2008 Potato Cultivar Yield and Postharvest Quality Evaluations

WSU Potato Research Group

Washington State University

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On the cover: Industry icon Dr. Robert E. Thornton (center) educates M.S. student Jason Ingram on how to identify diseased potato plants while Allan French (top left) and Mel Martin (top center) look for other diseased plants within the 2008 WSU Seed Lot Trial.

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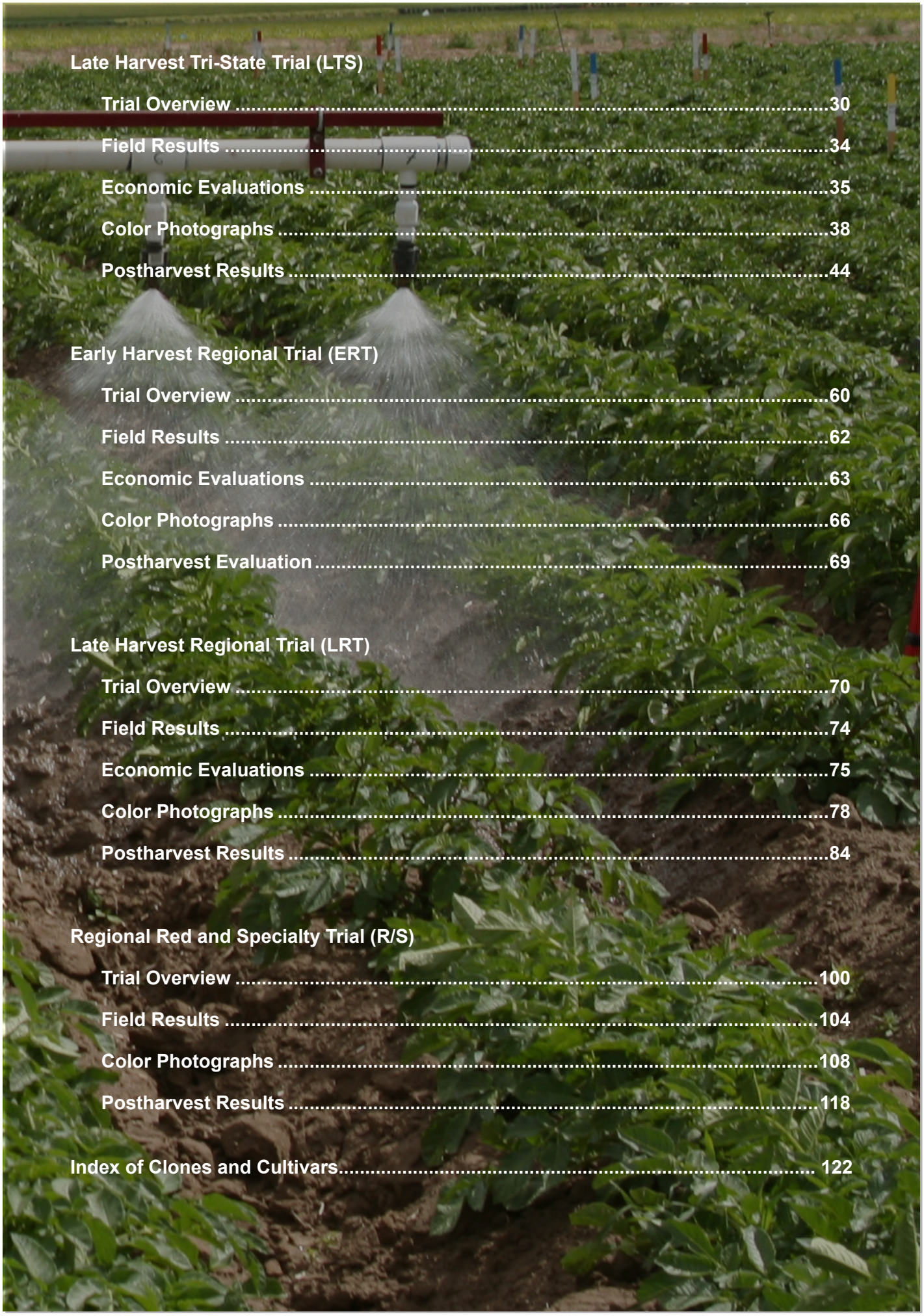


INTRODUCTION

The 2008 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.

Recent Accomplishments: As of January 2009, a total of 32 varieties have been released by the Tri-State program. Pacific Northwest Potato Development Program varieties are now produced on over 137,800 acres (2008) in the Pacific Northwest with value to growers estimated in excess of $325 million. The success and impact of the Tri-State potato breeding program is demonstrated by the adoption of its varieties. Four Tri-State releases, Ranger Russet (R.), Umatilla R., Alturas, and Western R., were the 3rd, 7th, 8th, and 10th most widely grown potato varieties in the United States in 2007, respectively. From 2006 to 2007, Tri-State varieties increased from 15% to 18% of production acreage (123,195- to 152,586-acres) across the eight states that dominate U.S. fall production (=89% of fall production). This acreage increased even further to 20% (157,540 A) in 2008. It is predicted that this impact will continue to increase as commercial seed supplies of the new varieties become available. For example, R. Burbank accounted for 62% (217,000 A) and 38.5% (63,500 A) of the 2007 Idaho and WA potato crops, respectively. Premier R., a 2006 release with low temperature sweetening resistance and excellent out-of-storage processing quality, will undoubtedly replace a significant proportion of acreage presently devoted to R. Burbank. Replacement of only half the current R. Burbank acreage with Premier equals approximately $393 million based on average processing contracts for R. Burbank. However, this value is likely an underestimate because of the higher quality and proportion of U.S. No. 1's produced by Premier R. Premier R. has been of interest to all of the major potato processing companies. This interest is most evident in the rapid expansion of acreage of Premier R. since its release in 2006. In 2007, approximately 880 acres of this variety was grown nationally (National Agricultural Statistics Service), with 629 acres of seed being grown in ID, ME, MT, MN, NE, and OR. Seed acreage of this magnitude suggests commercial acreage will continue to expand. During 2008, Premier R. was planted on 8,665 acres; a tenfold increase from 2007.

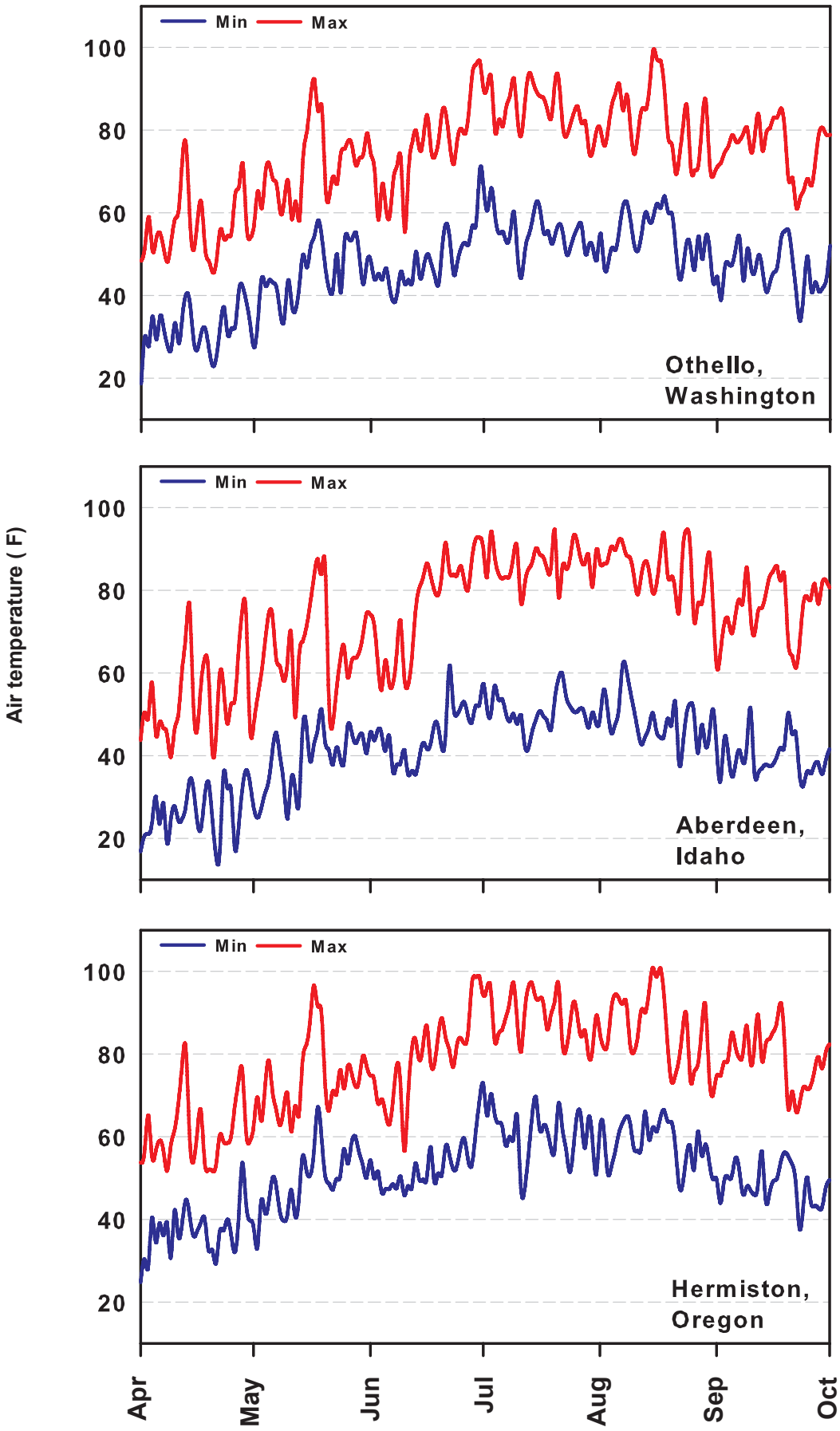
Cultural Information

Late Tri-State and Late Regional Trials

Tri-State Trial	**Othello, WA**	**Aberdeen, ID**	**Hermiston, OR**
Soil type	Shano silt loam	Silt loam	Loamy fine sand
Previous crop	Wheat	Small Grains	Small Grains
Planting date	April 8	April 29	April 2
Vine kill date	September 12	September 3	August 26
Soil moisture at harvest	Moist-Dry	70%	N/A
Temperature at harvest	76°F	80°F-85°F	N/A
Harvest date	September 22	September 18	September 19
Storage temperature	48°F	60°F-65°F	Ambient
Date received at Pullman	September 26	September 23	September 19

Regional Trial	**Othello, WA**	**Aberdeen, ID**	**Hermiston, OR**
Soil type	Shano silt loam	Silt loam	Loamy fine sand
Previous crop	Wheat	Small Grains	Small Grains
Planting date	April 9	April 29	April 2
Vine kill date	September 12	September 3	August 26
Soil moisture at harvest	Moist-Dry	70%	N/A
Temperature at harvest	76°F	80°F-85°F	N/A
Harvest date	September 23	September 18	September 19
Storage temperature	48°F	60°F-65°F	Ambient
Date received at Pullman	September 23	September 23	September 19

2008 Growing Season Temperatures



Guide to Clone Designations

Example: ATX91137-1Ru		
	ATX91137-1Ru	Breeding Program (**A**berdeen, ID)
	A**TX**91137-1Ru	Selection Site (**Tex**as)
	ATX**91**137-1Ru	Year of Cross (19**91**)
	ATX91**137**-1Ru	Cross Number (**137**)
	ATX91137-**1**Ru	Tuber Selection (**1**)
	ATX91137-1**Ru**	Russet (**Ru**)

Location Codes

Designation		**Breeding Program**	**Selection Program**	**Other**
A	=	**A**berdeen, Idaho	**A**berdeen, Idaho	
AO	=	**A**berdeen, Idaho	**O**regon	
AOA	=	**A**berdeen, Idaho	**O**regon	**A**berdeen,Idaho
ATX	=	**A**berdeen, Idaho	**Tex**as	
BTX	=	**B**eltsville, Maryland	**Tex**as	
CO	=	**Co**lorado		
MWTX	=	**M**adison **W**isconsin	**Tex**as	
NDA	=	**N**orth **D**akota	**A**berdeen, Idaho	
NY	=	**N**ew **Y**ork		
PA	=	**P**rosser, WA	**A**berdeen, Idaho	
POR	=	**P**rosser, WA	**O**regon	
TC	=	**T**exas	**Co**lorado	
TE	=	**Te**tonia, ID		
TXA	=	**Tex**as	**A**berdeen, Idaho	
TXNS	=	**Tex**as		**N**orkotah **S**train

Miscellaneous Designations

PA97**B**3-2	**B**	=	Chuck **B**rown's cross
A93157-6**LS**	**LS**	=	**L**ow **S**ugar
CO94165-3**P/P**	**P/P**	=	**P**urple skin & **P**urple flesh
A96741-2**R**	**R**	=	**R**ed skin
CO94183-1**R/R**	**R/R**	=	**R**ed skin / **R**ed flesh
VC0967-2**R/Y**	**R/Y**	=	**R**ed skin / **Y**ellow flesh
ATX92230-1**Ru**	**Ru**	=	**Ru**sset skin
VC1009-1**W/Y**	**W/Y**	=	**W**hite skin & **Y**ellow flesh
A97066-42**LB**	**LB**	=	**L**ate **B**light resistance
AC9923**PW/Y**	**PW/Y**	=	**P**urple skin with **W**hite eyes/ **Y**ellow flesh
AC9653**P/Y**	**P/Y**	=	**P**urple skin/**Y**ellow flesh
CO977-2**P/PW**	**P/PW**	=	**P**urple skin/**P**urple & **W**hite flesh

OVERALL CULTIVAR & CLONE PERFORMANCE

Merit Score Methods

Overview: Overall performance for each entry was rated on a scale of 1 to 5; 5 indicating the best performance possible. The methods are explained below. Economic analysis methods are explained on pages 14 (Fresh) and 15 (Process).

FRESH MARKET MERIT SCORE METHODS:

75% Fresh market economic value

25% Internal quality – blackspot bruise, shatter bruise, hollow heart, internal brown spot, and brown center. An average merit value is taken. Of the five internal categories listed above, the worst internal defect or bruise rating for each cultivar is weighted 50% so serious bruise or defect problems are reflected in the final merit score.

Researcher's Discretion: The overall merit score may be reduced by up to 50% for any unacceptable trait not quantified in the data (e.g. poor appearance or poor flavor).

EARLY PROCESS MARKET MERIT SCORE METHODS:

75% Early harvest process market economic value

25% Internal quality – blackspot bruise, shatter bruise, hollow heart, internal brown spot, and brown center. An average merit value is taken. Of the five internal categories listed above, the worst internal defect or bruise rating for each cultivar is weighted 50% so serious bruise or defect problems are reflected in the final merit score.

Researcher's Discretion: The overall merit score may be reduced by up to 50% for any unacceptable trait not quantified in the data.

LATE PROCESS MARKET MERIT SCORE METHODS:

For the late process market, a merit score is listed for both field and post-harvest performance.

Field/Economic Performance – methods are the same as "Early Process Market Merit Score Methods" shown above, with the exception that a late harvest economic analysis is conducted.

Post-Harvest Performance – see "Postharvest Procedures" section near front of book.

Researcher's Discretion:
The overall merit score may be reduced by up to 50% for any unacceptable trait not quantified in the data.

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 Merit	Rank	Entry	Late Harvest Merit
1	A0008-1TE	4.3	1	A0008-1TE	3.4
2	PA99N2-1	3.4	2	CO97087-2Ru	3.0
3	CO97087-2Ru	3.3	3	Ranger Russet	2.8
4	AOTX95265-2ARu	3.3	4	PA99N2-1	2.8
5	AOTX95265-4Ru	3.2	5	AOTX95265-4Ru	2.7
6	AOTX95265-3Ru	2.8	6	AO96141-3	2.7
7	PA99N82-4	2.7	7	**CO98067-7Ru**	2.3
8	Ranger Russet	2.6	8	A97066-42LB	2.1
9	AO96141-3	2.4	9	AC96052-1Ru	1.5
10	**CO98368-2Ru**	2.0	10	Russet Burbank	1.4
11	Russet Burbank	2.0	11	PA99N82-4	1.2
12	**CO98067-7Ru**	1.9	12	**CO98368-2Ru**	1.0
13	AC96052-1Ru	1.7			
14	A97066-42LB	1.5			

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

*Due to a seed issue, Russet Norkotah was excluded from the 2008 trials.

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 Merit	Rank	Entry	Late Harvest Merit
1	**AO00057-2**	3.8	1	AO96365-2	3.7
2	AO96365-2	3.1	2	AO96305-3	2.8
3	PA00N14-2	3.0	3	A98345-1	2.8
4	AO96305-3	2.9	4	A96814-65LB	2.4
5	A96814-65LB	2.8	5	Ranger Russet	2.4
6	A98345-1	2.7	6	PA00N14-2	2.4
7	Ranger Russet	2.6	7	**AO98282-5**	2.3
8	**AO98282-5**	2.3	8	**AO00057-2**	2.3
9	Russet Burbank	2.0	9	**PA98NM25-5**	2.2
10	**PA00N32-4**	1.9	10	**A00324-1**	2.0
11	**A00324-1**	1.4	11	Russet Burbank	1.4
12	**PA98NM25-5**	1.4	12	**A00646-4**	1.0
13	**A00646-4**	1.0	13	**PA00N32-4**	0.6

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

* Due to a seed issue, Russet Norkotah was excluded from the 2008 trials.

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.

				Late Harvest	
Rank	Entry	Early Harvest Merit	Entry	Field Performance Merit	Post-Harvest Processing Merit (3-State)
1	AO96141-3	4.3	CO97087-2Ru	4.0	4.3
2	CO97087-2Ru	3.9	AO96141-3	3.8	4.0
3	A0008-1TE	3.7	PA99N2-1	3.8	3.8
4	**CO98368-2Ru**	3.7	Ranger Russet	3.6	3.5
5	PA99N2-1	3.6	A0008-1TE	3.1	3.4
6	Ranger Russet	3.5	A97066-42LB	2.8	3.6
7	A97066-42LB	2.9	PA99N82-4	2.8	4.0
8	PA99N82-4	2.9	AC96052-1Ru	2.6	4.2
9	**CO98067-7Ru**	2.8	**CO98368-2Ru**	2.5	2.8
10	Russet Burbank	2.8	**CO98067-7Ru**	2.3	2.4
11	AOTX95265-2ARu	2.8	Russet Burbank	1.8	2.5
12	AOTX95265-4Ru	2.6	AOTX95265-4Ru	1.8	1.8
13	AOTX95265-3Ru	2.5			
14	AC96052-1Ru	2.1			

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

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.

				Late Harvest	
Rank	Entry	Early Harvest Merit	Entry	Field Performance Merit	Post-Harvest Processing Merit (3-State)
1	PA00N14-2	4.9	AO96365-2	4.0	3.8
2	**AO98282-5**	4.8	**AO98282-5**	3.9	4.1
3	**PA00N32-4**	4.0	A98345-1	3.9	4.5
4	A98345-1	3.7	Ranger Russet	3.6	3.5
5	AO96305-3	3.6	**AO00057-2**	3.4	4.3
6	Ranger Russet	3.5	AO96305-3	3.3	4.1
7	**AO00057-2**	3.4	**A00324-1**	3.2	3.9
8	AO96365-2	3.3	PA00N14-2	3.0	3.7
9	A96814-65LB	3.1	A96814-65LB	2.4	4.0
10	Russet Burbank	2.8	**PA98NM25-5**	2.1	4.0
11	**A00646-4**	2.6	**PA00N32-4**	1.9	2.9
12	**A00324-1**	2.4	Russet Burbank	1.8	2.5
13	**PA98NM25-5**	2.1	**A00646-4**	1.0	2.9

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

2008 Red & Specialty Potato Clones - Washington State University

RANKED ACCORDING TO 2008 US #1 Yield

	US #1 Yield 2008			US #1 Yield 2007	(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
Red Skin/White Flesh*					
Dark Red Norland	486	32	47	464	Pink/red, large uniform size, color inconsistent among tubers.
Red LaSoda	485	25	37	570	Deep eyes, very large, irreg shape, ugly.
CO98012-5R	455	91	9	455	Nice bright red, sticky stolons**.
NDA7985-1R	426	53	35	525	Large, red, shallow eyes, shape a bit irreg, poor skin set.
Red or Purple Skin/Yellow Flesh					
A99331-2RY	356	87	12		Pink skin - poor color, nice shape and size. Discard - color!
AC99329-7PW/Y	427	59	35		Attractive multi-color skin, shape a bit irreg, sticky stolons.
AC99330-1P/Y	322	97	3		Purple, nice, uniform size, deep eyes, sticky stolons.
ATTX961014-1R/Y	389	61	35	533	Pink, flat, longer, shape a bit irreg, nice overall appearance.
ATTX98500-2P/Y	356	75	23	409	Purple, uniform size, nice skin, deep eyes.
POR01PG45-5	457	83	16		Purple, some bronzing, poor skin set, shape a bit irreg.
Red Skin/Red Flesh					
CO97222-1R/R	428	88	11	441	Dark red, nice shape and size, some bronzing.
PA96RR1-193	475	87	13		Purple/red skin, nice shape/size, bronzing, sticky stolons.
POR03PG23-1	291	97	3		Nice multi-color skin, attractive, shape a bit irreg.
Purple Skin/Purple Flesh					
Purple Majesty	385	96	4		Dark purple, bronzing, small uniform size and shape.
CO97215-2P/P	318	75	22	304	Dark purple, bronzing, uniform size and shape.
CO97227-2P/PW	298	100	0	401	Dark purple, small, oblong or round, irreg shape, bronzing.
OR00068-11	431	84	13		Dark purple, nice shape and size, bronzing, skin not smooth.
Yellow Flesh - Skin Color/Type Vary					
Yukon Gold	322	35	43	465	Yellow, large, nice shape and skin, some rhizoc.
A00286-3Y	335	76	20		Yellow, nice shape & size, poor skin set, some oblong or irreg.
CO99045-1W/Y	426	81	16		Bright yellow, skin not smooth, nice shape and size, oblong.
POR02PG26-5	382	77	22	446	Looks like small Yukon G. with large red eyes, rhizoc.
POR02PG37-2	429	74	22	475	Small version of Yukon G. with more colorful eyes.

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

**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 mature prior to harvest, however, it generally indicates late maturation.

At-Harvest Grading Comments & Fresh Market Appearance

Newest Entries - 2008 Tri-State Trials		
Clone	Fresh Market Appearance 1-5 (5 = best)	Comments
Early-Harvest Tri-State		
Ranger Russet	2.8	Mostly typy; some points, knobs, cracks; nice for Ranger.
Russet Burbank	2.5	Shape mostly uniform; a few knobs, points, and dumbbells.
A96814-65LB	3.0	Large, flat, blocky, typy, spotty russeting.
A98345-1	2.8	Typy, blocky, mostly uniform shape, ugly skin.
A00324-1	3.0	Shape a bit irregular like Ranger, many typy ones.
A00646-4	3.3	Small, typy, light russetting, nice.
AO96305-3	3.3	Mostly typy, some irregularly shaped, some minor growth cracks.
AO96365-2	4.0	Typy, blocky, a bit small.
AO98282-5	2.5	Small, shape mostly uniform but a bit pointy.
AO00057-2	3.8	Large, blocky, typy, some pointy and some round.
PA98NM25-5	3.0	Shape mostly uniform, but some with irreg shape, light russet skin.
PA00N14-2	3.0	Long, skinny, pointy, a bit flat.
PA00N32-4	2.5	Light russetting, mostly typy, a few with irreg shape.
Late-Harvest Tri-State		
Ranger Russet	3.3	Large, long, mostly typy.
Russet Burbank	2.3	Mix of shapes, some typy, some rough, knobs.
A96814-65LB	3.0	Large, maybe too large, blocky, a bit round, puffed wheat skin.
A98345-1	2.0	Very large, looks similar to Shepody, a bit round, some rough.
A00324-1	3.0	Large, puffed wheat skin, mostly typy but skin is an issue.
A00646-4	3.0	Small, round, puffed wheat skin, mostly typy.
AO96305-3	3.5	Mostly typy, a few ugly and rough ones, some long and skinny.
AO96365-2	3.8	Mostly typy, round, small, some pointy ends.
AO98282-5	2.7	Lot of knobs, looks like a rough Russet Burbank.
AO00057-2	3.5	Very large - too large for fresh, mostly typy, a few folded ends.
PA98NM25-5	2.5	A bit ugly, some round, some pointy, light skin.
PA00N14-2	3.8	Ugly skin with orange tint, long, skinny, light russet, bit flat
PA00N32-4	1.0	Light skin, ugly, pear shaped, point, rough shape, poor yield.

At-Harvest Grading Comments & Fresh Market Appearance

Advanced Lines - 2008 Regional Trials		
Clone	Fresh Market Appearance 1-5 (5 = best)	Comments
Early-Harvest Regional		
Ranger Russet	3.0	Mostly typy, a bit pointy, poor skin set.
Russet Burbank	2.3	Irregular, inconsistent shape, a bit pointy, knobs, large.
A0008-1TE	4.0	Plump girth, very typy, fresh mkt standout, uniform size.
A97066-42LB	3.0	Bad skin, spotty russeting, blocky, a bit round.
AC96052-1Ru	4.3	Small, typy, looks like Russet Norkotah.
AO96141-3	3.0	Skinny, long, typy, uniform shape.
AOTX95265-2ARu	4.0	Small, typy, uniform size.
AOTX95265-3Ru	3.8	Small, typy, non-uniform russeting.
AOTX95265-4Ru	4.0	Small, typy.
CO97087-2Ru	3.8	Small, typy, some with non-uniform shape.
CO98067-7Ru	3.8	Small, typy, good skin set, light, puffed wheat skin with orange tint.
CO98368-2Ru	3.8	Small, typy, some a bit flat and round.
PA99N2-1	4.0	Many round tubers, typy.
PA99N82-4	4.0	Smaller tubers round, larger ones more oblong, typy.
Late-Harvest Regional		
Ranger Russet	2.8	Long, skinny, mostly typy, some a bit rough, large.
Russet Burbank	2.5	Some typy, some rough, knobs, growth cracks.
A0008-1TE	3.1	Mostly typy, rough, non-uniform shape and russeting.
A97066-42LB	1.5	Spotty russeting, skin cracks, alligator hide, large.
AC96052-1Ru	3.3	Small, typy, dark puffed wheat skin.
AO96141-3	3.0	Pointy ends, long and skinny, some knobs.
AOTX95265-4Ru	3.8	Looks like R. Norkotah, typy, bit flat, uniform shape and size.
CO97087-2Ru	3.7	Some pear shaped, some typy and round, bit flat.
CO98067-7Ru	2.8	Flat, round, some pears, discard?
CO98368-2Ru	3.0	Small, flat, shatter bruise, some curves, bit round.
PA99N2-1	2.5	Round - too round for fries, light puffed wheat skin.
PA99N82-4	1.5	Discard! Round, plump - too round for fries, puffed wheat skin.

Fresh Market Value - Methods

Economic Potential

The gross return in U.S. dollars per acre for each trial entry was calculated using WA (Columbia Basin) four-year average fresh potato prices. Production costs per acre were not applied. All assumptions are listed in the table below. Assessing the fresh value of a given lot of potatoes is difficult because the actual market allows fresh-pack sheds to utilize a mix of tuber sizes, packaging, and marketing opportunities to maximize income potential. Following discussions with actual pack-sheds and complying with USDA standards, the packaging and size ranges described below provide a good base for variety comparison. A packaging and handling fee (pack-shed operating fee) of $4.00 was assessed on each CWT of potatoes. This economic evaluation does not fully account for consumer preferences for each trial entry.

Fresh-pack market 4-year average shipping point prices per tuber size and grade with associated pack-fees.

	Range of Tuber Sizes for Each Package Type and USDA Grade		Four Year WA State Columbia Basin	Pack-Shed Fee: Packaging	
Markets/Packaging[a]	U.S. No. 1[b]	U.S. No. 2	Average Prices[c]	and Handling	Adjusted Value
50 lb cartons	oz	oz	$/CWT	$/CWT	$/CWT
100 Count	7 to 8.5		$13.54	$4.00	$9.54
90 Count	8.5 to 9.5		$14.71	$4.00	$10.71
80 Count	9.5 to 10.5		$17.02	$4.00	$13.02
70 Count	10.5 to 12.5		$17.62	$4.00	$13.62
60 Count	12.5 to 14		$17.61	$4.00	$13.61
50 Count	14 to 18		$17.06	$4.00	$13.06
10 lb Film Bags					
Non-size A	4 to 7		$9.15	$4.00	$5.15
100 lb Burlap Sacks					
10 oz Min. Size U.S. No. 2		10 to 20	$8.60	$4.00	$4.60
10 oz Min. Size U.S. No. 2	18 to 20		$8.60	$4.00	$4.60
Bulk					
Process-Culls	< 4	< 10	$4.00	$4.00	$0.00
Process-Culls	> 20	> 20	$4.00	$4.00	$0.00

[a]Count = tuber number per 50 lb carton.

[b]18 to 20 oz U.S. No. 1 tubers are typically of marginal value on the fresh market due to their large size. They were therefore priced as U.S. No. 2, 10 oz minimum size.

[c]Sales F.O.B. Shipping Point, market periods 2004/2005 to 2006/2007 (USDA Federal-State Market News Service 2004-2007). Process-culls priced at regional process-cull market value.

Process Value - Methods

Early Harvest

Economic Potential
The gross return in U.S. dollars per acre for each trial entry was calculated using an early-harvest mock processing contract similar to those used by Washington State processors. All assumptions are listed below.

Contract Assumptions:

1. Base price of $138/ton.
   a. Base price is an average of early-harvest Ranger Russet contracts from Washington processors based on a July 31, 2008 harvest date.
2. Market Yield (U.S. #1s & 2s) of tubers greater than 4 oz was multiplied by the base price.
3. Undersized market-grade potatoes less than 4 oz (process culls) were valued at $60/ton.
4. Specific gravity reject level for Ranger Russet contract = 1.074.
5. No premiums and penalties were applied for tuber fry color, sugar content, internal defects, or bruise.

Late Harvest

Economic Potential
The gross return in U.S. dollars per acre for each trial entry was calculated using a late-harvest mock processing contract. Process-market values are based on criteria (below) similar to that used by Washington potato processors. Production costs per acre were not applied. Direct delivery contract assumptions are listed below.

Contract Assumptions:

1. ***Base price:*** $133/ton for market (U.S. #1 & 2) grade tubers.
2. ***Six oz clause:*** Premiums for 6 oz and larger market grade tubers of $1.00/ton for each percentage point >56% they contribute to the total tuber yield composite, up to 66%, with a maximum of $11.00/ton. Premiums were $11.00/ton for >6 oz percentages above 66% (see also oversize clause). Penalties were $1.00/ton for each percentage point below 56%. Below 46%, penalties were $20/ton. (e.g. 60% of total yield >6 oz; 60%-56% = 4 x $1.00 = $4.00 x Mkt yield >4 oz + Base Price).
3. ***Oversize clause:*** If total yield has more than 30% >12 oz market grade tubers, penalty of $0.40/ton for each percentage point greater than 30%. (e.g. 40% of total yield >12 oz; 40%-30% = 10 x $0.40 = $4.00 x Mkt yield >4 oz subtracted from Base Price).
4. ***Undersized clause:*** Market grade potatoes <4 oz (process culls) were valued at $60.00/ton.
5. ***Specific Gravity clause:*** Premium per ton is $1.00 at 1.077, $4.00 at 1.078, $6.00 at 1.079, $8.00 at 1.080, $10.00 at 1.081, $12.00 at 1.082, $14.00 at 1.083, with a maximum of $14.00 for 1.084 through 1.088. Above 1.088 the premiums drop: $13.00 at 1.089, $12.00 at 1.090, $11.00 at 1.091, $9.00 at 1.092, $7.00 at 1.093, $5.00 at 1.094, $3.00 at 1.095. Between 1.096 and 1.098 no premium or penalty. Penalty of $1.00/ton at 1.099; >1.099 penalty of $3.00/ton. No premium or penalty for 1.076, $10.00 penalty at 1.075. Below 1.075, lots were penalized $20.00/ton with no rejection minimum.
6. No premiums or penalties were applied for bruise, tuber fry color, sugar content, or internal defects.

2008 Postharvest Procedures

Early Harvest

Testing of clones in the early harvest Tri-State and Regional Trials involved French frying samples at harvest only, following the same procedure as used in the late harvest trials. In addition to French frying and chipping, culinary and quality characteristics of clones from the Red/Specialty Trial were evaluated after oven-baking, microwaving and boiling. Four- to six-ounce tubers were selected for the cooking protocols described below. After cooking, each tuber was halved from stem to bud end. One half was immediately tasted and evaluated on a scale from 1 to 5 (5 is best) for texture, flavor, tuber center, and skin characteristics. The remaining half was incubated for 30 minutes at room temperature and after-cooking-darkening was then graded on a 1 to 5 scale based on a color chart for white- and yellow-fleshed clones (1 = excessive graying, 5 = no discoloration).

Oven Baking - Tubers were pierced twice with a fork on each side and baked at 400°F for 1 hour.

Boiling - Tubers were cooked in a sieved double-boiler for 1 hour after coming to a boil.

Microwaving - Tubers were pierced twice with a fork on each side and cooked for 10 minutes at the outer edge of a microwave oven (high setting). The tubers were then turned over and moved to the center of the microwave where they were cooked an additional 10 minutes. Four-tuber samples from each of two clones (eight tubers total) were cooked simultaneously.

Chipping - Tubers were cut longitudinally from stem to bud end. One half was used to make French fries as described below. The other half was sliced into 0.05-inch thick chips. The first slice was discarded to insure uniform thickness of the subsequent chips. The samples (12-tubers/clone) were rinsed with water and fried in 375°F vegetable oil for 2 minutes. The chips were drained on paper towels and chip color was graded using the Potato Chip/Snack Food Association (PC/SFA) color chart (1 = light, 5 = dark).

Late Harvest

Testing of clones in the late harvest trials involved the following postharvest quality evaluations. As soon as possible after harvest, tuber specific gravity and fry color (Photovolt readings) were measured on 12 tubers from each clone. Clones designated as fresh processing were French fried and Photovolt readings compared at harvest only. Additional tubers of each clone were placed in storage at 40°, 44° and 48°F. Tubers stored at 48°F were evaluated for bruise potential, soft rot susceptibility, consumer acceptance of French fries, and cooking time in October and November. Reducing sugar content and French fry color were assessed in early December. The extent of sprouting was recorded in late December. Tubers stored at 44°F were also evaluated for sugar accumulation in December. Storage of tubers at 40°F until mid December was done to determine the “cold-frying” potential of clones. Fry color and reducing sugar content were assessed in these tubers but the results are not reflected in the final numerical rating for each clone (see below).

Statistical Analysis

Least significant difference (LSD) values are included in the tables to facilitate evaluation of differences in fry color (Photovolt readings) and specific gravity among clones. Any two means whose difference is greater than or equal to the LSD value are significantly different. LSD values allow comparisons of the relative performance of any two clones for a particular characteristic, such as fry color.

Evaluation of Rated Characteristics

Specific gravity - was measured on a 12-tuber sample from each clone prior to storage by the weight-in-air/weight-in-water method and values were transformed into a 5-point scale as shown below. These same tubers were then used for French fry quality evaluation.

5 = 1.083 – 1.088
4 = 1.081 – 1.082 and 1.089 – 1.091
3 = 1.080 and 1.092 – 1.093
2 = 1.078 – 1.079 and 1.094 – 1.095
1 = 1.076 – 1.077 and 1.096 or higher
0 = 1.075 or lower

French fries - were processed by frying tuber slices (3/8" x 1 1/8") in 375°F oil for 3.5 minutes. Fry color was measured with a Photovolt meter within 3 minutes of frying. A Photovolt reading of 19 or less was considered unacceptably dark. The stem and bud end Photovolt readings were reported along with the USDA color class (see below). A difference of 9 Photovolt units or more between bud and stem end constitutes non-uniform fry color. A point was either added or subtracted from the total score, based on the uniformity of fry color. A (+) or (-) symbol is included with the Photovolt ratings to indicate that a point has been added or subtracted during tabulation of the total score. The USDA color classes assigned to French fries were based upon Photovolt readings of the darkest ends (usually the stem end) and are for information only; they were not used in determining the final rating.

Photovolt readings	USDA color
>31	0
25-30	1
20-24	2
15-19	3
<14	4

Rating/Av. Photovolt reading

5 = 41 or higher
4 = 36 thru 40
3 = 31 thru 35
2 = 25 thru 30
1 = 20 thru 24
0 = 19 or less

Taste panels - were used to determine the consumer acceptance of French fries from each clone. All of the clones evaluated by the taste panels were produced through classical breeding techniques. Slices (3/8" x 3/8") from tubers stored at 48°F were fried in 375°F oil for 4.5 minutes. Approximately 20 untrained panelists rated the fries on a 1 to 5 (5=best) scale for taste, texture, internal flesh color, and weak units (limpness). The average rating of the four fry characteristics is reported and was used in calculating the total rating score for each clone.

Reducing sugar - concentrations of tuber stem and bud ends are shown on a percent dry weight basis. Reducing sugars were assayed spectrophotometrically or were estimated based on fry color in tubers stored at 44° and 48°F. Percent values were transformed into a 5-point scale as shown below. Sugar scores contributed to the final rating of each clone.

5 = 0.9% or lower
4 = 1.0 through 1.49%
3 = 1.5 through 1.9%
2 = 2.0 through 2.49%
1 = 2.5% or higher

Calculation of Total Score - The overall postharvest rating for each clone is equal to the sum of the individual ratings for each of the following quality characteristics:

Quality Parameter	Max. Rating*
Fry color prior to storage (0-5)	5**
Specific gravity (0-5)	5
Taste panel (avg of 5 pts for taste, texture, internal flesh color and limpness of cooked fries). (1-5)	5
After-storage (~60 days) fry colors & reducing sugars for tubers stored at:	
48F fry color (0-5)	5**
48F Reducing sugars (1-5)	5
44F fry color(0-5)	5**
44F Reducing sugars (1-5)	5
Postharvest rating =	35

*all characteristics rated from 0-5 or 1-5 as indicated. A rating of 5 is best. **fry color can get ±1 for uniformity (see explanation below)

**Uniformity of color from bud to stem end is also assessed. The fry color ratings will gain or lose a point, depending on uniformity. For example, if the difference between stem and bud end fry color is <9 photovolt reflectance units, indicating highly uniform fry color, then a point is added to determine the overall score. On the other hand, if the difference between stem and bud end fry color is ≥9 photovolt reflectance units (non-uniform fry color), a point is subtracted to end up with the final score. Hence, a clone can receive a maximum of 38 points.

Evaluation of Non-Rated Characteristics

Bruise potential - For each clone, 12 tubers were warmed to room temperature for one day. Each tuber was then held under a device that dropped a 4-ounce weight from a height of 23". Each tuber received four such impacts, two on the stem end and two on the bud end. After 24 hours, the tubers were peeled and the percentage of impacts resulting in a blackspot or shatter bruise was calculated. In addition, the severity of bruise was also rated on a 1-5 scale as indicated below. Bruises that rated 3, 4, or 5 were used in the overall percentage calculation.

Bruise Severity Ratings:

1 = No bruise
2 = White Knot bruise
3 = Less than 50% of the impact area darkened
4 = Greater than 50% of the impact area darkened, or the whole impact area is light brown
5 = 100% of the impact area is dark

Soft rot index - Bacterial soft rot susceptibility was determined by wounding the stem and bud ends of room-temperature tubers, inoculating the wounds with *Erwinia carotovora* var. *carotovora*, and incubating the tubers (6 tubers per clone) for 24 hours at 72°F in a mist chamber. The percentage fresh weight of tissue lost due to rot is reported.

Reconditioning potential - Reconditioning ability of tubers stored at 40°F for approximately 60 days was determined by subsequently storing the tubers at 60°F for 21 days. The change in fry color over the reconditioning interval provides a relative measure of the reconditioning potential for each clone.

Sprouting - The degree of sprout development in tubers stored at 40° and 48°F was assessed after all other tests had been completed (usually late December). The percentage of tubers that sprouted and the average sprout length per tuber were recorded for 15 tubers of each clone.

Tuber shape characteristics - The lengths and widths of up to twentyfive 8- to 10-ounce tubers from each clone were measured and length:width (L/W) ratios reported. This was done to reveal the effects (if any) of growing location on tuber shape and to estimate the yield (% by number) of ≥3-inch long fries for each clone. Fry yields were calculated based on algorithms relating tuber shape (L/W) to the number and weight of fries. The following table reflects these relationships.

Visual Shape	Tuber L/W ratio	Percentage of French Fries (≥3in.) (by weight)	(by number)
Round	1.00	53.9	35.2
↓	1.25	70.3	51.6
	1.50	82.6	64.1
Blocky	1.75	90.8	72.8
↓	2.00	95.0	77.6
Elongated	2.25	95.1	78.5

A L/W ratio close to one indicates a round tuber which is not ideally suited for French fry production. A ratio in the 1.5 to 1.75 range represents an oblong, blocky tuber, such as Russet Burbank, which is desirable for processing. A typical L/W ratio for Russet Burbank is about 1.80. A schematic illustrating the relative sizes of potatoes having various ratios is included in the postharvest sections for the Tri-State and Regional Trials. Blocky and elongated tubers result in high French fry yield with less waste.

Long-term Storage Characteristics of Clones in the 2007 Tri-State and Regional Variety Trials

For evaluation of long-term storability, tubers were held at 48°F until late December and were then transferred to 44°F. The tubers were processed into French fries, and reducing sugars were measured in late April or early May of the following year. Tubers were not reconditioned prior to frying. Results from clones that were advanced from the Tri-State to the Regional Trial are reported in the Regional Trial section.

2008 Early Harvest Tri-State Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 3 Vine Kill Date: July 28
Harvest Date: July 31 Days Grown: 117
Fertility: 192-268-350 In-Row Spacing: 14 in.

The Tri-State trial is conducted annually in Washington, Idaho, and Oregon. The Tri-State committee designates which clones are entered in the trial. Selected cultivars and clones in the early trial are grown and managed for an early harvest (July/Aug). The 2008 trial compared 2 local reference varieties to 11 new clones. The Columbia Basin experienced a cooler-than-normal growing season this year. Some clones and cultivars faired well, while others produced low yields. The following is a summary of the Washington field and post-harvest results. See also: grading comments and merit scores near front of book.

Fresh Market Standout(s): AO00057-2, AO96305-3, and AO96365-2***.***
Process Market Standout(s): PA00N14-2, AO98282-5, A98345-1, and PA00N32-4.
Potential Discard(s): A00646-4.

Standcounts

- **40 Day**
  Fast emergence: A98345-1 (47%).
  Slow emergence: Over half of the entries had 0% emergence at 40 DAP.

- **50 Day**
  Full emergence: A98345-1 (100%), Ranger Russet and AO96365-2 (99%), and AO98282-5 (96%).
  Poor emergence: AO00057-2 and PA00N32-4 (65%). Over half of the entries had less than 90% emergence at 50 days.

Plant and Tuber Growth & Development

- **Stem Number Per Plant – Above Ground**
  Most: PA98NM25-5 (3.3) and PA00N32-4 (3.1).
  Least: A96814-65LB (1.6), Ranger Russet and Russet Burbank (1.7).

- **Average Tuber Number Per Plant**
  Most: AO98282-5 (8.9) and AO96365-2 (8.2).
  Least: Ranger Russet and A00324-1 (5.1).

- **Average Tuber Weight (oz)**
  Largest: A98345-1 (6.8), A96814-65LB (6.3), and AO96305-3 (6.2).
  Smallest: PA98NM25-5 (4.7), AO98282-5 and AO96365-2 (4.9).

- **Undersized Tubers (< 4 oz)**
  Most: AO98282-5 (85 CWT/A) and AO96365-2 (77 CWT/A).
  Fewest: AO96305-3 (30 CWT/A), Ranger Russet and A98345-1 (32 CWT/A).

Yield and Economic Data

- **Total Yield**
  Highest: AO98282-5 (433 CWT/A) and PA00N32-4 (401 CWT/A).
  Lowest: A00324-1 and Ranger Russet.

- **% U.S. #1's (>4 oz)**
  Highest: A98345-1 and PA00N14-2 (87%).
  Lowest: Russet Burbank (70%).

