2007 Potato Cultivar Yield and Postharvest Quality Evaluations

WSU Potato Research Group

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2007 Potato Cultivar Yield and Postharvest Quality Evaluations

Washington State University
Potato Research Group

PO Box 646414
Pullman, WA 99164-6414

potatoes@wsu.edu
http://www.potatoes.wsu.edu/

Principal Investigators

Mark J. Pavek
Field Trials and Information
509-335-6861
mjpavek@wsu.edu
Additional contact:
Zach Holden, 509-335-3452
zholden@wsu.edu

N. Richard Knowles
Postharvest Trials and Information
509-335-3451
rknowles@wsu.edu
Additional contact:
Nora Fuller, 509-335-4447
fullern@wsu.edu

Fax: 509-335-8690

Faculty and Staff
Nora Fuller
Raul “Rudy” G. Garza Jr.
Chris Hiles
Zachary J. Holden
Lisa O. Knowles
Josh Rodriguez

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John Steinbock; Mark Weber; Washington State Potato Commission; Growers and Industry; Conner Flying Service; Martin Aeriolla; Edward Driskill, Jr.; Kevin Bouchey; Dennis Johnson; Tom Cummings; Tim Waters; Vanessa Coil; Brian Clark; Esther Erickson; Roxanne Holden

On the Cover: Selection of new Tri-State potato clones near Powell Butte, OR.

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INTRODUCTION

The 2007 Washington "Potato Cultivar Yield and Postharvest Quality Evaluations" annual report provides detailed information about promising new potato cultivars and how they compare to traditional reference varieties when 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 the results from five variety 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.

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, 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.

We do our best to provide meaningful information that can be used by growers, processors, fresh-pack sheds, researchers, and other industry personnel. The results from this year's trials are presented in "user-friendly" graphs, figures, and charts. An economic analysis was conducted on all clones and cultivars for both the fresh and process markets, with the exception of the red and specialty clones. We also provide a merit rating for each cultivar within a specific market. The cultivars are ranked according to their overall performance which takes into account economics, yields, tuber-size profiles, tuber quality and many post-harvest attributes. It is our hope that this report is useful and easy to understand.

Accomplishments in 2007:
As a result of the Northwest Potato Variety Development Program's efforts, more than 26 percent of the 2007 PNW acreage was planted with varieties released by the program. In Washington State alone, these varieties accounted for more than 32% of the 2007 acreage, with a farm-gate value of approximately $160,000,000. The increase in acreage devoted to NWPVD varieties has been 5-fold since 1997. Recent NWPVD releases, Ranger and Umatilla, have had a significant impact on the processing industry, accounting for 23% and 12% of WA processing potatoes in 2007, respectively. New NWPVD clones released this year include A84180-8 and A88338-1. More information is available for each clone at: www.potatoes.wsu.edu.

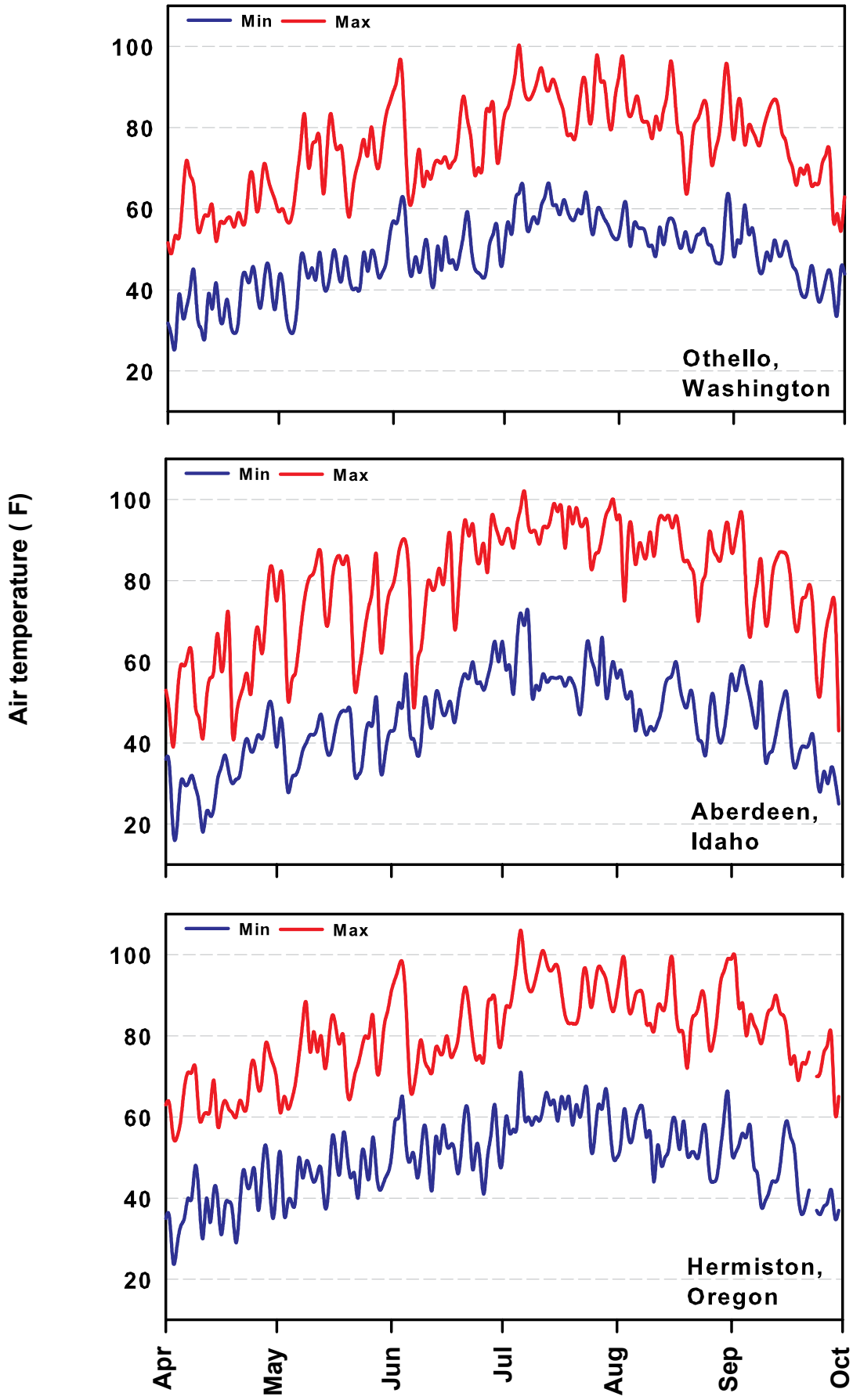
Cultural Information

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	Alfalfa	Grain	Small Grains
Planting date	April 18	May 1	April 5
Vine kill date	September 17	September 4	September 4
Soil moisture at harvest	Dry	60 - 65%	Field capacity
Temperature at harvest	73°F	74°F	60°F
Harvest date	September 26	September 21	October 1
Storage temperature	48°F	≥55°F	N/A
Date received at Pullman	October 12	October 11	October 2

Regional Trial	**Othello, WA**	**Aberdeen, ID**	**Hermiston, OR**
Soil type	Shano silt loam	Silt loam	Loamy fine sand
Previous crop	Alfalfa	Grain	Small Grains
Planting date	April 17	May 1	April 5
Vine kill date	September 17	September 4	September 4
Soil moisture at harvest	Dry	60 - 65%	Field capacity
Temperature at harvest	73°F	74°F	60°F
Harvest date	September 25	September 21	October 1
Storage temperature	48°F	≥55°F	N/A
Date received at Pullman	September 28	October 11	October 2

2007 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
VC	=	**V**auxhall, Alberta, **C**anada		

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

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 near the front of this book.

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 were the same as "Early Process Market Merit Score Methods" shown above, with the exception that a late harvest economic analysis was 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	**CO97138-7Ru**	4.4	1	**CO97138-7Ru**	4.3
2	AO96141-3	4.2	2	A95409-1	4.1
3	A95409-1	4.2	3	**CO97138-3Ru**	4.0
4	**AOTX95265-3Ru**	4.1	4	AO96164-1	3.8
5	**CO97138-3Ru**	4.1	5	AOA95155-7	3.5
6	AOTX95265-2ARu	3.8	6	AOTX95265-4Ru	3.4
7	AOTX95265-4Ru	3.8	7	Ranger Russet	3.3
8	TXA549-1Ru	3.6	8	**AOTX95265-3Ru**	3.3
9	A96104-2	3.6	9	**CO97087-2Ru**	3.3
10	Russet Norkotah	3.5	10	TXA549-1Ru	3.2
11	AO96164-1	3.5	11	A96104-2	3.1
12	A97287-6	3.3	12	AOA95154-1	3.1
13	**CO97087-2Ru**	2.9	13	AOTX95265-2ARu	2.9
14	Ranger Russet	2.6	14	Russet Norkotah	2.9
15	AOA95154-1	2.6	15	AO96141-3	2.8
16	CO95172-3Ru	2.4	16	CO95172-3Ru	2.7
17	Shepody	1.9	17	A97287-6	2.2
18	Russet Burbank	1.9	18	AC96052-1Ru	1.6
19	AC96052-1Ru	1.6	19	Russet Burbank	1.4
20	AOA95155-7	1.4			

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

NEWEST ENTRIES - TRI-STATE TRIAL

Fresh Market Value Merit Scores - Washington

(Entries ranked according to performance)

Scores based on 1 to 5 (5 = Best) and reflect 2007 performance only.

Rank	Entry	Early Harvest Merit	Rank	Entry	Late Harvest Merit
1	PA00N14-2	4.9	1	AO96305-3	3.9
2	A0008-1TE	3.5	2	Ranger Russet	3.6
3	AO96365-2	3.5	3	A0008-1TE	3.6
4	PA00N15-2	3.5	4	AO96365-2	3.4
5	Ranger Russet	3.4	5	A98345-1	3.2
6	PA99N2-1	3.3	6	A96814-65LB	3.0
7	A98345-1	3.2	7	PA00N14-2	2.9
8	Shepody	2.8	8	PA99N2-1	2.9
9	PA99N12-1	2.8	9	A97066-42LB	2.6
10	Russet Norkotah	2.6	10	Russet Burbank	2.5
11	AO96305-3	2.3	11	A99073-1	2.4
12	A96814-65LB	2.1	12	PA00N15-2	2.2
13	PA99N82-4	1.5	13	PA99N12-1	2.2
14	A97066-42LB	1.5	14	PA00N10-5	2.1
15	PA98NM39-1	1.4	15	PA98NM39-1	1.4
16	PA98NM38-1	1.4	16	PA98NM38-1	0.6
17	Russet Burbank	1.3	17	PA99N82-4	0.6
18	A99073-1	0.7			

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

ADVANCED LINES - REGIONAL TRIAL

Process Market Merit Scores - Washington

(Entries ranked according to WA field performance)

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

				Late Harvest	
Rank	Entry	Early Harvest Merit	Entry	Field Performance Merit	Post-Harvest Processing Merit
1	AO96141-3	4.3	AO96141-3	4.2	3.5
2	AO96164-1	3.9	**CO97087-2Ru**	4.0	4.6
3	Shepody	3.7	A95409-1	3.6	2.7
4	A95409-1	3.7	A97287-6	3.5	4.1
5	A97287-6	3.4	Ranger Russet	3.5	2.9
6	Ranger Russet	3.4	A96104-2	3.3	3.1
7	AOTX95265-2ARu	3.3	AOA95154-1	3.0	4.0
8	**AOTX95265-3Ru**	3.3	AOA95155-7	2.8	3.4
9	**CO97087-2Ru**	3.2	CO97138-3Ru	2.8	Not Rated
10	A96104-2	3.2	TXA549-1Ru	2.7	2.7
11	TXA549-1Ru	3.1	CO95172-3Ru	2.6	2.0
12	AOTX95265-4Ru	3.1	AO96164-1	2.6	4.0
13	**CO97138-7Ru**	3.0	AOTX95265-4Ru	2.0	3.3
14	**CO97138-3Ru**	2.9	**AOTX95265-3Ru**	1.9	2.3
15	AOA95154-1	2.8	**CO97138-7Ru**	1.9	Not Rated
16	Russet Norkotah	2.7	AC96052-1Ru	1.9	4.4
17	Russet Burbank	2.7	AOTX95265-2ARu	1.6	1.7
18	CO95172-3Ru	2.5	Russet Norkotah	1.5	Not Rated
19	AOA95155-7	1.6	Russet Burbank	1.5	2.6
20	AC96052-1Ru	1.4			

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 reflect 2007 performance only.

				Late Harvest	
Rank	Entry	Early Harvest Merit	Entry	Field Performance Merit	Post-Harvest Processing Merit
1	PA00N14-2	4.9	A96814-65LB	4.0	4.3
2	Shepody	3.9	A98345-1	3.7	4.1
3	A96814-65LB	3.7	AO96305-3	3.5	4.7
4	Ranger Russet	3.2	A97066-42LB	3.3	3.3
5	AO96305-3	3.1	AO96365-2	3.2	4.2
6	PA00N15-2	3.0	PA00N15-2	3.1	3.4
7	AO96365-2	2.9	Ranger Russet	2.7	3.4
8	PA99N12-1	2.9	A0008-1TE	2.7	4.7
9	PA99N2-1	2.8	PA99N12-1	2.5	4.4
10	PA98NM38-1	2.8	PA00N14-2	2.2	3.8
11	A98345-1	2.7	PA99N2-1	2.2	4.3
12	Russet Burbank	2.7	Russet Burbank	1.7	3.8
13	A0008-1TE	2.5	PA00N10-5	1.6	Not Rated
14	Russet Norkotah	2.4	A99073-1	1.2	3.4
15	A97066-42LB	2.4	PA98NM39-1	1.2	2.4
16	PA98NM39-1	1.3	PA99N82-4	1.2	4.6
17	A99073-1	1.2	PA98NM38-1	1.2	3.6
18	PA99N82-4	0.8			

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

2007 Red & Specialty Potato Clones - Washington State University

RANKED ACCORDING TO 2007 US #1 Yield

(See also Red & Specialty Section near end of book)

	US #1 Yield				
	2007			2006	
	US#1 Yield	0-6 oz	6-10oz	US#1 Yield	
	CWT/A	-----%-----		CWT/A	Comments
Red Skin/White Flesh					
Red LaSoda	570	15	34	430	Deep eyes, rhizoc, tuber surface bumpy.
NDA7985-1R	525	25	42		Large, deep red, bronzing, elephant hide, nice shape/size.
Dk Red Norland	464	25	34	340	Pink, lot of cracks & bronzing. Inconsistent color.
CO98012-5R	455	65	28		Deep red, uniform shape, good size distr., cracks
Red or Purple Skin/Yellow Flesh					
ATTX961014-1R/Y	533	41	37		Good skin set & size, nice color & shape, shallow eyes.
CO97232-2R/Y	511	39	37	385	Discard! Sunburn, light red,poor skin, cracks, bronzing.
CO97232-1R/Y	511	49	38	290	Light red, oblong, smooth shape, flat, poor skin set.
AC97521-1R/Y	458	45	36		Light red, lot of stem-end knobs, smooth shape, cracks.
ATTX98500-2P/Y	409	39	31		Deep purple, some bronzing, poor skin set, bit flat.
CO97233-3R/Y	376	35	47	390	Discard! Severe cracks, pear shaped, poor skin set.
POR00PG4-1	242	28	41		Discard! Severe cracks & knobs.
Red Skin/Red Flesh					
POR02PG5-1	490	15	29		Large, severe bronzing, sticky stolons, discard?
CO97222-1R/R	441	45	39		Discard! Severe bronzing & cracks. Purple/red, nice size.
POR01PG20-12	400	56	37	390	Nice deep red, oblong, uniform shape & size.
CO97226-2R/R	312	95	5	315	Severe bronzing, deep red/purple, nice size.
POR01PG22-1	275	91	7	160	Fingerling, nice deep red, some bronzing & curves
Purple Skin/Purple Flesh					
POR01PG16-1	436	80	17	180	Long, dumbbells, severe bronzing, banana shape, rough.
CO97227-2P/PW	401	88	11		Sticky stolons, nice shape & size, deep purple, oblong.
CO97215-2P/P	304	72	22		Deep purple, nice shape & size, some bronzing.
All Blue	290	59	32	340	Severe bronzing, deep blue, knobs, rough surface.
Yellow Flesh - Skin Color/Type Vary					
POR02PG37-2	475	61	29		Nice uniform shape & size, pink eyes, severe rhizoc.
Yukon Gold	465	19	36	420	Larger yellow, nice uniform shape.
POR02PG26-5	446	34	43		Discard? Skin issues. Otherwise, nice color, somewhat flat.
A96510-4Y	346	18	41	370	Discard x 3 years! Russet, ugly, pear shaped, poor skin set.
A99433-5Y	340	42	27		Yellow/buff, deep eyes, skin appears dirty after wash.

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

At-Harvest Grading Comments & Fresh Market Appearance

Newest Entries - 2007 Tri-State Trials		
Clone	Fresh Market Appearance 1-5 (5 = best)	Comments
Early-Harvest Tri-State		
Ranger Russet	3.0	Deep eyes, shape non-uniform, somewhat typy.
Russet Burbank	2.5	Non-uniform shape, smaller, knobs & cracks.
Russet Norkotah	3.8	Mostly typy, few pointed ones, dark skin.
Shepody	2.0	Surface bumpy, irreg., large, white, flat.
A0008-1TE	4.0	Mostly typy, nice skin, some cracks.
A96814-65LB	2.3	Non-uniform shape, with some typy tubers, spotty russeting.
A97066-42LB	2.0	Bit round, small, sticky stolons.
A98345-1	2.0	Round, plump; ugly, light skin.
A99073-1	1.5	Very rough shape, ugly, cracks, folded ends, discard.
AO96305-3	2.5	Folded ends, long and skinny, bad skin.
AO96365-2	3.5	Typy, nice skin, round.
PA00N14-2	3.5	Mostly typy, long, skinny, light russet.
PA00N15-2	3.0	Large, mostly typy, shape non-uniform, knobs, light skin.
PA98NM38-1	2.3	Small, ugly, deep eyes, light russet, sticky stolons.
PA98NM39-1	1.0	Bumpy surface, bit round, scab-type cracking, discard.
PA99N12-1	3.3	Typy, light skin, nice, some small tubers.
PA99N2-1	3.8	Mostly typy, bit round, small, light russet.
PA99N82-4	2.3	Very round, lot of cracks, small, discard.
Late-Harvest Tri-State		
Ranger Russet	3.0	Mostly typy, shape a bit irregular.
Russet Burbank	3.0	Mostly typy, some cracks and knobs.
A0008-1TE	4.0	Mostly typy, some cracks, spotty russeting on some.
A96814-65LB	2.0	Spotty, ugly skin, process only, bit round.
A97066-42LB	2.5	Spotty, ugly skin, process only, smooth shape.
A98345-1	2.3	Shape a bit irreg. Spotty, bad skin, plump, some knobs on end.
A99073-1	3.0	Shape a bit irreg. Plump, some cracks.
AO96305-3	4.0	Typy, long, some cracks, french fryers dream.
AO96365-2	4.0	Small, mostly typy, bit round, too small?
PA00N10-5	2.0	Too round for processing, baseballs.
PA00N14-2	3.5	Small, skinny, typy, long, french fryers dream.
PA00N15-2	1.7	Bad skin cracks, bit rough, discard?
PA98NM38-1	1.5	Small pears, discard.
PA98NM39-1	1.0	Lot of cracks - discard. Rough shape.
PA99N12-1	2.7	Pear shaped, round, discard.
PA99N2-1	3.7	Small, round, mostly typy, shatter bruise.
PA99N82-4	1.3	Severe G. cracks - discard. Small, round.

At-Harvest Grading Comments & Fresh Market Appearance

Advanced Lines - 2007 Regional Trials

Clone	Fresh Market Appearance 1-5 (5 = best)	Comments
Early-Harvest Regional		
Ranger Russet	3.0	A bit rough, irregular pear shape, deep eyes, some typy.
Russet Burbank	2.3	Many cracks, rough, many knobs, smaller, a bit rough.
Russet Norkotah	4.0	Typy, dark skin, a bit rough, a few pointed ones.
Shepody	2.5	Large, rough, and white.
A95409-1	3.0	Shape irreg, rough, plump girth, some typy ones, light russet.
A96104-2	4.0	Mostly typy, looks similar to Norkotah.
A97287-6	2.0	Spotty bad skin, a bit rough.
AC96052-1Ru	3.8	Small, typy, dark skin, round, some shatter.
AO96141-3	3.0	Long, skinny, french fryers dream, many pointy ones.
AO96164-1	3.0	Large, a bit rough, mostly typy, some with curves.
AOA95154-1	3.0	Very small, typy, some alligator hide.
AOA95155-7	3.0	Small, typy, light skin.
AOTX95265-2ARu	3.0	Typy, dark skin, some spotty russeting.
AOTX95265-3Ru	3.8	Looks similar to a Norkotah strain, but a bit rough.
AOTX95265-4Ru	3.8	Mostly typy, some irregular shapes.
CO95172-3Ru	3.0	Mostly typy, streaks of elephant hide skin.
CO97087-2Ru	2.8	Bit round, flat, looks like Alturas, shape irreg.
CO97138-3Ru	4.3	Typy, flat, nice, a few rough ones.
CO97138-7Ru	4.3	Large, typy, bit, flat, light russet.
TXA549-1Ru	3.5	Large, mostly round, non-uniform shape.
Late-Harvest Regional		
Ranger Russet	3.7	Mostly typy, large, shape a bit irreg.
Russet Burbank	3.0	Mostly typy, shape a bit irreg., some knobs & cracks.
Russet Norkotah	3.7	Typy, dark skin, deep eyes.
A95409-1	3.5	Plump, shape a bit irreg., light skin, typy.
A96104-2	3.5	Dark skin, mostly typy, shape a bit irreg, plump.
A97287-6	1.8	Process only - bad skin, spotty russeting, bit round, short.
AC96052-1Ru	4.0	Small, bit round, puffed-wheat skin, mini-bakers?
AO96141-3	3.7	Almost too skinny for fresh, long, french fryers dream.
AO96164-1	3.3	Mostly typy, shape a bit irreg.
AOA95154-1	4.0	Small, typy, smooth shape, bit round, some with puffed-wheat skin.
AOA95155-7	4.0	Bad shatter, plump, bit round, typy, some with puffed-wheat skin.
AOTX95265-2ARu	4.0	Looks like R. Norkotah, dark skin, poor skin set.
AOTX95265-3Ru	4.0	Looks like a typy R. Norkotah, poor skin set.
AOTX95265-4Ru	4.0	Looks like a typy R. Norkotah, dark russet.
CO95172-3Ru	3.0	Ugly russeting, spotty, plump, shape a bit irreg.
CO97087-2Ru	3.0	Small, typy, dark russet, shape a bit irreg. like RB.
CO97138-3Ru	4.0	Mostly typy, bit round, blocky ends, nice.
CO97138-7Ru	4.0	Bit flat, square, blocky ends, typy, nice.
TXA549-1Ru	2.8	Plump girth, round, pears, skin a bit ugly.

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 $3.50 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	Adjusted
Markets/Packaging[a]	U.S. No. 1[b]	U.S. No. 2	Average Prices[c]	and Handling	Value
50 lb cartons	oz	oz	$/CWT	$/CWT	$/CWT
100 Count	7 to 8.5		$11.98	$3.50	$8.48
90 Count	8.5 to 9.5		$13.44	$3.50	$9.94
80 Count	9.5 to 10.5		$15.28	$3.50	$11.78
70 Count	10.5 to 12.5		$16.81	$3.50	$13.31
60 Count	12.5 to 14		$16.67	$3.50	$13.17
50 Count	14 to 18		$15.51	$3.50	$12.01
10 lb Film Bags					
Non-size A	4 to 7		$8.05	$3.50	$4.55
100 lb Burlap Sacks					
10 oz Min. Size U.S. No. 2		10 to 20	$7.87	$3.50	$4.37
10 oz Min. Size U.S. No. 2	18 to 20		$7.87	$3.50	$4.37
Bulk					
Process-Culls	< 4	< 10	$2.00	$3.50	-$1.50
Process-Culls	> 20	> 20	$2.00	$3.50	-$1.50

[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 2000/2001 to 2003/2004 (USDA Federal-State Market News Service 2000-2004). 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 $102/ton.
   a. Base price is an average of early-harvest Ranger Russet contracts from Washington processors based on an August 1, 2007 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 $40/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 WA potato processors. Production costs per acre were not applied. Direct delivery contract assumptions are listed below.

Contract Assumptions:

1. Base price per ton was $77 for market (U.S. #1 & 2) grade tubers.
2. Premiums for 6 oz and larger market grade tubers of $0.60/ton for each percentage point greater than 50% they contribute to the total tuber yield composite, up to 70%, with a maximum of $12.00/ton. Penalties were $0.60/ton for each percentage point below 50%. Below 48%, penalties were $1.20/ton with no rejection minimum.
3. Penalty for 12 oz and larger market grade tubers of $0.60/ton for each percentage point greater than 35% they contribute to the total yield composite, with no rejection minimum.
4. Premiums for average tuber specific gravity values above, and penalties for values below, 1.076. Premium per CWT is $0.05 at 1.077, $0.20 at 1.078, $0.30 at 1.079, $0.40 at 1.080, $0.50 at 1.081, $0.60 at 1.082, $0.70 at 1.083, with a maximum of $0.70 for 1.084 through 1.088. Above 1.088 the premiums drop: $0.65 at 1.089, $0.60 at 1.090, $0.55 at 1.091, $0.45 at 1.092, $0.35 at 1.093, $0.25 at 1.094, $0.15 at 1.095. Above 1.096 penalty of $0.15/CWT. No premium or penalty for 1.076, $0.50 penalty at 1.075, for each 0.001-point decline from 1.075, lots were penalized $1.00/CWT with no rejection minimum.
5. Premium of $0.03 for each percentage of bruise-free tubers above 54% of total yield, up to a maximum of $0.75 for > 79% bruise free tubers; Below 54%, no premium or penalty.
6. Undersized market grade potatoes less than 4 oz (process culls) were valued at $40.00/ton.
7. No premiums or penalties were applied for tuber fry color, sugar content, or internal defects.

2007 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 40 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 twenty five 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 tubers result in high French fry yield with less waste.

Long-term Storage Characteristics of Clones in the 2006 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.

2007 Early Harvest Tri-State Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 4th
Harvest Date: Aug 7th
Fertility: 278-175-400
Vine Kill Date: July 23rd
Days Grown: 110
In-Row Spacing: 12 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 2007 trial compared 4 local reference varieties to 14 new clones. The summer was consistently hot in 2007, especially July. This year's trial produced a lot of round-shaped tubers, many with spotty russeting. The following is a summary of the Washington field and post-harvest 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): PA00N14-2, A96814-65LB
Suggested Discards: A99073-1, PA98NM39-1, PA99N82-4

Standcounts

- **40 Day**
  Fast emergence: Ranger Russet (98%) and Russet Norkotah (97%).
  Slow emergence: PA99N2-1 (28%) and A97066-42LB (30%).

- **50 Day**
  Full emergence: Most entries had 95% or higher emergence at 50 days.
  Poor emergence: A97066-42LB and AO96305-3 (88%).

Plant and Tuber Growth & Development

- **Stem Number Per Plant – Above Ground**
  Most: Russet Norkotah (2.2) and A98345-1 (2.1).
  Least: A97066-42LB (1.2), Russet Burbank and A99073-1 (1.3).

- **Average Tuber Number Per Plant**
  Most: PA00N14-2 (7.7) and PA98NM38-1 (7.3).
  Least: A99073-1 (3.8).

- **Average Tuber Size (oz)**
  Largest: Shepody (9.6) and PA00N15-2 (9.1).
  Smallest: A97066-42LB (5.0) and PA98NM38-1 (5.1).

- **Undersized Tubers (< 4 oz)**
  Most: PA98NM38-1 (83 CWT/A) and A97066-42LB (78 CWT/A).
  Fewest: Shepody (14 CWT/A).

Yield and Economic Data

- **Total Yield**
  Highest: PA00N15-2, PA00N14-2, and A98345-1 (all > 549 CWT/A).
  Lowest: A99073-1 and A97066-42LB.

- **% U.S. #1's (>4 oz)**
  Highest: A98345-1 and Shepody (91%), PA00N14-2 (90%).
  Lowest: Russet Burbank and A99073-1 (72%).

- **Carton Yield (100 to 50 Count (7 to 18 oz U.S.#1 Tubers))**
  Highest: A98345-1, A0008-1TE, and PA00N15-2 (all > 330 CWT/A).
  Lowest: A97066-42LB (133 CWT/A) and PA98NM38-1 (150 CWT/A).

- **Specific Gravity**
  Highest: A96814-65LB (1.086) and PA00N14-2 (1.084).
  Lowest: A0008-TE, A99073-1, and PA99N82-4 (1.073).

- **Gross Return ($/acre)**
  Fresh Market Highest: A98345-1, PA00N14-2, and PA00N15-2.
  Fresh Market Lowest: PA98NM38-1, A97066-42LB, and A99073-1.
  Process Market Highest: A98345-1, PA00N14-2, and PA00N15-2.
  Process Market Lowest: PA99N82-4, A97066-42LB, and A99073-1.

Tuber Defects (% out of 40 Tubers, 8-12 oz.)

- **External Defects**
  Notable Defects: A99073-1 had the highest percentage of growth cracks (15%), while PA99N82-4 had (10%), and AO96305-3 had 6%. Russet Burbank had the highest percentage of knobs (6%). All other entries had little to no external defects.

- **Internal Defects**
  Notable Defects: Russet Burbank had the highest occurrence of brown center (15%). Internal Brown Spot: Russet Burbank, A0008-1TE, AO96365-2, PA00N15-2, PA98NM39-1, and PA99N12-1 (3%). All other entries were 0%.

- **Bruise**
  Highest Blackspot: A96814-65LB (35%), Russet Burbank and Ranger Russet each had (28%).
  Highest Shatter: PA99N82-4 (63%), A99073-1 (44%), and PA99N12-1 (35%). All other entries were below 28%.

2007 Early Harvest Tri-State Trial

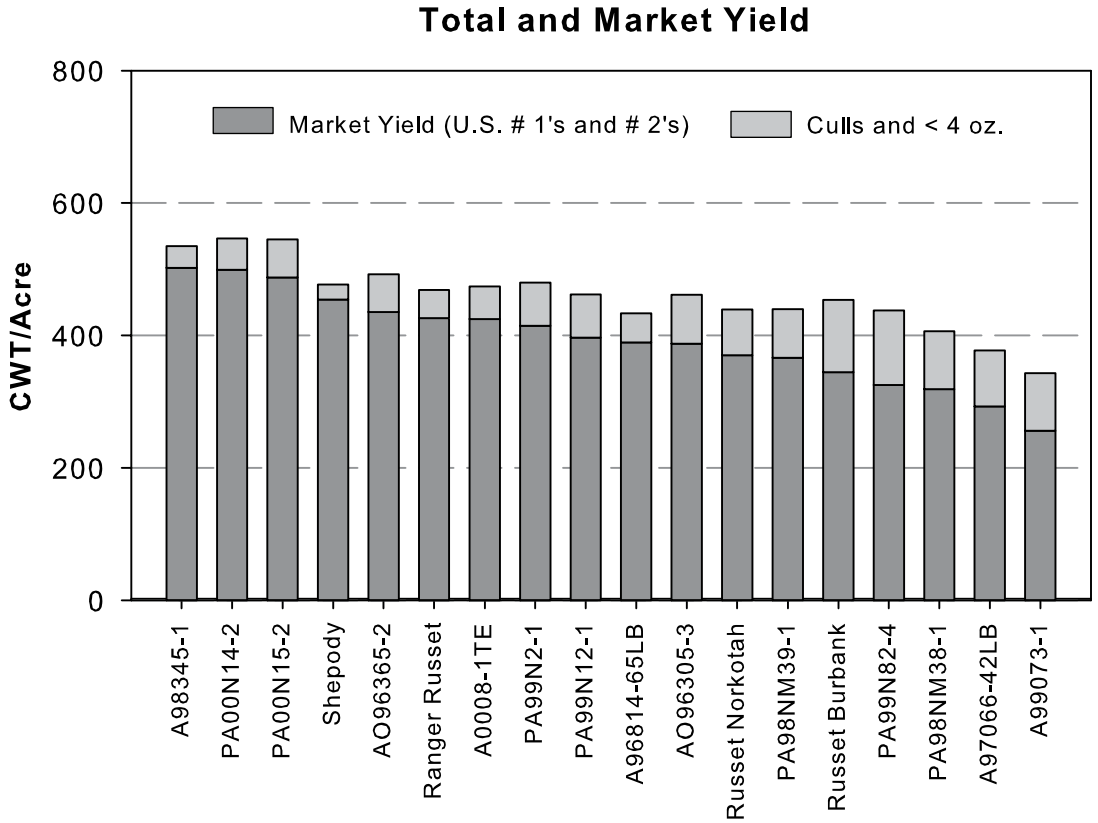
Summaries

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 100-50 count (US 1's 7-18 oz) Tons/A	PROCESS YIELD US 1's and 2's > 6 oz % of Total Yield	PROCESS YIELD US 1's and 2's > 6 oz Tons/A
Ranger Russet	601	ABCD	30.0	86	3	11	50	15.4	72	22.1
Russet Burbank	537	BCD	26.8	75	2	23	41	11.1	53	14.4
A0008-1TE	585	BCD	29.2	82	2	16	49	14.4	67	19.7
A96814-65LB	615	ABC	30.8	87	1	12	52	16.1	72	22.2
A97066-42LB	577	BCD	28.9	87	1	12	62	17.9	74	21.4
A98345-1	735	A	36.8	90	1	9	56	20.7	79	29.1
A99073-1	478	CD	23.9	81	2	17	55	13.1	74	17.7
AO96305-3	554	BCD	27.7	87	1	12	50	13.9	68	18.8
AO96365-2	586	BCD	29.3	78	1	21	43	12.7	57	16.7
PA00N10-5	577	BCD	28.8	79	1	20	46	13.3	56	16.2
PA00N14-2	583	BCD	29.1	85	1	14	31	9.2	53	15.4
PA00N15-2	651	AB	32.6	81	4	15	55	18.1	72	23.6
PA98NM38-1	466	D	23.3	69	0	31	24	5.9	38	9.1
PA98NM39-1	552	BCD	27.6	76	1	23	49	13.7	58	16.4
PA99N12-1	549	BCD	27.5	81	1	18	45	12.6	61	16.9
PA99N2-1	583	BCD	29.2	78	2	20	36	10.9	52	15.5
PA99N82-4	495	CD	24.8	70	0	30	32	8.2	45	11.5

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	521	ABC	26.1	30	49	21	1.087	0	0	0
Russet Burbank	405	BCDE	20.2	45	52	3	1.083	25	19	0
A0008-1TE	477	BCD	23.9	37	55	8	1.086	0	0	0
A96814-65LB	536	AB	26.8	26	46	28	1.105	0	0	0
A97066-42LB	504	BC	25.2	26	61	13	1.103	0	0	0
A98345-1	664	A	33.2	22	47	31	1.096	0	0	0
A99073-1	386	CDE	19.3	19	54	27	1.076	0	0	0
AO96305-3	480	BCD	24.0	38	52	10	1.094	0	0	0
AO96365-2	460	BCDE	23.0	45	51	4	1.091	0	0	0
PA00N10-5	455	BCDE	22.8	42	55	3	1.096	0	5	0
PA00N14-2	494	BCD	24.7	63	37	0	1.092	0	0	0
PA00N15-2	526	ABC	26.3	23	53	24	1.086	0	0	0
PA98NM38-1	323	E	16.2	65	35	0	1.097	0	0	0
PA98NM39-1	425	BCDE	21.2	35	57	8	1.087	0	0	0
PA99N12-1	442	BCDE	22.1	43	49	8	1.097	5	0	0
PA99N2-1	455	BCDE	22.7	54	42	4	1.090	0	0	0
PA99N82-4	347	DE	17.4	52	41	7	1.090	5	0	0

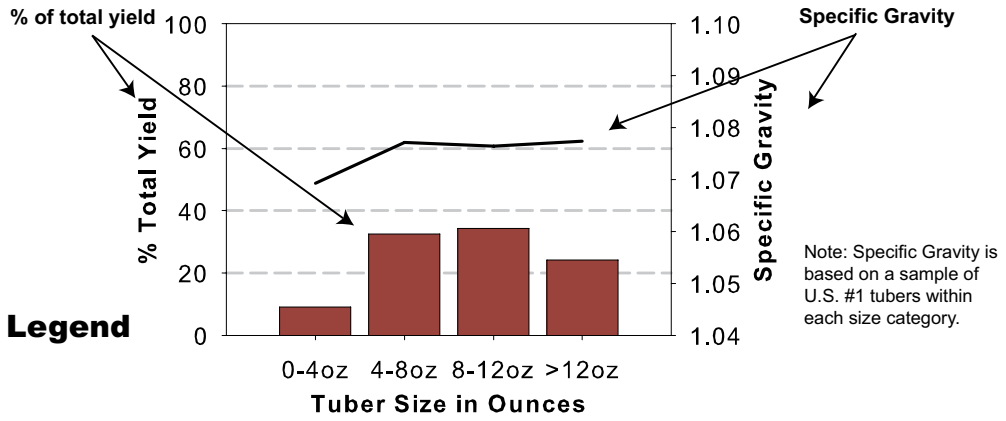
* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5 % level using Fisher's LSD Test

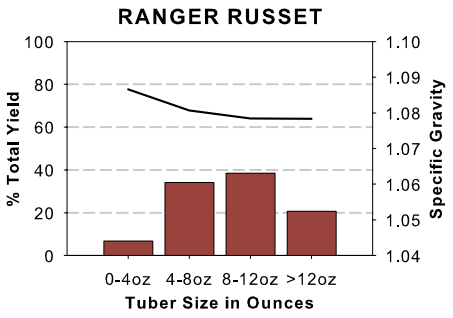
ENTRY	30 DAY STAND % Emerged	50 DAY STAND % Emerged	% Dead Vines prior to vine-kill	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) (8-12 oz tubers) SHATTER
Ranger Russet	89	100	94	2.2	7.2	7.2	4	3	81	66
Russet Burbank	74	100	100	1.9	5.7	8.1	4	3	44	81
A0008-1TE	15	100	100	2.6	6.7	7.6	4	3	27	95
A96814-65LB	61	100	92	2.1	7.6	7.1	4	2	18	76
A97066-42LB	1	100	55	1.3	7.0	7.2	4	4	43	94
A98345-1	97	100	71	2.6	7.9	8.1	4	3	62	97
A99073-1	25	94	100	1.4	7.9	5.3	4	3	26	87
AO96305-3	17	100	98	2.3	6.6	7.2	4	4	54	71
AO96365-2	67	100	76	1.8	5.4	9.4	4	3	41	50
PA00N10-5	22	98	50	2.0	5.4	9.3	4	1	32	100
PA00N14-2	5	100	100	2.3	5.4	9.3	4	4	40	100
PA00N15-2	10	98	99	1.8	7.6	7.4	4	3	17	97
PA98NM38-1	5	97	96	2.6	4.5	9.0	4	3	50	100
PA98NM39-1	30	98	95	2.1	6.5	7.3	4	3	59	100
PA99N12-1	16	99	82	2.0	5.8	8.3	4	3	19	95
PA99N2-1	3	100	97	3.3	5.4	9.4	4	2	31	100
PA99N82-4	22	99	99	2.4	5.2	8.2	4	2	48	95

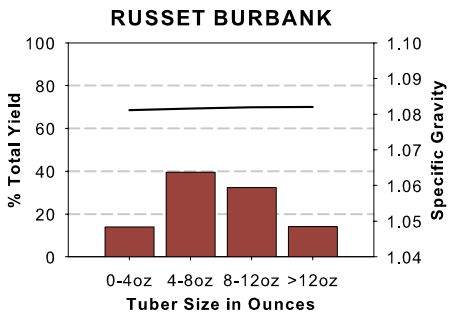


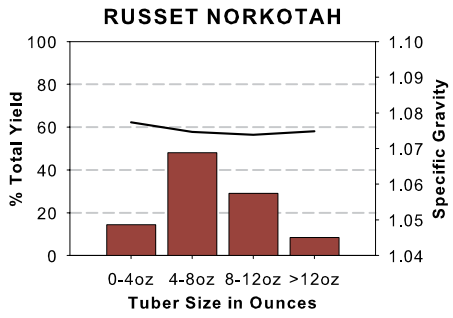
2007 Early Harvest Tri-State Trial

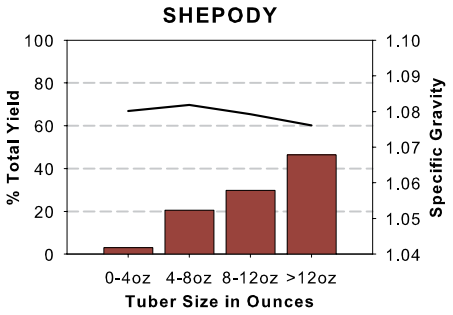
Tuber Yield and Specific Gravity Distributions

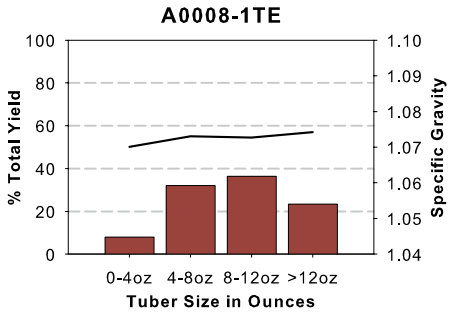


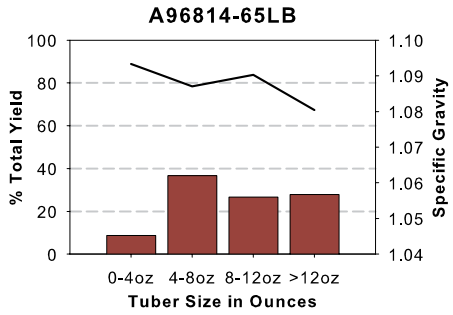


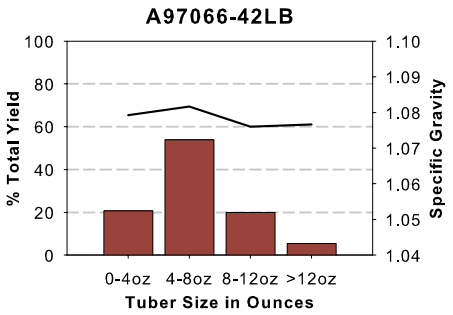


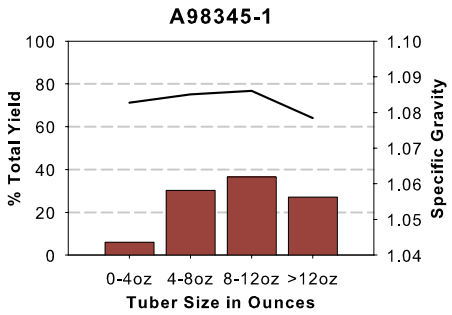


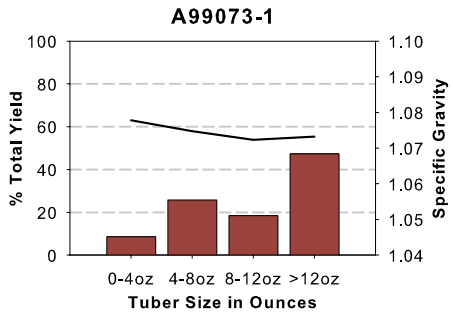


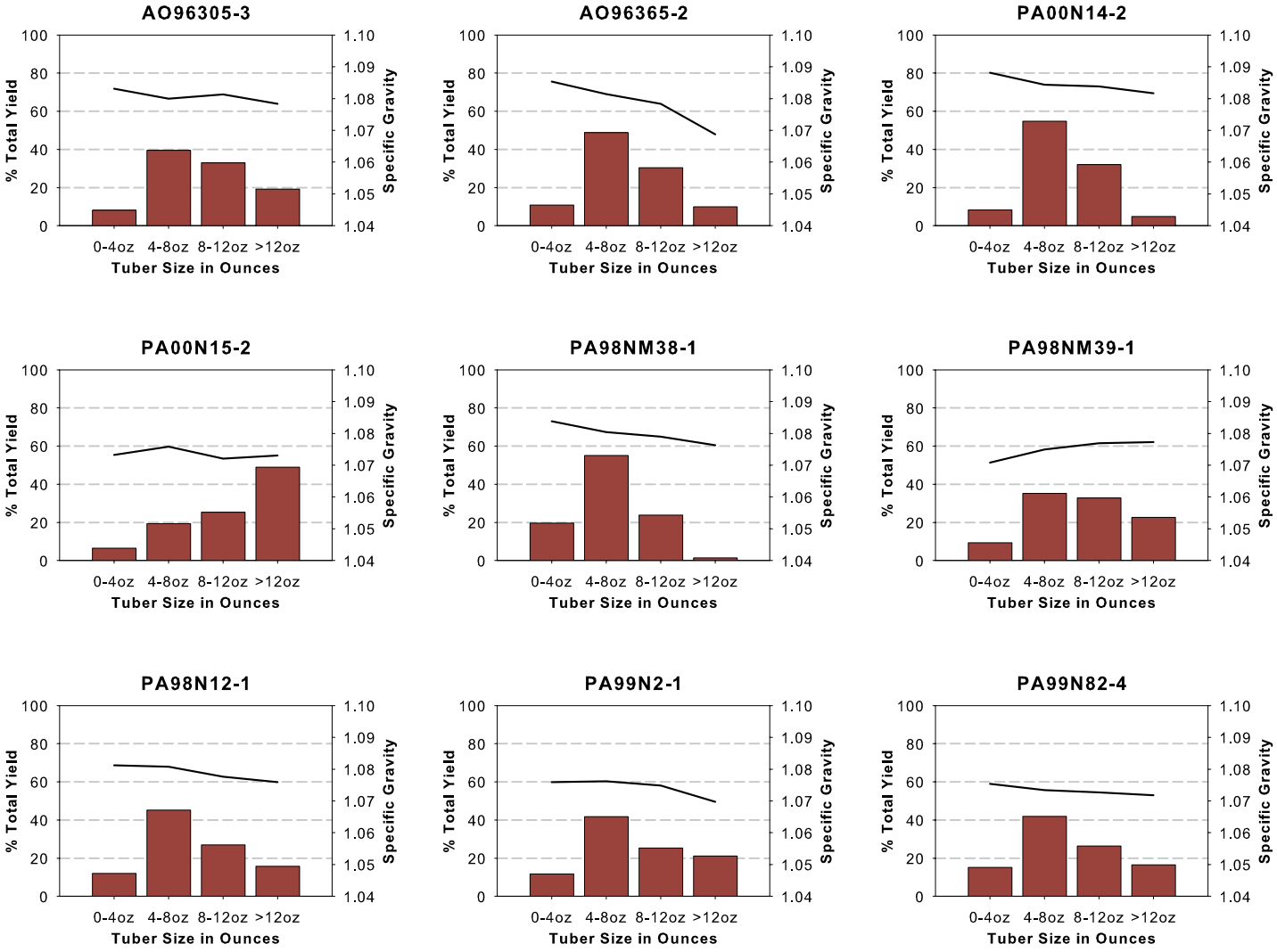


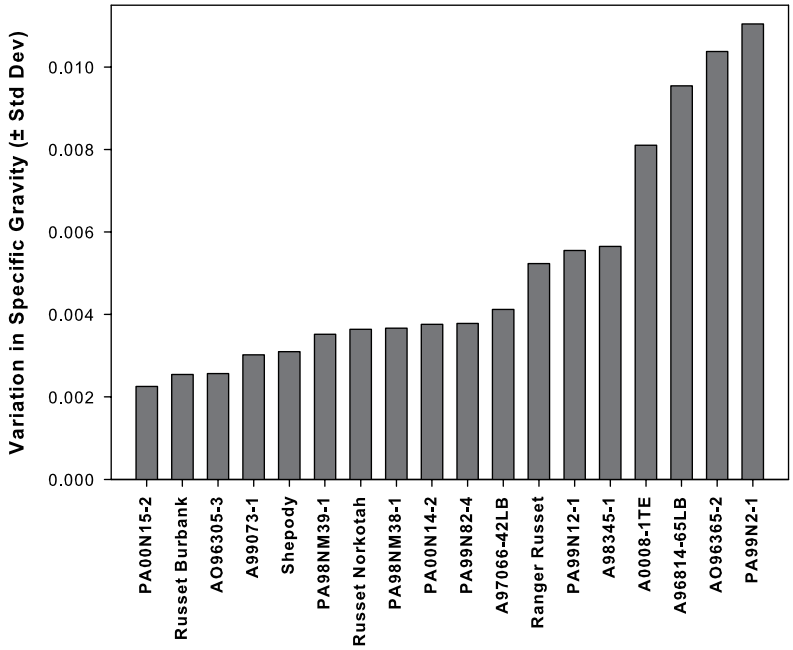









AO96305-3
AO96365-2
PA00N14-2
PA00N15-2
PA98NM38-1
PA98NM39-1
PA98N12-1
PA99N2-1
PA99N82-4
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


Clone - Dependent Variation in Specific Gravity
Variability among 16, 10lb samples from each entry (all tuber sizes)
2007 Early-Harvest Tri-State Trial
Variation in Specific Gravity (± Std Dev)
0.000
0.002
0.004
0.006
0.008
0.010
PA00N15-2
Russet Burbank
AO96305-3
A99073-1
Shepody
PA98NM39-1
Russet Norkotah
PA98NM38-1
PA00N14-2
PA99N82-4
A97066-42LB
Ranger Russet
PA99N12-1
A98345-1
A0008-1TE
A96814-65LB
AO96365-2
PA99N2-1

2007 Early Harvest Tri-State Trial

Fresh Value

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 potatoes prices. Production costs per acre were not applied. All assumptions are listed at the front of the book under “Fresh Market Value-Methods”. 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 and packaging to meet demand changes in an effort to maximize income potential. Following discussions with actual pack-sheds and complying with USDA standards, the packaging and size ranges used to produce the fresh values below (figure 1) provide a good base for variety comparison. A packaging and handling fee (pack-shed operating fee) of $3.50 was assessed on each CWT of potatoes. This economic evaluation does not fully account for consumer preferences for each trial entry. Figure 1, below, shows the difference in gross value from Russet Norkotah for all trial entries.

