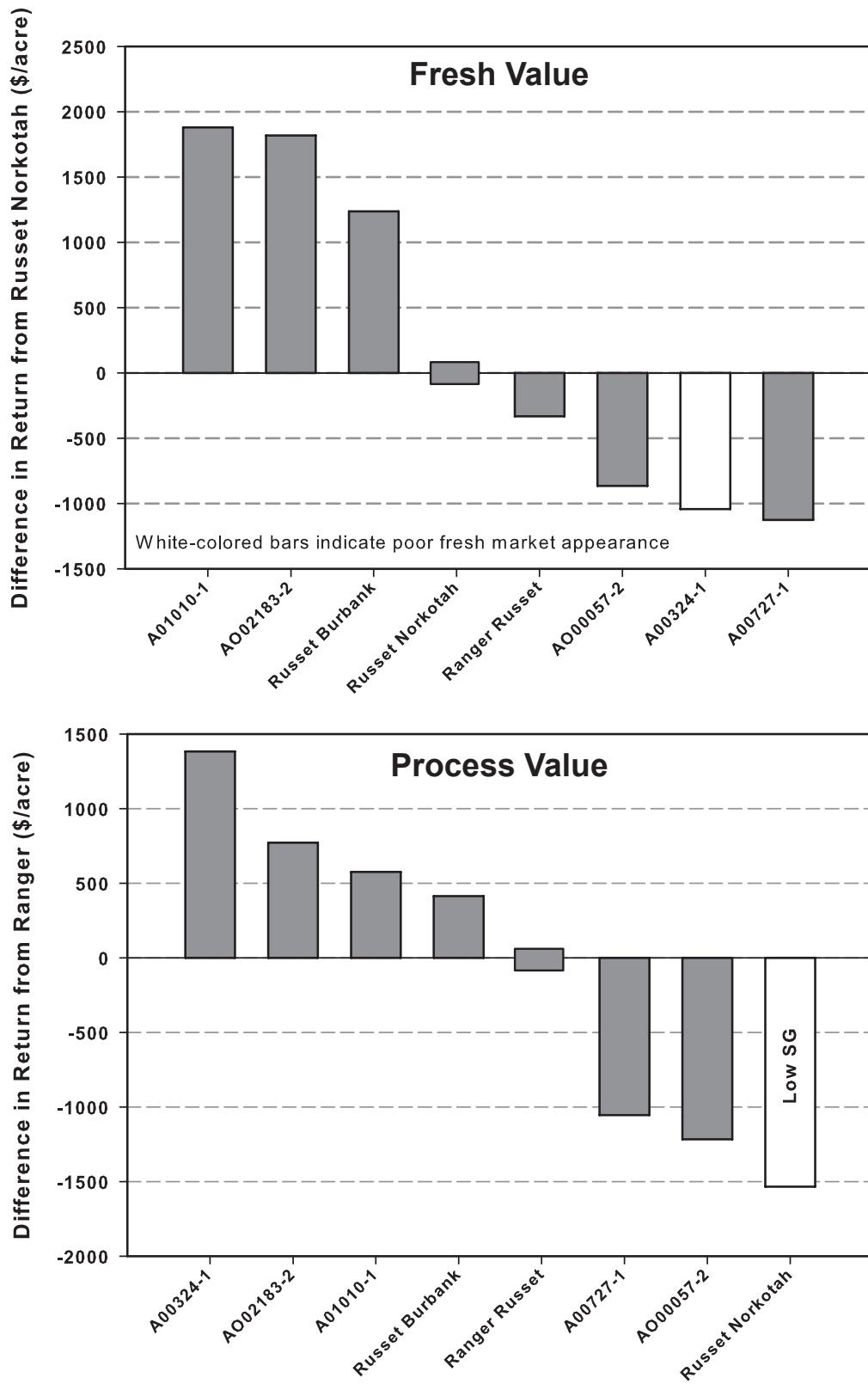
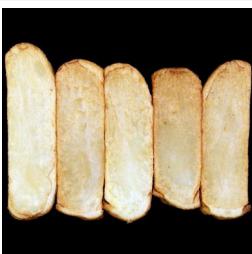
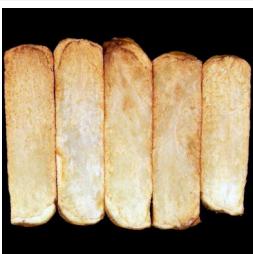
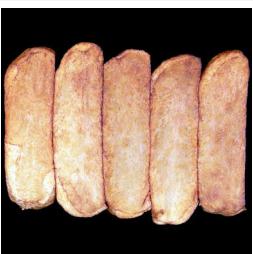
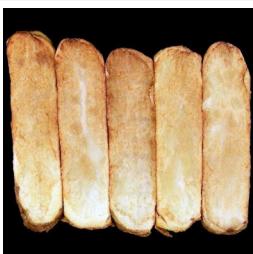
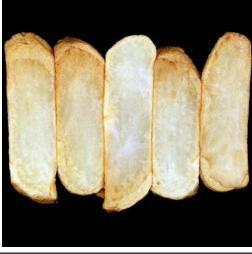
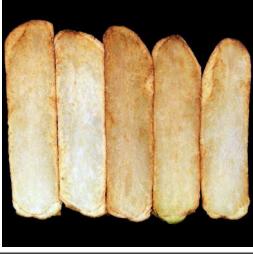
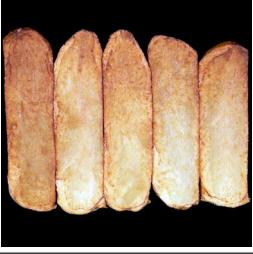
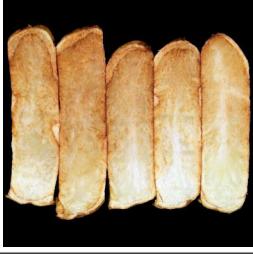
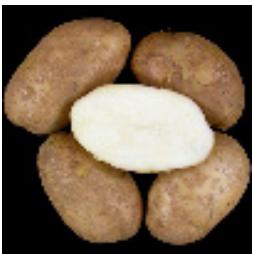
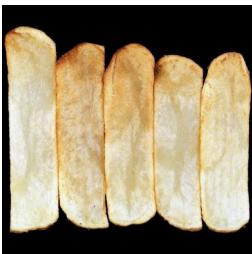
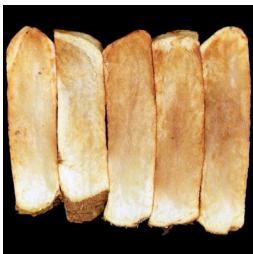
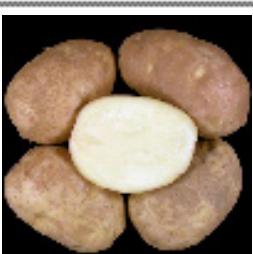
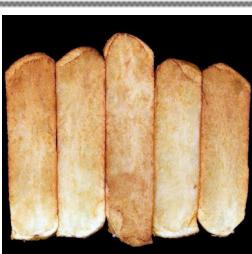
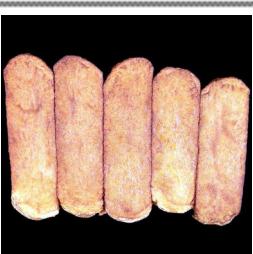
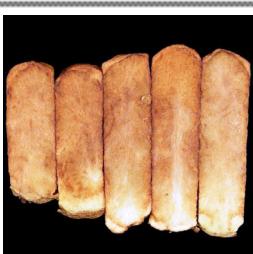
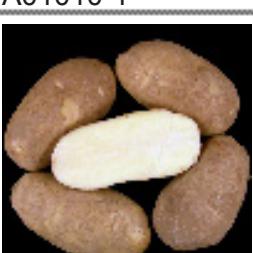
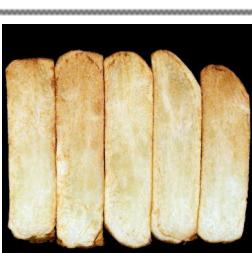
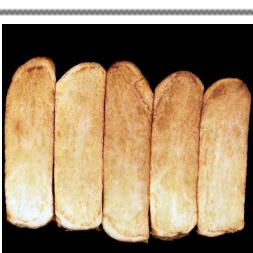
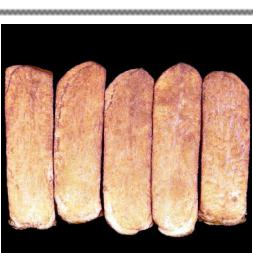
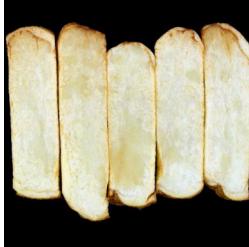
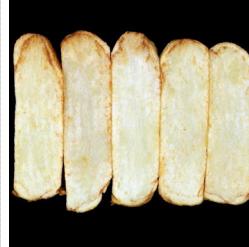
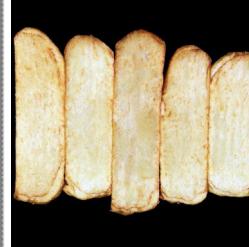
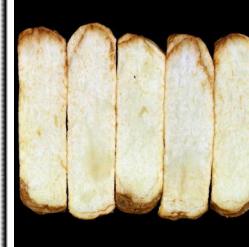
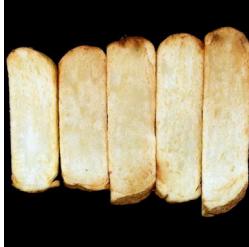
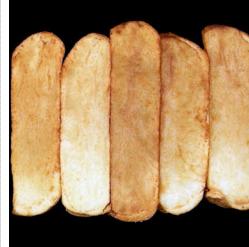
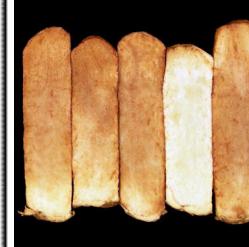


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape or appearance. **Figure 2 (Bottom)** Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet from the gross return of the particular entry. Entries with the white-colored bars would be penalized (under the mock contract parameters) due to a specific gravity less than 1.075.

Tubers	48° F Storage	44° F Storage	40° F Storage	40° F Recon.	
Ranger Russet					
Russet Burbank					
A00324-1					
A00727-1					
A01010-1					

Tubers	48° F Storage	44° F Storage	40° F Storage	40° F Recon.
AO00057-2				
				
AO02183-2				
				



Left: Tom Cummings (Plant Pathology) captivates the audience as he discusses potato disease management at the 2009 WSU Potato Field Day in Othello.



Right: Chuck Brown (USDA-ARS) kneeling, tells a group about potential phytonutrients in some specialty varieties grown in this year's seed lot.

2009 Late Harvest Tri-State Trial

Accumulated Total Postharvest Rating of Clones

Clone	WA		ID		OR		3 State av. Rating Total
	Rating Total §	Discard §§	Rating Total §	Discard §§	Rating Total §	Discard §§	
7 AO02183-2	27.6		36.6		36.3		33.5
6 AO00057-2	35.9		35.5		23.4		31.6
1 Ranger Russet	32.6		33.2		22.3		29.4
5 A01010-1	31.4		28.4		18.5	Sp. Gr.	26.1
3 A00324-1	32.5		27.2		14.1		24.6
2 Russet Burbank	28.5		15.7	Sp. Gr.	11.9	Sp. Gr.	18.7
4 A00727-1	19.2		17.6		14.2	Sp. Gr.	17.0
Average	29.7		27.7		20.1		25.8

§ maximum rating possible = 38

§§ Values for the indicated evaluation are lower than the rejection level.