- **Carton Yield (100 to 50 Count (7 to 18 oz U.S.#1 Tubers))**
  Highest: A98345-1 (212 CWT/A) and A96814-65LB (190 CWT/A).
  Lowest: PA98NM25-5 (88 CWT/A) and A00646-4 (106 CWT/A).

- **Specific Gravity**
  Highest: PA98NM25-5 (1.105), A96814-65LB (1.098).
  Lowest: AO96365-2 (1.079); AO00057-2, Russet Burbank, A00324-1 (all 1.082).

- **Gross Return ($/acre)**
  Fresh Market Highest: AO00057-2.
  Fresh Market Lowest: A00646-4 and PA98NM25-5.
  Process Market Highest: PA00N14-2, AO98282-5, and A98345-1.
  Process Market Lowest: A00324-1 and A00646-4.

Tuber Defects (40 tuber sample of 8-12 oz tubers)

- **External Defects**
  Notable Defects: Russet Burbank had the highest percentage of knobs (8%). AO96305-3 had the highest percentage of growth cracks (5%).

- **Internal Defects**
  Notable Defects: Russet Burbank, A00646-4, and PA00N32-4 had 3% brown center. Russet Burbank and A98345-1 had 5% internal brown spot; A96814-65LB and A00324-1 had 3%. All other entries were 0%.

- **Bruise**
  Highest Blackspot: AO96305-3 (15%), PA98NM25-5(11%), and AO00057-2(10%).
  Highest Shatter: PA00N32-4 (28%) and A00646-4 (23%).

2008 Early Harvest Tri-State Trial

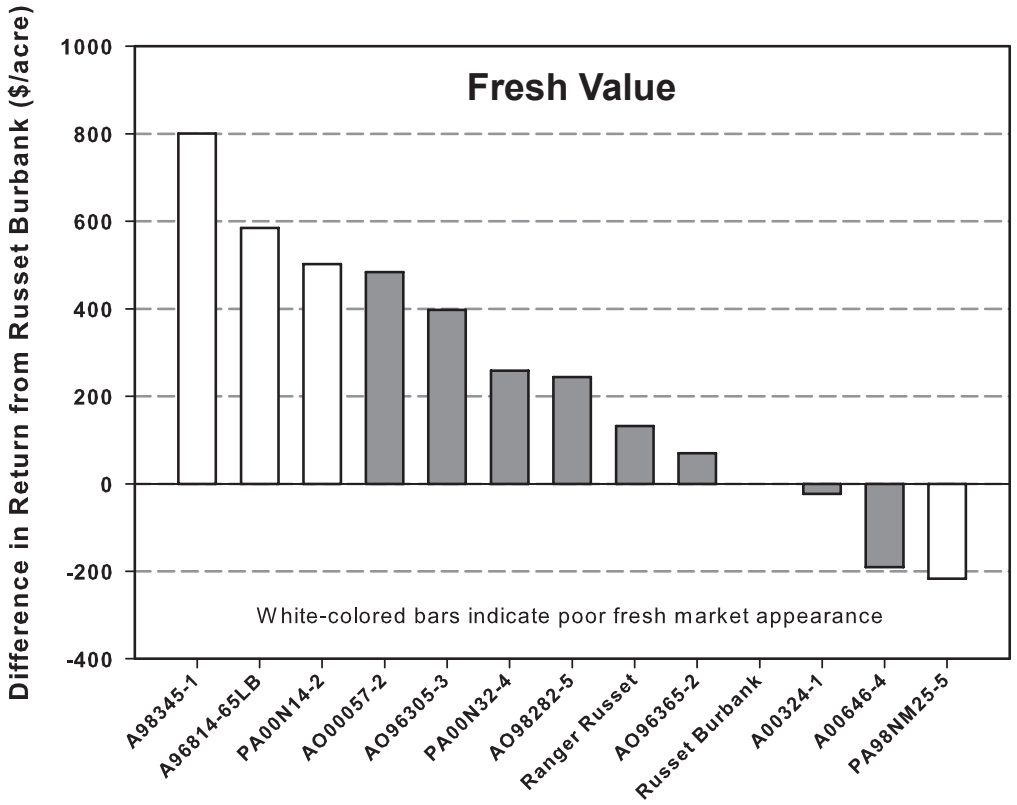
Summaries

ENTRY	TOTAL YIELD CWT/A	STATS**	TOTAL YIELD Tons/A	US # 1's* > 4 oz % of Total Yield	US # 2's* > 4 oz % of Total Yield	Culls* & < 4 oz % of Total Yield	CARTON YIELD 100-50 count (US 1's 7-18 oz) % of Total Yield	CARTON YIELD Tons/A	PROCESS YIELD US 1's and 2's > 6 oz % of Total Yield	PROCESS YIELD Tons/A
Ranger Russet	310	*CD*	15.5	84	1	15	49	7.6	64	9.9
Russet Burbank	363	*BC*	18.1	70	2	27	35	6.4	50	9.0
A96814-65LB	376	*B*	18.8	82	1	17	51	9.5	65	12.2
A98345-1	399	*AB*	19.9	87	0	13	53	10.6	67	13.4
A00324-1	301	*D*	15.1	80	2	18	44	6.6	62	9.4
A00646-4	315	*CD*	15.7	79	1	21	34	5.3	49	7.6
AO96305-3	374	*B*	18.7	82	3	16	47	8.8	62	11.6
AO96365-2	399	*AB*	19.9	75	2	24	31	6.1	44	8.8
AO98282-5	433	*A*	21.7	73	3	25	32	6.9	46	10.0
AO00057-2	354	*BCD*	17.7	85	1	14	51	9.1	65	11.6
PA98NM25-5	374	*B*	18.7	74	1	25	23	4.4	37	7.0
PA00N14-2	398	*AB*	19.9	87	0	13	44	8.8	61	12.1
PA00N32-4	401	*AB*	20.1	81	3	16	36	7.3	54	10.7

ENTRY	US # 1 YIELD > 4 oz CWT/A	STATS**	US # 1 YIELD > 4 oz Tons/A	4-7 oz* %	7-14 oz* %	> 14 oz* %	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers) % HH	% BC	% IBS
Ranger Russet	260	*CDEF*	13.0	42	57	2	1.086	0	0	0
Russet Burbank	256	*DEF*	12.8	50	49	2	1.082	0	3	5
A96814-65LB	309	*ABC*	15.5	34	54	12	1.098	0	0	3
A98345-1	348	*A*	17.4	34	58	8	1.086	0	0	5
A00324-1	241	*F*	12.0	44	51	5	1.082	0	0	3
A00646-4	248	*EF*	12.4	57	39	4	1.087	0	3	0
AO96305-3	307	*ABCD*	15.3	43	56	1	1.089	0	0	0
AO96365-2	299	*ABCDE*	15.0	59	40	1	1.079	0	0	0
AO98282-5	315	*AB*	15.8	56	43	1	1.093	0	0	0
AO00057-2	302	*ABCD*	15.1	37	53	10	1.082	0	0	0
PA98NM25-5	276	*BCDEF*	13.8	68	32	0	1.105	0	0	0
PA00N14-2	345	*A*	17.3	49	49	2	1.085	0	0	0
PA00N32-4	327	*AB*	16.3	55	44	1	1.083	0	3	0

ENTRY	30 DAY STAND % Emerged	40 DAY STAND % Emerged	50 DAY STAND % Emerged	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) (8-12 oz tubers) SHATTER
Ranger Russet	0	9	99	1.7	6.1	5.1	2	4	0	3
Russet Burbank	0	4	90	1.7	5.9	6.2	2	3	3	8
A96814-65LB	0	3	90	1.6	6.3	6.0	1	3	8	10
A98345-1	0	47	100	1.8	6.8	6.0	2	3	8	5
A00324-1	0	3	68	2.3	6.0	5.1	2	3	8	3
A00646-4	0	0	87	1.8	5.2	6.2	2	3	3	23
AO96305-3	0	0	78	2.8	6.2	6.1	2	4	15	10
AO96365-2	0	0	99	1.8	4.9	8.2	1	4	3	5
AO98282-5	0	1	96	2.6	4.9	8.9	1	3	3	13
AO00057-2	0	0	65	2.4	6.1	5.8	2	3	10	0
PA98NM25-5	0	0	79	3.3	4.7	8.0	1	3	11	14
PA00N14-2	0	0	88	2.0	5.8	7.0	2	4	8	3
PA00N32-4	0	0	65	3.1	5.6	7.3	2	3	8	28

* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5% level using Fisher's LSD Test



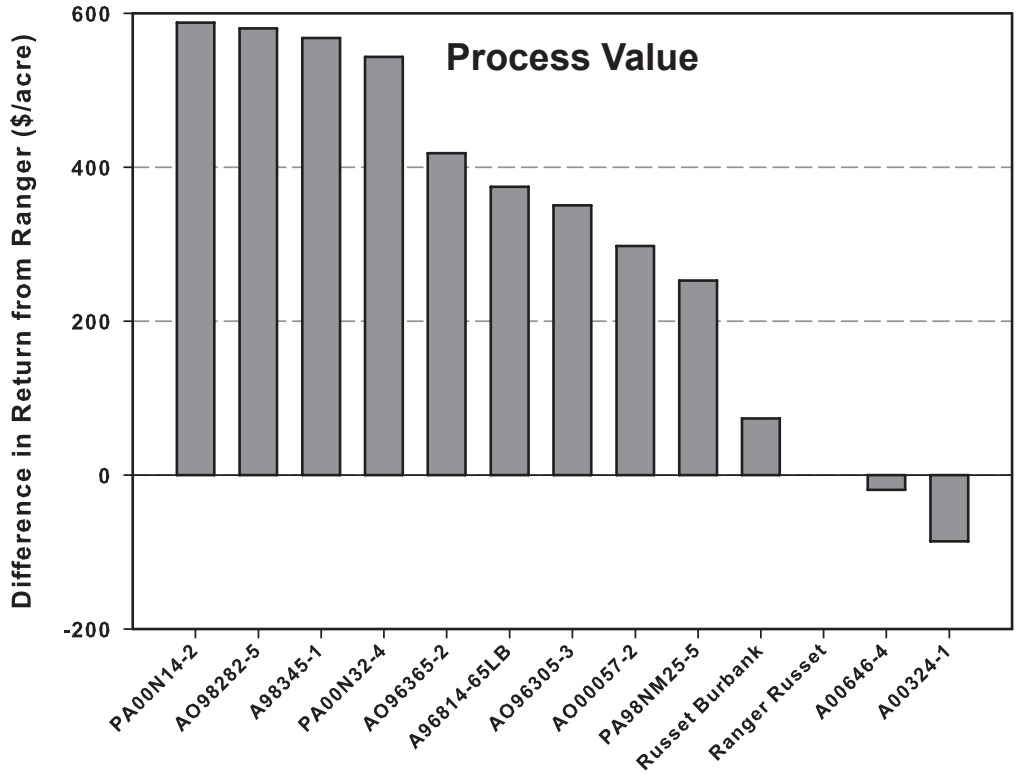
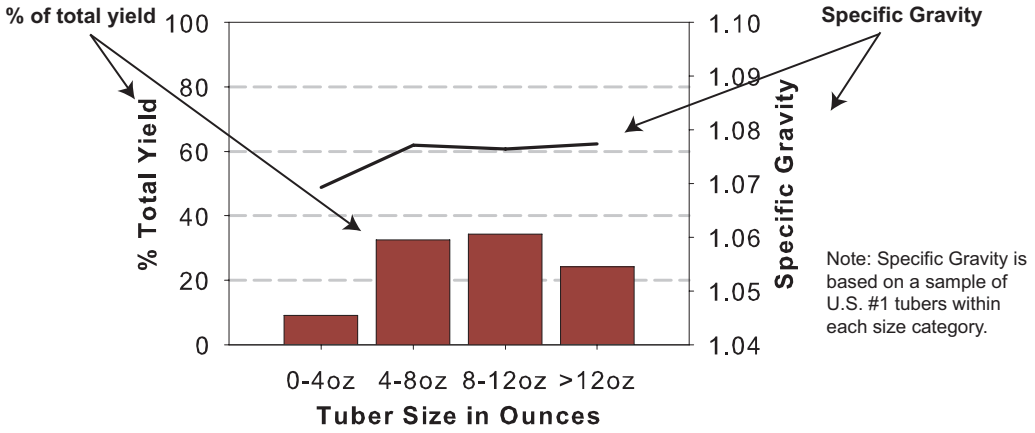


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Burbank calculated by subtracting the gross return of Russet Burbank ($1816) from the gross return of the particular entry. **Figure 2 (Bottom).** Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet ($1822) from the gross return of the particular entry.

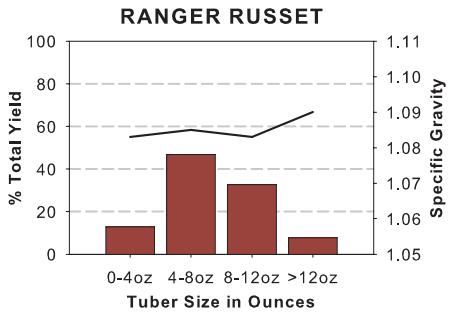
2008 Early Harvest Tri-State Trial

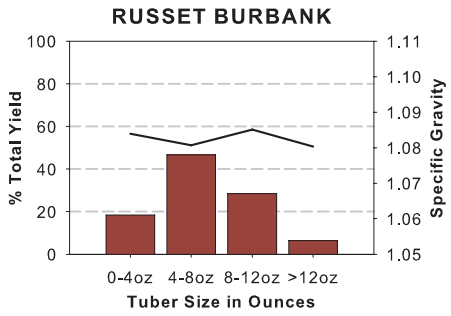
Tuber Yield and Specific Gravity Distributions

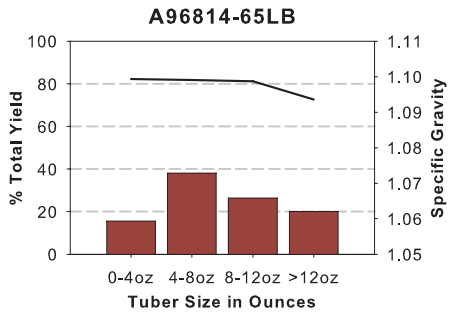
14 inch In-Row Spacing

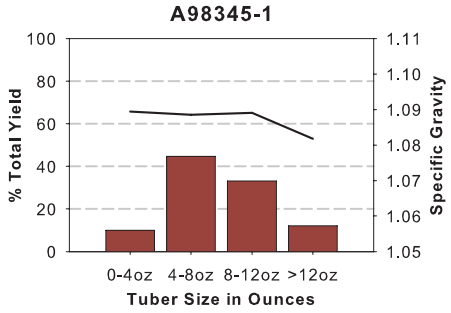


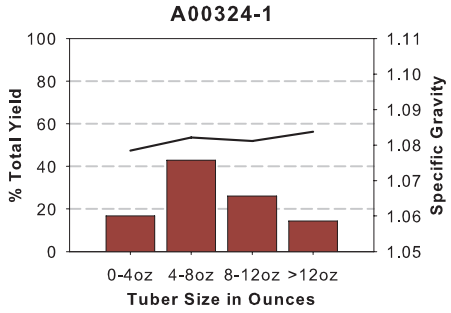
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

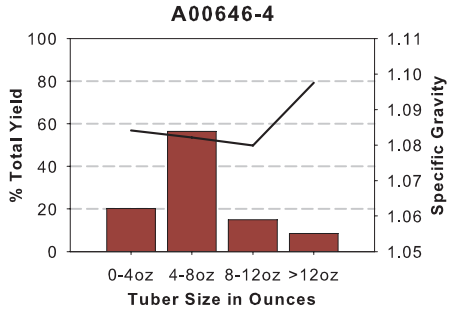


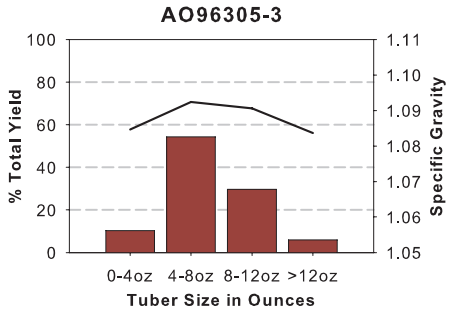


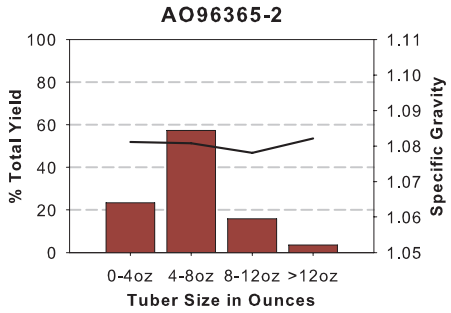


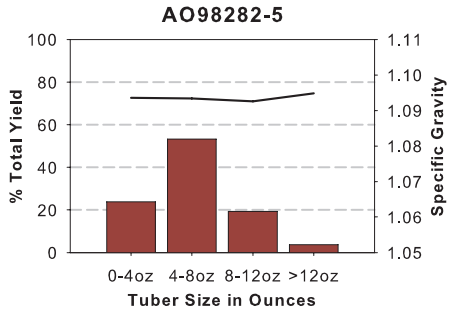


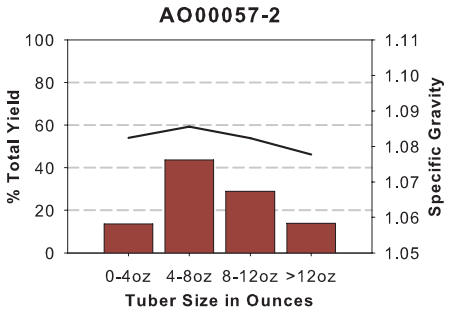


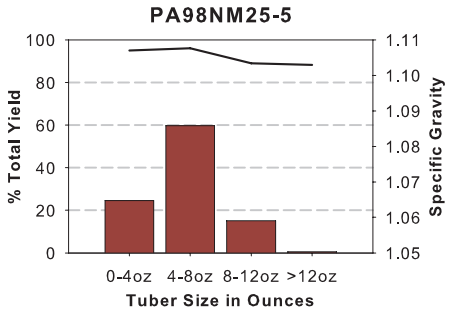


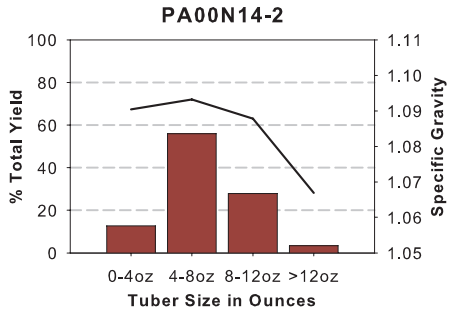


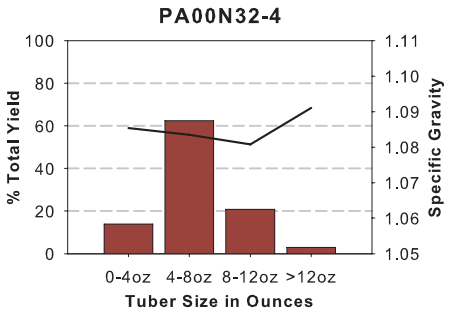


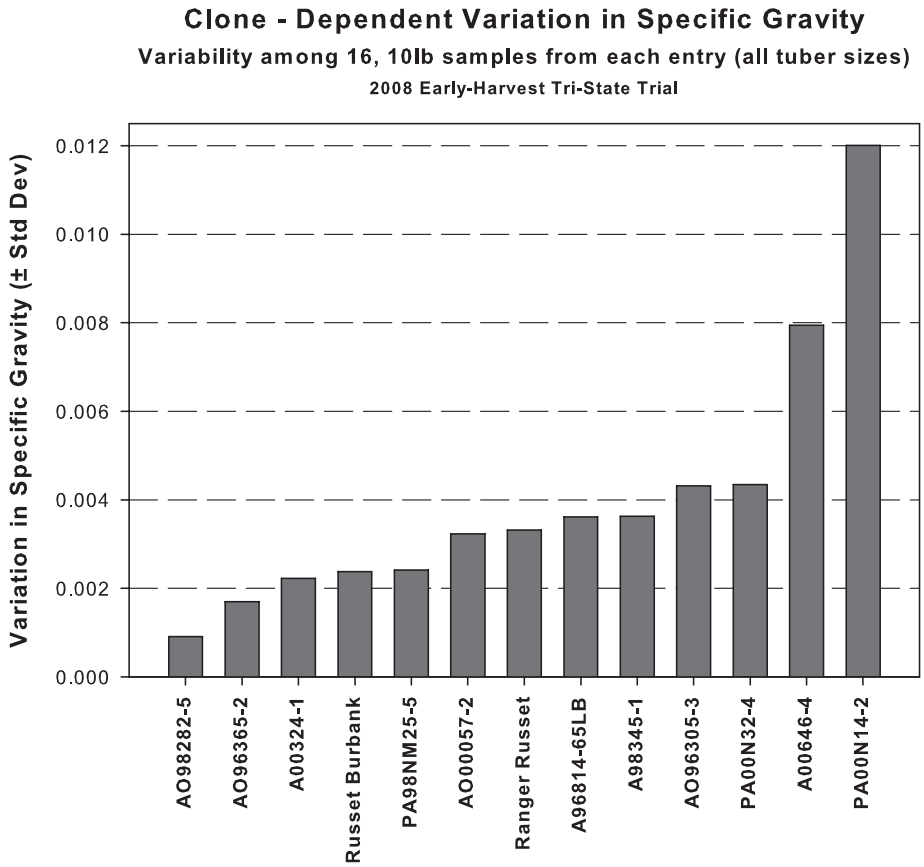


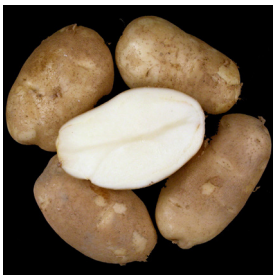
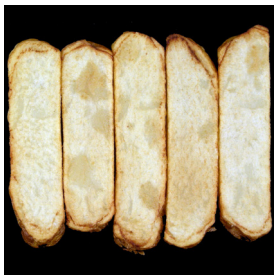
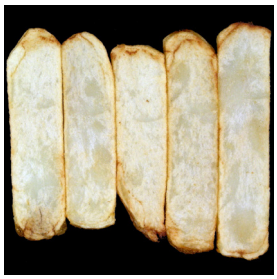
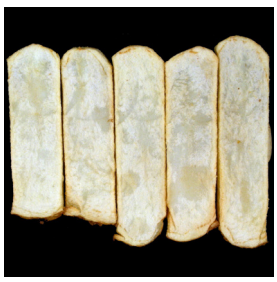
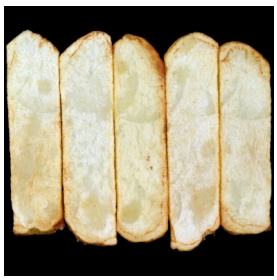
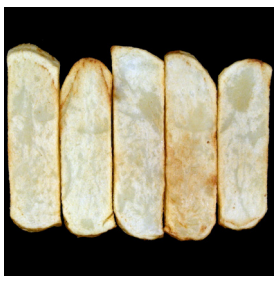

AO00057-2
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

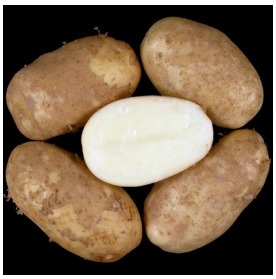
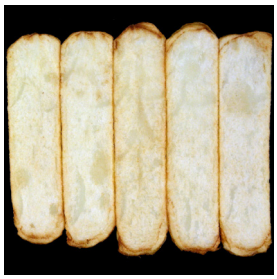
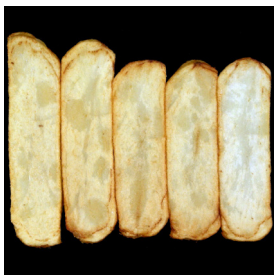
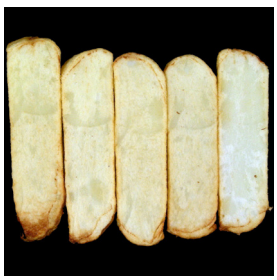

PA98NM25-5
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

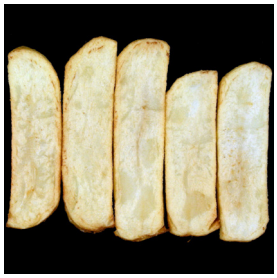
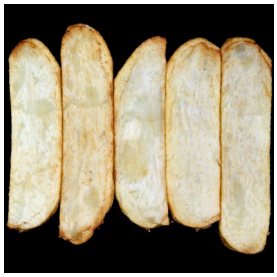
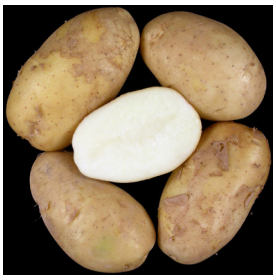

PA00N14-2
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


PA00N32-4
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


Clone - Dependent Variation in Specific Gravity
Variability among 16, 10lb samples from each entry (all tuber sizes)
2008 Early-Harvest Tri-State Trial
Variation in Specific Gravity (± Std Dev)
AO98282-5
AO96365-2
A00324-1
Russet Burbank
PA98NM25-5
AO00057-2
Ranger Russet
A96814-65LB
A98345-1
AO96305-3
PA00N32-4
A00646-4
PA00N14-2

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
Ranger Russet		
		**Tubers:** Oblong to long tubers. Moderately heavy russet with poor skin set; moderate eye depth. **Fry Color:** Light, uniform.
Russet Burbank		
		**Tubers:** Oblong tubers. Moderate russet with poor skin set; moderate eye depth. **Fry Color:** Light, uniform.
A96814-65LB		
		**Tubers:** Oblong tubers. Moderately heavy russet with very poor skin set; shallow eyes. **Fry Color:** Light, uniform.
A98345-1		
		**Tubers:** Oblong tubers. Light russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.
A00324-1		
		**Tubers:** Oblong tubers. Moderately heavy russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
A00646-4		
		**Tubers:** Oblong tubers. Moderate russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.
AO96305-3		
		**Tubers:** Oblong to long tubers. Light russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.
AO96365-2		
		**Tubers:** Oblong to long tubers. Moderately heavy russet with very poor skin set; shallow eyes. **Fry Color:** Light, uniform.
AO98282-5		
		**Tubers:** Oblong tubers. Moderately heavy russet with very poor skin set; shallow eyes. **Fry Color:** Light, uniform.
AO00057-2		
		**Tubers:** Oblong tubers. Moderately heavy russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
PA98NM25-5		
		**Tubers:** Oblong tubers. Light russet with very poor skin set; shallow eyes. **Fry Color:** Light, uniform.
PA00N14-2		
		**Tubers:** Oblong to long tubers. Light russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.
PA00N32-4		
		**Tubers:** Oblong tubers. Light russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.

Mark Pavek, Rudy Garza, and Rick Knowles (left to right) apply treatments on a nitrogen rate x timing study during 2008.

2008 Early Harvest Tri-State Trial

The 2008 Early Tri-State Trial consisted of 3 cultivars and 11 numbered lines. All entries fried light with USDA ratings of "0". They also fried uniform from stem to bud ends.

Clone	PHOTOVOLT Stem	Bud	Average	DIFFERENCE * STEM - BUD	USDA COLOR
1 Ranger Russet	45.7	44.6	45.1	4.8	0
2 Russet Burbank	47.0	43.8	45.4	5.2	0
3 Russet Norkotah	39.0	46.3	42.6	8.1	0
4 A96814-65LB	49.6	51.9	50.7	3.0	0
5 A98345-1	49.9	46.6	48.2	4.1	0
6 A00324-1	46.7	47.3	47.0	5.7	0
7 A00646-4	47.3	46.1	46.7	4.6	0
8 AO96305-3	52.4	52.4	52.4	2.8	0
9 AO96365-2	45.9	45.4	45.7	5.3	0
10 AO98282-5	46.5	51.2	48.8	5.6	0
11 AO00057-2	53.8	51.7	52.7	3.2	0
12 PA98NM25-5	53.1	49.7	51.4	3.8	0
13 PA00N14-2	47.0	46.6	46.8	3.2	0
14 PA00N32-4	51.8	49.1	50.4	3.6	0
		LSD 0.05	2.2	2.7	
Average	48.3	48.0	48.1	4.5	0

* Average of 12 individual tuber absolute differences

Planting Date: April 3
Harvest date: July 31
Fried on: August 4

2008 Late Harvest Tri-State Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 8 Vine Kill Date: Sept 12
Harvest Date: Sept 22 Days Grown: 158
Fertility: 192-268-350 In-Row Spacing: 10 in.

The Tri-State trial is a part of the cooperative cultivar development program conducted at locations in Washington, Oregon, and Idaho. The Tri-State committee selects all official entries in this trial. All entries are grown for full season late harvest in each of the three states to determine how they perform when grown under different management and climatic conditions. The Columbia Basin experienced a cooler-than-normal growing season this year. Some clones and cultivars fared well, while others produced low yields.The following is a summary of the Washington field and postharvest results. See also: grading comments and merit scores near front of book.

Fresh Market Standout(s): AO96365-2***.***
Process Market Standout(s): AO98282-5, A98345-1, AO96365-2, and A96814-65LB.
Potential Discard(s): A00646-4 and PA00N32-4.

Standcounts

- **30 Day**
  Slow emergence: All entries were slow to emerge. Only A98345-1 (3%) had emerged at 30 DAP.

- **50 Day**
  Full emergence: Most entries were >90% emerged.
  Slow emergence: A00324-1 (69%) and PA00N32-4 (76%).

Plant and Tuber Growth & Development

- **50 Day Stem Number per Plant**
  Most: AO98282-5 (2.7) and A00324-1 (2.6).
  Least: Ranger Russet (1.4) and A96814-65LB (1.5).

- **Average Tuber Number Per Plant**
  Most: AO98282-5 (10.8) and AO96365-2 (8.9).
  Least: Ranger Russet and AO00057-2 (each 5.7).

- **Average Tuber Weight (oz)**
  Largest: A98345-1 (11.4) and A96814-65LB (10.8).
  Smallest: PA00N14-2 (6.6) and AO96305-3 (6.8).

- **Undersized Tubers (< 4 oz)**
  Most: AO98282-5, AO96365-2, and Russet Burbank (all > 67 CWT/A).
  Least: A96814-65LB, A98345-1, and AO00057-2.

Yield and Economic Data

- **Total and Market Yield (US 1s & 2s > 4oz)**
  Highest: A98345-1 had the highest total and market yields (996 CWT/A and 897 CWT/A, respectively). AO98282-5 had the second highest total and market yields.
  Lowest: PA00N32-4 had the lowest total and market yields.

- **% Market Yield Greater Than 6 oz.**
  Highest: A98345-1 (87%) and A96814-65LB (86%).
  Lowest: Russet Burbank (64%), AO96305-3 and PA00N32-4 (each 70%).

- **Carton Yield (100 to 50 Count, 7 to 18 oz US#1 Tubers)**
  Highest: AO98282-5, A98345-1, and AO96365-2 (all > 455 CWT/A).
  Lowest: PA00N32-4, A00646-4, Ranger Russet, and AO96305-3 (all < 308 CWT/A).

- **Gross Return ($/acre)**
  Fresh Market Highest: AO96365-2.
  Fresh Market Lowest: A00646-4 and PA00N32-4.
  Process Market Highest: A98345-1 and AO98282-5.
  Process Market Lowest: PA00N32-4 and A00646-4.

Tuber Defects (40 tuber sample of 8-12 oz tubers)

- **External Defects**
  Notable Defects: Russet Burbank had 7% knobs and 4% growth cracks. AO96305-3 had 3% growth cracks. A00324-1 had 4% malformed tubers; Ranger Russet and PA00N32-4 each had 3%. A96814-65LB had 4% green tubers.

- **Internal Defects**
  Notable Defects: A00646-4 had 3% hollow heart. Russet Burbank had 10% brown center; AO96365-2 and A00646-4 had 3% each. Ranger Russet, Russet Burbank, PA00N14-2, and PA00N32-4 each had 3% internal brown spot.

- **Bruise**
  Highest Blackspot: A00324-1 (45%) and Ranger Russet (40%).
  Highest/Lowest Shatter: A00646-4 (90%), A00324-1 and PA98NM25-5 (each 83%). AO96365-2 (20%) and PA00N14-2 (33%) had the lowest shatter.

2008 Late Harvest Tri-State Trial

Postharvest Information

- **Overall Postharvest Rating**
  Highest scoring clones: A98345-1, AO96305-3, AO00057-2
  Lowest scoring clones: A00646-4, PA00N32-4, Russet Burbank

- **Low Temperature Sweetening**
  Most resistant: A96814-65LB, PA98NM25-5, A98345-1
  Most susceptible: PA00N32-4, A00646-4, Russet Burbank

- **Taste Panel**
  Highest rated: PA98NM25-5, AO96305-3, A96814-65LB
  Lowest rated: A00646-4, PA00N32-4, PA00N14-2

- **Blackspot Bruise Susceptibility**
  Most resistant: A00646-4, PA00N32-4, AO98282-5, AO00057-2
  Most susceptible: A96814-65LB, A98345-1, AO96365-2

- **Variability in Tuber Shape & Fry Yield (8- to 10-oz tubers)**
  Lowest L/W: A96814-65LB, AO00057-2, A98345-1
  Highest L/W: Ranger Russet, AO96305-3, PA00N14-2
  Least variable: AO96305-3, Ranger Russet, PA00N14-2, A96814-65LB
  Most variable: AO00057-2, AO96365-2, A98345-1

Details

- When averaged across states, all entries except A00646-4 and PA00N32-4 received higher overall postharvest scores than Russet Burbank.

- A98345-1, AO96305-3, and AO00057-2 were the highest rated entries, scoring 33.4, 32.5, and 32.3 out of 38 points, respectively. A98345-1, AO96305-3, A96814-65LB, and PA98NM25-5 had significant resistance to low temperature sweetening, with WA and ID grown samples producing USDA 0-1 fries when stored at 40°F (60 days). Processing quality of the OR-grown samples of these clones ranged from an acceptable USDA 1-2 when stored for 60 days at 40°F. All of these entries produced USDA 0-1 fry color following 60 days storage at 44°F.

- The average gravity of A00646-4 was 1.077, too low for most processing contracts. At the other extreme, PA98NM25-5, A96814-65LB, and AO98282-5 averaged 1.105, 1.103, and 1.095, respectively, which is too high for most contracts. A96814-65LB tubers also had excessively high gravity last year (avg.= 1.098; 1.101 from WA).

- From all growing locations, PA98NM25-5, AO96305-3, A96814-65LB were the favorites in the taste panels, receiving ratings of 3.8 to 3.6 (5 is best). Approximately 64% of variation in taste panel scores was explained by differences in gravity among the clones this year ($P<0.001$). Consistent with results last year, A96814-65LB produced severe after-cooking darkening from all states and storage temperatures. A00646-4, PA00N32-4, and PA00N14-2 had the lowest taste panel scores of 2.5, 2.9, and 3.1, respectively. Many taste panelists commented on the dark fry color of A00646-4.

- In addition to rating overall bruise susceptibility, blackspot bruise severity was rated from 1 to 5 (max. bruise) based on color intensity and percentage of the impacted area showing color (1= no bruise, 2= white knot bruise, 3= less than 50% of impact area with color, 4= >50% of impact area darkened or whole area light brown, 5= full impact area dark). A96814-65LB, A98345-1, and AO96365-2 were the most susceptible, scoring 79% bruise (stem end) in the controlled impact study. These clones also had the highest bruise severity, averaging 3.1/5. A96814-65LB, and A98345-1 were also rated most susceptible to bruise last year. In contrast, A00646-4, PA00N32-4, AO98282-5, AO00057-2 were the most resistant, averaging only 22% bruise with a 1.5/5 severity rating.

- The 8- to 10-oz tubers of A96814-65LB, AO00057-2, and A98345-1 had low length to width ratios (L/W=1.5), resulting in yields of 3-inch or longer fries of only 63% by number. AO00057-2, A00646-4, A98345-1, and AO96365-2 had the greatest variation in L/W ratios, which ranged from 1.4-1.5 in WA and OR to 1.7-1.9 in ID. 98345-1 and AO96365-2 also had relatively high variation in L/W ratios in the 2007 trials. The low average L/W ratio of A96814-65LB was fairly consistent across states. AO96305-3 and PA00N14-2 had L/W ratios statistically equal to Ranger (2.1) with relatively low variation across production sites.

- On average, reconditioning (60°F, 21 days) tubers of PA98NM25-5, AO00057-2, RR, and AO98282-5 that had been previously stored at 40°F for 60 days resulted in the greatest improvement in stem end fry color compared with the other clones. In contrast, PA00N32-4, PA00N14-2, and A00646-4 showed little reconditioning potential.

- A98345-1 produced the longest sprouts (avg.= 5.3 inches) after 7 months of storage, more than half an inch longer than either check (Ranger or Russet Burbank), which indicates relatively short dormancy. In contrast, A96814-65LB and AO96365-2 produced 0.7- to 0.9-inch shorter sprouts than Ranger and RB, indicating longer dormancy.

- A00646-4, PA00N32-4, and RB received the lowest overall postharvest scores (19.9/38, 21.9/38 and 22.9/38, respectively).

Overall Tri-State Postharvest Merit Scores

		Postharvest Merit Scores			3 state
	Clone	WA	ID	OR	Average
4	A98345-1	4.3	4.8	4.1	4.4
7	AO96305-3	4.8	4.2	3.8	4.3
10	AO00057-2	4.5	4.2	4.0	4.3
9	AO98282-5	4.3	4.5	3.6	4.1
11	PA98NM25-5	4.3	4.3	3.4	4.0
3	A96814-65LB	4.3	4.3	3.4	4.0
8	AO96365-2	4.4	4.7	2.8	3.9
12	PA00N14-2	4.7	3.8	3.2	3.9
5	A00324-1	4.4	4.4	2.8	3.9
1	Ranger Russet	4.7	4.1	2.7	3.8
2	Russet Burbank	3.9	3.0	2.1	3.0
13	PA00N32-4	3.5	3.2	2.0	2.9
6	A00646-4	3.4	3.1	1.4	2.6

2008 Late Harvest Tri-State Trial

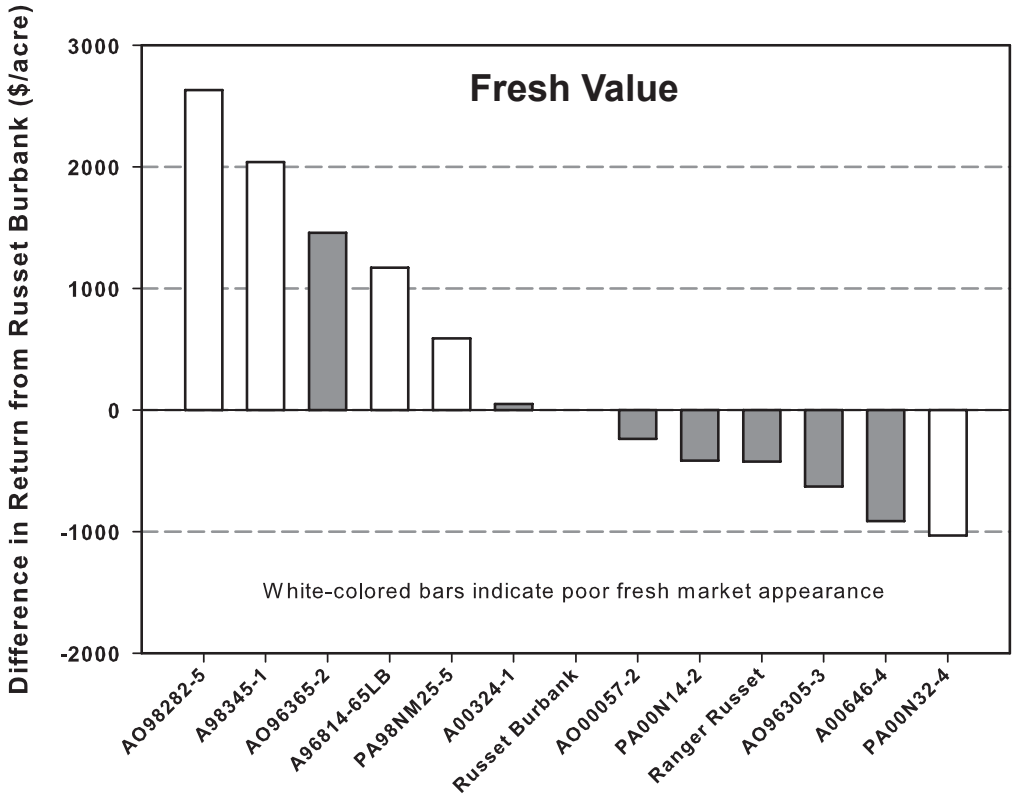
Summaries

ENTRY	TOTAL YIELD (CWT/A)	STATS**	TOTAL YIELD (Tons/A)	US # 1's* > 4 oz % of Total Yield	US # 2's* > 4 oz % of Total Yield	Culls* & < 4 oz % of Total Yield	CARTON YIELD 100-50 count (US 1's 7-18 oz) % of Total Yield	CARTON YIELD (Tons/A)	PROCESS YIELD US 1's and 2's > 6 oz % of Total Yield	PROCESS YIELD (Tons/A)
Ranger Russet	626	*DEFG*	31.3	86	4	10	48	15.0	81	25.5
Russet Burbank	696	*CD*	34.8	74	4	22	50	17.4	64	22.4
A96814-65LB	820	*B*	41.0	92	0	8	53	21.7	86	35.3
A98345-1	996	*A*	49.8	90	2	8	49	24.5	87	43.5
A00324-1	662	*CDE*	33.1	87	1	12	52	17.3	78	25.7
A00646-4	522	*GH*	26.1	87	0	13	54	14.1	73	19.0
AO96305-3	545	*FGH*	27.3	84	0	16	56	15.4	70	19.0
AO96365-2	759	*BC*	37.9	88	0	11	60	22.8	77	29.0
AO98282-5	940	*A*	47.0	86	1	13	56	26.2	75	35.4
AO00057-2	635	*DEFG*	31.8	92	1	7	50	15.9	84	26.8
PA98NM25-5	724	*BCD*	36.2	88	0	12	52	18.7	73	26.3
PA00N14-2	552	*EFGH*	27.6	88	1	11	59	16.2	71	19.5
PA00N32-4	495	*H*	24.7	83	3	15	56	13.9	70	17.4

ENTRY	US # 1 YIELD > 4 oz (CWT/A)	STATS**	US # 1 YIELD > 4 oz (Tons/A)	4-7 oz* %	7-14 oz* %	> 14 oz* %	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers) % HH	% BC	% IBS
Ranger Russet	537	*EFG*	26.9	14	36	50	1.083	0	0	3
Russet Burbank	515	*FG*	25.7	26	59	15	1.079	0	10	3
A96814-65LB	756	*BC*	37.8	10	40	50	1.104	0	0	0
A98345-1	897	*A*	44.8	8	38	54	1.085	0	0	0
A00324-1	576	*DEF*	28.8	17	46	36	1.085	0	0	0
A00646-4	452	*GH*	22.6	26	52	22	1.073	3	3	0
AO96305-3	457	*GH*	22.9	28	57	16	1.084	0	0	0
AO96365-2	670	*CD*	33.5	22	53	26	1.082	0	3	0
AO98282-5	809	*AB*	40.5	22	48	30	1.094	0	0	0
AO00057-2	584	*DEF*	29.2	15	36	49	1.089	0	0	0
PA98NM25-5	639	*DE*	31.9	27	45	28	1.106	0	0	0
PA00N14-2	487	*FGH*	24.3	31	58	10	1.082	0	0	3
PA00N32-4	409	*H*	20.5	28	60	12	1.079	0	0	3

ENTRY	% Dead At Vine Kill	30 DAY STAND (% Emerged)	50 DAY STAND (% Emerged)	STEMS PER PLANT (Above Ground)	AVERAGE TUBER WEIGHT (Ounces)	AVERAGE TUBER NUMBER (Tubers/Plant)	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) SHATTER
Ranger Russet	29	0	96	1.4	9.5	5.7	5	4	40	60
Russet Burbank	75	0	93	2.1	7.4	8.2	4	3	13	70
A96814-65LB	21	0	85	1.5	10.8	6.6	4	3	8	43
A98345-1	10	3	98	1.9	11.4	7.7	4	3	23	58
A00324-1	46	0	69	2.6	8.5	6.8	4	3	45	83
A00646-4	50	0	82	1.8	7.1	6.5	4	3	20	90
AO96305-3	49	0	91	2.3	6.8	7.0	5	3	20	38
AO96365-2	34	0	98	1.6	7.4	8.9	4	3	23	20
AO98282-5	55	0	100	2.7	7.6	10.8	4	3	20	70
AO00057-2	30	0	91	1.7	9.7	5.7	4	3	15	63
PA98NM25-5	31	0	86	2.2	8.2	8.2	4	3	18	83
PA00N14-2	50	0	93	1.6	6.6	7.2	4	4	3	33
PA00N32-4	54	0	76	2.0	7.1	6.1	4	2	35	75

* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5% level using Fisher's LSD Test



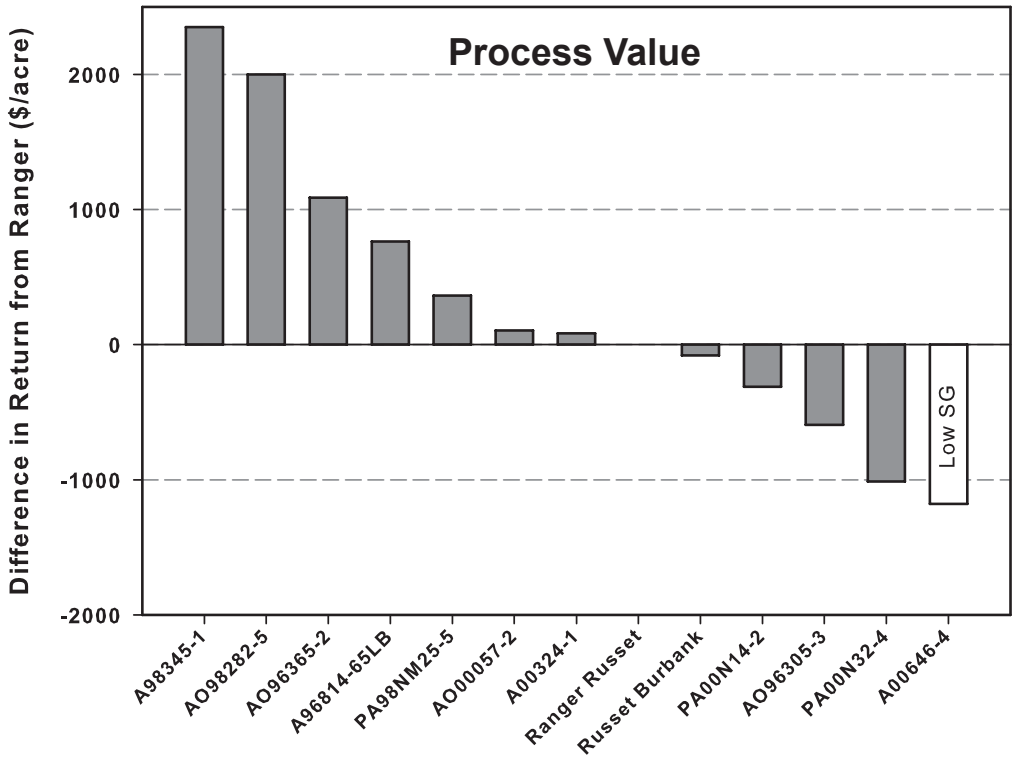
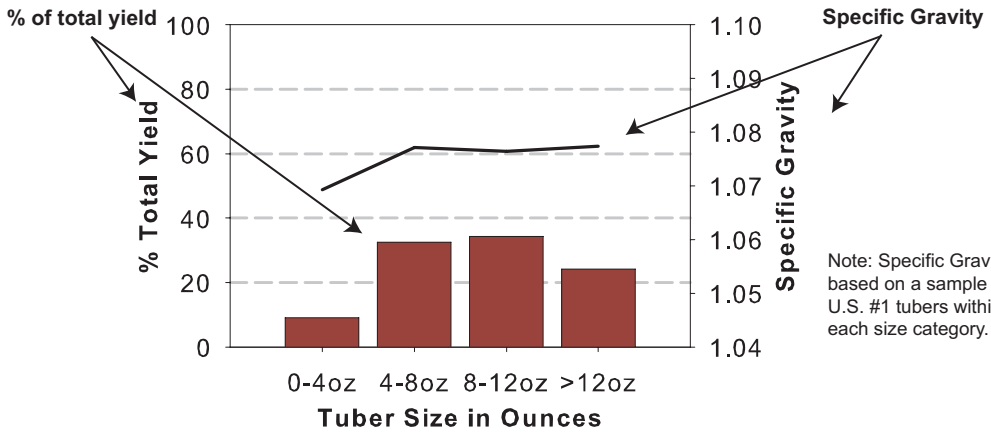


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Burbank calculated by subtracting the gross return of Russet Burbank ($5028) from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape 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 ($4267) 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.