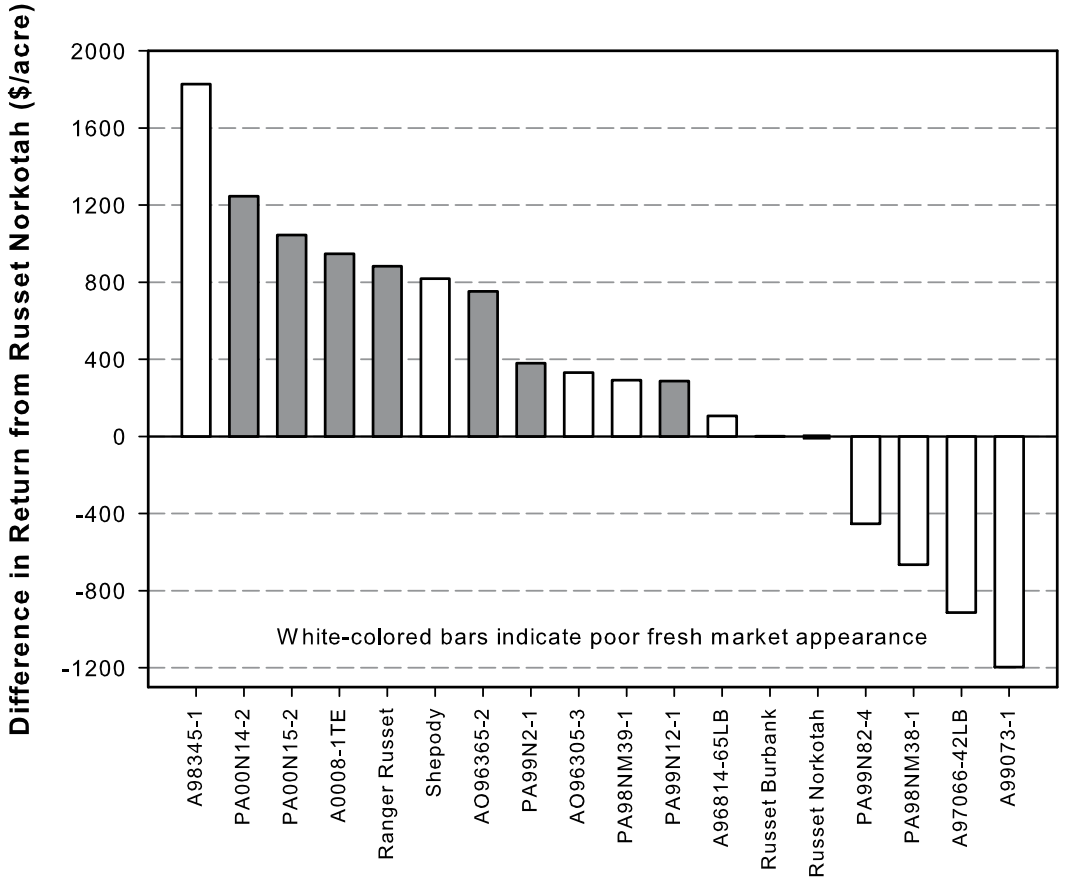


Figure 1. Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah ($3150) from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape or appearance.

2007 Early Harvest Tri-State Trial

Process Value

Economic Potential

The gross return in U.S. dollars per acre for each trial entry was calculated using an early-harvest mock processing contract. Process-market values are based on criteria similar to that used by WA potato processors. Production costs per acre were not applied. Contract assumptions are listed at the front of the book under “Process Market Value-Methods.” Figure 1, below, shows the gross value of all trial entries when compared against a standard reference variety.

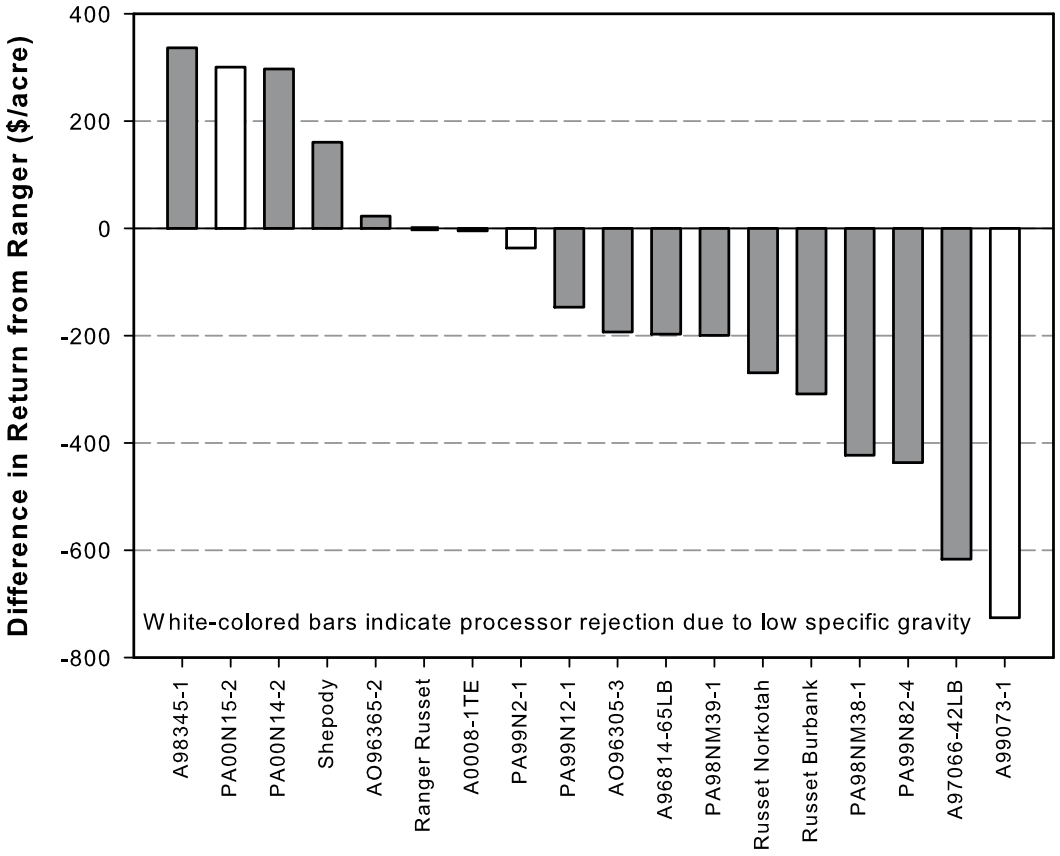


Figure 1. Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet ($1880) from the gross return of the particular entry. Entries with the white-colored bars were REJECTED (under the mock contract parameters) due to low specific gravity.

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
Ranger Russet		
		**Tubers:** Oblong to long tubers. Moderately heavy russet with good skin set; moderate eye depth. **Fry Color:** Light, uniform.
Russet Burbank		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; moderate eye depth. **Fry Color:** Light, uniform.
Russet Norkotah		
		**Tubers:** Oblong to long tubers. Heavy russet with good skin set; moderate eye depth. **Fry Color:** Light, uniform.
Shepody		
		**Tubers:** Oblong tubers. No russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
A0008-1TE		
		**Tubers:** Oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
A96814-65LB		
		**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
A97066-42LB		
		**Tubers:** Oblong tubers. Light russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
A98345-1		
		**Tubers:** Round to oblong tubers. Light russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
A99073-1		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
AO96305-3		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
AO96365-2		
		**Tubers:** Round to oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
PA00N14-2		
		**Tubers:** Oblong to long tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
PA00N15-2		
		**Tubers:** Oblong tubers. Light russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
PA98NM38-1		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; moderate eye depth. **Fry Color:** Light, uniform.
PA98NM39-1		
		**Tubers:** Oblong tubers. Light russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Tri-State Trial Comments
PA99N12-1		
		**Tubers:** Oblong tubers. Light russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
PA99N2-1		
		**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
PA99N82-4		
		**Tubers:** Round to oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.

Josh Rodriguez gives a new meaning to the term, “playing in the dirt.”

Rudy Garza, Ed Driskill, and Mark Pavek inspect the progress of recently planted potatoes.

2007 Early Harvest Tri-State Trial

Postharvest Evaluation

The 2007 Early Tri-State Trial consisted of 4 cultivars and 14 numbered lines. All entries fried light and uniform with USDA ratings of "0".

		PHOTOVOLT			DIFFERENCE *	USDA
	Clone	Stem	Bud	Average	STEM - BUD	COLOR
1	Ranger Russet	43.8	46.2	45.0	4.2	0
2	Russet Burbank	45.0	45.7	45.4	2.8	0
3	Russet Norkotah	46.3	44.8	45.6	3.9	0
4	Shepody	55.0	50.2	52.6	5.0	0
5	A0008-1TE	50.8	47.8	49.3	4.9	0
6	A96814-65LB	52.6	52.2	52.4	2.9	0
7	A97066-42LB	52.0	52.5	52.2	3.3	0
8	A98345-1	43.0	44.8	43.9	2.5	0
9	A99073-1	50.4	48.9	49.7	4.9	0
10	AO96305-3	50.8	52.3	51.6	3.9	0
11	AO96365-2	45.2	49.0	47.1	6.1	0
12	PA00N14-2	47.4	51.9	49.7	5.6	0
13	PA00N15-2	47.9	45.3	46.6	6.3	0
14	PA98NM38-1	48.1	45.5	46.8	4.9	0
15	PA98NM39-1	41.3	46.4	43.8	6.3	0
16	PA99N12-1	54.3	54.6	54.4	3.4	0
17	PA99N2-1	51.2	52.6	51.9	2.6	0
18	PA99N82-4	50.2	47.5	48.9	4.0	0
			LSD 0.05	2.3	2.9	
	Average	48.6	48.8	48.7	4.3	0

* Average of 12 individual tuber absolute differences

Planting Date: April 4
Harvest date: August 7
Fried on: August 10

2007 Late Harvest Tri-State Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 18
Harvest Date: Sept 26
Fertility: 278-175-400
Vine Kill Date: Sept 17
Days Grown: 152
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 following is a summary of the Washington field and post harvest results. For additional information, see the grading comments and merit scores near front of book. For additional information, see the grading comments and merit scores near front of book.

Fresh Market Standouts: AO96305-3, A0008-1TE, AO96365-2
Process Market Standouts: A96814-65LB, A98345-1, AO96305-3
Suggested Discards: PA00N15-2, PA99NM38-1, PA99N12-1, PA99N82-4

Standcounts

- **30 Day**
  Fast emergence: A93845-1 (97%), Ranger Russet (89%), Russet Burbank (74%).
  Slow emergence: A97066-42LB (1%), PA99N2-1 (3%), PA00N14-2 and PA98NM38-1 (5%).

- **50 Day**
  Full emergence: Most entries had > 97% emergence at 50 days.

Plant and Tuber Growth & Development

- **50 Day Stem Number per Plant**
  Most: PA99N2-1 (3.3).
  Least: A97066-42LB (1.3) and A99073-1 (1.4).

- **Average Tuber Number Per Plant**
  Most: PA99N2-1 and AO96365-2 (9.4).
  Least: A99073-1 (5.3)

- **Average Tuber Size (oz)**
  Largest: A98345-1 and A99073-1 (7.9).
  Smallest: PA98NM38-1 (4.5) and PA99N82-4 (5.2).

- **Undersized Tubers (< 4 oz)**
  Most: PA98NM38-1, AO96365-2, and PA99N2-1 (all > 110 CWT/A).
  Least: A99073-1 and A97066-42LB.

Yield and Economic Data

- **Total and Market Yield (US 1s & 2s > 4oz)**
  Highest: A98345-1 and PA00N15-2 had the highest and second highest total & market yields, respectively.
  Lowest: PA98NM38-1 had the lowest total and market yields.

- **% Market Yield Greater Than 6 oz.**
  Highest: A98345-1 (79%).
  Lowest: PA98NM38-1 (38%) and PA99N82-4 (45%).

- **Carton Yield (100 to 50 Count, 7 to 18 oz US#1 Tubers)**
  Highest: A98345-1, PA00N15-2, & A97066-42LB (all > 358 CWT/A).
  Lowest: PA98NM38-1, PA98N82-4, and PA00N14-2 (all < 190 CWT/A).

- **Gross Return ($/acre)**
  Fresh Market Highest: A98345-1 (skin & shape issues may disqualify it)
  Fresh Market Lowest: PA98NM38-1
  Process Market Highest: A98345-1, PA00N15-2
  Process Market Lowest: PA98NM38-1, A99073-1

Tuber Defects (% out of 40 tubers, 8-12 oz.)

- **External Defects**
  Notable Defects: PA98NM39-1 had 12% growth crack, while PA99N82-4 had 9% and A99073-1 had 7%. A96814-65LB and A97066-42LB each had 3% green tubers.

- **Internal Defects**
  Notable Defects: Russet Burbank had 25% hollow heart and 19% brown center. PA99N12-1 and PA99N82-4 each had 5% hollow heart. PA00N10-5 had 5% brown center. None of the other entries had any internal defects.

- **Bruise**
  Highest Blackspot: Ranger Russet (81%), A98345-1 (62%), and PA98NM39-1 (59%).
  Highest/Lowest Shatter: Five entries had 100% shatter; PA00N10-5, PA00N14-2, PA98NM38-1, PA98NM39-1, and PA99N2-1. Eight other entries had over 80% shatter. AO96365-2 (50%) and Ranger Russet had the lowest (66%).

2007 Late Harvest Tri-State Trial

Post Harvest Performance

- **Overall Postharvest Rating**
  Highest scoring clones: A98345-1, AO96305-3
  Lowest scoring clones: RB, PA98NM39-1, PA00N15-2

- **Low Temperature Sweetening**
  Most resistant: AO96305-3, A96814-65LB, A98345-1, PA99N82-4, PA99N12-1
  Most susceptible: PA98NM39-1, PA00N15-2, RB

- **Taste Panel**
  Highest rated: A96814-65LB, PA99N82-4, AO96305-3
  Lowest rated: PA98NM39-1, PA00N15-2, PA99N2-1

- **Blackspot Bruise Susceptibility**
  Most resistant: A0008-1TE, A99073-1, PA00N15-2
  Most susceptible: A96814-65LB, RR, A98345-1, PA00N14-2

- **Variability in Tuber Shape & Fry Yield (8- to 10-oz tubers)**
  Least variable: PA00N14-2, RR, RB
  Most variable: PA99N82-4, A98345-1, PA98NM39-1

Details

- When averaged across states, all entries except PA98NM39-1 received higher overall postharvest scores than Russet Burbank.

- A98345-1 and AO96305-3 were the highest rated entries, scoring 33.8 and 33.7 out of 38 points. These clones, along with A96814-65LB, PA99N82-4 and PA99N12-1, had significant resistance to low temperature sweetening, with WA and ID grown samples producing USDA 0 fries when stored at 40°F (44 days). Processing quality of the OR-grown samples of these clones ranged from an acceptable USDA 0-2, except for PA99N12-2 which produced unacceptable USDA 3 fries when stored for 44 days at 40°F.

- PA00N15-2, RB and PA98NM39-1 received the lowest overall postharvest scores (21.9/38, 19.6/38 and 18.6/38, respectively).

- The average gravity of A99073-1 was 1.073, too low for most processing contracts. At the other extreme, A97066-42LB averaged 1.097 (range = 1.096-1.106) which is too high for most contracts and consistent with results from last years trials (avg.= 1.101). A96814-65LB tubers from WA and ID also had excessively high gravities (avg.= 1.099).

- From all growing locations, A96814-65LB, PA99N82-4 and AO96305-3 were the favorites in the taste panels, receiving ratings of 3.8 to 3.7 (5 is best). Approximately 93% of variation in taste panel scores was explained by differences in gravity among the clones this year. A96814-65LB produced severe after-cooking darkening from all states and storage temperatures. PA98NM39-1, PA00N15-2 and PA99N2-1 had the lowest taste panel scores of 2.2, 2.9, and 2.9, respectively.

- 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, RR, A98345-1 and PA00N14-2 were the most susceptible, scoring 78% bruise (stem end) in the controlled impact study. These clones also had the highest bruise severity, averaging 3.4/5. In contrast, A0008-1TE, PA00N15-2 and A99073-1 were the most resistant, averaging only 22% bruise with a 1.5/5 severity rating.

- The 8- to 10-oz tubers of PA99N2-1, PA99N82-4 and A99073-1 had low length to width ratios (avg.= 1.4), resulting in yields of 3-inch or longer fries ranging from only 57 to 61% by number. For the second year, PA99N82-4 showed the greatest variation in L/W ratios, ranging from 1.7 in ID to 1.3 in WA and OR. The low average L/W ratio of PA99N2-1 was fairly consistent across states. The only numbered entries to have L/W ratios statistically equal to Ranger (2.11) and Russet Burbank (2.12) were AO96305-3 (2.21) and PA00N14-2 (2.18). The latter entry also showed the most consistent L/W ratio across production sites.

- On average, reconditioning (60°F, 21 days) tubers of A98345-1, A96814-65LB, PA00N15-2 and AO96365-2 that had previously been stored at 40°F for 44 days resulted in the greatest improvement in fry color compared with the other clones. In contrast, AO96305-3, PA99N12-1 and PA98NM38-1 showed no reconditioning potential.

- A0008-1TE, A97066-42LB, PA99N2-1 and PA99N82-4 produced the longest sprouts after 7 months of storage, considerably longer than either check (Ranger or Russet Burbank), indicating relatively short dormancy.

Overall Tri-State Postharvest Merit Scores

	Postharvest Merit Scores			3 state
Clone	WA	ID	OR	Average
6 A98345-1	4.1	4.8	4.5	4.5
8 AO96305-3	4.7	4.3	4.3	4.4
16 PA99N82-4	4.6	4.2	3.3	4.0
4 A96814-65LB	4.3	4.3	3.2	4.0
14 PA99N12-1	4.4	4.8	2.5	3.9
5 A97066-42LB	3.3	4.3	3.5	3.7
15 PA99N2-1	4.3	4.5	2.3	3.7
9 AO96365-2	4.2	4.2	2.4	3.6
7 A99073-1	3.4	4.0	3.3	3.6
3 A0008-1TE	4.7	3.2	2.8	3.5
10 PA00N14-2	3.8	4.4	2.3	3.5
12 PA98NM38-1	3.6	3.7	3.1	3.5
1 Ranger Russet	3.4	4.2	2.8	3.5
11 PA00N15-2	3.4	3.4	1.9	2.9
2 Russet Burbank	3.8	2.7	1.3	2.6
13 PA98NM39-1	2.4	2.8	2.1	2.4

2007 Late Harvest Tri-State Trial

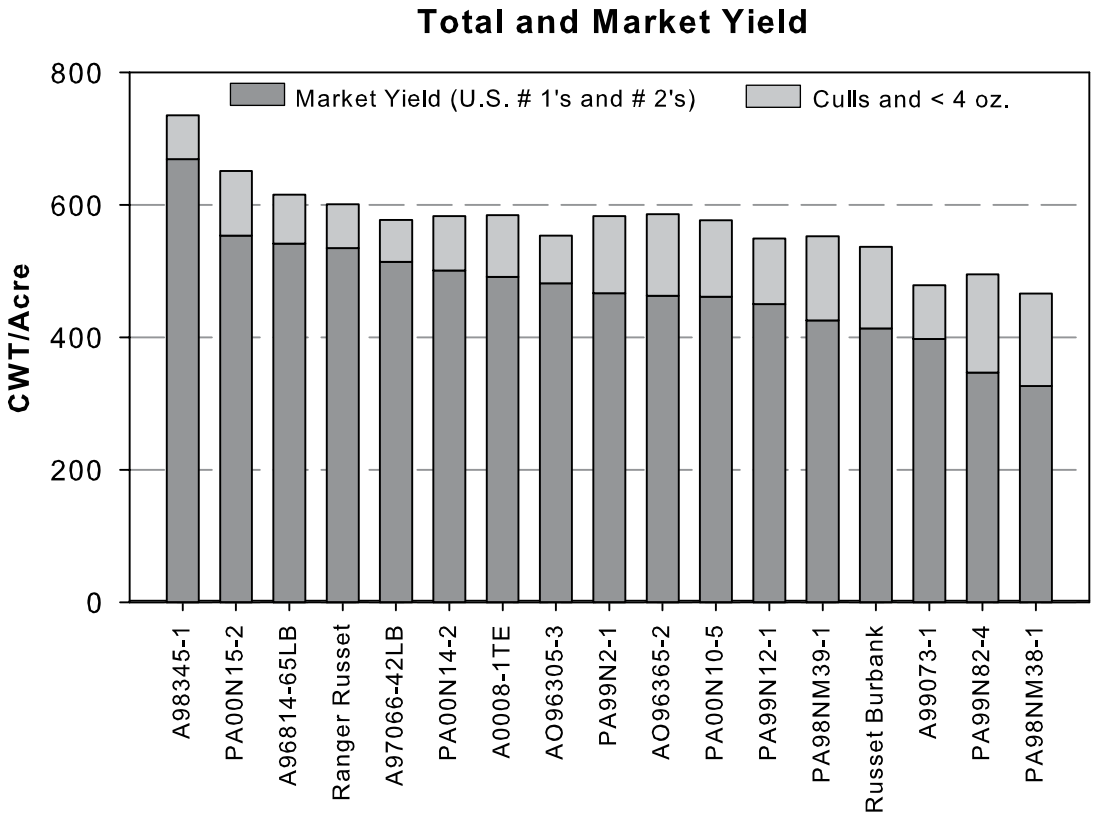
Summaries

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	601	ABCD	30.0	86	3	11	50	15.4	72	22.1
Russet Burbank	537	BCD	26.8	75	2	23	41	11.1	53	14.4
A0008-1TE	585	BCD	29.2	82	2	16	49	14.4	67	19.7
A96814-65LB	615	ABC	30.8	87	1	12	52	16.1	72	22.2
A97066-42LB	577	BCD	28.9	87	1	12	62	17.9	74	21.4
A98345-1	735	A	36.8	90	1	9	56	20.7	79	29.1
A99073-1	478	CD	23.9	81	2	17	55	13.1	74	17.7
AO96305-3	554	BCD	27.7	87	1	12	50	13.9	68	18.8
AO96365-2	586	BCD	29.3	78	1	21	43	12.7	57	16.7
PA00N10-5	577	BCD	28.8	79	1	20	46	13.3	56	16.2
PA00N14-2	583	BCD	29.1	85	1	14	31	9.2	53	15.4
PA00N15-2	651	AB	32.6	81	4	15	55	18.1	72	23.6
PA98NM38-1	466	D	23.3	69	0	31	24	5.9	38	9.1
PA98NM39-1	552	BCD	27.6	76	1	23	49	13.7	58	16.4
PA99N12-1	549	BCD	27.5	81	1	18	45	12.6	61	16.9
PA99N2-1	583	BCD	29.2	78	2	20	36	10.9	52	15.5
PA99N82-4	495	CD	24.8	70	0	30	32	8.2	45	11.5

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	521	ABC	26.1	30	49	21	1.087	0	0	0
Russet Burbank	405	BCDE	20.2	45	52	3	1.083	25	19	0
A0008-1TE	477	BCD	23.9	37	55	8	1.086	0	0	0
A96814-65LB	536	AB	26.8	26	46	28	1.105	0	0	0
A97066-42LB	504	BC	25.2	26	61	13	1.103	0	0	0
A98345-1	664	A	33.2	22	47	31	1.096	0	0	0
A99073-1	386	CDE	19.3	19	54	27	1.076	0	0	0
AO96305-3	480	BCD	24.0	38	52	10	1.094	0	0	0
AO96365-2	460	BCDE	23.0	45	51	4	1.091	0	0	0
PA00N10-5	455	BCDE	22.8	42	55	3	1.096	0	5	0
PA00N14-2	494	BCD	24.7	63	37	0	1.092	0	0	0
PA00N15-2	526	ABC	26.3	23	53	24	1.086	0	0	0
PA98NM38-1	323	E	16.2	65	35	0	1.097	0	0	0
PA98NM39-1	425	BCDE	21.2	35	57	8	1.087	0	0	0
PA99N12-1	442	BCDE	22.1	43	49	8	1.097	5	0	0
PA99N2-1	455	BCDE	22.7	54	42	4	1.090	0	0	0
PA99N82-4	347	DE	17.4	52	41	7	1.090	5	0	0

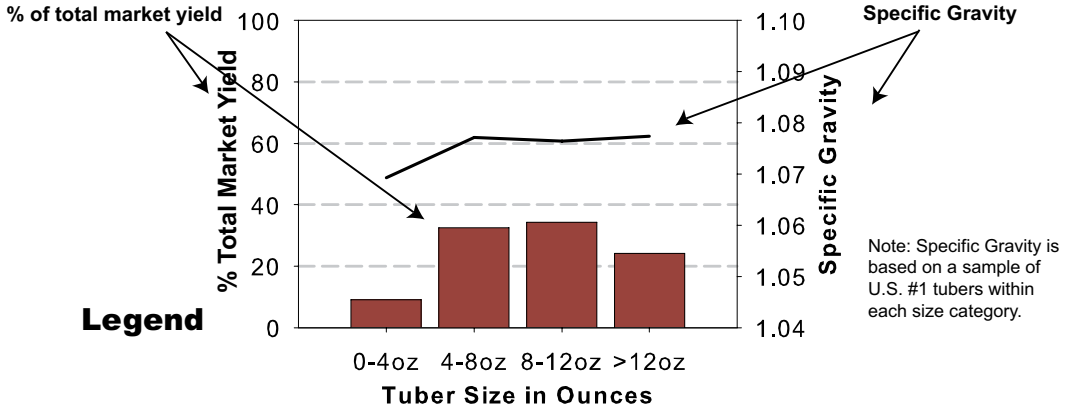
* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5 % level using Fisher's LSD Test

ENTRY	30 DAY STAND % Emerged	50 DAY STAND % Emerged	% Dead Vines prior to vine-kill	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	89	100	94	2.2	7.2	7.2	4	3	81	66
Russet Burbank	74	100	100	1.9	5.7	8.1	4	3	44	81
A0008-1TE	15	100	100	2.6	6.7	7.6	4	3	27	95
A96814-65LB	61	100	92	2.1	7.6	7.1	4	2	18	76
A97066-42LB	1	100	55	1.3	7.0	7.2	4	4	43	94
A98345-1	97	100	71	2.6	7.9	8.1	4	3	62	97
A99073-1	25	94	100	1.4	7.9	5.3	4	3	26	87
AO96305-3	17	100	98	2.3	6.6	7.2	4	4	54	71
AO96365-2	67	100	76	1.8	5.4	9.4	4	3	41	50
PA00N10-5	22	98	50	2.0	5.4	9.3	4	1	32	100
PA00N14-2	5	100	100	2.3	5.4	9.3	4	4	40	100
PA00N15-2	10	98	99	1.8	7.6	7.4	4	3	17	97
PA98NM38-1	5	97	96	2.6	4.5	9.0	4	3	50	100
PA98NM39-1	30	98	95	2.1	6.5	7.3	4	3	59	100
PA99N12-1	16	99	82	2.0	5.8	8.3	4	3	19	95
PA99N2-1	3	100	97	3.3	5.4	9.4	4	2	31	100
PA99N82-4	22	99	99	2.4	5.2	8.2	4	2	48	95

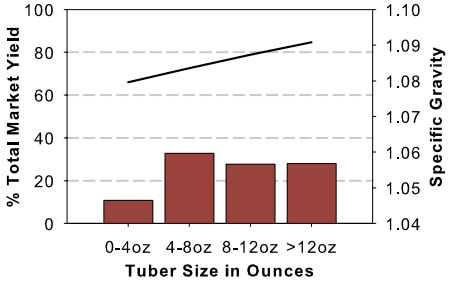


2007 Late Harvest Tri-State Trial

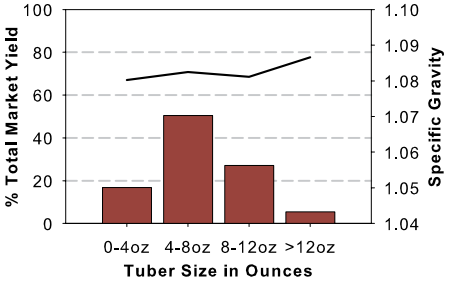
Tuber Yield and Specific Gravity Distributions



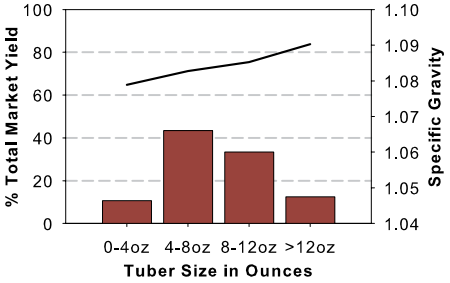
RANGER RUSSET



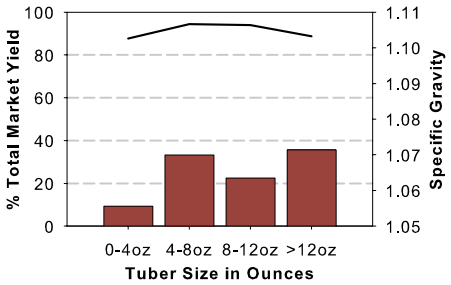
RUSSET BURBANK



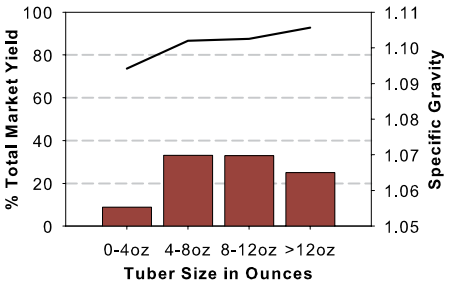
A0008-1TE



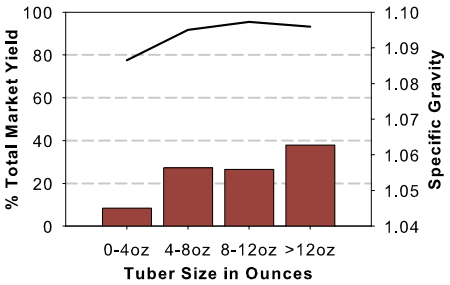
A96814-65LB



A97066-42LB



A98345-1



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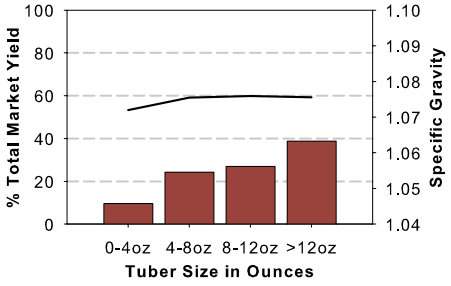
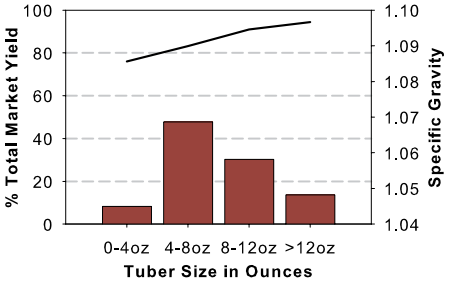


AO96305-3



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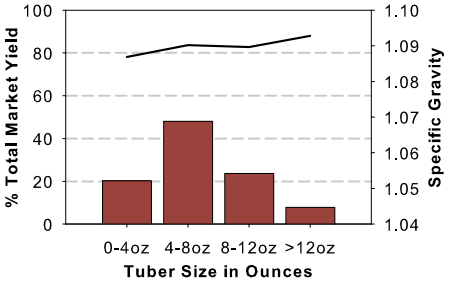
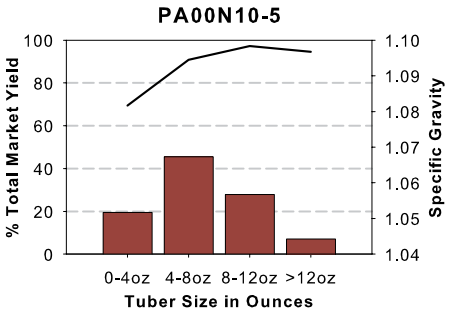
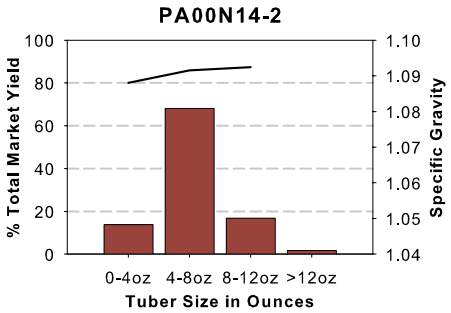
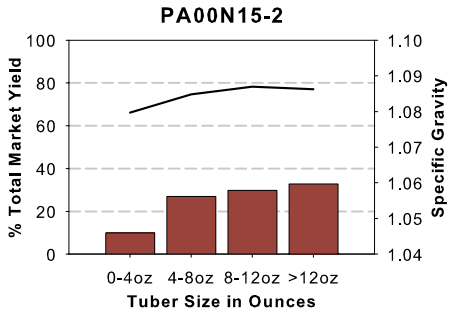
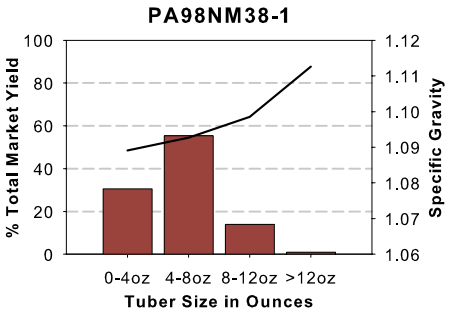
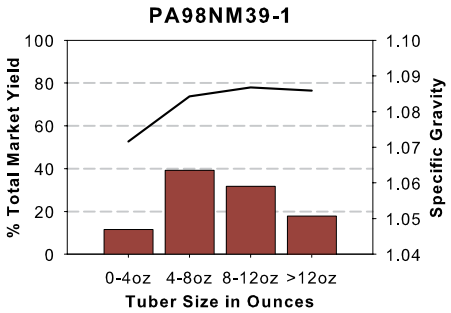


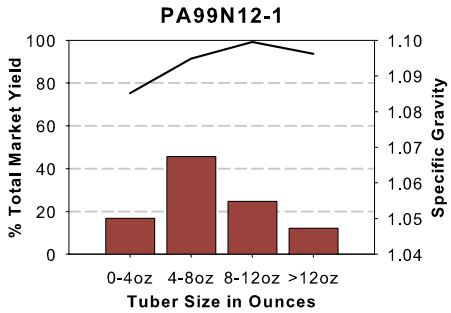

PA00N10-5
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

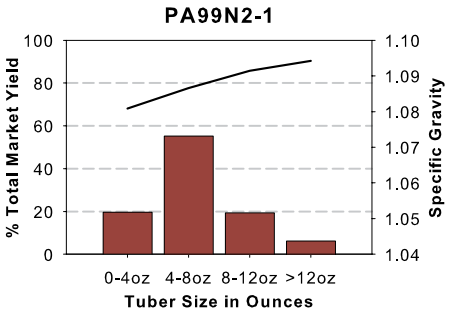

PA00N14-2
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

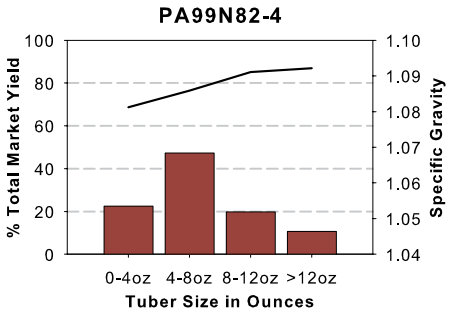

PA00N15-2
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

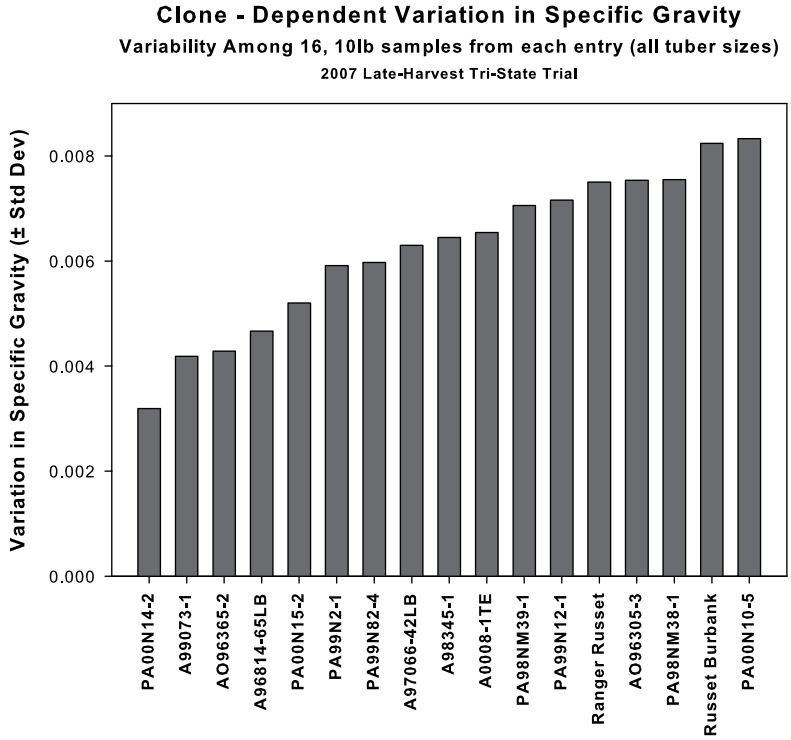

PA98NM38-1
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


PA98NM39-1
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


PA99N12-1
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


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


PA99N82-4
% Total Market 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)
2007 Late-Harvest Tri-State Trial
Variation in Specific Gravity (± Std Dev)
PA00N14-2
A99073-1
AO96365-2
A96814-65LB
PA00N15-2
PA99N2-1
PA99N82-4
A97066-42LB
A98345-1
A0008-1TE
PA98NM39-1
PA99N12-1
Ranger Russet
AO96305-3
PA98NM38-1
Russet Burbank
PA00N10-5

2007 Late Harvest Tri-State Trial

Fresh Value

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 potatoes prices. Production costs per acre were not applied. All assumptions are listed at the front of the book under “Fresh Market Value-Methods”. 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 and packaging to meet demand changes in an effort to maximize income potential. Following discussions with actual pack-sheds and complying with USDA standards, the packaging and size ranges used to produce the fresh values below (figure 1) provide a good base for variety comparison. A packaging and handling fee (pack-shed operating fee) of $3.50 was assessed on each CWT of potatoes. This economic evaluation does not fully account for consumer preferences for each trial entry. Figure 1, below, shows the gross value of all trial entries.

