2015 Potato Cultivar Yield and Postharvest Quality Evaluations

WSU Potato Research Group

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2015 Potato Cultivar Yield and Postharvest Quality Evaluations

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Potato Research Group

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On the cover: In 2015 the WA State Potato Commisision generously dontated a new John Deere Auto-Steer 4 x 4 tractor to the WSU Potato Research Group. Thank you WSPC!

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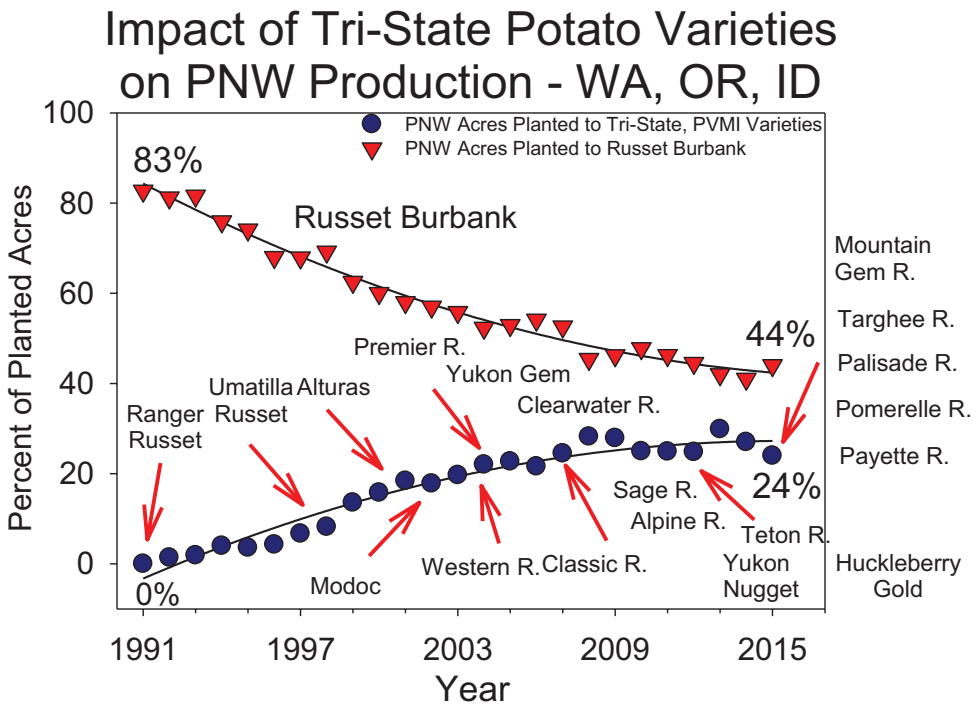
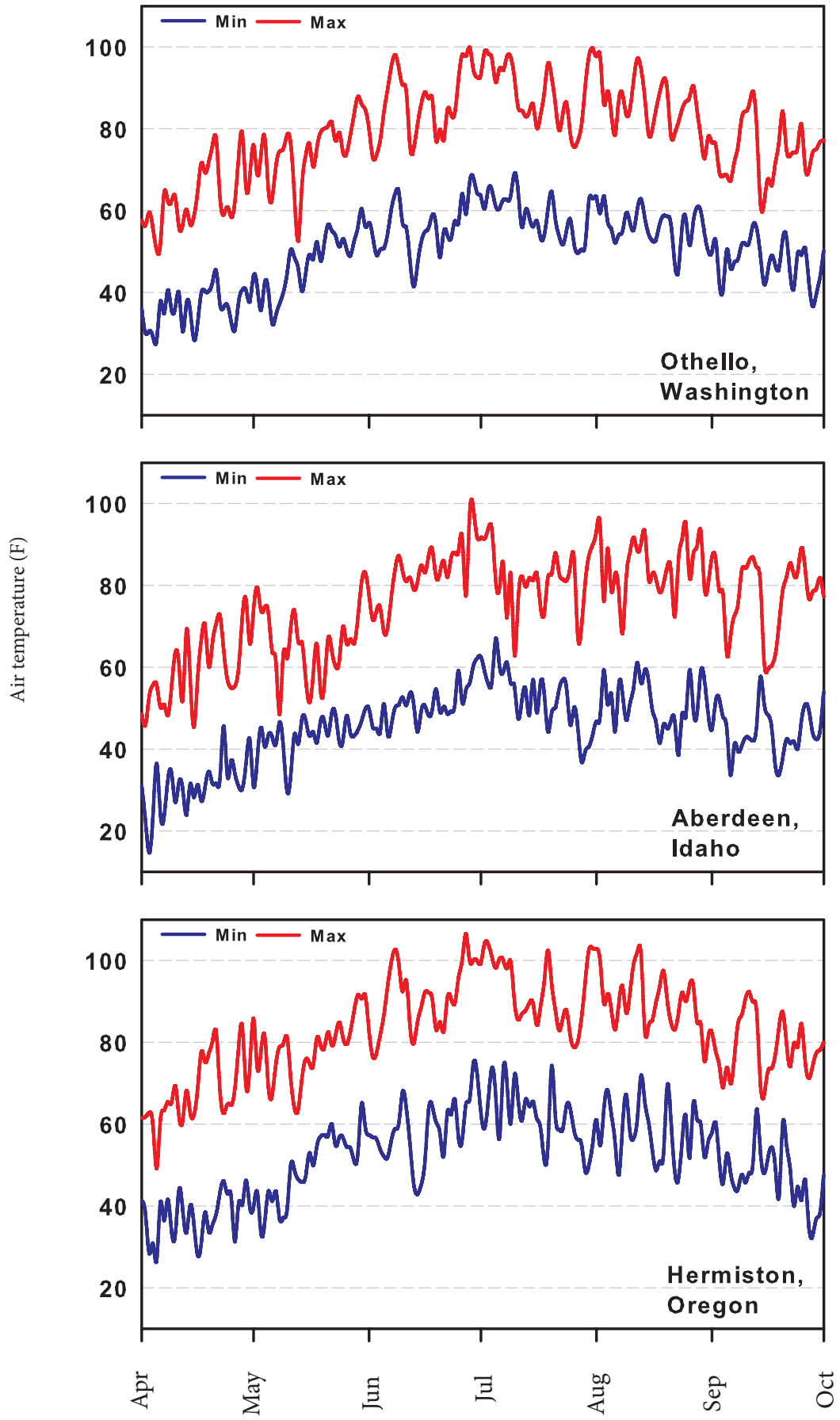
INTRODUCTION