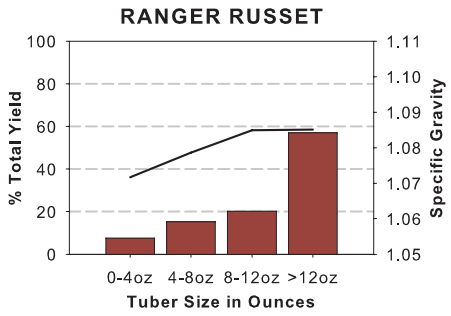
2008 Late Harvest Tri-State Trial

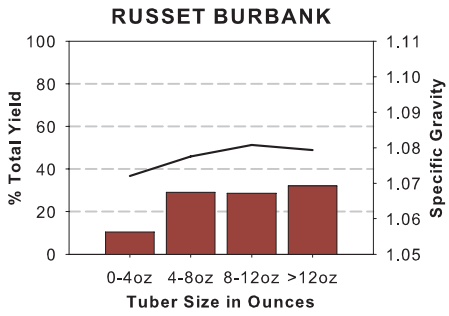
Tuber Yield and Specific Gravity Distributions

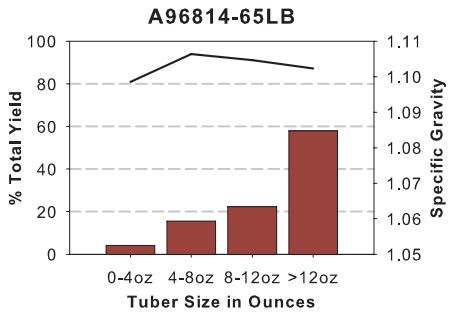
10 inch In-Row Spacing

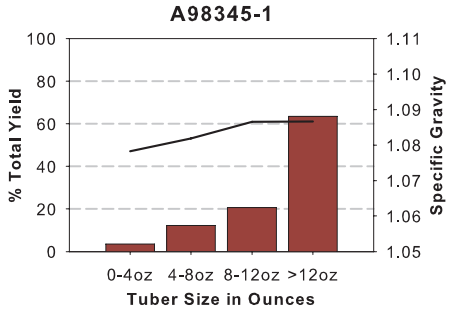


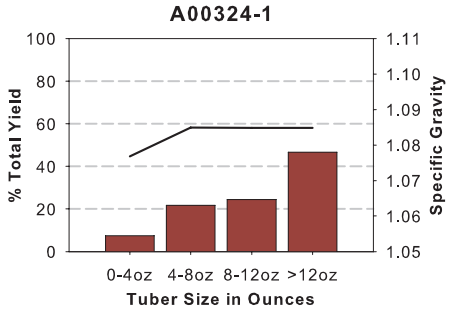
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

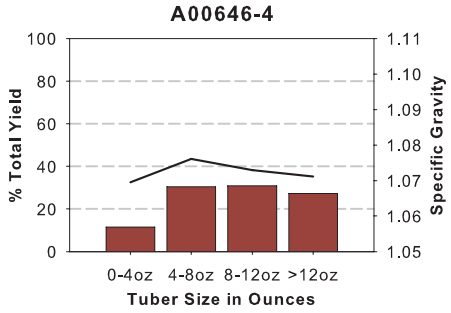


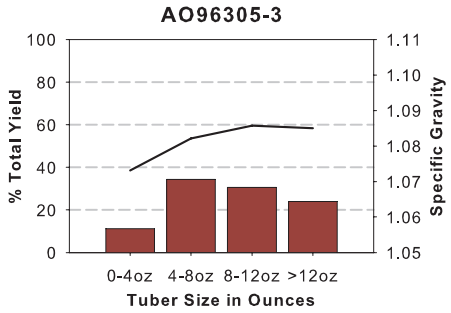


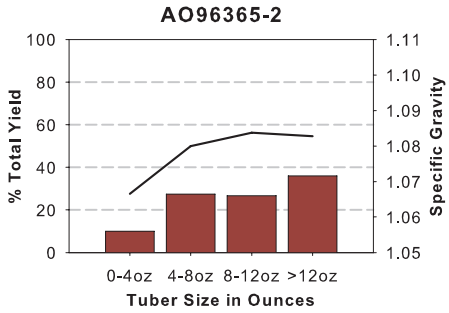


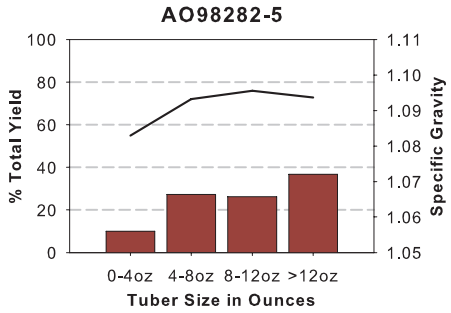


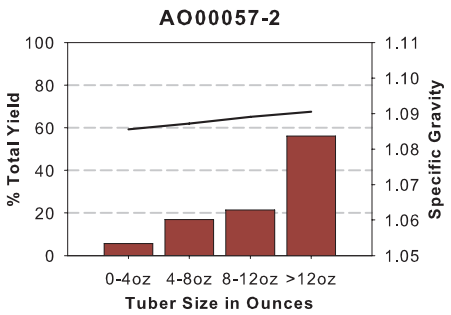


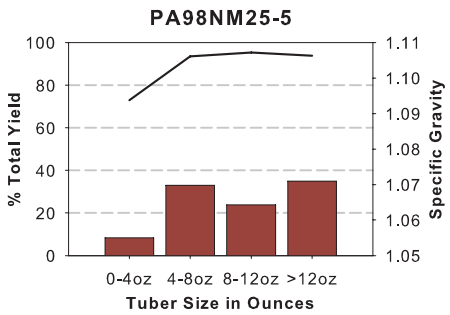


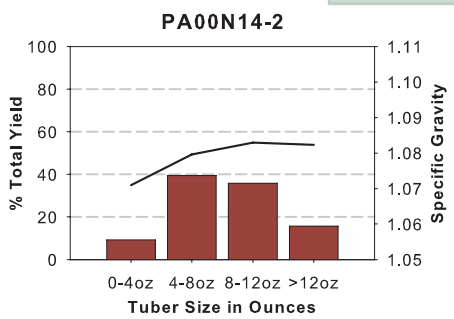


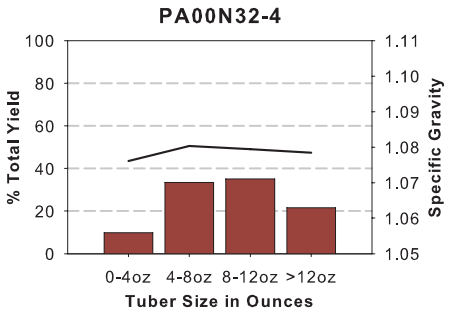


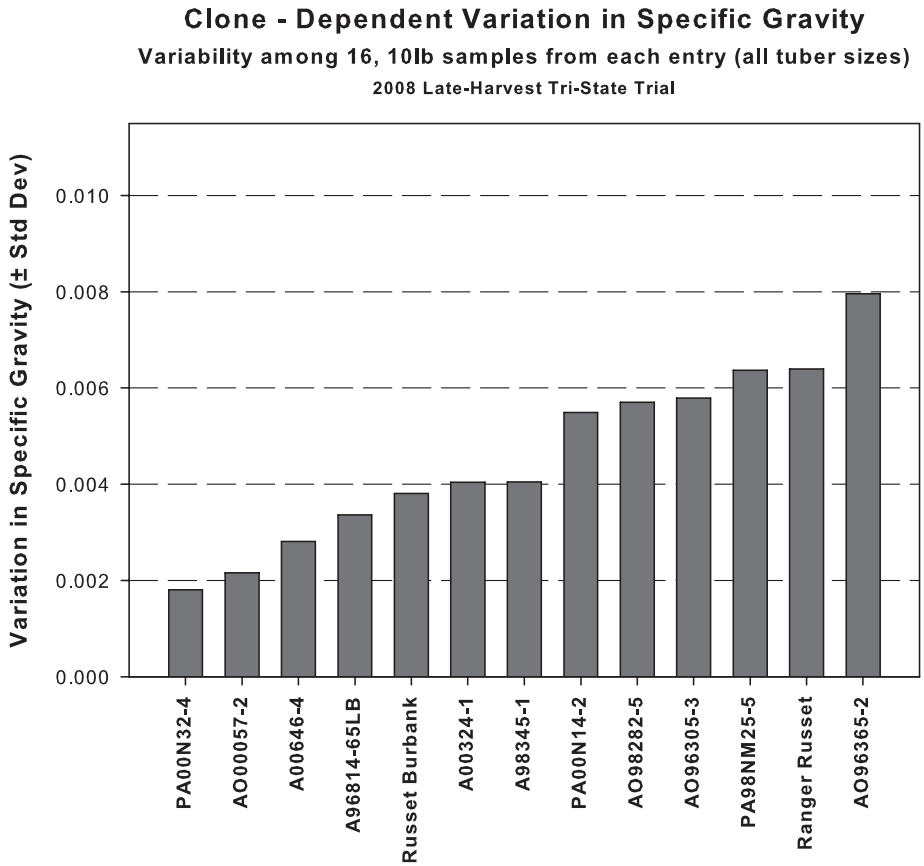


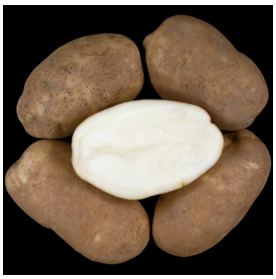
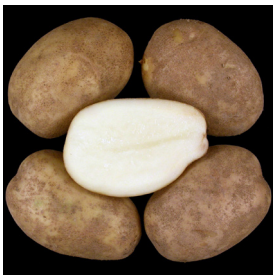

AO00057-2
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

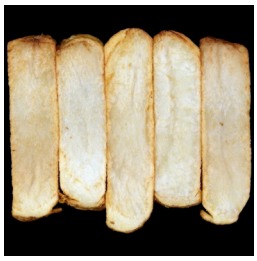
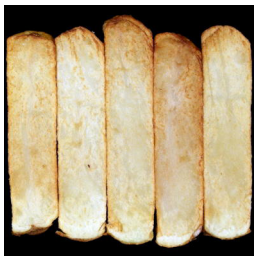
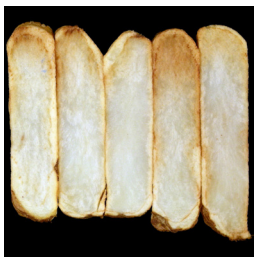
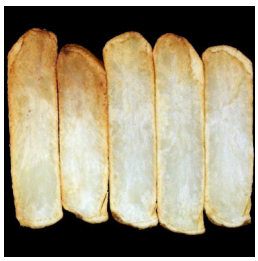
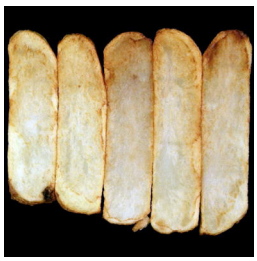
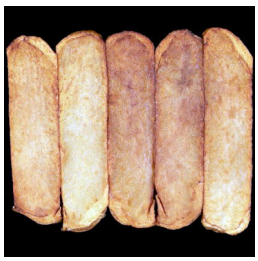
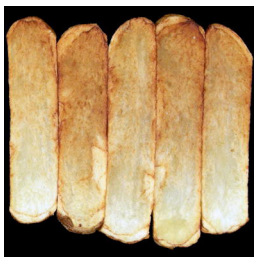
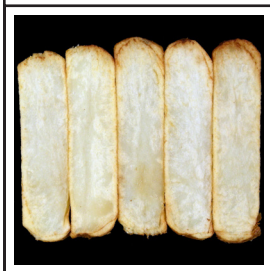
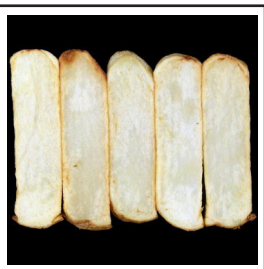
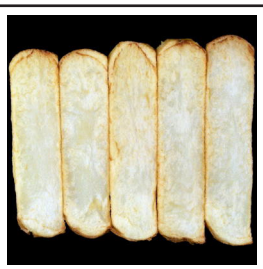
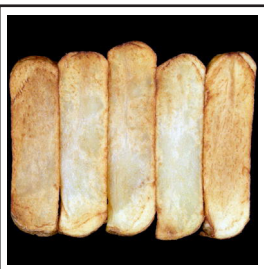
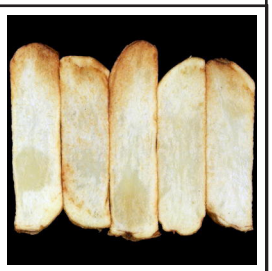
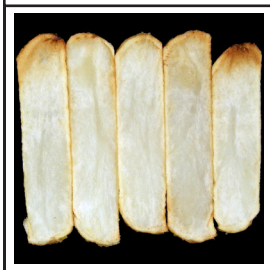
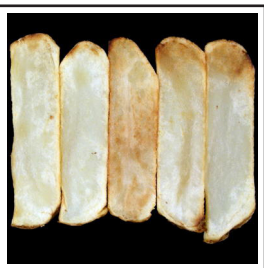
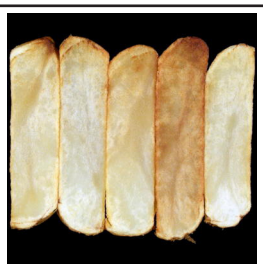
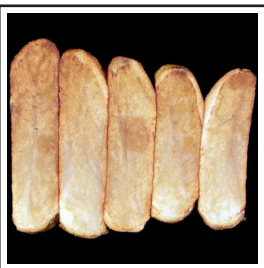
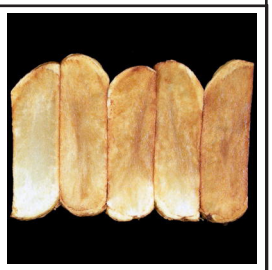

PA98NM25-5
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


PA00N14-2
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

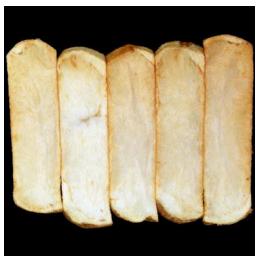
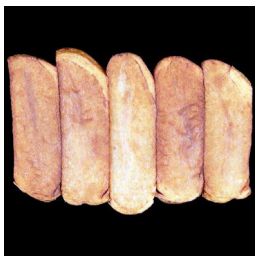
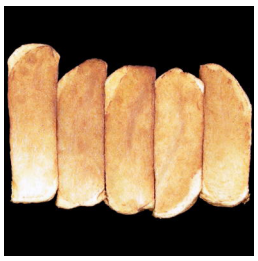
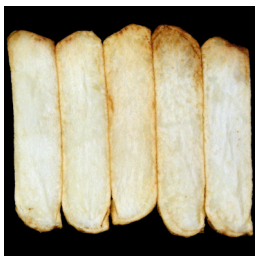
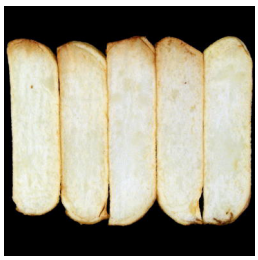
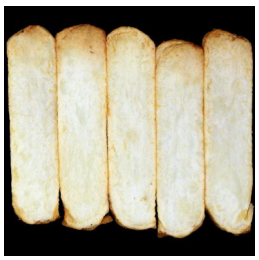
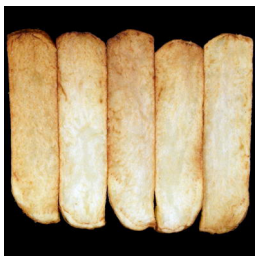
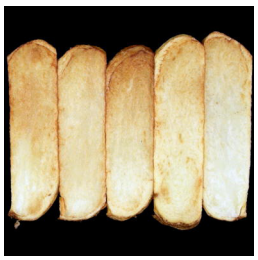

PA00N32-4
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


Clone - Dependent Variation in Specific Gravity
Variability among 16, 10lb samples from each entry (all tuber sizes)
2008 Late-Harvest Tri-State Trial
Variation in Specific Gravity (± Std Dev)
PA00N32-4
AO00057-2
A00646-4
A96814-65LB
Russet Burbank
A00324-1
A98345-1
PA00N14-2
AO98282-5
AO96305-3
PA98NM25-5
Ranger Russet
AO96365-2

Tubers	WA Late Harvest Tri-state Trial Comments
Ranger Russet	
	**Tubers:** Oblong to long tubers. Moderately heavy russet with very good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, non-uniform; reconditioned=light, non-uniform.
Russet Burbank	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, non-uniform; 44°F=light, non-uniform; 40°F=relatively dark, uniform; reconditioned=light, non-uniform.
A96814-65LB	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, uniform; reconditioned=light, non-uniform.
A98345-1	
	**Tubers:** Oblong tubers. Light russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, uniform; reconditioned=light, uniform.
A00324-1	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=light, uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
Ranger Russet				
				
Russet Burbank				
				
A96814-65LB				
				
A98345-1				
				
A00324-1				
				

Tubers	WA Late Harvest Tri-state Trial Comments
A00646-4	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, non-uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, non-uniform; 40°F=unacceptably dark, uniform; reconditioned=relatively dark, non-uniform.
AO96305-3	
	**Tubers:** Oblong tubers. Moderate russet with very good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, non-uniform; reconditioned=light, non-uniform.
AO96365-2	
	**Tubers:** Oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, non-uniform; 40°F=relatively dark, uniform; reconditioned=light, uniform.
AO98282-5	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, uniform; reconditioned=light, uniform.
AO00057-2	
	**Tubers:** Oblong tubers. Moderately heavy russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, non-uniform; reconditioned=light, non-uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
A00646-4				
				
AO96305-3				
				
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	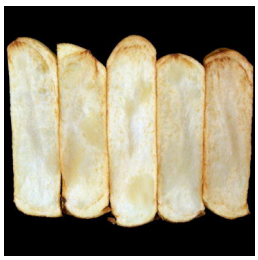	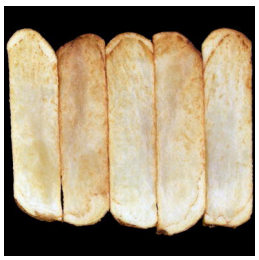		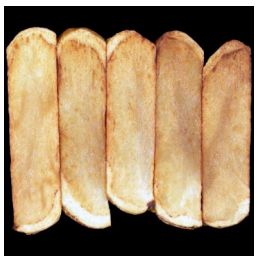
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	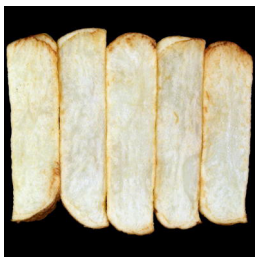		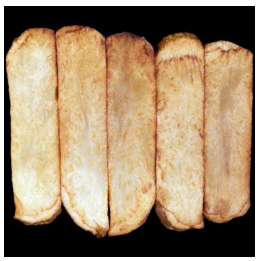	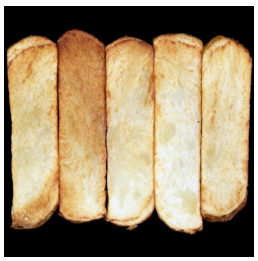
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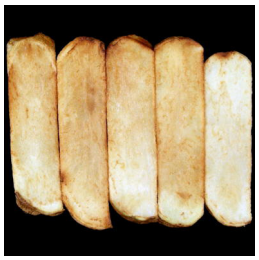
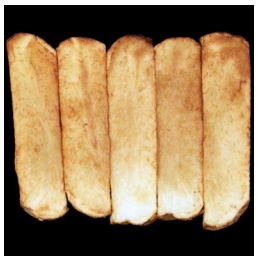
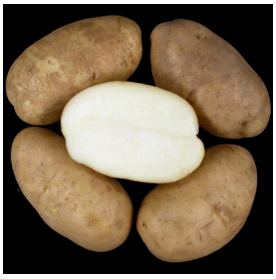
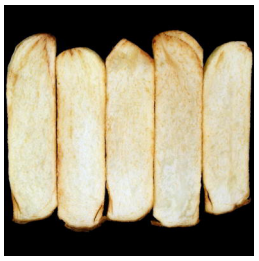
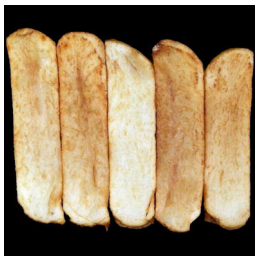
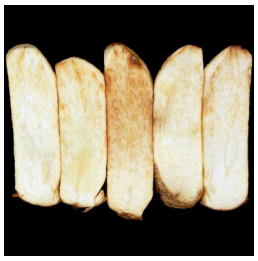
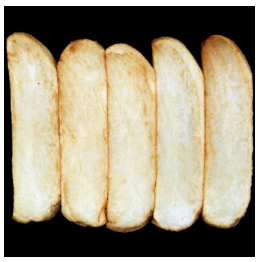
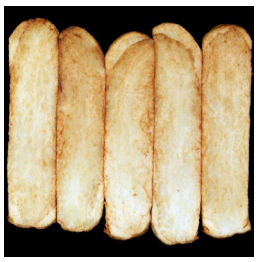
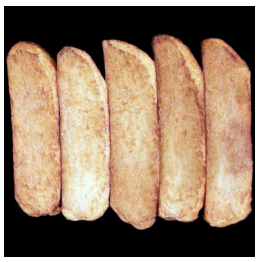
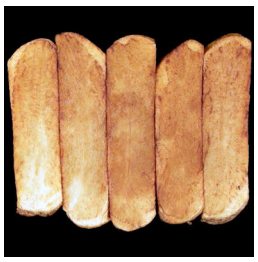
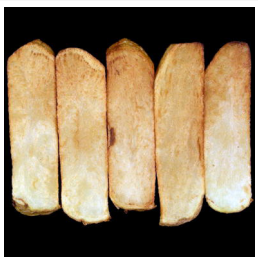
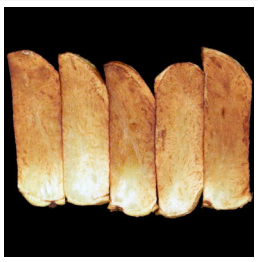
				

Tubers	WA Late Harvest Tri-state Trial Comments
PA98NM25-5	
	**Tubers:** Oblong tubers. Light russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, uniform; reconditioned=light, uniform.
PA00N14-2	
	**Tubers:** Oblong to long tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=relatively dark, non-uniform.
PA00N32-4	
	**Tubers:** Round to oblong tubers. Light russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, non-uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=relatively dark, non-uniform.

Oscar Gutbrod (middle) discusses the results of the 2008 WSU Commercial Seed Lot Trial with Mike Sun (left, of the Montana Potato Seed Certification Program).

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
PA98NM25-5				
				
PA00N14-2				
				
PA00N32-4				
				

Rick Knowles gets the crowd going by singing the WSU Cougar fight song prior to presenting important data at the 2008 Potato Field Day.

2008 Late Harvest Tri-State Trial

Accumulated Total Postharvest Rating of Clones

Clone	WA Rating Total §	WA Discard §§	ID Rating Total §	ID Discard §§	OR Rating Total §	OR Discard §§	3 State av. Rating Total
4 A98345-1	32.7		36.4		31.2		33.4
7 AO96305-3	36.8		31.9		28.7		32.5
10 AO00057-2	34.4		32.2		30.3		32.3
9 AO98282-5	32.4		34.3		27.5		31.4
11 PA98NM25-5	32.7		32.7		26.1		30.5
3 A96814-65LB	32.5		32.5		25.8		30.3
8 AO96365-2	33.3		35.4		21.3		30.0
12 PA00N14-2	35.9		29.1		24.3		29.8
5 A00324-1	33.3		33.3		21.5		29.4
1 Ranger Russet	36.0		31.2		20.4		29.2
2 Russet Burbank	29.3		23.1		16.3		22.9
13 PA00N32-4	26.6		24.0		15.0		21.9
6 A00646-4	25.8		23.5		10.3	Sp. Gr.	19.9

§ Maximum rating possible = 38
§§ Values for the indicated evaluation are lower than the rejection level

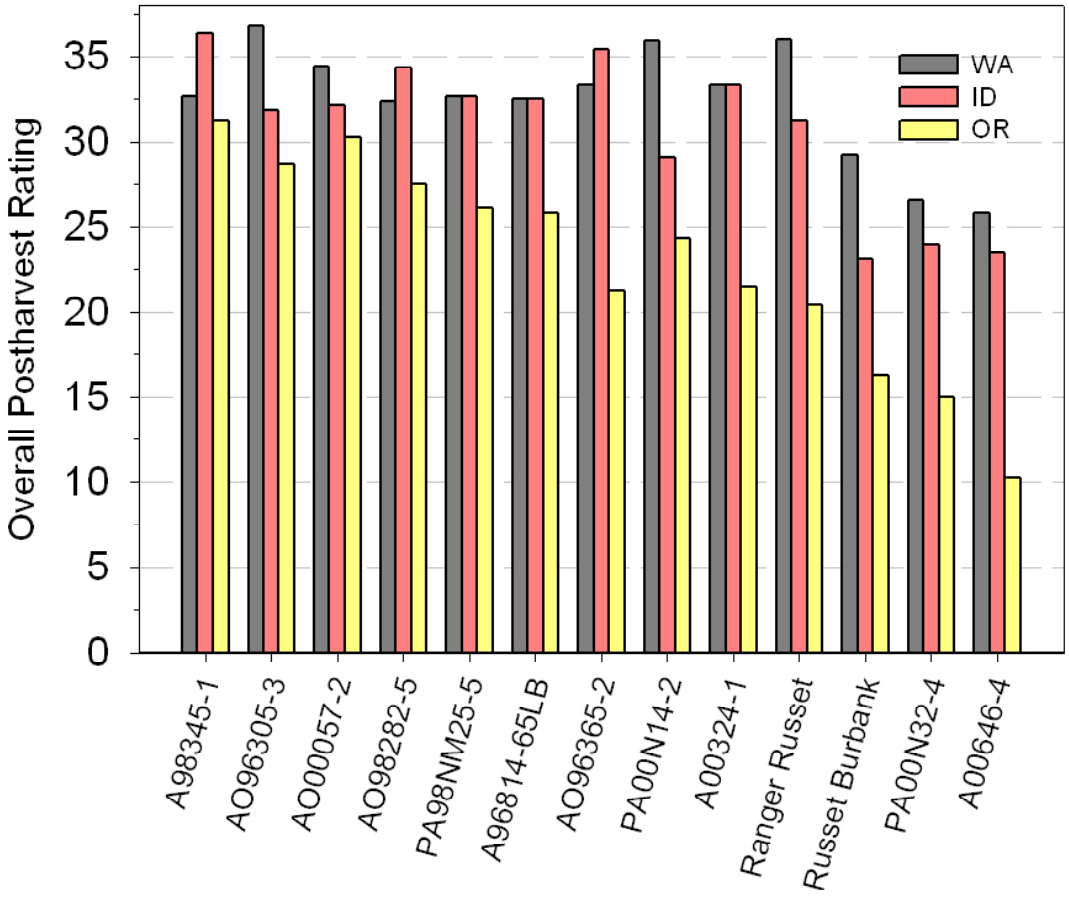
Overall Postharvest Performance of Clones Compared to Russet Burbank

Clone	WA	ID	OR	Average
1 Ranger Russet	H	H	H	H
3 A96814-65LB	H	H	H	H
4 A98345-1	H	H	H	H
5 A00324-1	H	H	H	H
6 A00646-4	L	H	L	L
7 AO96305-3	H	H	H	H
8 AO96365-2	H	H	H	H
9 AO98282-5	H	H	H	H
10 AO00057-2	H	H	H	H
11 PA98NM25-5	H	H	H	H
12 PA00N14-2	H	H	H	H
13 PA00N32-4	L	H	L	L

H= Higher than Russet Burbank
S= Same as Russet Burbank
L= Lower than Russet Burbank

2008 Late Harvest Tri-State Trial

Late Harvest Tri-State Postharvest Ratings



Participants of the 2008 Potato Field Day.

Jacob Blauer, WSU grad student, does some heavy lifting during the 2008 harvest.

The Knowles “A Team” including (from left to right) Jacob Blauer, Daniel Zommick, Lisa Knowles, Josh Rodriguez, and Anthony Cortez.

2008 Late Harvest Tri-State Trial

Prior to Storage

Clone	PHOTOVOLT READING stem	bud	av	rtg §	DIFF	USDA COLOR	SPECIFIC GRAVITY	rtg
Washington								
1 Ranger Russet	40.0	43.0	41.5	5+	5.3	0	1.088	5
2 Russet Burbank	38.5	42.4	40.4	4+	6.0	0	1.085	5
3 A96814-6SLB	50.6	52.2	51.4	5+	3.3	0	1.104	1
4 A98345-1	46.0	43.3	44.7	5+	4.0	0	1.096	1
5 A00324-1	41.0	42.4	41.7	5+	5.2	0	1.082	4
6 A00646-4	35.7	47.1	41.4	5-	11.4	0	1.076	1
7 AO96305-3	49.9	52.2	51.0	5+	3.4	0	1.087	5
8 AO96365-2	41.0	44.5	42.8	5+	4.1	0	1.085	5
9 AO98282-5	47.5	46.6	47.1	5+	3.6	0	1.103	1
10 AO00057-2	50.6	51.5	51.0	5+	4.3	0	1.093	3
11 PA98NM25-5	54.0	51.4	52.7	5+	3.6	0	1.107	1
12 PA00N14-2	45.2	50.0	47.6	5+	4.9	0	1.084	5
13 PA00N32-4	38.0	45.6	41.8	5+	7.8	0	1.082	4
		LSD 0.05	*2.7*		*3.1*		*0.006*	
Average	44.5	47.1	45.8		5.2	0	1.090	
Idaho								
1 Ranger Russet	43.9	42.9	43.4	5+	4.6	0	1.092	3
2 Russet Burbank	36.0	43.9	39.9	4+	8.9	0	1.079	2
3 A96814-6SLB	52.3	50.3	51.3	5+	3.6	0	1.108	1
4 A98345-1	51.1	43.0	47.0	5+	8.2	0	1.088	5
5 A00324-1	39.2	36.5	38.8	4+	4.5	0	1.085	5
6 A00646-4	35.4	42.6	39.0	4+	7.8	0	1.080	3
7 AO96305-3	40.8	50.1	45.4	5-	9.3	0	1.090	4
8 AO96365-2	40.8	45.8	43.3	5+	5.7	0	1.088	5
9 AO98282-5	45.9	42.9	44.4	5+	4.5	0	1.092	3
10 AO00057-2	46.5	46.8	47.6	5+	3.0	0	1.089	4
11 PA98NM25-5	56.5	52.2	54.3	5+	4.9	0	1.103	1
12 PA00N14-2	46.0	46.3	47.1	5+	5.7	0	1.093	3
13 PA00N32-4	43.2	44.4	43.8	5+	3.2	0	1.087	5
		LSD 0.05	*2.9*		*3.0*		*0.004*	
Average	44.4	45.6	45.0		5.7	0	1.090	
Oregon								
1 Ranger Russet	26.6	38.1	32.4	3-	12.1	1	1.087	5
2 Russet Burbank	20.9	38.3	29.6	2-	19.4	2	1.087	5
3 A96814-6SLB	35.0	46.5	40.2	4-	11.3	0	1.096	1
4 A98345-1	36.6	38.8	37.7	4+	4.9	0	1.087	5
5 A00324-1	38.5	46.5	42.5	5+	8.7	0	1.078	2
6 A00646-4	20.0	38.4	29.2	2-	18.4	2	1.074	0
7 AO96305-3	34.3	48.1	41.2	5-	13.9	0	1.096	5
8 AO96365-2	28.7	37.7	33.2	3-	9.0	1	1.082	4
9 AO98282-5	32.7	40.3	36.5	4+	8.1	0	1.089	4
10 AO00057-2	39.7	44.7	42.2	5+	7.7	0	1.081	4
11 PA98NM25-5	38.4	47.2	42.8	5-	10.3	0	1.104	1
12 PA00N14-2	34.1	42.9	38.5	4+	8.8	0	1.081	4
13 PA00N32-4	22.2	44.0	33.1	3-	21.8	2	1.083	5
		LSD 0.05	*3.0*		*4.6*		*0.005*	
Average	31.4	42.3	36.8		11.9	1	1.086	

Date test performed:

Washington	Oct. 6	Oct. 1
Idaho	Oct. 3	Oct. 29
Oregon	Oct. 2	Sept. 25

§ rtg = rating (1-5, 5 is best); *av* = average Photovolt reading. Diff = Absolute difference between stem and bud Photovolt reading. Stem to bud differences of nine or greater (-) lose one point and differences of less than nine (+) gain one point in the accumulated total postharvest rating.

2008 Late Harvest Tri-State Trial

Stored at 48°F after Arrival

Clone	FRENCH FRY TASTE PANEL rating	BRUISE POTENTIAL (percent) stem	bud	[color 5=darkest] stem	bud	SOFT ROT INDEX (percent) stem	bud
Washington							
1 Ranger Russet	**3.0**	50	8	2.3	1.2	10	13
2 Russet Burbank	**3.3**	46	13	2.1	1.3	15	14
3 A96814-65LB	**3.5**	96	33	3.8	1.8	5	6
4 A93345-1	**3.7**	96	42	4.1	1.8	8	7
5 A00324-1	**3.3**	67	8	2.8	1.2	7	8
6 A00646-4	**2.8**	23	27	1.5	1.5	12	10
7 AO96305-3	**3.8**	25	8	1.5	1.2	8	15
8 AO96365-2	**3.3**	88	29	3.1	1.6	5	8
9 AO98282-5	**3.4**	33	8	2.0	1.4	11	14
10 AO00057-2	**3.4**	50	7	2.1	1.1	8	8
11 PA98NM25-5	**3.7**	86	50	3.6	2.2	7	9
12 PA00N14-2	**2.9**	46	0	2.1	1.1	8	9
13 PA00N32-4	**2.6**	8	4	1.2	1.1	7	7
LSD 0.05	*0.4*	*27*	*23*			*3*	*4*
Average	3.3	54.9	18.4	2.5	1.4	8.6	9.9
Idaho							
1 Ranger Russet	**3.2**	75	0	2.8	1.0	12	9
2 Russet Burbank	**3.1**	42	4	1.8	1.1	9	7
3 A96814-65LB	**3.5**	88	38	2.8	1.6	6	6
4 A93345-1	**3.4**	58	8	2.4	1.2	8	14
5 A00324-1	**3.3**	17	0	1.3	1.0	6	6
6 A00646-4	**2.5**	0	0	1.0	1.0	10	10
7 AO96305-3	**3.9**	0	0	1.0	1.0	10	10
8 AO96365-2	**3.4**	50	8	2.1	1.2	6	6
9 AO98282-5	**3.3**	21	0	1.3	1.0	8	8
10 AO00057-2	**3.2**	5	0	1.1	1.0	8	8
11 PA98NM25-5	**3.7**	25	0	1.5	1.0	10	9
12 PA00N14-2	**3.1**	67	0	2.5	1.0	9	9
13 PA00N32-4	**3.0**	9	0	1.2	1.0	8	8
LSD 0.05	*0.4*	*27*	*12*			*3*	*6*
Average	3.3	35.0	1.1	1.8	1.1	8.4	8.4
Oregon							
1 Ranger Russet	**3.4**	25	25	1.5	1.5	11	13
2 Russet Burbank	**3.3**	29	29	1.6	1.6	8	21
3 A96814-65LB	**3.8**	100	4	3.7	1.1	5	5
4 A93345-1	**3.2**	92	21	3.8	1.4	7	10
5 A00324-1	**3.5**	63	0	2.6	1.0	5	7
6 A00646-4	**2.3**	25	21	1.5	1.3	10	15
7 AO96305-3	**3.7**	63	0	2.3	1.0	7	11
8 AO96365-2	**3.3**	42	4	2.0	1.1	6	9
9 AO98282-5	**3.5**	25	17	1.6	1.2	9	15
10 AO00057-2	**3.3**	25	13	1.5	1.3	6	12
11 PA98NM25-5	**4.1**	42	17	1.9	1.3	6	10
12 PA00N14-2	**3.3**	42	4	1.9	1.1	6	10
13 PA00N32-4	**3.0**	38	8	1.8	1.1	9	8
LSD 0.05	*0.5*	*30*	*21*			*3*	*5*
Average	3.3	46.8	1.2	2.1	1.2	7.4	11.3

Date test performed:

Washington	Oct. 21	Nov. 5	Nov. 19
Idaho	Oct. 20	Oct. 31	Nov. 14
Oregon	Oct. 17	Oct. 28	Nov. 7

2008 Late Harvest Tri-State Trial

Stored at 48°F for 60 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg	SPROUTING (%)	length (in)
Washington											
1 Ranger Russet	42.0	47.7	44.8	**5+**	5.9	0	0.7	0.5	**5**	92	1/4"
2 Russet Burbank	32.6	43.1	37.9	**4-**	10.5	0	1.2	0.6	**5**	0	
3 A96814-65LB	48.6	50.6	49.6	**5+**	4.5	0	0.5	0.5	**5**	87	1/4"
4 A98345-1	46.8	45.0	45.9	**5+**	4.8	0	0.5	0.6	**5**	100	1 3/4"
5 A00324-1	37.8	40.8	39.3	**4+**	4.7	0	0.8	0.7	**5**	100	1/2"
6 A00646-4	40.9	47.7	44.3	**5+**	6.8	0	0.7	0.5	**5**	33	1/4"
7 AO96305-3	52.7	56.2	54.4	**5+**	4.7	0	0.5	0.5	**5**	87	1/2"
8 AO96365-2	39.8	43.2	41.5	**5+**	5.5	0	0.7	0.6	**5**	100	3/4"
9 AO96282-5	46.3	50.7	49.5	**5+**	4.2	0	0.5	0.5	**5**	80	1/2"
10 AO00057-2	49.3	52.0	50.6	**5+**	6.2	0	0.5	0.5	**5**	0	
11 PA98NM25-5	51.1	50.0	50.5	**5+**	4.0	0	0.5	0.5	**5**	100	1/2"
12 PA00N14-2	44.5	48.7	46.6	**5+**	5.6	0	0.6	0.5	**5**	0	
13 PA00N32-4	26.8	39.1	34.0	**3-**	10.3	1	1.5	0.8	**4**	100	1/2"
		LSD 0.05	*3.1*		3.6					*16*	
Average	43.3	47.3	45.3		6.0	0	0.7	0.6		68	
Idaho											
1 Ranger Russet	42.2	45.6	43.9	**5+**	6.8	0	0.6	0.6	**5**	93	1/4"
2 Russet Burbank	28.6	41.3	34.9	**3-**	12.7	1	1.5	0.7	**4**	0	
3 A96814-65LB	52.1	53.4	52.8	**5+**	2.9	0	0.5	0.6	**5**	83	1/4"
4 A98345-1	50.6	47.5	49.1	**5+**	4.5	0	0.5	0.5	**5**	100	3/4"
5 A00324-1	42.0	43.6	42.8	**5+**	5.4	0	0.7	0.6	**5**	87	1/4"
6 A00646-4	31.0	40.7	35.8	**4-**	12.5	0	1.3	0.7	**4**	7	1/8"
7 AO96305-3	49.0	54.8	51.9	**5+**	6.2	0	0.5	0.5	**5**	0	
8 AO96365-2	44.0	48.3	46.1	**5+**	4.7	0	0.6	0.5	**5**	100	1/4"
9 AO96282-5	46.9	48.4	47.6	**5+**	3.3	0	0.5	0.5	**5**	47	1/8"
10 AO00057-2	50.9	52.9	51.9	**5+**	3.7	0	0.5	0.5	**5**	0	
11 PA98NM25-5	54.7	54.0	54.4	**5+**	2.5	0	0.5	0.5	**5**	7	1/8"
12 PA00N14-2	40.4	48.6	44.5	**5-**	9.6	0	0.7	0.5	**5**	0	
13 PA00N32-4	30.5	40.4	35.4	**3-**	10.9	0	1.3	0.7	**4**	67	1/4"
		LSD 0.05	*3.1*		*4.0*					*18*	
Average	43.3	47.6	45.5		6.6	0	0.8	0.6		45	
Oregon											
1 Ranger Russet	28.9	43.0	35.9	**4-**	14.1	1	1.5	0.6	**4**	93	1/2"
2 Russet Burbank	19.4	39.2	29.3	**2-**	19.8	3	2.8	0.8	**3**	0	
3 A96814-65LB	40.5	50.7	45.6	**5-**	10.2	0	0.7	0.5	**5**	100	1/4"
4 A98345-1	35.5	44.2	39.8	**4+**	8.8	0	1.0	0.6	**5**	100	1 3/4"
5 A00324-1	27.4	39.2	33.3	**3-**	11.9	1	1.7	0.8	**4**	100	1/2"
6 A00646-4	19.9	38.5	29.2	**2-**	18.6	2	2.7	0.8	**3**	67	1/4"
7 AO96305-3	32.7	49.4	41.1	**5-**	16.6	0	1.2	0.5	**5**	80	1/2"
8 AO96365-2	26.1	35.6	30.8	**3-**	11.7	1	1.8	1.0	**4**	73	1"
9 AO96282-5	37.0	47.3	42.2	**5-**	10.5	0	0.9	0.5	**5**	80	3/4"
10 AO00057-2	33.6	39.8	36.7	**4+**	8.0	0	1.1	0.7	**5**	27	1/8"
11 PA98NM25-5	40.2	50.8	45.5	**5-**	10.7	0	0.7	0.5	**5**	87	1/8"
12 PA00N14-2	31.7	43.2	37.5	**4-**	11.9	0	1.2	0.6	**5**	27	1/8"
13 PA00N32-4	19.7	37.6	28.7	**2-**	18.0	2	2.7	0.8	**3**	100	1/2"
		LSD 0.05	*3.0*		*4.9*					20	
Average	30.2	43.0	36.6		13.1	1	1.5	0.7		72	

Date test performed

Washington	Dec. 16	Dec. 23
Idaho	Dec. 10	Dec. 23
Oregon	Dec. 4	Dec. 23

§ rtg = rating (1-5, 5 is best), av = average Photovolt reading, Diff = Absolute difference between stem and bud Photovolt reading . Stem to bud differences of nine or greater (-) lose one point and differences of less than nine (+) gain one point in the accumulated total postharvest rating.