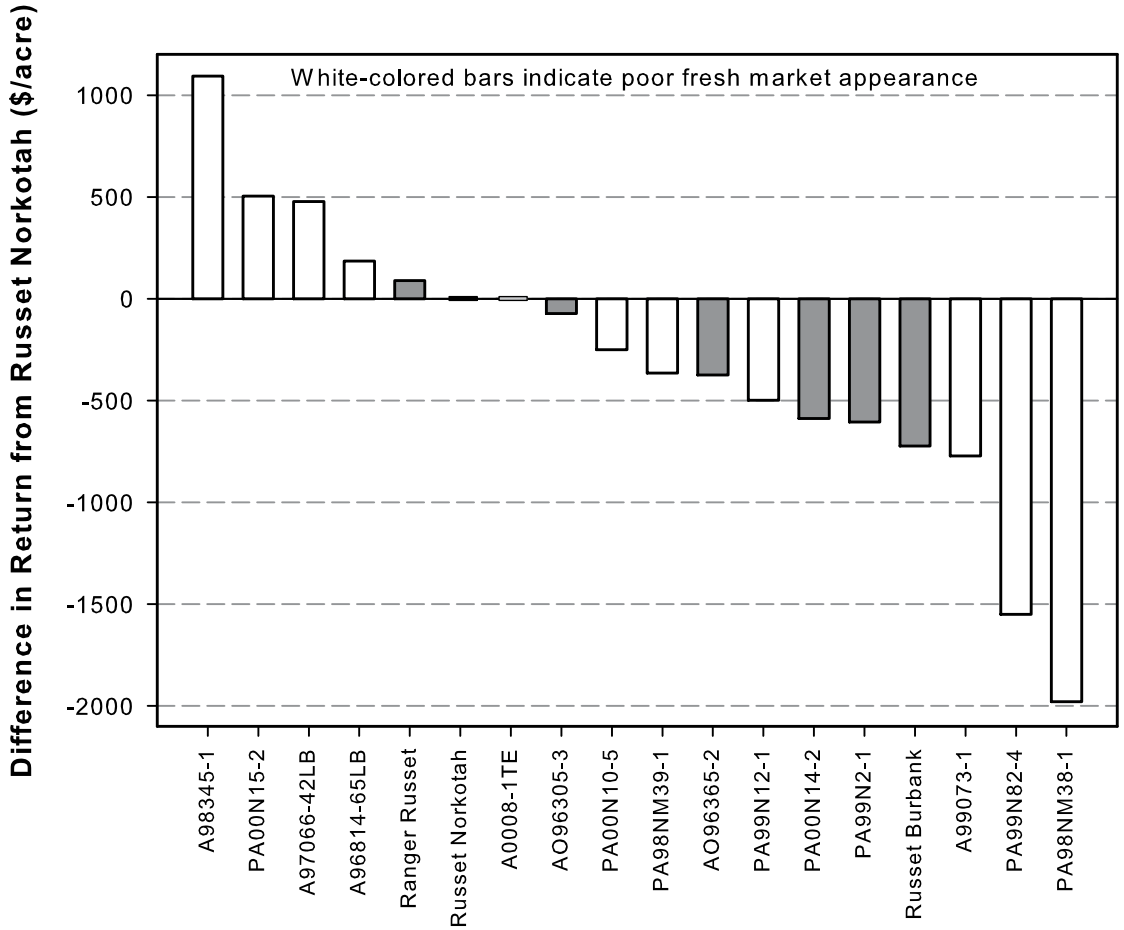


Figure 1. Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah ($4150) from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape or appearance.

2007 Late Harvest Tri-State Trial

Process Value

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 similar to that used by WA potato processors. Production costs per acre were not applied. Contract assumptions are listed at front of book under “Process Market Value-Methods.” Figure 1, below, shows the gross value of all trial entries when compared against a standard reference variety.

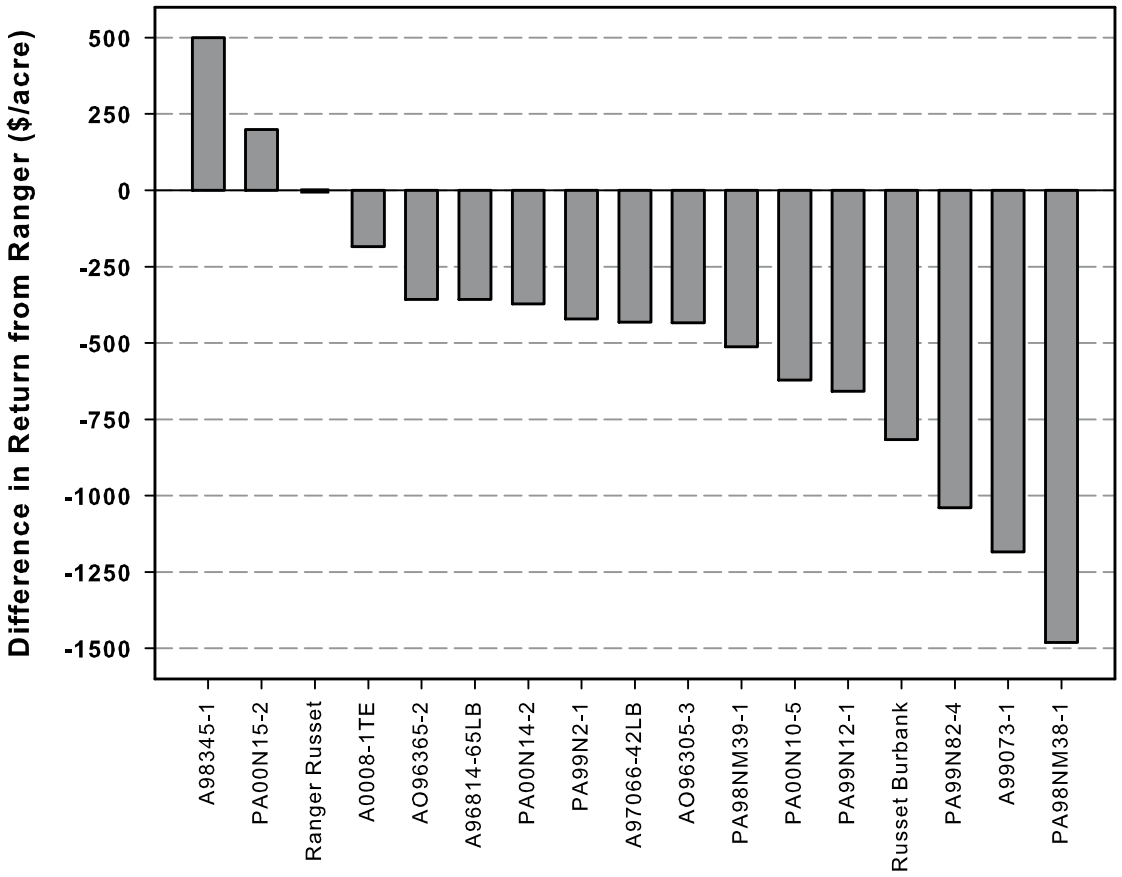
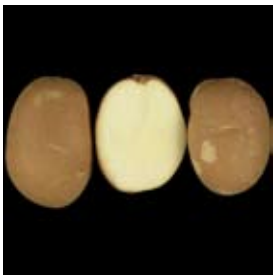
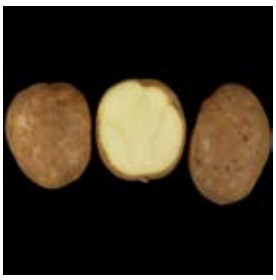
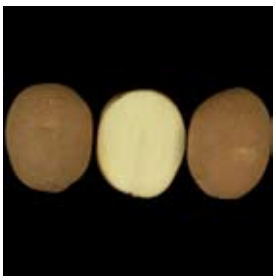
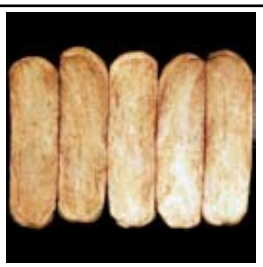


Figure 1. Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet ($2950) from the gross return of the particular entry.

Tubers	WA Late Harvest Tri-state Trial Comments
Ranger Russet	
	**Tubers:** Oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, non-uniform; 44°F = light, non-uniform; 40°F = relatively dark, uniform; reconditioned = relatively dark, non-uniform.
Russet Burbank	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = relatively dark, non-uniform; 40°F = relatively dark, uniform; reconditioned = relatively dark, non-uniform.
A0008-1TE	
	**Tubers:** Oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, uniform; recoditioned = light, non-uniform.
A96814-65LB	
	**Tubers:** Round to oblong tubers. Moderately heavy russet with good skin set; moderate eye depth. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; reconditioned = light, non-uniform.
A97066-42LB	
	**Tubers:** Oblong to long tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, non-uniform; 44°F = light, non-uniform; 40°F = light, 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				
				
A96814-65LB				
				
A97066-42LB				
				

Tubers	WA Late Harvest Tri-state Trial Comments
A98345-1	
	**Tubers:** Oblong tubers. Light russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, non-uniform; 40°F = light, uniform; reconditioned = light, non-uniform.
A99073-1	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = relatively dark, uniform; 40°F = relatively dark, uniform; reconditioned = relatively dark, non-uniform.
AO96305-3	
	**Tubers:** Oblong to long tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; reconditioned = light, non-uniform.
AO96365-2	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, uniform; reconditioned = light, non-uniform.
PA00N14-2	
	**Tubers:** Oblong to long tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, non-uniform; reconditioned = light, non-uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
A98345-1				
				
A99073-1				
				
AO96305-3				
				
AO96365-2				
				
PA00N14-2				
				

Tubers	WA Late Harvest Tri-state Trial Comments
PA00N15-2	
	**Tubers:** Oblong tubers. Light russet with good skin set; moderate eye depth. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, non-uniform; 44°F = relatively dark, uniform; 40°F = relatively dark, uniform; reconditioned = relatively dark, non-uniform.
PA98NM38-1	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, non-uniform; reconditioned = light, non-uniform.
PA98NM39-1	
	**Tubers:** Oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** at harvest = light, non-uniform; after approximately 2 months of storage at 48°F = light, non-uniform; 44°F = relatively dark, uniform; 40°F = relatively dark, non-uniform; reconditioned = relatively dark, non-uniform.
PA99N12-1	
	**Tubers:** Oblong tubers. Light russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, non-uniform; 40°F = light, non-uniform; reconditioned = light, non-uniform.
PA99N2-1	
	**Tubers:** Round to oblong tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** at harvest = light, uniform; after approximately 2 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.
PA00N15-2				
				
PA98NM38-1				
				
PA98NM39-1				
				
PA99N12-1				
				
PA99N2-1				
				

Tubers	WA Late Harvest Tri-state Trial Comments
PA99N82-4	
	**Tubers:** Round to oblong tubers. Moderately heavy russet with good skin set; moderate eye depth. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, uniform; 44°F = light, uniform; 40°F = light, non-uniform; reconditioned = light, uniform.

Zach Holden and Josh Rodriguez monitor tuber growth and soil moisture.

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

Roxanne Holden weighs vines in the field.

2007 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
6 A98345-1	31.5		36.1		33.9		33.8
8 AO96305-3	35.9		32.7		32.6		33.7
16 PA99N82-4	35.0		31.8		25.4	Sp. Gr.	30.7
4 A96814-65LB	32.7		33.0		24.6		30.1
14 PA99N12-1	33.4		36.7		19.1		29.7
5 A97066-42LB	25.1		32.7		26.9		28.2
15 PA99N2-1	33.0		34.0		17.6		28.2
9 AO96365-2	32.0		31.6		17.9		27.2
7 A99073-1	26.0		30.3	Sp. Gr.	24.9	Sp. Gr.	27.1
3 A0008-1TE	35.5		24.5		20.9	Sp. Gr.	27.0
10 PA00N14-2	28.8		33.6		17.8		26.7
12 PA98NM38-1	27.7		28.1		23.6		26.5
1 Ranger Russet	26.0		31.6		21.3		26.3
11 PA00N15-2	25.8		25.5		14.4		21.9
2 Russet Burbank	28.6		20.5	Sp. Gr.	9.7		19.6
13 PA98NM39-1	18.2		21.3		16.2		18.6
Average	29.7		30.3		21.7		27.2

§ maximum rating possible = 38

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

Overall Postharvest Performance of Clones Compared to Russet Bubank

Clone	WA	ID	OR	Average
1 Ranger Russet	L	H	H	H
3 A0008-1TE	H	H	H	H
4 A96814-65LB	H	H	H	H
5 A97066-42LB	L	H	H	H
6 A98345-1	H	H	H	H
7 A99073-1	L	H	H	H
8 AO96305-3	H	H	H	H
9 AO96365-2	H	H	H	H
10 PA00N14-2	H	H	H	H
11 PA00N15-2	L	H	H	H
12 PA98NM38-1	L	H	H	H
13 PA98NM39-1	L	H	H	L
14 PA99N12-1	H	H	H	H
15 PA99N2-1	H	H	H	H
16 PA99N82-4	H	H	H	H

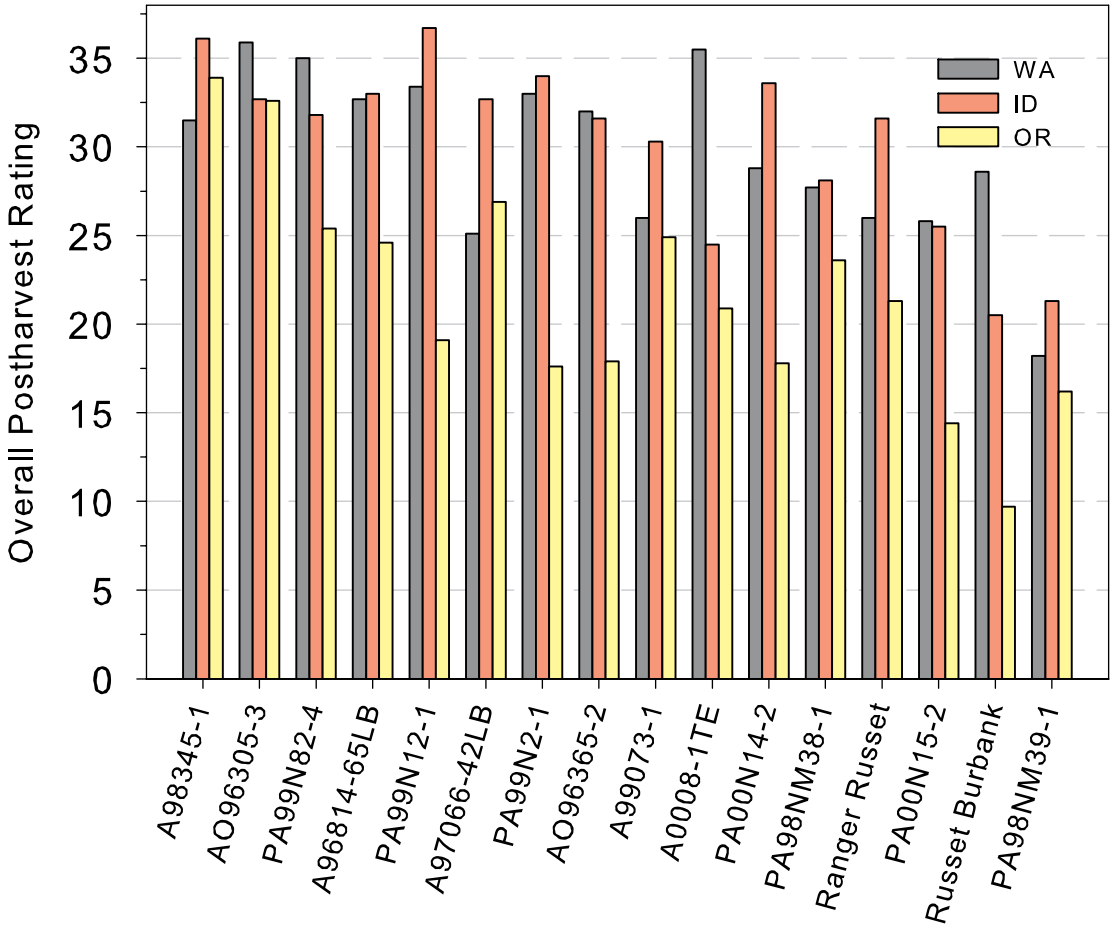
H = Higher than Russet Burbank

S = Same as Russet Burbank

L = Lower than Russet Burbank

2007 Late Harvest Tri-State Trial

Late Harvest Tri-State Postharvest Ratings



Tim Waters, the new Adams County Extention Educator, assists in the seedlot planting.

“A meeting of the minds” during the Annual 2007 Washington State Potato Field Day. From left to right: Martin Moore, Dennis Johnson, Phil Hamm, Sam Thornton, and Rick Knowles.

Field Day isn’t all about a free lunch and pesticide credits. Above, Zach Holden provides timely information about the management of the new variety A95109-1.

2007 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	36.7	42.4	39.6	4+	5.9	0	1.090	4
2 Russet Burbank	40.2	44.6	42.4	5+	5.1	0	1.081	4
3 A0008-1TE	50.0	52.3	51.2	5+	3.1	0	1.083	5
4 A96814-65LB	45.7	49.7	47.7	5+	6.1	0	1.101	1
5 A97066-42LB	40.3	47.8	44.1	5+	7.8	0	1.106	1
6 A98345-1	37.8	42.0	39.9	4+	5.3	0	1.089	4
7 A99073-1	45.1	42.9	44.0	5+	3.9	0	1.076	1
8 AO96305-3	53.9	54.3	54.1	5+	2.4	0	1.090	4
9 AO96365-2	41.0	49.5	45.2	5+	8.7	0	1.089	4
10 PA00N14-2	43.7	48.2	45.9	5+	6.1	0	1.093	3
11 PA00N15-2	37.4	44.4	40.9	5+	8.1	0	1.086	5
12 PA98NM38-1	47.5	48.8	48.1	5+	4.5	0	1.096	1
13 PA98NM39-1	27.5	37.8	32.7	3-	10.3	1	1.089	4
14 PA99N12-1	48.8	51.9	50.3	5+	3.2	0	1.089	4
15 PA99N2-1	45.9	47.8	46.8	5+	3.6	0	1.087	5
16 PA99N82-4	52.1	50.6	51.4	5+	2.4	0	1.081	4
		LSD 0.05	2.7		3.1		0.006	
Average	43.3	47.2	45.3		5.4	0	1.089	
Idaho								
1 Ranger Russet	45.9	48.8	47.4	5+	4.6	0	1.081	4
2 Russet Burbank	28.0	47.1	37.5	4-	19.2	1	1.075	0
3 A0008-1TE	36.5	50.7	43.6	5-	16.2	0	1.078	2
4 A96814-65LB	51.3	52.4	51.8	5+	2.7	0	1.099	1
5 A97066-42LB	48.1	47.4	47.7	5+	3.2	0	1.097	1
6 A98345-1	47.3	45.6	46.4	5+	4.2	0	1.085	5
7 A99073-1	51.3	50.3	50.8	5+	3.9	0	1.075	0
8 AO96305-3	44.3	52.4	48.3	5+	8.8	0	1.088	5
9 AO96365-2	43.4	47.0	45.2	5+	5.4	0	1.081	4
10 PA00N14-2	45.0	54.8	49.9	5-	9.9	0	1.089	4
11 PA00N15-2	41.5	39.0	40.2	4+	6.8	0	1.076	1
12 PA98NM38-1	40.4	48.7	44.6	5-	11.3	0	1.086	5
13 PA98NM39-1	32.9	36.5	34.7	3+	3.8	0	1.077	1
14 PA99N12-1	52.2	54.5	53.3	5+	3.1	0	1.084	5
15 PA99N2-1	45.5	43.7	44.6	5+	3.8	0	1.081	4
16 PA99N82-4	42.1	45.2	43.6	5+	5.2	0	1.077	1
		LSD 0.05	3.4		5.1		0.005	
Average	43.5	47.7	45.6		7.0	0	1.083	
Oregon								
1 Ranger Russet	32.4	45.7	39.0	4-	13.3	0	1.083	5
2 Russet Burbank	22.4	44.9	33.6	3-	22.5	2	1.077	1
3 A0008-1TE	42.0	48.2	45.1	5+	7.7	0	1.070	0
4 A96814-65LB	39.7	42.5	41.1	5+	4.3	0	1.096	1
5 A97066-42LB	39.0	45.7	42.4	5+	6.6	0	1.089	4
6 A98345-1	41.6	40.8	41.2	5+	3.8	0	1.083	5
7 A99073-1	41.6	44.9	43.3	5+	4.6	0	1.069	0
8 AO96305-3	48.1	53.1	50.6	5+	6.4	0	1.083	5
9 AO96365-2	33.5	45.9	39.7	4-	12.4	0	1.078	2
10 PA00N14-2	32.2	47.6	39.9	4-	15.5	0	1.077	1
11 PA00N15-2	29.7	42.7	36.2	4-	13.1	1	1.081	4
12 PA98NM38-1	36.7	48.9	42.8	5-	17.9	0	1.085	5
13 PA98NM39-1	34.2	39.2	36.7	4+	6.5	0	1.080	3
14 PA99N12-1	38.7	46.6	42.7	5-	9.6	0	1.077	1
15 PA99N2-1	36.6	41.8	39.2	4+	6.3	0	1.078	2
16 PA99N82-4	40.3	46.4	43.3	5+	8.4	0	1.075	0
		LSD 0.05	3.0		4.7		0.006	
Average	36.8	45.3	41.0		9.9	0	1.080	

Date test performed:

Washington	Oct. 19	Oct. 14
Idaho	Oct. 18	Oct. 17
Oregon	Oct. 5	Oct. 4

§ 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.

2007 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	100	0	4.0	1.0	11	12
2 Russet Burbank	2.6	63	38	2.6	2.0	6	11
3 A0008-1TE	3.5	33	17	1.5	1.2	7	10
4 A96814-65LB	3.7	100	25	4.3	1.5	4	4
5 A97066-42LB	3.1	63	21	2.5	1.4	5	9
6 A98345-1	3.5	100	50	4.5	1.9	5	8
7 A99073-1	3.0	17	4	1.4	1.1	7	7
8 AO96305-3	3.9	75	25	3.1	1.5	8	15
9 AO96365-2	3.0	54	25	2.4	1.5	5	8
10 PA00N14-2	2.8	71	8	2.9	1.2	7	8
11 PA00N15-2	2.8	42	4	1.8	1.1	7	9
12 PA98NM38-1	3.7	67	13	2.6	1.3	6	7
13 PA98NM39-1	2.2	75	58	3.0	2.6	11	13
14 PA99N12-1	3.4	83	21	3.0	1.4	6	8
15 PA99N2-1	3.0	71	13	2.8	1.3	7	9
16 PA99N82-4	4.0	38	4	2.0	1.1	8	11
LSD 0.05	0.5	28	25			3	3
Average	3.2	65.6	1.4	2.8	1.4	6.8	9.3
Idaho							
1 Ranger Russet	3.6	46	8	2.0	1.2	3	7
2 Russet Burbank	3.5	8	4	1.2	1.1	5	4
3 A0008-1TE	3.5	13	0	1.3	1.0	5	7
4 A96814-65LB	4.0	63	46	2.9	2.2	2	4
5 A97066-42LB	3.7	46	25	2.1	1.5	9	4
6 A98345-1	3.1	33	8	1.9	1.2	5	4
7 A99073-1	3.3	42	0	2.0	1.0	7	5
8 AO96305-3	3.7	17	4	1.3	1.0	6	6
9 AO96365-2	3.6	54	4	2.2	1.1	4	4
10 PA00N14-2	3.6	83	8	3.4	1.2	5	5
11 PA00N15-2	3.5	8	13	1.2	1.3	4	3
12 PA98NM38-1	4.1	13	8	1.3	1.2	4	3
13 PA98NM39-1	2.3	63	58	2.4	2.3	5	8
14 PA99N12-1	3.7	8	0	1.2	1.0	5	5
15 PA99N2-1	3.0	38	25	1.8	1.5	5	5
16 PA99N82-4	3.8	33	0	1.7	1.0	6	8
LSD 0.05	0.5	28	20			4	3
Average	3.5	35.4	1.3	1.9	1.3	5.0	5.2
Oregon							
1 Ranger Russet	3.3	96	17	4.3	1.3	6	9
2 Russet Burbank	2.7	63	8	2.7	1.2	5	8
3 A0008-1TE	2.9	0	17	1.0	1.2	6	10
4 A96814-65LB	3.6	96	29	4.0	1.6	4	4
5 A97066-42LB	2.9	63	21	2.4	1.4	6	6
6 A98345-1	2.9	92	63	4.3	2.5	6	7
7 A99073-1	2.9	17	0	1.4	1.0	3	6
8 AO96305-3	3.6	17	17	1.3	1.4	6	13
9 AO96365-2	2.9	58	21	2.4	1.4	3	5
10 PA00N14-2	2.8	63	4	2.6	1.1	6	6
11 PA00N15-2	2.4	25	4	1.6	1.1	5	6
12 PA98NM38-1	2.6	8	4	1.2	1.1	4	4
13 PA98NM39-1	2.2	71	50	3.0	2.3	6	10
14 PA99N12-1	3.1	29	13	1.5	1.3	4	5
15 PA99N2-1	2.6	79	42	3.0	2.0	7	7
16 PA99N82-4	3.4	17	21	1.3	1.3	6	9
LSD 0.05	0.5	24	25			2	3
Average	2.9	49.5	20.6	2.4	1.4	5.2	7.1

Date test performed:

Washington	Nov. 6	Oct. 31	Nov. 16
Idaho	Nov. 13	Oct. 30	Nov. 20
Oregon	Nov. 8	Oct. 25	Nov. 21

2007 Late Harvest Tri-State Trial

Stored at 48°F for 44 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg	SPROUTING (%)	length (in)
Washington											
1 Ranger Russet	33.9	43.4	38.6	4-	10.0	0	1.1	0.6	5	93	3/4
2 Russet Burbank	37.8	43.1	40.5	5+	5.3	0	0.8	0.6	5	0	
3 A0008-1TE	47.0	51.2	49.1	5+	5.6	0	0.5	0.5	5	93	1
4 A96814-65LB	45.2	50.4	47.8	5+	5.2	0	0.6	0.5	5	73	1/4
5 A97066-42LB	35.7	47.9	41.8	5-	12.3	0	1.0	0.5	5	13	1/8
6 A98345-1	42.5	44.5	43.5	5+	6.3	0	0.6	0.6	5	100	1 3/4
7 A99073-1	38.5	39.0	38.8	4+	5.1	0	0.8	0.8	5	93	1/4
8 AO96305-3	52.9	53.6	53.2	5+	2.7	0	0.5	0.5	5	60	1/2
9 AO96365-2	39.5	46.5	43.0	5+	8.0	0	0.8	0.5	5	100	1/2
10 PA00N14-2	49.6	51.8	50.7	5+	3.0	0	0.5	0.5	5	20	1/4
11 PA00N15-2	31.7	38.5	35.1	3-	9.6	0	1.2	0.8	4	13	1/8
12 PA98NM38-1	42.0	47.5	44.8	5+	6.4	0	0.7	0.5	5	20	1/4
13 PA98NM39-1	25.2	37.7	31.4	3-	12.5	1	1.9	0.8	4	100	3/4
14 PA99N12-1	46.4	50.6	48.5	5+	5.7	0	0.5	0.5	5	60	1/8
15 PA99N2-1	40.4	46.1	43.3	5+	6.1	0	0.7	0.5	5	100	1
16 PA99N82-4	45.0	46.7	45.8	5+	2.8	0	0.6	0.5	5	100	1/2
		LSD 0.05	2.7		3.4					19	
Average	40.8	46.2	43.5		6.6	0	0.8	0.6		65	
Idaho											
1 Ranger Russet	42.2	46.4	44.3	5+	6.9	0	0.6	0.5	5	67	1/4
2 Russet Burbank	31.6	45.6	38.6	4-	14.0	0	1.2	0.6	5	0	
3 A0008-1TE	31.9	50.0	41.0	5-	18.1	0	1.2	0.5	5	87	1/2
4 A96814-65LB	49.5	52.5	51.0	5+	4.8	0	0.5	0.5	5	60	1/8
5 A97066-42LB	42.7	47.4	45.0	5+	4.7	0	0.6	0.5	5	47	1/8
6 A98345-1	46.7	47.9	47.3	5+	6.1	0	0.5	0.5	5	100	3/4
7 A99073-1	44.0	39.3	41.7	5+	6.8	0	0.6	0.8	5	47	1/8
8 AO96305-3	44.1	53.5	48.8	5-	10.4	0	0.6	0.6	5	73	1/4
9 AO96365-2	41.6	49.5	45.5	5-	9.5	0	0.7	0.5	5	93	1/2
10 PA00N14-2	49.4	55.1	52.2	5+	5.7	0	0.5	0.5	5	0	
11 PA00N15-2	39.0	34.2	36.6	4+	6.3	0	0.8	1.1	5	0	
12 PA98NM38-1	37.5	51.0	44.2	5-	14.2	0	0.9	0.5	5	13	1/8
13 PA98NM39-1	32.6	36.8	34.7	3+	6.3	0	1.2	0.9	4	60	1/4
14 PA99N12-1	50.1	51.3	50.7	5+	2.9	0	0.5	0.5	5	47	1/8
15 PA99N2-1	50.4	49.4	49.9	5+	2.7	0	0.5	0.5	5	93	1/2
16 PA99N82-4	39.2	46.9	43.1	5+	7.9	0	0.8	0.5	5	93	1/4
		LSD 0.05	3.7		5.0					21	
Average	42.0	47.3	44.7		8.0	0	0.7	0.6		55	
Oregon											
1 Ranger Russet	25.3	43.5	34.4	3-	18.2	1	1.9	0.6	4	87	1/2
2 Russet Burbank	14.9	41.6	28.3	2-	26.7	3	3.6	0.7	2	13	1/8
3 A0008-1TE	31.7	45.8	38.7	4-	14.8	0	1.2	0.6	5	93	1/2
4 A96814-65LB	30.8	43.8	37.3	4-	13.2	0	1.3	0.6	4	100	1/2
5 A97066-42LB	33.4	46.2	39.8	4-	13.3	0	1.1	0.5	5	20	1/8
6 A98345-1	33.6	41.7	37.7	4+	8.2	0	1.1	0.7	5	100	1 1/2
7 A99073-1	34.1	45.3	39.7	4-	11.4	0	1.1	0.6	5	93	1/4
8 AO96305-3	41.0	53.5	47.3	5-	12.5	0	0.7	0.6	5	87	1/4
9 AO96365-2	25.8	38.0	31.9	3-	12.4	1	1.9	0.8	4	40	1/2
10 PA00N14-2	27.8	45.6	36.7	4-	17.8	1	1.6	0.6	4	53	1/8
11 PA00N15-2	18.9	36.8	27.9	2-	17.9	3	2.9	0.9	3	0	
12 PA98NM38-1	25.0	49.1	37.1	4-	24.1	1	1.9	0.5	4	27	1/8
13 PA98NM39-1	20.2	33.7	26.9	2-	14.9	2	2.6	1.1	3	80	1/2
14 PA99N12-1	22.9	41.0	32.0	3-	18.0	2	2.2	0.7	3	80	1/4
15 PA99N2-1	22.0	36.9	29.5	2-	15.0	2	2.4	0.9	3	87	3/4
16 PA99N82-4	37.0	47.8	42.4	5-	10.9	0	0.9	0.5	5	93	3/4
		LSD 0.05	2.8		5.1					20	
Average	27.8	43.1	35.5		15.6	1	1.8	0.7		66	

Date test performed:

Washington	Dec. 10	Dec. 27
Idaho	Dec. 16	Dec. 26
Oregon	Dec. 7	Dec. 26

§ 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.

2007 Late Harvest Tri-State Trial

Stored at 44°F for 44 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg
Washington									
1 Ranger Russet	27.4	36.8	32.1	3-	9.6	1	1.7	0.9	4
2 Russet Burbank	25.6	35.2	30.4	2-	9.7	1	1.9	1.0	4
3 A0008-1TE	34.8	40.0	37.4	4+	7.0	0	1.0	0.7	5
4 A96814-65LB	40.3	48.2	44.2	5+	7.9	0	0.7	0.5	5
5 A97066-42LB	28.2	40.5	34.3	3-	12.3	1	1.6	0.7	4
6 A98345-1	34.7	41.1	37.9	4-	9.1	0	1.0	0.7	5
7 A99073-1	30.5	28.0	29.3	2+	5.9	0	1.3	1.6	3
8 AO96305-3	49.9	54.5	52.2	5+	6.0	0	0.5	0.5	5
9 AO96365-2	32.3	42.7	37.5	4-	10.4	0	1.2	0.6	5
10 PA00N14-2	28.1	38.1	33.1	3-	10.0	1	1.6	0.8	4
11 PA00N15-2	23.2	28.5	25.8	2+	5.6	2	2.2	1.5	3
12 PA98NM38-1	28.2	42.0	35.1	3-	13.8	1	1.6	0.7	4
13 PA98NM39-1	20.2	26.2	23.2	1+	6.5	2	2.6	1.8	2
14 PA99N12-1	35.3	46.0	40.7	5-	10.8	0	1.0	0.5	5
15 PA99N2-1	29.5	35.6	32.5	3+	7.8	1	1.4	1.0	4
16 PA99N82-4	35.4	43.6	39.5	4+	8.6	0	1.0	0.6	5
		LSD 0.05	3.7		4.1				
Average	31.5	39.2	35.3		8.8	1	1.4	0.9	
Idaho									
1 Ranger Russet	27.4	44.6	36.0	4-	17.2	1	1.7	0.6	4
2 Russet Burbank	27.0	40.1	33.5	3-	13.1	1	1.7	0.7	4
3 A0008-1TE	27.0	34.2	30.6	3-	9.6	1	1.7	1.1	4
4 A96814-65LB	46.9	50.7	48.8	5+	5.4	0	0.5	0.5	5
5 A97066-42LB	39.7	42.5	41.1	5+	4.7	0	0.7	0.6	5
6 A98345-1	41.8	44.4	43.1	5+	4.2	0	0.7	0.6	5
7 A99073-1	39.6	39.1	39.3	4+	5.5	0	0.8	0.8	5
8 AO96305-3	41.9	51.9	46.9	5-	13.3	0	0.7	0.5	5
9 AO96365-2	34.6	47.3	40.9	5-	12.7	0	1.0	0.5	5
10 PA00N14-2	39.6	47.2	43.4	5+	7.6	0	0.7	0.5	5
11 PA00N15-2	28.2	28.2	28.2	2+	4.6	1	1.6	1.6	3
12 PA98NM38-1	25.9	43.2	34.6	3-	19.0	1	1.8	0.6	4
13 PA98NM39-1	25.3	29.8	27.6	2+	4.7	1	1.9	1.4	3
14 PA99N12-1	41.1	45.8	43.5	5+	6.6	0	0.7	0.6	5
15 PA99N2-1	38.1	37.5	37.8	4+	3.8	0	0.8	0.9	5
16 PA99N82-4	38.0	42.5	40.3	4+	7.0	0	0.8	0.6	5
		LSD 0.05	3.4		5.4				
Average	35.1	41.8	38.5		8.7	0	1.1	0.8	
Oregon									
1 Ranger Russet	20.9	37.4	29.2	2-	16.5	2	2.5	0.9	3
2 Russet Burbank	12.0	32.3	22.1	1-	20.3	4	4.5	1.2	1
3 A0008-1TE	21.0	35.6	28.3	2-	14.6	2	2.5	1.0	3
4 A96814-65LB	30.7	41.3	36.0	4-	10.7	0	1.3	0.7	4
5 A97066-42LB	27.8	39.1	33.4	3-	11.4	1	1.6	0.8	4
6 A98345-1	35.9	39.7	37.8	4+	7.0	0	0.9	0.7	5
7 A99073-1	30.8	39.7	35.2	3+	8.9	0	1.3	0.7	4
8 AO96305-3	39.1	52.1	45.6	5-	13.0	0	0.8	0.5	5
9 AO96365-2	21.3	32.5	26.9	2-	11.2	2	2.5	1.2	3
10 PA00N14-2	21.3	36.7	29.0	2-	15.3	2	2.5	0.9	3
11 PA00N15-2	15.4	27.0	21.2	1-	11.5	3	3.5	1.7	1
12 PA98NM38-1	21.0	40.0	30.5	3-	19.1	2	2.5	0.7	3
13 PA98NM39-1	17.5	27.5	22.5	1-	10.0	3	3.1	1.6	2
14 PA99N12-1	25.6	38.1	31.8	3-	13.4	1	1.9	0.8	4
15 PA99N2-1	21.7	32.5	27.1	2-	10.8	2	2.4	1.2	3
16 PA99N82-4	29.0	46.5	37.7	4-	17.5	1	1.5	0.5	4
		LSD 0.05	3.2		5.0				
Average	24.4	37.4	30.9		13.2	2	2.2	0.9	

Date test performed:

Washington	Dec. 11	Dec. 11
Idaho	Dec. 17	Dec. 17
Oregon	Dec. 8	Dec. 8

§ 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.

2007 Late Harvest Tri-State Trial

Stored at 40°F for 44 Days and Reconditioned

		PHOTOVOLT(44 Days at 40°F)					PHOTOVOLT AFTER RECONDITIONING (21 days at 60°F)				
Clone	SPROUTING (%)	stem	bud	average	DIFF	USDA COLOR	stem	bud	average	DIFF	USDA COLOR
Washington											
1 Ranger Russet	0	19.5	28.3	23.9	8.9	2	21.8	35.7	28.7	14.3	2
2 Russet Burbank	0	22.7	28.5	25.6	6.5	2	19.1	29.9	24.5	10.8	3
3 A0008-1TE	0	24.1	26.8	25.4	4.7	2	24.9	37.2	31.0	13.8	1
4 A96814-65LB	0	36.9	45.3	41.1	8.5	0	41.0	50.7	45.8	10.3	0
5 A97066-42LB	0	30.2	38.8	34.5	8.6	1	30.8	46.1	38.5	15.3	0
6 A98345-1	0	34.1	42.3	38.2	8.2	0	36.6	46.3	41.4	9.7	0
7 A99073-1	0	23.4	26.2	24.8	4.1	2	24.4	33.7	29.1	9.3	2
8 AO96305-3	0	38.8	49.9	44.3	11.1	0	37.6	51.1	44.4	13.5	0
9 AO96365-2	0	26.4	33.7	30.1	7.3	1	29.8	44.0	36.9	14.2	1
10 PA00N14-2	0	24.3	33.7	29.0	9.3	2	25.5	42.7	34.1	17.2	1
11 PA00N15-2	0	20.9	25.1	23.0	5.9	2	22.4	32.7	27.6	10.8	2
12 PA98NM38-1	0	16.7	31.2	24.0	14.5	3	23.2	40.2	31.7	17.1	2
13 PA98NM39-1	0	17.7	27.6	22.6	9.9	3	20.0	34.9	27.5	15.8	2
14 PA99N12-1	0	36.3	47.9	42.1	11.5	0	30.6	42.8	36.7	12.4	0
15 PA99N2-1	0	25.7	29.4	27.5	4.9	1	26.5	35.1	30.8	8.7	1
16 PA99N82-4	0	34.3	43.5	38.9	9.2	0	35.5	42.2	38.8	6.9	0
LSD 0.05	ns			3.3	3.9				3.7	5.0	
Average	0	27.0	34.9	30.9	8.3	1	28.1	40.3	34.2	12.5	1
Idaho											
1 Ranger Russet	0	23.2	35.0	29.1	11.7	2	30.2	46.8	38.5	17.7	1
2 Russet Burbank	0	21.0	32.2	26.6	11.2	2	25.0	43.9	34.4	18.8	1
3 A0008-1TE	0	19.7	27.4	23.5	10.6	2	22.4	40.2	31.3	17.8	2
4 A96814-65LB	0	43.7	50.1	46.9	6.4	0	49.5	54.5	52.0	5.2	0
5 A97066-42LB	0	29.6	37.4	33.5	8.6	1	35.4	42.2	38.8	8.3	0
6 A98345-1	0	31.7	41.8	36.7	10.2	0	43.2	53.8	48.5	10.7	0
7 A99073-1	0	28.6	29.2	28.9	2.8	1	31.8	39.1	35.5	7.7	0
8 AO96305-3	0	38.3	49.5	43.9	11.9	0	42.3	56.7	49.5	14.4	0
9 AO96365-2	0	27.5	39.3	33.4	12.2	1	36.2	48.5	42.3	15.4	0
10 PA00N14-2	0	24.4	30.6	27.5	8.1	2	26.5	43.1	34.8	16.6	1
11 PA00N15-2	0	19.0	20.0	19.5	4.4	3	30.5	26.4	28.4	5.4	0
12 PA98NM38-1	0	32.5	40.5	36.5	10.4	0	23.0	40.4	31.7	19.6	2
13 PA98NM39-1	0	19.5	24.1	21.8	5.1	2	25.6	35.8	30.7	10.2	1
14 PA99N12-1	0	41.0	49.1	45.1	8.6	0	40.3	48.2	44.2	8.0	0
15 PA99N2-1	0	30.6	34.0	32.3	5.4	0	36.6	47.2	41.9	11.1	0
16 PA99N82-4	0	31.0	38.0	34.5	7.0	0	33.5	45.7	39.6	12.2	0
LSD 0.05	ns			3.7	5.2				4.0	6.7	
Average	0	28.8	36.1	32.5	8.4	1	33.2	44.5	38.9	12.4	1
Oregon											
1 Ranger Russet	0	15.4	33.9	24.6	18.6	3	17.9	40.3	29.1	22.4	3
2 Russet Burbank	0	8.3	24.5	16.4	16.2	4	10.3	38.3	24.3	28.0	4
3 A0008-1TE	0	14.2	25.0	19.6	10.8	4	14.7	27.2	20.9	13.1	3
4 A96814-65LB	0	25.9	37.9	31.9	12.0	1	35.4	47.3	41.4	11.9	0
5 A97066-42LB	0	20.5	29.4	25.0	9.0	2	24.3	41.1	32.7	16.8	2
6 A98345-1	0	25.5	34.0	29.8	8.9	1	32.4	48.1	40.3	15.7	0
7 A99073-1	0	22.2	28.7	25.5	7.6	2	24.0	39.6	31.8	15.6	2
8 AO96305-3	0	37.2	45.4	41.3	9.4	0	29.8	53.6	41.7	23.8	1
9 AO96365-2	0	16.1	26.1	21.1	9.9	3	21.0	33.5	27.3	13.8	2
10 PA00N14-2	0	17.6	26.9	22.3	9.9	3	15.5	37.4	26.4	21.9	3
11 PA00N15-2	0	13.2	18.1	15.6	5.4	4	18.4	26.8	22.6	10.2	3
12 PA98NM38-1	0	15.3	35.3	25.3	20.0	3	17.1	41.0	29.0	24.0	3
13 PA98NM39-1	0	17.7	26.1	21.9	8.9	3	19.2	40.3	29.8	21.1	3
14 PA99N12-1	0	18.7	38.0	28.3	19.2	3	21.6	46.5	34.1	25.5	2
15 PA99N2-1	0	17.2	24.7	21.0	7.7	3	20.6	37.3	28.9	16.7	2
16 PA99N82-4	0	19.5	34.1	26.8	14.6	2	24.1	46.6	35.3	22.5	2
LSD 0.05	ns			2.7	4.5				3.0	6.4	
Average	0.0	19.0	30.5	24.8	11.8	3	21.6	40.3	31.0	18.9	2

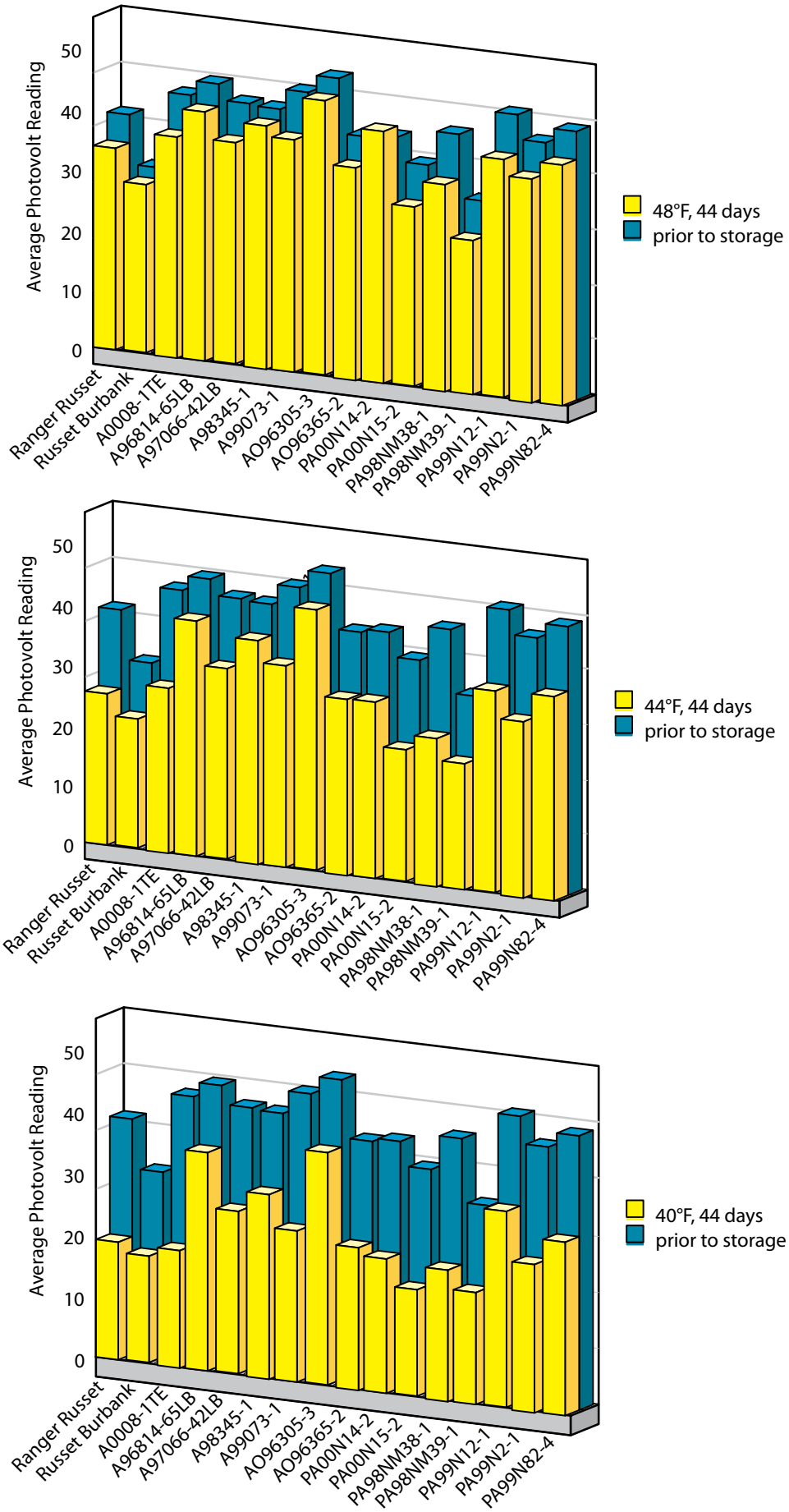
Date test performed:

Washington	Dec. 27	Dec. 12	Dec. 20
Idaho	Dec. 27	Dec. 18	Dec. 21
Oregon	Dec. 27	Dec. 9	Dec. 19

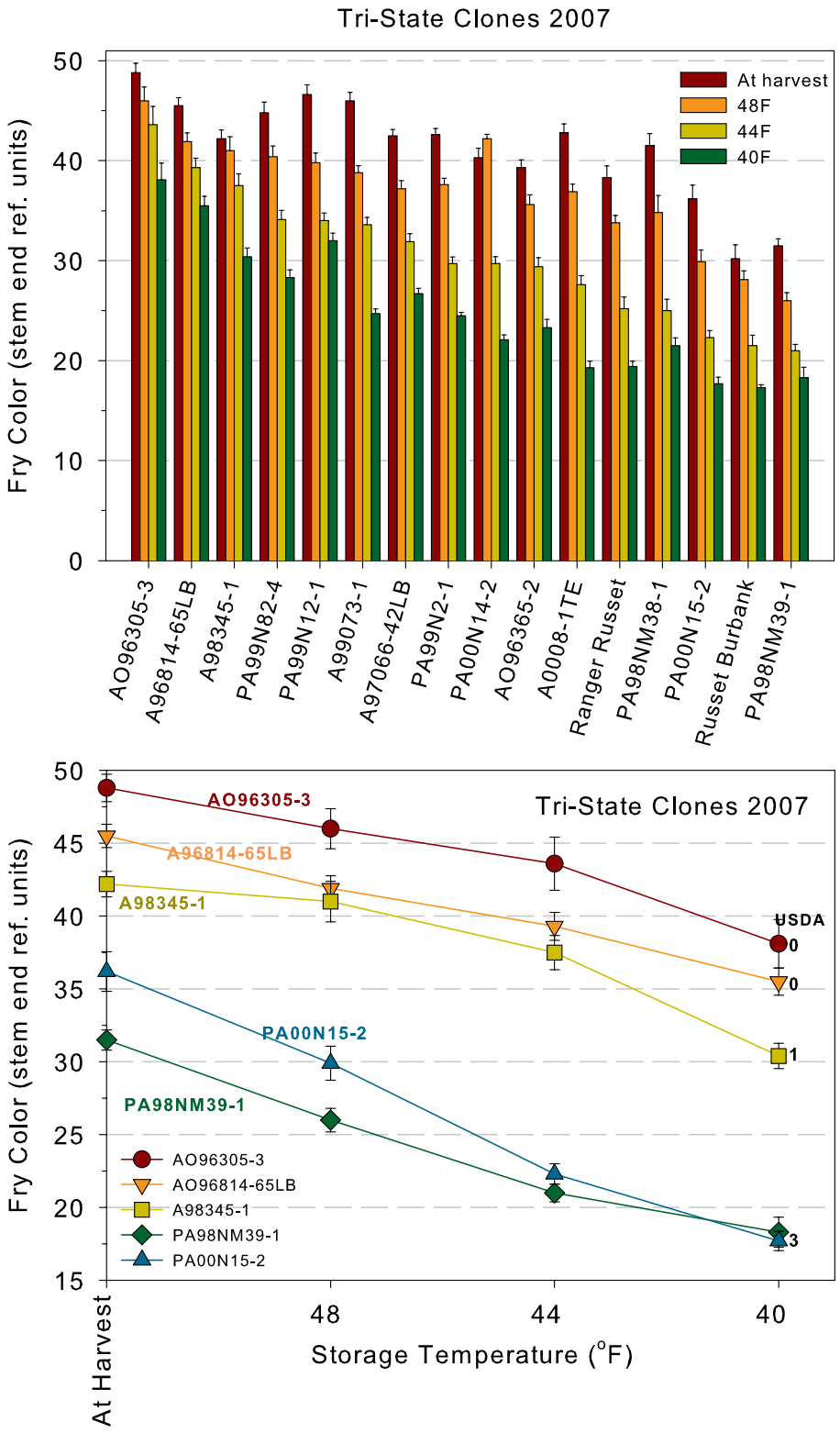
DIFF = Absolute difference between bud and stem Photovolt reading.