Overall Postharvest Performance of Clones Compared to Russet Burbank

Clone	WA	ID	OR	Average
1 Ranger Russet	H	H	H	H
3 A00324-1	H	H	H	H
4 A00727-1	L	H	H	L
5 A01010-1	H	H	H	H
6 AO00057-2	H	H	H	H
7 AO02183-2	L	H	H	H

H= Higher than Russet Burbank

S= Same as Russet Burbank

L= Lower than Russet Burbank

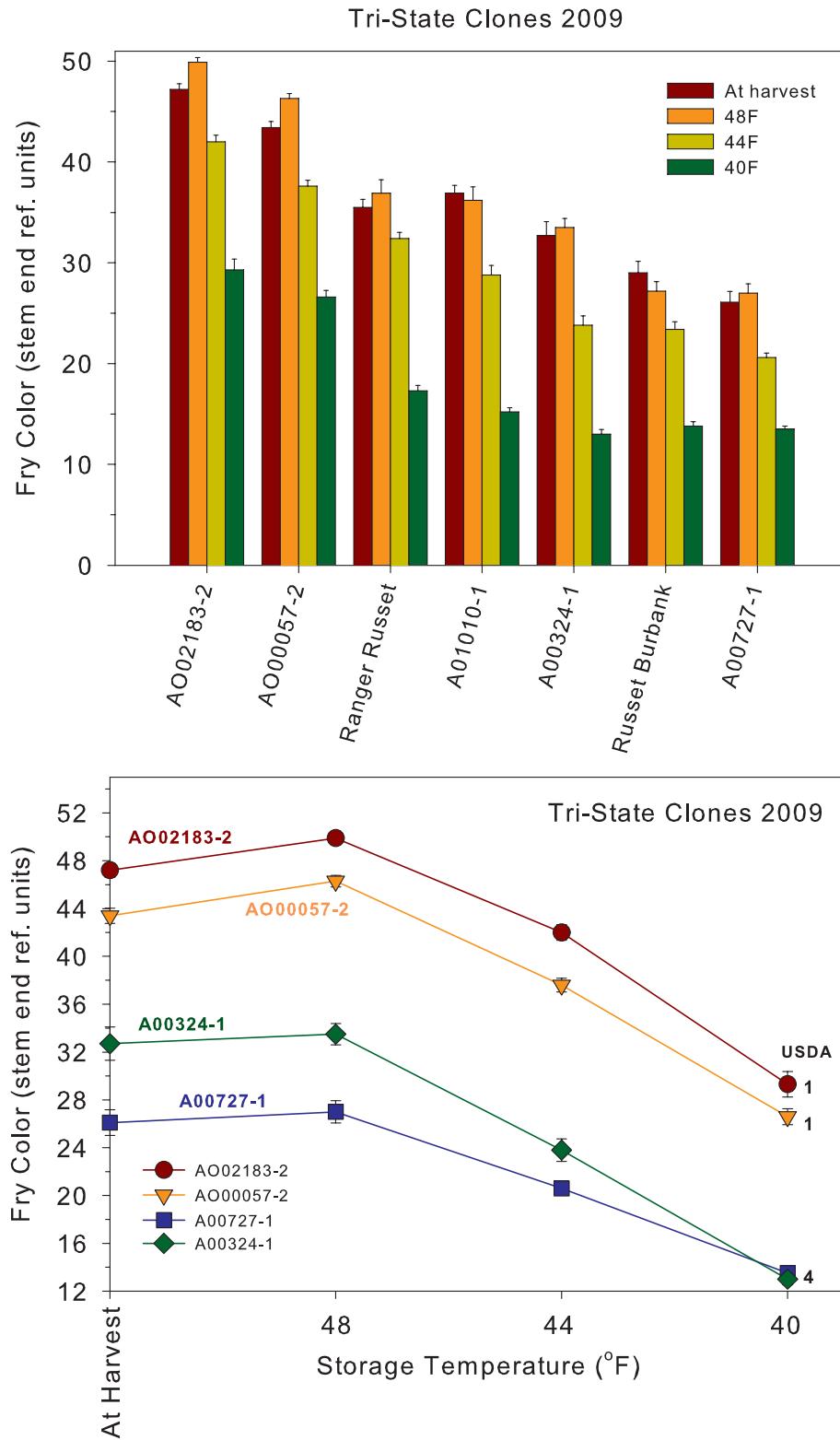


Above: Hand planting in the field is not always the easiest way to plant a trial, but it is the most accurate way to do certain types of research.

Below: Mel Martin (Simplot) aids in hand-planting done at the Othello Research Station this spring.



2009 Late Harvest Tri-State Trial



Top: At-harvest and after-storage French fry colors (stem end) of clones in the Tri-State Trial. Tubers were stored for 60 days at 48, 44, and 40°F. The clones are ranked from best to worst on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

Bottom: Line graph depicting the effects of storage temperature on the change in French fry processing quality (stem end fry color) of the best (AO02183-2 and AO00057-2) and worst (A00324-1 and A00727-1) performing clones in the Tri-State Trial. *Indicates similar performance of the clones last year.

2009 Early Harvest Regional Trial

Summaries

ENTRY	TOTAL YIELD			US # 1's*	US # 2's*	Culls*	CARTON YIELD		PROCESS YIELD	
	CWT/A	STATS**	Tons/A	> 4 oz	> 4 oz	& < 4 oz	% of Total Yield	% of Total Yield	Tons/A	% of Total Yield
Ranger Russet	475	AB	23.8	96	2	3	65	15.5	92	21.9
Russet Burbank	457	AB	22.9	86	2	12	68	15.5	76	17.3
Russet Norkotah	518	A	25.9	93	1	6	77	20.1	87	22.7
A96814-65LB	473	AB	23.6	93	2	5	62	14.8	88	20.8
A97066-42LB	313	B	15.7	82	0	18	50	7.8	62	9.8
A98345-1	442	AB	22.1	86	4	11	46	10.2	84	18.5
A0008-1TE	473	AB	23.6	86	4	10	60	14.3	85	20.2
AC99375-1Ru	389	AB	19.4	79	4	17	50	9.6	62	12.0
AO96305-3	483	AB	24.1	96	0	4	73	17.6	84	20.4
AO96365-2	420	AB	21.0	85	4	12	51	10.7	67	14.2
CO97087-2Ru	486	AB	24.3	80	7	12	57	13.8	75	18.3
CO98067-7Ru	497	AB	24.9	84	4	12	53	13.3	68	16.9
CO98368-2Ru	514	AB	25.7	80	2	18	44	11.3	57	14.6
CO99053-3Ru	414	AB	20.7	83	8	9	62	12.9	78	16.1
CO99053-4Ru	577	A	28.8	89	4	8	61	17.6	75	21.7
CO99100-1Ru	497	AB	24.8	94	1	5	66	16.4	87	21.5
PA00N14-2	504	AB	25.2	93	0	6	72	18.2	81	20.5
PA99N2-1	499	AB	24.9	90	2	9	72	18.0	80	20.0
PA99N82-4	484	AB	24.2	78	7	15	51	12.4	78	18.8

ENTRY	US # 1 YIELD					> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%)		
	> 4 oz CWT/A	STATS**	> 4 oz Tons/A	4-7 oz* %	7-14 oz* %	> 14 oz* %	(8-12 oz tubers) % HH	% BC	% IBS
Ranger Russet	456	AB	22.8	11	43	46	1.077	0	0
Russet Burbank	392	ABC	19.6	23	59	18	1.079	0	0
Russet Norkotah	482	AB	24.1	14	54	32	1.070	0	0
A96814-65LB	438	ABC	21.9	12	41	47	1.085	0	0
A97066-42LB	256	C	12.8	42	55	3	1.082	0	0
A98345-1	379	ABC	19.0	12	37	52	1.077	0	0
A0008-1TE	408	ABC	20.4	10	41	49	1.076	0	0
AC99375-1Ru	307	BC	15.4	38	46	17	1.081	0	0
AO96305-3	465	AB	23.2	17	54	29	1.075	0	0
AO96365-2	356	ABC	17.8	40	46	14	1.074	0	0
CO97087-2Ru	391	ABC	19.6	23	48	29	1.072	0	0
CO98067-7Ru	418	ABC	20.9	38	53	9	1.066	0	0
CO98368-2Ru	411	ABC	20.6	46	51	3	1.070	0	0
CO99053-3Ru	343	ABC	17.2	25	48	27	1.072	0	0
CO99053-4Ru	512	ABC	25.6	30	58	12	1.072	0	0
CO99100-1Ru	465	AB	23.3	14	50	36	1.070	0	0
PA00N14-2	470	AB	23.5	24	65	12	1.079	0	0
PA99N2-1	447	AB	22.4	20	63	17	1.069	0	0
PA99N82-4	377	ABC	18.8	17	41	42	1.064	0	0

* Percent values may not total 100% due to rounding

**Numbers followed by the same letter are not significantly different at the 5% level using Tukey's HSD Test

ENTRY	30 DAY STAND	40 DAY STAND	50 DAY STAND	STEMS PER PLANT	AVERAGE TUBER WEIGHT NUMBER		SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%)	
	% Emerged	% Emerged	% Emerged	Above Ground	Ounces	Tubers/Plant			(8-12 oz tubers)	BLACKSPOT
Ranger Russet	0	82	100	1.5	10.7	4.6	3	4	20	32
Russet Burbank	0	87	98	1.5	7.8	6.1	4	3	20	7
Russet Norkotah	0	91	98	1.9	9.6	5.6	4	3	3	10
A96814-65LB	0	51	87	1.5	10.5	4.7	4	3	17	20
A97066-42LB	0	22	98	1.2	5.9	5.6	3	3	10	23
A98345-1	0	100	100	1.8	9.9	4.6	3	3	10	7
A0008-1TE	0	53	96	1.5	10.8	4.6	4	3	10	47
AC99375-1Ru	0	84	96	1.9	6.1	6.7	4	3	0	7
AO96305-3	0	47	93	1.9	9.2	5.4	3	4	0	10
AO96365-2	0	89	96	1.7	6.4	6.9	4	3	3	0
CO97087-2Ru	0	84	89	2.7	7.7	6.5	4	3	20	10
CO98067-7Ru	0	100	100	3.2	6.4	8.1	4	3	7	0
CO98368-2Ru	0	96	98	2.2	5.6	9.5	4	3	13	3
CO99053-3Ru	0	69	98	2.2	7.8	5.6	3	4	14	2
CO99053-4Ru	0	89	100	2.5	7.2	8.3	4	4	7	7
CO99100-1Ru	0	87	100	2.7	9.5	5.5	4	3	0	10
PA00N14-2	0	27	100	1.6	8.1	6.5	4	5	20	17
PA99N2-1	0	47	93	2.1	8.0	6.4	3	2	3	30
PA99N82-4	0	73	100	1.7	10.0	5.2	4	2	20	63



Every year we start off by planting seed lots from near and far. It's a great beginning to every planting season, and we look forward to it, except when the wind is howling.

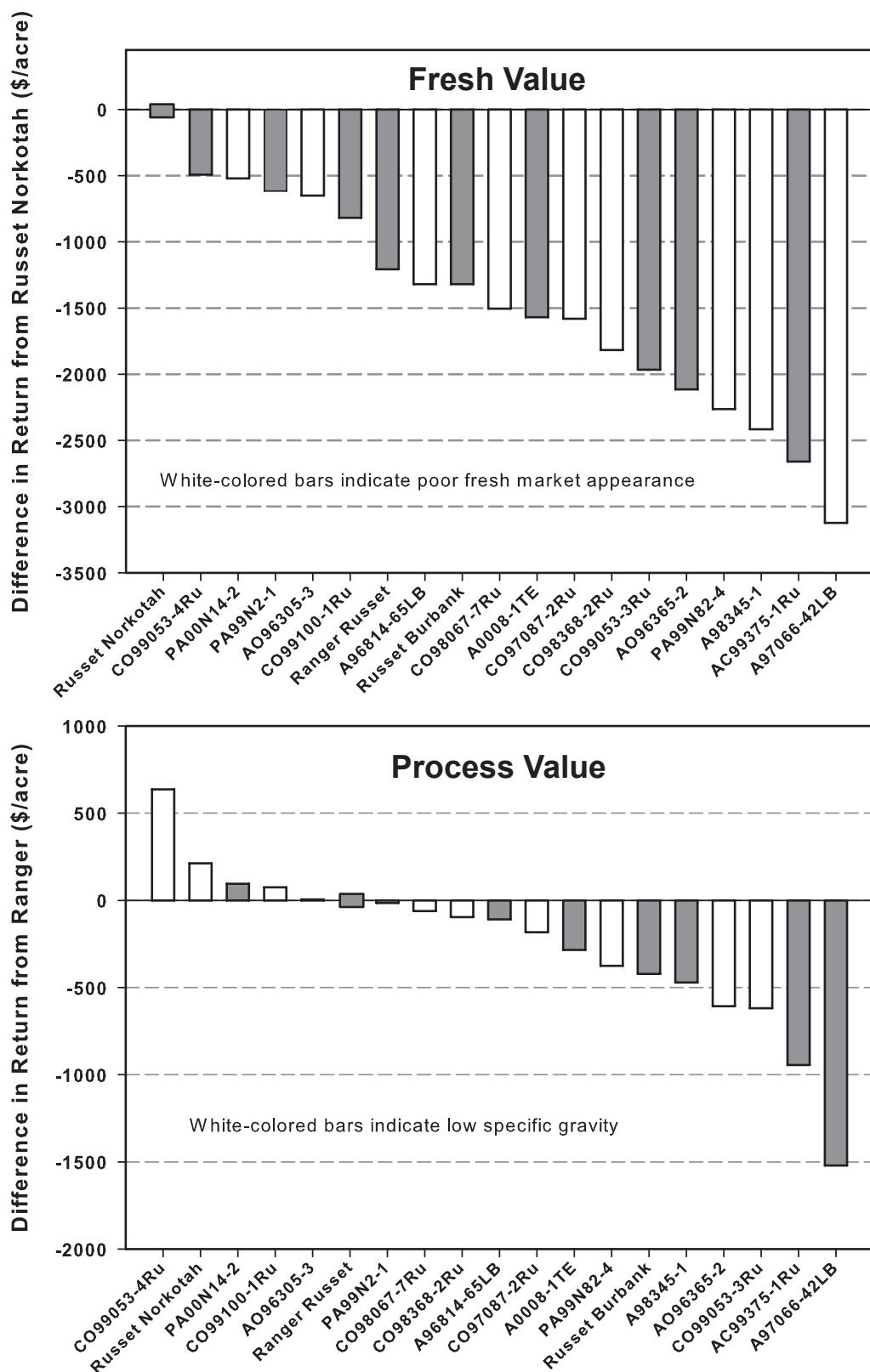
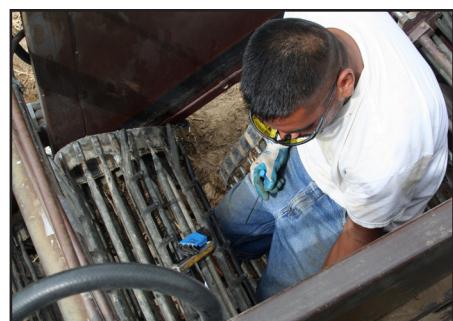


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to the undesirable shape or appearance. **Figure 2 (Bottom).** Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet from the gross return of the particular entry. Entries with white-colored bars would be penalized (under the mock contract parameters) due to a specific gravity less than 1.075.