2008 Late Harvest Tri-State Trial

Stored at 44°F for 60 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg
Washington									
1 Ranger Russet	37.6	44.7	41.2	5+	7.9	0	0.8	0.6	5
2 Russet Burbank	31.5	42.7	37.1	4-	11.2	0	1.3	0.6	5
3 A96814-65LB	47.4	50.4	48.9	5+	4.8	0	0.5	0.5	5
4 A98345-1	44.5	45.6	45.1	5+	3.6	0	0.6	0.6	5
5 A00324-1	35.3	40.0	37.7	4+	6.3	0	1.0	0.7	5
6 A00646-4	30.5	41.6	36.0	4-	11.1	0	1.3	0.7	4
7 AO96305-3	50.6	55.9	53.3	5+	5.6	0	0.5	0.5	5
8 AO96365-2	36.2	44.0	40.1	4-	9.1	0	0.9	0.6	5
9 AO98282-5	44.0	48.2	46.1	5+	4.3	0	0.6	0.5	5
10 AO00057-2	39.4	46.4	42.9	5+	8.1	0	0.8	0.5	5
11 PA98NM25-5	52.8	54.3	53.5	5+	4.7	0	0.5	0.5	5
12 PA00N14-2	37.8	45.5	41.6	5+	7.8	0	0.8	0.6	5
13 PA00N32-4	30.2	37.9	34.1	3+	7.7	1	1.4	0.8	4
		LSD 0.05	*3.6*		*3.8*				
Average	39.8	45.9	42.9		7.1	0	0.9	0.6	
Idaho									
1 Ranger Russet	35.9	42.8	39.3	4-	9.3	0	0.9	0.6	5
2 Russet Burbank	28.2	42.9	35.6	4-	14.8	1	1.6	0.6	4
3 A96814-65LB	51.5	54.0	52.7	5+	3.1	0	0.5	0.5	5
4 A98345-1	46.3	43.8	45.0	5+	5.7	0	0.5	0.6	5
5 A00324-1	35.1	36.2	35.7	4+	6.2	0	1.0	0.9	4
6 A00646-4	24.8	36.5	30.7	3-	11.8	1	2.0	0.9	4
7 AO96305-3	41.5	52.6	47.0	5-	11.0	0	0.7	0.5	5
8 AO96365-2	37.5	40.6	39.1	4+	6.0	0	0.8	0.7	5
9 AO98282-5	48.4	48.7	48.6	5+	5.5	0	0.5	0.5	5
10 AO00057-2	34.4	44.6	39.5	4-	10.2	0	1.0	0.6	5
11 PA98NM25-5	50.2	50.9	50.5	5+	7.0	0	0.5	0.5	5
12 PA00N14-2	34.0	45.5	39.7	4-	11.4	0	1.1	0.6	5
13 PA00N32-4	24.8	33.6	29.2	2-	9.3	1	2.0	1.1	3
		LSD 0.05	*3.5*		*4.4*				
Average	37.9	44.0	41.0		8.6	0	1.0	0.7	
Oregon									
1 Ranger Russet	18.3	34.9	26.6	2-	16.6	3	3.0	1.0	2
2 Russet Burbank	17.0	34.6	25.8	2-	17.6	3	3.2	1.0	2
3 A96814-65LB	38.7	48.8	43.7	5-	10.1	0	0.8	0.5	5
4 A98345-1	35.8	40.6	38.2	4-	9.2	0	0.9	0.7	5
5 A00324-1	21.9	34.5	28.2	2-	12.6	2	2.4	1.0	3
6 A00646-4	18.2	35.0	26.6	2-	16.8	3	3.0	1.0	2
7 AO96305-3	30.1	46.9	38.5	4-	16.9	1	1.4	0.5	4
8 AO96365-2	21.8	30.4	26.1	2+	8.6	2	2.4	1.4	3
9 AO98282-5	29.7	40.2	35.0	3-	10.6	1	1.4	0.7	4
10 AO00057-2	28.1	31.5	29.8	2+	4.7	1	1.6	1.3	4
11 PA98NM25-5	32.8	46.5	39.7	4-	13.7	0	1.1	0.5	5
12 PA00N14-2	24.3	34.2	29.3	2-	9.9	2	2.0	1.0	3
13 PA00N32-4	15.7	27.7	21.7	1-	12.0	3	3.5	1.6	1
		LSD 0.05	*3.0*		*3.9*				
Average	25.6	37.4	31.5		12.3	2	2.1	1.0	

Date test performed:

Washington	Dec. 17	Dec. 17
Idaho	Dec. 11	Dec. 11
Oregon	Dec. 5	Dec. 5

§ rtg = rating (1-5, 5 is best); av = average Photovolt reading; Diff = Absolute difference between stem and bud Photovolt reading. Stem to bud differences of nine or greater (-) lose one point and differences of less than nine (+) gain one point in the accumulated total postharvest rating.

2008 Late Harvest Tri-State Trial

Stored at 40°F for 60 Days and Reconditioned

Clone	SPROUTING (%)	PHOTOVOLT (60 Days at 40°F) stem	bud	average	DIFF	USDA COLOR	PHOTOVOLT AFTER RECONDITIONING (21 days at 60°F) stem	bud	average	DIFF	USDA COLOR
Washington											
1 Ranger Russet	0	21.8	32.6	27.2	10.8	2	25.7	42.7	34.2	17.5	1
2 Russet Burbank	0	17.2	22.9	20.1	5.8	3	23.7	40.6	32.1	17.0	2
3 A96814-65LB	0	27.3	35.5	31.4	8.3	1	34.2	45.9	40.1	11.7	0
4 A98345-1	0	32.4	35.7	34.1	4.0	0	39.8	45.1	42.4	7.3	0
5 A00324-1	0	21.6	25.0	23.3	4.1	2	27.6	34.0	30.8	7.2	1
6 A00646-4	0	16.5	21.4	18.9	5.0	3	20.9	34.1	27.5	13.2	2
7 AO96305-3	0	34.5	46.8	40.6	13.8	0	38.3	52.0	45.2	13.7	0
8 AO96365-2	0	22.3	28.4	25.3	6.1	2	30.0	36.3	33.2	7.3	1
9 AO98282-5	0	27.8	36.0	31.9	8.7	1	36.6	43.3	39.9	7.7	0
10 AO00057-2	0	23.8	39.4	31.6	15.6	2	35.8	44.1	40.0	9.1	0
11 PA98NM25-5	0	38.3	43.1	40.7	5.3	0	50.3	55.1	52.7	4.9	0
12 PA00N14-2	0	22.4	27.7	25.0	5.3	2	25.4	35.1	30.3	9.6	1
13 PA00N32-4	0	16.9	24.7	20.8	8.1	3	20.1	35.9	28.0	15.8	2
LSD 0.05	*ns*			*2.9*	*3.6*				*4.0*	*4.4*	
Average	0	24.8	32.3	28.5	7.8	2	31.4	41.9	36.6	10.9	1
Idaho											
1 Ranger Russet	0	22.7	34.6	28.6	11.9	2	33.6	47.2	40.4	13.6	0
2 Russet Burbank	0	14.6	22.2	18.4	7.6	3	18.5	32.3	25.4	13.8	3
3 A96814-65LB	0	41.0	49.5	45.3	8.5	0	47.1	52.3	49.7	6.2	0
4 A98345-1	0	37.0	43.1	40.0	7.1	0	40.6	46.8	43.7	6.1	0
5 A00324-1	0	19.3	25.3	22.3	7.6	3	29.9	35.1	32.5	6.5	1
6 A00646-4	0	15.1	22.1	18.6	7.7	3	20.5	28.1	24.3	8.1	2
7 AO96305-3	0	32.2	50.7	41.5	18.5	0	37.6	53.1	45.4	15.5	0
8 AO96365-2	0	24.7	30.7	27.7	6.4	1	31.7	40.0	35.9	11.0	0
9 AO98282-5	0	30.3	35.5	32.9	5.8	1	40.8	48.0	44.4	9.0	0
10 AO00057-2	0	21.3	37.9	29.6	18.9	2	32.9	39.5	36.2	7.6	0
11 PA98NM25-5	0	37.8	42.5	40.1	6.1	0	46.2	52.9	49.5	6.8	0
12 PA00N14-2	0	18.0	21.3	19.7	4.0	3	24.3	31.9	28.1	9.7	2
13 PA00N32-4	0	15.4	23.1	19.3	7.7	3	19.4	32.0	25.7	12.9	3
LSD 0.05	*ns*			*3.1*	*3.6*				*3.6*	*5.0*	
Average	0	25.3	33.7	29.5	9.1	2	32.6	41.5	37.0	9.8	1
Oregon											
1 Ranger Russet	0	12.7	25.5	19.1	12.9	4	22.6	43.4	33.0	20.8	2
2 Russet Burbank	0	10.6	25.4	18.0	14.8	4	14.5	36.5	25.5	22.1	3
3 A96814-65LB	0	22.2	30.1	26.2	7.9	2	30.4	44.0	37.2	13.6	1
4 A98345-1	0	24.0	32.4	28.2	8.4	2	29.5	43.9	36.7	14.4	1
5 A00324-1	0	15.3	26.0	20.7	10.7	3	17.9	28.3	23.1	10.4	3
6 A00646-4	0	10.9	20.7	15.8	9.8	4	13.4	26.1	19.7	12.8	4
7 AO96305-3	0	24.8	38.1	31.4	13.3	1	26.0	47.7	36.8	21.7	1
8 AO96365-2	0	15.6	16.4	16.0	3.0	3	21.1	28.5	24.8	7.4	2
9 AO98282-5	0	22.2	30.0	26.1	7.8	2	27.4	45.5	36.5	18.1	1
10 AO00057-2	0	15.8	20.5	18.2	6.1	3	22.4	29.3	25.9	7.4	2
11 PA98NM25-5	0	23.1	33.7	28.4	10.6	2	34.3	50.6	42.4	16.3	0
12 PA00N14-2	0	16.1	22.6	19.4	6.5	3	19.0	30.9	25.0	12.7	3
13 PA00N32-4	0	12.5	22.4	17.5	9.9	4	13.0	32.5	22.7	19.6	4
LSD 0.05	*ns*			*2.2*	*3.7*				*3.1*	*4.0*	
Average	0	17.4	26.4	21.9	9.4	3	22.4	37.5	29.9	15.2	2

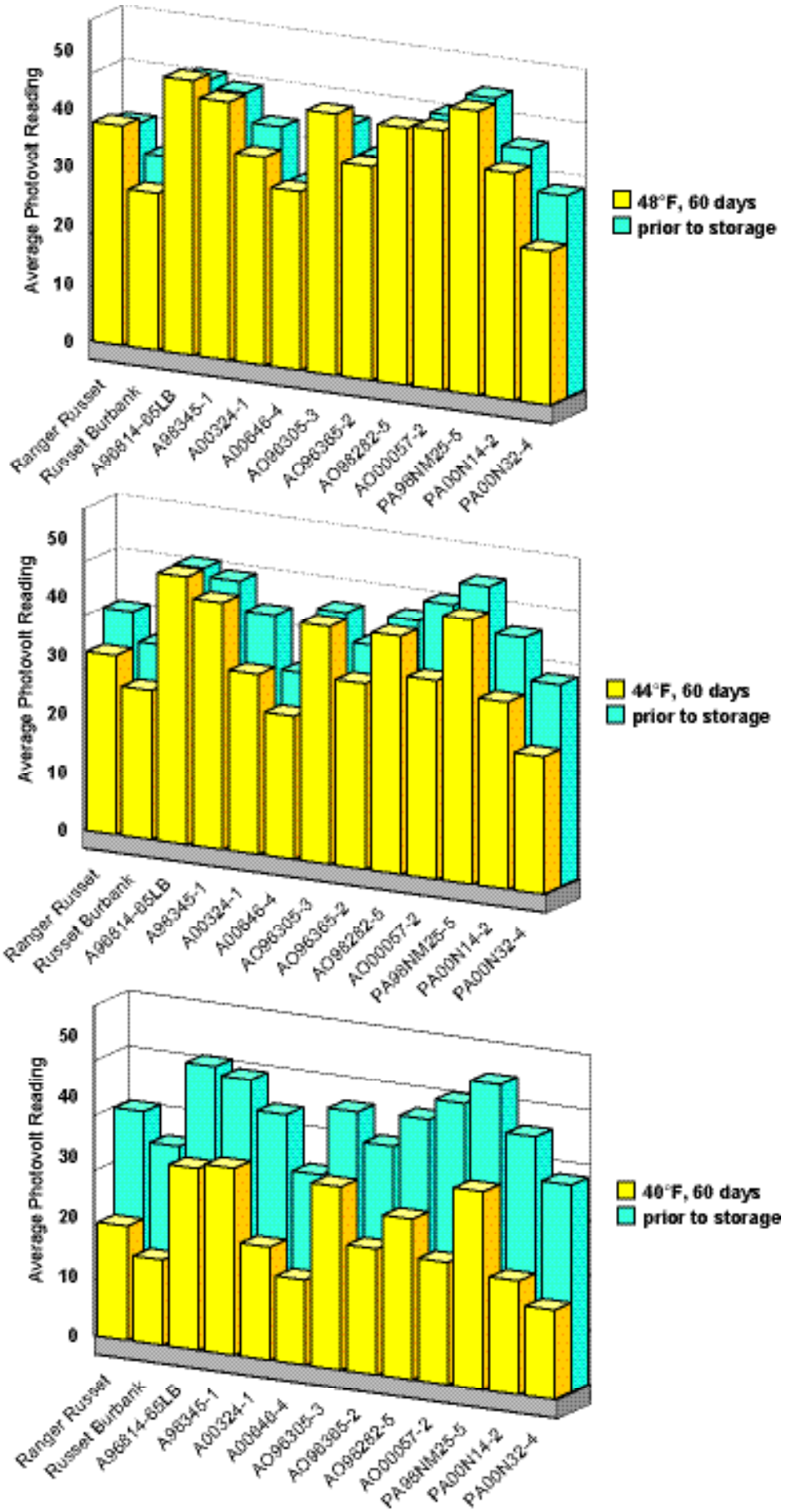
Date test performed:

Washington	Dec. 22	Dec. 18	Dec. 21
Idaho	Dec. 22	Dec. 12	Dec. 20
Oregon	Dec. 22	Dec. 6	Dec. 19

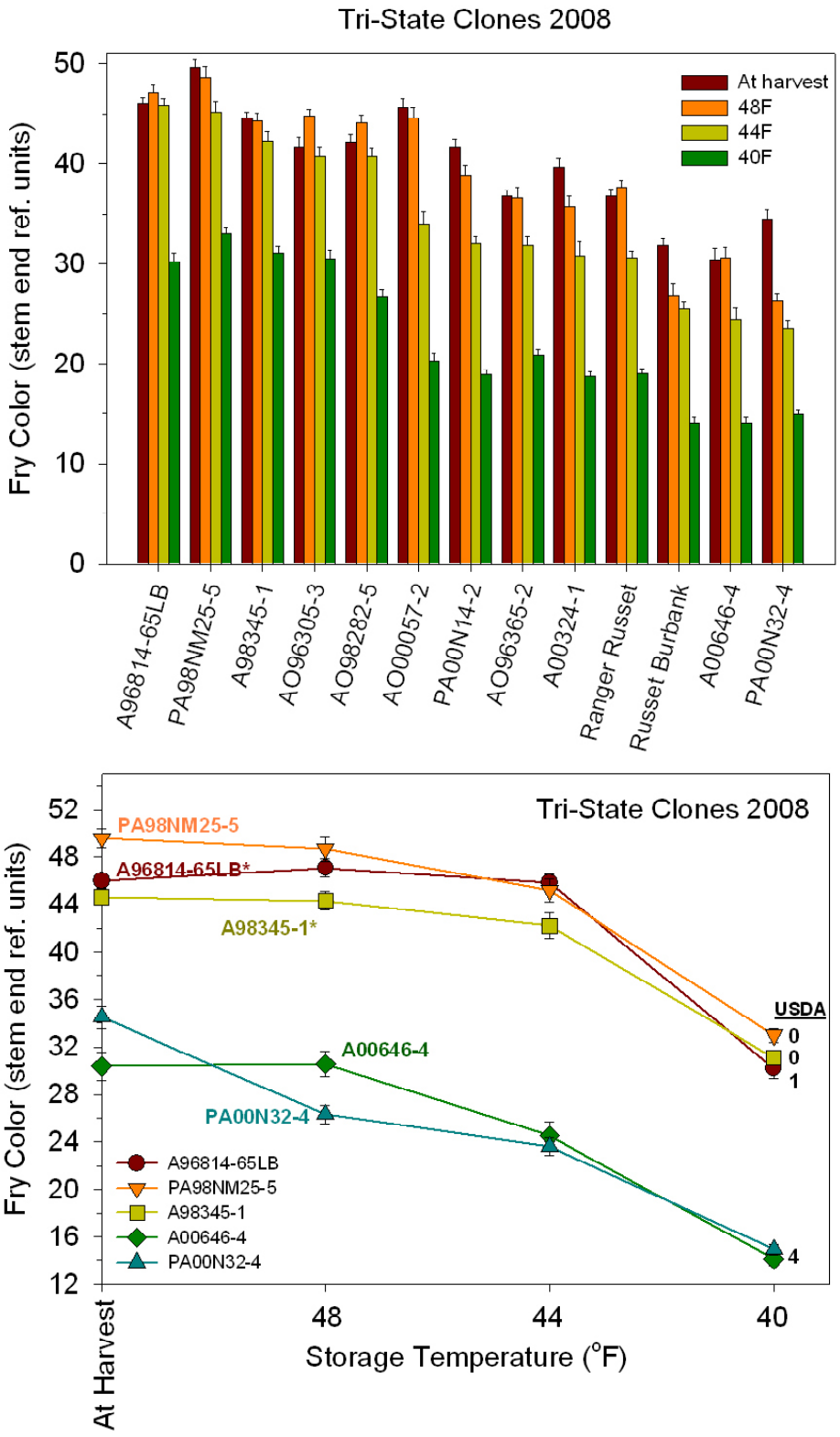
DIFF = Absolute difference between bud and stem Photovolt reading.

2008 Late Harvest Tri-State Trial

Tri-State Trial - 3 State Average of Stem End



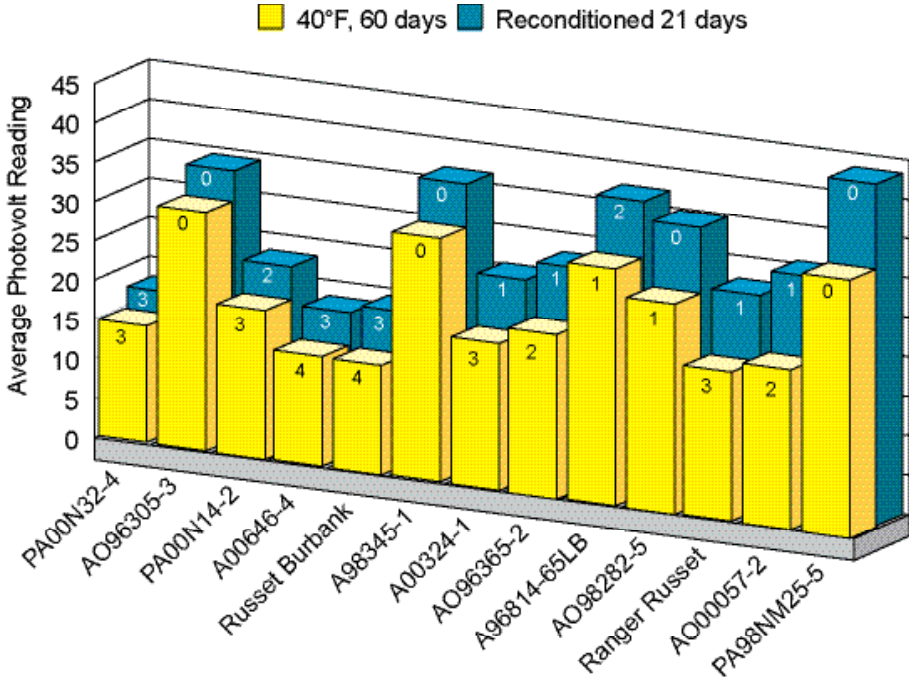
2008 Late Harvest Tri-State Trial

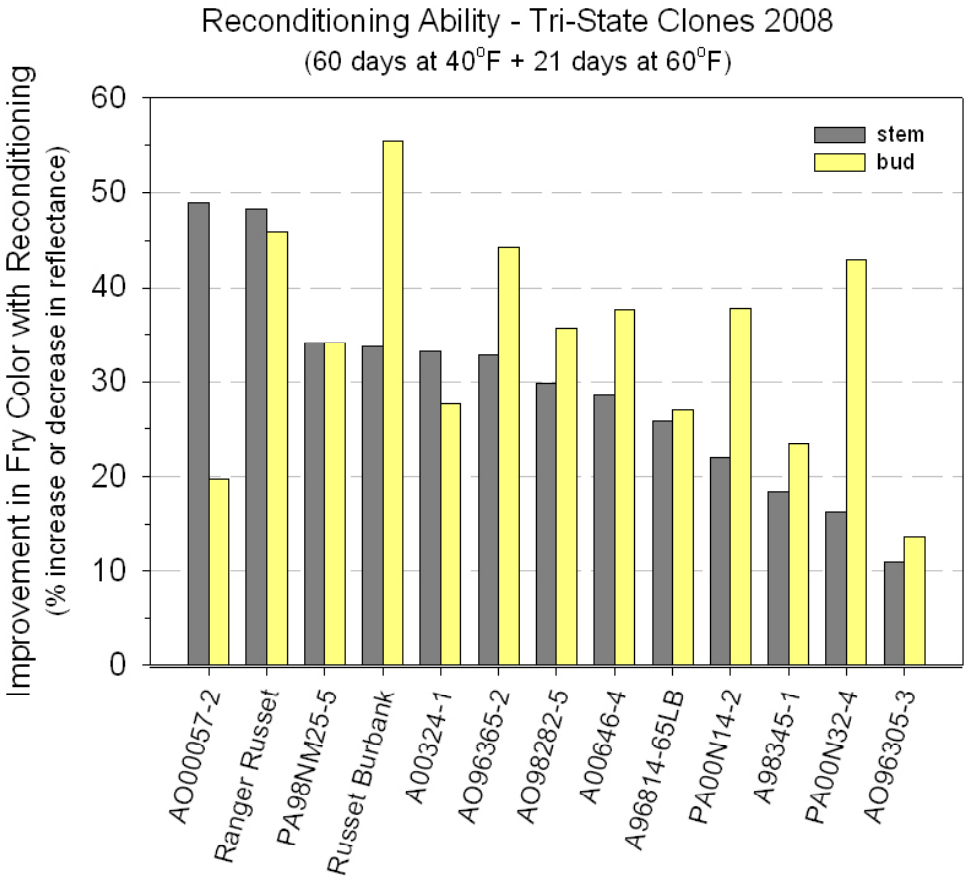


Top: At-harvest and after-storage French fry colors (stem end) of clones in the Tri-State Trial. Tubers were stored for 60 days at 48, 44, and 40°F. The clones are ranked from best to worst on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

Bottom: Line graph depicting the effects of storage temperature on the change in French fry processing quality (stem end fry color) of the best (PA98NM25-5, A96814-65LB, and A98345-1) and worst (A00646-4, PA00N32-4) performing clones in the Tri-State Trial. *Indicates similar performance of the clones last year.

2008 Late Harvest Tri-State Trial





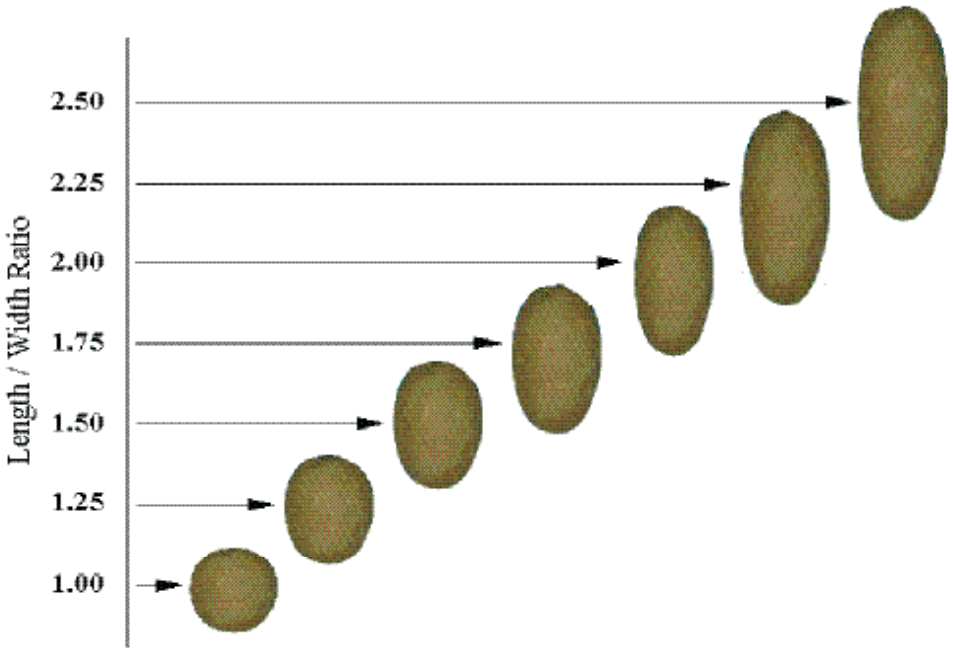
Reconditioning abilities of clones in the 2008 Tri-State Trial (3-state averages). Clones were stored at 40°F for 60 days after harvest and then reconditioned at 60°F for 21 days. **Top:** Stem end fry color before and after reconditioning. Numbers in bars indicate the USDA color rating of the stem end. **Bottom:** Percent improvement of stem and bud end fry color with reconditioning.

2008 Late Harvest Tri-State Trial

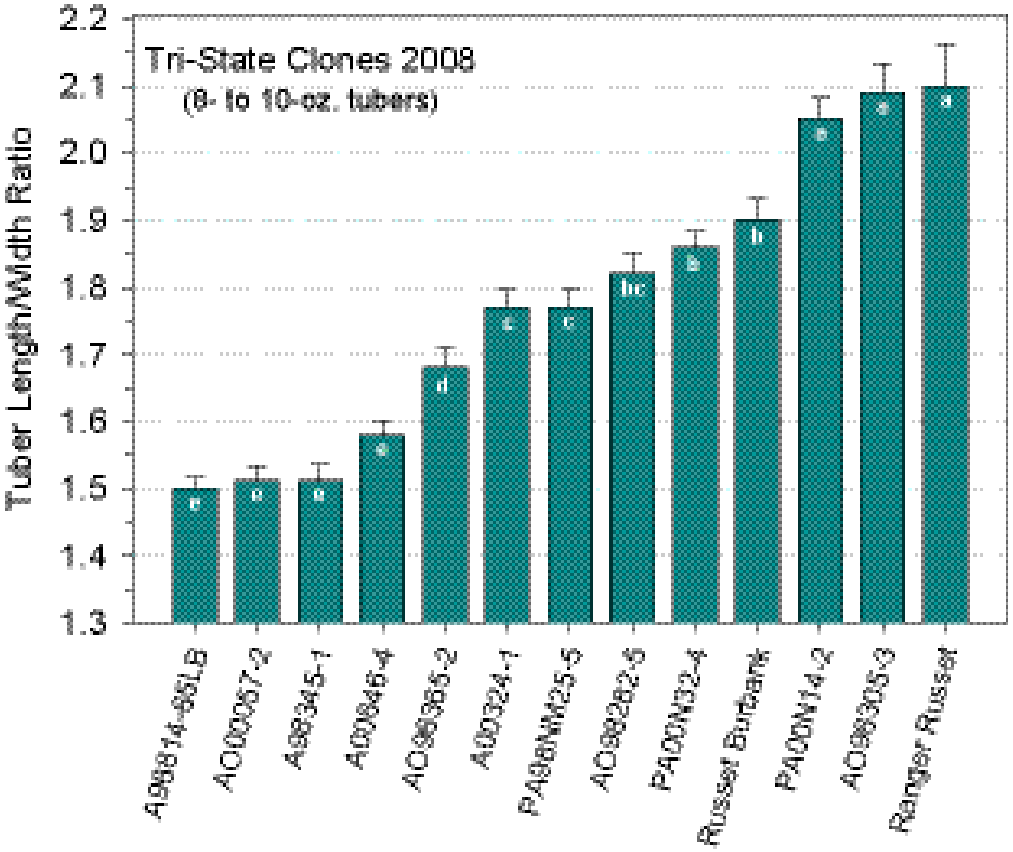
Tuber Shape and Associated French Fry Yields

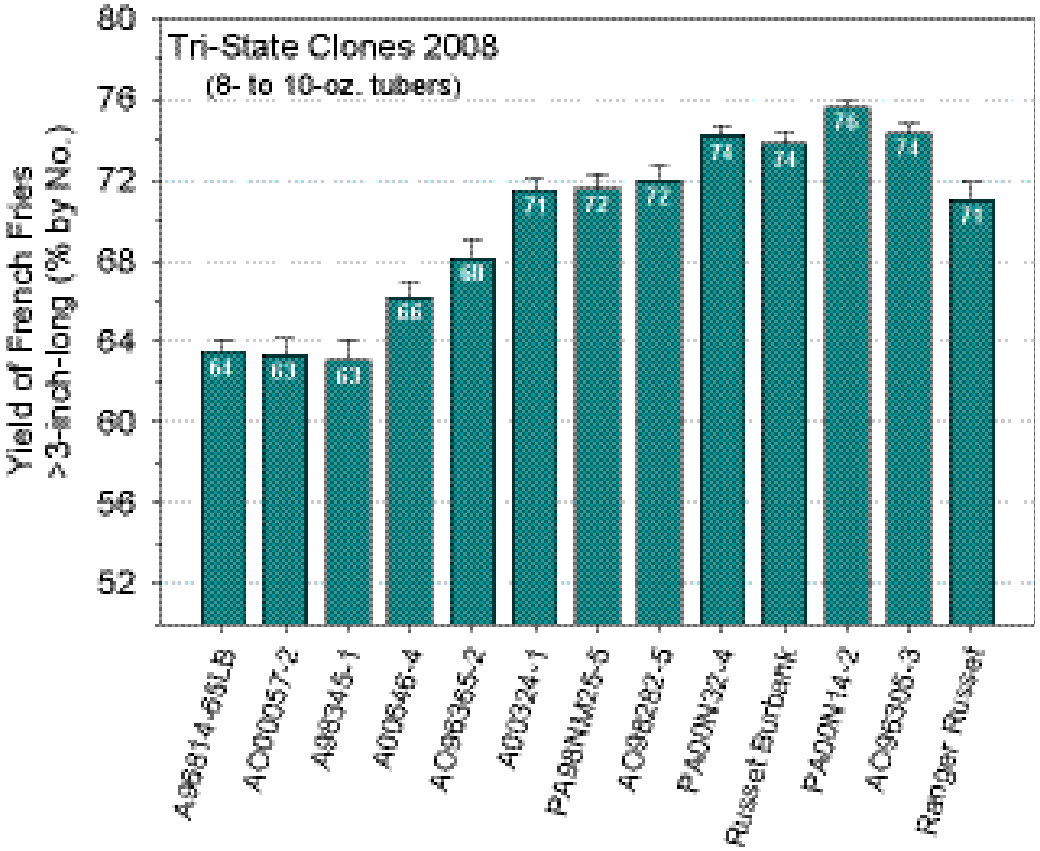
(8- to 10-oz Tubers)

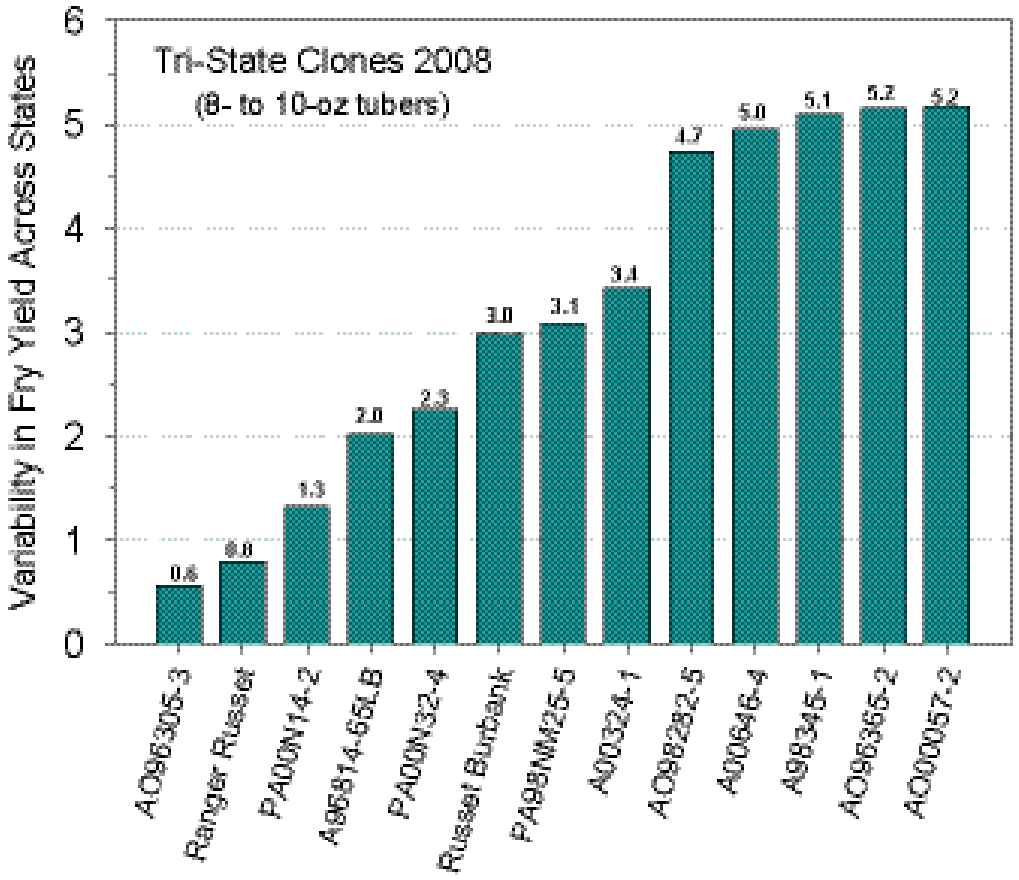
Clone	Length to width ratio			Yield of 3" or longer fries (% by number)		
	WA	ID	OR	WA	ID	OR
1 Ranger Russet	1.76	2.59	1.86	71	70	72
2 Russet Burbank	1.71	2.17	1.83	71	78	73
3 A96814-65LB	1.45	1.56	1.48	61	66	63
4 A98345-1	1.42	1.69	1.43	59	70	60
5 A00324-1	1.60	1.94	1.76	67	75	72
6 A00646-4	1.49	1.78	1.46	63	73	62
7 AO96305-3	1.82	2.44	2.00	74	75	75
8 AO96365-2	1.47	1.94	1.61	62	75	67
9 AO98282-5	1.55	2.08	1.83	66	77	73
10 AO00057-2	1.37	1.67	1.48	57	70	63
11 PA98NM25-5	1.61	1.82	1.89	67	74	74
12 PA00N14-2	1.82	2.35	1.99	74	77	76
13 PA00N32-4	1.73	2.01	1.85	71	77	74
Average	1.60	2.00	1.73	66	74	70



2008 Late Harvest Tri-State Trial







Relative ranking of clones in the Late Season Tri-State Trial for variability in yield of French fries from 8- to 10-oz tubers. Variability is expressed as the standard deviation (calculated across ID, WA and OR production sites) for the yield of fries ≥3 inches in length (% by number) from 8- to 10-oz tubers. High values reflect more variation in tuber shape and thus fry yield from state to state. For example, AO00057-2 had a length to width ratio of 1.51 (see previous page), resulting in 63% of the tuber yielding French fries that were ≥3 inches in length. However, tuber shape varied across production regions (above), resulting in fry yields ranging from 57.8% to 68.2% (63 ±5.2%).

Previous page: Tuber length to width ratios and the associated percentage yield of fries.

Left (top): Bars with same letter are not significantly different (P≤0.01).

2008 Late Harvest Tri-State Trial

Entries Retained from the 2007 Trials Currently in the Tri-State Trial

Harvested fall of 2007
Held at 48° F until December 26, 2007
Stored at 44° F until analysis

A96814-65LB, A98345-1, AO96305-3, AO96365-2, and PA00N14-2 were retained from the 2007 Tri-State trial. All clones fried as light as, or lighter than, Ranger Russet and Russet Burbank. All entries also had lower reducing sugars than the check cultivars. On average, differences in color of fries from bud to stem end were unacceptable for PA00N14-2, Ranger Russet, and Russet Burbank. A98345-1 tubers from Oregon produced fries with considerable mottling. Sprout lengths ranged from 1.5 to 7 inches following storage for seven months.

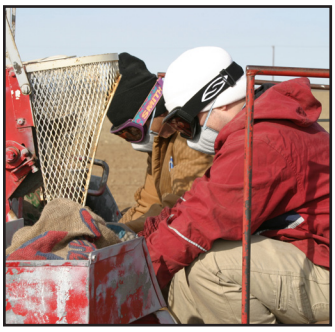
		PHOTOVOLT READING				USDA	% REDUCING SUGAR			Sprouting	
	Clone	stem	bud	avg	DIFF	COLOR	stem	bud	avg	percent	length
	Washington										
1	Ranger Russet	24.1	34.4	29.3	10.3	2	2.1	1.0	1.6	100	6"
2	Russet Burbank	35.2	38.9	37.1	6.2	0	1.0	0.8	0.9	100	7"
3	A96814-65LB	47.1	53.9	50.5	6.8	0	0.5	0.5	0.5	100	4"
4	A98345-1	37.9	35.8	36.9	7.6	0	0.8	0.9	0.9	100	4"
5	AO96305-3	46.5	50.0	48.2	6.1	0	0.5	0.5	0.5	100	5"
6	AO96365-2	34.5	44.9	39.7	10.4	0	1.0	0.6	0.8	100	5"
7	PA00N14-2	43.8	50.5	47.2	6.8	0	0.6	0.5	0.6	100	6"
			LSD 0.05	*4.1*	*4.3*						
	Average	38.5	44.1	41.3	7.7	0.3	0.9	0.7	0.8	100	
	Idaho										
1	Ranger Russet	31.1	36.0	33.5	8.7	0	1.3	0.9	1.1	100	4"
2	Russet Burbank	33.0	45.3	39.2	12.3	0	1.1	0.6	0.8	100	1 1/2"
3	A96814-65LB	48.2	53.3	50.8	6.3	0	0.5	0.6	0.5	100	3"
4	A98345-1	40.7	47.4	44.1	7.3	0	0.7	0.5	0.6	100	6"
5	AO96305-3	48.6	53.5	51.0	7.2	0	0.5	0.6	0.5	100	4"
6	AO96365-2	40.0	48.3	44.1	8.3	0	0.7	0.5	0.6	100	3 1/2"
7	PA00N14-2	43.3	53.2	48.2	10.0	0	0.6	0.6	0.6	100	3"
			LSD 0.05	*3.3*	*5.5*						
	Average	40.7	48.1	44.4	8.6	0.0	0.8	0.6	0.7	100	
	Oregon										
1	Ranger Russet	22.1	38.4	30.2	16.3	2	2.4	0.8	1.6	100	4"
2	Russet Burbank	22.2	40.0	31.1	17.8	2	2.3	0.7	1.5	100	5"
3	A96814-65LB	39.6	48.5	44.1	9.3	0	0.7	0.5	0.6	100	4"
4	A98345-1	27.8	30.6	29.2	7.8	1	1.6	1.3	1.5	100	6"
5	AO96305-3	43.1	49.5	46.3	9.4	0	0.6	0.5	0.6	100	4"
6	AO96365-2	24.4	31.7	28.1	7.9	2	2.0	1.2	1.6	100	3"
7	PA00N14-2	28.5	44.6	36.6	18.4	1	1.5	0.6	1.1	100	4"
			LSD 0.05	*3.1*	*5.2*						
	Average	29.7	40.5	35.1	12.4	1.1	1.6	0.8	1.2	100	

Date test performed:

Washington	May 5
Idaho	May 7
Oregon	May 9

ALL IN A DAY'S WORK...










2008 Early Harvest Regional Trial

Location: WSU Research Center - Othello, WA
Planting Date: April 3
Harvest Date: July 31
Fertility: 192-268-350
Vine Kill Date: July 28
Days Grown: 117
In-Row Spacing: 14 in.

Regional trials are conducted in five to six western states, including Washington. Entries in the Regional Trial are chosen by a coordinating committee and are grown for both early (Early Regional) and full (Late Regional) season harvest. The 2008 early harvest trial compared 2 local reference varieties to 12 new clones on the WSU Othello Research Station. The Columbia Basin experienced a cooler-than-normal growing season this year. Some clones and cultivars fared well, while others produced low yields. The following is a summary of the Washington field and post-harvest results. See also: grading comments and merit scores near front of book.

Fresh Market Standout(s): A0008-1TE
Process Market Standout(s): PA99N82-4, A0008-1TE, PA99N2-1.
Potential Discards(s): AOTX95265-4Ru, AOTX95265-3Ru, AC96052-1Ru. (All had low econ values)

Standcounts

- **40 Day**
  Fast emergence: All entries were slow to emerge. Russet Burbank (21%), CO98067-7Ru (18%).
  Slow emergence: Over half of the entries were 1% emerged or less at 40 DAP due to a cool spring.