2007 Late Harvest Tri-State Trial

Tri-State Trial - 3 State Average of Stem End



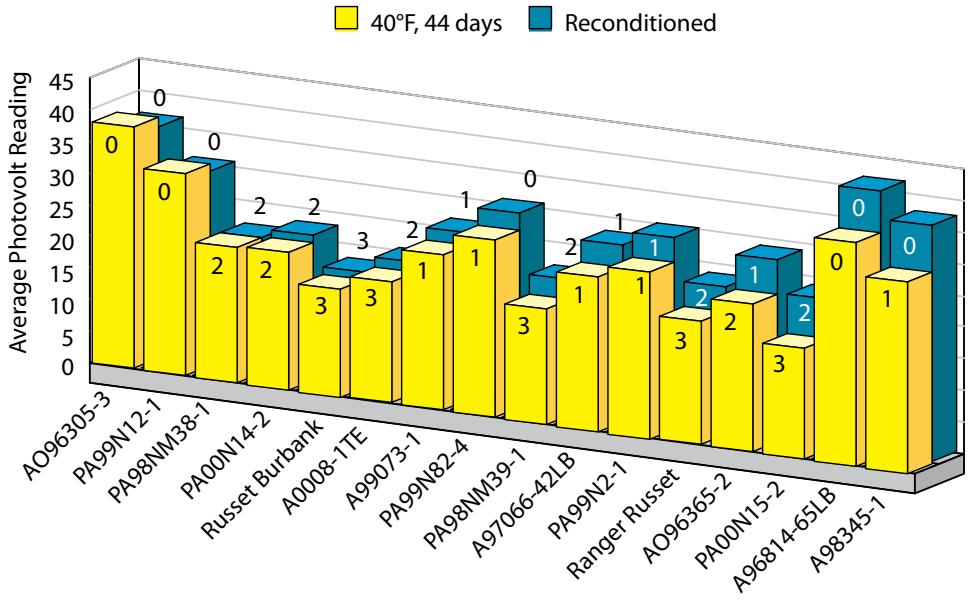
2007 Late Harvest Tri-State Trial

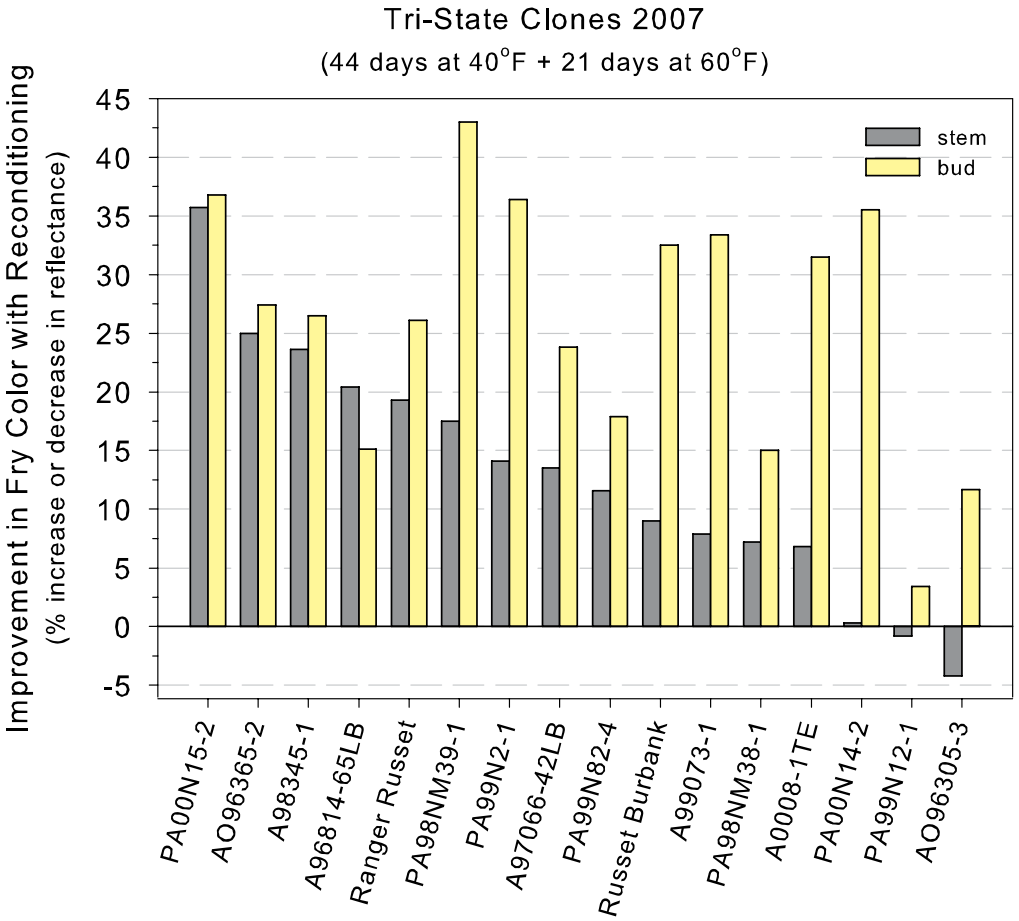


Top: At-harvest and after-storage French fry colors (stem end) of clones in the Tri-State Trial. Tubers were stored for 44 days at 48, 44, and 40°F. The clones are ranked from best to worst on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

Bottom: Line graph depicting the effects of storage temerature on the change in French fry processing quality (stem end fry color) of the best (AO96305-3, A95814-65LB, and A98345-1) and worst (PA00N15-2, PA98NM39-1) performing clones in the Tri-State Trial.

2007 Late Harvest Tri-State Trial





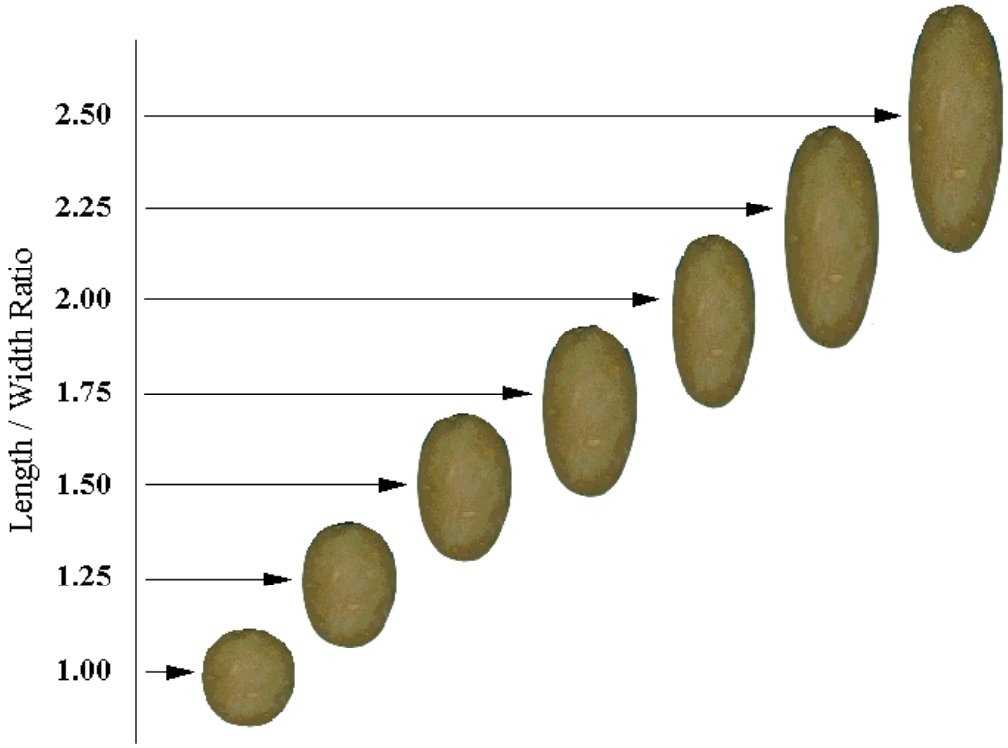
Reconditioning abilities of clones in the 2007 Tri-State Trial (3-state averages). Clones were stored at 40°F for 44 days after harvest and then reconditioned at 60°F for 21 days. **Top:** Stem end fry color before and after reconditioning. Numbers in bars indicate the USDA color rating of the stem end. **Bottom:** Percent improvement of stem and bud end fry color with reconditioning. Negative numbers indicate deterioration of processing quality.

2007 Late Harvest Tri-State Trial

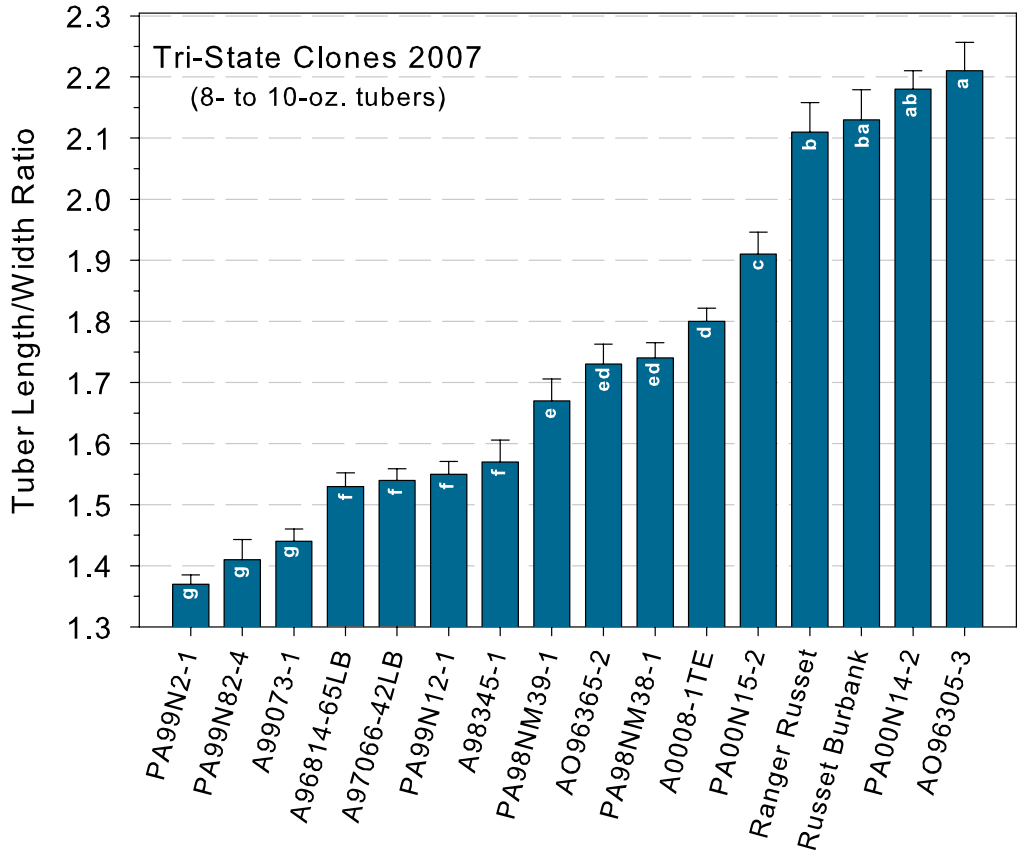
Tuber Shape and Associated French Fry Yields

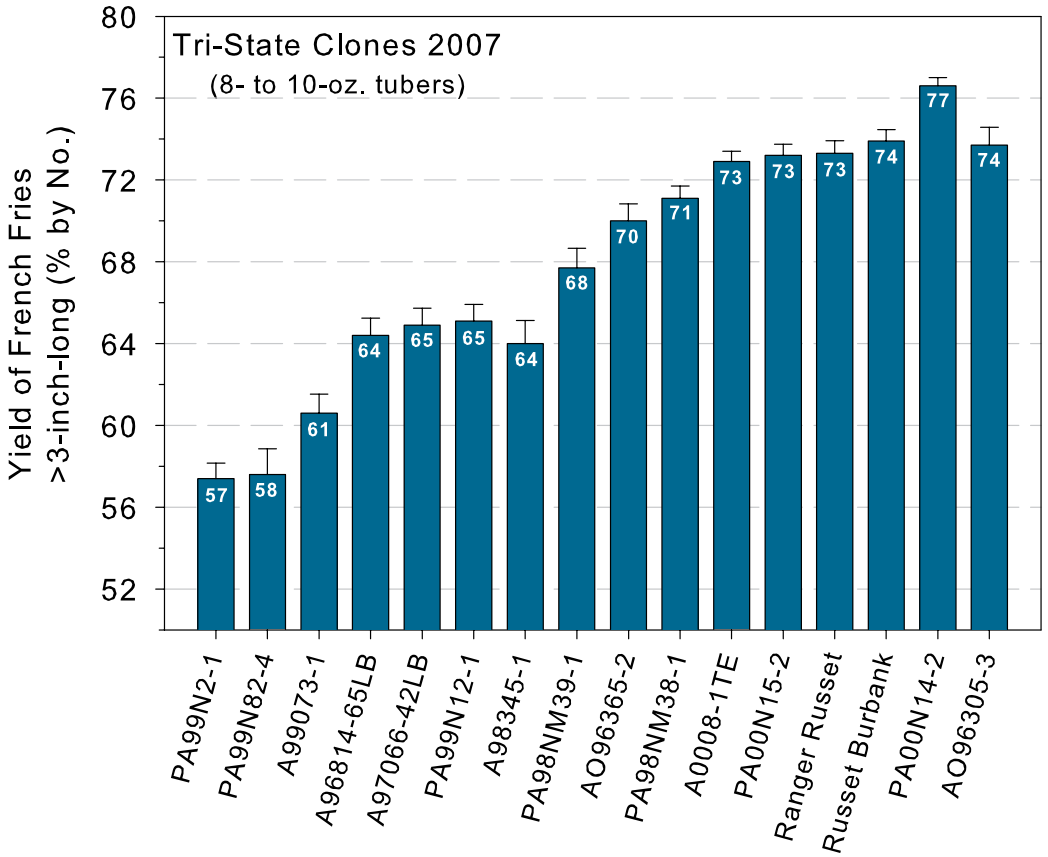
(8- to 10-oz Tubers)

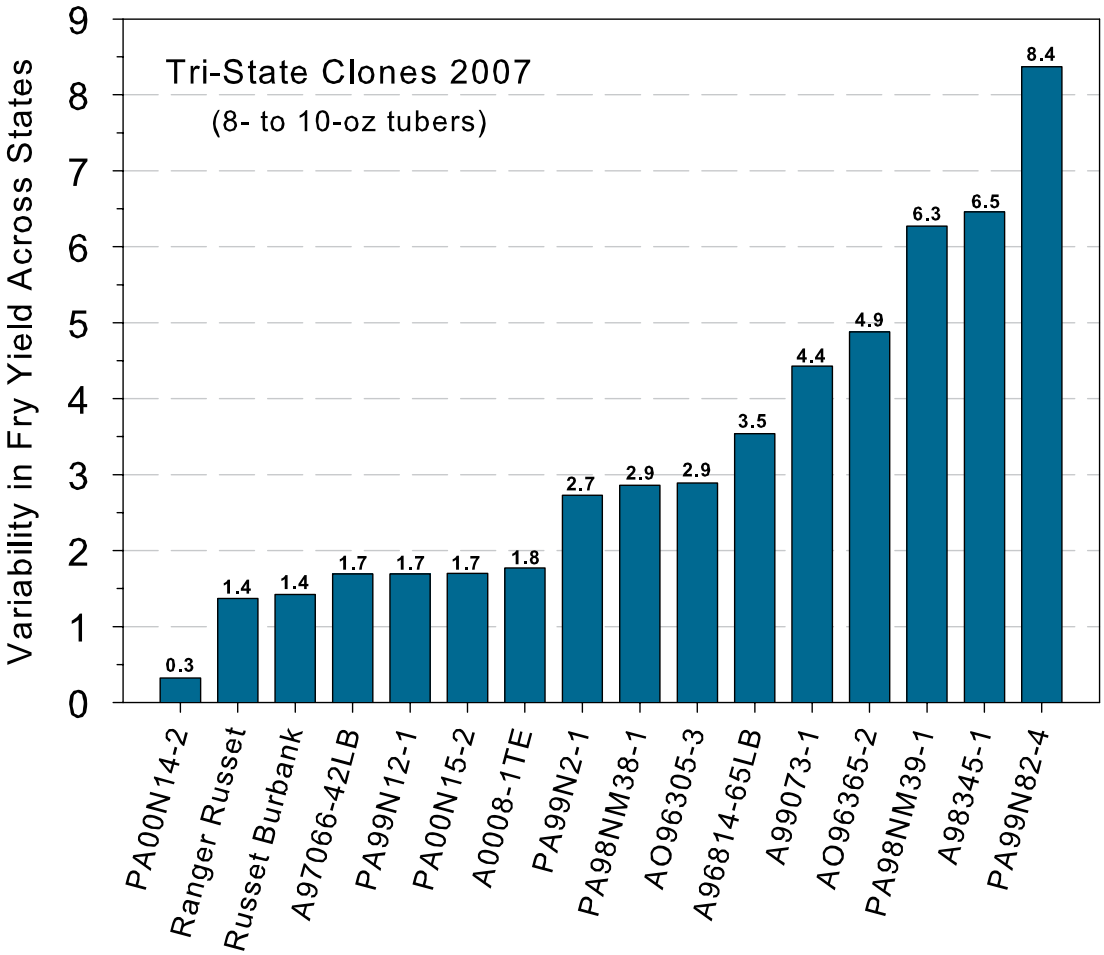
Clone	Length to width ratio			Yield of 3" or longer fries (% by number)		
	WA	ID	OR	WA	ID	OR
1 Ranger Russet	1.79	2.59	1.96	72	72	75
2 Russet Burbank	1.80	2.49	2.07	73	73	76
3 A0008-1TE	1.70	1.90	1.78	71	75	73
4 A96814-65LB	1.49	1.67	1.45	63	69	61
5 A97066-42LB	1.49	1.59	1.55	63	67	65
6 A98345-1	1.39	1.88	1.44	58	73	61
7 A99073-1	1.48	1.53	1.31	63	65	54
8 AO96305-3	1.89	2.60	2.14	75	70	77
9 AO96365-2	1.51	1.97	1.74	64	76	71
10 PA00N14-2	2.03	2.39	2.12	77	76	77
11 PA00N15-2	1.74	2.20	1.78	72	76	73
12 PA98NM38-1	1.60	1.89	1.72	68	75	71
13 PA98NM39-1	1.49	1.98	1.55	63	77	63
14 PA99N12-1	1.49	1.60	1.55	63	67	65
15 PA99N2-1	1.38	1.42	1.29	58	60	54
16 PA99N82-4	1.26	1.72	1.26	52	69	52
Average	1.60	1.96	1.67	66	71	67



2007 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, PA99N82-4 had a length to width ratio of 1.4 (see previous page), resulting in 58% 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 49.6% to 66.4% (58 ±8.4%). Tuber length to width ratios and the associated percentage yield of fries are shown on the previous page. Bars with the same letter are not significantly different (P≤0.01).

2007 Late Harvest Tri-State Trial

Entries Retained from the 2006 Trials Currently in the Tri-State Trial

Harvested fall of 2006
Held at 48°F until December 28
Stored at 44°F until analysis

A0008-1TE, A97066-42LB, PA99N2-1, and PA99N82-4 were retained from the 2006 Tri-State Trial. On average, A97066-42LB and PA99N82-4 produced lighter fries than Ranger or Russet Burbank after 7 months of storage. They also had lower reducing sugar sugar concentrations. PA99N2-1 produced mottled fries from all three states. Sprout lengths of the numbered clones were considerably longer than either check, indicating shorter dormancy.

	PHOTOVOLT READING				USDA	% REDUCING SUGAR			Sprouting	
Clone	stem	bud	avg	DIFF	COLOR	stem	bud	avg	percent	length
Washington										
1 Ranger Russet	26.3	46.8	36.5	20.5	1	1.8	0.5	1.2	100	2"
2 Russet Burbank	26.0	45.6	35.8	19.6	1	1.8	0.6	1.2	100	1 1/2"
3 A0008-1TE	22.3	24.7	23.5	7.7	2	2.3	2.0	2.2	100	4 1/2"
4 A97066-42LB	44.3	48.8	46.5	5.4	0	0.6	0.5	0.6	100	4"
5 PA99N2-1	31.1	39.5	35.3	8.4	0	1.3	0.8	1.0	100	4 1/2"
6 PA99N82-4	41.8	45.3	43.6	4.0	0	0.7	0.6	0.6	100	5 1/2"
		LSD 0.05	4.8	4.3						
Average	32.0	41.8	36.9	10.9	0.7	1.4	0.8	1.1	100	
Idaho										
1 Ranger Russet	36.5	42.5	39.5	9.3	0	0.9	0.6	0.8	100	2 1/2"
2 Russet Burbank	29.0	39.6	34.3	12.5	1	1.5	0.8	1.1	100	1"
3 A0008-1TE	29.6	34.1	31.8	7.0	1	1.4	1.1	1.2	100	3 1/2"
4 A97066-42LB	43.4	45.4	44.4	3.2	0	0.6	0.6	0.6	100	4"
5 PA99N2-1	30.8	34.8	32.8	5.0	0	1.3	1.0	1.2	100	4 1/2"
6 PA99N82-4	35.8	38.9	37.4	4.3	0	0.9	0.8	0.9	100	4"
		LSD 0.05	3.8	4.4						
Average	34.2	39.2	36.7	6.9	0.3	1.1	0.8	1.0	100	
Oregon										
1 Ranger Russet	24.9	38.3	31.6	13.4	1	2.0	0.8	1.4	100	2 1/2"
2 Russet Burbank	24.6	41.6	33.1	17.0	1	2.0	0.7	1.3	100	2"
3 A0008-1TE	24.9	30.7	27.8	7.7	1	2.0	1.3	1.6	100	4"
4 A97066-42LB	36.8	44.6	40.7	7.8	0	0.9	0.6	0.7	100	2 1/2"
5 PA99N2-1	27.7	36.2	31.9	8.6	1	1.6	0.9	1.3	100	4"
6 PA99N82-4	35.7	44.9	40.3	10.1	0	1.0	0.6	0.8	100	4 1/2"
		LSD 0.05	3.1	4.3						
Average	29.1	39.4	34.2	10.8	0.7	1.6	0.8	1.2	100	

Date test performed:

Washington	April 30
Idaho	April 30
Oregon	May 1

Rick Knowles and crew harvesting a trial in late September.

It is a group effort at harvest time.

2007 Early Harvest Regional Trial

Location: WSU Research Center - Othello, WA
Planting Date: April 4
Harvest Date: Aug 6
Fertility: 278-175-400
Vine Kill Date: July 23
Days Grown: 110
In-Row Spacing: 12 in.

Regional trials are conducted throughout 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. The 2007 early harvest trial compared 4 local reference varieties to 16 new clones on the WSU Othello Research Station. Overall, most clones had a nice, typy shape; the reference varieties were among the ugliest and had the most non-uniform shape. The following is a summary of the Washington field and post-harvest results. For additional information, see the grading comments and merit scores near front of book.

Fresh Market Standouts: CO97138-7Ru, CO97138-3Ru, AOTX95265-3Ru
Process Market Standouts: AO96141-3, AO96164-1, A95409-1
Suggested Discards: AC96052-1Ru, CO95172-3Ru

Standcounts

- **40 Day**
  Fast emergence: A95409-1, A96104-2, Ranger, Russet Burbank, Norkotah, (all > 97%)
  Slow emergence: AC96052-1Ru (15%), AOA95155-7 (32%), and A97287-6 (57%), all other entries were > 67%.

- **50 Day**
  Full emergence: Most entries had > 95% of plants emerged at 50 DAP.
  Poor emergence: AC96052-1Ru (92%) and CO97138-3Ru (93%).

Plant and Tuber Growth & Development

- **Above Ground Stem Number Per Plant**
  Most: TXA549-1Ru (2.4) and AO96141-3 (2.3)
  Least: A97287-6 (1.3).

- **Average Tuber Number Per Plant**
  Most: Norkotah (7.7), CO97087-2Ru, and TXA549-1Ru (7.0).
  Least: Shepody (4.5), AO96164-1 (4.7), and A95409-1 (4.8).

- **Average Tuber Size (oz)**
  Largest: AO96164-1 (9.8), Shepody (9.7), and A95409-1 (9.5).
  Smallest: AC96052-1Ru (4.5), AOA95155-7 (5.0), and AOA95154-1 (5.2).

- **Undersized Tubers (< 4 oz)**
  Most: AC96052-1Ru, AOA95154-1, and AOA95155-7.
  Fewest: A95409-1 and Shepody.

Yield and Economic Data

- **Total Yield and U.S. #1 Yield**
  Highest: CO97138-7Ru, highest total and U.S. #1 yield. A95409-1 had the second highest U.S. #1 yield with 503 CWT/A.
  Lowest: AC96052-1Ru, AOA95154-1, AOA95155-7, and AOTX95265-2ARu.

- **% U.S. #1's (greater than 4 oz)**
  Highest: A95409-1 (96%).
  Compare to R. Norkotah at 87%.
  Lowest: AC96052-1Ru (67%), R. Burbank (74%) and AOA95154-1 (76%).

- **Carton Yield (100 to 50 Count (7 to 18 oz U.S.#1 Tubers))**
  Highest: A95409-1 (390 CWT/A) and CO97138-7Ru (388 CWT/A).
  Lowest: AC96052-1Ru, AOA95155-7, and AOA95154-1.

- **Gross Return ($/acre)**
  Fresh Market Highest: CO97138-7Ru, A95409-1, and A96104-2.
  Fresh Market Lowest: AC96052-1Ru , AOA95155-7, and AOA95154-1.
  Process Market Highest: AO96164-1, A95409-1, and A96104-2.
  Process Market Lowest: AC96052-1Ru , AOA95155-7, and AOA95154-1.

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

- **External Defects**
  Notable Defects: Russet Burbank had the highest percentage of growth cracks (6%) and knobs (3%).

- **Internal Defects**
  Notable Defects: CO95172-3Ru had the only occurrence of hollow heart (5%) and brown center (8%). Shepody had the highest occurrence of internal brown spot (5%), while Norkotah and CO97087-3Ru each had 3%.

- **Bruise**
  Highest Blackspot: TXA549-1Ru (45%) and CO97138-7Ru (42%). All other entries had less than 33%.
  Highest Shatter: AC96052-1Ru (48%), AOA95155-7 (39%), and CO95172-3Ru (38%).

2007 Early Harvest Regional Trial

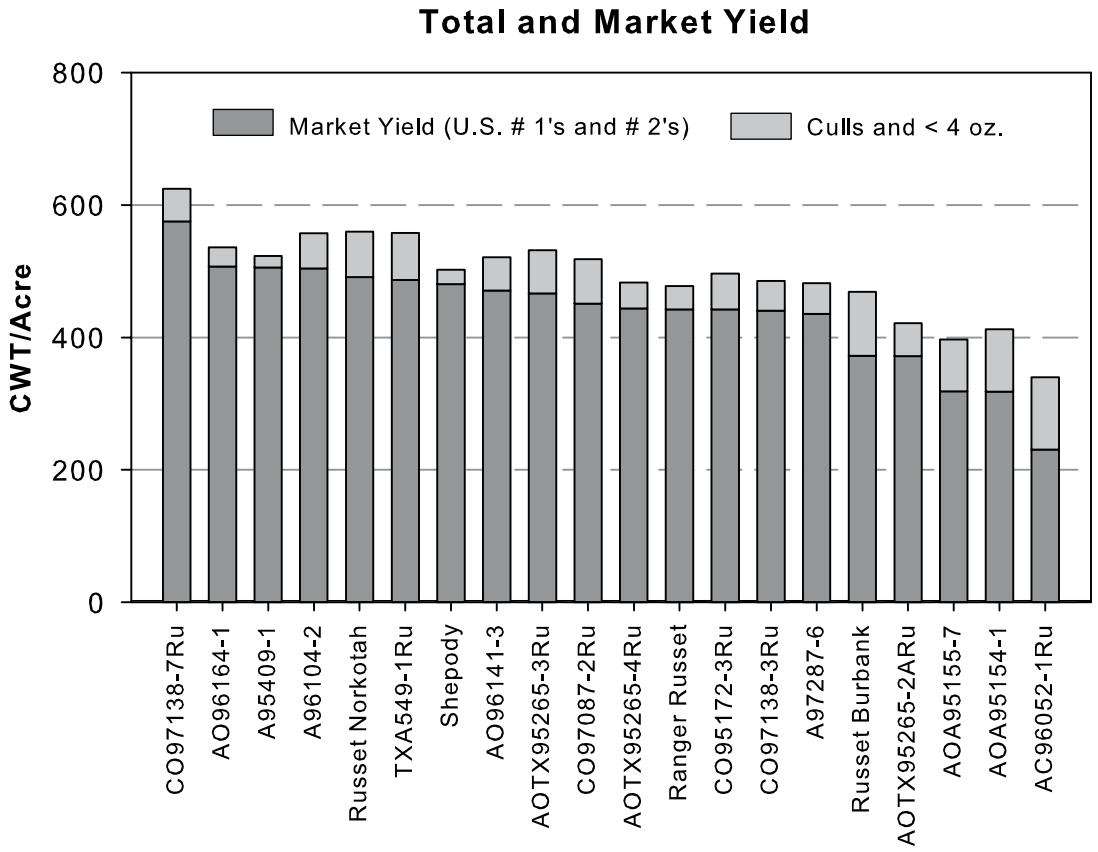
Summaries

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	616	ABC	30.8	87	5	8	56	17.3	79	24.3
Russet Burbank	552	ABC	27.6	75	1	24	33	9.4	45	12.8
Russet Norkotah	612	ABC	30.6	82	2	16	44	13.6	60	18.5
A95409-1	589	ABC	29.5	88	2	10	64	18.7	79	23.4
A96104-2	650	AB	32.5	85	2	13	52	17.3	68	22.5
A97287-6	588	ABC	29.4	85	0	15	50	14.9	64	19.1
AC96052-1Ru	469	C	23.4	70	0	30	32	7.5	43	10.1
AO96141-3	593	ABC	29.7	83	2	15	46	13.9	62	18.7
AO96164-1	658	A	32.9	88	3	9	61	20.1	78	25.6
AOA95154-1	601	ABC	30.1	79	1	20	38	11.5	53	15.9
AOA95155-7	657	AB	32.8	85	2	13	53	17.5	68	22.5
AOTX95265-2ARu	509	BC	25.4	84	1	15	43	11.0	59	15.0
AOTX95265-3Ru	571	ABC	28.6	84	1	15	47	13.6	63	17.9
AOTX95265-4Ru	497	C	24.9	86	1	13	51	12.8	64	16.0
CO95172-3Ru	668	A	33.4	82	0	18	47	15.7	63	21.1
CO97087-2Ru	557	ABC	27.8	83	2	15	43	11.9	57	15.9
CO97138-3Ru	552	ABC	27.6	88	1	11	58	16.0	70	19.5
CO97138-7Ru	692	A	34.6	89	1	10	60	20.9	74	25.7
TXA549-1Ru	674	A	33.7	84	1	15	52	17.6	66	22.3

ENTRY	US # 1 YIELD > 4 oz			4-7 oz*	7-14 oz*	> 14 oz*	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	CWT/A	STATS**	Tons/A	%				% HH	% BC	% IBS
Ranger Russet	537	ABC	26.8	22	52	26	1.081	0	0	3
Russet Burbank	414	DC	20.7	56	42	2	1.083	13	0	13
Russet Norkotah	505	ABC	25.2	45	48	7	1.075	0	0	0
A95409-1	518	ABC	25.9	17	57	26	1.082	0	0	0
A96104-2	553	ABC	27.6	33	50	17	1.086	0	0	0
A97287-6	498	ABC	24.9	36	52	12	1.086	0	0	0
AC96052-1Ru	331	D	16.5	55	42	3	1.085	0	0	0
AO96141-3	493	ABCD	24.6	44	52	4	1.092	0	0	0
AO96164-1	579	AB	29.0	24	52	24	1.082	0	0	0
AOA95154-1	473	ABCD	23.6	51	48	1	1.092	0	0	0
AOA95155-7	560	ABC	28.0	34	54	12	1.086	0	0	0
AOTX95265-2ARu	425	BCD	21.3	46	49	5	1.070	0	0	0
AOTX95265-3Ru	479	ABCD	24.0	43	52	5	1.071	0	0	0
AOTX95265-4Ru	429	BCD	21.5	40	56	4	1.069	0	0	0
CO95172-3Ru	550	ABC	27.5	38	49	13	1.085	0	0	0
CO97087-2Ru	463	ABCD	23.1	48	49	3	1.089	0	0	0
CO97138-3Ru	487	ABCD	24.3	32	58	10	1.077	0	0	0
CO97138-7Ru	619	A	31.0	28	56	16	1.074	0	0	0
TXA549-1Ru	563	ABC	28.2	32	53	15	1.082	0	0	0

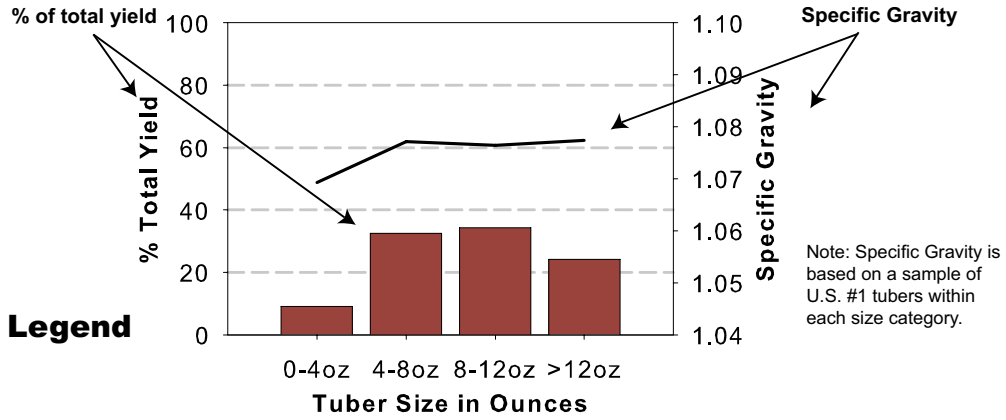
* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5 % level using Fisher's LSD Test

ENTRY	30 DAY STAND % Emerged	50 DAY STAND % Emerged	% Dead Vines prior to vine-kill	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	74	99	90	1.7	8.1	6.6	3	3	35	48
Russet Burbank	86	100	100	2.2	5.2	9.2	4	3	58	38
Russet Norkotah	80	100	100	2.7	5.9	9.1	3	4	27	67
A95409-1	70	100	96	1.6	7.9	6.4	3	3	63	71
A96104-2	77	99	97	2.0	6.6	8.6	3	3	29	62
A97287-6	30	99	98	1.5	6.3	8.1	3	2	38	69
AC96052-1Ru	21	98	69	2.0	4.6	8.9	4	2	15	92
AO96141-3	43	99	100	3.0	5.9	8.6	4	4	32	39
AO96164-1	56	100	100	2.0	7.7	7.4	2	3	60	75
AOA95154-1	10	99	64	2.2	5.3	9.8	4	3	0	80
AOA95155-7	4	99	34	1.8	6.4	8.9	3	2	0	90
AOTX95265-2ARu	77	100	100	1.9	5.8	7.6	3	4	29	32
AOTX95265-3Ru	68	100	100	1.8	6.0	8.3	3	4	22	57
AOTX95265-4Ru	80	99	100	1.8	6.2	7.0	3	4	19	42
CO95172-3Ru	41	99	83	2.3	6.1	9.6	4	3	48	81
CO97087-2Ru	34	99	99	2.8	5.7	8.4	4	3	31	54
CO97138-3Ru	29	98	100	2.2	6.7	7.1	4	3	30	40
CO97138-7Ru	60	100	99	2.1	7.1	8.4	4	3	58	78
TXA549-1Ru	50	95	100	3.3	6.3	9.3	3	2	56	69

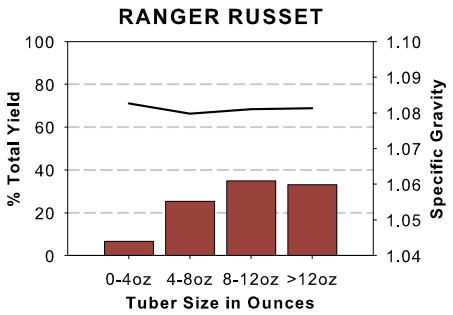


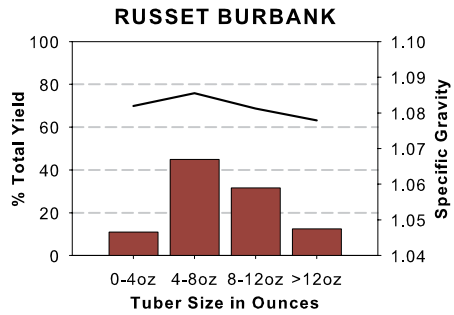
2007 Early Harvest Regional Trial

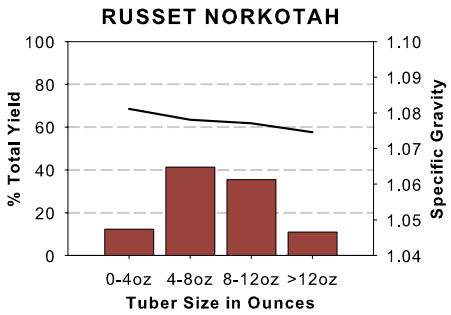
Tuber Yield and Specific Gravity Distributions

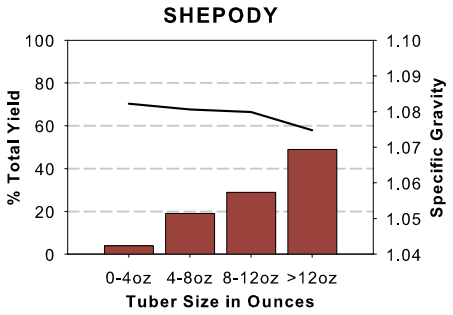


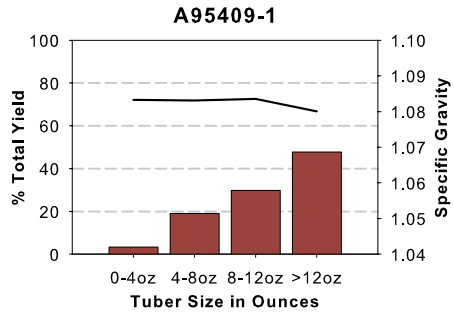
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