ALL IN A DAY'S WORK...



2009 Late Harvest Regional Trial

Summaries

ENTRY	TOTAL YIELD			US # 1's*	US # 2's*	Culls*	CARTON YIELD		PROCESS YIELD	
	CWT/A	STATS**	Tons/A	> 4 oz	> 4 oz	& < 4 oz	% of Total Yield	100-50 count (US 1's 7-18 oz)	Tons/A	US 1's and 2's
										> 6 oz
Ranger Russet	814	ABCD	40.7	89	4	7	48	19.6	87	35.4
Russet Burbank	852	ABCD	42.6	88	5	8	59	25.0	85	36.1
Russet Norkotah	663	CD	33.1	91	0	9	65	21.6	77	25.5
A96814-65LB	946	ABCD	47.3	94	1	5	55	26.1	92	43.4
A97066-42LB	871	ABCD	43.5	92	1	7	49	21.2	89	38.5
A98345-1	1130	A	56.5	95	1	4	47	26.6	92	52.0
A0008-1TE	653	CD	32.7	92	1	7	65	21.1	86	28.2
AC99375-1Ru	975	ABC	48.8	88	4	8	58	28.1	81	39.6
AO96305-3	739	BCD	36.9	94	0	6	66	24.5	86	31.7
AO96365-2	857	ABCD	42.8	90	2	8	54	23.3	81	34.6
CO97087-2Ru	607	D	30.4	86	2	11	52	15.7	77	23.4
CO98067-7Ru	880	ABCD	44.0	87	2	11	53	23.1	75	33.2
CO98368-2Ru	606	D	30.3	86	1	13	57	17.2	72	21.9
CO99053-3Ru	824	ABCD	41.2	91	5	4	46	18.8	91	37.6
CO99053-4Ru	650	CD	32.5	88	2	11	55	17.9	77	25.1
CO99100-1Ru	672	CD	33.6	90	1	9	61	20.6	83	27.8
PA00N14-2	679	CD	33.9	94	0	6	73	24.8	83	28.2
PA99N2-1	950	ABCD	47.5	96	1	4	55	26.2	90	42.8
PA99N82-4	918	ABCD	45.9	80	1	19	31	14.2	78	35.9

ENTRY	US # 1 YIELD					> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%)			
	> 4 oz CWT/A	STATS**	Tons/A	> 4 oz	4-7 oz*	7-14 oz*	> 14 oz*			
				%	%	%	%	% HH	% BC	% IBS
Ranger Russet	725	BCDE	36.2	11	34	56	1.081	0	0	0
Russet Burbank	748	ABCDE	37.4	17	47	37	1.080	3	0	0
Russet Norkotah	604	CDE	30.2	24	62	14	1.065	0	0	0
A96814-65LB	887	ABCD	44.3	6	33	61	1.099	0	0	0
A97066-42LB	798	ABCDE	39.9	8	33	59	1.096	0	0	0
A98345-1	1074	A	53.7	6	27	66	1.086	0	0	0
A0008-1TE	599	CDE	29.9	12	50	38	1.075	0	0	0
AC99375-1Ru	861	ABCD	43.1	17	45	38	1.093	0	0	0
AO96305-3	693	BCDE	34.7	15	53	32	1.081	0	0	0
AO96365-2	769	ABCDE	38.5	20	45	35	1.078	0	0	0
CO97087-2Ru	524	E	26.2	20	44	37	1.077	0	0	0
CO98067-7Ru	767	ABCDE	38.3	25	47	29	1.068	0	0	0
CO98368-2Ru	520	E	26.0	28	51	21	1.072	0	0	0
CO99053-3Ru	747	ABCDE	37.3	7	33	60	1.081	0	0	0
CO99053-4Ru	570	DE	28.5	22	51	27	1.072	0	0	0
CO99100-1Ru	607	CDE	30.3	16	51	33	1.073	0	0	0
PA00N14-2	638	CDE	31.9	21	69	11	1.079	0	0	0
PA99N2-1	909	ABC	45.5	11	39	51	1.080	0	0	3
PA99N82-4	733	BCDE	36.6	5	24	71	1.076	10	0	0

* Percent values may not total 100% due to rounding

**Numbers followed by the same letter are not significantly different at the 5% level using Tukey's HSD Test

ENTRY	30 DAY STAND	40 DAY STAND	50 DAY STAND	STEMS PER PLANT	AVERAGE TUBER WEIGHT NUMBER		SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers)	
	% Emerged	% Emerged	% Emerged	Above Ground	Ounces	Tubers/Plant			BLACKSPOT	SHATTER
Ranger Russet	13	98	100	1.5	10.9	6.5	4	4	20	50
Russet Burbank	19	97	100	1.6	9.3	8.0	4	3	25	55
Russet Norkotah	10	93	97	1.9	7.4	7.8	4	3	15	23
A96814-65LB	7	95	100	1.3	12.6	6.6	3	2	0	62
A97066-42LB	0	68	96	1.1	12.1	6.3	4	3	18	68
A98345-1	42	97	99	1.7	12.8	7.7	4	3	13	58
A0008-1TE	2	76	95	1.7	9.7	5.9	4	3	5	73
AC99375-1Ru	10	70	90	1.7	9.0	9.5	3	3	20	25
AO96305-3	0	97	99	1.9	8.9	7.2	4	4	8	37
AO96365-2	5	91	97	1.5	8.4	8.9	4	2	8	43
CO97087-2Ru	22	95	98	2.2	8.1	6.6	4	3	11	38
CO98067-7Ru	55	96	99	3.0	7.5	10.1	4	2	6	22
CO98368-2Ru	32	80	91	2.0	6.9	7.7	4	3	13	50
CO99053-3Ru	6	85	93	2.2	12.3	5.8	3	3	6	14
CO99053-4Ru	11	84	91	2.1	7.6	7.5	4	3	10	20
CO99100-1Ru	28	85	96	2.4	9.0	6.5	4	3	15	48
PA00N14-2	0	88	95	1.5	7.8	7.5	4	4	8	20
PA99N2-1	0	71	89	2.2	10.9	7.6	4	2	28	60
PA99N82-4	1	89	98	1.6	15.1	5.3	4	2	15	88

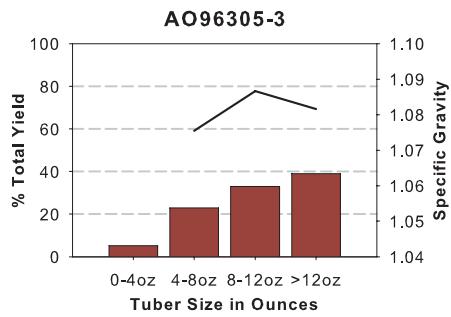
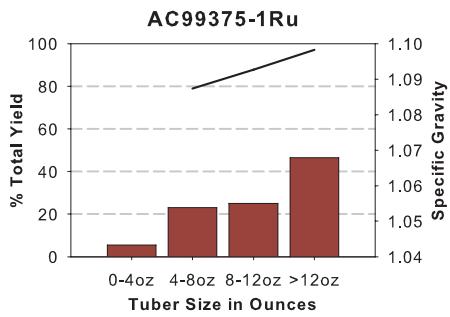
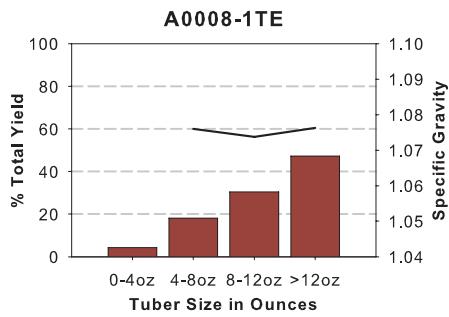
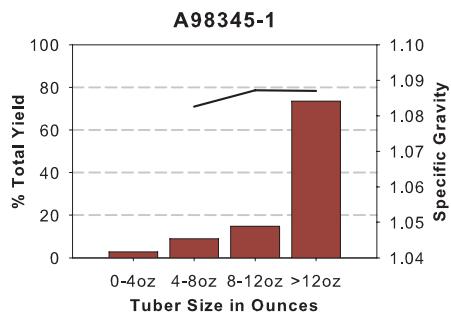
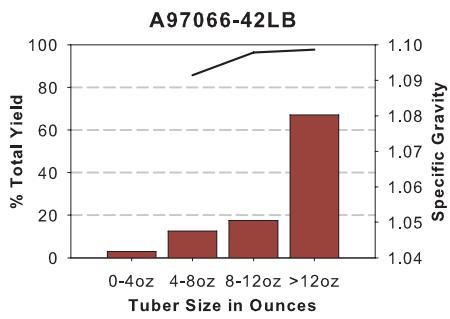
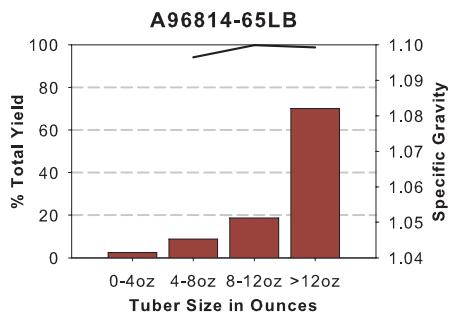
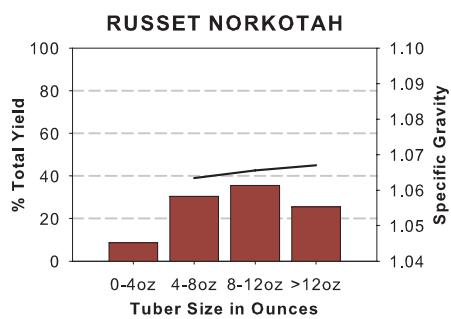
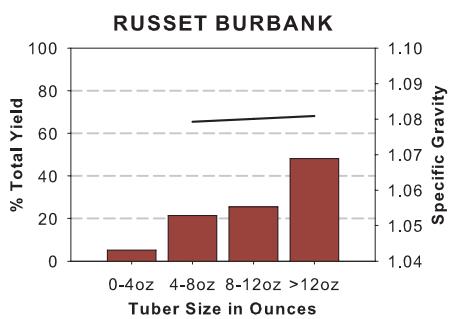
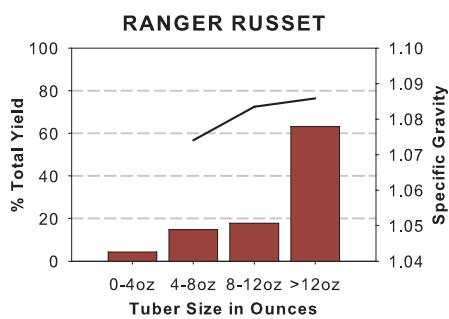
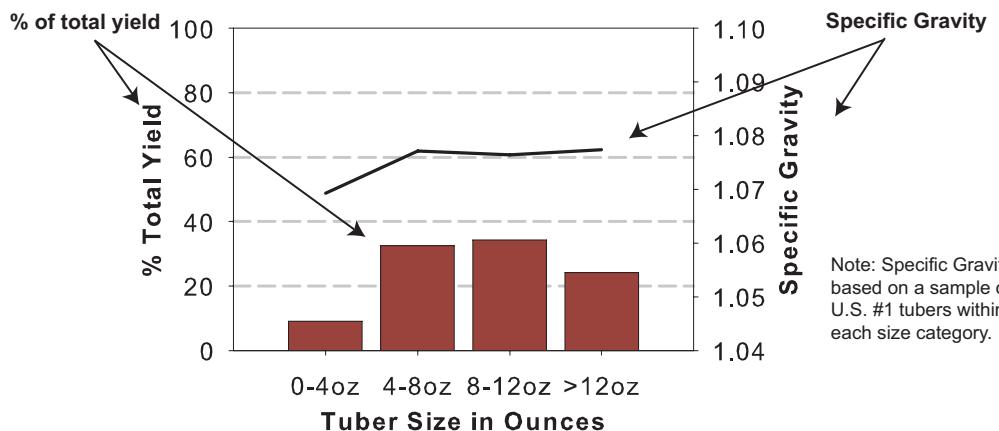