- **50 Day**
  Full emergence: AOTX95265-2ARu and CO98067-7Ru (99%), Ranger Russet (96%). Most of the entries had < 95% of plants emerged at 50 DAP.
  Poor emergence: A97066-42LB (38%), AC96052-1Ru (71%), PA99N2-1 and PA99N82-4 (75%).

Plant and Tuber Growth & Development

- **Above Ground Stem Number Per Plant**
  Most: A97066-42LB (4.5) and PA99N2-1 (3.4).
  Least: AOTX95265-2ARu (1.9).

- **Average Tuber Number Per Plant**
  Most: CO98067-7Ru (9.4), AO96141-3 (8.2), and PA99N2-1 (8.0).
  Least: AOTX95265-4Ru (4.8) and A97066-42LB (4.9), and Ranger Russet (5.3).

- **Average Tuber Weight (oz)**
  Largest: Ranger Russet (6.2), Russet Burbank (5.9), A0008-1TE and PA99N82-4 (5.4).
  Smallest: CO98067-7Ru (3.6), AC96052-1Ru (3.8) and AOTX95265-4Ru (3.9).

- **Undersized Tubers (< 4 oz)**
  Most: CO98067-7Ru and AC96052-1Ru.
  Fewest: Ranger Russet and A97066-42LB.

Yield and Economic Data

- **Total Yield and U.S. #1 Yield**
  Highest: PA99N82-4, highest total (420 CWT/) and U.S. #1 yield (342 CWT/A). A0008-1TE had the second highest U.S. #1 yield with 327 CWT/A.
  Lowest: AOTX95265-4Ru, lowest total and U.S. #1 yield (184 CWT and 104 CWT). AC96052-1Ru had the second lowest U.S. #1 yield with 144 CWT/A.

- **% U.S. #1's (greater than 4 oz)**
  Highest: Ranger Russet (87%).
  Lowest: AC96052-1Ru and CO98067-7Ru (53%) and AOTX95265-4Ru (57%).

- **Carton Yield (100 to 50 Count (7 to 18 oz U.S. #1 Tubers))**
  Highest: A0008-1TE (158 CWT/A).
  Lowest: AC96052-1Ru, AOTX95265-4Ru, and CO98067-7Ru.

- **Gross Return ($/acre)**
  Fresh Market Highest: A0008-1TE.
  Fresh Market Lowest: AC96052-1Ru, and AOTX95265-4Ru.
  Process Market Highest: PA99N82-4, A0008-1TE, and PA99N2-1.
  Process Market Lowest: AOTX95265-3Ru and AOTX95265-4Ru.

Tuber Defects (40 tuber sample of 8-12 oz tubers)

- **External Defects**
  Notable Defects: Russet Burbank had the highest percentage of knobs (5%), followed by A97066-42LB (2%). All other entries had little to no external defects.

- **Internal Defects**
  Notable Defects: Russet Burbank had the only occurrence of brown center (11%). PA99N82-4 had the highest occurrence of internal brown spot (5%), followed by AOTX95265-3Ru (3%).

- **Bruise**
  Highest Blackspot: CO98368-2Ru (27%), Ranger Russet and CO97087-2Ru (25%), Russet Burbank (24%) and AOTX95265-2ARu (23%). All other entries had 20% or less.
  Highest Shatter: A97066-42LB (31%), A0008-1TE (18%), and Russet Burbank (16%).

2008 Early Harvest Regional Trial

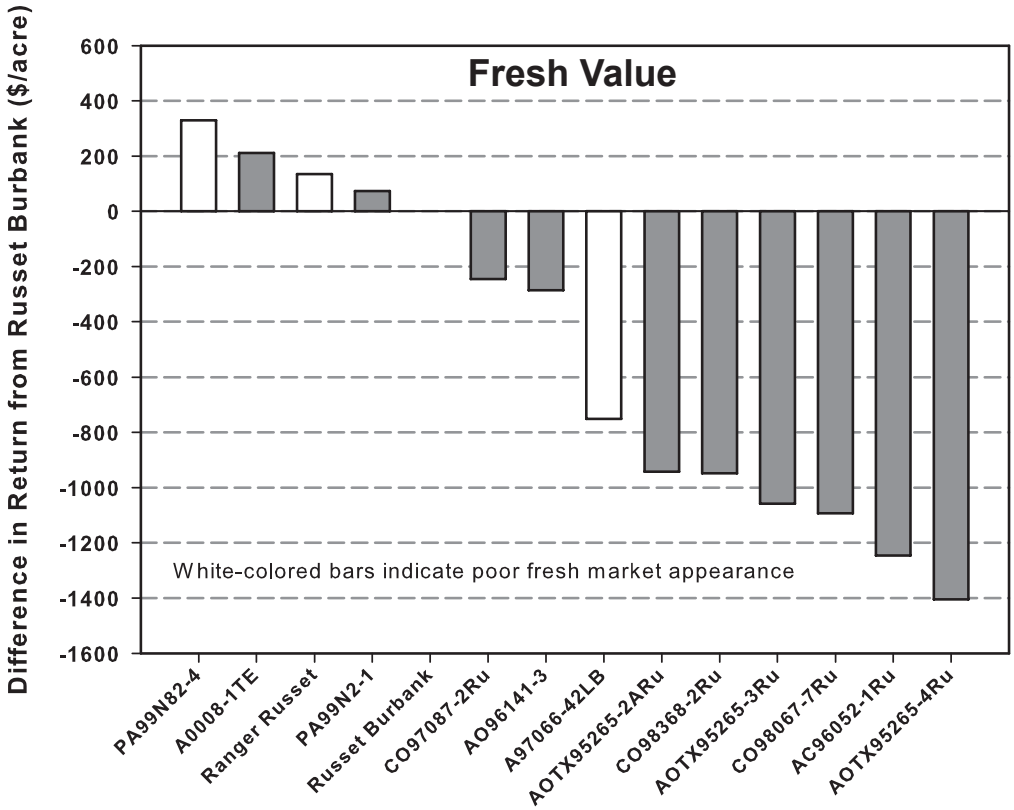
Summaries

ENTRY	TOTAL YIELD			US # 1's* > 4 oz	US # 2's* > 4 oz	Culls* & < 4 oz	CARTON YIELD 100-50 count (US 1's 7-18 oz)		PROCESS YIELD US 1's and 2's > 6 oz	
	CWT/A	STATS**	Tons/A	% of Total Yield			% of Total Yield	Tons/A	% of Total Yield	Tons/A
Ranger Russet	328	*BCD*	16.4	87	1	13	52	8.6	67	11.0
Russet Burbank	363	*ABC*	18.1	71	4	24	41	7.4	54	9.9
A0008-1TE	405	*A*	20.2	81	1	18	39	7.9	53	10.8
A97066-42LB	245	*EF*	12.2	75	0	24	35	4.3	47	5.7
AC96052-1Ru	274	*DE*	13.7	53	0	47	9	1.3	18	2.5
AO96141-3	385	*AB*	19.2	73	0	26	27	5.1	39	7.5
AOTX95265-2ARu	247	*E*	12.4	69	0	30	24	3.0	33	4.1
AOTX95265-3Ru	244	*EF*	12.2	67	0	33	19	2.4	32	4.0
AOTX95265-4Ru	184	*F*	9.2	57	0	43	14	1.3	22	2.0
CO97087-2Ru	381	*AB*	19.0	76	2	21	27	5.1	42	8.0
CO98067-7Ru	335	*BCD*	16.8	53	0	47	8	1.3	16	2.7
CO98368-2Ru	301	*CDE*	15.0	61	3	36	14	2.1	29	4.3
PA99N2-1	407	*A*	20.4	78	1	21	34	6.9	49	10.0
PA99N82-4	420	*A*	21.0	81	1	18	38	8.0	55	11.5

ENTRY	US # 1 YIELD			4-7 oz*	7-14 oz*	> 14 oz*	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	> 4 oz CWT/A	STATS**	> 4 oz Tons/A	%				% HH	% BC	% IBS
Ranger Russet	284	*ABC*	14.2	38	57	6	1.085	0	0	0
Russet Burbank	258	*C*	12.9	43	47	10	1.080	0	11	0
A0008-1TE	327	*AB*	16.3	52	47	1	1.081	0	0	0
A97066-42LB	185	*D*	9.2	53	47	0	1.090	0	0	0
AC96052-1Ru	144	*DE*	7.2	82	18	0	1.086	0	0	0
AO96141-3	282	*BC*	14.1	62	33	4	1.093	0	0	0
AOTX95265-2ARu	172	*D*	8.6	66	33	1	1.076	0	0	0
AOTX95265-3Ru	162	*DE*	8.1	71	28	2	1.075	0	0	3
AOTX95265-4Ru	104	*E*	5.2	76	24	0	1.075	0	0	0
CO97087-2Ru	291	*ABC*	14.6	65	34	1	1.093	0	0	0
CO98067-7Ru	178	*D*	8.9	86	14	0	1.078	0	0	0
CO98368-2Ru	185	*D*	9.2	77	23	0	1.085	0	0	0
PA99N2-1	318	*ABC*	15.9	56	44	0	1.080	0	0	0
PA99N82-4	342	*A*	17.1	52	45	4	1.082	0	0	5

ENTRY	30 DAY STAND	40 DAY STAND	50 DAY STAND	STEMS PER PLANT	AVERAGE TUBER WEIGHT	AVERAGE TUBER 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	0	7	96	2.1	6.2	4.6	2	4	25	8
Russet Burbank	0	21	91	2.0	5.9	5.3	2	3	24	16
A0008-1TE	0	0	85	2.7	5.4	6.5	3	3	15	18
A97066-42LB	0	0	38	4.5	5.0	4.2	2	3	17	31
AC96052-1Ru	0	0	71	2.6	3.8	6.2	3	3	8	3
AO96141-3	0	0	90	3.0	4.8	7.0	3	4	3	5
AOTX95265-2ARu	0	9	99	1.9	4.4	4.8	3	3	23	3
AOTX95265-3Ru	0	3	93	2.3	4.3	4.9	3	3	15	10
AOTX95265-4Ru	0	1	88	2.6	3.9	4.1	3	3	5	3
CO97087-2Ru	0	1	94	2.6	4.9	6.7	3	3	25	6
CO98067-7Ru	0	18	99	2.5	3.6	8.1	4	4	11	5
CO98368-2Ru	0	1	85	2.5	4.3	6.1	3	3	27	10
PA99N2-1	0	0	75	3.4	5.2	6.8	2	2	20	8
PA99N82-4	0	0	75	2.6	5.4	6.8	2	2	18	5

* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5% level using Fisher's LSD Test



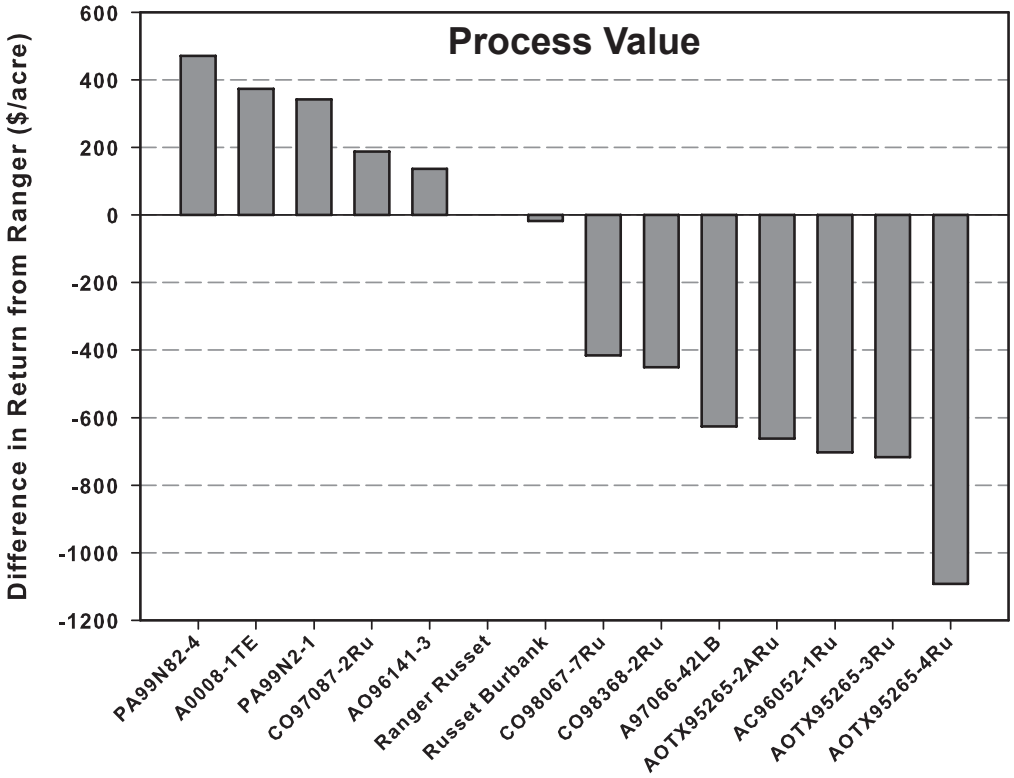
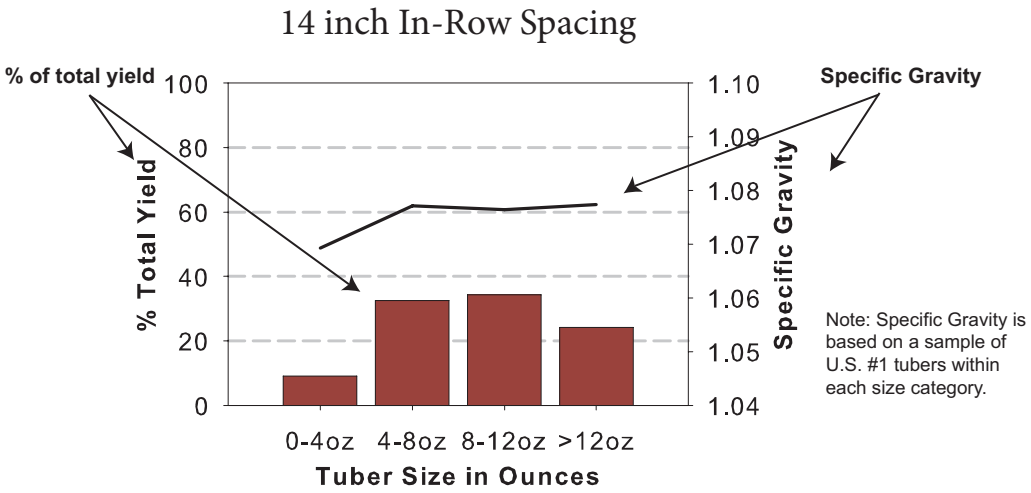
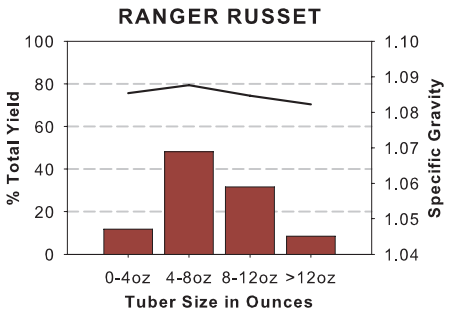


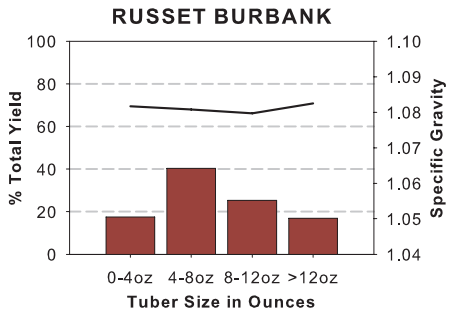
Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Burbank calculated by subtracting the gross return of Russet Burbank ($1969) from the gross return of the particular entry. **Figure 2 (Bottom).** Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet ($1978) from the gross return of the particular entry.

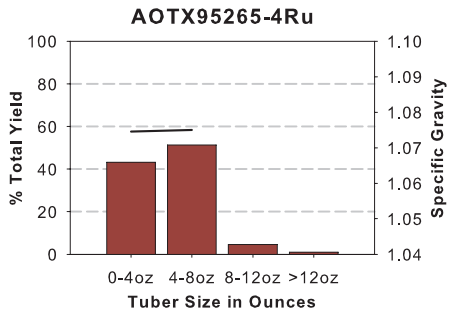
2008 Early Harvest Regional Trial

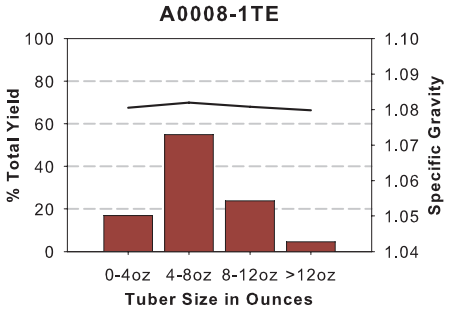
Tuber Yield and Specific Gravity Distributions

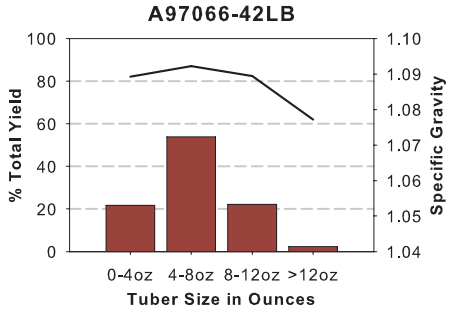


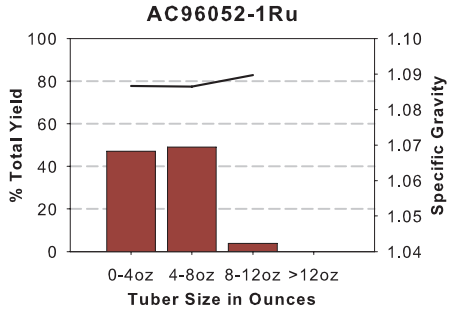


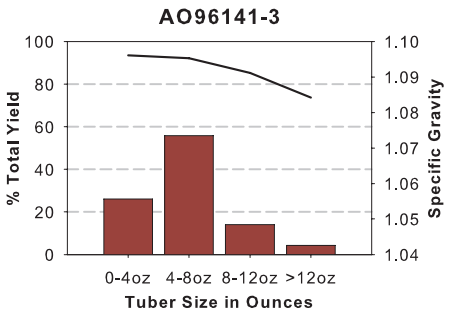


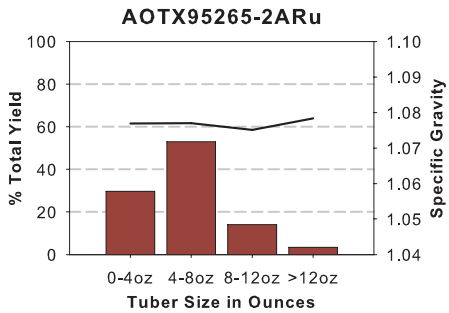


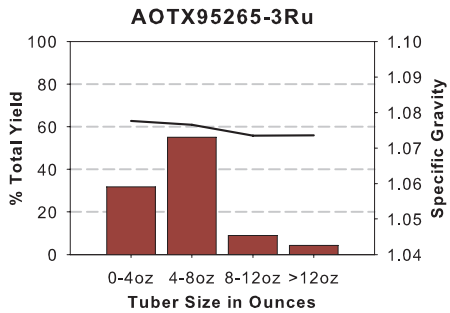


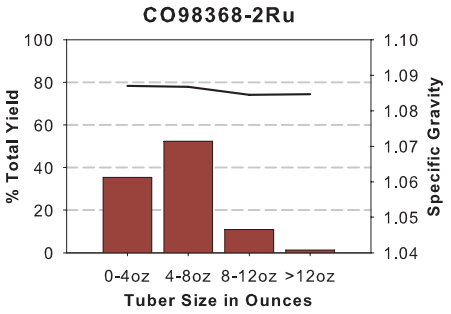


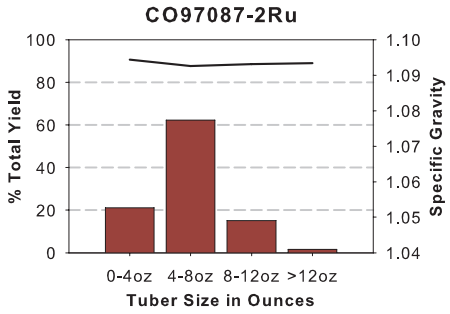


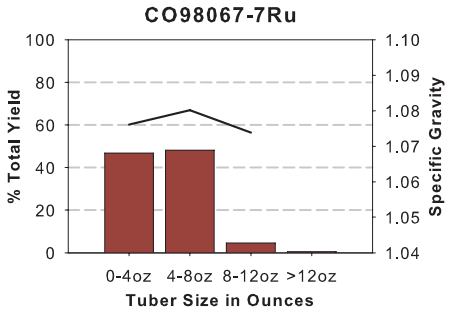


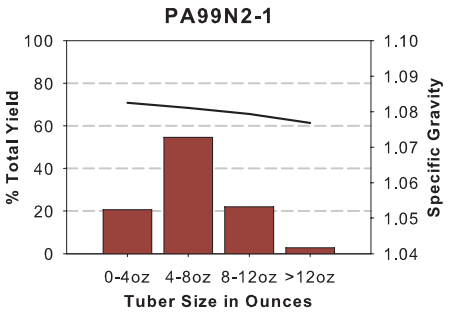


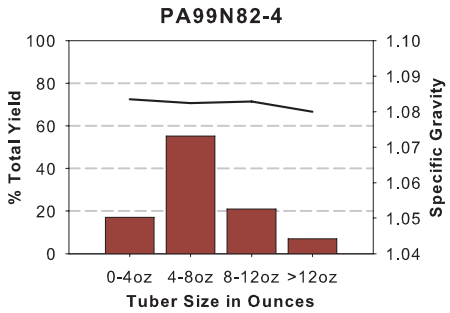


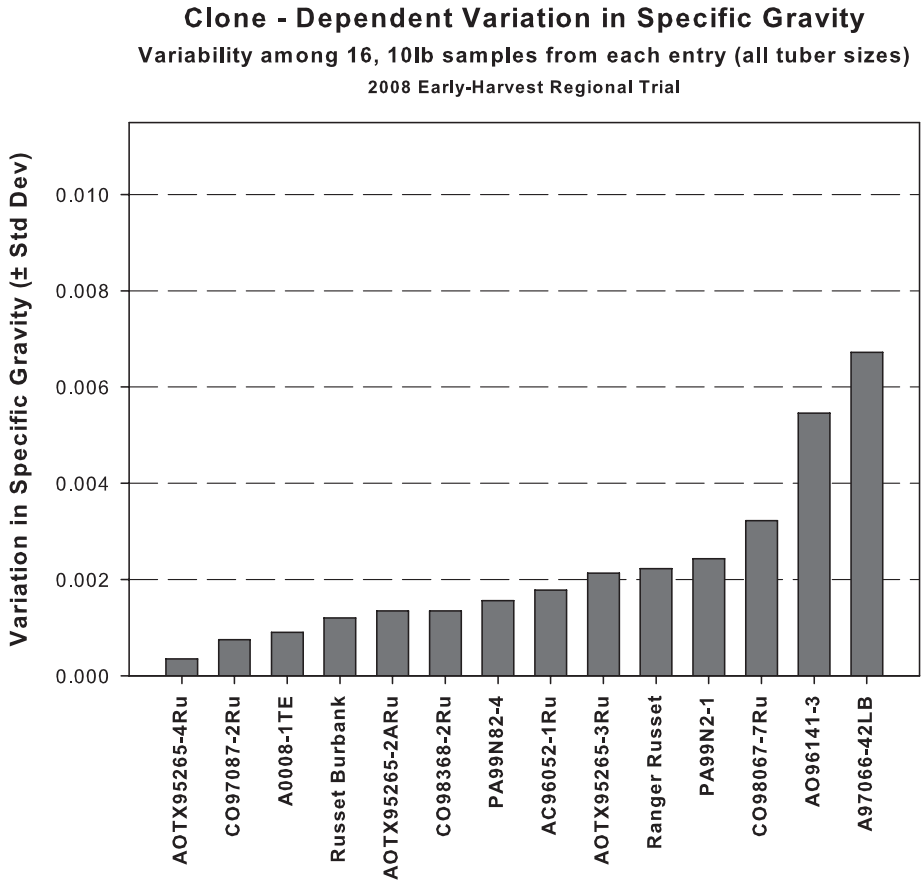

CO98368-2Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

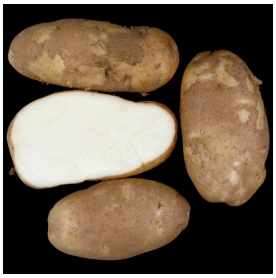
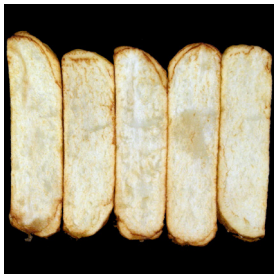
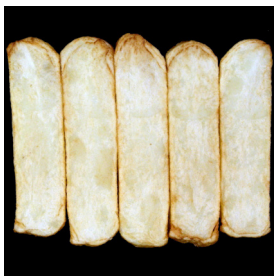
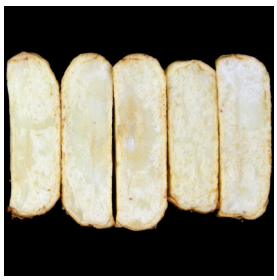

CO97087-2Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

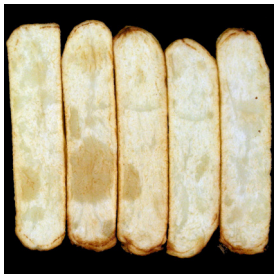
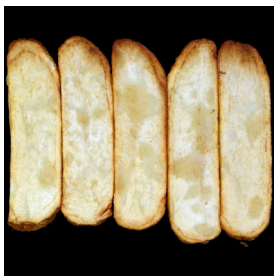
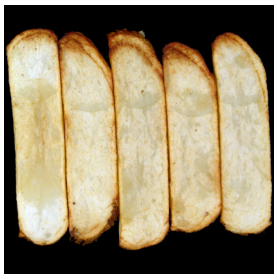
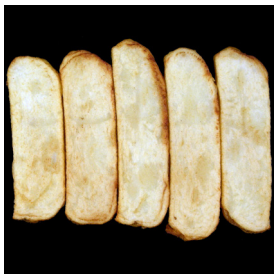

CO98067-7Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

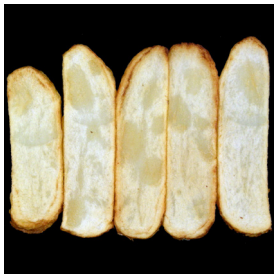
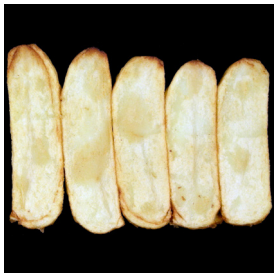
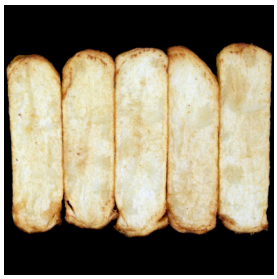

PA99N2-1
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


PA99N82-4
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


Clone - Dependent Variation in Specific Gravity
Variability among 16, 10lb samples from each entry (all tuber sizes)
2008 Early-Harvest Regional Trial
Variation in Specific Gravity (± Std Dev)
AOTX95265-4Ru
CO97087-2Ru
A0008-1TE
Russet Burbank
AOTX95265-2ARu
CO98368-2Ru
PA99N82-4
AC96052-1Ru
AOTX95265-3Ru
Ranger Russet
PA99N2-1
CO98067-7Ru
AO96141-3
A97066-42LB

Tubers	Fries	WA Early Harvest Regional Trial Comments
Ranger Russet		
		**Tubers:** Oblong to long tubers. Moderately heavy russet with poor skin set; moderate eye depth. **Fry Color:** Light, uniform.
Russet Burbank		
		**Tubers:** Oblong tubers. Moderate russet with poor skin set; moderate eye depth. **Fry Color:** Light, uniform.
A0008-1TE		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
A97066-42LB		
		**Tubers:** Oblong tubers. Light russet with poor skin set; shallow eyes. **Fry Color:** Light, non-uniform.
AC96052-1Ru		
		**Tubers:** Oblong tubers. Moderately heavy russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Regional Trial Comments
AO96141-3		
		**Tubers:** Oblong to long tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
AOTX95265-2ARu		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
AOTX95265-3Ru		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
AOTX95265-4Ru		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
CO97087-2Ru		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Regional Trial Comments
CO98067-7Ru		
		**Tubers:** Oblong to long tubers. Light russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
CO98368-2Ru		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
PA99N2-1		
		**Tubers:** Round to oblong tubers. Moderate russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.
PA99N82-4		
		**Tubers:** Round to oblong tubers. Moderately heavy russet with poor skin set; shallow eyes. **Fry Color:** Light, uniform.

2008 Early Harvest Regional Trial

Postharvest Evaluation

The 2008 Early Regional Trial consisted of 3 cultivars and 12 numbered lines. All entries fried light with USDA ratings of "0". Fry color was acceptably uniform from bud to stem end.

	Clone	PHOTOVOLT Stem	Bud	Average	DIFFERENCE* STEM - BUD	USDA COLOR
1	Ranger Russet	46.2	45.6	45.9	3.2	0
2	Russet Burbank	48.1	44.9	46.5	4.0	0
3	Russet Norkotah	42.6	48.2	45.4	6.3	0
4	A0008-1TE	52.8	51.3	52.1	2.7	0
5	A97066-42LB	45.2	44.9	45.0	5.2	0
6	AC96052-1Ru	54.3	52.0	53.2	3.3	0
7	AO96141-3	54.1	49.5	51.8	5.2	0
8	AOTX95265-2ARu	43.4	46.8	45.1	4.7	0
9	AOTX95265-3Ru	38.7	45.6	42.1	7.1	0
10	AOTX95265-4Ru	44.7	48.4	46.5	6.1	0
11	CO97087-2Ru	50.7	46.8	48.8	4.4	0
12	CO98067-7Ru	44.2	48.4	46.3	4.8	0
13	CO98368-2Ru	45.0	48.9	46.9	5.3	0
14	PA99N2-1	48.6	48.0	48.3	3.9	0
15	PA99N82-4	45.8	45.7	45.8	4.7	0
			LSD 0.05	*2.7*	*2.9*	
	Average	46.9	47.7	47.3	4.7	0

* Average of 12 individual tuber absolute differences

Planting date: April 3
Harvest date: July 31
Fried on: August 4

Potato research is a team event. We greatly appreciate those who contributed to our efforts during 2008!

2008 Late Harvest Regional Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 9 Vine Kill Date: Sept 12
Harvest Date: Sept 23 Days Grown: 158
Fertility: 192-268-350 In-Row Spacing: 10 in.

Regional trials are conducted in five to six states in the western region of the United States, including Washington. Entries in the Regional Trial are chosen by a coordinating committee and are grown for both early (Early Regional) and full (Late Regional) season harvest. This year's trial included 2 local reference varieties and 10 new clones. The Columbia Basin experienced a cooler-than-normal growing season this year. Some clones and cultivars fared well, while others produced low yields. The following is a summary of the Washington field and postharvest results. For additional information, see the grading comments and merit scores near front of book.

Fresh market standout(s): A0008-1TE.
Process Market Standout(s): PA99N2-1, PA99N82-4 (may be too round for fries), A0008-1TE, and AO96141-3.
Potential Discards(s): AOTX95265-4Ru (low specific gravity, low yield, low economic value) and CO98067-7Ru (low specific gravity).

Standcounts

- **30 Day**
  No entries had emerged at 30 DAP due to a cool spring.

- **50 Day**
  Full emergence: Russet Burbank, A0008-1TE, AO96141-3, AOTX95265-4Ru, CO97087-2Ru, and CO98067-7Ru were > 95% emerged.
  Worst emergence: A97066-42LB and PA99N2-1 (84%); CO98368-2Ru (85%).

Plant and Tuber Growth & Development

- **Above Ground Stem Number Per Plant**
  Most: CO98067-7Ru (3.3) and CO97087-2Ru (3.2).
  Least: A97066-42LB (1.2) and Ranger Russet (1.4).

- **Average Tuber Number Per Plant**
  Most: CO98067-7Ru (10.3), CO97087-2Ru (9.2), and AC96052-1Ru (9.1).
  Least: Ranger Russet (5.4), A97066-42LB (6.0), and AOTX95265-4Ru (6.2).

- **Average Tuber Weight (oz)**
  Largest: Ranger Russet (9.6), PA99N82-4 and A97066-42LB each had (9.4).
  Smallest: AC96052-1Ru, CO97087-2Ru, and CO98368-2Ru (5.8).

- **Undersized Tubers (< 4 oz)**
  Most: CO98067-7Ru (111 CWT/A) and AC96052-1Ru (103 CWT/A).
  Least: A97066-42LB, Ranger Russet, and PA99N82-4 (all < 47 CWT/A).

Yield and Economic Data

- **Total and Market Yield**
  Highest: PA99N2-1 had the highest total and market yields (775 CWT/A and 689 CWT/A, respectively).
  Lowest: AOTX95265-4Ru had the lowest total and market yield (495 CWT/A and 392 CWT/A, respectively).

- **% Market Yield Greater Than 6 oz.**
  Highest: A97066-42LB, PA99N2-1, and PA99N82-4 (all > 77%).
  Lowest: AC96052-1Ru, CO98368-2Ru, and CO97087-2Ru (all 60% or less).

- **Carton Yield (100 to 50 Count (7 to 18 oz US#1 Tubers))**
  Highest: A0008-1TE (> 388 CWT/A).
  Lowest: AC96052-1Ru (236 CWT/A).

- **Gross Return ($/acre)**
  Fresh Market Highest: A0008-1TE and CO98067-7Ru.
  Fresh Market Lowest: AC96052-1Ru, CO98368-2Ru, and AOTX95265-4Ru.
  Process Market Highest: PA99N2-1, PA99N82-4, and A0008-1TE.
  Process Market Lowest: CO98368-2Ru, Russet Burbank, and AOTX95265-4Ru.

Tuber Defects (40 tuber sample of 8-12 oz tubers)

- **External Defects**
  Notable Defects: Russet Burbank had 7% knobs. Ranger Russet (6%) and AOTX95265-4Ru (5%) had the highest percentage of malformed tubers. PA99N82-4 had 6% growth cracks. A97066-42LB had 5% green tubers.

- **Internal Defects**
  Notable Defects: Most entries were free of internal defects. Russet Burbank and AOTX95265-4Ru each had 5% hollow heart and Russet Burbank 8% brown center. A0008-1TE and AO96141-3 each had 3% internal brown spot.

- **Bruise**
  Highest Blackspot: Ranger Russet (53%) and AC96052-1Ru (38%).
  Lowest Blackspot: CO97087-2Ru (13%).
  Highest Shatter: PA99N82-4 (95%) and A97066-42LB (69%).
  Lowest Shatter: CO97087-2Ru, CO98067-7Ru, and AOTX95265-4Ru (all < 36%).

2008 Late Harvest Regional Trial

Postharvest Information

- **Overall Postharvest Rating**
  Highest scoring clones: AC96052-1Ru, CO97087-2Ru, PA99N82-4, AO96141-3
  Lowest scoring clones: AOTX95265-4Ru, CO98067-7Ru, Russet Burbank

- **Low temperature Sweetening**
  Most resistant: CO97087-2Ru, AC96052-1Ru, AO96141-3
  Most susceptible: AOTX95265-4Ru, CO98067-7Ru, Russet Burbank, CO98368-2Ru

- **Taste Panel**
  Highest rated: AO96141-3, PA99N82-4, A0008-1TE
  Lowest rated: AOTX95265-4Ru, CO98067-7Ru, CO98368-2Ru

- **Blackspot Bruise Susceptibility**
  Most resistant: CO98067-7Ru, CO98368-2Ru, CO97087-2Ru
  Most susceptible: Ranger Russet, AC96052-1Ru

- **Variability in Tuber Shape & Fry Yield (8- to 10-oz tubers)**
  Lowest L/W: PA99N82-4, PA99N2-1
  Highest L/W: AO96141-3, RR, AOTX95265-4Ru
  Least variable L/W: AO96141-3, RR, AOTX95265-4Ru, A0008-1TE
  Most variable L/W: CO97087-2Ru, CO98067-7Ru, PA99N82-4

Details

- AC96052-1Ru, CO97087-2Ru, PA99N82-4, and AO96141-3 were the highest rated entries, accumulating an average of 35.2, 34.8, 31.7, and 31.6 of 38 possible points, respectively. PA99N82-4 was among the top three scoring clones in the 2007 Tri-State trial and AO96141-3 and CO97087-2Ru were among the top three in the 2007 Regional trial. These clones had significant resistance to low temperature sweetening, producing USDA 1-2 fries (stem end) when stored for 60 days at 40°F from all locations.

- AOTX95265-4Ru, CO98067-7Ru, and RB were the lowest scoring clones, receiving overall scores of 14/38, 19/38, and 21/38, respectively All three clones produced relatively dark fries at harvest and after 60 days storage at all storage temperatures.

- AC96052-1Ru, CO98067-7Ru, PA99N2-1, and RR reconditioned well at 60°F following storage for 60 days at 40°F. Reconditioning A0008-1TE, CO98368-2Ru, and A97066-42LB tubers had the least effect on change in stem end fry color; however, the improvement was sufficient to produce acceptable USDA 1-2 fries from unacceptable USDA 3-4 fries.

- A97066-42LB, AO96141-3, and CO97087-2Ru had the highest average gravities (1.099-1.088). These clones were among the highest rated in the taste panel evaluations, scoring 3.4/5 and up. CO97087-2Ru and AO96141-3 were the two highest ranked clones in the 2007 taste panel evaluations. Comments for AO96141-3 this year included: “best so far” and “good flavor and color”. Also consistent with taste panel results last year, AC96052-1Ru and PA99N82-4 scored among the top six entries this year. Approximately 75% of the variation in taste panel scores was explained by differences in gravity among the clones this year ($P<0.001$).

- Fry colors were non-uniform from bud to stem end for many of the OR-grown clones after 60 days of storage, regardless of storage temperature. On average, AO96141-3, RR, and RB produced non-uniform fry color when stored at 44 and 40°F; the checks (RR and RB) were also non-uniform at 48°F. RR and AO96141-3 varied the most in their ability to retain processing quality during storage for 60 days at 44°F, as affected by production site.

- The specific gravities of CO98067-7Ru and AOTX95265-4Ru were 1.073 and 1.074, respectively; too low for processing contracts. These entries received the lowest taste panel ratings (avg. 2.4/5) with many negative comments (e.g. AOTX95265-4Ru had squash-like flavor).

- CO98067-7Ru was highly resistant to blackspot, with only 5.6% of impacts (stem end) showing bruise (3-state average). CO98368-2Ru, CO97087-2Ru, and AO96141-3 were moderately resistant with 15 to 20% bruise in the controlled impact study. Similar results were obtained for AO96141-3 last year. In contrast, RR, AC96052-1Ru, RB, and A97066-42LB had 90, 80, 67, and 67% of impacts developing bruise, respectively. Bruise severity was greatest in RR (3.5/5) and AC96052-1Ru (2.8/5) and least in CO98067-7Ru (1.1/5) and CO98368-2Ru (1.3/5).

- On average, ID-grown tubers had the highest L/W ratios (1.9) compared with those grown in WA (1.6) and OR (1.7). Similar to their performance in the Tri-State trial last year, the 8- to 10-oz tubers of PA99N82-4 and PA99N2-1 had the lowest L/W ratios (1.3), reflecting round tubers. AO96141-3, RR, AOTX95265-4Ru, and RB had the highest L/W ratios (2.2, 2.0, 1.9, 1.8, respectively), consistent with results from the 2007 trial. CO97087-2Ru, CO98067-7Ru, PA99N82-4 had the greatest variation in L/W ratio of 8- to 10-oz tubers across states. PA99N82-4 was also highly variable last year (Tri-State trial). In contrast, the L/W ratios of AO96141-3, RR, AOTX95265-4Ru, and A0008-1TE were least affected by growing location. The results are consistent with last year for AO96141-3.

- PA99N82-4, and PA99N2-1 produced 8-inch sprouts after 7 months of storage, considerably longer (by about 3 inches) than either check (Ranger or Russet Burbank), indicating relatively short dormancy. In contrast, CO97087-2Ru, A96141-3, and AC96052-1Ru produced sprouts that were 1 to 2 inches shorter than RB and RR.

- On average, ID- and WA-grown tubers produced the lightest fry colors at harvest. When stored at 48°F, the processing quality of ID- and WA-grown tubers improved, while tubers from OR lost quality slightly, characterizing a significant effect of production site on storability. Averaged across the three production sites, the Regional clones retained 100% and 87% of their processing quality (stem end) when stored at 48 and 44°F for 60 days, respectively.