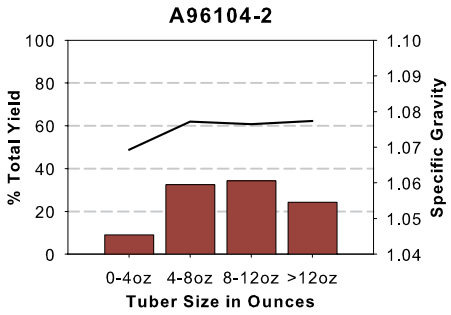


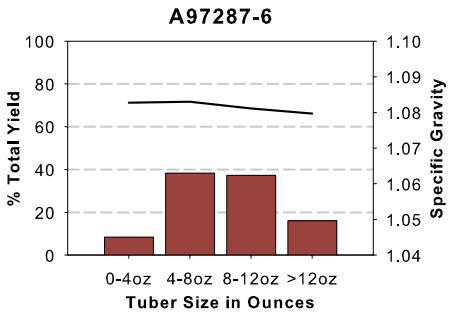


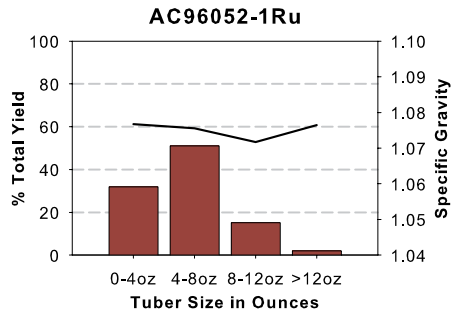


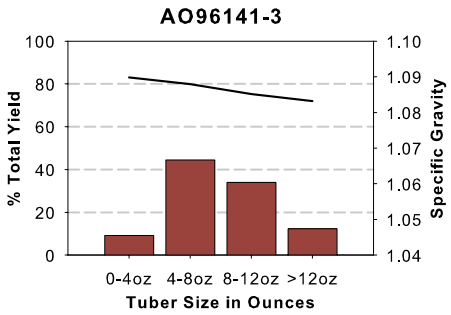


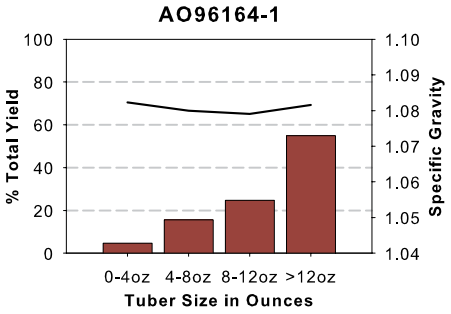


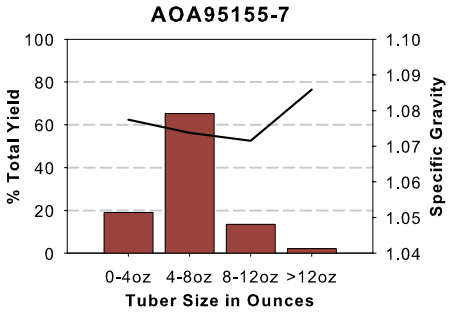


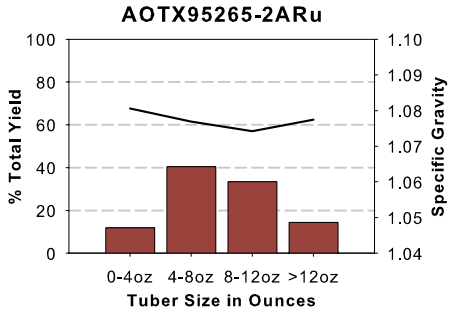


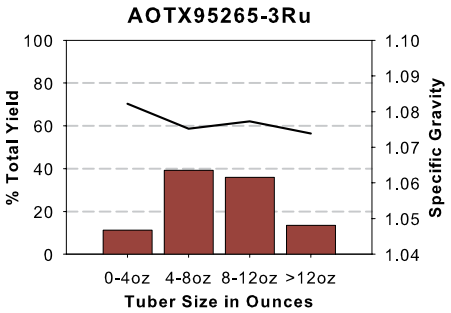


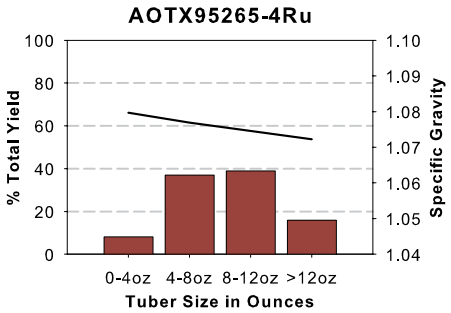


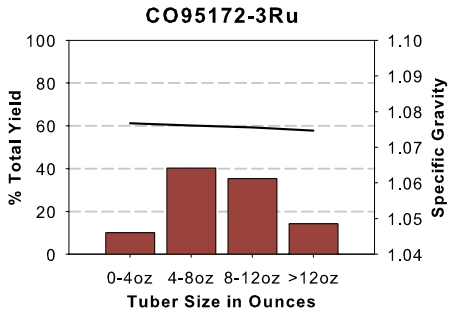

AO96164-1
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

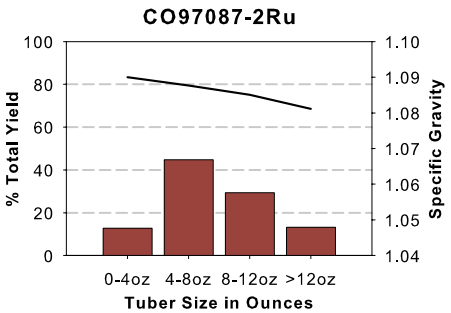

AOA95155-7
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

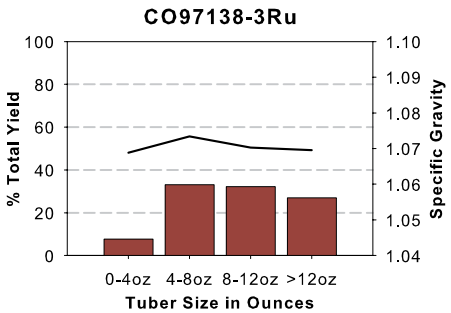

AOTX95265-2ARu
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

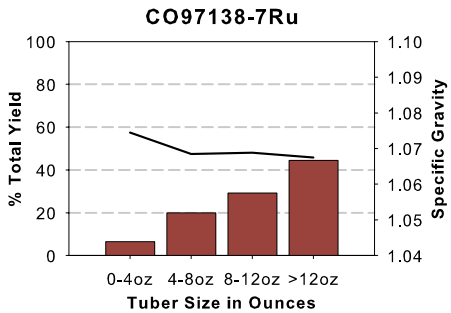

AOTX95265-3Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

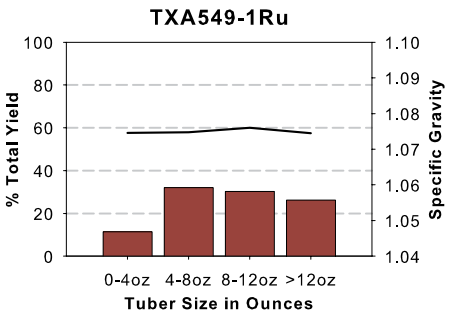

AOTX95265-4Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

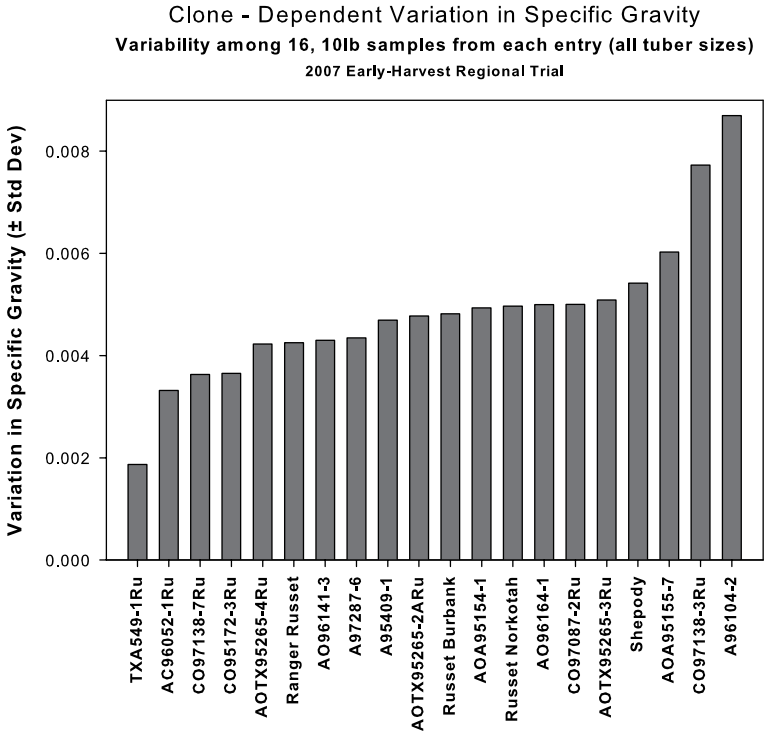

CO95172-3Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


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


CO97138-3Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


CO97138-7Ru
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


TXA549-1Ru
% 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)
2007 Early-Harvest Regional Trial
Variation in Specific Gravity (± Std Dev)
TXA549-1Ru
AC96052-1Ru
CO97138-7Ru
CO95172-3Ru
AOTX95265-4Ru
Ranger Russet
AO96141-3
A97287-6
A95409-1
AOTX95265-2ARu
Russet Burbank
AOA95154-1
Russet Norkotah
AO96164-1
CO97087-2Ru
AOTX95265-3Ru
Shepody
AOA95155-7
CO97138-3Ru
A96104-2

2007 Early Harvest Regional Trial

Fresh Value

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 potatoes prices. Production costs per acre were not applied. All assumptions are listed at the front of the book under “Fresh Market Value - Methods.” 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 and packaging to meet demand changes in an effort to maximize income potential. Following discussions with actual pack-sheds and complying with USDA standards, the packaging and size ranges used to produce the fresh value below (figure 1) provide a good base for variety comparison. A packaging and handling fee (pack-shed operating fee) of $3.50 was assessed on each CWT of potatoes. This economic evaluation does not fully account for consumer preferences for each trial entry. Figure 1, below, shows the difference in gross value from Russet Norkotah for all trial entries.

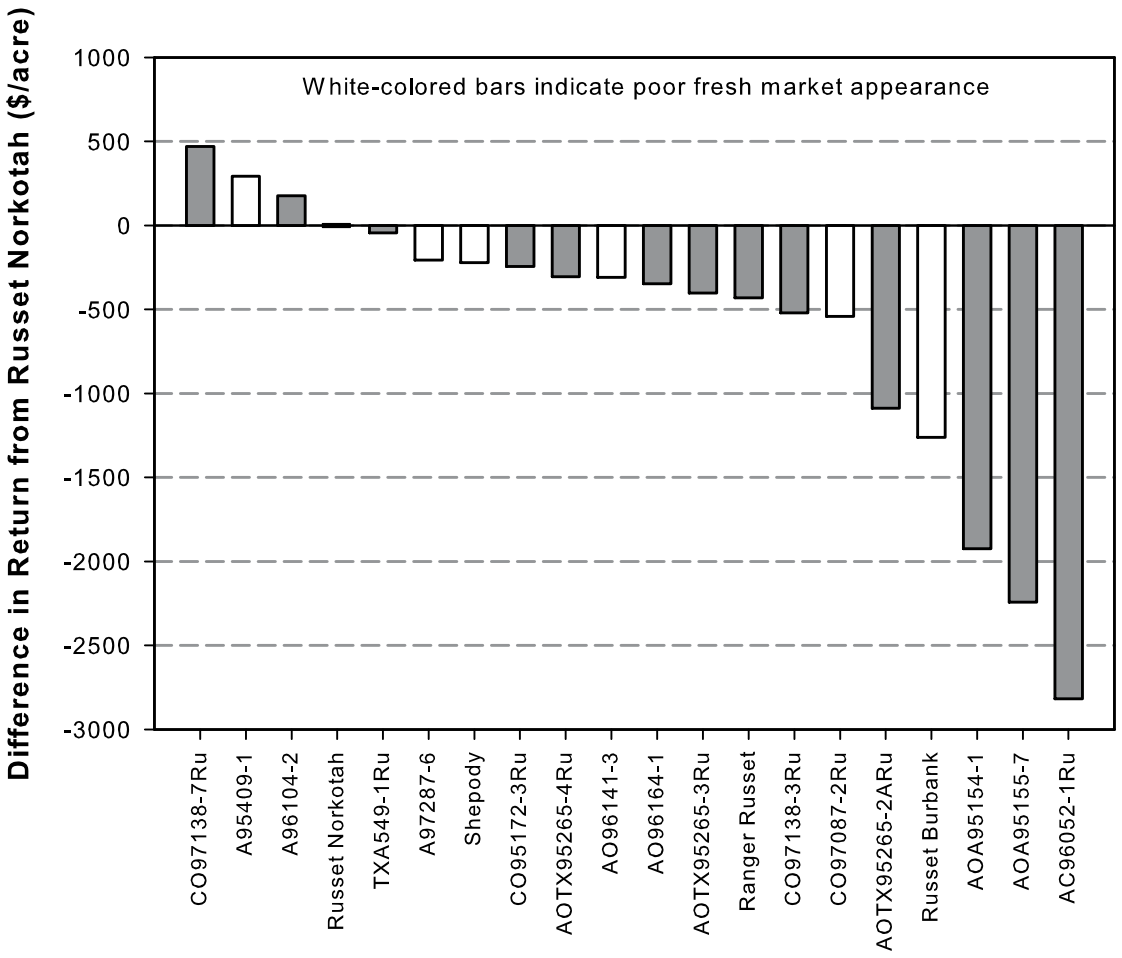


Figure 1. Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah ($4350) from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape or appearance.

2007 Early Harvest Regional Trial

Process Value

Economic Potential

The gross return in U.S. dollars per acre for each trial entry was calculated using an early-harvest mock processing contract. Process-market values are based on criteria and assumptions similar to that used by WA potato processors (see “Process Market Value-Methods” in front of book). Production costs per acre were not applied. Figure 1, below, shows the gross value of all trial entries when compared against a standard reference variety.

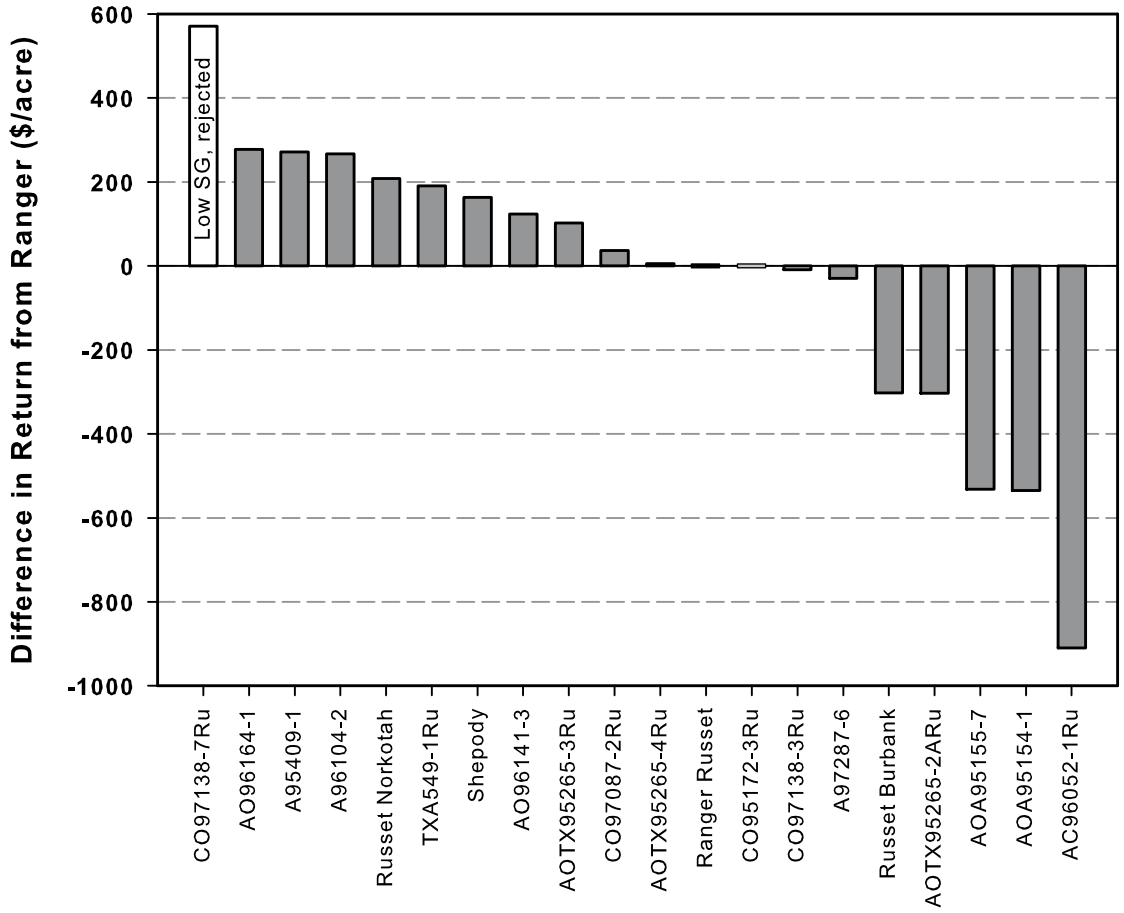
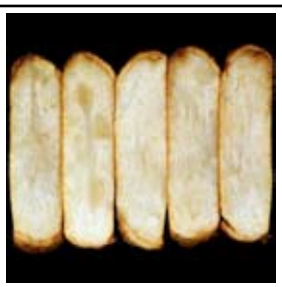


Figure 1. Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet ($1900) from the gross return of the particular entry. Entries with the white-colored bars were REJECTED (under the mock contract parameters) due to low specific gravity.

Tubers	Fries	WA Early Harvest Regional Trial Comments
Ranger Russett		
		**Tubers:** Oblong to long tubers. Moderately heavy russet with fair skin set; moderate eye depth. **Fry Color:** Light, non-uniform.
Russet Burbank		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; moderate eye depth. **Fry Color:** Light, uniform.
Russet Norkotah		
		**Tubers:** Oblong to long tubers. Heavy russet with good skin set; moderate eye depth. **Fry Color:** Light, uniform.
Shepody		
		**Tubers:** Oblong tubers. No russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
A95409-1		
		**Tubers:** Oblong tubers. Light russet with fair skin set; moderate eye depth. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Regional Trial Comments
A96104-2		
		**Tubers:** Oblong tubers. Moderately heavy russet with fair skin set; moderate eye depth. **Fry Color:** Light, uniform.
A97287-6		
		**Tubers:** Oblong tubers. Moderate russet with good skin set; moderate eye depth. **Fry Color:** Light, uniform.
AC96052-1Ru		
		**Tubers:** Oblong tubers. Heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
AO96141-3		
		**Tubers:** Oblong to long tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
AO96164-1		
		**Tubers:** Oblong to long tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Regional Trial Comments
AOA95155-7		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.
AOTX95265-2ARu		
		**Tubers:** Oblong to long tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
AOTX95265-3Ru		
		**Tubers:** Oblong to long tubers. Heavy russet with good skin set; moderate eye depth. **Fry Color:** Light, uniform.
AOTX95265-4Ru		
		**Tubers:** Oblong tubers. Moderately heavy russet with fair skin set; moderate eye depth. **Fry Color:** Light, uniform.
CO95172-3Ru		
		**Tubers:** Oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.

Tubers	Fries	WA Early Harvest Regional Trial Comments
CO97087-2Ru		
		**Tubers:** Round to oblong tubers. Moderately heavy russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
CO97138-3Ru		
		**Tubers:** Oblong to long tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** Light, non-uniform.
CO97138-7Ru		
		**Tubers:** Oblong to long tubers. Moderate russet with good skin set; shallow eyes. **Fry Color:** Light, uniform.
TXA549-1Ru		
		**Tubers:** Oblong tubers. Moderate russet with fair skin set; shallow eyes. **Fry Color:** Light, uniform.

2007 Early Harvest Regional Trial

Postharvest Evaluation

The 2007 Early Regional Trial consisted of 4 cultivars and 16 numbered lines. All entries fried light with USDA ratings of "0". Ranger Russet and CO97138-3Ru had non-uniform fry color. All other entries were uniformly colored from bud to stem end.

	Clone	PHOTOVOLT Stem	Bud	Average	DIFFERENCE* STEM - BUD	USDA COLOR
1	Ranger Russet	34.1	44.5	39.3	10.7	0
2	Russet Burbank	42.4	46.6	44.5	5.2	0
3	Russet Norkotah	38.5	43.6	41.1	6.3	0
4	Shepody	45.9	50.7	48.3	7.0	0
5	A95409-1	45.9	47.8	46.8	3.1	0
6	A96104-2	44.1	49.9	47.0	6.9	0
7	A97287-6	53.0	54.3	53.7	6.1	0
8	AC96052-1Ru	54.7	55.5	55.1	2.7	0
9	AO96141-3	51.6	50.5	51.1	2.9	0
10	AO96164-1	44.2	48.6	46.4	5.0	0
11	AOA95154-1	40.9	47.8	44.4	7.5	0
12	AOA95155-7	50.2	53.8	52.0	5.5	0
13	AOTX95265-2ARu	40.0	46.4	43.2	7.1	0
14	AOTX95265-3Ru	40.8	44.7	42.7	5.4	0
15	AOTX95265-4Ru	36.6	39.8	38.2	4.0	0
16	CO95172-3Ru	40.4	45.3	42.9	6.0	0
17	CO97087-2Ru	50.5	51.1	50.8	2.2	0
18	CO97138-3Ru	33.3	43.4	38.4	10.2	0
19	CO97138-7Ru	32.7	35.9	34.3	4.2	0
20	TXA549-1Ru	43.3	45.7	44.5	3.7	0
			LSD 0.05	2.6	3.4	
	Average	43.1	47.3	45.2	5.6	0

* Average of 12 individual tuber absolute differences

Planting Date:	April 4
Harvest Date:	August 6
Fried on:	August 10

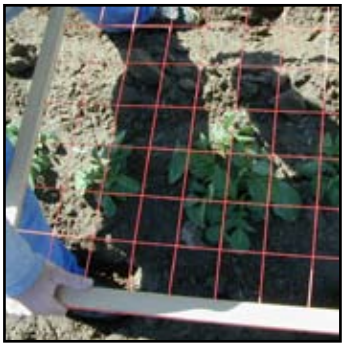
The 2007 Growing Season



Seed is hand-cut and bagged. All varieties are planted at four different locations within each research trial. All plots are initially flagged.




Each variety is planted into four, 20ft x 3 row plots and randomly positioned throughout the research trial.




When plants begin to emerge, data is collected on ground cover, stand, and stems. Petiole and soil samples are taken for nutrient analysis and rain gauges and tensiometers are monitored for soil moisture.




Potatoes from each plot are harvested into burlap bags and handled one at a time. The typical trial fills 160 burlap bags.

2007 Late Harvest Regional Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 17
Harvest Date: Sept 25
Fertility: 278-175-400
Vine Kill Date: Sept 17
Days Grown: 162
In-Row Spacing: 10 in.

Regional trials are conducted throughout 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 3 local reference varieties and 16 new clones. Overall, this year's growing conditions were favorable for nice tuber shape and size, so most clones had a nice fresh-market appearance. The following is a summary of the Washington field and post harvest results. For additional information, see the grading comments and merit scores near front of book.

Fresh market standouts: CO97138-7Ru, A95409-1, CO97138-3Ru, AO96141-3
Process market standouts: AO96141-3, CO97087-2 Ru, A97287-6, A96104-2

Standcounts

- **30 Day**
  Fast emergence: R. Burbank (86%), Ranger and AOTX95265-4RU (80%).
  Slow emergence: AOA95155-7, AOA95154-1, AC96052-1Ru (all < 21%).

- **50 Day**
  Worst emergence: TXA549-1Ru (95%), all other entries were > 97%.

Plant and Tuber Growth & Development

- **Above Ground Stem Number Per Plant**
  Most: TXA549-1Ru (3.3) and AO96141-3 (3.0).
  Least: A97287-6 (1.5) and A95409-1 (1.6).

- **Average Tuber Number Per Plant**
  Most: AOA95154-1 (9.8), CO95172-3Ru (9.6), and TXA549-1Ru (9.3).
  Least: A95409-1 (6.4), Ranger Russet (6.6), and AOTX95265-4Ru (7.0).

- **Average Tuber Size (oz)**
  Largest: Ranger Russet (8.1), A95409-1 (7.9), and AO96164-1 (7.7).
  Smallest: AC96052-1Ru (4.6), Russet Burbank (5.2), and AOA95154-1 (5.3).

- **Undersized Tubers (< 4 oz)**
  Most: AC96052-1Ru (137 CWT/A) and AOA95154-1 (113 CWT/A).
  Least: Ranger Russet, A95409-1, and AO96164-1 (all < 50 CWT/A).

Yield and Economic Data

- **Total and Market Yield**
  Highest: CO97138-7Ru had the highest total & market yields (692 CWT/A & 619 CWT/A, respectively). CO95172-3Ru & TXA549-1Ru had total yields > 665 CWT/A.
  Lowest: AC96052-1Ru had the lowest total and market yield (469 CWT/A & 331 CWT/A, respectively).

- **% Market Yield Greater Than 6 oz.**
  Highest: Ranger Russet, Russet Norkotah, and AO96164-1 (all > 78%).
  Lowest: AC96052-1Ru, Russet Burbank, and AOA95154-1 (all < 53%).

- **Carton Yield (100 to 50 Count (7 to 18 oz US#1 Tubers))**
  Highest: CO97138-7Ru, A95409-1, and AO96164-1 (all > 370 CWT/A).
  (Compare to Russet Norkotah at 271 CWT/A).
  Lowest: AC96052-1Ru and Russet Burbank (< 187 CWT/A).

- **Gross Return ($/acre)**
  Fresh Market Highest: CO97138-7Ru, AO96164-1 & AOA95155-7.
  Fresh Market Lowest: AC96052-1Ru and Russet Burbank.
  Process Market Highest: AO96164-1, AOA95155-7, TXA549-1Ru, A96104-2.
  Process Market Lowest: AOTX95265-2ARu, AOTX95265-4Ru, & AC96052-1Ru.

Tuber Defects (% out of 40 Tubers, 8-12 oz.)

- **External Defects**
  Notable Defects: Most entries were free of external defects; the highest occurrence of any external defect was 2% of the total yield.

- **Internal Defects**
  Notable Defects: All new clones were free of internal defects; Russet Burbank had 13% hollow heart and internal brown spot. Ranger Russet had 3% internal brown spot.

- **Bruise**
  Highest Blackspot: A95409-1 (63%) and AO96164-1 (60%).
  Lowest Blackspot: AOA95154-1 and AOA95155-7 (0%).
  Highest Shatter: AC96052-1Ru (92%) and AOA95155-7 (90%).
  Lowest Shatter: AOTX95265-2ARu, R. Burbank, and AO96141-3 (all < 39%).

2007 Late Harvest Regional Trial

Post Harvest Performance

- **Overall Postharvest Rating**
  Highest scoring clones: AO96141-3, AO96164-1, CO97087-2Ru, AOA95154-1
  Lowest scoring clones: AOTX95265-3Ru, Russet Burbank

- **Low temperature Sweetening**
  Most resistant: AO96164-1, AO96141-3, AOA95154-1
  Most susceptible: AOTX95265-3Ru, Russet Burbank, A95409-1

- **Taste Panel**
  Highest rated: CO97087-2Ru, AO96141-3, A97287-6, AC96052-1Ru
  Lowest rated: AOTX95265-3Ru, Russet Burbank

- **Blackspot Bruise Susceptibility**
  Most resistant: AOA95155-7, AO96141-3
  Most susceptible: Ranger Russet, TXA549-1Ru

- **Variability in Tuber Shape & Fry Yield (8- to 10-oz tubers)**
  Least variable: Russet Burbank, AOTX95265-3Ru, AO96141-3, TXA549-1Ru
  Most variable: AOA95155-7, AO96164-1

Details

- AO96141-3, AO96164-1, CO97087-2Ru, and AOA95154-1 were the highest rated entries, accumulating an average of 32.9, 31.8, 30.7, and 30.7 of 38 possible points, respectively. AO96164-1 was one of the top scoring clones in the 2005 and 2006 trials and AOA95154-1 was among the top five clones in the 2006 trials. These clones had significant resistance to low temperature sweetening, producing USDA 0 to 1 fries (stem end) when stored for 44 days at 40°F.

- AOTX95265-3Ru, RB and A95409-1 were the lowest scoring clones, receiving overall scores of 14/38, 16/38, and 23/38, respectively. All three clones sweetened and produced relatively dark fries at all storage temperatures.

- The specific gravity of AOTX95265-3Ru averaged 1.067, too low for processing contracts. This clone received the lowest taste panel rating (2.2/5) with many negative comments.

- AO96141-3 had the highest average gravity of 1.089. It was 2nd to CO97087-2Ru (3.8/5) in taste panel score with a rating of 3.6/5. A97287-6 and AC96052-1Ru ranked 3rd and 4th in taste panel evaluations, respectively. The latter entry was also among the top 4 favorites in culinary evaluations last year.

- AC96052-1Ru, AOA95154-1, AOA95155-7, and AOTX95265-3Ru reconditioned well at 60°F following storage for 44 days at 40°F. Reconditioning A97287-6 and CO97087-2Ru tubers had little effect on fry color.

- On average, ID- and WA-grown tubers produced the lightest fry colors at harvest. When stored at 48°F, the processing quality of ID-grown tubers improved, while tubers from WA and OR lost quality, characterizing a significant effect of production site on storability. Averaged across the three production sites, the Regional clones retained 87% and 70% of their processing quality (stem end) when stored at 48 and 44°F for 44 days, respectively.

- Fry colors were non-uniform from bud to stem end for many of the OR-grown clones prior to and after storage, regardless of storage temperature. The uniformity of fry color progressively worsened for WA and ID-grown tubers with falling storage temperature. The incidence of jelly end rot was higher than normal this season. AOA95155-7, AOA95154-1, and RR varied the most in their ability to retain processing quality during storage for 44 days at 44°F, as affected by production site.

- Similar to the results in 2005 and 2006, AOA95155-7 was highly resistant to blackspot, with only 6.9% of impacts showing bruise (3-state average). AO96141-3 also showed bruise resistance (17% bruise). In contrast, RR, TXA549-1Ru, A95409-1, and AC96052-1Ru had 85, 81, 61, and 57% of impacts developing bruise, respectively. Bruise severity was greatest in RR (3.7/5) and TXA549-1Ru (3.4/5) and least in AOA95155-7 (1.2/5) and AO96141-3 (1.3/5).

- On average, ID-grown tubers had the highest L/W ratios (2.1) compared with those grown in WA (1.7) and OR (1.7). TXA549-1Ru and AC96052-1Ru had the lowest L/W ratios (average=1.54), reflecting round tubers. TXA549-1Ru also had the lowest L/W ratio last year. AO96141-3, RR, RB, and AOTX95265-3Ru had the highest L/W ratios (2.0-2.1). AOA95155-7 and AO96164-1 had the greatest variation in L/W ratio of 8- to 10-oz tubers across states. In contrast, the L/W ratios of RB, AOTX95265-3Ru, AO96141-3, and TXA549-1Ru were least affected by growing location. The results are consistent with last year for the latter two clones.

- A95409-1, AO96141-3, AO96164-1, AOA95155-7 and TXA549-1Ru produced the longest sprouts after 7 months of storage, considerably longer than either check (Ranger or Russet Burbank), indicating relatively short dormancy.

Overall Regional Postharvest Merit Scores

	Postharvest Merit Scores			3 state
Clone	WA	ID	OR	Average
7 AO96141-3	4.4	4.1	4.4	4.3
8 AO96164-1	4.7	3.5	4.4	4.2
12 CO97087-2Ru	4.6	3.8	3.7	4.0
9 AOA95154-1	4.0	4.4	3.7	4.0
6 AC96052-1Ru	4.4	4.0	3.6	4.0
5 A97287-6	4.6	3.8	3.3	3.9
4 A96104-2	4.1	4.5	2.4	3.7
10 AOA95155-7	3.7	4.2	2.6	3.5
1 Ranger Russet	3.2	4.1	2.8	3.4
13 TXA549-1Ru	2.9	4.2	2.2	3.1
3 A95409-1	3.0	3.5	2.6	3.0
2 Russet Burbank	2.9	2.3	1.3	2.2
11 AOTX95265-3Ru	2.3	2.3	1.1	1.9

2007 Late Harvest Regional Trial

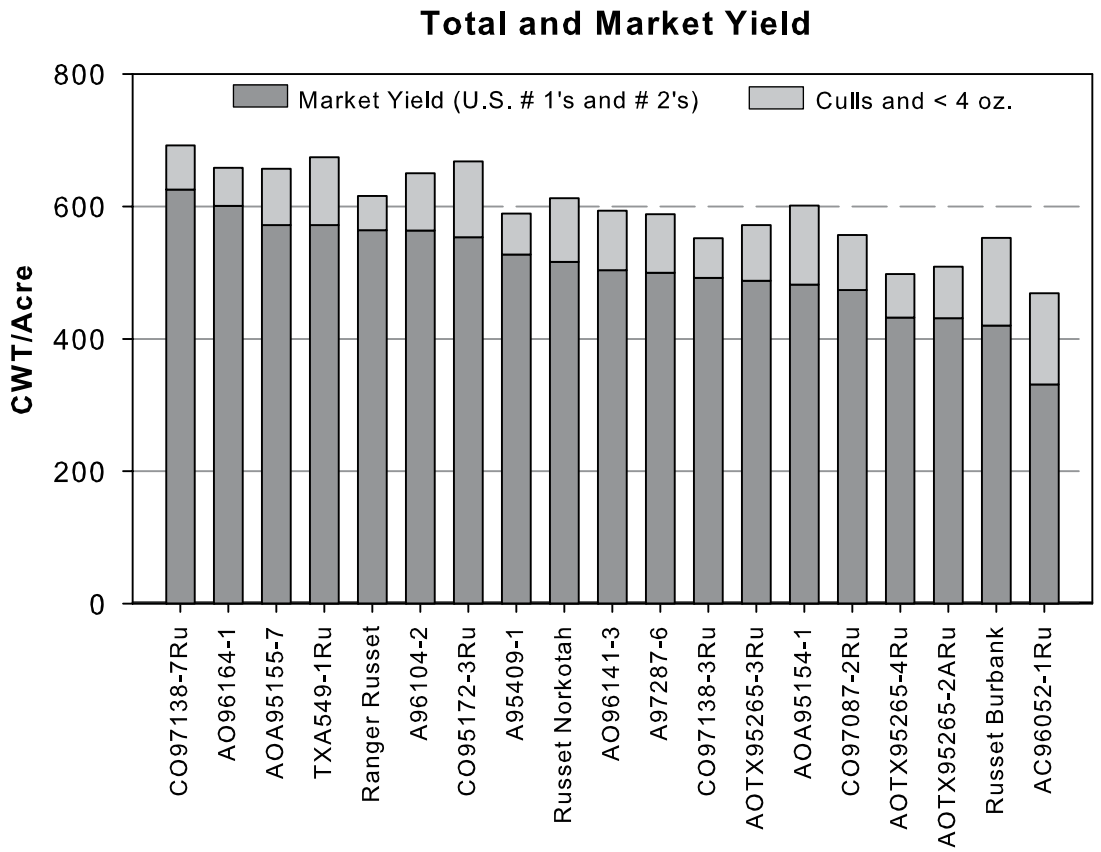
Summaries

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	616	ABC	30.8	87	5	8	56	17.3	79	24.3
Russet Burbank	552	ABC	27.6	75	1	24	33	9.4	45	12.8
Russet Norkotah	612	ABC	30.6	82	2	16	44	13.6	60	18.5
A95409-1	589	ABC	29.5	88	2	10	64	18.7	79	23.4
A96104-2	650	AB	32.5	85	2	13	52	17.3	68	22.5
A97287-6	588	ABC	29.4	85	0	15	50	14.9	64	19.1
AC96052-1Ru	469	C	23.4	70	0	30	32	7.5	43	10.1
AO96141-3	593	ABC	29.7	83	2	15	46	13.9	62	18.7
AO96164-1	658	A	32.9	88	3	9	61	20.1	78	25.6
AOA95154-1	601	ABC	30.1	79	1	20	38	11.5	53	15.9
AOA95155-7	657	AB	32.8	85	2	13	53	17.5	68	22.5
AOTX95265-2ARu	509	BC	25.4	84	1	15	43	11.0	59	15.0
AOTX95265-3Ru	571	ABC	28.6	84	1	15	47	13.6	63	17.9
AOTX95265-4Ru	497	C	24.9	86	1	13	51	12.8	64	16.0
CO95172-3Ru	668	A	33.4	82	0	18	47	15.7	63	21.1
CO97087-2Ru	557	ABC	27.8	83	2	15	43	11.9	57	15.9
CO97138-3Ru	552	ABC	27.6	88	1	11	58	16.0	70	19.5
CO97138-7Ru	692	A	34.6	89	1	10	60	20.9	74	25.7
TXA549-1Ru	674	A	33.7	84	1	15	52	17.6	66	22.3

ENTRY	US # 1 YIELD > 4 oz			4-7 oz*	7-14 oz*	> 14 oz*	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	CWT/A	STATS**	Tons/A	%				% HH	% BC	% IBS
Ranger Russet	537	ABC	26.8	22	52	26	1.081	0	0	3
Russet Burbank	414	DC	20.7	56	42	2	1.083	13	0	13
Russet Norkotah	505	ABC	25.2	45	48	7	1.075	0	0	0
A95409-1	518	ABC	25.9	17	57	26	1.082	0	0	0
A96104-2	553	ABC	27.6	33	50	17	1.086	0	0	0
A97287-6	498	ABC	24.9	36	52	12	1.086	0	0	0
AC96052-1Ru	331	D	16.5	55	42	3	1.085	0	0	0
AO96141-3	493	ABCD	24.6	44	52	4	1.092	0	0	0
AO96164-1	579	AB	29.0	24	52	24	1.082	0	0	0
AOA95154-1	473	ABCD	23.6	51	48	1	1.092	0	0	0
AOA95155-7	560	ABC	28.0	34	54	12	1.086	0	0	0
AOTX95265-2ARu	425	BCD	21.3	46	49	5	1.070	0	0	0
AOTX95265-3Ru	479	ABCD	24.0	43	52	5	1.071	0	0	0
AOTX95265-4Ru	429	BCD	21.5	40	56	4	1.069	0	0	0
CO95172-3Ru	550	ABC	27.5	38	49	13	1.085	0	0	0
CO97087-2Ru	463	ABCD	23.1	48	49	3	1.089	0	0	0
CO97138-3Ru	487	ABCD	24.3	32	58	10	1.077	0	0	0
CO97138-7Ru	619	A	31.0	28	56	16	1.074	0	0	0
TXA549-1Ru	563	ABC	28.2	32	53	15	1.082	0	0	0

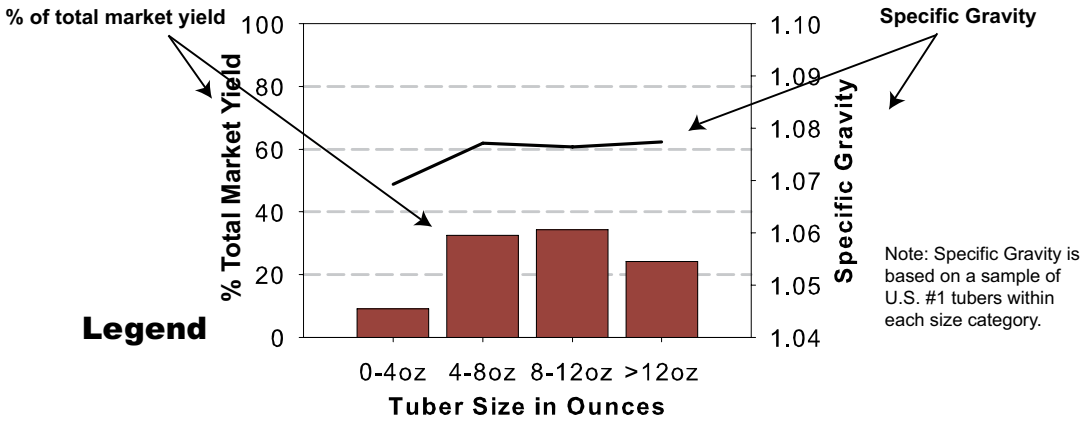
* Percent values may not total 100% due to rounding
**Numbers followed by the same letter are not significantly different at the 5 % level using Fisher's LSD Test

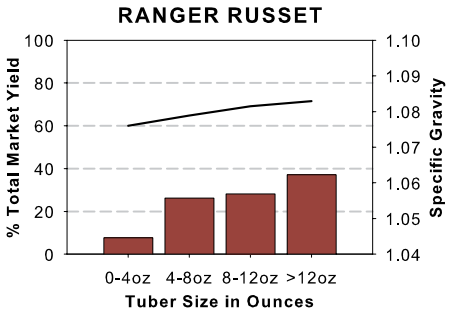
ENTRY	30 DAY STAND % Emerged	50 DAY STAND % Emerged	% Dead Vines prior to vine-kill	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) (8-12 oz tubers) SHATTER
Ranger Russet	74	99	90	1.7	8.1	6.6	3	3	35	48
Russet Burbank	86	100	100	2.2	5.2	9.2	4	3	58	38
Russet Norkotah	80	100	100	2.7	5.9	9.1	3	4	27	67
A95409-1	70	100	96	1.6	7.9	6.4	3	3	63	71
A96104-2	77	99	97	2.0	6.6	8.6	3	3	29	62
A97287-6	30	99	98	1.5	6.3	8.1	3	2	38	69
AC96052-1Ru	21	98	69	2.0	4.6	8.9	4	2	15	92
AO96141-3	43	99	100	3.0	5.9	8.6	4	4	32	39
AO96164-1	56	100	100	2.0	7.7	7.4	2	3	60	75
AOA95154-1	10	99	64	2.2	5.3	9.8	4	3	0	80
AOA95155-7	4	99	34	1.8	6.4	8.9	3	2	0	90
AOTX95265-2ARu	77	100	100	1.9	5.8	7.6	3	4	29	32
AOTX95265-3Ru	68	100	100	1.8	6.0	8.3	3	4	22	57
AOTX95265-4Ru	80	99	100	1.8	6.2	7.0	3	4	19	42
CO95172-3Ru	41	99	83	2.3	6.1	9.6	4	3	48	81
CO97087-2Ru	34	99	99	2.8	5.7	8.4	4	3	31	54
CO97138-3Ru	29	98	100	2.2	6.7	7.1	4	3	30	40
CO97138-7Ru	60	100	99	2.1	7.1	8.4	4	3	58	78
TXA549-1Ru	50	95	100	3.3	6.3	9.3	3	2	56	69

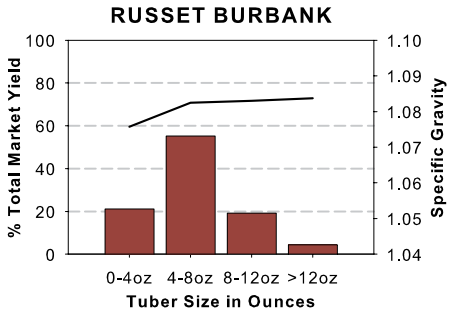


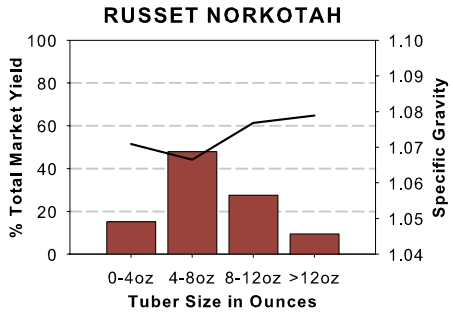
2007 Late Harvest Regional Trial

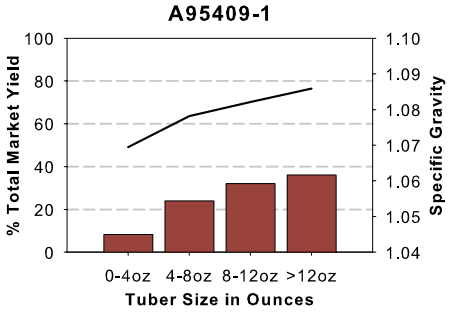
Tuber Yield and Specific Gravity Distributions