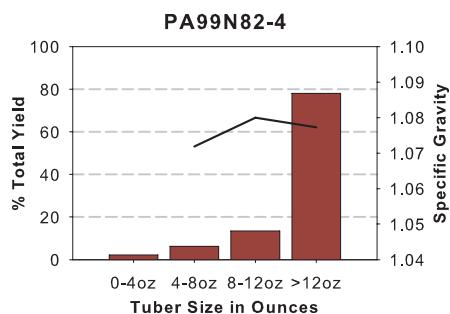
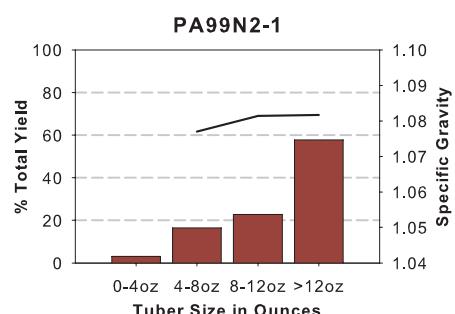
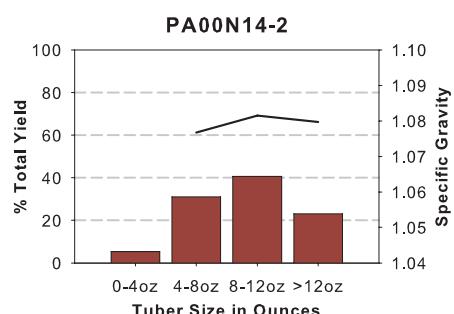
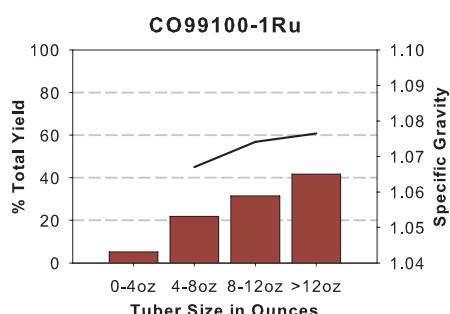
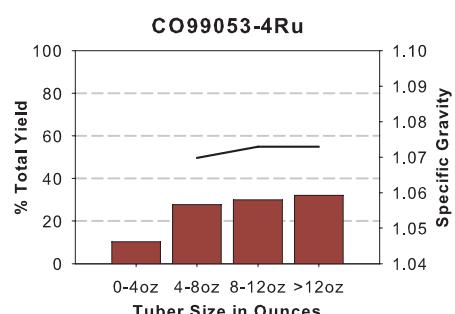
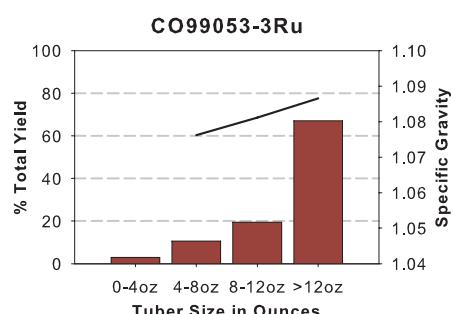
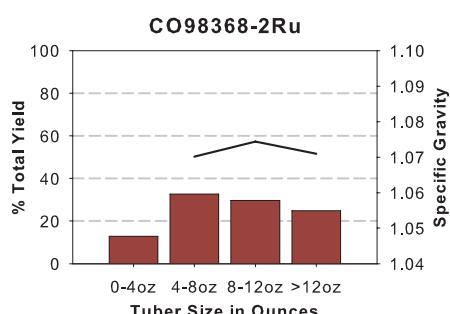
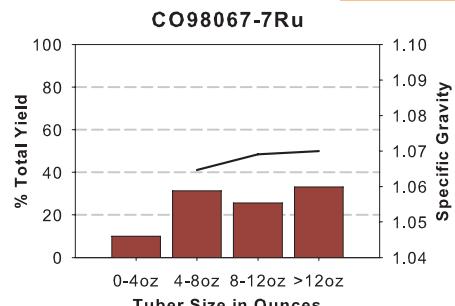
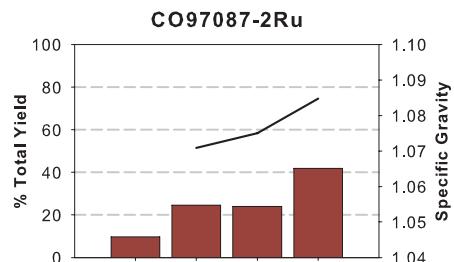
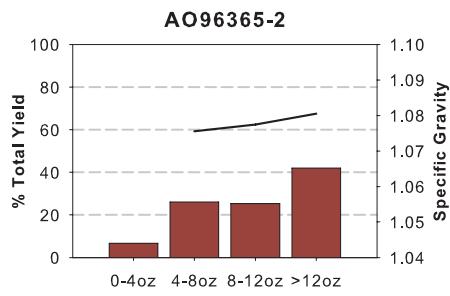
"Look Ma, no hands..." Chris Hiles, WSU Grad student, exclaimed while planting a trial this spring. Meanwhile Josh Rodriguez, left, keeps his eye on the prize.

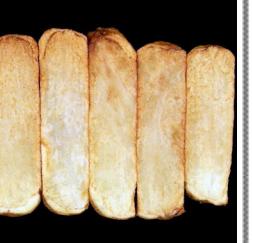
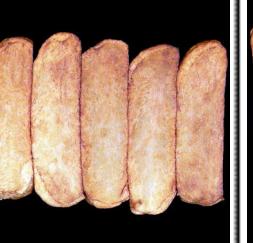
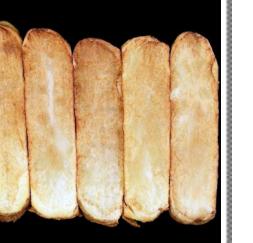
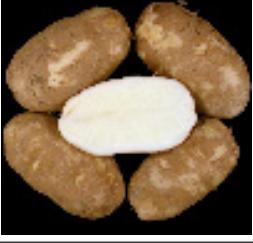
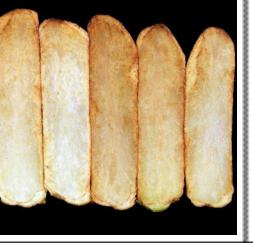
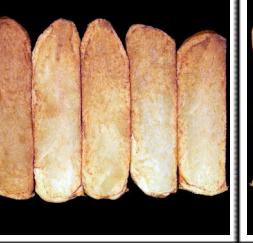
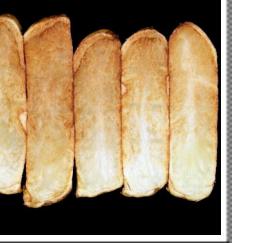
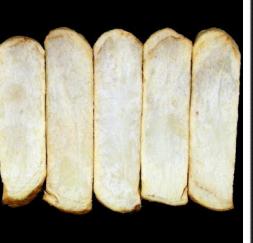
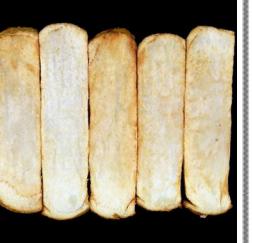
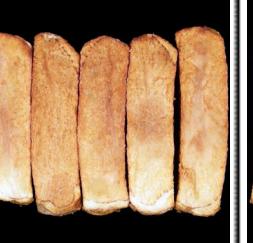
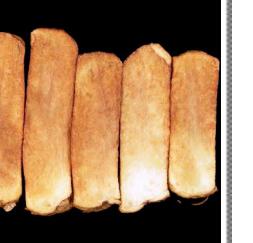
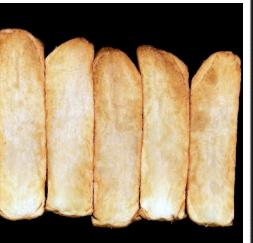
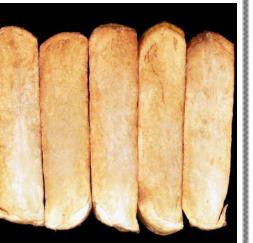
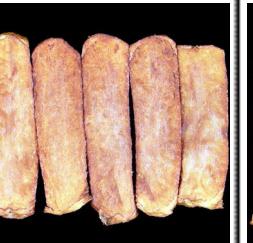
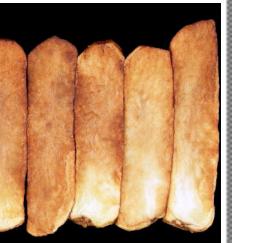
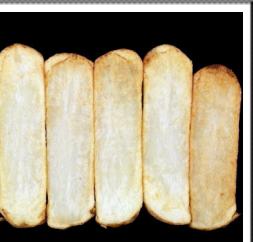
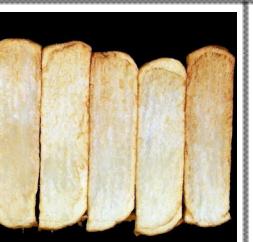
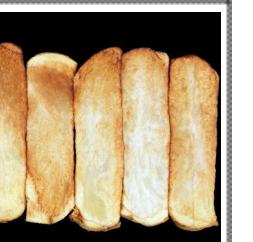
2009 Late Harvest Regional Trial

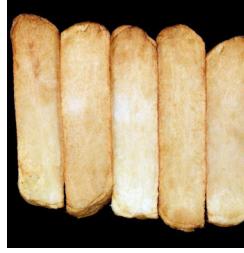
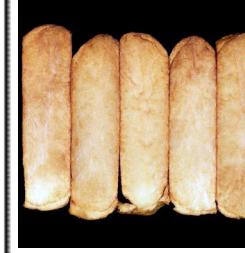
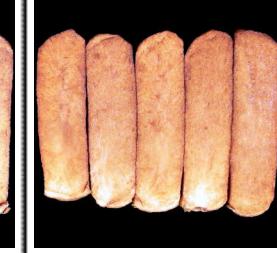
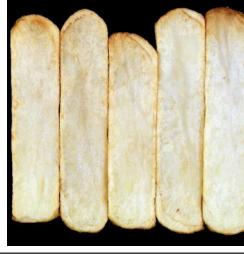
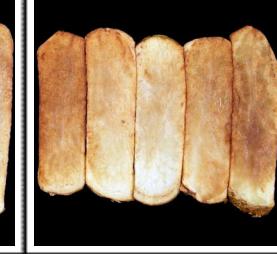
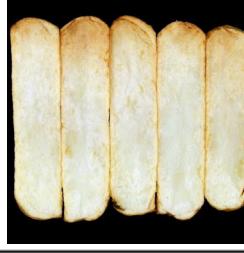
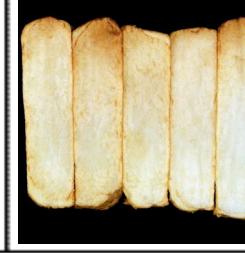
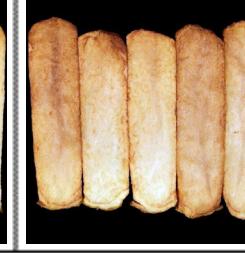
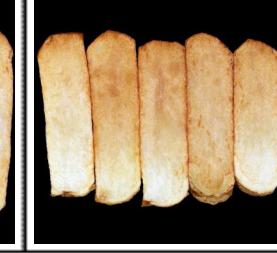
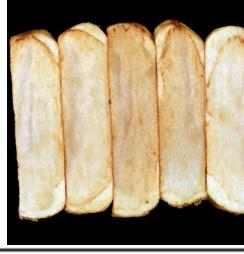
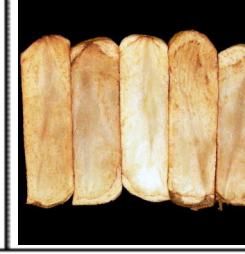
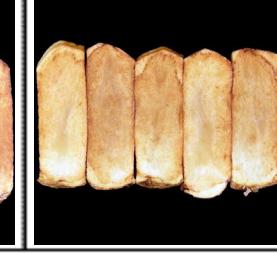
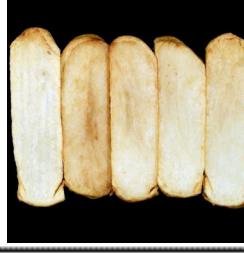
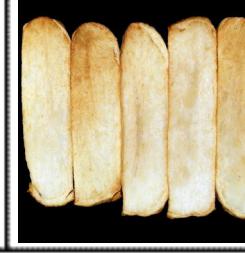
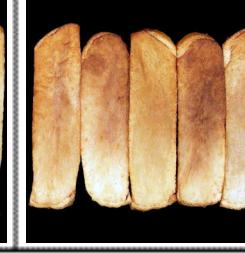
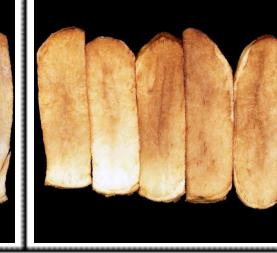
Tuber Yield and Specific Gravity Distributions