Overall Regional Postharvest Merit Scores

	Clone	Postharvest Merit Scores WA	ID	OR	3 state Average
5	AC96052-1Ru	4.8	4.8	4.3	4.6
8	CO97087-2Ru	4.8	4.5	4.4	4.6
12	PA99N82-4	4.8	4.7	2.9	4.2
6	AO96141-3	4.3	4.2	3.9	4.2
11	PA99N2-1	4.4	4.6	3.1	4.0
3	A0008-1TE	4.6	3.5	3.4	3.8
4	A97066-42LB	4.1	4.0	2.7	3.6
1	Ranger Russet	3.7	4.4	2.7	3.6
10	CO98368-2Ru	3.7	2.6	2.1	2.8
2	Russet Burbank	2.8	3.4	2.1	2.8
9	CO98067-7Ru	2.7	3.1	1.5	2.4
7	AOTX95265-4Ru	2.3	2.5	0.8	1.9
	Average	3.9	3.9	2.8	

2008 Late Harvest Regional Trial

Summaries

ENTRY	TOTAL YIELD (CWT/A)	STATS**	TOTAL YIELD (Tons/A)	US # 1's* > 4 oz % of Total Yield	US # 2's* > 4 oz % of Total Yield	Culls* & < 4 oz % of Total Yield	CARTON YIELD 100-50 count (US 1's 7-18 oz) % of Total Yield	CARTON YIELD (Tons/A)	PROCESS YIELD US 1's and 2's > 6 oz % of Total Yield	PROCESS YIELD (Tons/A)
Ranger Russet	598	*CD*	29.9	79	5	16	45	13.4	75	22.4
Russet Burbank	592	*CD*	29.6	71	4	25	52	15.4	64	19.1
A0008-1TE	621	*CD*	31.0	86	2	13	63	19.4	76	23.5
A97066-42LB	647	*BC*	32.4	84	1	15	51	16.5	78	25.2
AC96052-1Ru	605	*CD*	30.2	79	1	20	39	11.8	55	16.6
AO96141-3	634	*C*	31.7	85	3	12	53	16.8	72	22.8
AOTX95265-4Ru	495	*E*	24.8	79	2	19	50	12.4	64	15.9
CO97087-2Ru	615	*CD*	30.7	82	1	17	48	14.9	60	18.3
CO98067-7Ru	738	*A*	36.9	79	3	18	46	17.1	63	23.2
CO98368-2Ru	542	*DE*	27.1	81	2	18	44	11.9	59	15.9
PA99N2-1	775	*A*	38.8	89	2	10	57	22.3	82	31.6
PA99N82-4	725	*AB*	36.2	87	0	13	49	17.9	79	28.8

ENTRY	US # 1 YIELD > 4 oz (CWT/A)	STATS**	US # 1 YIELD > 4 oz (Tons/A)	4-7 oz* %	7-14 oz* %	> 14 oz* %	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers) % HH	% BC	% IBS
Ranger Russet	470	*DEF*	23.5	18	40	42	1.085	0	0	0
Russet Burbank	423	*EFG*	21.1	22	58	21	1.079	5	8	0
A0008-1TE	532	*CD*	26.6	22	56	22	1.081	0	0	3
A97066-42LB	545	*BCD*	27.2	14	42	43	1.095	0	0	0
AC96052-1Ru	480	*DE*	24.0	44	45	10	1.087	0	0	0
AO96141-3	540	*CD*	27.0	27	48	25	1.096	0	0	3
AOTX95265-4Ru	392	*FG*	19.6	31	52	17	1.071	5	0	0
CO97087-2Ru	505	*CDE*	25.2	40	52	8	1.088	0	0	0
CO98067-7Ru	584	*BC*	29.2	36	51	13	1.072	0	0	0
CO98368-2Ru	437	*EFG*	21.9	42	49	10	1.080	0	0	0
PA99N2-1	689	*A*	34.4	17	48	36	1.083	0	0	0
PA99N82-4	630	*AB*	31.5	13	39	48	1.083	0	0	0

ENTRY	% Dead At Vine Kill	30 DAY STAND (% Emerged)	50 DAY STAND (% Emerged)	STEMS PER PLANT (Above Ground)	AVERAGE TUBER WEIGHT (Ounces)	AVERAGE TUBER NUMBER (Tubers/Plant)	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) SHATTER
Ranger Russet	41	0	93	1.4	9.6	5.4	4	4	53	43
Russet Burbank	90	0	99	1.6	7.2	7.1	4	3	30	55
A0008-1TE	97	0	98	2.2	7.5	7.2	4	3	25	50
A97066-42LB	6	0	84	1.2	9.4	6.0	4	3	28	69
AC96052-1Ru	16	0	92	2.4	5.8	9.1	4	3	38	53
AO96141-3	59	0	96	2.6	7.4	7.5	3	4	28	38
AOTX95265-4Ru	99	0	100	1.8	6.9	6.2	4	4	30	35
CO97087-2Ru	75	0	96	3.2	5.8	9.2	4	3	13	28
CO98067-7Ru	81	0	98	3.3	6.2	10.3	4	2	28	33
CO98368-2Ru	98	0	85	2.5	5.8	8.0	4	3	33	65
PA99N2-1	21	0	84	2.4	8.8	7.6	4	2	23	60
PA99N82-4	30	0	94	1.8	9.4	6.7	4	2	24	95

* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5% level using Fisher's LSD Test

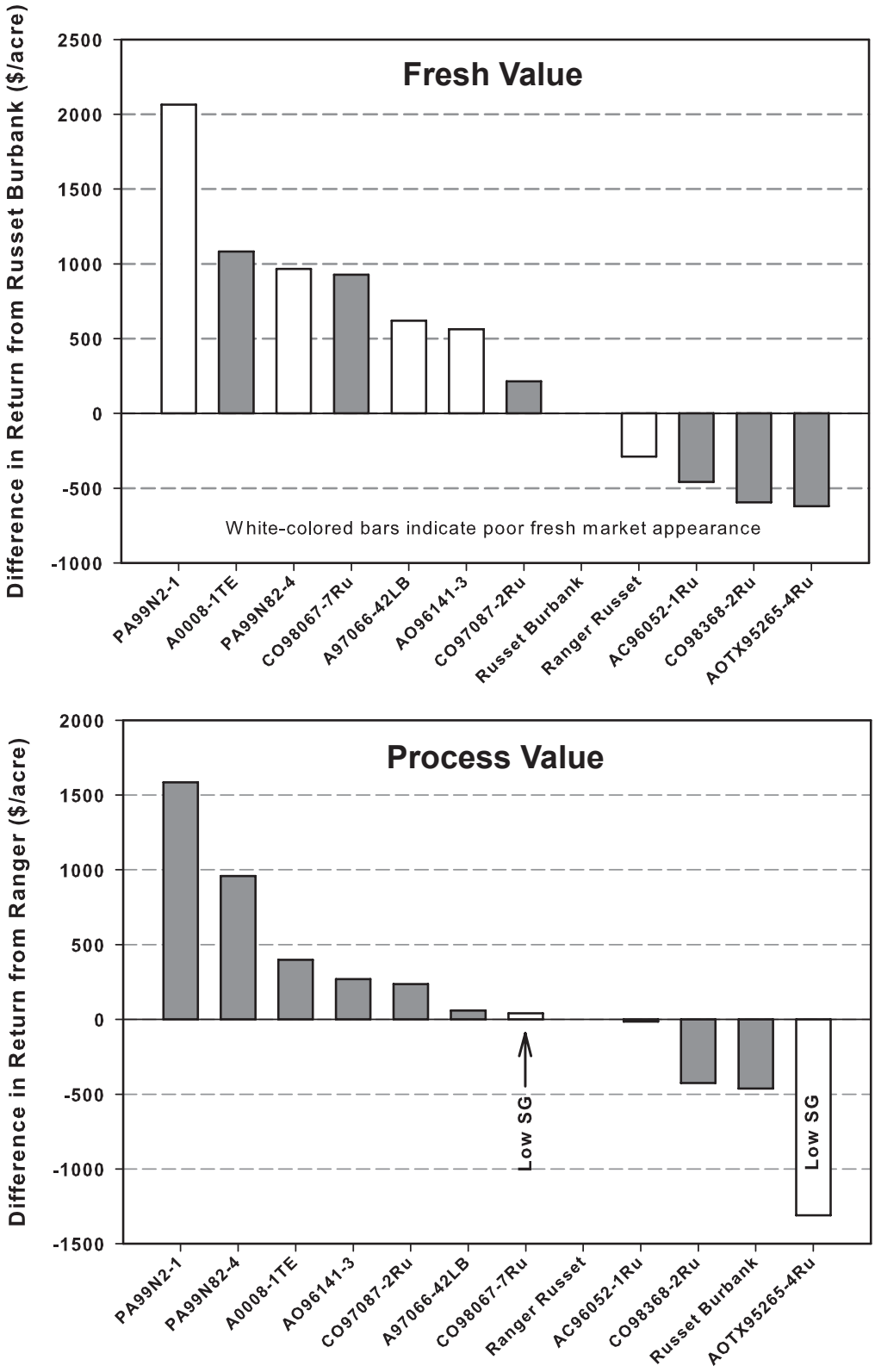
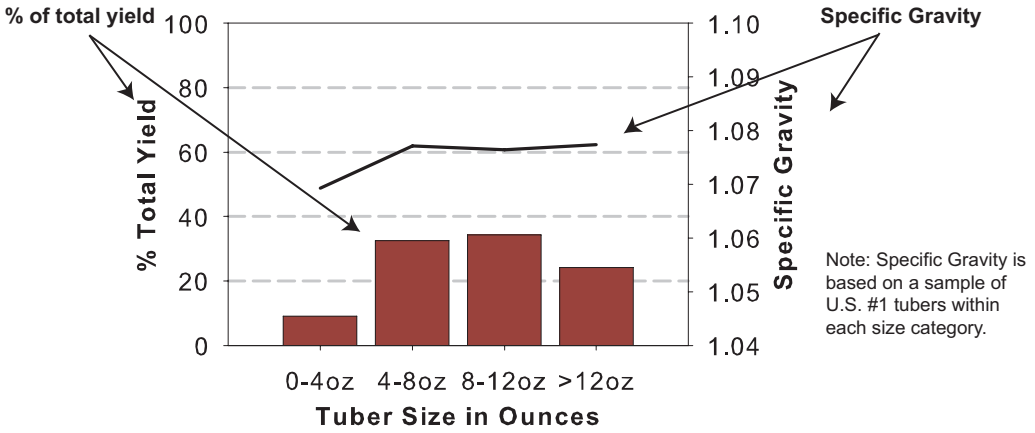


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Burbank calculated by subtracting the gross return of Russet Burbank ($4382) from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape 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 ($3894) 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.

2008 Late Harvest Regional Trial

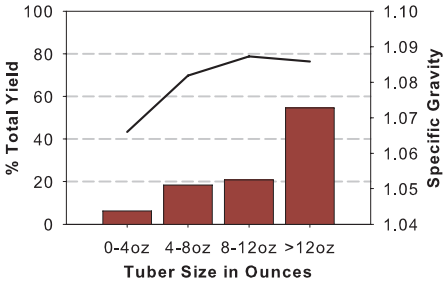
Tuber Yield and Specific Gravity Distributions

10 inch In-Row Spacing

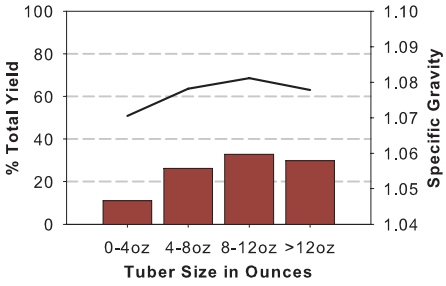


Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

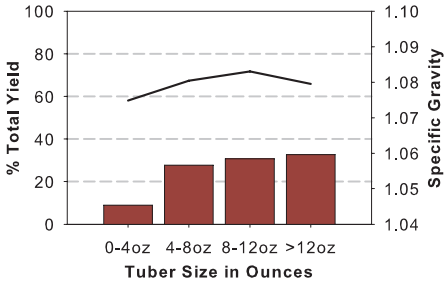
RANGER RUSSET



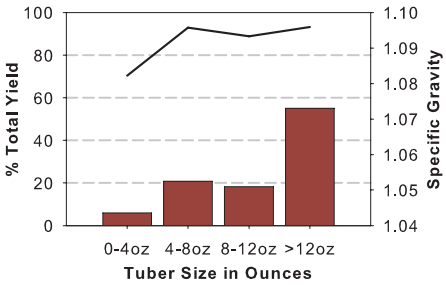
RUSSET BURBANK



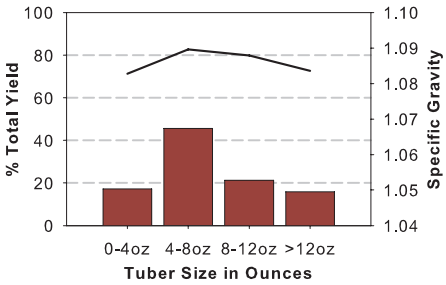
A0008-1TE



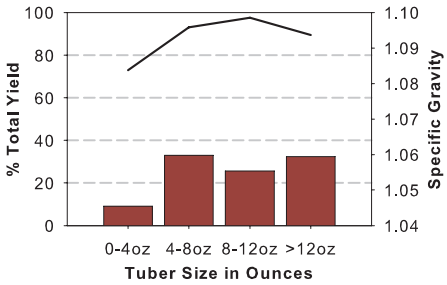
A97066-42LB



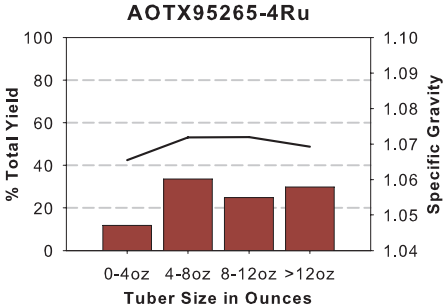
AC96052-1Ru



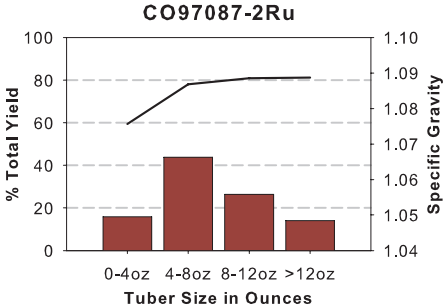
AO96141-3



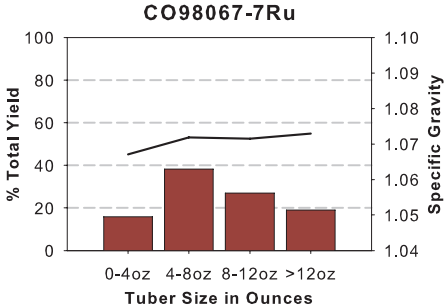
AOTX95265-4Ru

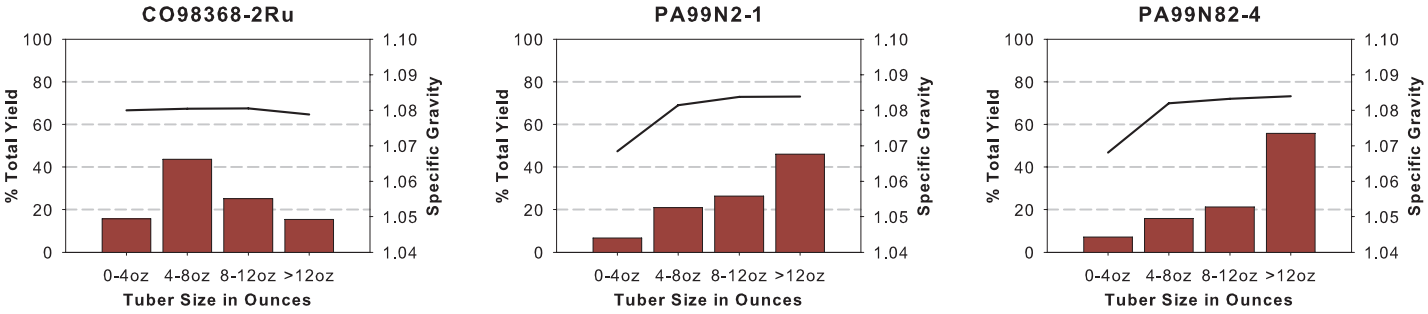


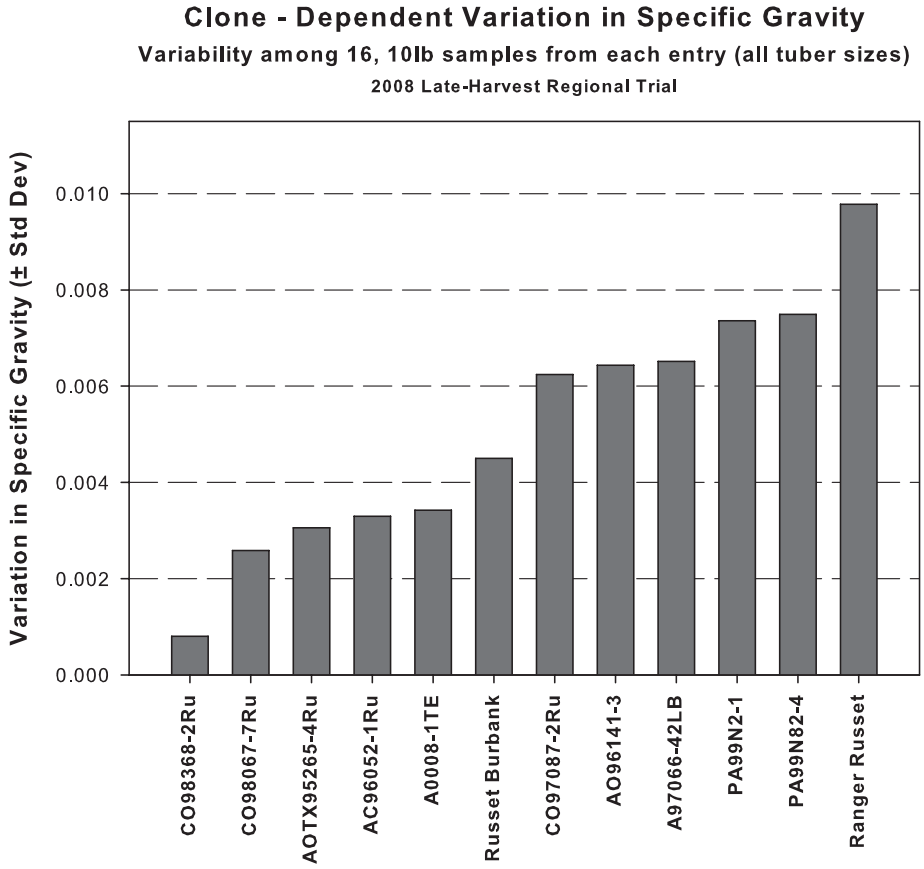
CO97087-2Ru



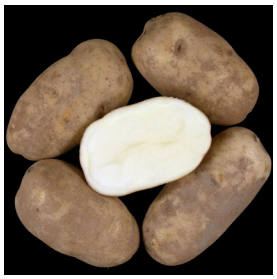
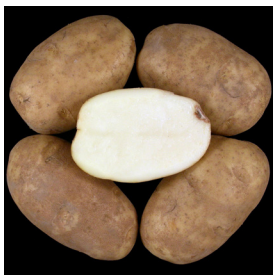
CO98067-7Ru

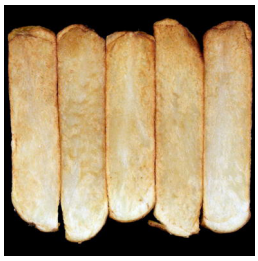
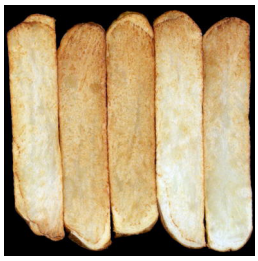
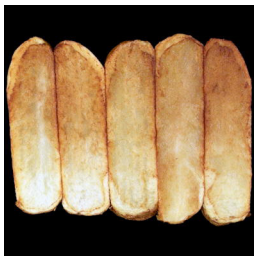
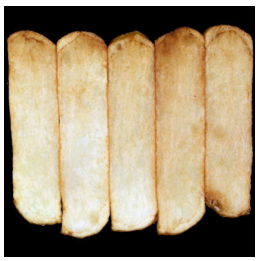
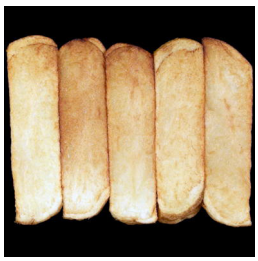
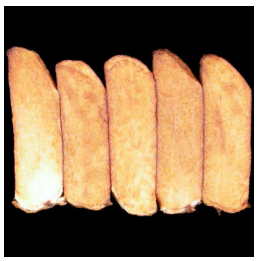
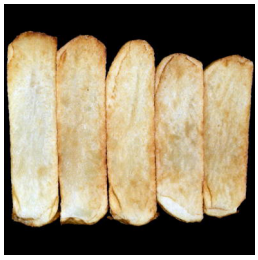
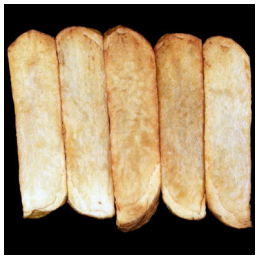
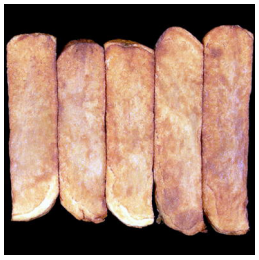
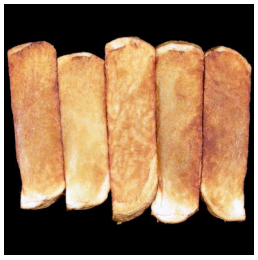
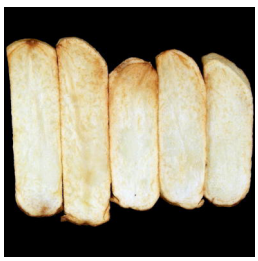
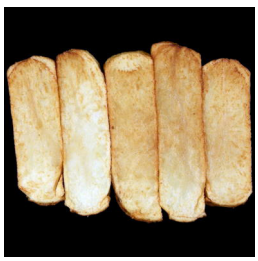
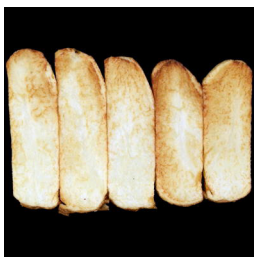


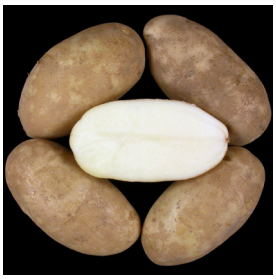


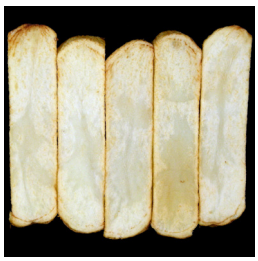
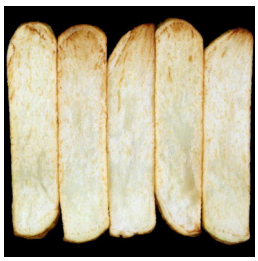
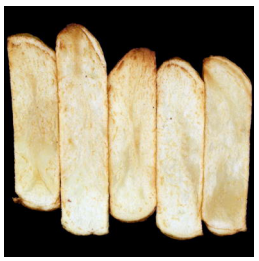
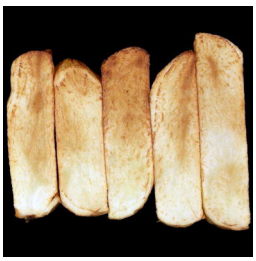
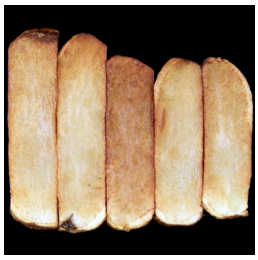
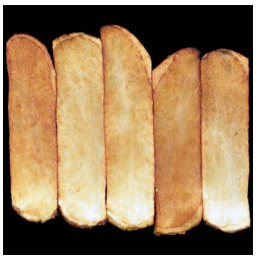
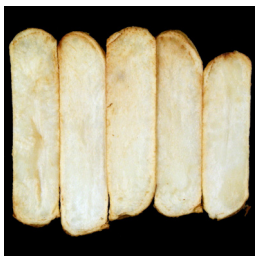
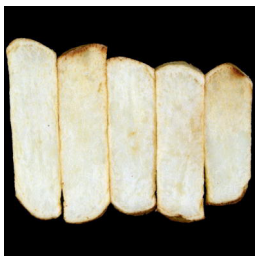
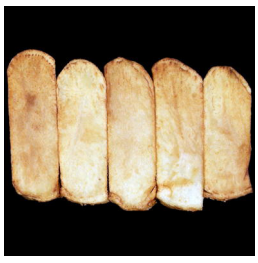
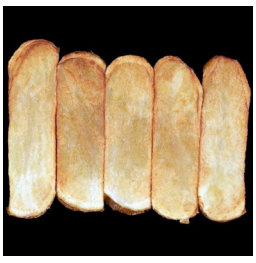
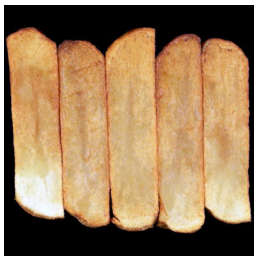
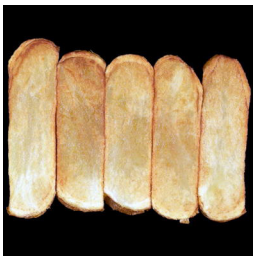
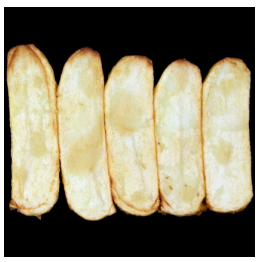
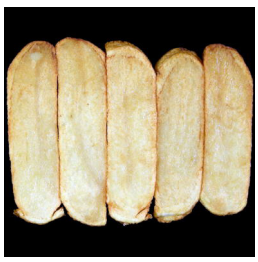
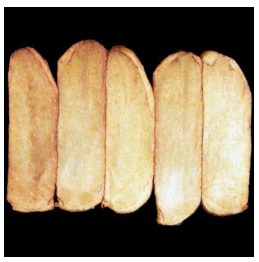
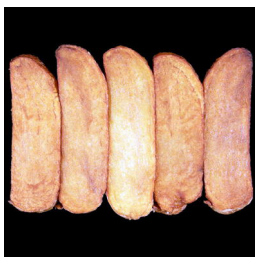
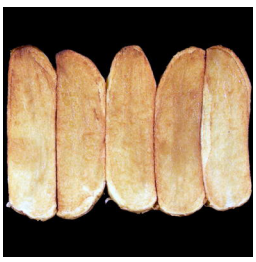


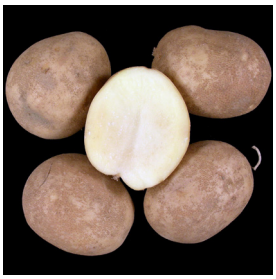
"Remember kids, always wear your face and ear protection when out in the field. After all, risk takers are accident makers!"

Tubers	WA Late Harvest Regional Trial Comments
Ranger Russet	
	**Tubers:** Oblong to long tubers. Moderately heavy russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, non-uniform; 44°F=light, non-uniform; 40°F=relatively dark, non-uniform; reconditioned=light, non-uniform.
Russet Burbank	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, non-uniform; after approximately two months of storage at 48°F=light, non-uniform; 44°F=light, non-uniform; 40°F=relatively dark, non-uniform; reconditioned=light, non-uniform.
A0008-1TE	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=unacceptably dark, uniform; reconditioned=relatively dark, uniform.
A97066-42LB	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=relatively dark, uniform.
AC96052-1Ru	
	**Tubers:** Oblong tubers. Heavy russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=light, non-uniform.

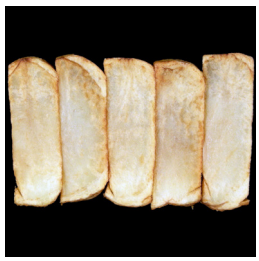
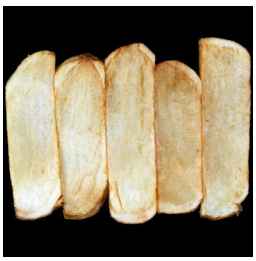
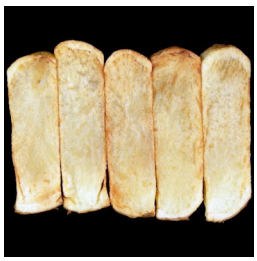
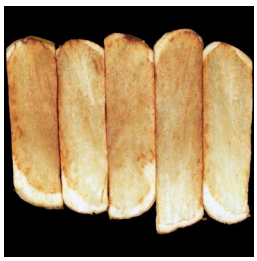
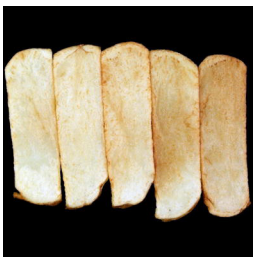
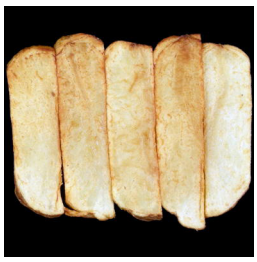
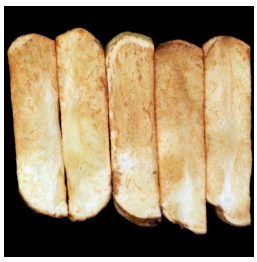
Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
Ranger Russet				
				
Russet Burbank				
				
A0008-1TE				
				
A97066-42LB				
				
AC96052-1Ru				
				

Tubers	WA Late Harvest Regional Trial Comments
AO96141-3	
	**Tubers:** Oblong to long tubers. Light russet with fair skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, non-uniform; reconditioned=light, non-uniform.
AOTX95265-4Ru	
	**Tubers:** Oblong to long tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** At harvest=relatively dark, uniform; after approximately two months of storage at 48°F=light, non-uniform; 44°F=relatively dark, uniform; 40°F=unacceptably dark, uniform; reconditioned=light, non-uniform.
CO97087-2Ru	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=light, uniform; reconditioned=light, uniform.
CO98067-7Ru	
	**Tubers:** Round to oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=relatively dark, uniform; 40°F=unacceptably dark, uniform; reconditioned=relatively dark, uniform.
CO98368-2Ru	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=unacceptably dark, uniform; reconditioned=relatively dark, non-uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
AO96141-3				
				
AOTX95265-4Ru				
				
CO97087-2Ru				
				
CO98067-7Ru				
				
CO98368-2Ru				
				

Tubers	WA Late Harvest Regional Trial Comments
PA99N2-1	
	**Tubers:** Round to oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=light, uniform.
PA99N82-4	
	**Tubers:** Round to oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** At harvest=light, uniform; after approximately two months of storage at 48°F=light, uniform; 44°F=light, uniform; 40°F=relatively dark, uniform; reconditioned=light, uniform.

Andy Jensen, Washington State Potato Commission, demonstrates proper use of insect-monitoring traps at the 2008 WSU Potato Field Day.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
PA99N2-1				
				
PA99N82-4				
				

Andy Jensen, Washington State Potato Commission, interacts with the audience during his insect-monitoring seminar at the 2008 WSU Potato Field Day. Visit www.potatoes.com for information on insects and other Washington potato-related items.

2008 Late Harvest Regional Trial

Accumulated Total Postharvest Rating of Clones

	Clone	WA Rating Total §	WA Discard §§	ID Rating Total §	ID Discard §§	OR Rating Total §	OR Discard §§	3 State av. Rating Total
5	AC96052-1Ru	36.7		36.6		32.3		35.2
8	CO97087-2Ru	36.4		34.3		33.8		34.8
12	PA99N82-4	36.8		35.9		22.4		31.7
6	AO96141-3	32.7		32.2		30.0		31.6
11	PA99N2-1	33.8		35.0		23.4		30.7
3	A0008-1TE	34.6		26.7		25.6		29.0
4	A97066-42LB	31.3		30.6		20.5		27.5
1	Ranger Russet	28.2		33.3		20.2		27.2
10	CO98368-2Ru	27.9		19.6		16.1		21.2
2	Russet Burbank	20.9		26.2	Sp. Gr.	16.0		21.0
9	CO98067-7Ru	20.3	Sp.Gr.	23.6	Sp. Gr.	11.6	Sp. Gr.	18.5
7	AOTX95265-4Ru	17.6	Sp. Gr.	19.2		6.3		14.4
	Average	29.8		29.4		21.5		

§ Maximum rating possible = 38
§§ Values for the indicated evaluation are lower than the rejection level

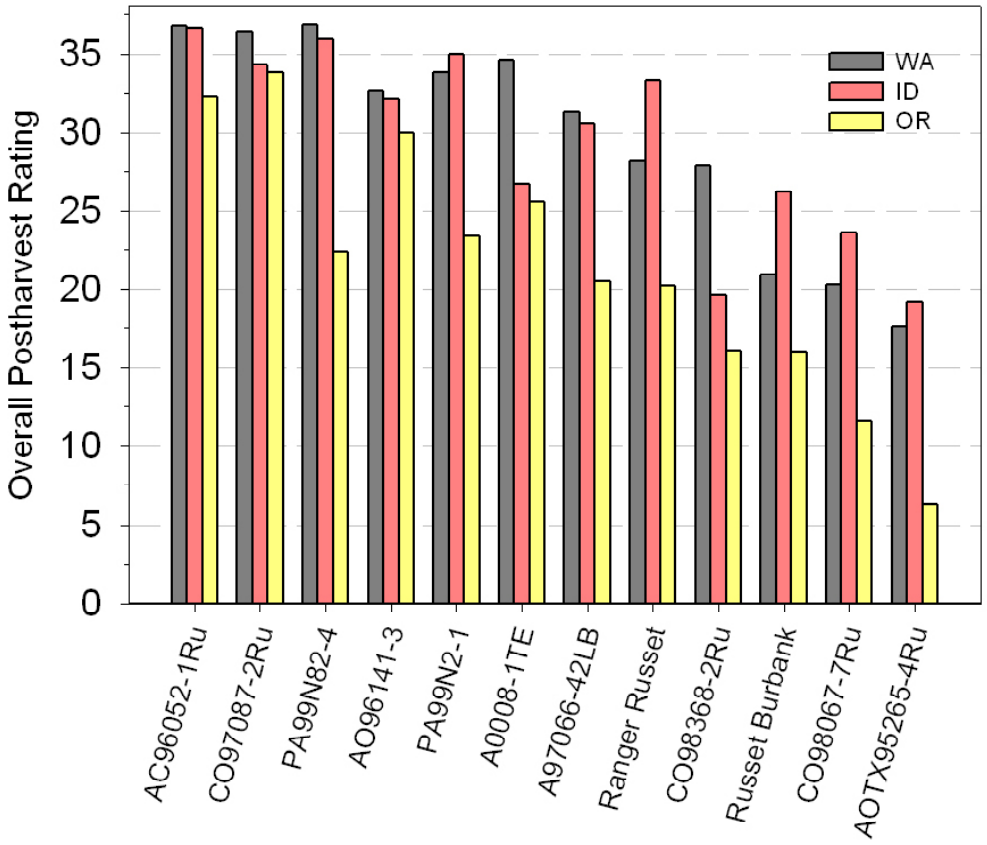
Overall Postharvest Performance of Clones Compared to Russet Burbank

	Clone	WA	ID	OR	Average
1	Ranger Russet	H	H	H	H
3	A0008-1TE	H	H	H	H
4	A97066-42LB	H	H	H	H
5	AC96052-1Ru	H	H	H	H
6	AO96141-3	H	H	H	H
7	AOTX95265-4Ru	L	L	L	L
8	CO97087-2Ru	H	H	H	H
9	CO98067-7Ru	L	L	L	L
10	CO98368-2Ru	H	L	H	H
11	PA99N2-1	H	H	H	H
12	PA99N82-4	H	H	H	H

H= Higher than Russet Burbank
L= Lower than Russet Burbank
S = Same as Russet Burbank

2008 Late Harvest Regional Trial

Late Harvest Regional Postharvest Ratings



Postharvest analysis takes dedication and hard work. Here are some of the people involved (from left to right): Nora Fuller, Mark Pavek (checking up on Rick), Lisa Knowles, and Rick Knowles.

2008 Late Harvest Regional Trial

Prior to Storage

	Clone	PHOTOVOLT READING stem	bud	av	rtg §	DIFF	USDA COLOR	SPECIFIC GRAVITY	rtg
	Washington								
1	Ranger Russet	31.9	38.1	35.0	3+	6.2	0	1.085	5
2	Russet Burbank	32.3	43.2	37.8	4-	10.9	0	1.079	2
3	A0008-1TE	42.7	48.0	45.3	5+	5.4	0	1.081	4
4	A97066-42LB	34.3	37.5	35.9	4+	5.7	0	1.095	2
5	AC96052-1Ru	47.4	48.9	48.2	5+	2.0	0	1.087	5
6	AO96141-3	53.7	49.5	51.6	5+	5.8	0	1.096	1
7	AOTX95265-4Ru	26.4	33.5	30.0	2+	7.3	1	1.071	0
8	CO97087-2Ru	51.0	52.7	51.9	5+	2.9	0	1.088	5
9	CO98067-7Ru	31.4	36.7	34.0	3+	5.7	0	1.072	0
10	CO98368-2Ru	32.9	33.4	33.2	3+	4.6	0	1.080	3
11	PA99N2-1	37.4	40.5	39.0	4+	4.3	0	1.083	5
12	PA99N82-4	44.0	44.5	44.2	5+	3.9	0	1.083	5
			LSD 0.05	*3.2*		*3.2*		*0.006*	
	Average	38.8	42.2	40.5		5.4	0	1.083	
	Idaho								
1	Ranger Russet	42.4	45.3	43.8	5+	7.8	0	1.092	3
2	Russet Burbank	34.0	40.2	37.1	4+	6.6	0	1.075	0
3	A0008-1TE	41.5	50.8	46.1	5-	9.9	0	1.082	4
4	A97066-42LB	37.2	38.7	37.9	4+	5.3	0	1.104	1
5	AC96052-1Ru	44.1	46.1	45.1	5+	4.6	0	1.087	5
6	AO96141-3	48.6	50.1	49.4	5+	5.1	0	1.091	4
7	AOTX95265-4Ru	27.4	35.7	31.5	3-	9.2	1	1.076	1
8	CO97087-2Ru	42.3	48.4	45.3	5-	9.7	0	1.088	5
9	CO98067-7Ru	35.8	39.6	37.7	4+	4.2	0	1.073	0
10	CO98368-2Ru	29.9	39.5	34.7	3-	10.9	1	1.077	1
11	PA99N2-1	43.0	44.7	43.8	5+	2.7	0	1.083	5
12	PA99N82-4	45.7	43.4	44.6	5+	2.6	0	1.086	5
			LSD 0.05	*3.2*		*4.4*		*0.005*	
	Average	39.3	43.5	41.4		6.5	0	1.084	
	Oregon								
1	Ranger Russet	26.6	38.1	32.4	3-	12.1	1	1.087	5
2	Russet Burbank	20.9	38.3	29.6	2-	19.4	2	1.087	5
3	A0008-1TE	34.3	41.1	37.7	4+	8.3	0	1.083	5
4	A97066-42LB	26.3	31.6	29.0	2+	7.0	1	1.097	1
5	AC96052-1Ru	44.2	45.0	44.6	5+	3.6	0	1.086	5
6	AO96141-3	49.4	55.4	52.4	5+	7.2	0	1.097	1
7	AOTX95265-4Ru	15.1	26.9	21.0	1-	11.8	3	1.076	1
8	CO97087-2Ru	43.3	51.1	47.2	5+	8.0	0	1.089	4
9	CO98067-7Ru	25.5	35.0	30.3	2-	9.4	1	1.075	0
10	CO98368-2Ru	21.4	28.6	25.0	2+	7.3	2	1.081	4
11	PA99N2-1	31.1	40.1	35.6	4-	9.0	0	1.085	5
12	PA99N82-4	36.0	45.6	40.8	5-	9.7	0	1.083	5
			LSD 0.05	*2.9*		*3.9*		*0.004*	
	Average	31.2	39.7	35.4		9.4	1	1.086	

Date test performed:		
Washington	Oct. 6	Oct. 1
Idaho	Oct. 3	Sept. 30
Oregon	Oct. 2	Sept 25

§ rtg = rating (1-5, 5 is best); av = average Photovolt reading; Diff = Absolute difference between stem and bud Photovolt reading. Stem to bud differences of nine or greater (-) lose one point and differences of less than nine (+) gain one point in the accumulated total postharvest rating.

2008 Late Harvest Regional Trial

Stored at 48°F after Arrival

Clone	FRENCH FRY TASTE PANEL rating	BRUISE POTENTIAL (percent) stem	bud	[color 5=darkest] stem	bud	SOFT ROT INDEX (percent) stem	bud
Washington							
1 Ranger Russet	**3.2**	88	0	3.3	1.0	10	13
2 Russet Burbank	**2.9**	42	17	2.0	1.3	12	13
3 A0008-1TE	**3.6**	38	13	1.8	1.3	10	10
4 A97066-42LB	**3.3**	67	29	2.9	1.7	7	9
5 AC96052-1Ru	**3.7**	83	38	3.0	1.9	8	9
6 AO96141-3	**3.7**	25	0	1.4	1.0	7	10
7 AOTX95265-4Ru	**2.6**	50	17	2.3	1.3	10	8
8 CO97087-2Ru	**3.4**	17	0	1.5	1.0	9	12
9 CO98067-7Ru	**2.3**	13	17	1.3	1.3	8	10
10 CO98368-2Ru	**2.9**	21	8	1.4	1.2	13	11
11 PA99N2-1	**2.8**	88	13	3.1	1.3	8	8
12 PA99N82-4	**3.8**	63	17	2.5	1.5	11	13
LSD 0.05	*0.4*	*31*	*23*			*4*	*4*
Average	3.2	49.3	13.9	2.2	1.3	9.4	10.4
Idaho							
1 Ranger Russet	**3.3**	92	0	3.2	1.0	11	9
2 Russet Burbank	**3.2**	79	4	3.1	1.1	7	8
3 A0008-1TE	**3.7**	13	0	1.3	1.0	8	8
4 A97066-42LB	**3.6**	67	8	2.5	1.2	8	8
5 AC96052-1Ru	**3.6**	64	9	2.3	1.2	10	8
6 AO96141-3	**4.2**	0	0	1.0	1.0	8	7
7 AOTX95265-4Ru	**2.2**	0	0	1.0	1.0	9	7
8 CO97087-2Ru	**3.3**	0	0	1.0	1.0	8	9
9 CO98067-7Ru	**2.6**	0	0	1.0	1.0	9	8
10 CO98368-2Ru	**2.6**	21	0	1.5	1.0	12	13
11 PA99N2-1	**3.0**	0	0	1.0	1.0	9	7
12 PA99N82-4	**3.9**	25	0	1.5	1.0	10	9
LSD 0.05	*0.5*	*19*	*9*			*3*	*3*
Average	3.3	30.0	1.8	1.7	1.0	9.1	8.4
Oregon							
1 Ranger Russet	**3.2**	92	25	4.0	1.5	11	13
2 Russet Burbank	**3.0**	79	29	2.7	1.6	8	21
3 A0008-1TE	**3.6**	50	25	2.0	1.1	9	11
4 A97066-42LB	**3.5**	67	4	2.3	1.1	10	11
5 AC96052-1Ru	**3.3**	92	50	3.0	1.8	13	12
6 AO96141-3	**4.0**	38	0	1.6	1.0	7	11
7 AOTX95265-4Ru	**2.3**	58	8	2.3	1.2	11	14
8 CO97087-2Ru	**3.8**	42	21	1.8	1.4	8	8
9 CO98067-7Ru	**2.6**	4	8	1.1	1.2	8	8
10 CO98368-2Ru	**3.1**	4	54	1.0	1.7	13	15
11 PA99N2-1	**3.4**	54	8	2.1	1.2	7	10
12 PA99N82-4	**3.4**	46	29	1.9	1.6	12	15
LSD 0.05	*0.5*	*28*	*28*			*3*	*6*
Average	3.3	52.1	21.9	2.1	1	9.5	12.6

Date test performed:

Washington	Oct. 24	Nov. 6	Nov. 21
Idaho	Oct. 23	Nov. 4	Nov. 18
Oregon	Oct. 22	Oct. 29	Nov. 13

2008 Late Harvest Regional Trial

Stored at 48°F for 60 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg	SPROUTING (%)	length (in)
Washington											
1 Ranger Russet	32.4	42.0	37.2	4-	9.6	0	1.2	0.7	5	87	1/2"
2 Russet Burbank	29.8	41.1	35.4	3-	11.3	1	1.4	0.7	4	0	
3 A0008-1TE	39.4	44.6	42.0	5+	7.4	0	0.8	0.6	5	73	3/4"
4 A97066-42LB	46.6	44.2	45.4	5+	4.4	0	0.5	0.6	5	0	
5 AC96052-1Ru	51.0	54.4	52.7	5+	5.0	0	0.5	0.5	5	0	
6 AO96141-3	51.1	53.2	52.2	5+	5.2	0	0.5	0.6	5	87	3/4"
7 AOTX95265-4Ru	25.6	35.4	30.5	3-	9.8	1	1.9	1.0	4	20	1/8"
8 CO97087-2Ru	53.7	55.9	54.8	5+	2.4	0	0.5	0.5	5	13	1/8"
9 CO98067-7Ru	31.7	37.1	34.4	3+	6.2	0	1.2	0.9	4	100	1 1/2"
10 CO98368-2Ru	35.7	41.2	38.4	4+	5.5	0	1.0	0.7	5	20	1/4"
11 PA99N2-1	43.3	44.3	43.8	5+	2.8	0	0.6	0.6	5	93	3/4"
12 PA99N82-4	46.2	50.4	48.3	5+	5.3	0	0.5	0.5	5	100	1"
		LSD 0.05	*3.2*							*18*	
Average	40.5	45.3	42.9		6.3	0	0.9	0.6		49	
Idaho											
1 Ranger Russet	38.4	42.0	40.2	4+	6.7	0	0.8	0.7	5	79	1/4"
2 Russet Burbank	34.8	40.9	37.8	4+	7.7	0	1.0	0.7	5	0	
3 A0008-1TE	39.7	45.4	42.5	5-	9.5	0	0.7	0.6	5	14	1/8"
4 A97066-42LB	46.4	46.1	46.3	5+	3.1	0	0.5	0.5	5	7	1/2"
5 AC96052-1Ru	54.8	56.9	55.9	5+	4.1	0	0.5	0.4	5	20	1/8"
6 AO96141-3	46.7	52.7	49.7	5-	9.1	0	0.5	0.5	5	53	1/4"
7 AOTX95265-4Ru	30.2	33.2	31.7	3+	6.1	1	1.4	1.1	4	0	
8 CO97087-2Ru	48.8	53.1	50.9	5+	5.4	0	0.5	0.6	5	0	
9 CO98067-7Ru	36.3	40.2	39.3	4+	3.8	0	0.8	0.7	5	100	3/4"
10 CO98368-2Ru	31.8	43.1	37.4	4-	11.3	0	1.2	0.6	5	0	
11 PA99N2-1	50.9	49.1	50.0	5+	3.0	0	0.5	0.5	5	73	1/4"
12 PA99N82-4	45.4	46.2	45.8	5+	3.8	0	0.6	0.5	5	53	1/8"
		LSD 0.05	*3.3*		*4.0*					*20*	
Average	42.2	45.7	44.0		6.1	0	0.8	0.6		33	
Oregon											
1 Ranger Russet	28.9	43.0	35.9	4-	14.1	1	1.5	0.6	4	93	1/2"
2 Russet Burbank	19.4	39.2	29.3	2-	19.8	3	2.8	0.8	3	0	
3 A0008-1TE	28.4	37.8	33.1	3-	9.7	1	1.6	0.8	4	87	1.4"
4 A97066-42LB	29.8	36.8	33.3	3+	7.0	1	1.4	0.9	4	0	
5 AC96052-1Ru	35.6	43.9	39.7	4+	8.7	0	1.0	0.6	5	0	
6 AO96141-3	41.7	45.9	43.8	5+	5.1	0	0.7	0.5	5	100	1"
7 AOTX95265-4Ru	17.6	30.6	24.1	1-	13.1	3	3.1	1.3	2	67	1/4"
8 CO97087-2Ru	43.9	51.2	47.6	5+	7.4	0	0.6	0.5	5	67	1/8"
9 CO98067-7Ru	22.6	36.4	29.5	2-	13.9	2	2.3	0.9	3	100	1 1/4"
10 CO98368-2Ru	23.4	35.8	29.6	2-	12.4	2	2.2	0.9	3	33	1/8"
11 PA99N2-1	24.1	38.3	31.2	3-	14.2	2	2.1	0.8	4	100	1/4"
12 PA99N82-4	32.5	43.3	37.9	4-	10.8	0	1.2	0.6	5	100	3/4"
		LSD 0.05	*3.0*		*4.0*					*18*	
Average	29.0	40.2	34.6		11.3	1	1.7	0.8		62	

Date test performed:

Washington	Dec. 13	Dec. 13	Dec. 23
Idaho	Dec. 7	Dec. 7	Dec. 23
Oregon	Dec. 1	Dec. 1	Dec. 23

§ rtg = rating (1-5, 5 is best); av = average Photovolt reading; Diff = Absolute difference between stem and bud Photovolt reading. Stem to bud differences of nine or greater (-) lose one point and differences of less than nine (+) gain one point in the accumulated total postharvest rating.