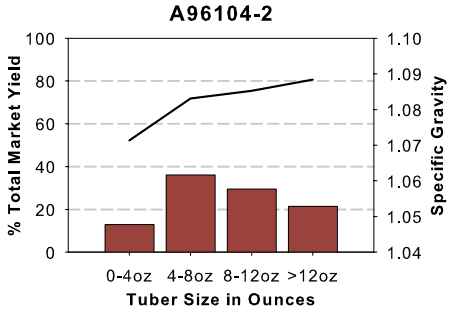


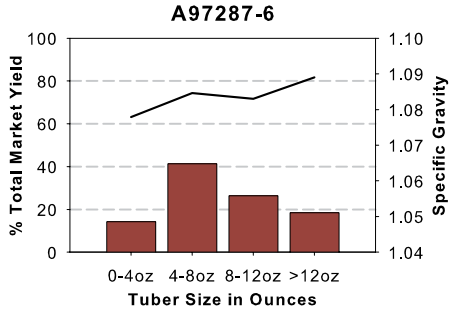


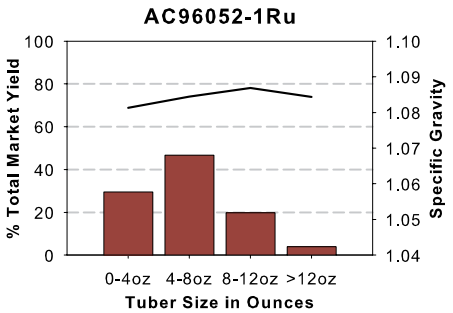


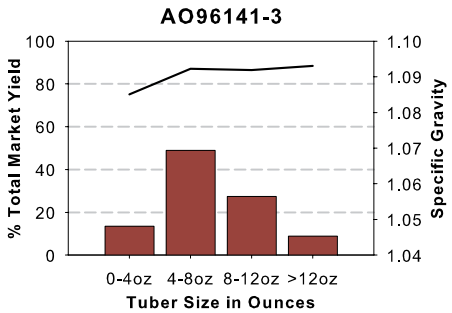


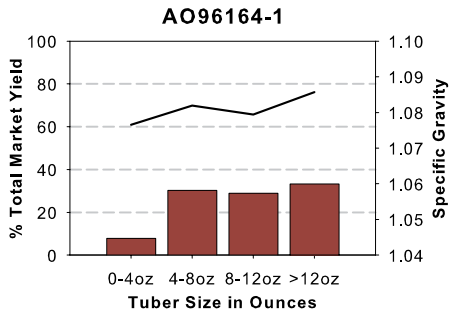


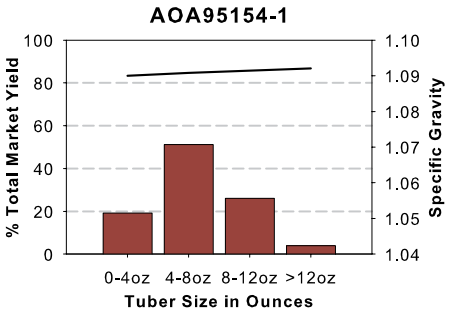


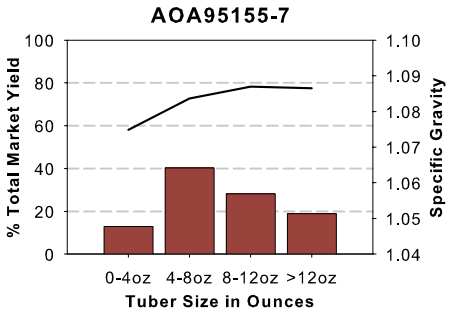









AOA95154-1
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


AOA95155-7
% Total Market Yield
Specific Gravity
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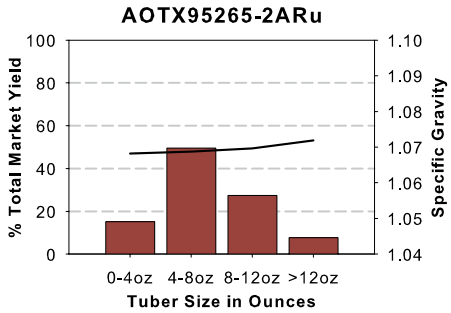
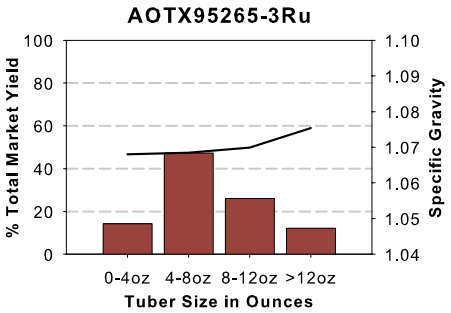
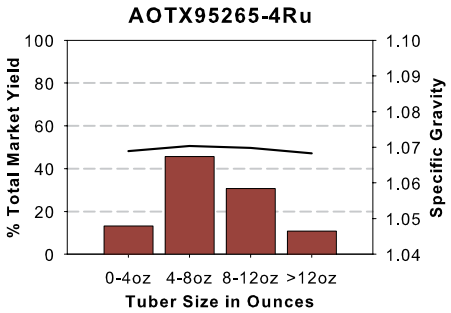
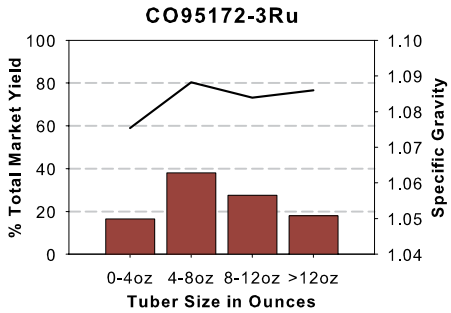
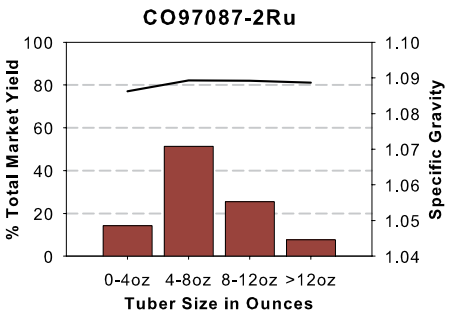
Tuber Size in Ounces

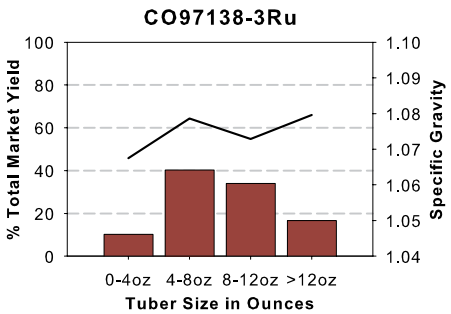

AOTX95265-2ARu
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

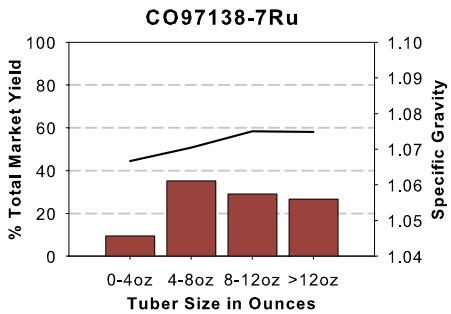

AOTX95265-3Ru
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

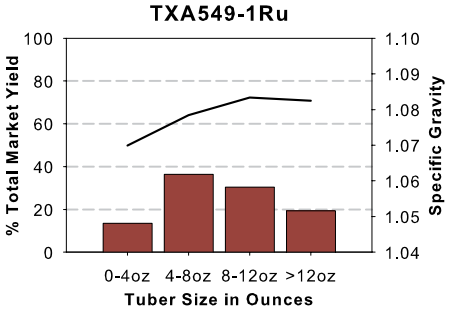

AOTX95265-4Ru
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

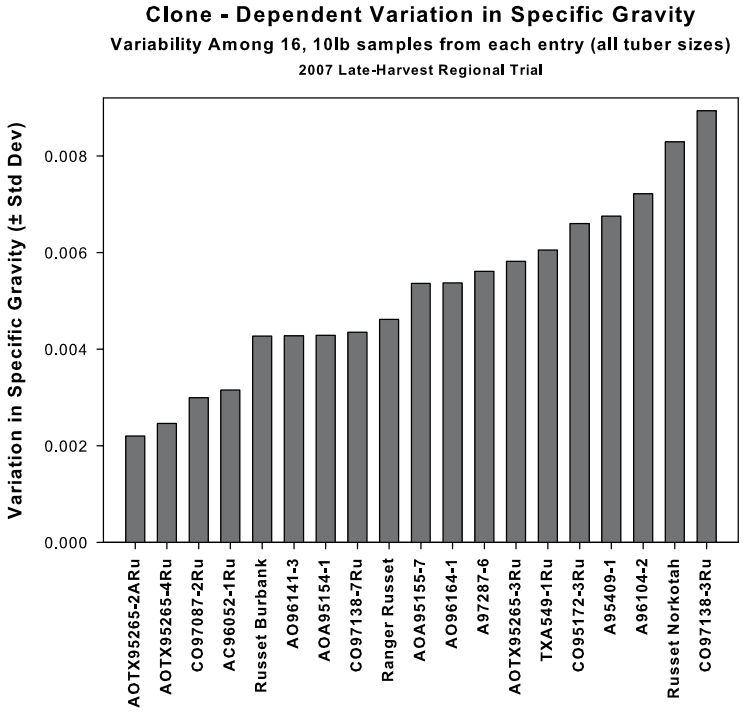

CO95172-3Ru
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


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


CO97138-3Ru
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


CO97138-7Ru
% Total Market Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


TXA549-1Ru
% Total Market 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)
2007 Late-Harvest Regional Trial
Variation in Specific Gravity (± Std Dev)
AOTX95265-2ARu
AOTX95265-4Ru
CO97087-2Ru
AC96052-1Ru
Russet Burbank
AO96141-3
AOA95154-1
CO97138-7Ru
Ranger Russet
AOA95155-7
AO96164-1
A97287-6
AOTX95265-3Ru
TXA549-1Ru
CO95172-3Ru
A95409-1
A96104-2
Russet Norkotah
CO97138-3Ru

2007 Late Harvest Regional Trial

Fresh Value

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 potatoes prices. Production costs per acre were not applied. All assumptions are listed at the front of the book under “Fresh Market Value-Methods”. 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 and packaging to meet demand changes in an effort to maximize income potential. Following discussions with actual pack-sheds and complying with USDA standards, the packaging and size ranges used to produce the Fresh values below (figure 1) provide a good base for variety comparison. A packaging and handling fee (pack-shed operating fee) of $3.50 was assessed on each CWT of potatoes. This economic evaluation does not fully account for consumer preferences for each trial entry. Figure 1, below, shows the difference in gross value from Russet Norkotah for all trial entries.

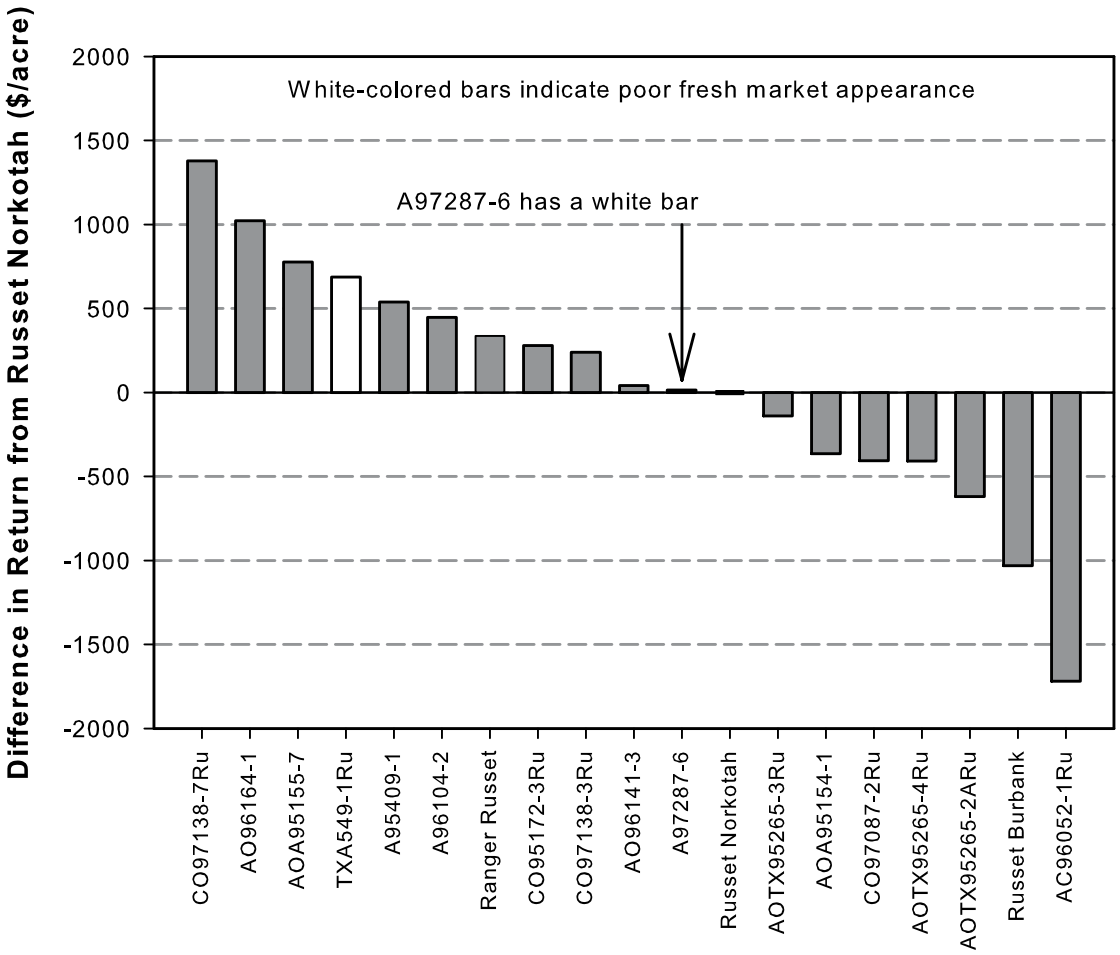


Figure 1. Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Norkotah ($4150) from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape or appearance.

2007 Late Harvest Regional Trial

Process Value

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 and assumptions similar to that used by WA potato processors (see “Process Market Value-Methods” in front of book). Production costs per acre were not applied. Contract assumptions are listed at front of book under “Process Market Value - Methods.” Figure 1, below, shows the gross value of all trial entries when compared against a standard reference variety.

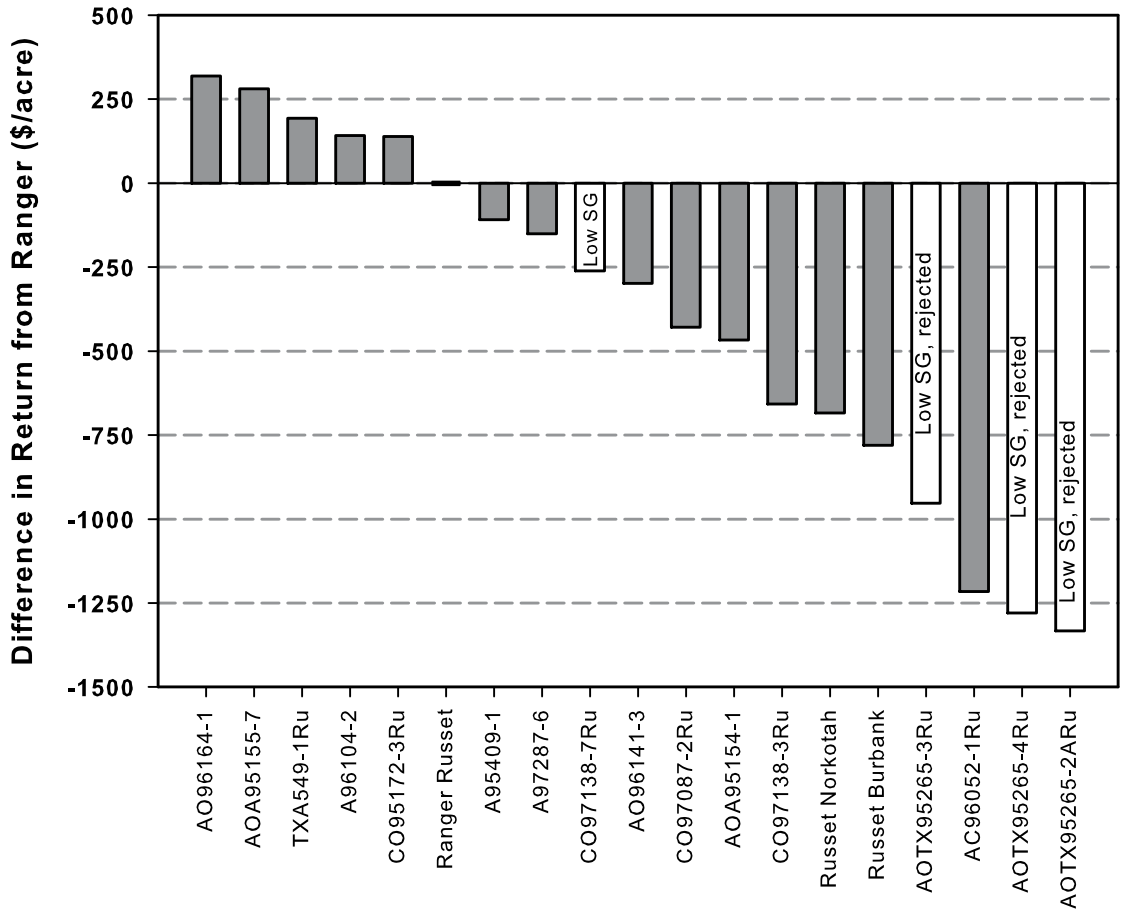
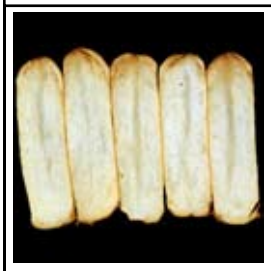


Figure 1. Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet ($3050) from the gross return of the particular entry. Entries with the white-colored bars were REJECTED (under the mock contract parameters) due to low specific gravity.

Tubers	WA Late Harvest Regional Trial Comments
Ranger Russet	
	**Tubers:** Oblong tubers. Moderate russet with fair skin set; moderate eye depth. **Fry Color:** at harvest = light, uniform; after approximately 2 months of storage at 48°F = light, non-uniform; 44°F = relatively dark, 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, 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.
A95409-1	
	**Tubers:** Oblong 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, non-uniform; 44°F= relatively dark, non-uniform; 40°F = relatively dark, non-uniform; reconditioned = relatively dark, non-uniform.
A96104-2	
	**Tubers:** Oblong tubers. Moderately heavy russet with fair 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 = relatively dark, non-uniform.
A97287-6	
	**Tubers:** Round to oblong tubers. Moderate russet with fair 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° = light, non-uniform; reconditioned = light, non-uniform

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
Ranger Russet				
				
Russet Burbank				
				
A95409-1				
				
A96104-2				
				
A97287-6				
				

Tubers	WA Late Harvest Regional Trial Comments
AC96052-1Ru	
	**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 = light, non-uniform; 40°F = light, non-uniform; reconditioned = light, non-uniform.
AO96141-3	
	**Tubers:** Oblong to long tubers. Light 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 = light, uniform; reconditioned = light, non-uniform.
AO96164-1	
	**Tubers:** Oblong tubers. Moderate russet with poor 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.
AOA95154-1	
	**Tubers:** Oblong tubers. Light russet with good skin set; shallow eyes. **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 = light, non-uniform; reconditioned = light, non-uniform.
AOA95155-7	
	**Tubers:** Round to oblong 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, non-uniform; 44°F = light, non-uniform; 40°F = relatively dark, non-uniform; reconditioned = light, non-uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
AC96052-1Ru				
				
AO96141-3				
				
AO96164-1				
				
AOA95154-1				
				
AOA95155-7				
				

Tubers	WA Late Harvest Regional Trial Comments
AOTX95265-3Ru	
	**Tubers:** Oblong to long tubers. Heavy russet with fair skin set; moderate eye depth. **Fry Color:** at harvest = light, uniform; after approximately two months of storage at 48°F = relatively dark, uniform; 44°F= relatively dark, uniform; 40°F = relatively dark, uniform; reconditioned = relatively dark, uniform.
CO97087-2Ru	
	**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, non-uniform; 40°F = light, non-uniform; reconditioned = light, non-uniform.
TXA549-1Ru	
	**Tubers:** Round to oblong tubers. Moderate russet with fair skin set; shallow eyes. **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.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
AOTX95265-3Ru				
				
CO97087-2Ru				
				
TXA549-1Ru				
				

2007 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
7 AO96141-3	33.6		31.5		33.7		32.9
8 AO96164-1	35.5		26.5		33.3		31.8
12 CO97087-2Ru	34.9		28.9		28.4		30.7
9 AOA95154-1	30.5		33.7		27.9		30.7
6 AC96052-1Ru	33.7		30.6		27.5		30.6
5 A97287-6	34.6		28.8		25.4		29.6
4 A96104-2	31.2		34.1		18.0	Sp. Gr.	27.8
10 AOA95155-7	28.3		31.7	Sp. Gr.	19.9		26.6
1 Ranger Russet	24.3		31.3		21.0		25.5
13 TXA549-1Ru	22.0		31.6		16.8	Sp. Gr.	23.5
3 A95409-1	22.9		26.6		19.8		23.1
2 Russet Burbank	22.2		17.2	Sp. Gr.	9.7		16.4
11 AOTX95265-3Ru	17.1	Sp. Gr.	17.5	Sp. Gr.	8.2	Sp. Gr.	14.3
Average	28.5		28.5		22.3		

§ maximum rating possible = 38

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

Overall Postharvest Performance of Clones Compared to Russet Bubank

Clone	WA	ID	OR	Average
1 Ranger Russet	H	H	H	H
3 A95409-1	H	H	H	H
4 A96104-2	H	H	H	H
5 A97287-6	H	H	H	H
6 AC96052-1Ru	H	H	H	H
7 AO96141-3	H	H	H	H
8 AO96164-1	H	H	H	H
9 AOA95154-1	H	H	H	H
10 AOA95155-7	H	H	H	H
11 AOTX95265-3Ru	L	H	L	L
12 CO97087-2Ru	H	H	H	H
13 TXA549-1Ru	L	H	H	H

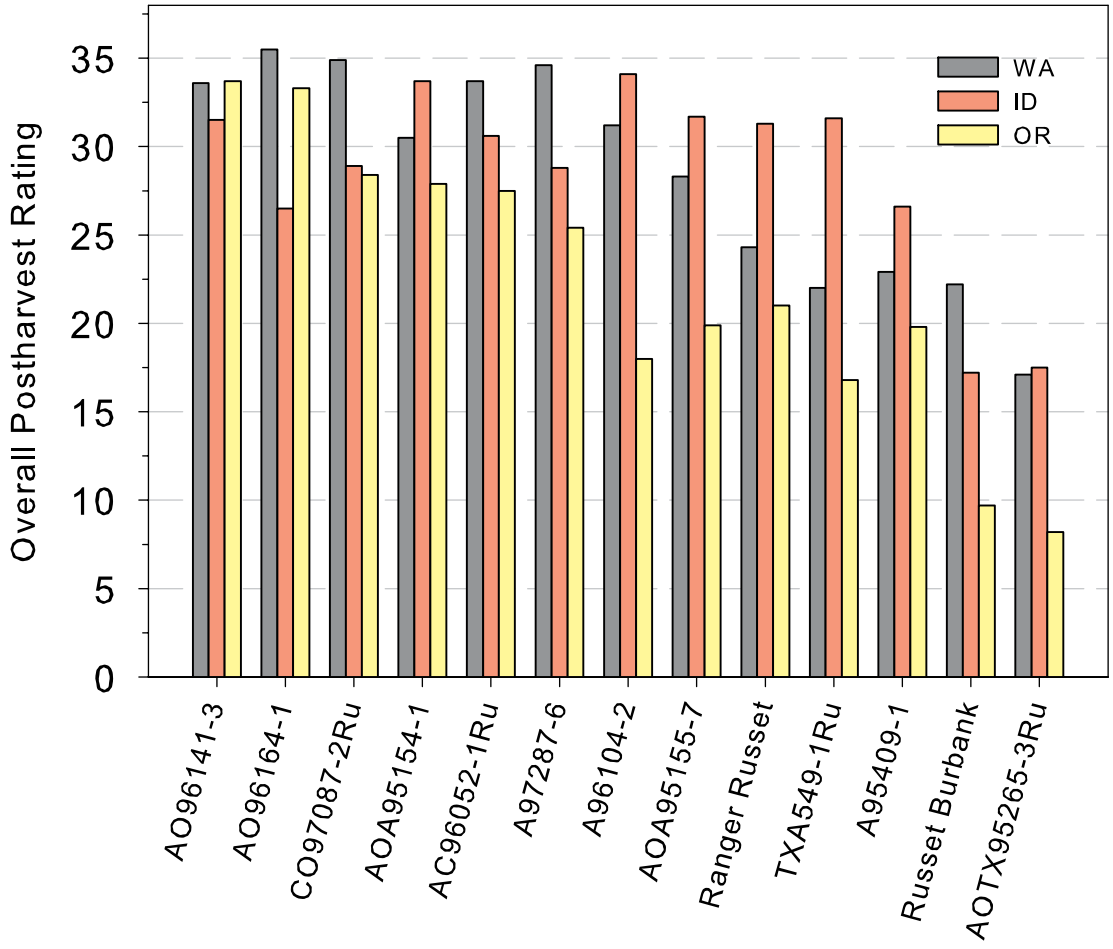
H = Higher than Russet Burbank

L = Lower than Russet Burbank

S = Same as Russet Burbank

2007 Late Harvest Regional Trial

Late Harvest Regional Postharvest Ratings



Just like some growing seasons, things don't always go as planned.

2007 Late Harvest Regional Trial

Prior to Storage

Clone	PHOTOVOLT READING stem	bud	av	rtg §	DIFF	USDA COLOR	SPECIFIC GRAVITY	rtg
Washington								
1 Ranger Russet	44.5	49.5	47.0	5+	5.0	0	1.083	5
2 Russet Burbank	44.1	48.1	46.1	5+	4.9	0	1.083	5
3 A95409-1	40.6	47.4	44.0	5+	6.8	0	1.086	5
4 A96104-2	45.1	52.0	48.6	5+	7.3	0	1.084	5
5 A97287-6	55.7	55.6	55.7	5+	2.5	0	1.090	4
6 AC96052-1Ru	53.1	55.1	54.1	5+	2.6	0	1.088	5
7 AO96141-3	53.4	49.6	51.5	5+	4.7	0	1.091	4
8 AO96164-1	51.9	50.0	51.0	5+	3.6	0	1.082	4
9 AOA95154-1	49.3	53.9	51.6	5+	4.7	0	1.092	3
10 AOA95155-7	52.7	54.9	53.8	5+	3.3	0	1.087	5
11 AOTX95265-3Ru	37.2	42.0	39.6	4+	4.9	0	1.067	0
12 CO97087-2Ru	54.3	53.4	53.9	5+	2.3	0	1.088	5
13 TXA549-1Ru	41.1	44.9	43.0	5+	4.6	0	1.077	1
		LSD 0.05	2.3		3.1		0.006	
Average	47.9	50.5	49.2		4.4	0	1.084	
Idaho								
1 Ranger Russet	39.7	48.3	44.0	5+	8.6	0	1.081	4
2 Russet Burbank	28.9	47.4	38.2	4-	18.5	1	1.074	0
3 A95409-1	37.1	45.7	41.4	5-	9.0	0	1.086	5
4 A96104-2	41.3	49.9	45.6	5+	8.6	0	1.082	4
5 A97287-6	46.7	45.6	46.2	5+	5.9	0	1.082	4
6 AC96052-1Ru	40.8	44.3	42.6	5+	7.1	0	1.080	3
7 AO96141-3	41.2	52.4	46.8	5-	12.1	0	1.083	5
8 AO96164-1	42.9	51.0	47.0	5-	9.5	0	1.078	2
9 AOA95154-1	36.6	44.0	40.3	4+	8.0	0	1.085	5
10 AOA95155-7	40.8	48.9	44.9	5+	8.7	0	1.072	0
11 AOTX95265-3Ru	30.5	34.8	32.6	3+	6.3	0	1.063	0
12 CO97087-2Ru	46.7	53.8	50.2	5-	12.1	0	1.077	1
13 TXA549-1Ru	43.3	46.3	44.8	5+	5.3	0	1.080	3
		LSD 0.05	3.8		5.2		0.005	
Average	39.7	47.1	43.4		9.2	0	1.079	
Oregon								
1 Ranger Russet	32.4	45.7	39.0	4-	13.3	0	1.083	5
2 Russet Burbank	22.4	44.9	33.6	3-	22.5	2	1.077	1
3 A95409-1	33.0	39.7	36.4	4+	8.5	0	1.081	4
4 A96104-2	32.0	49.6	40.8	5-	17.7	0	1.075	0
5 A97287-6	40.2	54.5	47.4	5-	14.7	0	1.078	2
6 AC96052-1Ru	48.1	50.8	49.4	5+	4.1	0	1.082	4
7 AO96141-3	54.7	51.9	53.3	5+	4.1	0	1.095	2
8 AO96164-1	47.6	48.2	47.9	5+	2.9	0	1.079	2
9 AOA95154-1	35.3	45.2	40.2	4-	12.0	0	1.086	5
10 AOA95155-7	43.1	53.1	48.1	5-	10.0	0	1.076	1
11 AOTX95265-3Ru	22.1	36.6	29.3	2-	14.5	2	1.069	0
12 CO97087-2Ru	42.6	47.2	44.9	5+	5.7	0	1.076	1
13 TXA549-1Ru	31.1	41.0	36.1	4-	10.1	0	1.073	0
		LSD 0.05	3.2		5.6		0.005	
Average	37.3	46.8	42.0		10.8	0	1.079	

Date test performed:

Washington	Oct. 3	Oct. 2
Idaho	Oct. 19	Oct. 14
Oregon	Oct. 8	Oct. 4

§ 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.

2007 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	3.3	100	21	4.3	1.4	9	14
2 Russet Burbank	3.2	71	25	2.6	1.7	7	13
3 A95409-1	2.9	71	4	2.6	1.1	8	9
4 A96104-2	3.2	46	38	2.1	1.7	7	12
5 A97287-6	3.6	42	25	1.8	1.3	13	15
6 AC96052-1Ru	3.7	71	25	2.7	1.5	No Sample	
7 AO96141-3	3.6	4	4	1.1	1.0	9	12
8 AO96164-1	3.5	38	4	1.8	1.1	8	16
9 AOA95154-1	3.5	54	13	2.2	1.3	10	15
10 AOA95155-7	3.3	13	4	1.2	1.1	11	13
11 AOTX95265-3Ru	2.1	67	13	3.2	1.3	12	10
12 CO97087-2Ru	3.9	25	0	1.5	1.0	9	11
13 TXA549-1Ru	3.0	88	38	3.7	2.0	7	12
LSD 0.05	0.6	29	24			3	5
Average	3.3	52.9	16.3	2.4	1.3	9.2	12.6
Idaho							
1 Ranger Russet	3.3	58	4	2.5	1.1	6	5
2 Russet Burbank	3.2	13	0	1.3	1.0	6	5
3 A95409-1	3.6	29	8	1.6	1.2	6	6
4 A96104-2	3.1	8	46	1.2	2.0	7	6
5 A97287-6	3.8	0	0	1.0	1.0	6	6
6 AC96052-1Ru	3.6	33	38	1.8	1.8	7	9
7 AO96141-3	3.5	13	4	1.3	1.1	7	7
8 AO96164-1	3.5	29	8	1.6	1.2	9	7
9 AOA95154-1	3.7	8	8	1.2	1.2	6	8
10 AOA95155-7	3.7	0	4	1.0	1.1	6	6
11 AOTX95265-3Ru	2.5	13	4	1.3	1.1	6	4
12 CO97087-2Ru	3.9	17	0	1.4	1.0	6	7
13 TXA549-1Ru	3.6	71	8	3.0	1.2	7	10
LSD 0.05	0.4	24	15			2	4
Average	3.5	22.4	10.3	1.5	1.2	6.5	6.4
Oregon							
1 Ranger Russet	3.0	96	17	4.3	1.3	6	9
2 Russet Burbank	2.7	63	8	2.7	1.2	5	8
3 A95409-1	2.8	83	25	3.4	1.5	4	8
4 A96104-2	3.0	17	58	1.5	2.4	6	7
5 A97287-6	3.4	71	50	2.7	1.8	9	12
6 AC96052-1Ru	3.5	67	38	2.8	2.0	5	8
7 AO96141-3	3.7	33	0	1.7	1.0	6	8
8 AO96164-1	3.3	42	4	2.3	1.1	5	12
9 AOA95154-1	2.9	67	54	2.5	2.2	5	8
10 AOA95155-7	2.9	8	13	1.3	1.2	8	9
11 AOTX95265-3Ru	2.2	29	33	1.8	1.8	5	7
12 CO97087-2Ru	3.4	33	13	1.6	1.3	5	6
13 TXA549-1Ru	2.8	83	79	3.5	2.9	7	15
LSD 0.05	0.4	29	27			2	3
Average	3.0	53.2	30.1	2.5	2	6.0	8.9

Date test performed:

Washington	Nov. 5	Oct. 23	Nov. 15
Idaho	Nov. 9	Oct. 26	Nov. 20
Oregon	Nov. 7	Oct. 24	Nov. 21

2007 Late Harvest Regional Trial

Stored at 48°F for 44 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg	SPROUTING (%)	length (in)
Washington											
1 Ranger Russet	26.6	41.5	34.0	3-	14.9	1	1.8	0.7	4	100	3/4
2 Russet Burbank	34.1	42.6	38.4	4+	8.5	0	1.1	0.6	5	27	1/4
3 A95409-1	30.5	40.3	35.4	3-	9.8	0	1.3	0.7	4	87	1/4
4 A96104-2	37.4	48.6	43.0	5-	11.2	0	0.9	0.5	5	93	3/4
5 A97287-6	44.8	48.8	46.8	5+	4.8	0	0.6	0.5	5	60	1/4
6 AC96052-1Ru	46.3	54.3	50.3	5+	8.0	0	0.5	0.5	5	60	1/8
7 AO96141-3	46.8	52.0	49.4	5+	5.7	0	0.5	0.5	5	93	1
8 AO96164-1	44.2	46.4	45.3	5+	3.1	0	0.6	0.5	5	100	3/4
9 AOA95154-1	43.0	52.4	47.7	5-	9.4	0	0.6	0.5	5	100	1/4
10 AOA95155-7	31.3	47.8	39.6	4-	16.5	0	1.3	0.5	5	100	3/4
11 AOTX95265-3Ru	24.4	32.5	28.5	2+	8.1	2	2.0	1.2	3	87	1/4
12 CO97087-2Ru	50.1	53.3	51.7	5+	4.2	0	0.5	0.6	5	100	1/4
13 TXA549-1Ru	29.0	38.1	33.6	3-	9.1	1	1.5	0.8	4	100	1/2
		LSD 0.05	3.3		3.5					18	
Average	37.6	46.0	41.8		8.7	0	1.0	0.6		85	
Idaho											
1 Ranger Russet	39.4	44.4	41.9	5+	6.7	0	0.8	0.6	5	60	1/4
2 Russet Burbank	24.3	45.6	34.9	3-	21.3	2	2.0	0.6	4	0	
3 A95409-1	38.0	48.4	43.2	5-	10.5	0	0.8	0.5	5	7	1/8
4 A96104-2	39.6	48.4	44.0	5+	8.8	0	0.7	0.5	5	60	1/4
5 A97287-6	40.6	45.3	43.0	5-	11.0	0	0.7	0.6	5	0	
6 AC96052-1Ru	43.7	49.5	46.6	5+	6.6	0	0.6	0.5	5	53	1/8
7 AO96141-3	50.0	45.1	47.5	5+	5.9	0	0.5	0.6	5	80	1/4
8 AO96164-1	41.5	51.1	46.3	5-	10.3	0	0.7	0.5	5	27	1/8
9 AOA95154-1	46.1	51.7	48.9	5+	6.3	0	0.5	0.5	5	80	1/8
10 AOA95155-7	44.9	46.8	45.9	5+	4.7	0	0.6	0.5	5	20	1/8
11 AOTX95265-3Ru	31.3	39.6	35.4	3+	8.6	0	1.3	0.7	4	0	
12 CO97087-2Ru	49.1	54.6	51.8	5+	7.7	0	0.5	0.5	5	0	
13 TXA549-1Ru	45.8	45.8	45.8	5+	4.1	0	0.6	0.6	5	80	1/4
		LSD 0.05	3.6		4.8					21	
Average	41.1	47.4	44.3		8.7	0	0.8	0.6		36	
Oregon											
1 Ranger Russet	25.3	43.5	34.4	3-	18.2	1	1.9	0.6	4	87	1/2
2 Russet Burbank	14.9	41.6	28.3	2-	26.7	3	3.6	0.7	2	13	1/8
3 A95409-1	21.6	35.1	28.3	2-	13.5	2	2.4	1.0	3	27	1/8
4 A96104-2	26.2	45.9	36.1	4-	19.7	1	1.8	0.5	4	80	1/2
5 A97287-6	38.3	50.1	44.2	5-	11.8	0	0.8	0.5	5	27	1/8
6 AC96052-1Ru	32.5	47.7	40.1	4-	15.3	0	1.2	0.5	5	47	1/8
7 AO96141-3	45.3	50.3	47.8	5+	5.5	0	0.6	0.5	5	100	1
8 AO96164-1	43.0	48.7	45.9	5+	5.8	0	0.6	0.5	5	100	1
9 AOA95154-1	30.3	48.0	39.2	4-	17.7	1	1.4	0.5	5	87	1/4
10 AOA95155-7	25.7	47.6	36.6	4-	21.9	1	1.9	0.5	4	100	3/4
11 AOTX95265-3Ru	18.7	35.5	27.1	2-	16.8	3	2.9	1.0	3	67	1/8
12 CO97087-2Ru	38.2	52.0	45.1	5-	13.8	0	0.8	0.5	5	53	1/4
13 TXA549-1Ru	22.4	40.9	31.6	3-	18.5	2	2.3	0.7	3	87	1/4
		LSD 0.05	2.8		5.0					21	
Average	29.4	45.1	37.3		15.8	1	1.7	0.6		67	

Date test performed:			
Washington	Dec. 1	Dec. 1	Dec. 26
Idaho	Dec. 13	Dec. 13	Dec. 26
Oregon	Dec. 4	Dec. 4	Dec. 26

§ 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.

2007 Late Harvest Regional Trial

Stored at 44°F for 44 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg
Washington									
1 Ranger Russet	21.0	35.5	28.3	2-	14.5	2	2.5	1.0	3
2 Russet Burbank	29.5	36.8	33.1	3+	7.3	1	1.4	0.9	4
3 A95409-1	19.5	29.7	24.6	2-	10.2	2	2.8	1.4	2
4 A96104-2	32.1	42.8	37.4	4-	10.6	0	1.2	0.6	5
5 A97287-6	34.0	40.5	37.2	4+	8.3	0	1.1	0.7	5
6 AC96052-1Ru	32.3	45.7	39.0	4-	13.4	0	1.2	0.6	5
7 AO96141-3	38.9	49.1	44.0	5-	10.2	0	0.8	0.5	5
8 AO96164-1	38.1	45.6	41.9	5+	7.5	0	0.8	0.6	5
9 AOA95154-1	33.4	50.5	41.9	5-	17.2	0	1.1	0.5	5
10 AOA95155-7	25.0	41.4	33.2	3-	16.3	1	1.9	0.7	4
11 AOTX95265-3Ru	18.2	26.8	22.5	1+	8.5	3	3.0	1.7	2
12 CO97087-2Ru	34.6	46.6	40.6	5-	12.0	0	1.0	0.5	5
13 TXA549-1Ru	30.2	39.1	34.6	3-	9.0	1	1.4	0.8	4
		LSD 0.05	3.5		4.4				
Average	29.8	40.8	35.3		11.2	1	1.6	0.8	
Idaho									
1 Ranger Russet	30.3	42.5	36.4	4-	13.5	1	1.4	0.6	4
2 Russet Burbank	20.0	42.9	31.4	3-	22.9	2	2.7	0.6	3
3 A95409-1	23.0	38.0	30.5	3-	15.0	2	2.2	0.8	3
4 A96104-2	35.2	42.6	38.9	4+	7.9	0	1.0	0.6	5
5 A97287-6	33.3	36.2	34.7	3-	12.0	0	1.1	0.9	4
6 AC96052-1Ru	29.9	42.4	36.1	4-	13.4	1	1.4	0.6	4
7 AO96141-3	33.5	43.5	38.5	4-	15.1	0	1.1	0.6	5
8 AO96164-1	33.5	47.0	40.2	4-	13.5	0	1.1	0.5	5
9 AOA95154-1	36.2	50.7	43.4	5-	15.1	0	0.9	0.5	5
10 AOA95155-7	39.2	43.8	41.5	5+	7.4	0	0.8	0.6	5
11 AOTX95265-3Ru	21.0	29.8	25.4	2-	9.2	2	2.5	1.4	2
12 CO97087-2Ru	35.4	47.3	41.4	5-	13.5	0	1.0	0.5	5
13 TXA549-1Ru	34.2	39.3	36.7	4-	10.5	0	1.1	0.8	5
		LSD 0.05	3.5		6.3				
Average	31.1	42.0	36.6		13.0	1	1.4	0.7	
Oregon									
1 Ranger Russet	20.9	37.4	29.2	2-	16.5	2	2.5	0.9	3
2 Russet Burbank	12.0	32.3	22.1	1-	20.3	4	4.5	1.2	1
3 A95409-1	20.8	32.4	26.6	2-	11.6	2	2.5	1.2	3
4 A96104-2	20.9	37.1	29.0	2-	16.8	2	2.5	0.9	3
5 A97287-6	30.6	43.5	37.0	4-	12.9	0	1.3	0.6	4
6 AC96052-1Ru	26.0	42.4	34.2	3-	16.4	1	1.8	0.6	4
7 AO96141-3	37.4	44.6	41.0	5+	8.1	0	0.9	0.6	5
8 AO96164-1	38.4	45.2	41.8	5+	7.7	0	0.8	0.6	5
9 AOA95154-1	32.7	48.5	40.6	5-	16.3	0	1.2	0.5	5
10 AOA95155-7	22.8	42.2	32.5	3-	19.4	2	2.3	0.6	3
11 AOTX95265-3Ru	15.2	30.0	22.6	1-	14.8	3	3.6	1.4	1
12 CO97087-2Ru	32.1	50.6	41.3	5-	18.4	0	1.2	0.5	5
13 TXA549-1Ru	26.5	36.4	31.4	3-	9.8	1	1.8	0.9	4
		LSD 0.05	3.1		5.1				
Average	25.9	40.2	33.0		14.5	1	2.1	0.8	

Date test performed:		
Washington	Dec. 2	Dec. 2
Idaho	Dec. 14	Dec. 14
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.