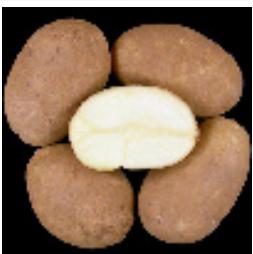
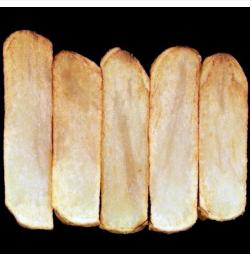
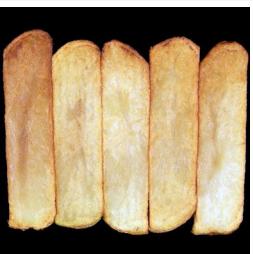
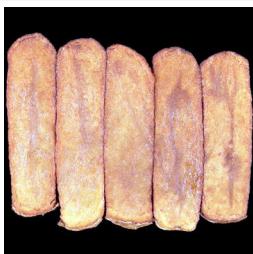
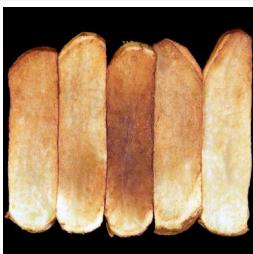
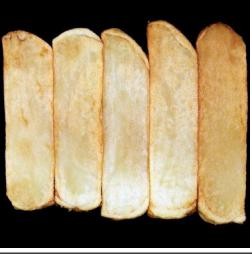
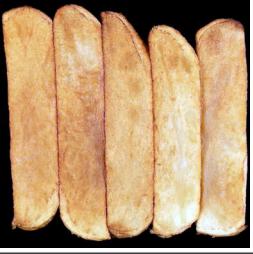
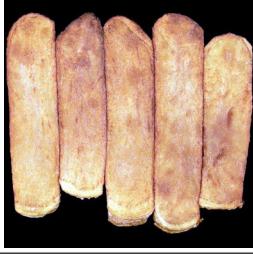
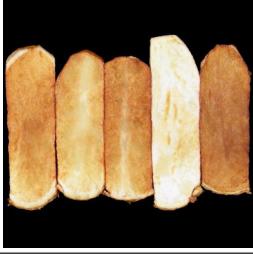
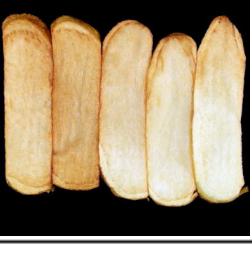
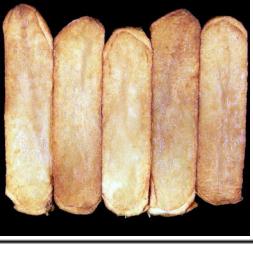
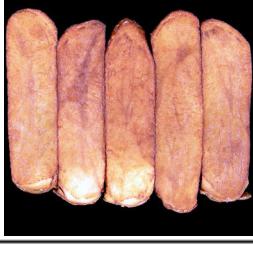
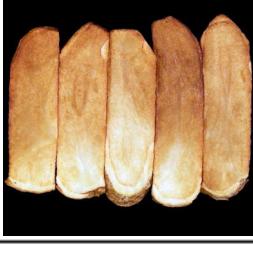
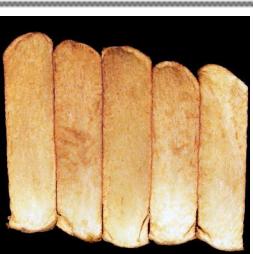
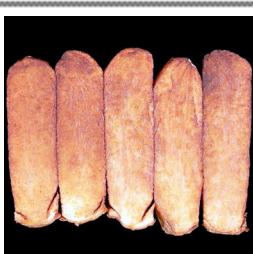
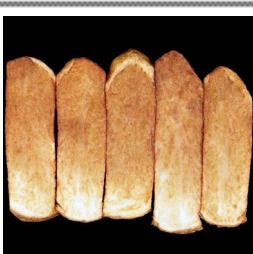
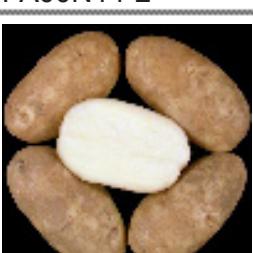
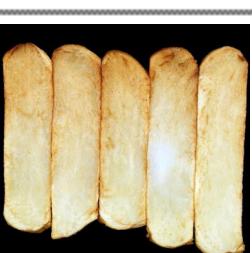
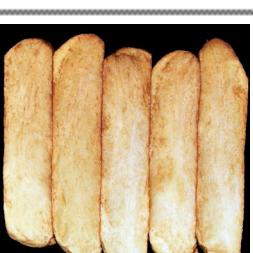
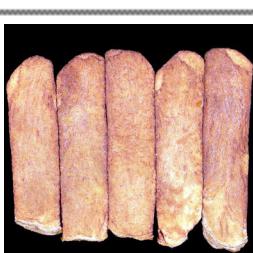
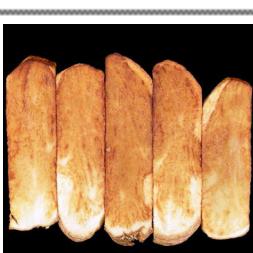
10 inch In-Row Spacing

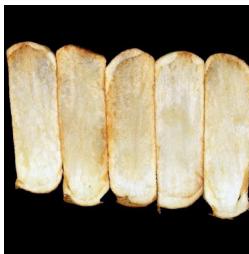
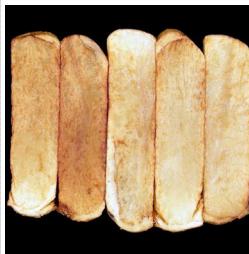
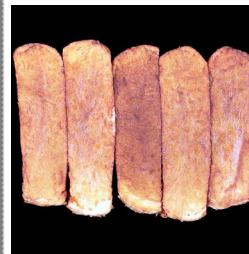
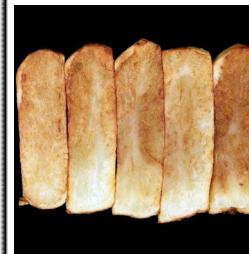
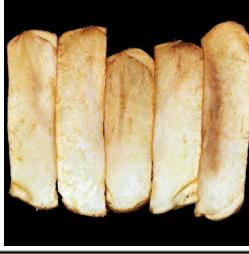
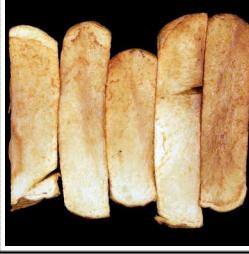
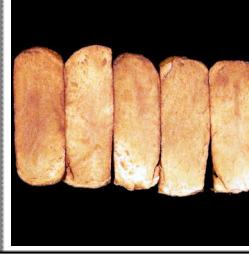




Tubers	48° F Storage	44° F Storage	40° F Storage	40° F Recon.
Ranger Russet				
				
Russet Burbank				
				
A96814-65LB				
				
A97066-42LB				
				
A98345-1				
				

Tubers	48° F Storage	44° F Storage	40° F Storage	40° F Recon.	
A0008-1TE					
AC99375-1Ru					
AO96305-3					
AO96365-2					
CO97087-2Ru					

Tubers	48° F Storage	44° F Storage	40° F Storage	40° F Recon.	
CO98067-7Ru					
CO99053-3Ru					
CO99053-4Ru					
CO99100-1Ru					
PA00N14-2					

Tubers	48° F Storage	44° F Storage	40° F Storage	40° F Recon.	
PA99N2-1					
PA99N82-4					N/A



Daniel Zommick, WSU Grad student, makes sure every seed piece is in it's proper place.

2009 Late Harvest Regional Trial

Accumulated Total Postharvest Rating of Clones

Clone	WA		ID		OR		3 State av. Rating Total
	Rating Total §	Discard §§	Rating Total §	Discard §§	Rating Total §	Discard §§	
8 AO96305-3	34.4		35.9		36.8		35.7
7 AC99375-1Ru	33.1		36.6		35.3		35.0
3 A96814-65LB	32.4		32.1		34.4		33.0
10 CO97087-2Ru	35.3		31.9		30.3		32.5
5 A98345-1	35.5		35.9		25.2		32.2
17 PA99N82-4	30.4		31.7		26.7		29.6
1 Ranger Russet	32.4		32.6		22.6		29.2
16 PA99N2-1	30.0		28.2		29.1		29.1
4 A97066-42LB	27.0		31.9		21.8		26.9
15 PA00N14-2	23.4		32.3		23.3		26.3
12 CO99053-3Ru	28.8		33.3		15.6		25.9
6 A0008-1TE	27.3		27.7		21.1	Sp. Gr.	25.4
9 AO96365-2	27.4		32.6		16.1	Sp. Gr.	25.4
13 CO99053-4Ru	22.2	Sp. Gr.	34.5		16.5		24.4
14 CO99100-1Ru	21.2	Sp. Gr.	28.5		14.9	Sp. Gr.	21.5
2 Russet Burbank	27.9		18.6	Sp. Gr.	11.7	Sp. Gr.	19.4
11 CO98067-7Ru	18.4	Sp. Gr.	21.0	Sp. Gr.	14.3		17.9
Average	28.7		30.9		23.3		27.6

§ maximum rating possible = 38

§§ Values for the indicated evaluation are lower than the rejection level.

Overall Postharvest Performance of Clones Compared to Russet Burbank.

Clone	WA	ID	OR	Average
1 Ranger Russet	H	H	H	H
3 A96814-65LB	H	H	H	H
4 A97066-42LB	L	H	H	H
5 A98345-1	H	H	H	H
6 A0008-1TE	L	H	H	H
7 AC99375-1Ru	H	H	H	H
8 AO96305-3	H	H	H	H
9 AO96365-2	L	H	H	H
10 CO97087-2Ru	H	H	H	H
11 CO98067-7Ru	L	H	H	L
12 CO99053-3Ru	H	H	H	H
13 CO99053-4Ru	L	H	H	H
14 CO99100-1Ru	L	H	H	H
15 PA00N14-2	L	H	H	H
16 PA99N2-1	L	H	H	H
17 PA99N82-4	L	H	H	H