2008 Late Harvest Regional Trial

Stored at 44°F for 60 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg
Washington									
1 Ranger Russet	32.4	42.1	37.2	4-	9.8	0	1.2	0.7	5
2 Russet Burbank	31.7	41.3	36.5	4-	9.8	0	1.2	0.7	4
3 A0008-1TE	35.8	43.1	39.5	4+	7.3	0	0.9	0.6	5
4 A97066-42LB	36.1	36.5	36.3	4+	6.3	0	0.9	0.9	5
5 AC96052-1Ru	42.1	49.6	45.9	5+	7.5	0	0.6	0.5	5
6 AO96141-3	49.7	53.4	51.6	5+	6.6	0	0.5	0.6	5
7 AOTX95265-4Ru	24.3	30.9	27.6	2+	6.6	2	2.0	1.3	3
8 CO97087-2Ru	50.7	55.9	53.3	5+	5.3	0	0.5	0.5	5
9 CO98067-7Ru	25.7	32.6	29.1	2+	6.8	1	1.9	1.2	3
10 CO98368-2Ru	32.2	36.2	34.2	3+	6.1	0	1.2	0.9	4
11 PA99N2-1	37.4	40.6	39.0	4+	3.7	0	0.9	0.7	5
12 PA99N82-4	42.2	44.0	43.1	5+	3.9	0	0.6	0.6	5
		LSD 0.05	*3.0*		*3.5*				
Average	36.7	42.2	39.4		6.6	0	1.1	0.8	
Idaho									
1 Ranger Russet	41.2	43.1	42.2	5+	5.1	0	0.7	0.6	5
2 Russet Burbank	28.1	33.6	30.8	3+	6.7	1	1.6	1.1	4
3 A0008-1TE	26.9	40.7	33.8	3-	14.9	1	1.7	0.7	4
4 A97066-42LB	36.6	40.5	38.5	4+	6.8	0	0.9	0.7	5
5 AC96052-1Ru	42.4	49.9	46.1	5+	8.0	0	0.6	0.5	5
6 AO96141-3	34.2	47.0	40.6	5-	13.9	0	1.0	0.5	5
7 AOTX95265-4Ru	26.5	29.2	27.9	2+	5.0	1	1.8	1.5	3
8 CO97087-2Ru	41.1	48.7	44.9	5+	8.4	0	0.7	0.5	5
9 CO98067-7Ru	26.2	33.2	29.7	2+	7.1	1	1.8	1.1	3
10 CO98368-2Ru	26.3	36.8	31.5	3-	10.5	1	1.8	0.9	4
11 PA99N2-1	38.5	38.8	38.6	4+	4.2	0	0.8	0.8	5
12 PA99N82-4	37.8	36.7	37.3	4+	2.4	0	0.8	0.9	5
		LSD 0.05	*3.6*		*4.4*				
Average	33.8	39.8	36.8		7.7	0	1.2	0.8	
Oregon									
1 Ranger Russet	18.3	34.9	26.6	2-	16.6	3	3.0	1.0	2
2 Russet Burbank	17.0	34.6	25.8	2-	17.6	3	3.2	1.0	2
3 A0008-1TE	25.1	31.5	28.3	2+	7.3	1	1.9	1.3	3
4 A97066-42LB	25.5	30.7	28.1	2+	6.0	1	1.9	1.3	3
5 AC96052-1Ru	31.4	37.4	34.4	3+	7.0	0	1.3	0.9	4
6 AO96141-3	31.2	36.5	33.9	3+	7.4	0	1.3	0.9	4
7 AOTX95265-4Ru	16.0	26.2	21.1	1-	10.2	3	3.4	1.8	1
8 CO97087-2Ru	37.3	48.3	42.8	5-	11.0	0	0.9	0.5	5
9 CO98067-7Ru	21.4	31.3	26.4	2-	9.9	2	2.5	1.3	3
10 CO98368-2Ru	18.5	30.0	24.3	1-	11.5	3	2.9	1.4	2
11 PA99N2-1	23.3	32.1	27.7	2+	8.8	2	2.2	1.2	3
12 PA99N82-4	25.6	34.7	30.2	2-	9.4	1	1.9	1.0	1
		LSD 0.05	*3.0*		*3.7*				
Average	24.2	34.0	29.1		10.2	2	2.2	1.1	

Date test performed:

Washington	Dec. 14	Dec. 14
Idaho	Dec. 8	Dec. 8
Oregon	Dec. 2	Dec. 2

§ rtg = rating (1-5, 5 is best); av = average Photovolt reading; Diff = Absolute difference between stem and bud Photovolt reading. Stem to bud differences of nine or greater (-) lose one point and differences of less than nine (+) gain one point in the accumulated total postharvest rating.

2008 Late Harvest Regional Trial

Stored at 40°F for 60 Days and Reconditioned

Clone	SPROUTING (%)	PHOTOVOLT (60 Days at 40°F) stem	bud	average	DIFF	USDA COLOR	PHOTOVOLT AFTER RECONDITIONING (21 days at 60°F) stem	bud	average	DIFF	USDA COLOR
Washington											
1 Ranger Russet	0	17.6	26.7	22.1	9.0	3	25.7	43.6	34.6	17.9	1
2 Russet Burbank	0	15.6	25.1	20.4	9.5	3	25.2	41.5	33.4	16.3	1
3 A0008-1TE	0	16.6	22.4	19.5	6.0	3	23.4	27.5	25.5	4.9	2
4 A97066-42LB	0	19.2	21.0	20.1	3.3	3	22.5	26.0	24.3	4.4	2
5 AC96052-1Ru	0	23.7	29.7	26.7	6.1	2	43.5	52.9	48.2	9.3	0
6 AO96141-3	0	30.8	37.0	33.9	9.6	0	32.9	47.8	40.4	14.9	0
7 AOTX95265-4Ru	0	14.1	18.2	16.1	4.1	4	25.5	35.9	30.7	10.4	1
8 CO97087-2Ru	0	29.4	37.5	33.5	8.7	1	42.8	47.1	45.0	6.1	0
9 CO98067-7Ru	0	12.9	14.9	13.9	2.5	4	27.0	31.4	29.2	4.6	1
10 CO98368-2Ru	0	15.6	17.9	16.7	2.9	3	25.3	34.5	29.9	9.2	1
11 PA99N2-1	0	19.6	24.5	22.2	5.4	2	31.9	40.5	36.2	8.6	0
12 PA99N82-4	0	22.8	28.7	25.8	5.9	2	36.7	44.9	40.8	8.5	0
LSD 0.05	*ns*			*3.1*	*3.6*				*3.4*	*4.6*	
Average	0	19.9	25.3	22.6	6.1	3	30.2	39.5	34.8	9.6	1
Idaho											
1 Ranger Russet	0	24.0	34.0	29.0	10.1	2	35.1	48.6	41.9	13.6	0
2 Russet Burbank	0	15.9	21.9	18.9	6.9	3	23.5	36.3	29.9	13.5	2
3 A0008-1TE	0	14.6	18.0	16.3	4.9	3	18.2	28.9	23.5	12.8	3
4 A97066-42LB	0	21.8	24.5	23.2	3.9	2	32.6	39.3	36.1	7.4	0
5 AC96052-1Ru	0	33.7	37.8	35.8	6.2	0	41.9	51.0	46.5	9.3	0
6 AO96141-3	0	25.4	39.1	32.2	16.8	1	29.2	39.3	33.8	10.6	1
7 AOTX95265-4Ru	0	14.4	17.3	15.6	4.2	4	24.4	33.3	28.9	10.7	2
8 CO97087-2Ru	0	21.9	38.0	29.9	16.3	2	24.8	35.7	30.2	13.8	1
9 CO98067-7Ru	0	13.2	14.7	13.9	2.7	4	25.3	34.7	30.0	9.4	1
10 CO98368-2Ru	0	15.4	22.4	18.9	7.0	3	16.6	30.9	23.7	14.4	3
11 PA99N2-1	0	17.0	22.8	19.9	6.1	3	30.3	39.3	34.8	9.3	1
12 PA99N82-4	0	24.1	27.5	25.8	5.5	2	35.2	40.8	38.0	7.4	0
LSD 0.05	*ns*			*2.5*	*4.0*				*3.6*	*12.6*	
Average	0	20.1	26.5	23.3	7.6	2	28.1	38.1	33.1	11.0	1
Oregon											
1 Ranger Russet	0	12.7	25.5	19.1	12.8	4	22.6	43.4	33.0	20.8	2
2 Russet Burbank	0	10.6	25.4	18.0	14.8	4	14.5	36.5	25.5	22.1	3
3 A0008-1TE	0	14.9	17.2	16.0	3.1	3	18.2	24.3	21.3	6.2	3
4 A97066-42LB	0	17.7	21.0	19.3	3.6	3	21.5	24.6	23.1	5.1	2
5 AC96052-1Ru	0	16.4	23.5	20.0	7.6	3	28.7	48.2	38.5	19.5	1
6 AO96141-3	0	26.5	33.0	29.7	8.5	1	30.6	39.4	35.0	9.5	0
7 AOTX95265-4Ru	0	11.9	16.0	13.9	4.1	4	18.3	29.0	23.7	11.2	3
8 CO97087-2Ru	0	24.1	39.9	32.0	15.8	2	28.9	42.2	35.6	13.4	1
9 CO98067-7Ru	0	10.4	14.5	12.4	4.1	4	18.0	31.0	24.5	13.0	3
10 CO98368-2Ru	0	12.2	15.6	13.9	3.4	4	19.0	30.6	24.8	11.6	3
11 PA99N2-1	0	15.8	22.0	18.9	6.2	3	21.1	28.3	24.7	8.5	2
12 PA99N82-4	0	20.3	30.6	25.5	10.2	2	22.6	40.9	31.8	18.4	2
LSD 0.05	*ns*			*2.4*	*3.2*				*3.2*	*4.7*	
Average	0	16.1	23.7	19.9	7.8	3	22.0	34.9	28.4	13.3	2

Date test performed:

Washington	Dec. 22	Dec. 15	Dec. 21
Idaho	Dec. 22	Dec. 9	Dec. 20
Oregon	Dec. 22	Dec. 3	Dec. 19

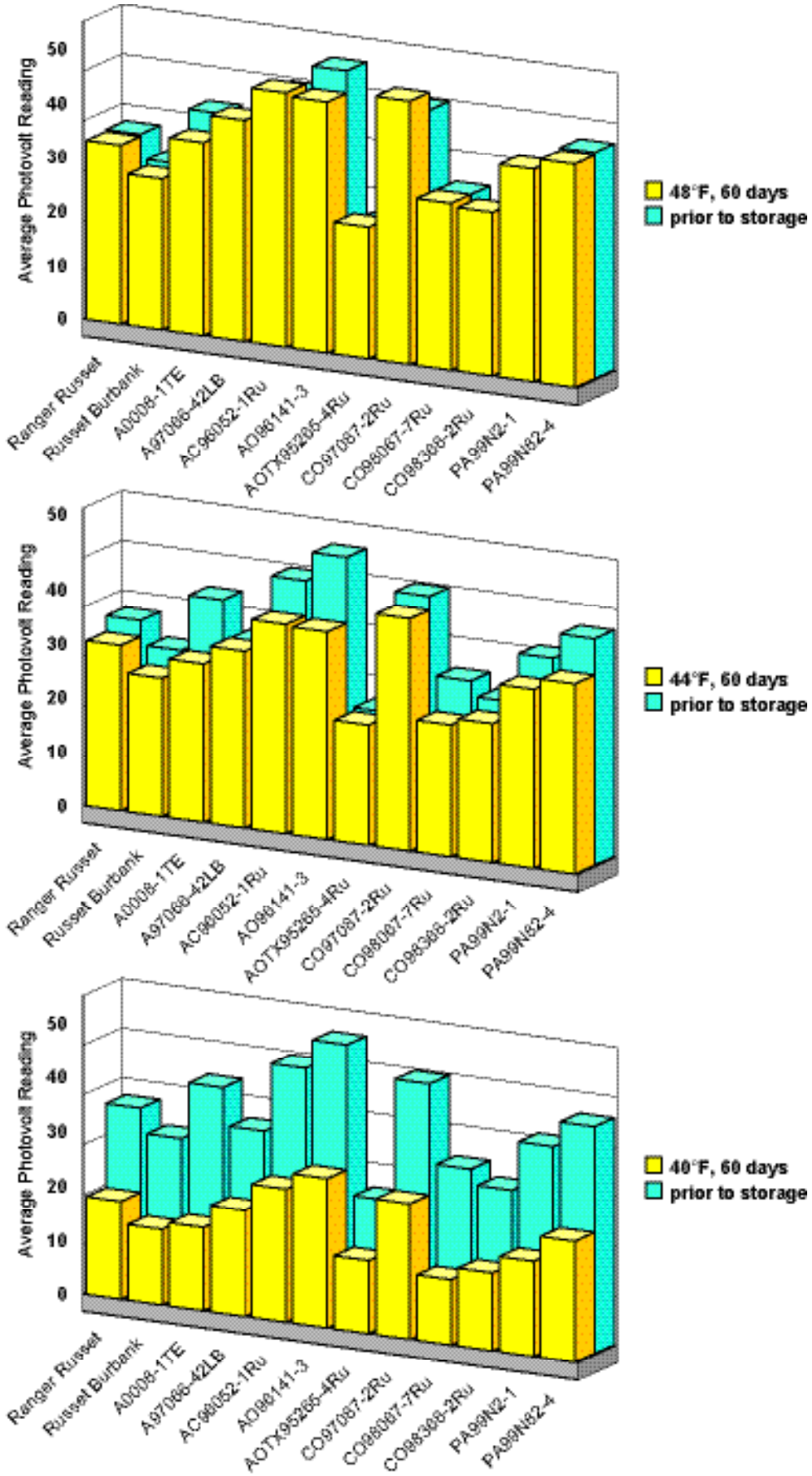
DIFF=Absolute difference between bud and stem photovolt reading.

“Can you hear me now?” Mel Martin, Simplot, shows that a linear irrigation system can have more than one use.

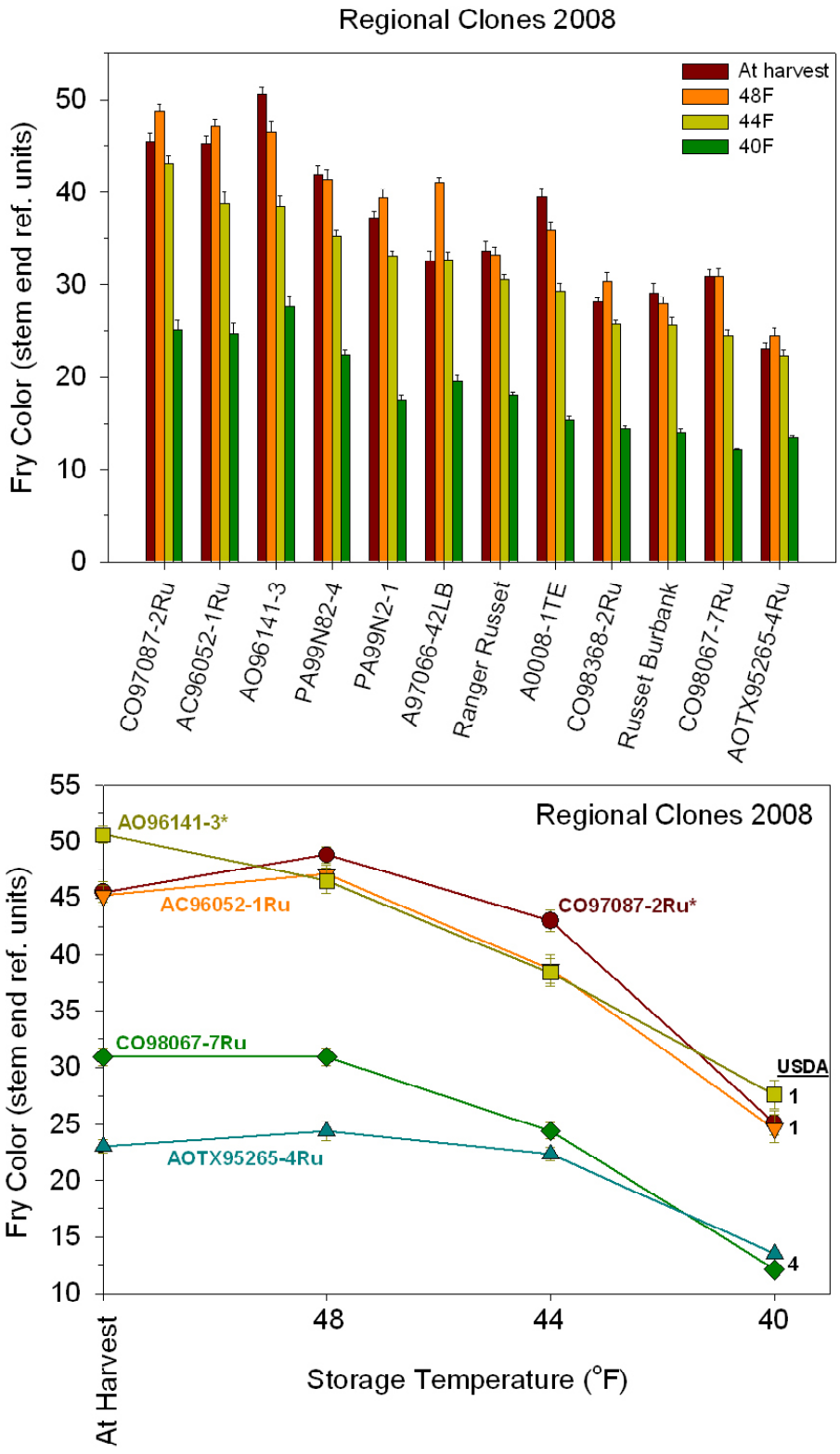
“Defining N rates that maximize profits: Alturas and Premier Russet” was one of the talks given by Chris Hiles, WSU grad student, at the 2008 WSU Potato Field Day.

2008 Late Harvest Regional Trial

Regional Trial - 3 State Average of Stem End



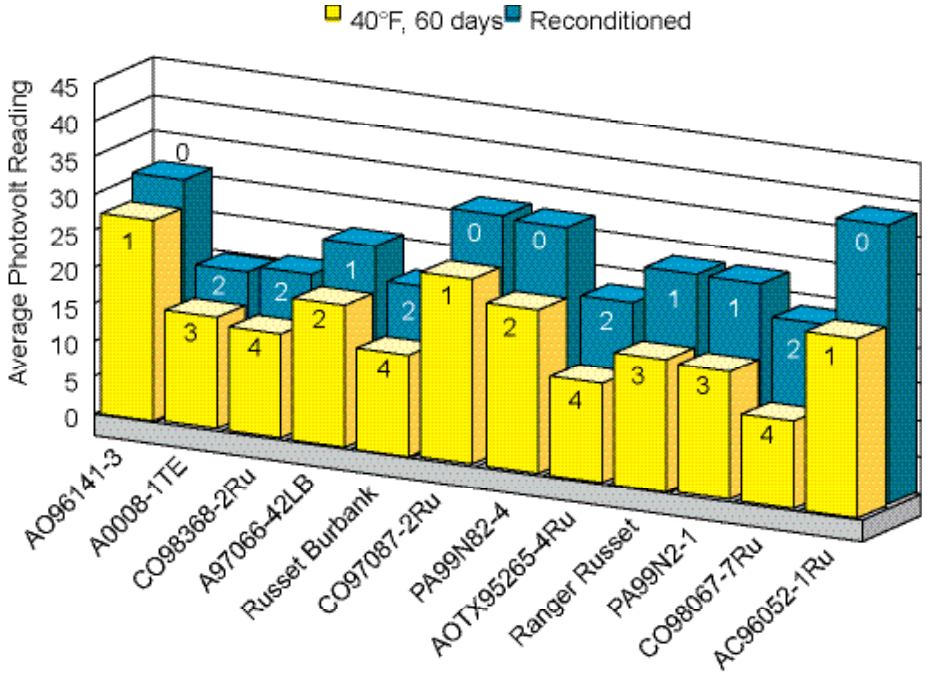
2008 Late Harvest Regional Trial

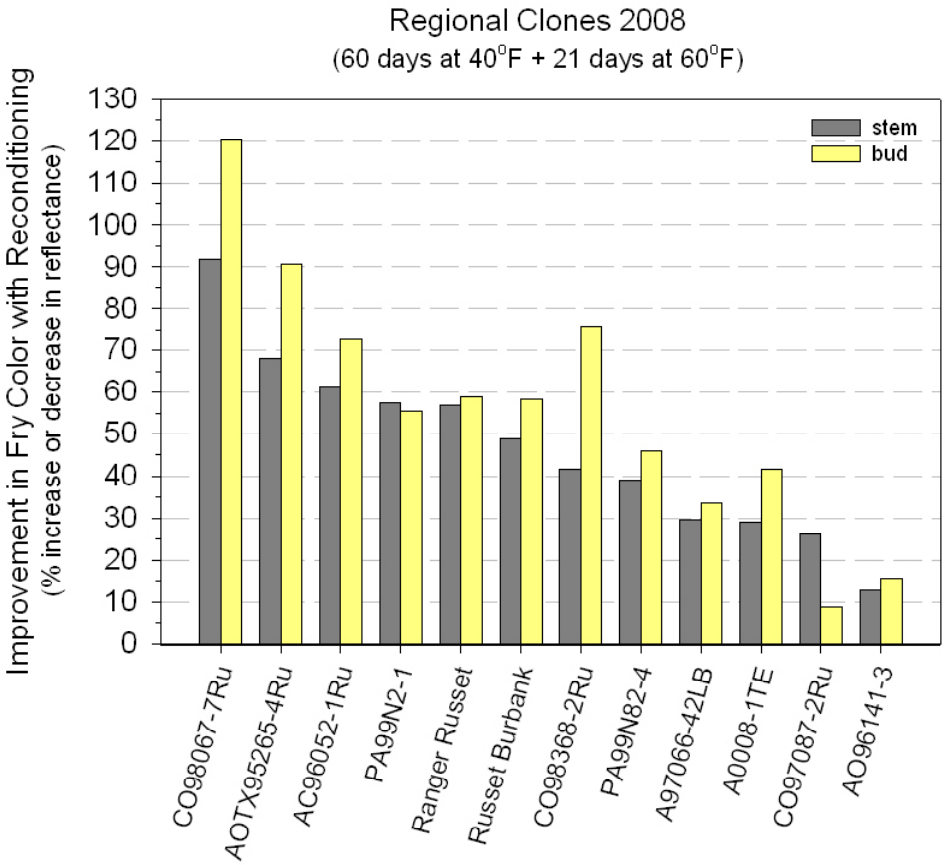


Top: At-harvest and after-storage French fry colors (stem end) of clones in the Regional Trial. Tubers were stored for 60 days at 48, 44 and 40°F. The clones are ranked from best to worst based on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

B**ottom:** Line graph depicting the effects of storage temperature on the change in French fry processing quality (stem end fry color) of the best (AO96141-3, CO97087-2Ru, and AC96052-1Ru) and worst (CO98067-7Ru, AOTX95265-4Ru) performing clones in the Regional Trial. *Indicates similar performance of the clones last year.

2008 Late Harvest Regional Trial





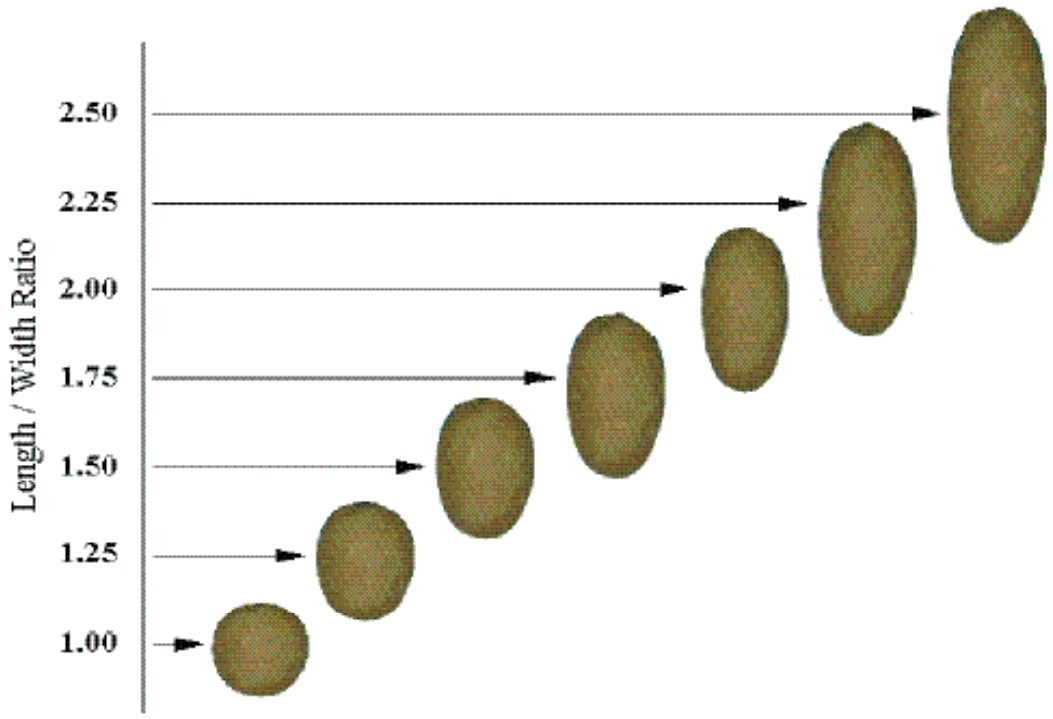
Reconditioning abilities of clones in the 2008 Regional Trial (3-state averages). Clones were stored at 40°F for 60 days after harvest and then reconditioned at 60°F for 21 days. **Top:** Stem end fry color before and after reconditioning. Numbers in bars indicate the USDA color rating of the stem end. **Bottom:** Percent improvement of stem and bud end fry color with reconditioning.

2008 Late Harvest Regional Trial

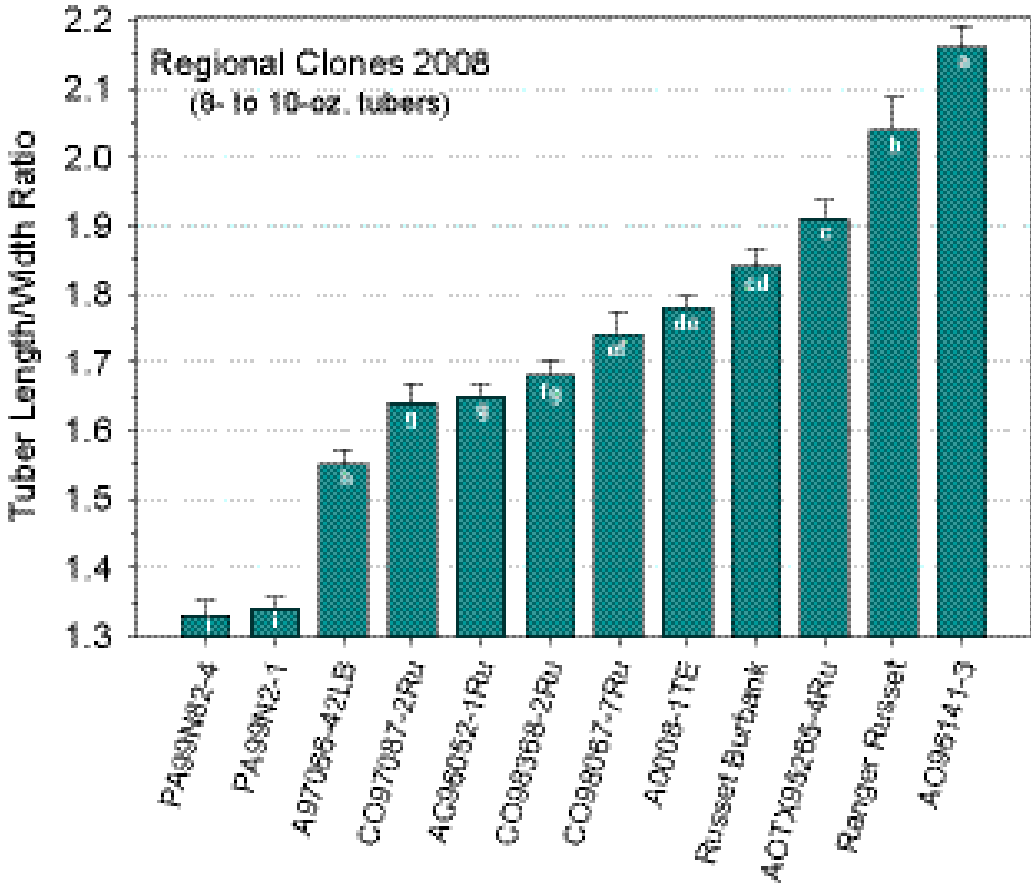
Tuber Shape and Associated French Fry Yields

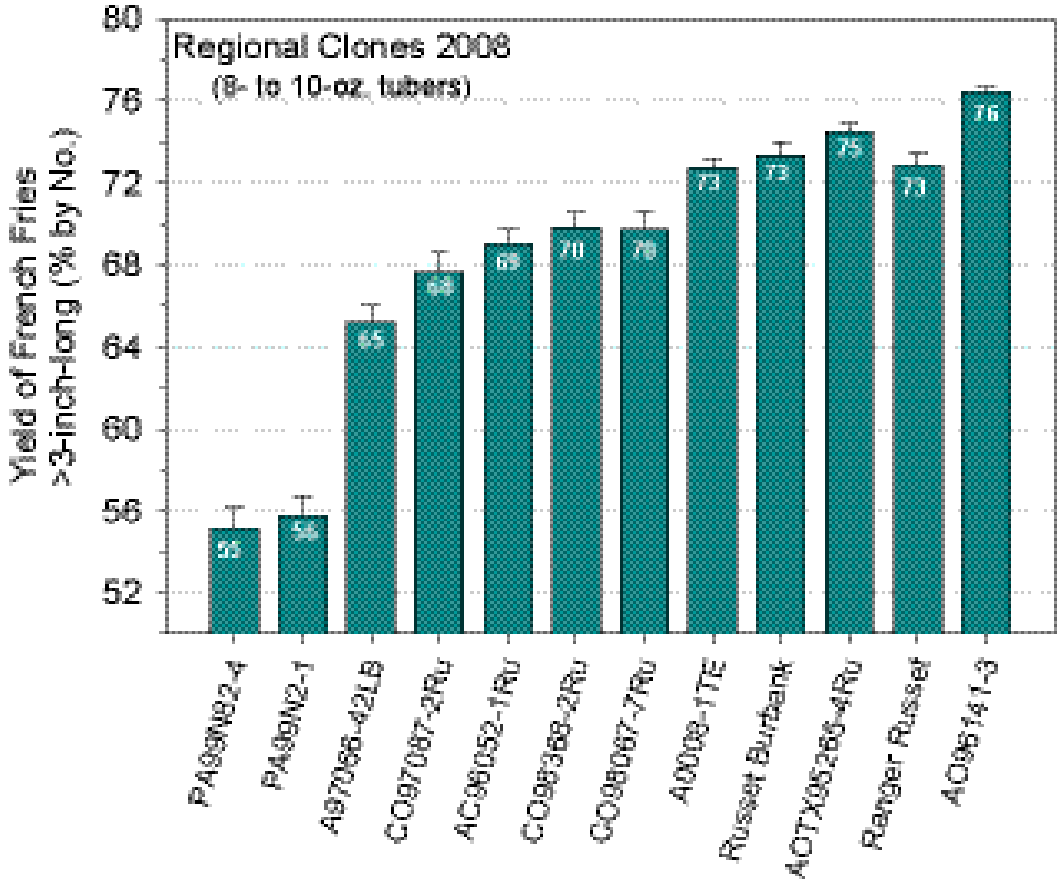
(8- to 10-oz Tubers)

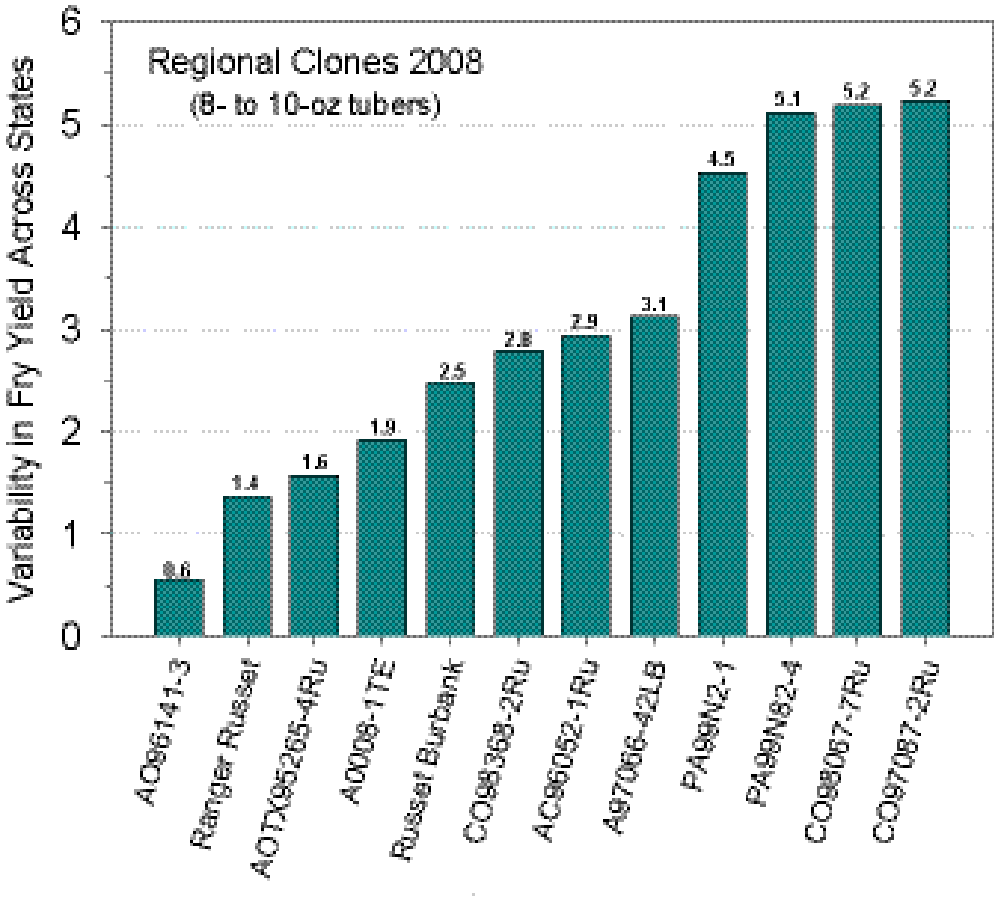
	Clone	Length to width ratio			Yield of 3" or longer fries (% by number)		
		WA	ID	OR	WA	ID	OR
1	Ranger Russet	1.82	2.39	1.86	72	75	72
2	Russet Burbank	1.71	1.97	1.83	70	76	73
3	A0008-1TE	1.68	1.87	1.78	70	75	73
4	A97066-42LB	1.51	1.67	1.48	64	70	62
5	AC96052-1Ru	1.54	1.74	1.62	65	72	68
6	AO96141-3	1.95	2.34	2.18	76	76	77
7	AOTX95265-4Ru	1.80	2.13	1.79	74	77	73
8	CO97087-2Ru	1.47	1.88	1.58	62	74	66
9	CO98067-7Ru	1.52	2.06	1.64	64	77	68
10	CO98368-2Ru	1.63	1.76	1.58	65	72	66
11	PA99N2-1	1.22	1.39	1.41	49	59	59
12	PA99N82-4	1.20	1.45	1.34	48	61	56
	Average	1.59	1.89	1.67	65	72	68



2008 Late Harvest Regional Trial







Relative ranking of clones in the Late Season Regional Trial for variability in yield of French fries from 8- to 10-oz tubers. Variability is expressed as the standard deviation (calculated across ID, WA and OR production sites) for the yield of fries ≥3 inches in length (% by number) from 8- to 10-oz tubers. High values reflect more variation in tuber shape and thus fry yield from state to state. For example, PA99N82-4 had a length to width ratio of 1.33 (see previous page), resulting in 55% of the tuber yielding French fries that were ≥3 inches in length. However, tuber shape varied across production regions (above), resulting in fry yields ranging from 49.9% to 60.1% (55 ±5.1%).

Previous page: Tuber length to width ratios and the associated percentage yield of fries.

Left (top): Bars with same letter are not significantly different (P≤0.01).

“Do as I say and not as I do” was never better illustrated than when Mark Pavek hitched a ride on a gator during the selection tour in Powell Butte, OR.

Just like small children, the Colorado Potato Beetle may be cute when alone, but in groups they can be ferocious and deadly.

Entries Retained from the 2007 Trials Currently in the Regional Trial

Harvested fall of 2007 Held at 48°F until December 7 Stored at 44°F until analysis

A0008-1TE, A97066-42LB, PA99N2-1, and PA99N82-4 were advanced from the 2007 Tri-State Trial to the 2008 Regional Trial. AC96052-1Ru, AO96141-3, and CO97087-2Ru were retained in the Regional Trial. On average, A97066-42LB, AC96052-1Ru, AO96141-3, CO97087-2Ru, and PA99N82-4 produced lighter fries than Ranger Russet and Russet Burbank. A0008-1TE, A97066-42LB, PA99N2-1, and PA99N82-4 produced the most uniform colored fries when grown in WA and ID. Sprout lengths ranged from 2 to 10 inches following seven months of storage.

		PHOTOVOLT READING				USDA	% REDUCING SUGAR			Sprouting	
	Clone	stem	bud	avg	DIFF	COLOR	stem	bud	avg	percent	length
	Washington										
1	Ranger Russet	24.0	33.9	29.0	10.2	2	2.1	1.1	1.6	100	6"
2	Russet Burbank	33.9	37.7	35.8	5.8	0	1.1	0.8	1.0	100	7"
3	A0008-1TE §	34.0	37.0	35.5	4.3	0	1.1	0.9	1.0	100	7"
4	A97066-42LB §	41.4	50.0	45.7	8.6	0	0.7	0.5	0.6	100	5"
5	AC96052-1Ru	42.0	52.2	47.1	10.3	0	0.7	0.5	0.6	100	4"
6	AO96141-3	41.2	48.7	44.9	7.6	0	0.7	0.5	0.6	100	5"
7	CO97087-2Ru	40.5	49.5	45.0	9.0	0	0.7	0.5	0.6	100	3"
8	PA99N2-1 §	26.4	32.9	29.6	6.5	1	1.8	1.1	1.5	100	10"
9	PA99N82-4 §	41.9	45.7	43.8	4.7	0	0.7	0.6	0.6	100	9"
			LSD 0.05	*4.0*	*3.8*						
	Average	36.1	43.0	39.6	7.4	0	0.9	0.7	0.9	100	
	Idaho										
1	Ranger Russet	35.3	45.1	40.2	10.4	0	1.0	0.6	0.8	100	6"
2	Russet Burbank	25.9	40.0	32.9	15.3	1	1.8	0.7	1.3	100	2"
3	A0008-1TE §	27.4	25.6	26.5	8.7	1	1.7	1.9	1.8	100	5"
4	A97066-42LB §	45.8	47.8	46.8	3.7	0	0.6	0.5	0.5	100	4"
5	AC96052-1Ru	33.7	47.6	40.6	15.4	0	1.1	0.5	0.8	100	3"
6	AO96141-3	36.8	48.2	42.5	14.1	0	0.9	0.5	0.7	100	3"
7	CO97087-2Ru	36.7	49.2	42.9	13.5	0	0.9	0.5	0.7	100	3"
8	PA99N2-1 §	38.1	38.6	38.4	3.9	0	0.8	0.8	0.8	100	5"
9	PA99N82-4 §	41.2	45.1	43.1	4.9	0	0.7	0.6	0.6	100	7"
			LSD 0.05	*3.3*	*5.7*						
	Average	35.6	43.0	39.3	10.0	0	1.0	0.7	0.9	100	
	Oregon										
1	Ranger Russet	22.1	38.4	30.2	16.3	2	2.4	0.8	1.6	100	4"
2	Russet Burbank	22.2	40.0	31.1	17.8	2	2.3	0.7	1.5	100	5"
3	A0008-1TE §	21.3	32.2	26.7	11.2	2	2.5	1.2	1.8	100	5"
4	A97066-42LB §	34.3	43.4	38.9	10.1	0	1.0	0.6	0.8	100	8"
5	AC96052-1Ru	37.1	51.2	44.2	14.1	0	0.9	0.5	0.7	100	4"
6	AO96141-3	43.6	45.2	44.4	5.2	0	0.6	0.6	0.6	100	2"
7	CO97087-2Ru	32.1	50.1	41.1	17.9	0	1.2	0.5	0.9	100	4"
8	PA99N2-1 §	19.4	28.0	23.7	8.6	3	2.8	1.6	2.2	100	8"
9	PA99N82-4 §	29.3	42.1	35.7	16.0	1	1.5	0.6	1.1	100	9"
			LSD 0.05	*4.1*	*5.1*						
	Average	29.0	41.2	35.1	13.0	1	1.7	0.8	1.2	100	

§ Advanced from 2007 Tri-State Trial

Date test performed:

Washington	May 5
Idaho	May 7
Oregon	May 9

2008 Red and Specialty Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 1
Harvest Date: August 6
In-Row Spacing: 8 in.
Vine Kill Date: July 25
Days Grown: 116

The Regional Red and Specialty trial is a part of the overall Western Regional Trial effort. This trial consists of unique specialty clones which are primarily evaluated for the fresh market. This year's trial compared 4 local reference varieties to 18 new clones and was grown on station at Othello,WA. The Columbia Basin experienced a cooler-than-normal growing season this year. Some clones and cultivars fared well, while others produced low yields. The following is a summary of the Washington field and postharvest results.

Visual Standout(s) (nice color, skin, size distribution, & shape):

(See also: grading comments and US #1 yield ranking near front of book)

Red/White flesh: CO98012-5R
Red-purple/Yellow flesh: AC99329-7PW/Y, AC99330-1P/Y, ATTX961014-1R/Y
Red/Red flesh: POR03PG23-1
Purple/Purple flesh: CO97227-2P/PW (Some bronzing)
Yellow flesh: POR02PG37-2 and POR02PG26-5

Potential Discards (Reason): ATTX98500-2P/Y (Blackspot bruise), A00286-3Y (Poor skin set and blackspot bruise), and CO99045-1W/Y (Internal brown spot).