The 2015 Washington "Potato Cultivar Yield and Postharvest Quality Evaluations" is an annual report providing detailed information about promising new potato clones and cultivars grown in Washington conducted by the Washington State University (WSU) Potato Research Group . Our mission: to identify and release new potato varieties that will provide profitable, sustainable production for the grower, improved competitiveness for the Washington and NW US potato industry, a healthy, inexpensive food supply for American consumers, and contributions towards a healthy environment. Tri-State trials include the newest clones which are created and evaluated in ID, OR, and WA by the USDA/ARS of Aberdeen, ID & Prosser, WA, Univ. of ID, OR State U., and WA State U. Regional trials include advanced clones from, and evaluated by, ID, OR, WA, CO, TX, and CA. Potato Commissions from the Tri-State area support and fund much of the variety development efforts. Potato Variety Management Institute (PVMI) is a nonprofit organization that licenses and promotes Tri-State varieties. PVMI collects royalties from the varieties which are then distributed among the Tri-State research programs to support the ongoing development efforts. Learn more at www.pvmi.org.

Recent Accomplishments : The effect of the Tri-State Potato Variety Development Program on the Northwest potato industry has been substantial. Ranger Russet, Umatilla Russet, Alturas, Bannock Russet, and Clearwater Russet , are examples of russet cultivars released from the Tri-State program that have greatly benefited the United States and Northwest potato industry, being the 3nd, 4th, 7th, 8th, and 16th most widely grown cultivars in the United States in 2015, respectively, with Tri-State varieties representing 23%, or 220,000 acres, of the fall crop nationally. (NASS, Crop Production, September, 2015). Ranger Russet, Umatilla Russet, and Alturas were the 3rd, 4th, and 5th most widely grown cultivars in the PNW (ID, OR, WA) in 2015, respectively, and accounted for 24% of the PNW planted acreage. Varieties recently released by the Tri-State program are now produced on more than 129,000 acres in the Pacific Northwest with value to growers estimated at approximately $470 million. In the past 10 years, the US farm-gate value of Tri-State varieties has increased by approximately $43 million.