2007 Late Harvest Regional Trial

Stored at 40°F for 44 Days and Reconditioned

Clone	SPROUTING (%)	PHOTOVOLT (44 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	19.3	34.1	26.7	14.7	3	27.2	41.2	34.2	15.9	1
2 Russet Burbank	0	19.0	24.4	21.7	5.4	3	24.6	36.7	30.6	12.1	1
3 A95409-1	0	16.9	27.6	22.3	10.7	3	23.3	34.5	28.9	11.2	2
4 A96104-2	0	21.5	31.3	26.4	9.8	2	23.6	34.6	29.1	11.0	2
5 A97287-6	0	28.9	40.7	34.8	11.7	1	29.3	38.1	33.7	9.2	1
6 AC96052-1Ru	0	25.0	41.8	33.4	16.8	1	35.5	48.6	42.1	13.1	0
7 AO96141-3	0	35.9	44.4	40.2	8.9	0	33.3	46.4	39.9	13.2	0
8 AO96164-1	0	36.1	39.6	37.8	4.7	0	40.3	47.1	43.7	8.0	0
9 AOA95154-1	0	25.2	44.1	34.6	18.9	1	33.2	52.0	42.6	18.8	0
10 AOA95155-7	0	16.9	31.8	24.3	14.9	3	30.9	44.0	37.4	13.1	0
11 AOTX95265-3Ru	0	16.9	22.3	19.6	5.4	3	23.0	30.3	26.6	7.7	2
12 CO97087-2Ru	0	27.7	39.6	33.7	12.1	1	29.1	43.8	36.4	14.7	1
13 TXA549-1Ru	0	20.0	28.4	24.2	8.6	2	24.1	40.7	32.4	16.7	2
LSD 0.05	ns			3.7	3.7				4.2	5.3	
Average	0	23.8	34.6	29.2	11.0	2	29.0	41.4	35.2	12.7	1
Idaho											
1 Ranger Russet	0	25.9	36.5	31.2	10.6	1	31.0	48.5	39.8	19.6	0
2 Russet Burbank	0	15.4	27.5	21.4	12.1	3	18.7	39.9	29.3	21.2	3
3 A95409-1	0	20.3	33.2	26.8	12.9	2	24.9	36.6	30.7	11.6	1
4 A96104-2	0	21.4	33.3	27.3	12.2	2	28.5	44.6	36.6	16.4	1
5 A97287-6	0	34.6	36.5	35.6	8.5	0	39.8	37.3	38.6	7.2	0
6 AC96052-1Ru	0	26.0	38.0	32.0	12.1	1	36.6	48.7	42.7	12.4	0
7 AO96141-3	0	22.6	39.7	31.1	17.1	2	34.9	41.8	38.4	10.7	0
8 AO96164-1	0	31.5	41.6	36.5	12.3	0	34.4	49.8	42.1	15.4	0
9 AOA95154-1	0	32.3	44.4	38.3	12.1	0	43.0	51.1	47.1	8.4	0
10 AOA95155-7	0	33.5	37.4	35.4	5.9	0	41.1	47.0	44.0	8.7	0
11 AOTX95265-3Ru	0	15.9	18.5	17.2	4.1	3	26.5	30.9	28.7	9.1	1
12 CO97087-2Ru	0	26.5	45.9	36.2	19.4	1	28.4	52.2	40.3	24.4	1
13 TXA549-1Ru	0	28.6	37.4	33.0	8.8	1	33.8	42.2	38.0	9.3	0
LSD 0.05	ns			3.3	5.8				3.6	6.3	
Average	0	25.7	36.1	30.9	11.4	1	32.4	43.9	38.2	13.4	1
Oregon											
1 Ranger Russet	0	15.4	33.9	24.6	18.6	3	17.9	40.3	29.1	22.4	3
2 Russet Burbank	0	8.3	24.5	16.4	16.2	4	10.3	38.3	24.3	28.0	4
3 A95409-1	0	15.8	25.5	20.6	9.7	3	14.2	30.2	22.2	16.0	4
4 A96104-2	0	15.3	25.5	20.4	10.2	3	20.8	38.2	29.5	17.5	2
5 A97287-6	0	26.3	39.0	32.6	12.7	1	23.0	39.1	31.0	16.1	2
6 AC96052-1Ru	0	21.1	39.9	30.5	18.9	2	25.7	47.5	36.6	21.8	1
7 AO96141-3	0	34.8	41.4	38.1	6.7	0	33.7	47.2	40.4	13.8	0
8 AO96164-1	0	31.5	44.4	37.9	12.9	0	28.4	49.0	38.7	20.6	1
9 AOA95154-1	0	24.0	44.0	34.0	20.0	2	29.7	52.9	41.3	23.2	1
10 AOA95155-7	0	17.2	32.8	25.0	15.6	3	20.1	42.2	31.2	22.2	2
11 AOTX95265-3Ru	0	11.0	19.6	15.3	8.6	4	17.8	35.8	26.8	18.4	3
12 CO97087-2Ru	0	17.9	40.7	29.3	22.8	3	19.1	47.4	33.2	28.3	3
13 TXA549-1Ru	0	16.8	30.9	23.8	14.1	3	19.7	40.6	30.1	20.9	2
LSD 0.05	ns			3.1	4.4				3.1	5.8	
Average	0	19.6	34.0	26.8	14.4	2	21.5	42.2	31.9	20.7	2

Date test performed:

Washington	Dec. 27	Dec. 3	Dec. 20
Idaho	Dec. 27	Dec. 15	Dec. 21
Oregon	Dec. 27	Dec. 6	Dec. 19

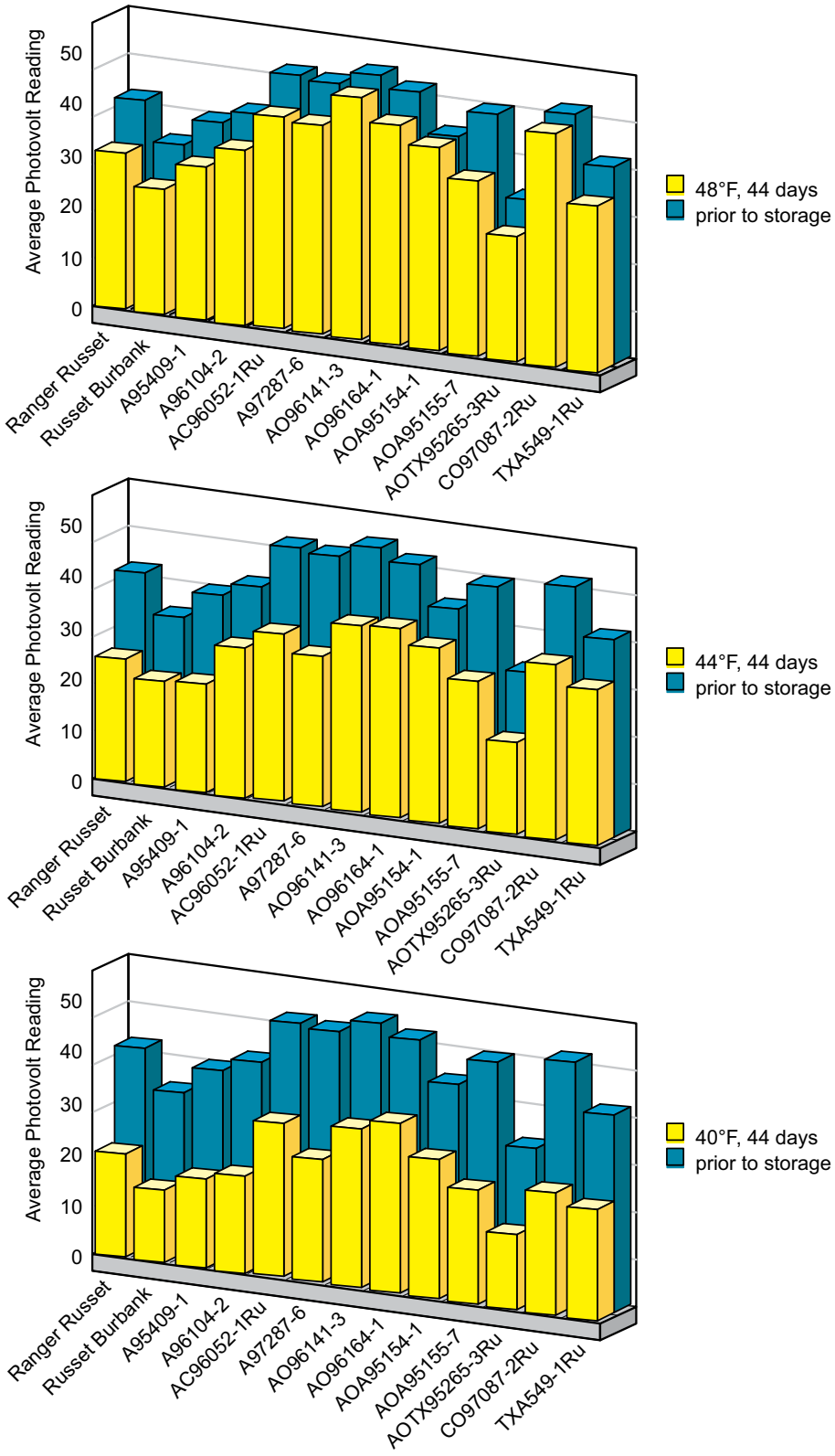
DIFF=Absolute difference between bud and stem photovolt reading.

The Othello potato crew and graduate students get a chance to interact during a bi-monthly hand harvest in a growth and development trial. From left to right: Daniel Zommick, Josh Rodriguez, Rudy Garza, Chris Hiles and Sarah Weeda.

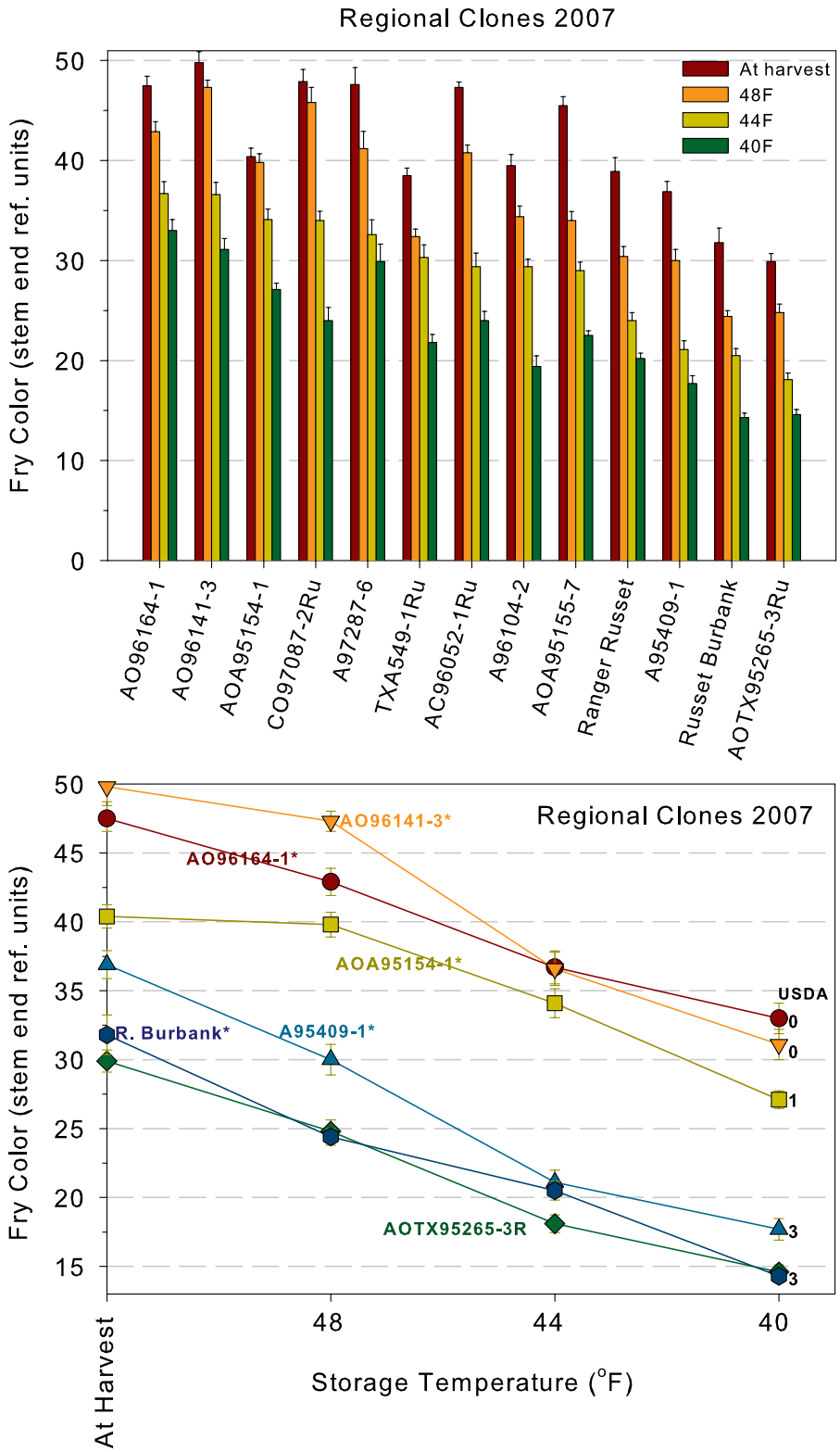
As a component of our biological control program our “watchdog”, the burrowing owl, monitors the crop for vermin.

2007 Late Harvest Regional Trial

Regional Trial - 3 State Average of Stem End



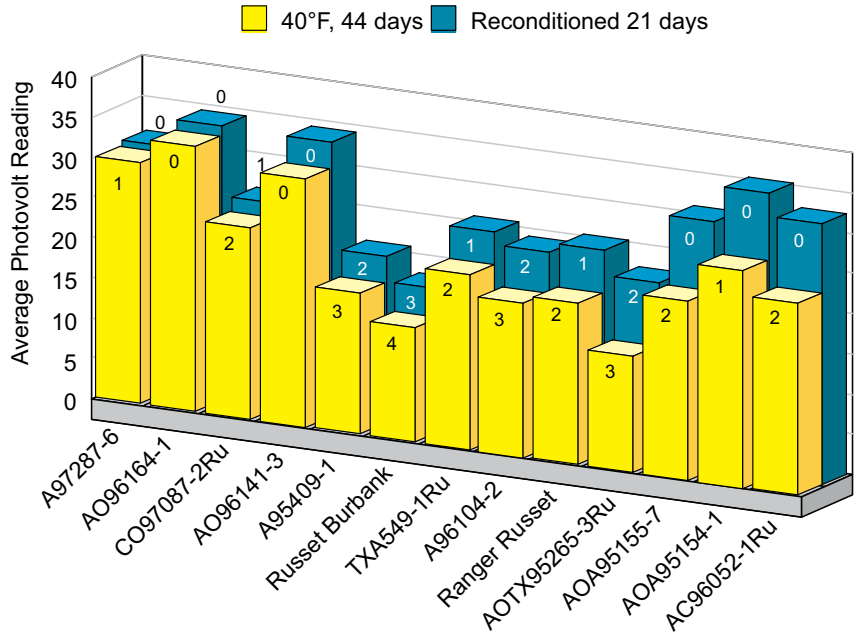
2007 Late Harvest Regional Trial

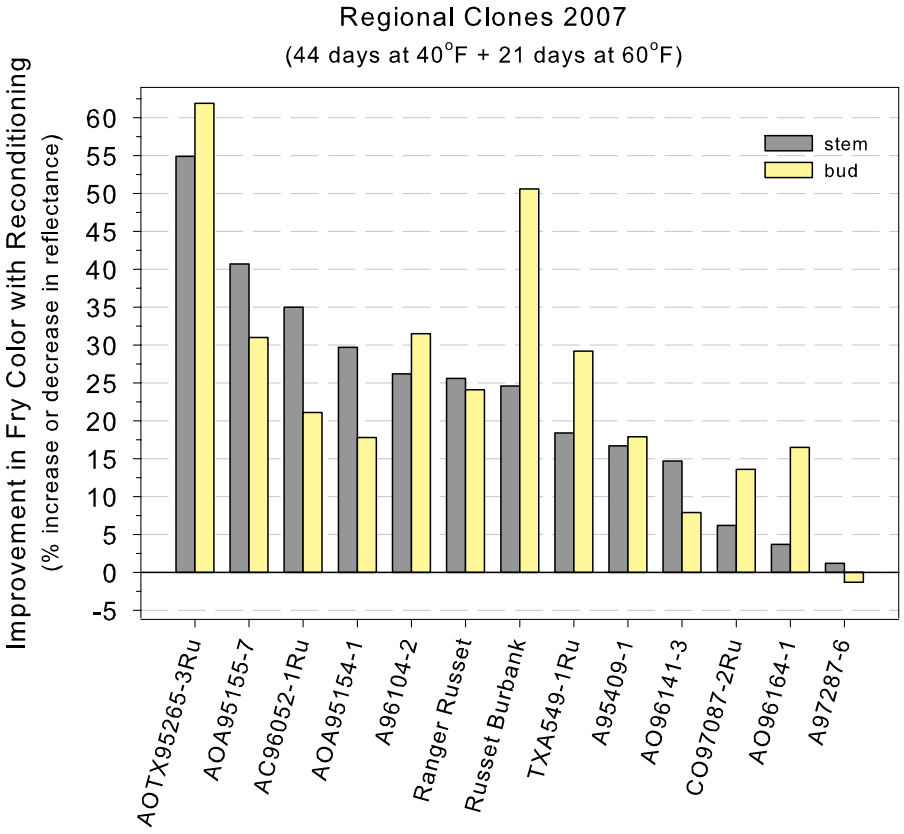


Top: At-harvest and after-storage French fry colors (stem end) of clones in the Regional Trial. Tubers were stored for 44 days at 48, 44 and 40°F. The clones are ranked from best to worst based on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

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, AO96164-1, and AOA95154-1) and worst (A95409-1, Russet Burbank, and AOTX95265-3R) performing clones in the Regional Trial. *Indicates similar performance of the clones last year.

2007 Late Harvest Regional Trial





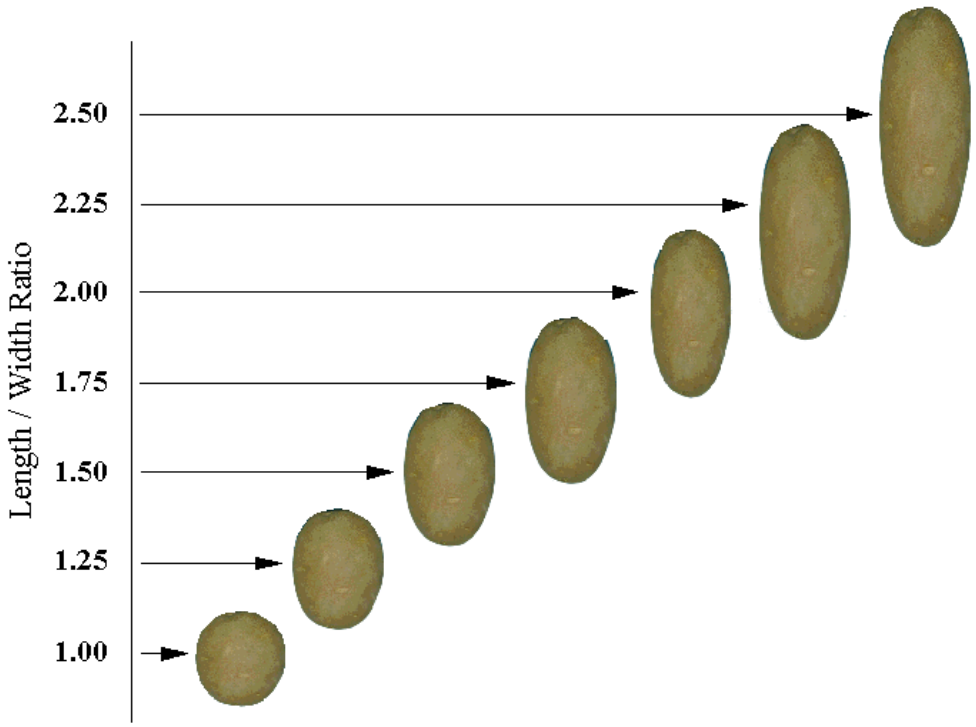
Reconditioning abilities of clones in the 2007 Regional Trial (3-state averages). Clones were stored at 40°F for 44 days after harvest and then reconditioned at 60°F for 21 days. **Top:** Stem end fry color before and after reconditioning. Numbers in bars indicate the USDA color rating of the stem end. **Bottom:** Percent improvement of stem and bud end fry color with reconditioning. Negative numbers indicate deterioration of processing quality.

2007 Late Harvest Regional Trial

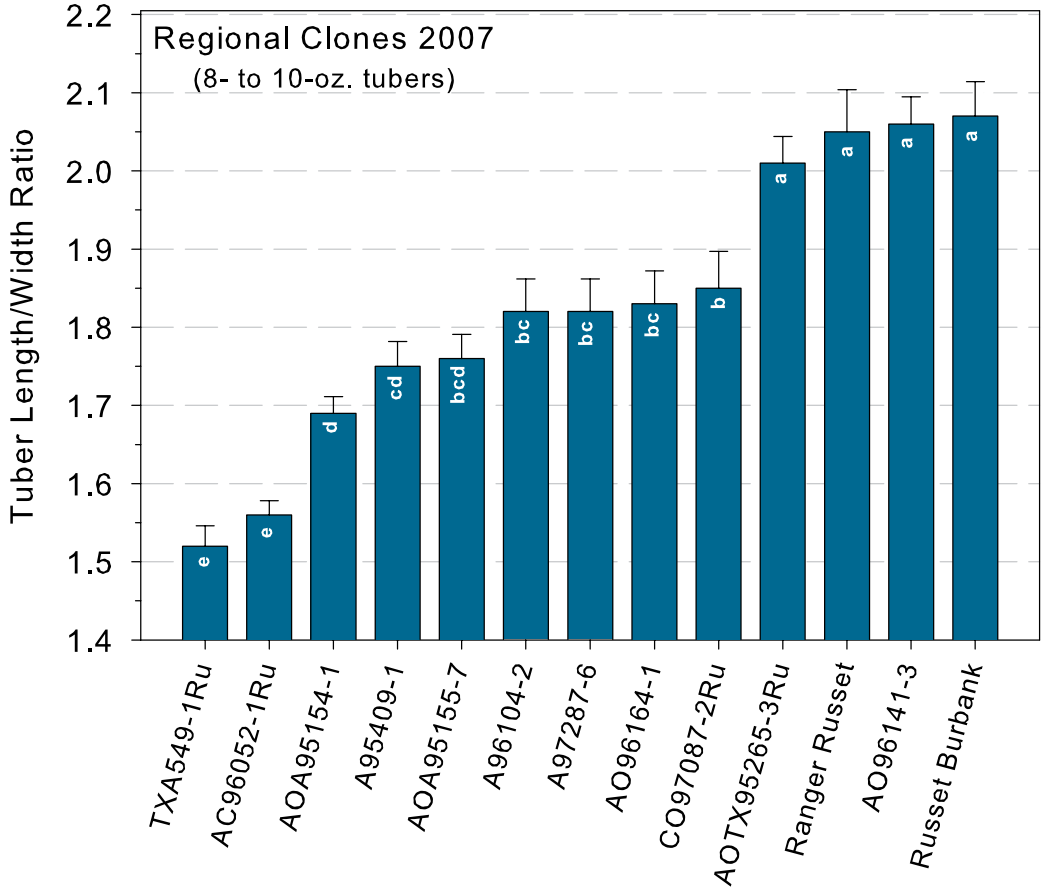
Tuber Shape and Associated French Fry Yields

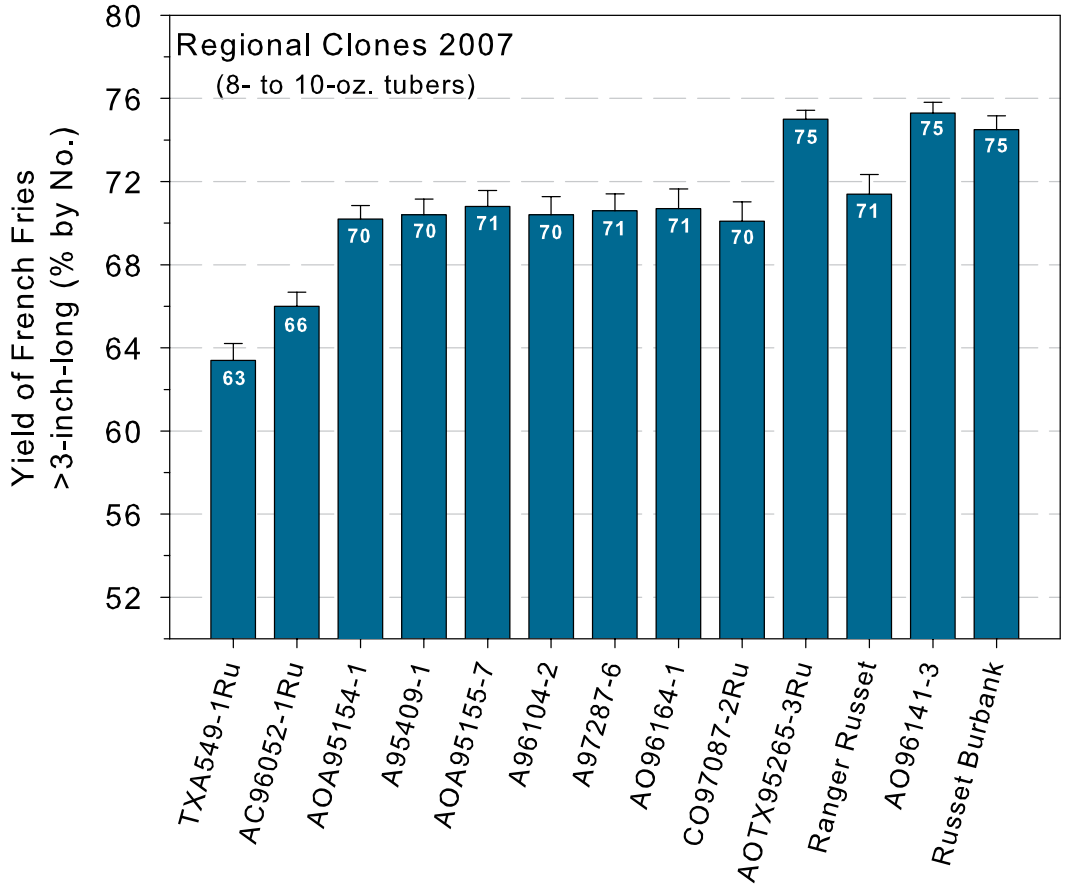
(8- to 10-oz Tubers)

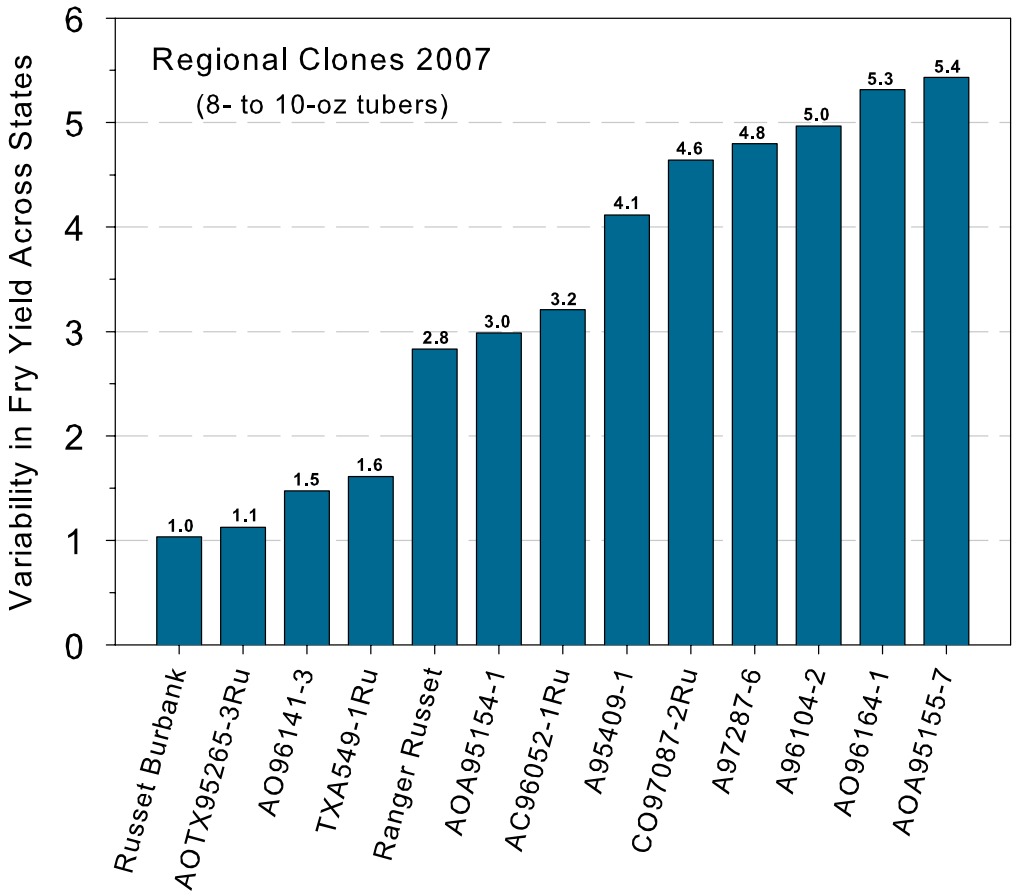
Clone	Length to width ratio			Yield of 3" or longer fries (% by number)		
	WA	ID	OR	WA	ID	OR
1 Ranger Russet	1.66	2.50	1.96	68	72	75
2 Russet Burbank	1.84	2.30	2.07	74	74	76
3 A95409-1	1.63	2.04	1.59	68	76	67
4 A96104-2	1.53	2.22	1.71	64	77	70
5 A97287-6	1.55	2.23	1.67	65	78	69
6 AC96052-1Ru	1.45	1.65	1.53	61	69	65
7 AO96141-3	2.11	2.28	1.80	77	75	73
8 AO96164-1	1.74	2.22	1.54	71	77	64
9 AOA95154-1	1.59	1.83	1.65	67	74	69
10 AOA95155-7	1.49	2.01	1.78	63	76	73
11 AOTX95265-3Ru	1.83	2.34	1.86	74	77	74
12 CO97087-2Ru	1.71	2.30	1.52	70	76	64
13 TXA549-1Ru	1.55	1.54	1.46	66	63	62
Average	1.67	2.11	1.70	69	74	69



2007 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, AOA95155-7 had a length to width ratio of 1.76 (see previous page), resulting in 71% 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 65.6% to 76.4% (71 ±5.4%). Tuber length to width ratios and the associated percentage yield of fries are shown on the previous page. Bars with the same letter are not significantly different (P≤0.01).

Late Harvest Fresh-Processing
Evaluation of Entries From Regional and Tri-State Trials

Entries 2 through 6 from the late-season Regional trial and entry 7 from the Tri-State Trial were designated as 'fresh-processing' and thus were fried as soon as possible following harvest. All entries fried light and uniform from stem to bud end.

	Clone	PHOTOVOLT Stem	Bud	Average	DIFFERENCE* STEM - BUD	USDA COLOR
	Washington					
1	Russet Norkotah	39.4	44.3	41.9	4.9	0
2	AOTX95265-2ARu	44.1	46.7	45.4	3.8	0
3	AOTX95265-4Ru	43.8	45.3	44.5	3.2	0
4	CO95172-3Ru	43.6	45.9	44.7	3.2	0
5	CO97138-3Ru	42.5	44.3	43.4	3.9	0
6	CO97138-7Ru	37.8	38.4	38.1	3.5	0
7	PA00N10-5 §	50.2	52.6	51.4	4.1	0
			LSD 0.05	2.1	ns	
	Average	43.1	45.4	44.2	3.8	0
	Oregon					
7	PA00N10-5 §	52.6	51.1	51.8	4.1	0

§ Entered in Late Tri-State Trial

* Average of 12 individual tuber absolute differences

	Washington	Oregon
Harvest Date:	Sept. 25	October 1
Fried on:	Sept. 28	Octboer 3

Vanessa Coil, a physical therapy major, gets her excercise cutting fries for processing evaluations.

Entries Retained from the 2006 Trials Currently in the Regional Trial

Harvested fall of 2006 Held at 48°F until December 28 Stored at 44°F until analysis

A97287-6 was advanced from the 2006 Tri-State Trial into the 2007 Regional Trial. A97287-6, AC96052-1Ru, and TXA549-1Ru produced French fries with a USDA "0" rating from all locations. A95409-1 produced fries with a USDA "2" rating from WA and OR. Averaged across locations, A97287-6 produced the shortest sprouts (1 1/8"), while AO96164-1 produced the longest sprouts (4 3/4"). Ranger and Russet Burbank averaged 2 ½" and 1 ½", respectively.

	PHOTOVOLT READING				USDA	% REDUCING SUGAR			Sprouting	
Clone	stem	bud	avg	DIFF	COLOR	stem	bud	avg	percent	length
Washington										
1 Ranger Russet	30.4	40.7	35.5	10.3	1	1.4	0.7	1.0	100	2"
2 Russet Burbank	30.3	45.9	38.1	15.6	1	1.4	0.5	1.0	100	1 1/2"
3 A95409-1	23.5	34.4	28.9	11.6	2	2.1	1.0	1.6	100	4"
4 A96104-2	33.8	45.3	39.6	11.4	0	1.1	0.6	0.8	100	2"
5 A97287-6 §	37.3	48.4	42.9	11.1	0	0.9	0.5	0.7	100	1"
6 AC96052-1Ru	48.8	53.6	51.2	5.8	0	0.5	0.5	0.5	100	1 1/2"
7 AO96141-3	23.8	44.9	34.3	21.1	2	2.1	0.6	1.3	100	3"
8 AO96164-1	36.5	42.9	39.7	7.4	0	0.9	0.6	0.8	100	5"
9 AOA95154-1	48.1	55.9	52.0	7.8	0	0.5	0.5	0.5	100	1"
10 AOA95155-7	42.4	48.3	45.3	6.0	0	0.6	0.5	0.6	100	3"
11 TXA549-1Ru	35.3	47.7	41.5	12.4	0	1.0	0.5	0.8	100	2"
		LSD 0.05	4.0	4.6						
Average	33.1	44.5	38.8	11.8	1	1.1	0.6	1.0	100	
Idaho										
1 Ranger Russet	32.4	44.2	38.3	11.8	0	1.2	0.6	0.9	100	3"
2 Russet Burbank	28.2	40.4	34.3	15.3	1	1.6	0.7	1.1	100	3/4"
3 A95409-1	34.7	37.5	36.1	8.6	0	1.0	0.8	0.9	100	4"
4 A96104-2	34.8	40.9	37.8	6.7	0	1.0	0.7	0.9	100	2 1/2"
5 A97287-6 §	36.7	34.6	35.6	5.1	0	0.9	1.0	1.0	100	1 1/2"
6 AC96052-1Ru	45.8	51.0	48.4	5.9	0	0.6	0.5	0.5	100	1 1/2"
7 AO96141-3	41.9	39.9	40.9	10.5	0	0.7	0.7	0.7	100	4"
8 AO96164-1	33.2	36.7	35.0	7.3	0	1.1	0.9	1.0	100	3"
9 AOA95154-1	50.5	48.1	49.3	3.7	0	0.5	0.5	0.5	100	1"
10 AOA95155-7	42.7	42.5	42.6	4.2	0	0.6	0.6	0.6	100	4"
11 TXA549-1Ru	40.8	43.1	42.0	5.6	0	0.7	0.6	0.7	100	4"
		LSD 0.05	4.1	4.2						
Average	36.4	41.2	38.8	9.1	0	1.0	0.7	0.9	100	
Oregon										
1 Ranger Russet	24.9	38.3	31.6	13.4	1	2.0	0.8	1.4	100	2 1/2"
2 Russet Burbank	24.6	41.6	33.1	17.0	1	2.0	0.7	1.3	100	2"
3 A95409-1	20.2	32.6	26.4	12.5	2	2.7	1.2	1.9	100	4"
4 A96104-2	25.7	37.8	31.7	12.2	1	1.9	0.8	1.4	100	3"
5 A97287-6 §	34.1	34.9	34.5	4.3	0	1.1	1.0	1.0	100	1"
6 AC96052-1Ru	38.3	48.5	43.4	10.2	0	0.8	0.5	0.7	100	2 1/2"
7 AO96141-3	41.1	42.6	41.9	4.7	0	0.7	0.6	0.7	100	3"
8 AO96164-1	34.6	45.3	39.9	10.7	0	1.0	0.6	0.8	100	6"
9 AOA95154-1	30.2	45.8	38.0	15.8	1	1.4	0.6	1.0	100	2"
10 AOA95155-7	25.9	47.0	36.4	21.1	1	1.8	0.5	1.2	100	5"
11 TXA549-1Ru	35.9	39.3	37.6	5.0	0	0.9	0.8	0.9	100	4"
		LSD 0.05	3.6	4.6						
Average	29.8	39.5	34.7	10.6	1	1.6	0.8	1.2	100	

§ Advanced from 2006 Tri-State Trial

Date test performed:

Washington	May 1
Idaho	May 2
Oregon	May 3

2007 Red and Specialty Trial

Location: Commercial field near Granger, WA
Planting Date: March 21
Harvest Date: July 30
In-Row Spacing: 8 in.
Vine Kill Date: July 20
Days Grown: 121

The Regional Red and Specialty trial is a part of the overall Western Regional Trial effort. This trial consists of clones with unique color and attributes which are primarily evaluated for fresh market suitability. This year's trial compared 4 local reference varieties to 21 new clones and was grown in a commercial field near Granger, WA. Growing conditions were favorable for tuber growth cracks; as a result, we were able to determine which clones had genetic resistance or susceptibility. 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.

Visual Standouts **(nice color, skin, size distribution, & shape)**:

Red/White flesh: C098012-5R was nice but had some growth cracks.
Red/Yellow flesh: ATTX961014-1R/Y.
Red/Red flesh: POR01PG20-12.
Purple/Purple flesh: CO97215-2P/P, some bronzing.
Yellow flesh: POR02PG37-2, some rhizoc.

Suggested Discards: CO97232-2R/Y, CO97233-3R/Y, POR00PG4-1, CO97222-1R/R, POR02PG26-5, A96510-4Y.

Standcounts

- **40 Day**
  Fast emergence: Most entries were > 90% emerged at 40 DAP.
  Slow emergence: Yukon Gold (80%), CO97233-3R/Y, and A96510-4Y (81% each).

- **50 Day**
  Full emergence: Most entries were > 96% emerged at 50DAP.
  Poor emergence: Yukon Gold (94%).

Plant and Tuber Growth & Development

- **60 Day Stems per plant**
  Most: CO97227-2P/PW (3.3).
  Fewest: Yukon Gold (1.4), A96510-4Y (1.6), and POR02PG5-1 (1.6); all other entries averaged over 1.7 stems or greater.

- **Average Tuber Number Per Plant**
  Most: CO97227-2P/PW (9.4) and POR01PG16-1 (9.2).
  Fewest: A96510-4Y (3.3), Yukon Gold and POR02PG5-1 (4.1).

- **Average Tuber Size (oz)**
  Largest: POR02PG5-1 (10.9), Red LaSoda (10.5), and Yukon Gold (9.7).
  Smallest: CO97226-2R/R (3.5), POR01PG22-1 (3.8), and CO97227-2P/PW (3.9).

Yield Data

- **Total Yield and U.S. #1 Yield**
  Highest: Red LaSoda was the highest with 582 CWT/A total and 570 CWT/A US#1 yield.
  Lowest: POR01PG22-1 had the lowest total (279 CWT/A) and POR00PG4-1 had the lowest US#1 yield (242 CWT/A) with 45% culls.

- **% U.S. #1's**
  Highest: ATTX98500-2P/Y and POR01PG22-1 had 99% U.S. #1's.
  Lowest: POR00PG4-1 (55%) and CO97233-3R/Y (83%); all other entries were 88% or greater.

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

- **External Defects**
  Knobs: POR01PG16-1 (3%); all other entries had less than (2%) knobs.
  Notable Defects: All Blue had the highest percent of malformed tubers (7%). POR00PG4-1 had the most tubers with growth crack (38%), while CO97233-3R/Y had (14%).

- **Internal Defects**
  AC97521-1R/Y was the only entry that had hollow heart (3%).
  Notable Defects: ATTX961014-1R/Y and POR01PG20-12 each had (5%) internal brown spot.

- **Bruise**
  Highest Blackspot: CO97232-2R/Y (30%), NDA7985-1R (28%), and CO97233-3R/Y (25%). Six entries had no blackspot.
  Highest Shatter: Dark Red Norland (40%), Yukon Gold and A99433-5Y each had (36%).

Postharvest Analysis

- POR01PG20-12, a red fleshed entry, was the highest scoring clone in the culinary evaluations with a total of 58.7 out of 75 possible points. POR02PG26-5, CO97222-1R/R, ATTX961014-1R/Y and Dark Red Norland also ranked among the top five entries with scores of 57, 57.2, 57.3 and 57.8, respectively. For the second year, POR01PG16-1 (purple flesh) was the lowest scoring clone with 51.5 points. A96510-4Y (yellow flesh) and CO97232-2R/Y (red skin yellow flesh) were close behind with scores of 51.8/75.

- Five of this year's entries had red flesh (CO97226-1R/R, CO97226-2R/R, POR01PG20-12, POR01PG22-1, & POR02PG5-1) and four had purple flesh (All Blue, CO97215-2P/P, CO97227-2P/PW & POR01PG16-1). These clones were not included in the statistical analysis of fry color and thus cannot be compared with the white and yellow flesh clones. AC97521-1R/Y was the only entry to have non-uniform fry color.

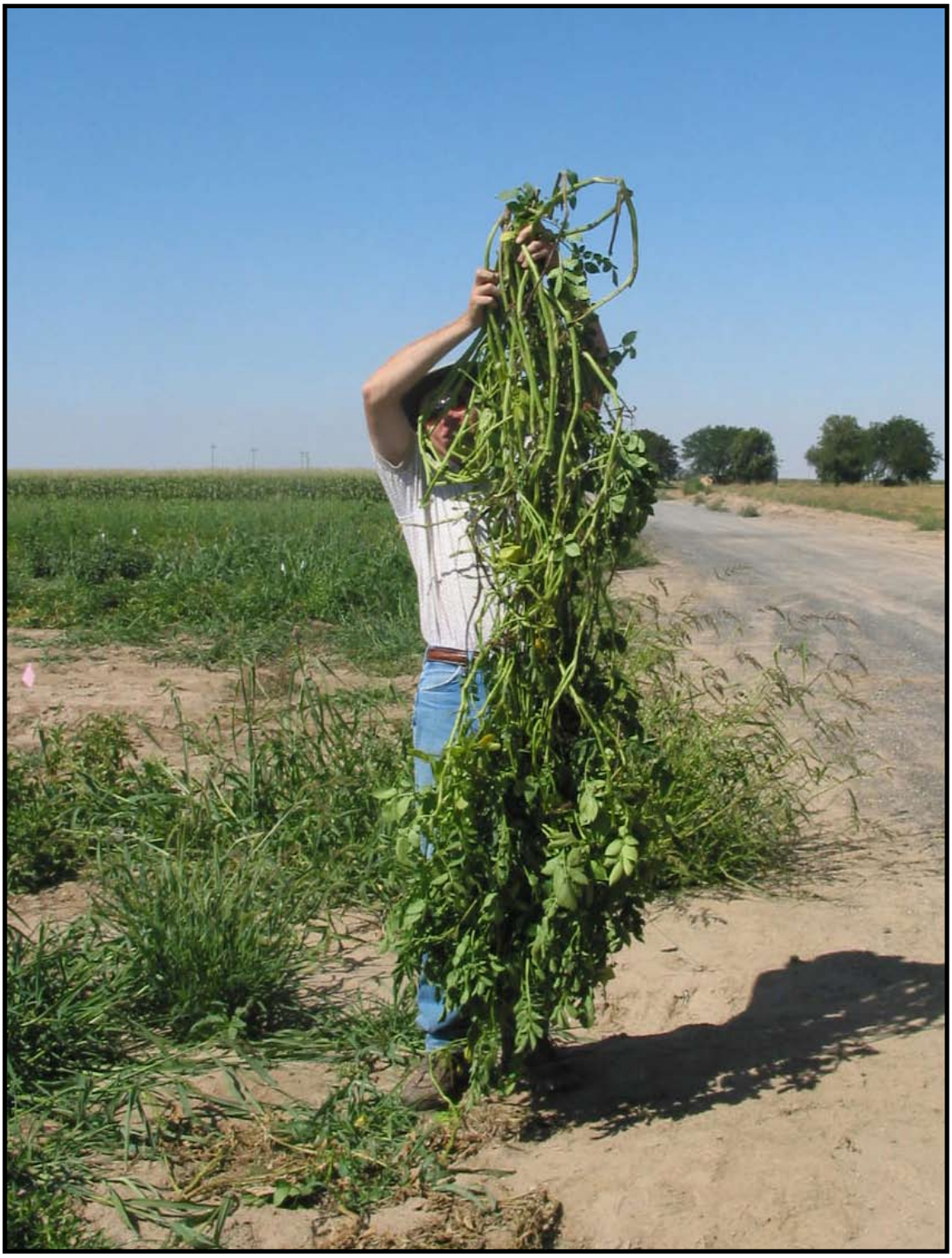
- Dark Red Norland and CO98012-5R received the lightest SFA chip ratings of 1.4/5 from the ten taste panel members. CO97226-2R/R produced the darkest chips with a SFA rating of 3.7/5.

- For oven baked samples, CO97222-1R/R was the only clone to produce a moderate degree of after cooking darkening; all other entries had only slight or no after cooking darkening. Texture of baked samples of ATTX98500-2P/Y was “pasty”, whereas texture of the other clones was favorably rated as “creamy” or “fluffy”. Flavor ratings of all baked samples were either “good” or “bland” and tuber centers were either “mushy” or “fully cooked”. Skins were described as either “steamy” or “fully cooked”.

- When boiled, POR00PG4-1was the only clone to slough severely. All entries showed some degree of after cooking darkening. Texture of the boiled samples of all entries except CO97215-2P/P and CO97227-2P/PW were favorably rated as creamy or fluffy. Boiled samples of CO97215-2P/P and CO97227-2P/PW had a “pasty” texture. The flavor of boiled samples of POR01PG22-1 and CO97215-2P/P was unacceptable. All other entries rated either good or bland for flavor. All tuber centers were rated fully cooked or mushy.

- Microwaving produced slight to moderate after cooking darkening in all entries. The texture of all microwaved samples was favorably rated as creamy or fluffy. A99433-5Y, CO97227-2P/PW and POR01PG16-1 produced unacceptable flavor when microwaved. Flavor of the other entries ranged from bland to good. Microwaving resulted in either mushy or fully cooked tuber centers in all clones except A96510-4Y and A99433-5Y which were somewhat raw. Skins were steamy or fully, which are desirable ratings.

Chris Hiles and Rudy Garza collect petiole samples from an in-season nitrogen rate study.



In his attempt to break the world record for vine length, Mark Pavek demonstrates the importance of nitrogen management during the growing season.