H= Higher than Russet Burbank

L= Lower than Russet Burbank

S = Same as Russet Burbank

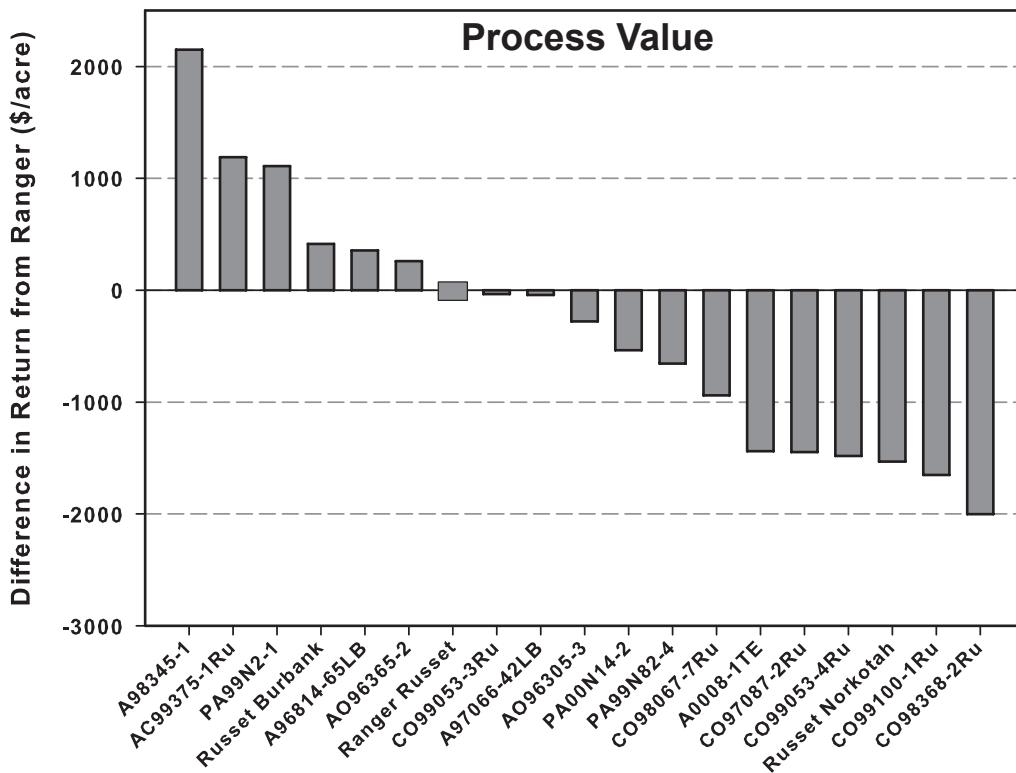
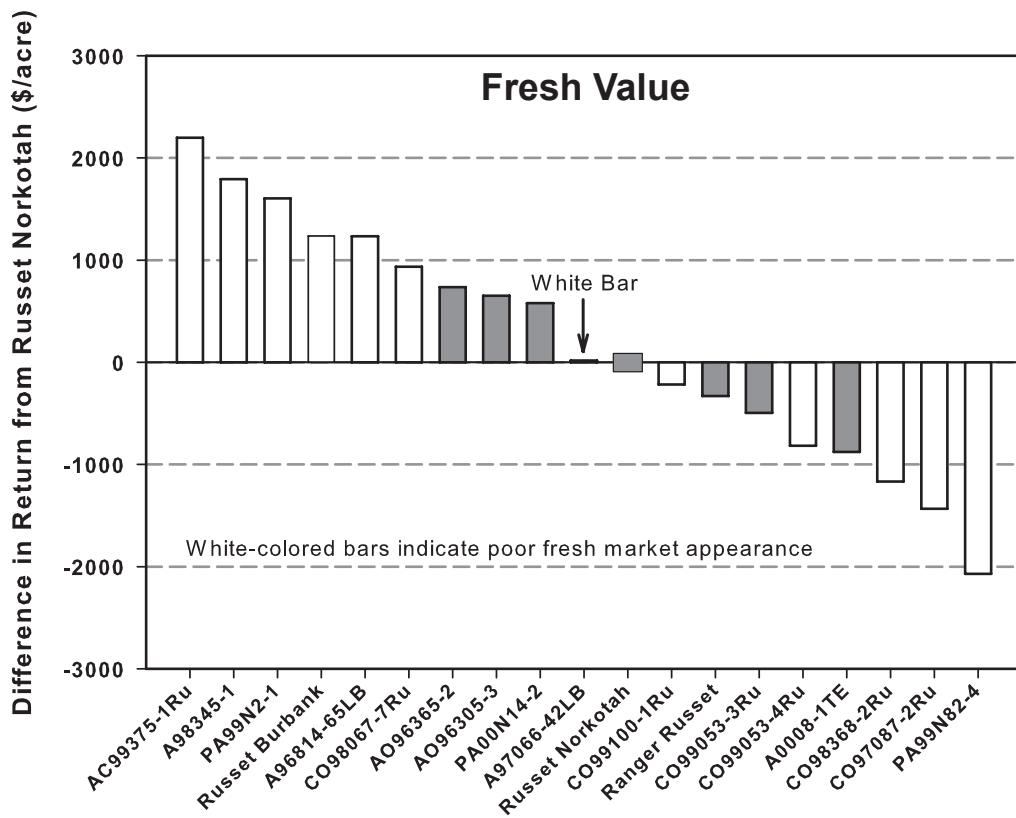
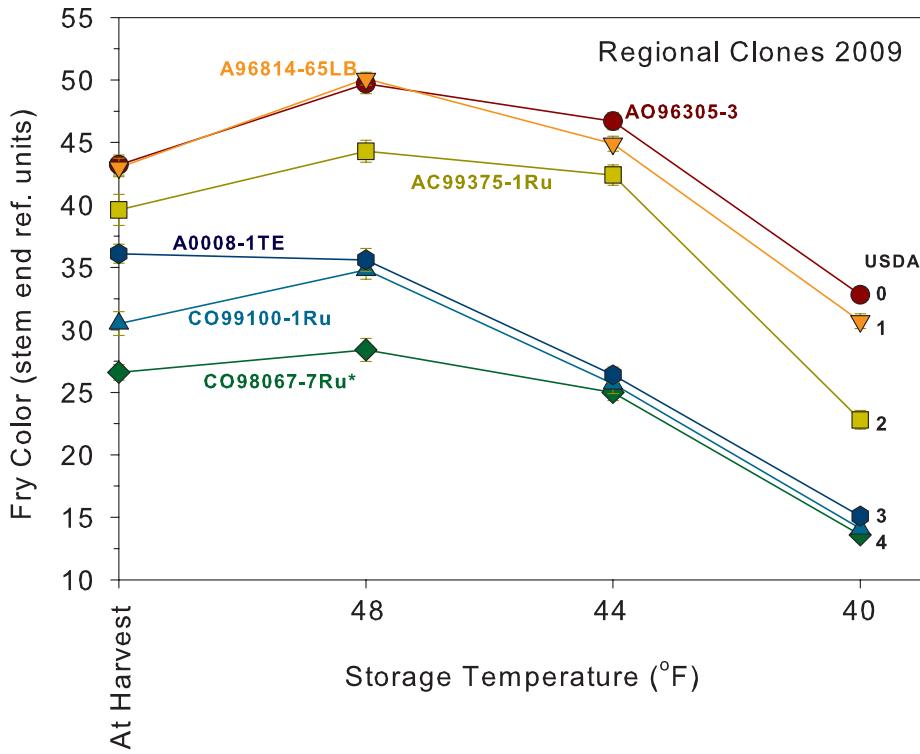
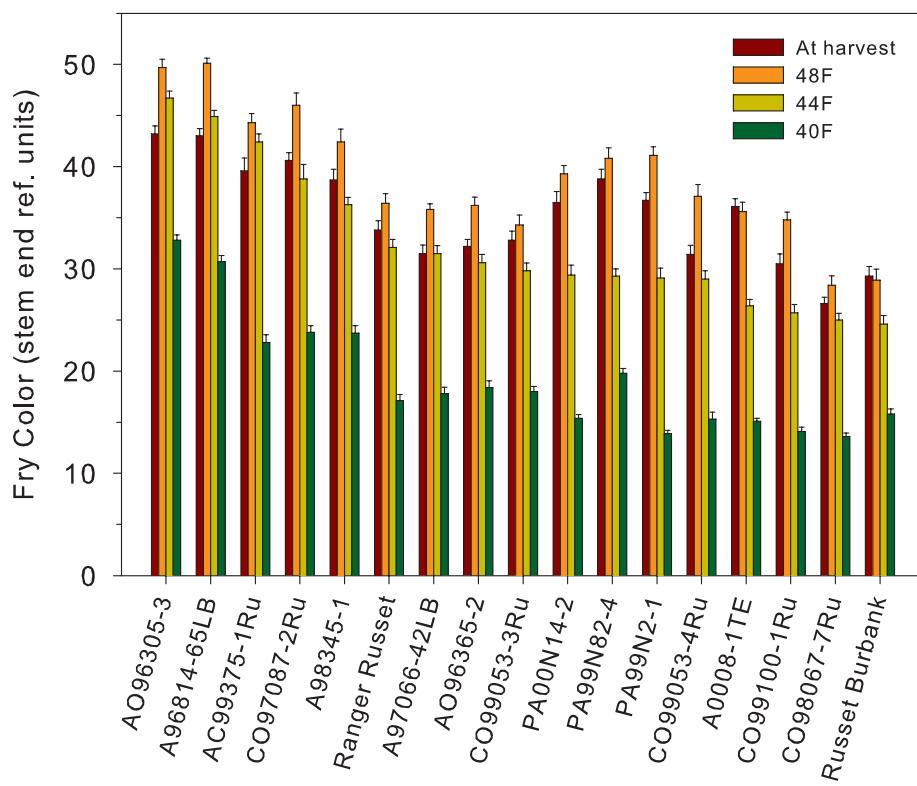


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to the undesirable shape or appearance. **Figure 2 (Bottom).** Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet from the gross return of the particular entry.

2009 Late Harvest Regional Trial

Regional Clones 2009



Top: At-harvest and after-storage French fry colors (stem end) of clones in the Regional Trial. Tubers were stored for 60 days at 48, 44 and 40°F. The clones are ranked from best to worst based on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

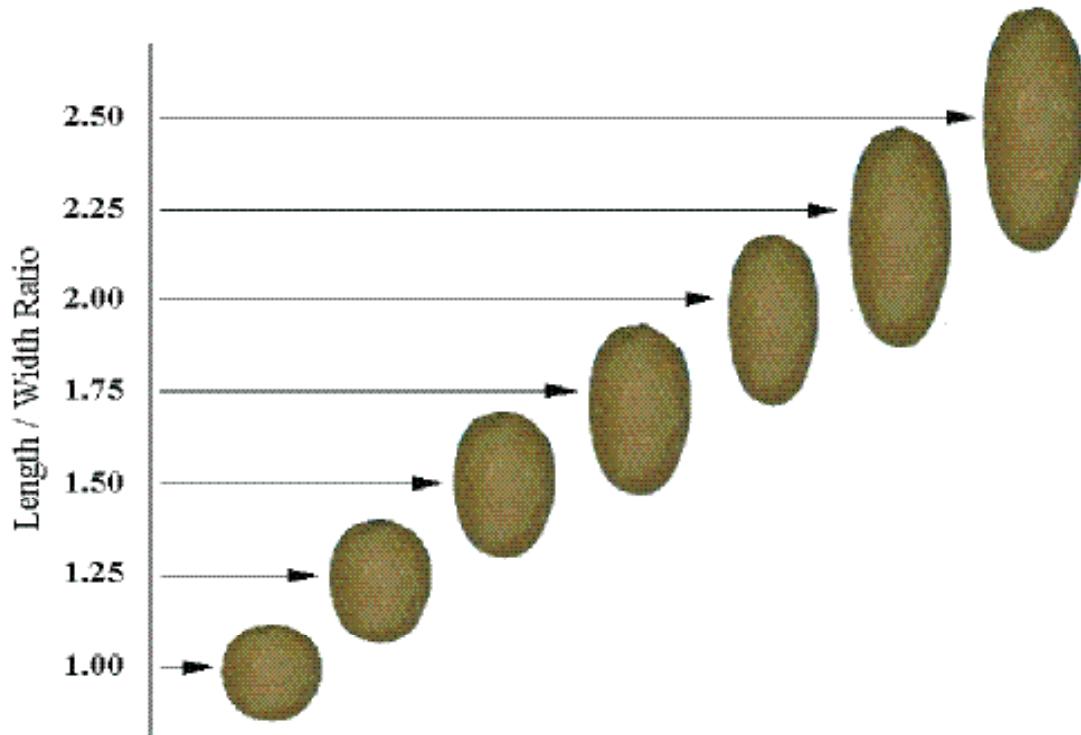
Bottom: Line graph depicting the effects of storage temperature on the change in French fry processing quality (stem end fry color) of the best (A96814-65LB, AO96305-3, and AC99375-1Ru) and worst (A0008-1TE, CO99100-1Ru, and CO98067-7Ru*) performing clones in the Regional Trial. *Indicates similar performance of the clones last year.

2009 Late Harvest Regional Trial

Tuber Shape and Associated French Fry Yields

(8- to 10-oz Tubers)

Clone	Length to width ratio			Yield of 3" or longer fries (% by number)		
	WA	ID	OR	WA	ID	OR
1 Ranger Russet	1.62	2.12	2.01	68	78	76
2 Russet Burbank	1.77	2.00	2.09	72	77	76
3 A96814-65LB	1.42	1.49	1.44	60	63	61
4 A97066-42LB	1.45	1.49	1.44	61	63	60
5 A98345-1	1.38	1.58	1.65	58	66	69
6 A0008-1TE	1.75	1.87	1.78	73	75	73
7 AC99375-1RU	1.61	1.69	1.60	67	70	67
8 AO96305-3	1.77	2.24	1.98	73	78	76
9 AO96365-2	1.41	1.78	1.52	60	72	64
10 CO97087-2RU	1.52	1.84	1.50	64	75	63
11 CO98067-7RU	1.47	No sample	1.67	62	No Sample	67
12 CO99053-3RU	1.67	1.78	1.87	69	73	74
13 CO99053-4RU	1.78	2.05	2.00	73	77	77
14 CO99100-1RU	1.58	1.95	1.72	67	76	70
15 PA00N14-2	1.92	2.19	1.99	75	77	77
16 PA99N2-1	1.34	1.44	1.34	56	61	55
17 PA99N82-4	1.26	1.45	1.29	52	61	53
Average	1.57	1.81	1.70	65	71	68



Entries Retained from the 2008 Trials Currently in the Regional Trial

Harvested fall of 2008

Held at 48°F until December 23

Stored at 44°F until analysis

Five clones were advanced from the Tri-State Trial into the 2009 Regional Trial - A96814-65LB, A98345-1, AO96305-3, AO96365-2 and PA00N14-2. Seven clones were retained in the Regional Trial - A97066-42LB, A0008-1TE, CO97087-2Ru, CO98067-7Ru, CO98368-2Ru, PA99N2-1 and PA99N82-4. When averaged across states, AO96305-3, A96814-65LB and CO97087-2Ru produced the lightest fries. CO98067-7Ru and PA99N2-1 had the shortest dormancy with the longest sprouts.