2015 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	
TXA	=	**Tex**as	**A**berdeen, Idaho	
TXNS	=	**Tex**as		**N**orkotah **S**train

Miscellaneous Designations

PA97**B**3-2	**B**	=	Chuck **B**rown's cross
A93157-6**LS**	**LS**	=	**L**ow **S**ugar
CO94165-3**P/P**	**P/P**	=	**P**urple skin & **P**urple flesh
A96741-2**R**	**R**	=	**R**ed skin
CO94183-1**R/R**	**R/R**	=	**R**ed skin / **R**ed flesh
VC0967-2**R/Y**	**R/Y**	=	**R**ed skin / **Y**ellow flesh
ATX92230-1**Ru**	**Ru**	=	**Ru**sset skin
VC1009-1**W/Y**	**W/Y**	=	**W**hite skin & **Y**ellow flesh
A97066-42**LB**	**LB**	=	**L**ate **B**light resistance
AC9923**PW/Y**	**PW/Y**	=	**P**urple skin with **W**hite eyes/ **Y**ellow flesh
AC9653**P/Y**	**P/Y**	=	**P**urple skin/**Y**ellow flesh
CO977-2**P/PW**	**P/PW**	=	**P**urple skin/**P**urple & **W**hite flesh
A99029-3**E**	**E**	=	**E**arly maturing
A0008-1**TE**	**TE**	=	**TE**tonia, ID Selection, Early maturing
A07008-4**T**	**T**	=	**T**etonia, ID Selection, Late maturing
A06914-3**CR**	**CR**	=	**C**orky **R**ingspot resistance
A06862-18**VR**	**VR**	=	**V**irus **R**esistance

OVERALL CULTIVAR & CLONE PERFORMANCE

Merit Score Methods

Overview: Overall performance for each entry was rated on a scale of 1 to 5; 5 indicating the best performance possible. The methods are explained below. Economic analysis methods are explained on pages 16 (Fresh) and 17 (Process).

FRESH MARKET MERIT SCORE METHODS:

75% Fresh market economic value

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

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

EARLY PROCESS MARKET MERIT SCORE METHODS:

75% Early harvest process market economic value

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

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

LATE PROCESS MARKET MERIT SCORE METHODS:

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

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

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

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

Multi-Year Summaries of Graduating Russet Entries and Reference Varieties

Entry	Year	Early/Late* Harvest Total Yield	US # 1 & 2 Yield > 6 oz	Specific Gravity	Average Tuber Weight/ Number per Plant	Bruise Blackspot/ Shatter	Internal** Issues	Merit Scores (5 = Best) Field Performance Early/Late Fresh	Field Performance Early/Late Process	Postharvest Processing Performance
		CWT/A	% of Total		oz/number	%				
AO01114-4	2015	296	53	1.082	5.1	3/41	none	0.9	2.2	na
(Early Harvest)	2014	520/581	70	1.084	7.3/5.9	18/92	none	4.9/0.7	4.9/2.8	3.6
(only in 2015)	2013	306/554	64	1.085	6.6/6.9	16/56	none	1.6/1.0	1.5/1.9	3.0
	2012	382/550	57	1.087	7.0/7.6	15/54	none	3.1/1.4	3.8/3.0	4.2
	2011	429/677	72	1.089	6.5/8.6	17/78	none	3.0/3.5	3.8/4.1	4.3
	2010	485/673	67	1.095	10.8/8.6	29/67	none	1.4/2.3	4.2/2.9	3.5
		Shape mostly uniform, good tuber length for fries, outstanding postharvest performance, hollow heart similar to/or worse then Russet Burbank, shatter bruise may be a concern, russet skin can have wide netting, make work for fresh market in some regions								
OR05039-4	2015	439/677	78	1.083	6.8/6.9	5/45	none	1.8/1.7	4.5/3.5	4.4
	2014	464/685	77	1.078	7.3/7.5	17/47	none	1.8/2.0	3.1/2.9	3.5
	2013	320/779	85	1.077	5.2/7.3	26/32	3% BC	1.8/2.2	2.2/3.9	2.7
	2012	336/573	74	1.077	8.9/6.7	17/31	none	0.9/1.5	3.8/2.8	3.6
	2011	437/660	91	1.081	6.3/6.2	8/37	3% BC	3.0/3.5	3.8/3.2	4.8
		Light russet/buff skin makes it unfit as a fresh pack variety, good tuber length for fries, shape can be irregular, high glycoalkaloids may be a concern, cold sweetening resistance, internal brown spot and vascular discoloration have been noted.								
POR06V12-3	2015	421/652	77	1.086	5.4/6.9	0/73	none	2.2/3.1	3.7/3.6	4.7
	2014	478/724	78	1.087	8.8/7.8	18/53	none	2.8/4.0	2.7/4.9	3.5
	2013	358/771	78	1.092	7.0/7.6	13/32	none	2.8/4.1	2.6/4.9	4.4
	2012	328/658	66	1.086	8.4/9.2	0/77	none	1.0/2.3	na/4.1	3.5
		Has extreme resistance to Potato Virus Y (PVY), Corky Ring Spot Disease (CRS), Tobacco Rattle Virus (TRV) vectored by the Stubby Root Nematode and Potato Mop Top Virus (PMTV) vectored by Powdery Scab, smooth, long tuber shape, attractive dark skin, high yield of fresh market carton count tubers, hollow heart may be a concern, especially when planted early, excellent processing qualities, high glycoalkaloids are a concern.								
Ranger R.	2015	479/851	77	1.086	7.1/8.8	17/23	none	NA	3.6/3.8	4.9
	2014	524/681	76	1.077	8.9/6.6	49/19	3% IBS	NA	4.3/2.5	2.8
	2013	479/821	75	1.085	7.9/8.4	29/45	none	NA	2.7/4.4	3.8
	2012	396/852	86	1.085	9.6/7.7	50/50	3% IBS	NA	3.1/4.6	3.1
	2011	468/735	75	1.086	7.5/8.4	49/46	3% IBS	NA	3.1/3.5	4.1
	2010	630/782	78	1.091	7.6/9.0	29/52	none	NA	3.5/3.7	3.5
		Long, shape variable at times, yet uniform other times								
R. Burbank	2015	460/677	70	1.072	7.7/8.0	41/59	3% BC	1.3/1.4	2.9/1.2	2.7
	2014	466/730	63	1.077	9.4/6.8	31/61	3% HH, 6% IBS	0.9/0.4	1.3/1.2	2.0
	2013	364/738	67	1.075	8.0/7.5	22/47	9% HH, 3% BC	1.2/0.6	1.4/1.7	1.9
	2012	364/710	63	1.076	7.0/8.8	27/57	10%HH, 20% BC	0.5/0.9	1.0/1.6	1.9
	2011	487/641	68	1.076	6.8/8.2	6/24	35%HH, 21% BC	2.3/1.3	3.3/1.5	3.9
	2010	676/683	70	1.079	7.1/8.2	19/62	10% HH, 19% BC	1.9/3.0	3.2/2.3	2.4
		Shape typically variable, often with many growth cracks and knobs								
R. Norkotah	2015	468/602	70	1.065	7.7/7.6	21/29	none	1.7/2.5	NA	NA
	2014	465/730	73	1.068	7.5/8.0	22/11	none	2.3/3.5	NA	NA
	2013	364/598	58	1.067	5.7/8.5	18/33	3% HH, 3% IBS	2.0/1.0	NA	NA
	2012	355/522	56	1.072	5.7/8.0	14/59	none	1.3/1.2	NA	NA
		Shape and skin typically very uniform, size profile typically on the small side								
Shepody	2015	487	72	1.076	6.7	7/7	none	NA	3.4	-
(Early Harvest)	2014	553	84	1.073	9.9/5.8	13/0	none	NA	3.8	-
only	2013	354	77	1.062	7.9/4.4	5/10	none	NA	2.6	-
		Early-harvest processing variety. Post-harvest merit not available as this and most varieties typically produce acceptable fries directly from the field.								

*Early Harvest ~ 110 days after planting, Late Harvest ~ 150 DAP.