2007 Regional Red and Specialty Trial

Summaries

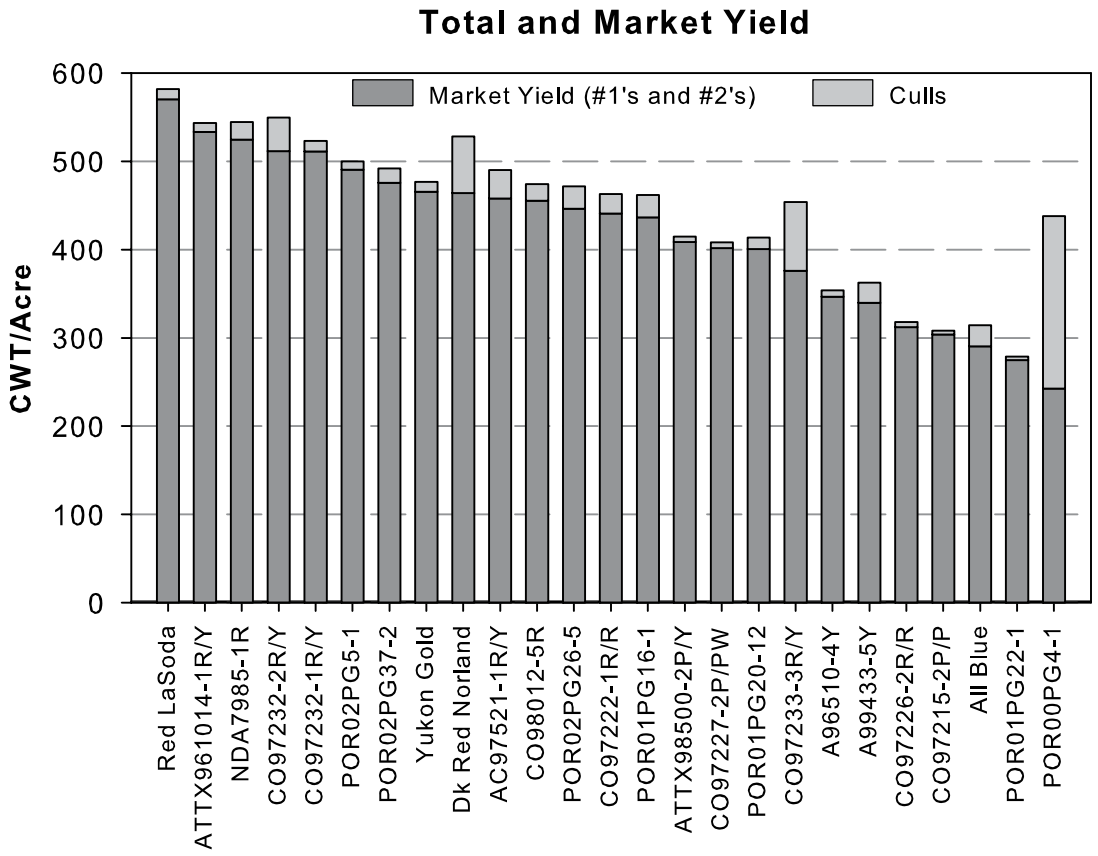
ENTRY	TOTAL YIELD			US # 1's* > 0 oz	US # 2's* > 0 oz	Culls* > 0 oz	EXTERNAL DEFECTS (%)				SPECIFIC GRAVITY
	CWT/A	STATS**	Tons/A	% of Total Yield			Knobs	Malformed	Growh Cracks	Green	
Dk Red Norland	528	BCD	26.4	88	0	12	1	0	10	1	1.074
Red LaSoda	582	A	29.1	98	0	2	0	0	2	0	1.074
CO98012-5R	474	EFG	23.7	96	0	4	0	0	3	1	1.079
NDA7985-1R	544	AB	27.2	96	0	4	1	0	1	1	1.072
AC97521-1R/Y	490	DEFG	24.5	93	0	7	1	3	2	1	1.073
ATTX961014-1R/Y	543	AB	27.2	98	0	2	0	0	0	1	1.084
ATTX98500-2P/Y	415	HI	20.7	99	0	1	0	0	0	1	1.069
CO97232-1R/Y	523	BCDE	26.1	98	0	2	1	0	1	0	1.086
CO97232-2R/Y	549	AB	27.5	93	0	7	1	0	3	3	1.076
CO97233-3R/Y	454	FGHI	22.7	83	0	17	1	0	14	2	1.079
POR00PG4-1	438	GHI	21.9	55	0	45	1	5	38	1	1.078
CO97222-1R/R	463	FGH	23.1	95	0	5	0	1	3	1	1.072
CO97226-2R/R	318	KL	15.9	98	0	2	0	0	1	0	1.074
POR01PG20-12	414	HIJ	20.7	97	0	3	1	0	1	1	1.081
POR01PG22-1	279	L	13.9	99	0	1	1	1	0	0	1.069
POR02PG5-1	500	BCDEF	25.0	98	0	2	0	0	1	0	1.078
All Blue	314	KL	15.7	92	0	8	0	7	0	0	1.073
CO97215-2P/P	311	KL	15.6	98	0	2	1	0	0	0	1.078
CO97227-2P/PW	408	IJ	20.4	98	0	2	0	0	1	0	1.083
POR01PG16-1	462	FGH	23.1	94	0	6	3	0	2	0	1.072
Yukon Gold	476	DEFG	23.8	98	0	2	1	1	0	0	1.094
A96510-4Y	354	K	17.7	98	0	2	0	0	1	1	1.080
A99433-5Y	363	JK	18.1	94	0	6	2	0	4	0	1.086
POR02PG26-5	472	EFG	23.6	95	0	5	0	1	2	2	1.083
POR02PG37-2	492	CDEF	24.6	97	0	3	0	0	2	1	1.086

ENTRY	US # 1 YIELD								INTERNAL DEFECTS (%) (6-10 oz tubers)		
	CWT/A	STATS**	Tons/A	0-2 oz*	2-4 oz*	4-6 oz*	6-10 oz*	> 10 oz*	% HH	% BC	% IBS
				%----------							
Dk Red Norland	464	DEF	23.2	2	9	15	34	41	0	0	0
Red LaSoda	570	A	28.5	1	4	10	34	51	0	0	0
CO98012-5R	455	EFGH	22.8	4	26	34	28	7	0	0	0
NDA7985-1R	525	ABC	26.2	1	7	16	42	33	0	0	0
AC97521-1R/Y	458	DEFG	22.9	3	18	24	36	19	3	0	0
ATTX961014-1R/Y	533	AB	26.6	2	15	23	37	22	0	0	5
ATTX98500-2P/Y	409	GHIJ	20.4	4	15	19	31	30	0	0	0
CO97232-1R/Y	511	BCD	25.5	2	19	28	38	13	0	0	0
CO97232-2R/Y	511	BCD	25.6	2	16	21	37	25	0	0	0
CO97233-3R/Y	376	JKL	18.8	2	13	20	47	18	0	0	0
POR00PG4-1	242	P	12.1	2	12	13	41	31	0	0	0
CO97222-1R/R	441	EFGHI	22.0	6	16	23	39	16	0	0	0
CO97226-2R/R	312	MNO	15.6	16	55	25	5	0	0	0	0
POR01PG20-12	400	JI	20.0	4	23	29	37	8	0	0	5
POR01PG22-1	275	OP	13.7	15	51	25	7	1	0	0	0
POR02PG5-1	490	BCDE	24.5	0	5	9	29	56	0	0	0
All Blue	290	NOP	14.5	7	25	27	32	9	0	0	0
CO97215-2P/P	304	MNO	15.2	11	30	31	22	6	0	0	0
CO97227-2P/PW	401	HIJ	20.1	16	42	30	11	1	0	0	0
POR01PG16-1	436	FGHI	21.8	11	39	30	17	3	0	0	0
Yukon Gold	465	DEF	23.3	1	6	12	36	45	0	0	0
A96510-4Y	346	KLM	17.3	1	6	11	41	41	0	0	0
A99433-5Y	340	LMN	17.0	3	19	21	27	31	0	0	0
POR02PG26-5	446	EFGHI	22.3	2	13	18	43	24	0	0	0
POR02PG37-2	475	CDEF	23.8	5	27	28	29	10	0	0	0

* Percent values may not total 100% due to rounding

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

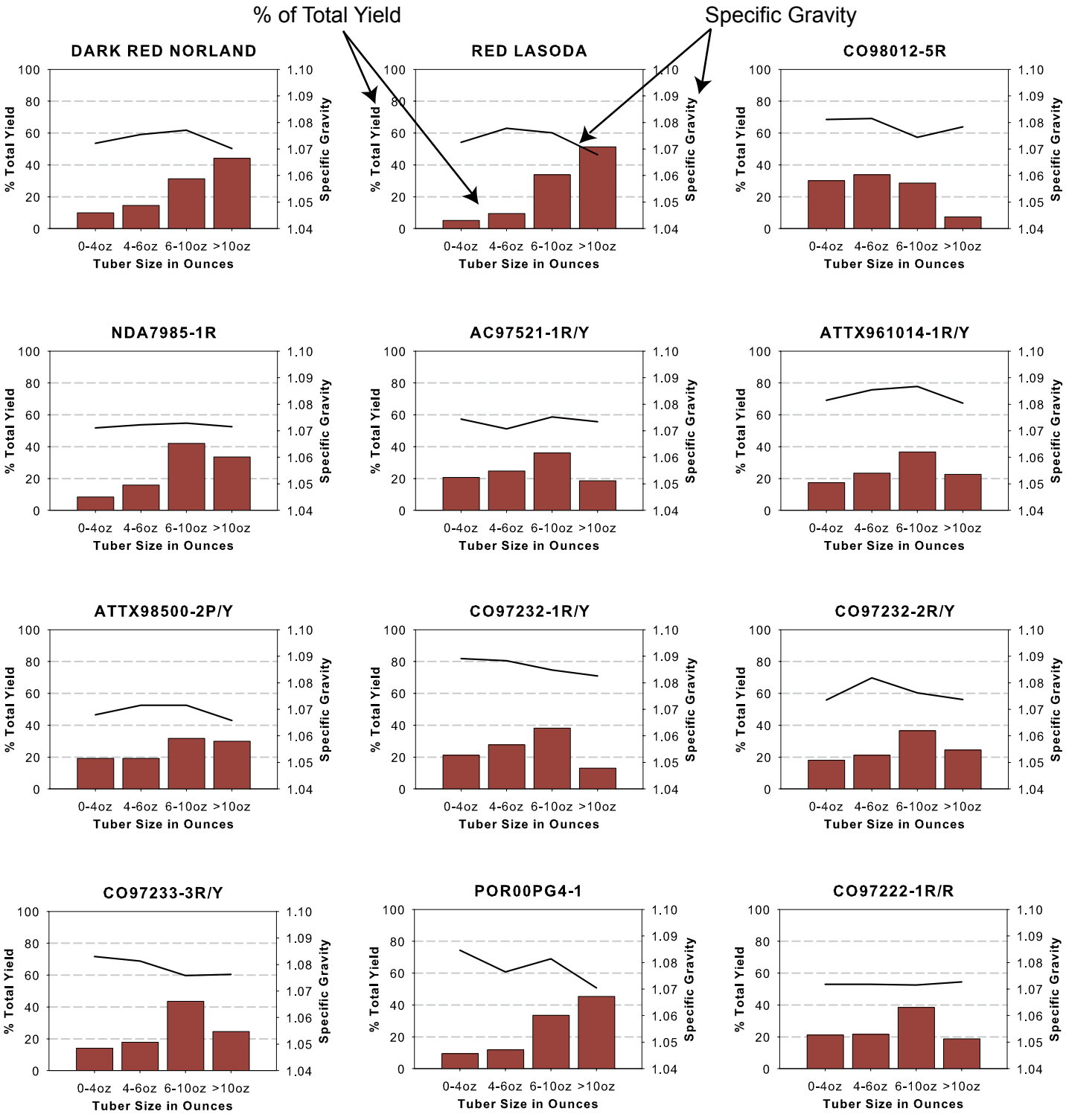
ENTRY	Percent Dead at vine kill	40 DAY STAND % Emerged	50 DAY STAND % Emerged	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (6-10 oz tubers) BLACKSPOT	BRUISE (%) (6-10 oz tubers) SHATTER	Length to Width Ratio 1 = Round 2 = Oblong
Dk Red Norland	10	95	97	2.0	8.8	5.1	4	2	8	40	1.1
Red LaSoda	5	88	95	1.8	10.5	4.9	4	2	18	18	1.0
CO98012-5R	0	97	100	1.9	5.5	7.4	4	1	15	20	1.0
NDA7985-1R	0	97	99	1.7	8.7	5.5	4	1	28	5	1.1
AC97521-1R/Y	5	89	98	2.4	6.8	6.4	3	3	20	10	1.2
ATTX961014-1R/Y	25	94	96	2.9	7.1	6.7	5	2	23	23	1.2
ATTX98500-2P/Y	0	93	100	2.0	6.9	5.1	4	2	5	10	1.2
CO97232-1R/Y	15	85	97	2.3	6.3	6.7	3	3	18	3	1.4
CO97232-2R/Y	10	89	97	2.2	7.1	6.7	4	2	30	15	1.2
CO97233-3R/Y	0	81	96	1.7	7.7	4.9	3	2	25	13	1.5
POR00PG4-1	15	95	100	1.9	9.2	4.3	4	3	15	23	1.5
CO97222-1R/R	10	86	96	2.4	6.3	6.5	3	3	10	15	1.4
CO97226-2R/R	20	95	100	2.2	3.5	7.8	4	1	5	5	1.3
POR01PG20-12	0	96	100	2.0	6.0	6.2	3	4	5	13	1.9
POR01PG22-1	0	92	99	2.1	3.8	6.7	4	5	12	8	2.5
POR02PG5-1	0	88	98	1.6	10.9	4.1	4	1	3	11	1.0
All Blue	5	97	99	2.0	5.5	5.3	4	4	12	20	1.9
CO97215-2P/P	5	84	95	2.7	4.5	6.0	5	1	8	5	1.3
CO97227-2P/PW	10	100	100	3.3	3.9	9.4	4	4	0	24	1.9
POR01PG16-1	15	96	100	2.8	4.5	9.2	5	5	8	13	2.3
Yukon Gold	50	80	94	1.4	9.7	4.1	5	2	0	36	1.1
A96510-4Y	0	81	98	1.6	9.5	3.3	2	3	0	16	1.6
A99433-5Y	0	94	98	2.1	7.3	4.3	3	1	0	36	1.1
POR02PG26-5	20	96	98	2.1	7.5	5.4	5	2	0	24	1.3
POR02PG37-2	20	96	98	2.9	5.4	7.7	5	1	0	12	1.1



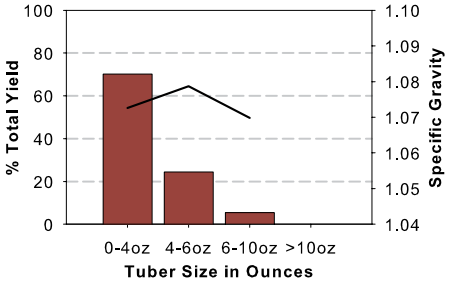
2007 Regional Red and Specialty Trial

Tuber Yield and Specific Gravity Distributions

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



CO97226-2R/R



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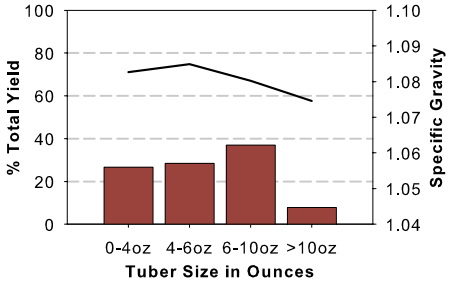

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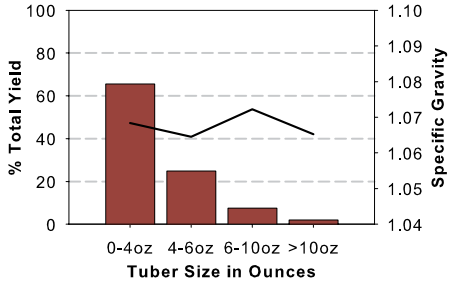

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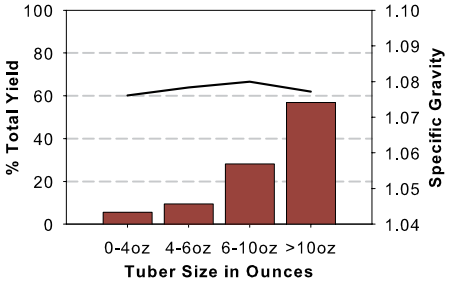
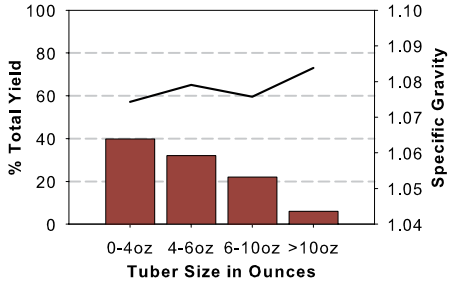
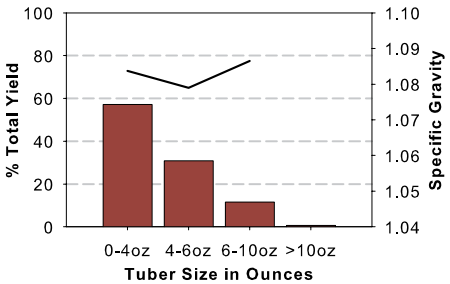


ALL BLUE

CO97215-2P/P



CO97227-2P/PW



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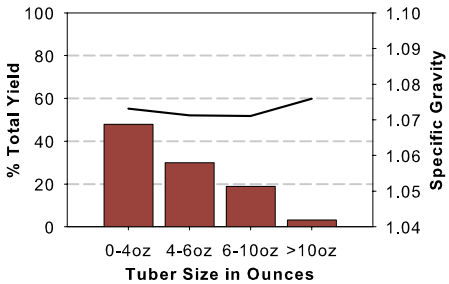
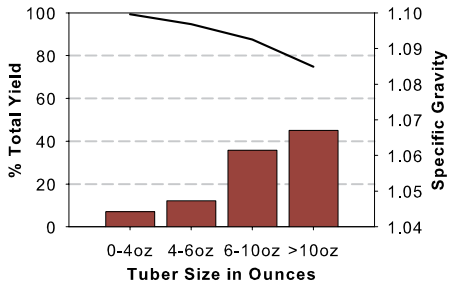
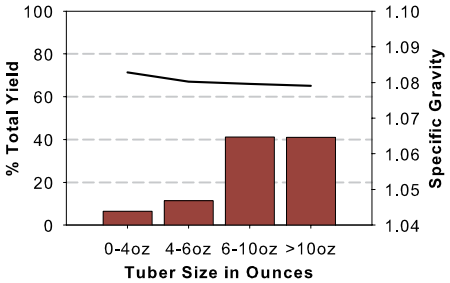


YUKON GOLD



A96510-4Y



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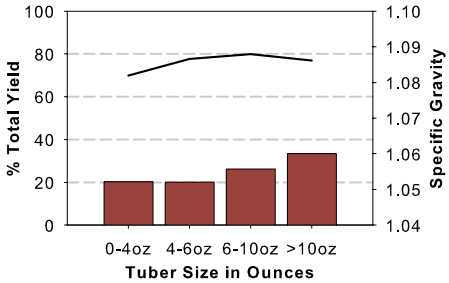

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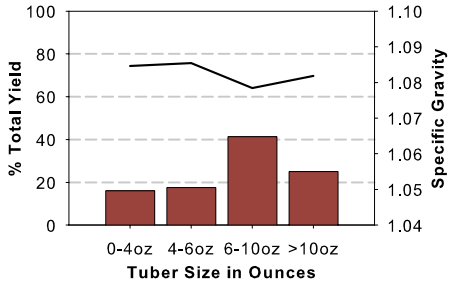
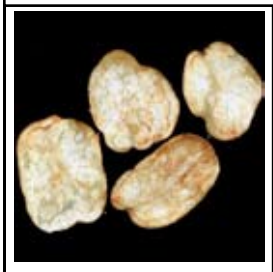
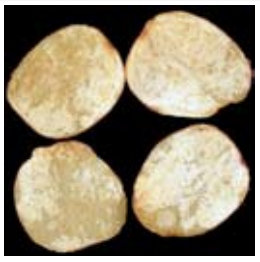


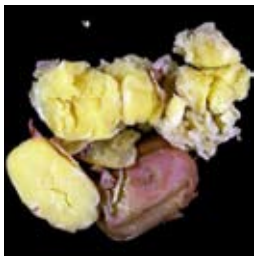
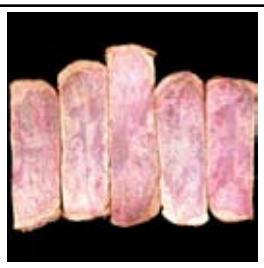
Tubers	WA Red and Specialty Regional Trial Comments
Dark Red Norland	
	**Tubers:** Round to oblong tubers. The tuber has deep red skin color, good skin set; moderately deep eyes. **Fry Color:** Light, uniform. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center, steamy skin. **Microwaved:** moderate after-cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
Red LaSoda	
	**Tubers:** Round to oblong tubers. The tuber has red to pink skin color, good skin set; deep eyes. **Fry Color:** Light, uniform **Boiled:** slight sloughing, slight after cooking darkening, creamy texture, bland flavor, fully cooked 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.
CO98012-5R	
	**Tubers:** Round tubers. The tuber has a deep red color, good skin set; shallow eyes. **Fry Color:** Light, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin. **Microwaved:** moderate after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.
NDA7985-1R	
	**Tubers:** Round tubers. The tuber has a red to dark red color, 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:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
AC97521-1R/Y	
	**Tubers:** Oblong tubers. The tuber has a red to dark red color, fair skin set; moderate eye depth. **Fry Color:** Light, non-uniform. **Boiled:** slight sloughing, moderate after cooking darkening, fluffy texture, good flavor, mushy tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center, steamy skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
Dark Red Norland				
				
Red LaSoda				
				
CO98012-5R				
				
NDA7985-1R				
				
AC97521-1R/Y				
				

Tubers	WA Red and Specialty Regional Trial Comments
ATTX961014-1R/Y	
	**Tubers:** Round to oblong tubers. The tuber has a light pink skin color, very good skin set; shallow eyes. **Fry Color:** Light, uniform. **Boiled:** severe sloughing, slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center. **Baked:** slight after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** moderate after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
ATTX98500-2P/Y	
	**Tubers:** Round to oblong tubers. The tuber has a deep purple skin color, good skin set; moderate eye depth. **Fry Color:** Light, uniform. **Boiled:** slight sloughing, moderate after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** slight after cooking darkening, pasty texture, bland flavor, mushy tuber center, steamy skin. **Microwaved:** moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
CO97232-1R/Y	
	**Tubers:** Oblong tubers. The tuber has a deep red color, fair skin set; shallow eyes. **Fry Color:** Light, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin. **Microwaved:** slight after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin.
CO97232-2R/Y	
	**Tubers:** Round to oblong tubers. The tuber has a deep red color, good skin set; moderate eye depth. **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, bland flavor, mushy tuber center, steamy skin. **Microwaved:** moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
CO97233-3R/Y	
	**Tubers:** Round to oblong tubers. The tuber has a deep red color, fair skin set; moderate eye depth. **Fry Color:** Light, uniform. **Boiled:** slight sloughing, moderate after cooking darkening, creamy texture, good flavor, fully cooked tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin. **Microwaved:** moderate after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
ATTX961014-1R/Y				
				
ATTX98500-2P/Y				
				
CO97232-1R/Y				
				
CO97232-2R/Y				
				
CO97233-3R/Y				
				

Tubers	WA Red and Specialty Regional Trial Comments
POR00PG4-1	
	**Tubers:** Oblong tubers. The tuber has a multi color skin, good skin set; moderate eye depth. **Fry Color:** Light, uniform. **Boiled:** severe sloughing, severe 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, fully cooked tuber center, steamy skin.
CO97222-1R/R	
	**Tubers:** Oblong tubers. The tuber has a purple color, fair skin set; shallow eyes. **Fry Color:** unacceptably dark, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, fully cooked tuber center. **Baked:** moderate after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** slight after cooking darkening, fluffy texture, good flavor, mushy tuber center, fully cooked skin.
CO97226-2R/R	
	**Tubers:** Round tubers. The tuber has a light purple skin color, good skin set; shallow eyes. **Fry Color:** unacceptably dark, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center, fully cooked skin. **Microwaved:** slight after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
POR01PG20-12	
	**Tubers:** Oblong to long tubers. The tuber has a light pink to red skin color, fair skin set; shallow eyes. **Fry Color:** relatively dark, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** no after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** slight after cooking darkening, fluffy texture, good flavor, mushy tuber center, steamy skin.
POR01PG22-1	
	**Tubers:** Long tubers. The tuber has a light pink to red skin color, good skin set; shallow eyes. **Fry Color:** relatively dark, 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, fully cooked skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
POR00PG4-1				
				
CO97222-1R/R				
				
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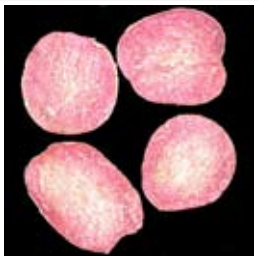
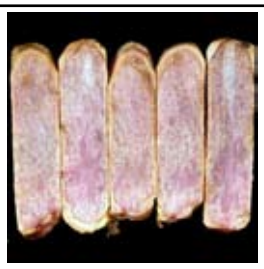
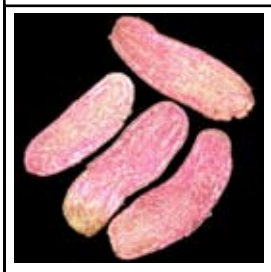
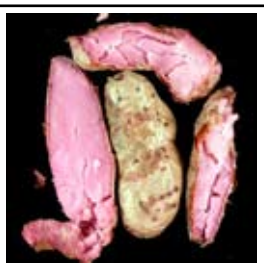
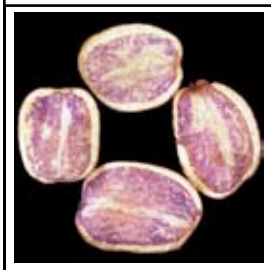
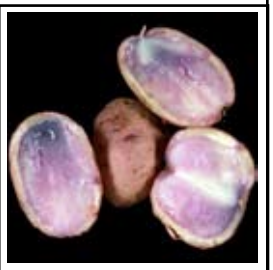
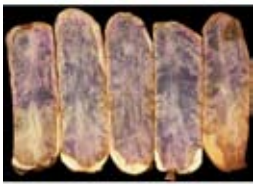
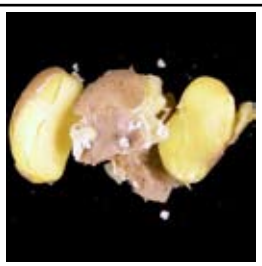
				
POR01PG20-12				
				
POR01PG22-1				
				

Tubers	WA Red and Specialty Regional Trial Comments
POR02PG5-1	
	**Tubers:** Round tubers. The tuber has a deep purple skin color, good skin set; moderate eye depth. **Fry Color:** relatively dark, uniform. **Boiled:** moderate sloughing, slight after cooking darkening, fluffy texture, good flavor, mushy tuber center. **Baked:** no after cooking darkening, creamy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
All Blue	
	**Tubers:** Oblong to long tubers. The tuber has a purple skin color, good skin set; moderately deep eyes. **Fry Color:** unacceptably dark, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, fluffy texture, bland flavor, mushy tuber center. **Baked:** slight after cooking darkening, creamy texture, bland 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. The tuber has a deep purple skin color, very good skin set; shallow eyes. **Fry Color:** unacceptably dark, uniform. **Boiled:** slight sloughing, moderate after cooking darkening, pasty texture, unacceptable flavor, mushy tuber center. **Baked:** slight after cooking darkening, fluffy texture, bland flavor, fully cooked tuber center, steamy skin. **Microwaved:** slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.
CO97227-2P/PW	
	**Tubers:** Oblong to long tubers. The tuber has a dark purple skin color, good skin set; shallow eyes. **Fry Color:** unacceptably dark, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, pasty 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, creamy texture, unacceptable flavor, mushy tuber center, fully cooked skin.
POR01PG16-1	
	**Tubers:** Long tubers. The tuber has a deep purple skin color, very good skin set; moderate eye depth. **Fry Color:** unacceptably dark, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** slight after cooking darkening, creamy texture, bland flavor, fully cooked tuber center, steamy skin. **Microwaved:** moderate after cooking darkening, creamy texture, unacceptable flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
POR02PG5-1				
				
All Blue				
				
CO97215-2P/P				
				
CO97227-2P/PW				
				
POR01PG16-1				
				

Tubers	WA Red and Specialty Regional Trial Comments
Yukon Gold	
	**Tubers:** Round to oblong tubers. The tuber has a yellow skin color, very good skin set; moderate eye depth. **Fry Color:** Light, uniform. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center. **Baked:** slight after cooking darkening, fluffy texture, good flavor, fully cooked tuber center, steamy skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, raw tuber center, steamy skin.
A96510-4Y	
	**Tubers:** Oblong tubers. The tuber has a russet skin color, poor 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, bland flavor, mushy tuber center, steamy skin. **Microwaved:** slight after cooking darkening, fluffy texture, bland flavor, somewhat raw tuber center, steamy skin.
A99433-5Y	
	**Tubers:** Round tubers. The tuber has a white skin color, fair skin set; moderate eye depth. **Fry Color:** Light, uniform. **Boiled:** slight sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** no after cooking darkening, fluffy texture, bland flavor, mushy tuber center, steamy skin. **Microwaved:** slight after cooking darkening, creamy texture, unacceptable flavor, somewhat raw tuber center, steamy skin.
POR02PG26-5	
	**Tubers:** Round to oblong tubers. The tuber has a white skin color with pink eyes, very good skin set; shallow eyes. **Fry Color:** Light, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, good flavor, mushy tuber center. **Baked:** no after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy cooked tuber center, steamy skin.
POR02PG37-2	
	**Tubers:** Round tubers. The tuber has a yellow skin color, very good skin set; moderate eye depth. **Fry Color:** Light, uniform. **Boiled:** moderate sloughing, moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center. **Baked:** no after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.

Chips	Fries	Baked	Boiled	Microwaved
Yukon Gold				
				
A96510-4Y				
				
A99433-5Y				
				
POR02PG26-5				
				
POR02PG37-2				
				

2007 Washington Regional Red and Specialty Trial

Postharvest Evaluation

Fried	(3/8 x 1 1/8" slices)									(Chips)
	Raw				After Frying					Av of 10 raters
Clone	Stem	Bud	Average	Difference	Stem	Bud	Average	Difference	USDA	SFA
1 Dark Red Norland	59.4	58.2	58.8	1.9	54.9	51.1	53.0	4.3	0	1.4
2 Red LaSoda	60.8	60.6	60.7	2.2	52.3	47.3	49.8	5.0	0	2.4
3 CO98012-5R	56.5	56.0	56.2	2.3	46.3	46.3	46.3	1.9	0	1.4
4 NDA7985-1R	55.9	55.7	55.8	1.8	43.8	47.4	45.6	5.4	0	3.2
5 AC97521-1R/Y	52.6	51.0	51.8	4.0	47.0	38.2	42.6	10.0	0	3.1
6 ATTX961014-1R/Y	54.7	56.0	55.4	4.4	49.9	53.2	51.6	4.4	0	2.7
7 ATTX98500-2P/Y	53.2	54.6	53.9	4.3	46.6	46.7	46.6	3.7	0	2.8
8 CO97232-1R/Y	54.6	49.6	52.1	5.0	50.9	50.0	50.4	1.7	0	2.1
9 CO97232-2R/Y	54.7	49.9	52.3	5.4	47.1	45.0	46.0	4.1	0	2.5
10 CO97233-3R/Y	54.4	49.3	51.9	5.4	48.7	46.0	47.4	8.5	0	3.4
11 POR00PG4-1	53.8	55.1	54.4	5.0	46.3	48.4	47.3	4.0	0	3.2
12 CO97222-1R/R	11.9	9.5	10.7	2.4	12.5	14.9	13.7	3.4	4	3.5
13 CO97226-2R/R	8.9	10.5	9.7	2.0	12.4	14.6	13.5	2.2	4	3.7
14 POR01PG20-12	17.0	20.0	18.5	3.1	20.3	24.9	22.6	4.6	2	2.2
15 POR01PG22-1	17.0	18.8	17.9	3.2	18.6	20.5	19.5	2.3	3	2.6
16 POR02PG5-1	25.5	26.2	25.8	6.4	27.7	30.4	29.0	4.9	1	1.8
17 All Blue	8.4	11.6	10.0	4.6	14.1	17.1	15.6	4.0	4	3.3
18 CO97215-2P/P	3.5	3.6	3.6	0.2	7.3	9.3	8.3	2.1	4	2.7
19 CO97227-2P/PW	2.9	2.9	2.9	0.2	5.6	6.6	6.1	1.4	4	3.3
20 POR01PG16-1	4.4	3.9	4.2	1.0	7.5	10.8	9.1	3.6	4	3.5
21 Yukon Gold	54.8	54.0	54.4	3.0	46.7	51.1	48.9	6.4	0	3.3
22 A96510-4Y	59.0	58.1	58.5	2.2	49.0	53.5	51.2	6.0	0	2.6
23 A99433-5Y	56.9	55.0	55.9	3.9	52.6	51.1	51.9	4.0	0	2.7
24 POR02PG26-5	58.6	56.7	57.7	2.4	51.3	50.5	50.9	4.7	0	2.0
25 POR02PG37-2	54.0	52.2	53.1	3.4	48.5	50.6	49.6	3.2	0	2.4
LSD 0.05 *			2.0	2.1			3.7	3.1		
Average	39.7	39.2	39.4	3.2	36.3	37.0	36.7	4.2	1	2.7

*Differences between clones equal to or greater than the LSD 0.05 are significant. Entries with red (CO97222-1R/R, CO97226-2R/R, POR01PG20-12, POR01PG22-1& POR02PG5-1) or purple (All Blue, CO97215-2P/P, CO97227-2P/PW & POR01PG16-1) flesh were not included in the ANOVA. All other entries have white or yellow flesh. SFA 1 (lightest) to 5 (darkest).

A kaleidoscope of colors is what we end up with after trimming our seed pieces for the Red & Specialty Trial.

2007 Washington Regional Red and Specialty Trial

Postharvest Evaluation Summary

	Clone	Boiled (25 max)	Baked (25 max)	Microwaved (25 max)	Total (75 max)
14	POR01PG20-12	16.6	21.1	21.0	58.7
1	Dark Red Norland	18.6	20.9	18.3	57.8
6	ATTX961014-1R/Y	18.0	20.6	18.8	57.3
12	CO97222-1R/R	16.6	19.3	21.2	57.2
24	POR02PG26-5	17.9	19.6	19.6	57.0
15	POR01PG22-1	17.8	19.8	18.4	55.9
25	POR02PG37-2	16.0	20.0	19.6	55.6
2	Red LaSoda	18.3	20.3	17.0	55.6
8	CO97232-1R/Y	15.1	19.4	20.8	55.3
16	POR02PG5-1	18.6	20.7	16.0	55.2
18	CO97215-2P/P	15.4	20.2	19.6	55.1
13	CO97226-2R/R	15.9	19.6	19.6	55.1
11	POR00PG4-1	15.6	19.6	19.2	54.4
4	NDA7985-1R	17.4	19.8	16.9	54.1
10	CO97233-3R/Y	19.3	18.8	15.8	53.8
5	AC97521-1R/Y	18.4	17.9	17.4	53.7
21	Yukon Gold	18.4	20.3	14.6	53.4
17	All Blue	16.4	19.7	17.2	53.3
19	CO97227-2P/PW	15.1	20.5	17.6	53.2
7	ATTX98500-2P/Y	18.6	17.4	16.8	52.8
23	A99433-5Y	18.7	18.3	15.2	52.2
3	CO98012-5R	15.1	19.0	18.0	52.1
9	CO97232-2R/Y	18.9	17.2	15.8	51.8
22	A96510-4Y	16.3	19.1	16.4	51.8
20	POR01PG16-1	16.1	19.2	16.2	51.5

Planted:	March 21
Harvested:	July 30
French Fried:	August 1
Chipped:	August 1
Boiled:	August 2 & 3
Microwaved:	August 6 & 7
Baked:	August 7 & 8

2007 Washington Regional Red and Specialty Trial

Red Clone Postharvest Evaluation

Boiled

Clone	After cooking				Tuber	Total
	Sloughing	Darkening	Texture	Flavor	Center	Rating
1 Dk Red Norland	3.1	3.9	3.1	3.9	4.6	18.6
2 Red LaSoda	3.7	3.6	3.1	3.3	4.6	18.3
3 CO98012-5R	3.3	2.7	2.7	3.0	3.4	15.1
4 NDA7985-1R	3.0	3.9	3.1	3.3	4.1	17.4
5 AC97521-1R/Y	3.9	3.0	3.6	3.7	4.3	18.4
6 ATTX961014-1R/Y	2.4	4.3	3.1	3.6	4.6	18.0
7 ATTX98500-2P/Y	3.9	3.1	3.1	4.0	4.4	18.6
8 CO97232-1R/Y	2.9	3.4	2.9	2.9	3.1	15.1
9 CO97232-2R/Y	3.7	3.9	3.1	3.9	4.3	18.9
10 CO97233-3R/Y	3.9	3.1	3.4	4.3	4.6	19.3
11 POR00PG4-1	2.4	2.4	3.4	3.3	4.0	15.6
LSD 0.05	0.7	1.0	0.7	1.4	0.8	2.7
Average	3.3	3.4	3.2	3.5	4.2	17.6

Oven Baked

Clone	After cooking			Tuber	Skin	Total
	Darkening	Texture	Flavor	Center	Rating	Rating
1 Dark Red Norland	4.4	3.3	4.5	4.6	4.1	20.9
2 Red LaSoda	4.4	3.4	4.0	4.0	4.4	20.3
3 CO98012-5R	3.9	3.3	3.3	4.3	4.3	19.0
4 NDA7985-1R	4.0	3.4	3.4	4.4	4.6	19.8
5 AC97521-1R/Y	4.0	2.7	2.6	4.6	4.0	17.9
6 ATTX961014-1R/Y	4.0	3.6	4.3	4.6	4.1	20.6
7 ATTX98500-2P/Y	4.0	2.4	3.0	4.1	3.9	17.4
8 CO97232-1R/Y	4.3	2.9	3.3	4.3	4.7	19.4
9 CO97232-2R/Y	4.0	2.8	3.0	3.1	4.3	17.2
10 CO97233-3R/Y	3.6	3.4	3.4	4.1	4.2	18.8
11 POR00PG4-1	3.9	2.7	3.9	4.9	4.4	19.6
LSD 0.05	0.7	0.8	1.3	0.8	0.7	2.3
Average	4.0	3.1	3.5	4.3	4.3	19.2

Microwaved

Clone	After cooking			Tuber	Skin	Total
	Darkening	Texture	Flavor	Center	Rating	Rating
1 Dark Red Norland	3.2	3.2	3.8	3.8	4.3	18.3
2 Red LaSoda	4.3	2.5	3.5	2.5	4.2	17.0
3 CO98012-5R	3.2	3.0	4.0	3.8	4.0	18.0
4 NDA7985-1R	4.2	2.8	3.3	2.7	4.0	16.9
5 AC97521-1R/Y	4.2	2.9	3.3	2.8	4.2	17.4
6 ATTX961014-1R/Y	3.3	3.8	4.1	3.2	4.3	18.8
7 ATTX98500-2P/Y	3.3	2.8	2.9	3.7	4.1	16.8
8 CO97232-1R/Y	3.7	4.0	4.2	4.5	4.4	20.8
9 CO97232-2R/Y	3.3	2.8	3.0	2.7	4.0	15.8
10 CO97233-3R/Y	2.5	2.9	3.8	2.7	3.8	15.8
11 POR00PG4-1	3.2	3.0	4.3	4.5	4.2	19.2
LSD 0.05	0.7	1.2	1.4	1.3	0.6	3.0
Average	3.5	3.1	3.7	3.3	4.1	17.7

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

2007 Washington Regional Red and Specialty Trial

Specialty Clone Postharvest Evaluation

Boiled

Clone	After cooking Sloughing	Darkening	Texture	Flavor	Tuber Center	Total Rating
12 CO97222-1R/R	3.1	3.1	2.6	3.1	4.6	16.6
13 CO97226-2R/R	3.0	3.4	2.6	2.6	4.3	15.9
14 POR01PG20-12	3.4	3.3	3.0	3.0	3.9	16.6
15 POR01PG22-1	4.0	4.3	3.2	2.0	4.3	17.8
16 POR02PG5-1	3.3	3.6	3.6	4.0	4.1	18.6
17 All Blue	3.4	2.6	3.6	2.9	4.0	16.4
18 CO97215-2P/P	4.2	3.0	2.3	2.4	3.4	15.4
19 CO97227-2P/PW	3.3	3.0	2.4	2.7	3.7	15.1
20 POR01PG16-1	3.3	3.0	2.6	2.9	4.4	16.1
21 Yukon Gold	2.9	3.6	3.4	3.9	4.7	18.4
22 A96510-4Y	4.0	3.7	2.6	2.7	3.3	16.3
23 A99433-5Y	4.1	3.6	3.0	3.7	4.3	18.7
24 POR02PG26-5	2.7	3.4	3.1	4.1	4.4	17.9
25 POR02PG37-2	2.7	3.0	2.9	3.4	4.0	16.0
LSD 0.05	0.8	1.0	0.9	1.3	1.0	3.0
Average	3.4	3.3	2.9	3.1	4.1	16.8

Oven Baked

Clone	After cooking Darkening	Texture	Flavor	Tuber Center	Skin Rating	Total Rating
12 CO97222-1R/R	3.3	3.5	3.7	4.8	4.0	19.3
13 CO97226-2R/R	4.0	3.3	3.3	4.5	4.5	19.6
14 POR01PG20-12	4.5	3.3	4.3	4.5	4.4	21.1
15 POR01PG22-1	4.3	3.4	3.0	4.5	4.5	19.8
16 POR02PG5-1	4.5	3.2	4.7	4.7	3.7	20.7
17 All Blue	4.3	3.3	3.3	4.2	4.5	19.7
18 CO97215-2P/P	4.3	3.8	3.0	4.8	4.2	20.2
19 CO97227-2P/PW	4.2	3.6	4.0	4.5	4.3	20.5
20 POR01PG16-1	4.2	3.2	3.0	4.5	4.3	19.2
21 Yukon Gold	4.3	3.7	3.7	4.5	4.2	20.3
22 A96510-4Y	4.7	3.9	2.8	3.7	4.0	19.1
23 A99433-5Y	4.8	3.7	2.7	3.0	4.2	18.3
24 POR02PG26-5	4.5	3.7	2.5	4.2	4.8	19.6
25 POR02PG37-2	4.5	3.3	3.3	4.3	4.6	20.0
LSD 0.05	0.6	ns	1.3	0.9	0.9	2.8
Average	4.3	3.5	3.4	4.3	4.3	19.8

Microwaved

Clone	After cooking Darkening	Texture	Flavor	Tuber Center	Skin Rating	Total Rating
12 CO97222-1R/R	3.8	4.0	4.2	4.4	4.8	21.2
13 CO97226-2R/R	3.8	3.8	4.0	3.8	4.2	19.6
14 POR01PG20-12	4.4	3.6	4.6	4.0	4.4	21.0
15 POR01PG22-1	4.4	2.6	3.4	3.8	4.2	18.4
16 POR02PG5-1	3.6	2.6	3.0	2.6	4.2	16.0
17 All Blue	3.6	3.2	3.2	3.4	3.8	17.2
18 CO97215-2P/P	4.0	3.6	3.2	4.2	4.6	19.6
19 CO97227-2P/PW	3.6	3.0	2.4	3.8	4.8	17.6
20 POR01PG16-1	3.4	3.4	2.0	3.4	4.0	16.2
21 Yukon Gold	3.6	3.4	2.6	1.4	3.6	14.6
22 A96510-4Y	3.6	3.8	3.0	2.0	4.0	16.4
23 A99433-5Y	3.8	3.4	1.8	2.2	4.0	15.2
24 POR02PG26-5	4.4	3.2	3.4	4.2	4.4	19.6
25 POR02PG37-2	4.0	3.4	3.4	4.4	4.4	19.6
LSD 0.05	ns	1.1	1.5	1.2	0.9	3.3
Average	3.9	3.4	3.2	3.4	4.2	18.0

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

Index of Clones and Cultivars

Early Harvest Tri-State Trial 20-33

A0008-1TE
A96814-65LB
A97066-42LB
A98345-1
A99073-1
AO96305-3
AO96365-2
PA00N14-2
PA00N15-2
PA98NM38-1
PA98NM39-1
PA99N12-1
PA99N2-1
PA99N82-4
Ranger Russet
Russet Burbank
Russet Norkotah
Shepody

Late Harvest Tri-State Trial 34-66

Ranger Russet
Russet Burbank
A0008-1TE
A96814-65LB
A97066-42LB
A98345-1
A99073-1
AO96305-3
AO96365-2
PA00N10-5
PA00N14-2
PA00N15-2
PA98NM38-1
PA98NM39-1
PA99N12-1
PA99N2-1
PA99N82-4

Early Harvest Regional Trial 68-80

A95409-1
A96104-2
A97287-6
AC96052-1Ru
AO96141-3
AO96164-1
AOA95154-1
AOA95155-7
AOTX95265-2ARu
AOTX95265-3Ru
AOTX95265-4Ru
CO95172-3Ru
CO97087-2Ru
CO97138-3Ru
CO97138-7Ru
Ranger Russet
Russet Burbank
Russet Norkotah
Shepody
TXA549-1Ru

Late Harvest Regional Trial 82-113

A95409-1
A96104-2
A97287-6
AC96052-1Ru
AO96141-3
AO96164-1
AOA95154-1
AOA95155-7
AOTX95265-2ARu
AOTX95265-3Ru
AOTX95265-4Ru
CO95172-3Ru
CO97087-2Ru
CO97138-3Ru
CO97138-7Ru
Ranger Russet
Russet Burbank
Russet Norkotah
TXA549-1Ru

Regional Red and Specialty Trial 114-135

A96510-4Y
A99433-5Y
AC97521-1R/Y
All Blue
ATTX961014-1R/Y
ATTX98500-2P/Y
CO97215-2P/P
CO97222-1R/R
CO97226-2R/R
CO97227-2P/PW
CO97232-1R/Y
CO97232-2R/Y
CO97233-3R/Y
CO98012-5R
Dk Red Norland
NDA7985-1R
POR00PG4-1
POR01PG16-1
POR01PG20-12
POR01PG22-1
POR02PG26-5
POR02PG37-2
POR02PG5-1
Red LaSoda
Yukon Gold