Clone	PHOTOVOLT READING					USDA COLOR	% REDUCING SUGAR			Sprouting	
	stem	bud	avg	DIFF			stem	bud	avg	percent	length
Washington											
1 Ranger Russet	31.2	40.9	36.1	10.4	0		1.3	0.7	1.0	100	4"
2 Russet Burbank	32.6	41.3	36.9	8.6	0		1.2	0.7	0.9	100	4"
3 A96814-65LB §	47.6	49.5	48.5	4.3	0		0.5	0.5	0.5	100	3"
4 A97066-42LB	42.8	44.4	43.6	5.1	0		0.6	0.6	0.6	100	5"
5 A98345-1 §	46.5	47.1	46.8	3.0	0		0.5	0.5	0.5	100	8"
6 A0008-1TE	35.7	38.8	37.3	5.7	0		1.0	0.8	0.9	100	9"
7 AO96305-3 §	53.1	56.6	54.8	4.0	0		0.6	0.4	0.5	100	5"
8 AO96365-2 §	42.9	45.0	43.9	4.3	0		0.6	0.6	0.6	100	4"
9 CO97087-2Ru	52.1	55.6	53.8	3.5	0		0.5	0.5	0.5	100	5"
10 CO98067-7Ru	29.1	34.5	31.8	6.9	1		1.5	1.0	1.3	100	9"
11 CO98368-2Ru	35.1	40.4	37.8	5.3	0		1.0	0.7	0.9	100	6"
12 PA00N14-2 §	45.8	49.9	47.9	5.0	0		0.6	0.5	0.5	100	3"
13 PA99N2-1	31.4	37.4	34.4	7.8	0		1.3	0.9	1.1	100	9"
14 PA99N82-4	38.8	42.1	40.5	4.2	0		0.8	0.6	0.7	100	6"
Average	LSD 0.05						3.7	3.6			
	40.3	44.5	42.4	5.6	0		0.9	0.7	0.7	100	
Idaho											
1 Ranger Russet	38.8	41.7	40.2	7.2	0		0.8	0.7	0.7	100	4"
2 Russet Burbank	34.8	41.1	38.0	8.8	0		1.0	0.7	0.8	100	4"
3 A96814-65LB §	53.9	55.1	54.5	2.6	0		0.5	0.5	0.5	100	3"
4 A97066-42LB	41.7	42.5	42.1	4.3	0		0.7	0.6	0.6	100	5"
5 A98345-1 §	51.4	47.6	49.5	4.7	0		0.5	0.5	0.5	100	8"
6 A0008-1TE	33.7	34.4	34.0	9.0	0		1.1	1.0	1.1	100	6"
7 AO96305-3 §	45.0	54.5	49.8	9.8	0		0.6	0.5	0.6	100	3"
8 AO96365-2 §	43.3	47.7	45.5	5.6	0		0.6	0.5	0.6	100	3.5"
9 CO97087-2Ru	46.1	50.3	48.2	7.9	0		0.5	0.5	0.5	100	5"
10 CO98067-7Ru	30.5	31.1	30.8	6.3	0		1.3	1.3	1.3	100	10"
11 CO98368-2Ru	28.3	41.0	34.7	14.6	1		1.6	0.7	1.1	100	6"
12 PA00N14-2 §	38.3	45.8	42.0	7.8	0		0.8	0.6	0.7	100	3"
13 PA99N2-1	33.1	39.8	36.5	9.0	0		1.1	0.7	0.9	100	8"
14 PA99N82-4	42.7	44.8	43.7	6.6	0		0.6	0.6	0.6	100	8"
Average	LSD 0.05						3.6	3.9			
	40.1	44.1	42.1	7.4	0		0.8	0.7	0.8	100	
Oregon											
1 Ranger Russet	22.0	37.7	29.8	15.8	2		2.4	0.8	1.6	100	4"
2 Russet Burbank	22.2	40.7	31.5	18.5	2		2.3	0.7	1.5	100	4"
3 A96814-65LB §	39.5	50.9	45.2	11.3	0		0.8	0.5	0.6	100	4"
4 A97066-42LB	33.2	39.8	36.5	8.1	0		1.1	0.7	0.9	100	8"
5 A98345-1 §	36.4	36.5	36.4	3.4	0		0.9	0.9	0.9	100	10"
6 A0008-1TE	22.3	32.0	27.2	10.6	2		2.3	1.2	1.8	100	6"
7 AO96305-3 §	31.3	51.1	41.2	19.9	0		1.3	0.5	0.9	100	5"
8 AO96365-2 §	28.8	34.3	31.5	6.9	1		1.5	1.0	1.3	100	4"
9 CO97087-2Ru	45.6	52.4	49.0	7.7	0		0.6	0.5	0.6	100	3"
10 CO98067-7Ru	27.0	38.0	32.5	11.0	1		1.7	0.8	1.3	100	10"
11 CO98368-2Ru	21.0	41.3	31.1	20.3	2		2.5	0.7	1.6	100	8"
12 PA00N14-2 §	25.4	43.1	34.2	17.7	1		1.9	0.6	1.3	100	6"
13 PA99N2-1	21.0	33.2	27.1	12.7	2		2.5	1.1	1.8	100	10"
14 PA99N82-4	29.4	41.4	35.4	12.2	1		1.5	0.7	1.1	100	10"
Average	LSD 0.05						2.8	4.8			
	28.9	40.9	34.9	12.6	1		1.7	0.8	1.2	100	

§ Advanced from 2008 Tri-State Trial

Date test performed:

Washington	April 28	
Idaho	May 1	
Oregon	May 3	



Doing it like the old timers. Mark Pavek (left) and Chris Hiles (right) handplant seed at precise in-row spacing.



Chris Voigt from the WSPC (Washington State Potato Commission) pictured far right, takes a look at a plant from this year's Seed Lot trial marked as having mosaic.



One of four seed lot plantings during 2009 early spring.



Zach Holden (left) and Josh Rodriguez (right) adjust the angle of the hillistion prior to hilling the first seed lot.



Time Out! The Othello crew works on the potato digger after a bearing seized up. Lending support are Anthony Cortez (left), Rudy Garza (top), and Chris Hiles (right).



Rick Knowles and crew harvest a trial.

2009 Regional Red and Specialty Trial

Summaries

ENTRY	TOTAL YIELD			US # 1's*	US # 2's*	Culls*	EXTERNAL DEFECTS (%)				SPECIFIC GRAVITY
	CWT/A	STATS**	Tons/A	> 0 oz -----% of Total Yield-----	> 0 oz	> 0 oz	Knobs	Malformed	Growth Cracks	Green	
Red Skin/White Flesh											
Dark Red Norland	331	AB	16.6	89 -----	1 -----%	9 -----	0	0	2	8	1.060
Red LaSoda	421	A	21.1	92 -----	1 -----%	7 -----	1	0	5	1	1.059
ATTX98453-6R	322	AB	16.1	92 -----	2 -----%	6 -----	0	0	5	1	1.067
BTX2332-1R	402	A	20.1	98 -----	0 -----%	2 -----	0	0	2	0	1.064
COTX94216-1R	235	BC	11.8	97 -----	2 -----%	0 -----	0	0	0	0	1.060
COTX94218-1R	219	C	11.0	99 -----	0 -----%	0 -----	0	0	0	0	1.066
NDTX4784-7R	372	A	18.6	88 -----	0 -----%	12 -----	0	0	10	2	1.058
Red-Purple Skin/Yellow Flesh											
A99326-1PY	353	A	17.7	95 -----	5 -----%	0 -----	0	0	0	0	1.067
AC99329-7PW/Y	312	AB	15.6	95 -----	0 -----%	5 -----	0	2	1	2	1.071
AC99330-1P/Y	351	A	17.6	98 -----	1 -----%	1 -----	0	1	0	0	1.064
POR01PG45-5	257	B	12.8	96 -----	4 -----%	0 -----	0	0	0	0	1.079
POR03PG80-2	322	AB	16.1	98 -----	1 -----%	0 -----	0	0	0	0	1.063
Red Skin/Red Flesh											
PA96RR1-193	390	A	19.5	98 -----	2 -----%	1 -----	0	1	0	0	1.072
POR03PG23-1	229	B	11.4	99 -----	1 -----%	1 -----	1	0	0	0	1.060
Purple Skin/Purple Flesh											
Purple Majesty	385	A	19.3	99 -----	1 -----%	0 -----	0	0	0	0	1.069
OR00068-11	362	A	18.1	99 -----	1 -----%	0 -----	0	0	0	0	1.082
Yellow Flesh											
Yukon Gold	442	A	22.1	86 -----	7 -----%	7 -----	0	0	6	1	1.081
A00286-3Y	320	C	16.0	100 -----	0 -----%	0 -----	0	0	0	0	1.060
A00293-2Y	320	C	16.0	100 -----	0 -----%	0 -----	0	0	0	0	1.066
CO00412-5W/Y	303	C	15.1	97 -----	1 -----%	2 -----	0	0	0	2	1.083
CO99045-1W/Y	340	ABC	17.0	97 -----	1 -----%	2 -----	1	0	0	1	1.069
POR02PG37-2	433	AB	21.7	97 -----	1 -----%	2 -----	0	0	0	2	1.077

ENTRY	US # 1 YIELD							INTERNAL DEFECTS (%)			
	CWT/A	STATS**	Tons/A	0-2 oz*	2-4 oz*	4-6 oz*	6-10 oz*	> 10 oz*	(6-10 oz tubers)	% HH	% BC
Red Skin/White Flesh											
Dark Red Norland	296	AB	14.8	2	12	20	32	33	0	4	4
Red LaSoda	387	A	19.4	1	4	9	29	58	0	8	8
ATTX98453-6R	296	AB	14.8	5	19	26	36	14	4	0	4
BTX2332-1R	392	A	19.6	2	12	23	44	19	0	3	3
COTX94216-1R	229	B	11.4	11	52	24	13	0	0	0	0
COTX94218-1R	218	B	10.9	10	41	27	20	2	0	0	0
NDTX4784-7R	329	AB	16.4	2	13	21	41	23	0	0	0
Red-Purple Skin/Yellow Flesh											
A99326-1PY	335	A	16.7	1	8	13	36	42	0	0	4
AC99329-7PW/Y	297	A	14.9	7	22	29	33	10	0	0	14
AC99330-1P/Y	344	A	17.2	13	52	25	10	0	0	0	0
POR01PG45-5	246	A	12.3	8	46	33	12	1	0	0	0
POR03PG80-2	317	A	15.8	1	8	24	48	18	0	0	0
Red Skin/Red Flesh											
PA96RR1-193	381	A	19.1	13	51	28	7	0	0	0	0
POR03PG23-1	226	B	11.3	15	44	29	11	1	0	0	0
Purple Skin/Purple Flesh											
Purple Majesty	380	A	19.0	8	48	30	13	1	0	0	0
OR00068-11	359	A	18.0	8	49	37	5	1	0	0	0
Yellow Flesh											
Yukon Gold	380	AB	19.0	1	5	6	28	60	0	0	4
A00286-3Y	320	AB	16.0	8	40	29	22	2	0	0	0
A00293-2Y	319	AB	15.9	7	34	32	22	5	0	0	0
CO00412-5W/Y	293	B	14.6	5	27	30	31	7	0	0	0
CO99045-1W/Y	329	B	16.4	2	17	23	35	23	0	0	0
POR02PG37-2	421	A	21.0	4	22	26	36	12	5	0	0

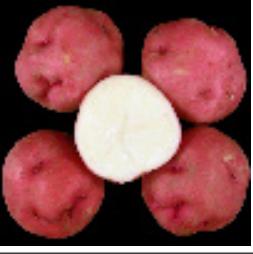
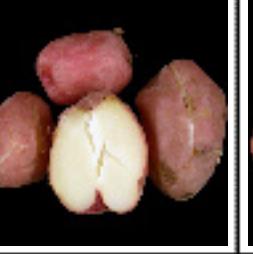
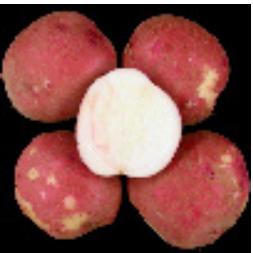
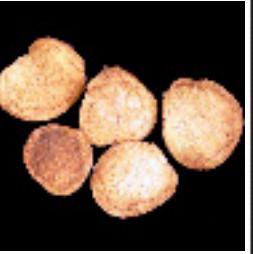
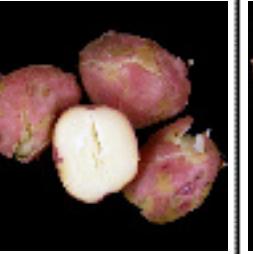
* Percent values may not total 100% due to rounding

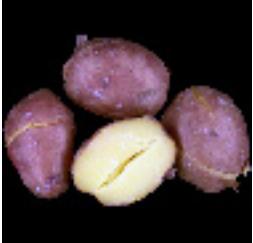
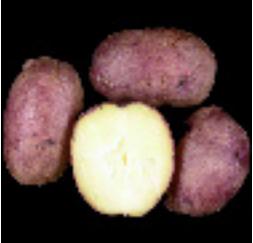
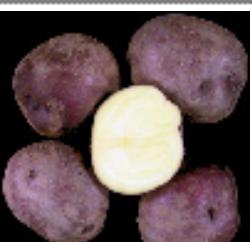
**Numbers followed by the same letter are not significantly different at the 5% level using Tukey's HSD Test