Standcounts

- **40 Day (cool spring delayed emergence)**
  Fast emergence: All entries were slow to emerge, due to the cool spring.
  Slow emergence: CO98012-5R, CO97215-2P/P, and CO99045-1W/Y all had 0% emergence.

- **50 Day**
  Full emergence: No entries were fully emerged at 50 DAP. OR00068-11 (88%) and AC99329-7PW/Y and Purple Majesty (84%) had the highest emergence.
  Poor emergence: NDA7985-1R only had 56% emergence at 50 days after planting.

Plant and Tuber Growth & Development

- **Stems per plant**
  Most: AC99330-1P/Y and POR02PG37-2 (4.0).
  Fewest: A00286-3Y and Yukon Gold (2.0); all other entries averaged 2.3 stems per plant or greater.

- **Average Tuber Number Per Plant**
  Most: Purple Majesty (10.8), CO97222-1R/R and CO97227-2P/PW (9.5).
  Fewest: Yukon Gold (4.0), Red LaSoda (4.8), and Dark Red Norland (5.3).

- **Average Tuber Weight (oz)**
  Largest: Red LaSoda (7.2), Dark Red Norland (6.2), and Yukon Gold (5.8).
  Smallest: CO97227-2P/PW (2.2), AC99330-1P/Y and Purple Majesty (2.8) each.

Yield Data

- **Total Yield and U.S. #1 Yield**
  Highest: Dark Red Norland had the highest total and U.S. #1 yield (486 CWT/A).
  Lowest: POR03PG23-1 had the lowest total (293 CWT/A) and U.S. #1 yield (291 CWT/A).

- **% U.S. #1's**
  All entries had greater than 98% U.S. #1's.

Tuber Defects (percent out of 40, 6-10 oz tubers)

- **External Defects**
  Most entries were free of external defects; ATTX961014-1R/Y had 2% knobs.

- **Internal Defects**
  Notable defects: Most entries were free of internal defects. CO99045-1W/Y had 23% internal brown spot and 3% brown center. Yukon Gold had 13% internal brown spot.

- **Bruise**
  Highest Blackspot: ATTX98500-2P/Y (18%), A00286-3Y (15%), and POR03PG23-1(13%). Ten entries had no blackspot.
  Highest Shatter: CO97222-1R/R (34%), OR00068-11(30%), PA96RR1-193(28%), and Yukon Gold (23%).

Postharvest Analysis

- Three yellow flesh clones scored the highest in culinary evaluations this year. Yukon Gold, the yellow fleshed standard, was the highest scoring clone with a total of 61 out of 75 points. CO99045-1W/Y (white skin, yellow flesh) and AC99329-7PW/Y (purple skin, yellow flesh) rated 59.7 and 59.5, respectively.

- Four purple flesh and three red flesh entries were included in the 2008 trial. The two purple fleshed holdovers from the 2007 trial (CO97215-2P/P and CO97227-2P/PW) were evaluated along with a new entry, OR00068-11, and the check cultivar, Purple Majesty. All three red fleshed entries (CO97222-1R/R, PA96RR1-193, POR01PG45-5) were new this year. Colored flesh clones are not considered in the statistical analysis of fry color with the white and yellow flesh entries. All white and yellow flesh entries produced acceptably light colored French fries (≤USDA 2) except Yukon Gold and CO99045-1W/Y. These latter two clones produced fries that were non-uniform in color from stem to bud end (difference in reflectance ≥9).

- A00286-3Y produced the lightest SFA chip rating of 2.5 from the six-member taste panel CO99045-1W/Y produced the darkest chips with a SFA score of 4.8. All entries as a group seemed to fry darker than in previous years.

- The samples in this year's trial were all rated very closely when oven baked, with ratings ranging from 17.5 to 21.8. All entries produced slight or no after cooking darkening when oven baked. The texture of baked samples was favorably rated as "creamy" or 'fluffy'. ATT98500-2P/Y had an "unacceptable" flavor but all other entries were rated as either "good" or "bland". Tuber centers of baked samples were given acceptable ratings of "mushy" or "fully cooked" for all entries. The skins of baked samples were also rated as acceptable ("steamy" or "fully cooked") for all entries.

- When boiled, NDA7985-1R, PA96RR1-193, Purple Majesty, CO97215-2P/P, OR00068-11, POR02PG26-5 and POR02PG37-2 sloughed severely; all others sloughed slightly or moderately. CO97222-1R/R and POR03PG23-1 had a moderate degree of after cooking darkening but all other entries were slight. Texture of the boiled samples of all entries was favorably rated as "creamy" or 'fluffy. The flavor of AC99330-1P/Y was unacceptable; however, all others were rated as either "good" or "bland". All tuber centers were rated as either "fully cooked" or "mushy" after boiling.

- Microwaving produced "moderate" after cooking darkening in A99331-2RY and POR03PG23-1; all other entries were rated as "slight" or "none". The texture of all microwaved samples was favorably rated as "creamy" or "fluffy" and flavor ratings ranged from "bland" to "good". Microwaving resulted in tuber centers that were "mushy" or "fully cooked" and skins that were "steamy" or "fully cooked", which are desirable ratings.

Hoping to get one of his pictures on the cover of Better Homes and Gardens magazine, Zach Holden takes a close-up shot.

Some neat finds from the annual selection tour in Aberdeen, Idaho.

Rudy Garza (left) does his best George Clooney pose. NO autographs...Please.

Right: Chris Hiles (left) and Mark Pavek (right) audition for a role in the new movie “Titanic II: The sinking of the Auto Industry”.

2008 Regional Red and Specialty Trial

Summaries

ENTRY	TOTAL YIELD			US # 1's* > 0 oz	US # 2's* > 0 oz	Culls* > 0 oz	EXTERNAL DEFECTS (%)				SPECIFIC GRAVITY
	CWT/A	STATS**	Tons/A	% of Total Yield			Knobs	Malformed	Growth Cracks	Green	
Red Skin/White Flesh											
Dark Red Norland	486	*A*	24.3	100	0	0	0	0	0	0	1.072
Red LaSoda	485	*A*	24.2	100	0	0	0	0	0	0	1.072
CO98012-5R	455	*ABC*	22.8	100	0	0	0	0	0	0	1.080
NDA7985-1R	432	*BCD*	21.6	99	0	1	1	0	0	0	1.072
Red-Purple Skin/Yellow Flesh											
A99331-2RY	358	*EFG*	17.9	99	0	1	0	0	0	0	1.077
AC99329-7PW/Y	432	*BCD*	21.6	99	0	1	0	0	0	1	1.084
AC99330-1P/Y	322	*GH*	16.1	100	0	0	0	0	0	0	1.077
ATTX961014-1R/Y	396	*DE*	19.8	98	0	2	2	0	0	0	1.079
ATTX98500-2P/Y	359	*EFG*	17.9	99	0	1	1	0	0	0	1.071
POR01PG45-5	460	*ABC*	23.0	99	0	0	0	0	0	0	1.085
Red Skin/Red Flesh											
CO97222-1R/R	429	*BCD*	21.4	100	0	0	0	0	0	0	1.072
PA96RR1-193	476	*AB*	23.8	100	0	0	0	0	0	0	1.091
POR03PG23-1	293	*H*	14.6	99	0	0	0	0	0	0	1.078
Purple Skin/Purple Flesh											
Purple Majesty	387	*DE*	19.4	99	0	0	0	0	0	0	1.090
CO97215-2P/P	319	*GH*	15.9	100	0	0	0	0	0	0	1.087
CO97227-2P/PW	299	*H*	14.9	100	0	0	0	0	0	0	1.088
OR00068-11	431	*BCD*	21.6	100	0	0	0	0	0	0	1.099
Yellow Flesh											
Yukon Gold	328	*GH*	16.4	98	1	1	0	0	1	0	1.091
A00286-3Y	335	*FGH*	16.8	100	0	0	0	0	0	0	1.079
CO99045-1W/Y	426	*CD*	21.3	100	0	0	0	0	0	0	1.085
POR02PG26-5	383	*DEF*	19.2	100	0	0	0	0	0	0	1.087
POR02PG37-2	432	*BCD*	21.6	99	0	1	0	0	0	1	1.089

ENTRY	US # 1 YIELD			0-2 oz*	2-4 oz*	4-6 oz*	6-10 oz*	> 10 oz*	INTERNAL DEFECTS (%) (6-10 oz tubers)		
	CWT/A	STATS**	Tons/A	%					% HH	% BC	% IBS
Red Skin/White Flesh											
Dark Red Norland	486	*A*	24.3	1	10	21	47	21	0	0	0
Red LaSoda	485	*A*	24.2	1	8	15	37	38	0	0	0
CO98012-5R	455	*AB*	22.8	9	44	38	9	0	0	0	0
NDA7985-1R	426	*BC*	21.3	3	17	33	35	12	0	0	0
Red-Purple Skin/Yellow Flesh											
A99331-2RY	356	*DEF*	17.8	14	44	28	12	1	0	0	0
AC99329-7PW/Y	427	*BC*	21.4	5	23	31	35	6	0	0	0
AC99330-1P/Y	322	*FG*	16.1	20	56	21	3	0	0	0	0
ATTX961014-1R/Y	389	*CD*	19.4	3	23	35	35	4	0	0	0
ATTX98500-2P/Y	356	*DEF*	17.8	8	32	35	23	2	0	0	0
POR01PG45-5	457	*AB*	22.9	5	41	37	16	0	0	0	0
Red Skin/Red Flesh											
CO97222-1R/R	428	*BC*	21.4	13	46	30	11	1	0	0	0
PA96RR1-193	475	*AB*	23.7	5	40	41	13	0	0	0	0
POR03PG23-1	291	*G*	14.6	14	60	23	3	0	0	0	0
Purple Skin/Purple Flesh											
Purple Majesty	385	*CDE*	19.2	22	56	18	4	0	0	0	0
CO97215-2P/P	318	*FG*	15.9	8	31	36	22	2	0	0	0
CO97227-2P/PW	298	*G*	14.9	35	55	10	0	0	0	0	0
OR00068-11	431	*BC*	21.5	9	45	31	13	3	0	0	0
Yellow Flesh											
Yukon Gold	322	*FG*	16.1	3	13	19	43	23	0	0	13
A00286-3Y	335	*EFG*	16.8	4	34	39	20	4	0	0	0
CO99045-1W/Y	426	*BC*	21.3	6	41	34	16	2	0	3	23
POR02PG26-5	382	*CDE*	19.1	8	38	31	22	2	0	0	0
POR02PG37-2	429	*BC*	21.4	6	35	33	22	4	0	0	3

* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5% level using Fisher's LSD 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	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (6-10 oz tubers) BLACKSPOT	BRUISE (%) (6-10 oz tubers) SHATTER	Length to Width Ratio 1 = Round 2 = Oblong
Red Skin/White Flesh											
Dark Red Norland	30	7	77	2.9	6.2	5.3	4	2	0	18	1.3
Red LaSoda	13	18	70	2.3	7.2	4.8	3	2	6	14	1.2
CO98012-5R	9	0	74	3.6	3.4	9.3	4	1	0	10	1.0
NDA7985-1R	21	5	56	3.0	5.0	6.0	3	1	5	10	1.3
Red-Purple Skin/Yellow Flesh											
A99331-2RY	3	26	71	3.2	3.1	8.3	4	1	6	9	1.1
AC99329-7PW/Y	8	9	84	3.3	4.6	6.8	4	1	5	0	1.1
AC99330-1P/Y	26	1	80	4.0	2.6	8.5	4	1	0	0	1.1
ATTX961014-1R/Y	24	20	78	2.4	4.7	5.8	4	2	10	15	1.2
ATTX98500-2P/Y	1	14	82	2.7	3.8	6.8	4	1	18	10	1.2
POR01PG45-5	0	4	75	2.4	3.8	8.3	2	1	5	13	1.3
Red Skin/Red Flesh											
CO97222-1R/R	6	17	81	3.4	3.1	9.5	4	2	0	34	1.2
PA96RR1-193	6	8	77	3.2	3.7	9.0	4	1	0	28	1.1
POR03PG23-1	51	1	74	3.7	2.8	7.3	4	1	13	15	1.3
Purple Skin/Purple Flesh											
Purple Majesty	25	16	84	3.7	2.6	10.8	4	1	0	0	1.2
CO97215-2P/P	5	0	72	2.9	3.8	6.0	4	1	0	13	1.1
CO97227-2P/PW	6	18	79	3.5	2.2	9.5	4	2	0	8	1.5
OR00068-11	9	15	88	3.1	3.5	8.8	4	1	0	30	1.2
Yellow Flesh											
Yukon Gold	14	8	77	2.0	5.8	4.0	3	2	8	23	1.2
A00286-3Y	9	15	77	2.0	4.1	5.8	2	2	15	0	1.2
CO99045-1W/Y	6	0	81	3.4	3.7	8.3	4	3	0	3	1.6
POR02PG26-5	8	3	75	3.0	3.6	7.3	4	1	8	18	1.3
POR02PG37-2	16	6	77	4.0	3.9	7.8	4	1	10	13	1.1

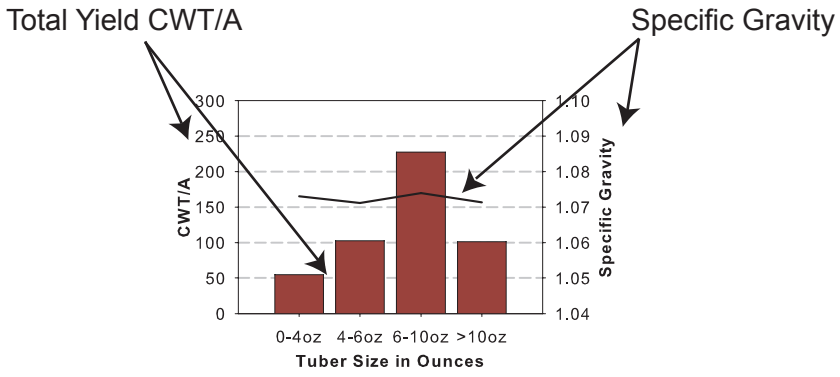
"The Othello Chain Gang" (From left to right: Mark Pavek, Josh Rodriguez, Chris Hiles, Zach Holden, Daniel Zommick, Anthony Cortez, and Rudy Garza.)

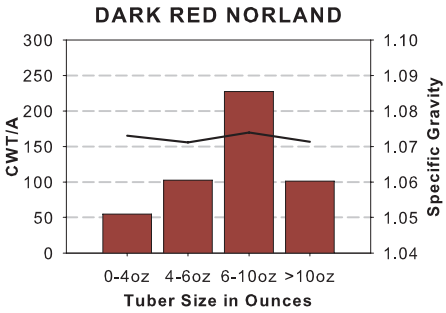
2008 Regional Red and Specialty Trial

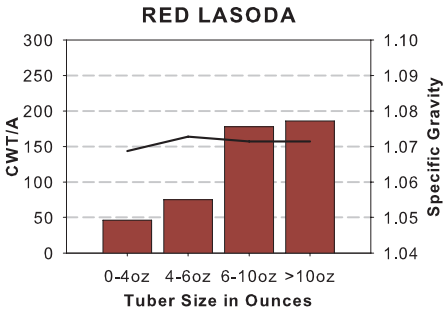
Tuber Yield and Specific Gravity Distributions

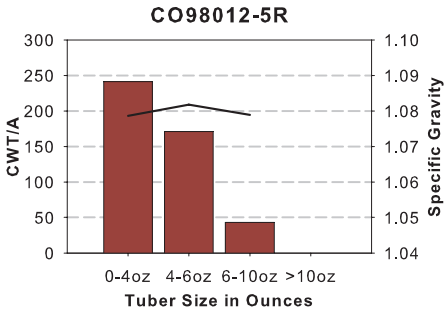
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category

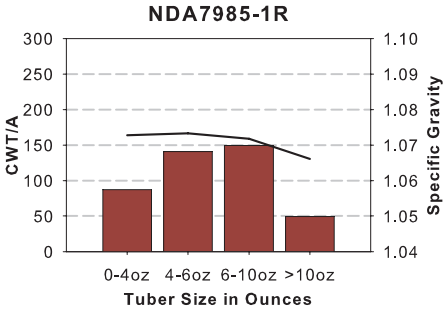
8 inch In-Row Spacing

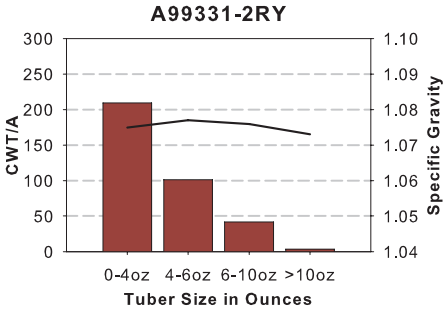


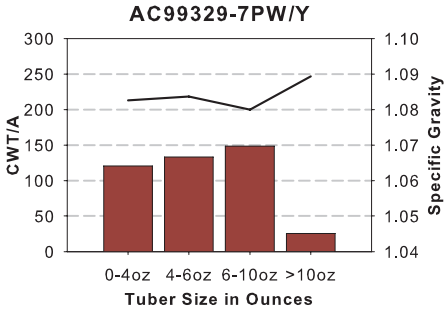


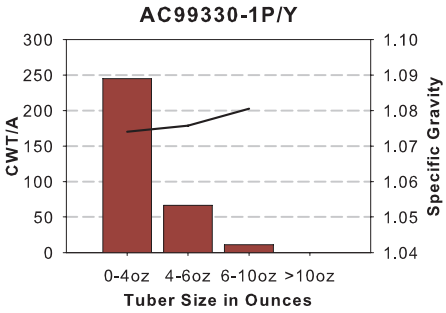


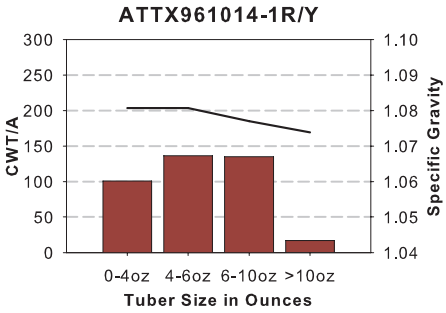


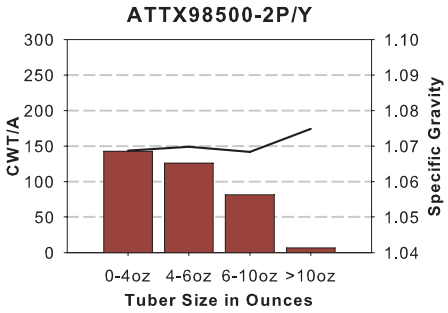












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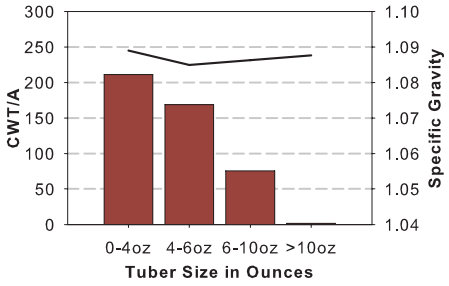

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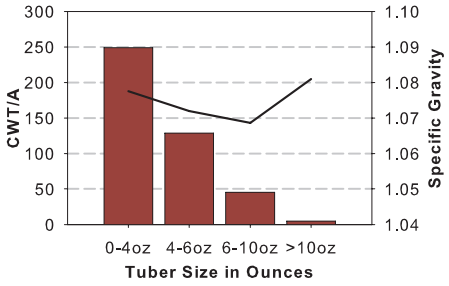

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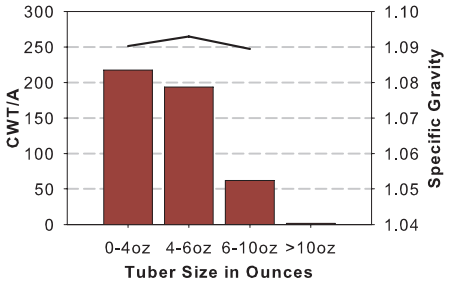

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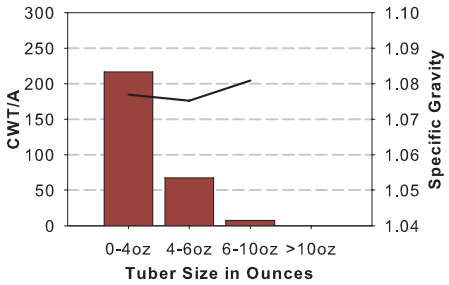
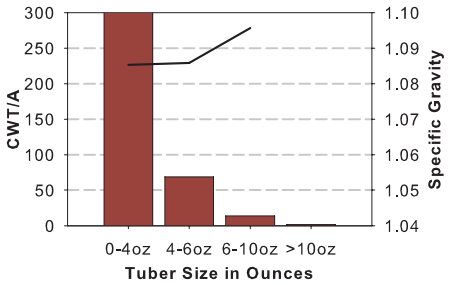


PURPLE MAJESTY



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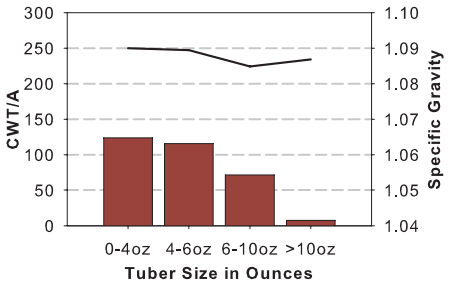

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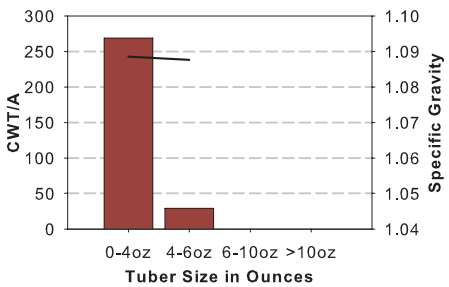
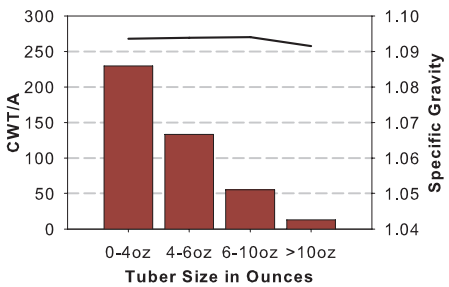
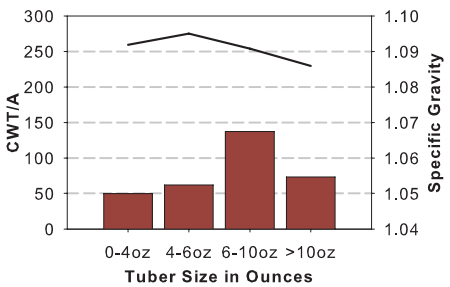


OR00068-11



YUKON GOLD



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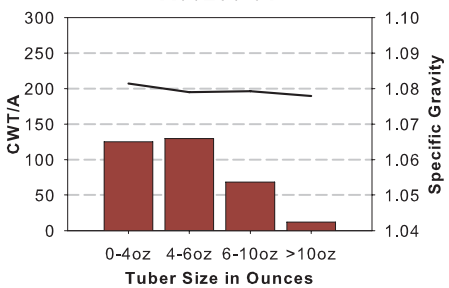

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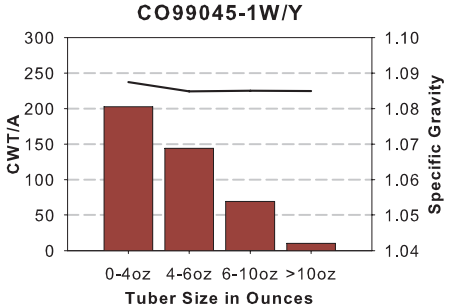

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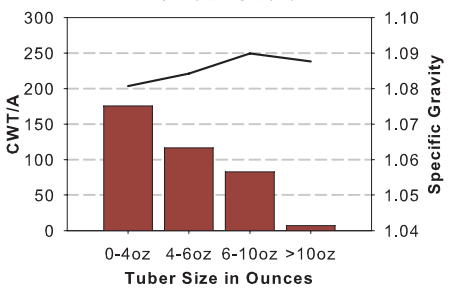

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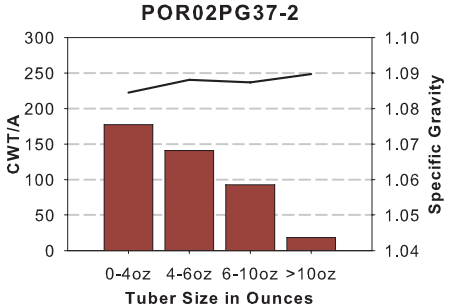
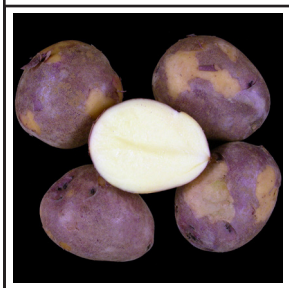


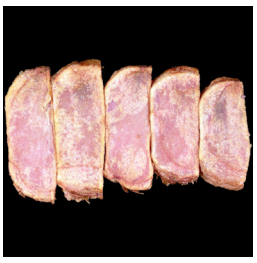
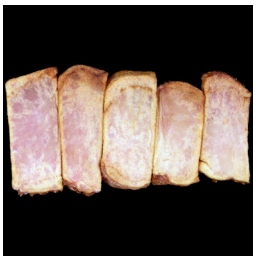
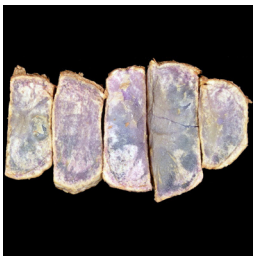
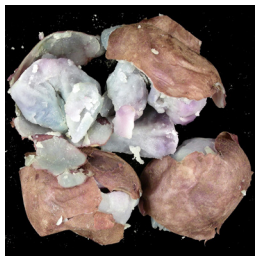
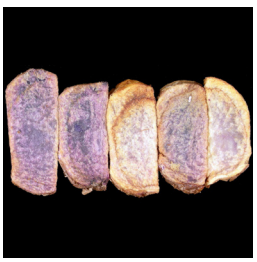
Tubers	WA Tri-State Specialty Trial Comments
Dark Red Norland	
	**Tubers:** Round to oblong tubers. Good skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
Red LaSoda	
	**Tubers:** Round to oblong tubers. Fair skin set; deep eyes. **Fry color:** Light, uniform. **Boiled:** Moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** No after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** No after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
CO98012-5R	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Moderate sloughing, slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center. **Baked:** No after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, fully cooked skin.
NDA7985-1R	
	**Tubers:** Round tubers. Fair skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center. **Baked:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
A99331-2RY	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** Light, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** Moderate after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.

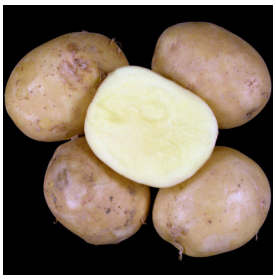
Chips	Fries	Baked	Boiled	Microwaved
Dark Red Norland				
				
Red LaSoda				
				
CO98012-5R				
				
NDA7985-1R				
				
A99331-2RY				
				

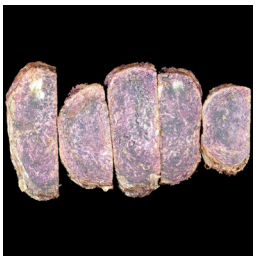
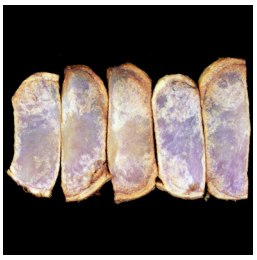
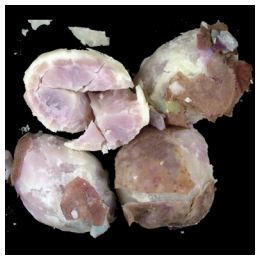
Tubers	WA Tri-State Specialty Trial Comments
AC99329-7PW/Y	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** Light, uniform. **Boiled:** Moderate sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** No after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin.
AC99330-1P/Y	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** Light, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, creamy texture, unacceptable flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin.
ATTX961014-1R/Y	
	**Tubers:** Round to oblong tubers. Good skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** No after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center, steamy skin.
ATTX98500-2P/Y	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** Light, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, unacceptable flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
POR01PG45-5	
	**Tubers:** Round tubers. Poor skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
AC99329-7PW/Y				
				
AC99330-1P/Y				
				
ATTX961014-1R/Y				
				
ATTX98500-2P/Y				
				
POR01PG45-5				
				

Tubers	WA Tri-State Specialty Trial Comments
CO97222-1R/R	
	**Tubers:** Round to oblong tubers. Good skin set; shallow eyes. **Fry color:** Bright pink, uniform. **Boiled:** Moderate sloughing, moderate after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
PA96RR1-193	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Brownish pink, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, fully cooked skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin.
POR03PG23-1	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Brownish pink, uniform. **Boiled:** Moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** Moderate after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
Purple Majesty	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Light purple grey, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, fully cooked skin. **Microwaved:** Slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
CO97215-2P/P	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** Light purple, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.

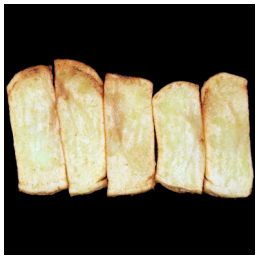
Chips	Fries	Baked	Boiled	Microwaved
CO97222-1R/R				
				
PA96RR1-193				
				
POR03PG23-1				
				
Purple Majesty				
				
CO97215-2P/P				
				

Tubers	WA Tri-State Specialty Trial Comments
CO97227-2P/PW	
	**Tubers:** Round to oblong tubers. Good skin set; shallow eyes. **Fry color:** Very dark, dark purple with light spots, uniform. **Boiled:** Slight sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
OR00068-11	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Light purple grey, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
Yukon Gold	
	**Tubers:** Round to oblong tubers. Fair skin set; moderate eye depth. **Fry color:** Light, non-uniform. Boiled: Moderate sloughing, slight after cooking darkening, fluffy texture, good flavor, fully cooked tuber center. **Baked:** No after cooking darkening, fluffy texture, good flavor, mushy tuber center, fully cooked skin. **Microwaved:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
A00286-3Y	
	**Tubers:** Round to oblong tubers. Poor skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Moderate sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, fully cooked skin. **Microwaved:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
CO99045-1W/Y	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** Light, non-uniform. **Boiled:** Slight sloughing, slight after cooking darkening, fluffy texture, good flavor, mushy tuber center. **Baked:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
CO97227-2P/PW				
				
OR00068-11				
				
Yukon Gold				
				
A00286-3Y				
				
CO99045-1W/Y				
				

Tubers	WA Tri-State Specialty Trial Comments
POR02PG26-5	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** Slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** Slight after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
POR02PG37-2	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** Light, uniform. **Boiled:** Severe sloughing, slight after cooking darkening, fluffy texture, good flavor, mushy tuber center. **Baked:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Microwaved:** No after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.

Jeanne Debons from the PVMI (Potato Variety Management Institute) talks about promising new varieties now available to the potato industry.

Chips	Fries	Baked	Boiled	Microwaved
POR02PG26-5				
				
POR02PG37-2				
				

Tri-State and Specialty clones await selection by a dedicated team of researchers, agronomists, commissioners and other industry personel.

2008 Washington Regional Red and Specialty Trial

Postharvest Evaluation

Fried (3/8 x 1 1/8" slices) **(Chips)**

	Clone	Raw				After Frying					Av of 6 raters
		Stem	Bud	Average	Difference	Stem	Bud	Average	Difference	USDA	SFA
1	Dk Red Norland	57.6	57.0	57.4	2.2	34.0	41.7	37.9	7.9	0	2.7
2	Red LaSoda	57.3	58.8	58.1	2.7	31.5	35.8	33.7	4.6	0	4.3
3	CO98012-5R	54.4	55.2	54.8	1.7	36.9	40.8	38.9	6.4	0	3.7
4	NDA7988-1R	55.5	56.0	55.7	2.5	32.8	32.4	32.6	5.9	0	4.8
5	A99331-2RY	53.9	54.0	54.0	1.5	39.6	41.9	40.8	3.1	0	3.2
6	AC99329-7PW/Y	57.3	57.8	57.5	1.4	36.4	42.7	39.6	6.8	0	4.7
7	AC99330-1P/Y	52.7	52.5	52.6	1.3	32.0	35.7	33.8	5.1	0	3.8
8	ATTX961014-1R/Y	56.9	56.4	56.6	2.4	40.3	40.1	40.2	2.8	0	4.0
9	ATTX98508-2P/Y	54.1	54.2	54.2	1.2	45.6	45.6	45.6	2.6	0	3.3
10	POR01PG45-5	57.0	57.9	57.4	1.7	36.9	40.9	39.9	3.3	0	3.5
11	CO97222-1R/R	13.3	14.8	14.0	2.1	14.1	13.9	14.0	1.7	4	2.8
12	PA96RR1-193	26.4	34.6	30.5	8.2	25.3	29.5	27.4	5.0	1	2.7
13	POR03PG23-1	14.0	14.4	14.2	1.6	15.3	14.6	15.0	2.8	3	3.0
14	Purple Majesty	6.5	6.9	6.7	1.1	14.5	13.7	14.1	2.5	4	3.0
15	CO97215-2P/P	4.9	5.1	5.0	0.5	9.8	9.0	9.4	1.8	4	4.2
16	CO97227-2P/PW	4.1	3.0	3.5	1.2	7.9	6.0	7.0	2.0	4	3.4
17	OR00068-11	8.8	11.6	10.6	2.2	19.1	17.6	18.4	2.5	3	3.7
18	Yukon Gold	34.7	34.9	34.8	1.2	28.5	39.2	33.9	10.7	1	4.2
19	A00286-3Y	54.0	52.3	53.1	2.5	42.8	44.3	43.6	4.0	0	2.5
20	CO99045-1W/Y	52.3	52.8	52.5	1.4	21.6	30.7	26.2	9.1	2	4.8
21	POR02PG26-5	57.3	56.0	56.6	1.8	35.9	37.5	36.7	4.4	0	4.2
22	POR03PG37-2	54.3	54.7	54.5	1.4	45.1	44.9	45.0	2.3	0	2.9
	LSD 0.05*			1.3	1.2			3.3	3.1		
	Average	41.3	41.9	41.6	2.0	29.5	31.8	30.6	4.4	1	3.6

*Differences between clones equal to or greater than the LSD 0.05 are significant. Entries with red (CO97222-1R/R, PA96RR1-193 & POR03PG23-1) or purple (Purple Majesty, CO97215-2P/P, CO97227-2P/PW & OR00068-11) flesh were not included in the ANOVA. All other entries have white or yellow flesh.

French fries from a late trial await to be eaten. Nora Fuller prepares the fries annually for a group of tasters at Washington State University, Pullman.

2008 Washington Regional Red and Specialty Trial

Postharvest Evaluation Summary

	Clone	Boiled (25 max)	Baked (25 max)	Microwaved (25 max)	Total (75 max)
18	Yukon Gold	19.7	21.8	19.6	61.0
20	CO99045-1W/Y	20.2	19.7	19.9	59.7
6	AC99329-7PW/Y	18.2	21.4	20.0	59.5
3	CO98012-5R	18.3	20.5	20.2	59.0
2	Red LaSoda	18.5	20.4	19.3	58.2
19	A00286-3Y	18.7	19.7	19.6	57.9
22	POR02PG37-2	17.8	20.2	19.4	57.4
1	Dk Red Norland	18.8	20.1	18.3	57.3
8	ATTX961014-1R/Y	18.5	20.4	18.3	57.2
10	POR01PG45-5	18.2	20.5	18.3	57.0
17	OR00068-11	18.2	18.4	19.6	56.2
11	CO97222-1R/R	16.7	20.8	18.7	56.2
5	A99331-2RY	17.8	19.8	18.3	55.9
4	NDA7985-1R	17.0	19.8	19.2	55.9
12	PA96RR1-193	17.0	19.0	19.4	55.4
16	CO97227-2P/PW	17.5	18.7	19.1	55.3
7	AC99330-1P/Y	16.3	18.8	19.0	54.1
14	Purple Majesty	15.0	19.7	19.4	54.0
21	POR02PG26-5	16.8	18.8	18.1	53.8
13	POR03PG23-1	16.8	18.7	17.9	53.4
15	CO97215-2P/P	16.5	18.7	18.1	53.3
9	ATTX98500-2P/Y	16.8	17.5	18.3	52.7

Planted:	April 1
Harvested:	Aug. 6
French Fried:	Aug. 7
Chipped:	Aug. 7
Boiled:	Aug. 13
Microwaved:	Aug. 11
Baked:	Aug. 7 & 12

2008 Washington Regional Red and Specialty Trial

Red Clone Postharvest Evaluation

Boiled

	Clone	After Cooking Sloughing	After Cooking Darkening	Texture	Flavor	Tuber Center	Total Rating
1	Dk Red Norland	3.5	4.2	3.3	3.5	4.3	18.8
2	Red LaSoda	3.2	4.3	3.0	3.8	4.2	18.5
3	CO98012-5R	3.3	4.3	3.2	3.0	4.5	18.3
4	NDA7985-1R	2.0	4.2	3.2	3.0	4.7	17.0
5	A99331-2RY	3.5	3.5	3.2	3.3	4.3	17.8
6	AC99329-7PW/Y	3.3	4.3	3.0	3.2	4.3	18.2
7	AC99330-1P/Y	3.8	3.7	2.7	2.2	4.0	16.3
8	ATTX961014-1R/Y	3.5	4.2	3.3	3.2	4.3	18.5
9	ATTX98500-2P/Y	3.7	3.8	2.8	2.5	4.0	16.8
10	POR01PG45-5	3.5	3.8	3.5	3.3	4.0	18.2
	LSD 0.05	*0.8*	*0.6*	*0.8*	*1.2*	*0.6*	*2.3*
	Average	3.3	4.0	3.1	3.1	4.3	17.9

Oven Baked

	Clone	After cooking Darkening	Texture	Flavor	Tuber Center	Skin Rating	Total Rating
1	Dk Red Norland	4.4	3.1	3.8	4.6	4.3	20.1
2	Red LaSoda	4.4	3.6	4.0	4.4	4.0	20.4
3	CO98012-5R	4.5	3.5	4.0	4.4	4.1	20.5
4	NDA7985-1R	4.8	2.9	3.6	4.4	4.1	19.8
5	A99331-2RY	4.3	3.3	3.8	4.5	4.0	19.8
6	AC99329-7PW/Y	4.6	3.6	4.6	4.5	4.0	21.4
7	AC99330-1P/Y	3.8	3.3	3.1	4.5	4.1	18.8
8	ATTX961014-1R/Y	4.5	3.6	3.5	4.4	4.4	20.4
9	ATTX98500-2P/Y	3.9	3.0	1.9	4.4	4.4	17.5
10	POR01PG45-5	4.0	3.8	3.9	4.5	4.4	20.5
	LSD 0.05	*0.5*	*0.9*	*1.1*	*ns*	*ns*	2.3
	Average	4.3	3.4	3.6	4.5	4.2	19.9

Microwaved

	Clone	After cooking Darkening	Texture	Flavor	Tuber Center	Skin Rating	Total Rating
1	Dk Red Norland	4.3	3.3	4.2	2.7	3.8	18.3
2	Red LaSoda	4.5	3.5	3.8	3.3	4.2	19.3
3	CO98012-5R	4.2	3.2	4.3	3.8	4.7	20.2
4	NDA7985-1R	4.2	3.0	4.2	4.0	3.8	19.2
5	A99331-2RY	3.2	3.3	3.7	4.2	4.0	18.3
6	AC99329-7PW/Y	4.0	3.2	4.2	4.5	4.2	20.0
7	AC99330-1P/Y	3.5	3.5	3.8	4.5	3.7	19.0
8	ATTX961014-1R/Y	3.8	3.5	3.3	3.8	3.8	18.3
9	ATTX98500-2P/Y	3.8	2.8	3.7	4.2	3.8	18.3
10	POR01PG45-5	4.0	3.5	3.0	4.2	3.7	18.3
	LSD 0.05	*0.7*	*ns*	*1.3*	*0.9*	*0.8*	*2.4*
	Average	4.0	3.3	3.8	3.9	4.0	18.9

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

2008 Washington Regional Red and Specialty Trial

Specialty Clone Postharvest Evaluation

Boiled

Clone	After cooking Sloughing	After cooking Darkening	Texture	Flavor	Tuber Center	Total Rating
11 CO97222-1R/R	2.5	3.3	3.0	3.7	4.2	16.7
12 PA96RR1-193	2.3	3.7	3.2	3.8	4.0	17.0
13 POR03PG23-1	3.3	3.3	3.0	3.2	4.0	16.8
14 Purple Majesty	1.8	3.7	2.8	2.7	4.0	15.0
15 CO97215-2P/P	1.8	3.5	3.3	3.8	4.0	16.5
16 CO97227-2P/PW	3.7	3.5	3.0	3.3	4.0	17.5
17 OR00068-11	2.3	4.0	3.7	4.0	4.2	18.2
18 Yukon Gold	2.7	4.2	3.8	4.5	4.5	19.7
19 A00286-3Y	3.2	4.2	3.3	3.7	4.3	18.7
20 CO99045-1W/Y	3.5	4.3	3.7	4.3	4.3	20.2
21 POR02PG26-5	2.0	4.3	3.2	3.3	4.0	16.8
22 POR02PG37-2	2.2	4.2	3.7	3.7	4.2	17.8
LSD 0.05	*0.7*	*0.8*	*0.7*	*1.1*	*ns*	*2.4*
Average	2.6	3.8	3.3	3.7	4.1	17.6

Oven Baked

Clone	After cooking Darkening	Texture	Flavor	Tuber Center	Skin Rating	Total Rating
11 CO97222-1R/R	4.2	3.1	4.7	4.4	4.3	20.8
12 PA96RR1-193	4.1	2.7	3.2	4.4	4.6	19.0
13 POR03PG23-1	3.6	3.1	3.1	4.6	4.3	18.7
14 Purple Majesty	4.1	3.1	3.6	4.2	4.7	19.7
15 CO97215-2P/P	4.1	3.2	3.3	3.7	4.3	18.7
16 CO97227-2P/PW	4.3	3.1	3.1	3.8	4.3	18.7
17 OR00068-11	3.7	3.1	3.3	4.0	4.3	18.4
18 Yukon Gold	4.8	3.7	4.2	4.4	4.7	21.8
19 A00286-3Y	4.8	2.9	3.3	4.1	4.6	19.7
20 CO99045-1W/Y	4.6	3.3	3.7	3.9	4.3	19.7
21 POR02PG26-5	4.4	2.9	3.4	3.9	4.1	18.8
22 POR02PG37-2	4.8	2.7	4.0	4.4	4.2	20.2
	0.6	*0.7*	*1.1*	*0.8*	*0.6*	*2.0*
Average	4.3	3.1	3.6	4.2	4.4	19.5

Microwaved

Clone	After cooking Darkening	Texture	Flavor	Tuber Center	Skin Rating	Total Rating
11 CO97222-1R/R	3.6	3.4	3.9	3.9	4.0	18.7
12 PA96RR1-193	3.6	3.1	3.9	4.6	4.3	19.4
13 POR03PG23-1	3.3	2.6	3.9	4.3	3.9	17.9
14 Purple Majesty	4.3	3.4	3.1	4.4	4.1	19.4
15 CO97215-2P/P	4.0	3.0	3.1	4.3	3.7	18.1
16 CO97227-2P/PW	3.7	3.6	3.9	4.0	4.0	19.1
17 OR00068-11	3.9	3.6	3.9	4.3	4.0	19.6
18 Yukon Gold	4.7	3.1	4.3	3.7	3.7	19.6
19 A00286-3Y	4.7	3.4	4.0	3.6	3.9	19.6
20 CO99045-1W/Y	4.4	3.4	4.1	4.0	3.9	19.9
21 POR02PG26-5	4.3	3.6	3.6	3.0	3.7	18.1
22 POR02PG37-2	4.7	3.1	3.7	4.0	3.9	19.4
LSD 0.05	*0.9*	*1.0*	*1.2*	*1.1*	*ns*	*2.4*
Average	4.1	3.3	3.8	4.0	3.9	19.1

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

Index of Clones and Cultivars