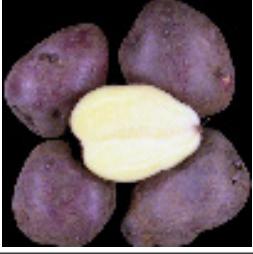
ENTRY	% Dead Vines prior to Vine Kill				40 DAY STAND % Emerged		50 DAY STAND % Emerged		STEMS PER PLANT Above Ground		AVERAGE TUBER WEIGHT Ounces		TUBER NUMBER Tubers/Plant		Skin Set 1 = Poor 5 = Good	Tuber Shape 1 = Round 5 = Long	BRUISE (%) (6-10 oz tubers) BLACKSPOT SHATTER		Length to Width Ratio 1 = Round 2 = Oblong
Red Skin/White Flesh																			
Dark Red Norland	2	47	97	1.8		7.4		4.8		4		1		8		21		1.2	
Red LaSoda	5	4	99	1.6		11.7		3.9		3		1		4		12		1.2	
ATTX98453-6R	4	0	40	2.1		6.2		5.6		3		1		18		36		1.0	
BTX2332-1R	2	56	81	2.7		7.2		6.0		3		1		3		38		1.0	
COTX94216-1R	0	3	63	3.0		3.9		6.6		3		1		0		10		1.1	
COTX94218-1R	1	8	75	3.0		4.3		5.6		3		1		0		26		1.0	
NDTX4784-7R	2	4	74	1.9		7.2		5.6		4		1		10		57		1.1	
Red-Purple Skin/Yellow Flesh																			
A99326-1PY	1	13	96	1.7		9.3		4.1		4		1		4		11		1.1	
AC99329-7PW/Y	2	53	100	2.7		5.4		6.3		4		1		0		0		1.0	
AC99330-1P/Y	0	31	96	3.2		3.8		10.1		4		1		0		10		1.1	
POR01PG45-5	0	7	97	1.6		4.2		6.5		3		3		4		0		1.4	
POR03PG80-2	0	4	86	1.3		7.8		4.4		4		3		12		32		1.6	
Red Skin/Red Flesh																			
PA96RR1-193	3	61	100	2.2		3.8		11.2		4		1		0		0		1.1	
POR03PG23-1	2	32	97	2.4		3.8		6.6		4		2		0		4		1.2	
Purple Skin/Purple Flesh																			
Purple Majesty	3	50	99	2.2		4.3		9.9		4		4		67		17		1.4	
OR00068-11	2	72	94	2.2		4.2		9.4		4		1		3		13		1.1	
Yellow Flesh																			
Yukon Gold	3	1	86	1.2		12.2		4.0		4		3		4		21		1.2	
A00286-3Y	0	56	96	2.1		4.4		7.9		4		2		0		0		1.3	
A00293-2Y	2	4	81	2.0		4.9		7.1		4		2		0		0		1.3	
CO00412-5W/Y	4	4	89	2.8		5.5		5.9		4		1		3		14		1.2	
CO99045-1W/Y	2	15	79	2.6		7.0		5.3		4		3		4		69		1.7	
POR02PG37-2	2	38	99	2.4		6.1		7.7		4		2		0		0		1.1	

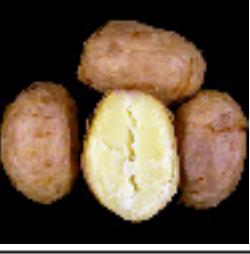
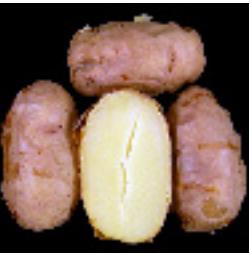
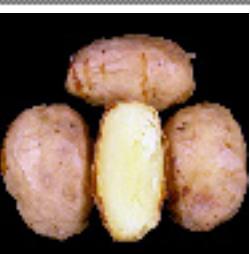
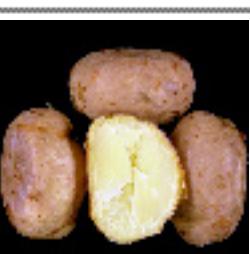


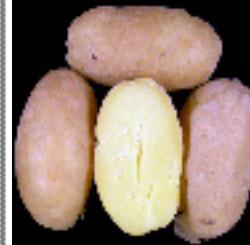
"The seed lot three" (From left to right: Oscar Gutbrod, Dan Hane (Oregon State University), and Mark Pavek (Washington State University)).

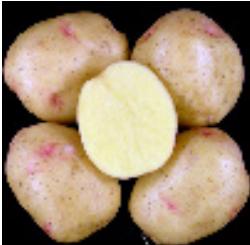
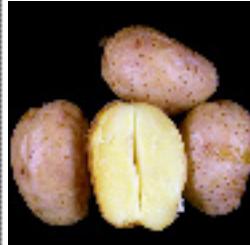
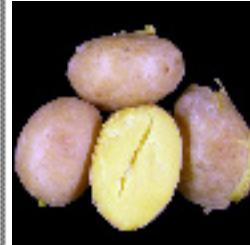
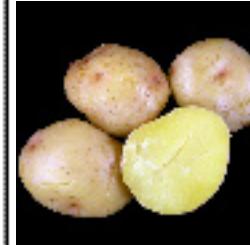
Tubers	Chips	Baked	Boiled	Microwaved
Dark Red Norland				
				
Red LaSoda				
				
ATTX98453-6R				
				
BTX2332-1R				
				
COTX94216-1R				
				

Tubers	Chips	Baked	Boiled	Microwaved
COTX94218-1R				
				
NDTX4784-7R				
				
A99326-1PY				
				
AC99329-7PW/Y				
				
AC99330-1P/Y				
				

Tubers	Chips	Baked	Boiled	Microwaved
POR01PG45-5				
				
POR03PG80-2				
				
PA96RR1-193				
				
POR03PG23-1				
				
Purple Majesty				
				

Tubers	Chips	Baked	Boiled	Microwaved
OR00068-11				
				
Yukon Gold				
				
A00286-3Y				
				
A00293-2Y				
				
CO00412-5W/Y				
				

	Tubers	Chips	Baked	Boiled	Microwaved
CO99045-1W/Y					
					

POR02PG37-2					
					

Postharvest Evaluation

Fried

(3/8 x 1 1/8" slices)

(Chips)

Clone	Raw				After Frying				Av of 4 raters
	Stem	Bud	Average	Difference	Stem	Bud	Average	Difference	
1 Dk Red Norland	55.7	55.2	55.4	1.6	34.3	33.5	33.9	4.1	0
2 Red LaSoda	58.2	56.6	57.4	2.4	21.6	23.4	22.5	3.6	2
3 ATTX98453-6R	55.7	56.2	56.0	1.7	18.6	17.8	18.2	1.7	3
4 BTX2332-1R	53.4	53.1	53.3	1.9	30.3	37.4	33.8	8.1	1
5 COTX94216-1R	54.7	53.8	54.2	1.5	32.0	32.5	32.3	2.7	0
6 COTX94218-1R	54.3	52.6	53.4	2.8	34.0	35.8	34.9	4.1	0
7 NDTX4784-7R	50.4	50.8	50.6	1.7	26.0	24.1	25.0	3.8	2
8 A99326-1PY	55.9	57.1	56.5	1.7	27.3	31.8	29.5	4.9	1
9 AC99329-7PW/Y	55.4	55.2	55.3	1.5	29.1	32.0	30.6	3.9	1
10 AC99330-1P/Y	52.3	51.0	51.6	1.6	32.2	33.5	32.8	2.7	0
11 POR01PG45-5	56.1	55.4	55.7	1.9	36.9	42.0	39.4	5.4	0
12 POR03PG80-2	53.4	54.6	54.0	2.5	20.4	27.6	24.0	7.2	2
13 PA96RR1-193	22.3	26.7	24.5	5.1	23.6	27.8	25.7	5.0	2
14 POR03PG23-1	9.9	11.3	10.6	1.6	10.8	12.5	11.6	1.8	4
15 Purple Majesty	4.7	4.3	4.5	0.7	11.7	11.0	11.3	1.3	4
16 OR00068-11	6.6	8.6	7.6	2.0	15.2	17.9	16.5	2.7	3
17 Yukon Gold	53.7	53.5	53.6	2.4	27.8	39.7	33.7	11.9	1
18 A00286-3Y	52.7	51.7	52.2	1.5	30.6	34.2	32.4	4.6	0
19 A00293-2Y	53.3	51.3	52.3	2.7	27.6	34.1	30.9	6.8	1
20 CO00412-5W/Y	46.7	48.4	47.5	2.5	35.6	39.5	37.5	4.5	0
21 CO99045-1W/Y	52.2	51.7	52.0	2.0	27.4	27.8	27.6	3.1	1
22 POR02PG37-2	51.5	51.5	51.5	1.3	40.5	45.0	42.8	4.6	0
LSD 0.05 *			1.8	1.3			3.7	2.8	
Average	45.9	45.9	45.9	2.0	27.0	30.0	28.5	4.5	1
									4.1

*Differences between clones equal to or greater than the LSD 0.05 are significant.

Entries with red (PA96RR1-193 & POR03PG23-1) or purple (Purple Majesty & OR00068-11) flesh were not included in the ANOVA. All other entries have white or yellow flesh.

SFA 1 (lightest) to 5 (darkest)

2009 Washington Regional Red and Specialty Trial

Postharvest Evaluation Summary

Clone	Boiled (25 max)	Baked (25 max)	Microwaved (25 max)	Total (75 max)
20 CO00412-5W/Y	20.2	21.3	17.7	59.1
12 POR03PG80-2	19.6	19.0	20.3	59.0
22 POR02PG37-2	20.7	19.7	18.6	58.9
19 A00293-2Y	20.7	19.2	18.8	58.6
13 PA96RR1-193	19.7	19.2	19.4	58.3
11 POR01PG45-5	18.7	20.7	18.6	57.9
15 Purple Majesty	19.2	19.5	19.2	57.9
1 Dk Red Norland	18.9	20.7	18.1	57.7
16 OR00068-11	20.0	19.7	17.8	57.5
7 NDTX4784-7R	19.0	18.8	19.4	57.3
9 AC99329-7PW/Y	18.8	19.7	18.8	57.2
2 Red LaSoda	19.6	19.0	18.4	57.0
18 A00286-3Y	20.3	18.1	18.2	56.7
5 COTX94216-1R	18.2	19.5	18.8	56.4
3 ATT98453-6R	19.8	18.8	17.7	56.3
17 Yukon Gold	18.3	20.0	17.9	56.2
8 A99326-1PY	18.4	19.5	18.3	56.2
6 COTX94218-1R	17.8	19.3	18.9	56.0
21 CO99045-1W/Y	19.7	18.4	17.4	55.5
10 AC99330-1P/Y	18.4	17.7	19.3	55.4
4 BTX2332-1R	17.1	19.2	17.9	54.1
14 POR03PG23-1	17.3	19.0	16.9	53.3

Index of Clones and Cultivars

Early Harvest Tri-State Trial 8-9

A00324-1
A00727-1
A01010-1
AO00057-2
AO02183-2
Ranger Russet

Russet Burbank
Russet Norkotah

Late Harvest Tri-State Trial 10-15

A00324-1
A00727-1
A01010-1
AO00057-2
AO02183-2
Ranger Russet

Russet Burbank
Russet Norkotah

Early Harvest Regional Trial 16-19

A0008-1TE
A96814-65LB
A97066-42LB
A98345-1
AC99375-1Ru
AO96305-2
AO96365-2

CO97087-2Ru
CO98067-7Ru
CO98368-2Ru
CO99053-3Ru
CO99053-4Ru
CO99100-1Ru
PA00N14-2

PA99N2-1
Ranger Russet
Russet Burbank
Russet Norkotah

Late Harvest Regional Trial 20-33

A0008-1TE
A96814-65LB
A97066-42LB
A98345-1
AC99375-1Ru
AO96305-2
AO96365-2

CO97087-2Ru
CO98067-7Ru
CO98368-2Ru
CO99053-3Ru
CO99053-4Ru
CO99100-1Ru
PA00N14-2

PA99N2-1
Ranger Russet
Russet Burbank
Russet Norkotah

Regional Red and Specialty Trial 34-41

A00286-3Y
A00293-2Y
A99326-1PY
AC99329-7PW/Y
AC99330-1P/Y
ATTX98453-6R
BTX2332-1R
CO00412-5W/Y
CO99045-1W/Y

COTX94216-1R
COTX94218-1R
Dark Red Norland
NDTX4784-7R
OR00068-11
PA96RR1-193
POR01PG45-5

POR02PG37-2
POR03PG23-1
POR03PG80-2
Purple Majesty
Red LaSoda
Yukon Gold