**HH = Hollow heart, BC = brown center, IBS = internal brown spot.

2015 Tri-State Specialty Potato Clones - Washington State University

2015 Tri-State Specialty Trial

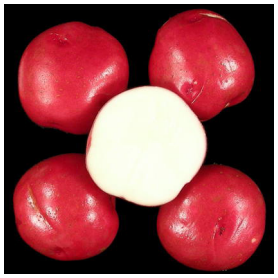
	US #1 Yield 2015			Fresh Market	(See also Tri-State Specialty Section near end of book)
	US#1 Yield	0-6 oz	6-10oz	Appearance	
	CWT/A	-----%-----		5 = best	Comments
Red Skin/White Flesh*					
Chieftain	640	45	34	3.3	Shape and size a bit variable.
NDA050237B-1R	337	81	16	4.0	Eyes a bit deep, nice red/purple.
NDTX5438-11R	467	55	32	3.7	A nice red, but flat with large size range.
Red or Purple Skin/Yellow Flesh					
A05180-3PY	366	79	21	4.0	Nice deep purple, sticky stolons**.
COA07365-4RY	461	61	29	3.7	Large size range, variable shape.
NDTX059759-3R/Y	300	71	22	2.7	Flat, oval, irregular shape, Discard.
Yellow Flesh					
Yukon Gold	502	27	43	4.0	Mostly typy, large.
A06336-5Y	496	98	2	4.0	Small, nice round shape, slightly pink eyes.
A05182-7Y	474	84	16	4.0	Nice looking, champagne with pink eyes.
AOR06267-3	129	100	0	1.3	Pointy, irregular shape. Discrard!
NDA081451CB-1CY	473	87	13	3.7	Nice shape and skin, sticky stolons**.

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

** The term "sticky stolons" refers to tubers that remain attached to the plant during harvest. This may or may not be a problem.

Chieftain

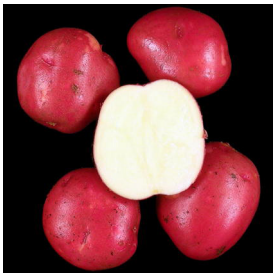
NDA050237B-1R



NDTX5438-11R

Yukon Gold

COA07365-4RY



A05180-3PY

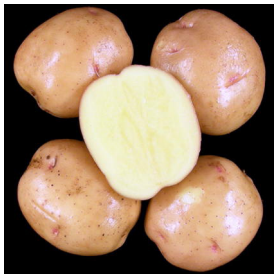
NDA081451CB-1CY

A06336-5Y

NDTX059759-3R/Y

AOR06267-3

A05182-7Y



At-Harvest Grading Comments & Fresh Market Appearance

Newest Lines - 2015 Tri-State Trials			
	Fresh Market Appearance 1-5 (5 = Best)		
Clone	2015	2014	Tuber Appearance Comments
Early Harvest Tri-State			
Ranger Russet	2.7	3.0	Long and skinny.
Russet Burbank	1.0	3.0	Rough, a lot of cracks and knobs.
Russet Norkotah	2.3	3.0	Some points, irregular shape.
Shepody	1.0	1.0	Larger, round to long, Lt skin/russet, rough
A02449-100	1.3	-	Large, light russet, irregular shape,with some road mapping
A06030-23	4.0	-	Looks a bit like Mountain Gem Russet, typy.
A061070-3CSR	2.0	-	Deep eyes, short, irregular shape, light skin.
A061071-3CSR	2.5	-	Deep eyes, irregular russeting, irregular shape.
A06862-14VR	2.7	-	Variable shape both long and round. Lots of rot - beware
A07008-4T	3.0	4.0	Mostly typy, some points, smaller, not early.
A08009-2TE	4.0	-	Smaller, typy, blocky
A08433-4VR	2.0	-	Flat, short, some pears, bit round, medium russet
A09001-12TE	2.3	-	Plump, short, deep eyes
A09001-14TE	2.7	-	Deep eyes, a few softballs among the baseballs
AO06191-1	4.0	4.0	Dark skinned, larger, uniform size, mostly typy.
Late Harvest Tri-State			
Ranger Russet	3.7	2.7	Mostly typy, long.
Russet Burbank	2.8	2.7	Somewhat typy.
Russet Norkotah	4.0	3.3	Small, typy, dark russet.
A02449-100	2.3	-	Small, round, DISCARD!
A06030-23	4.0	-	Typy, dark russet, with deep eyes, could go fresh.
A061070-3CSR	1.8	-	Irregular shape, round, bumpy, long lumps.
A061071-3CSR	2.5	-	Some long some short, plump, deeper eyes.
A06862-14VR	3.3	-	Large, russeting not uniform, mostly typy.
A07008-4T	3.5	3.3	Typy, small, nice russet.
A08009-2TE	3.0	-	Long, some rough tubers, somewhat typy.
A08433-4VR	3.0	-	Flat, light russeting, odd shapes.
A09001-12TE	3.0	-	Round with lots of greening.
A09001-14TE	2.5	-	Round, Discard!
AO06191-1	4.0	4.0	Typy, large, looks like RN but bigger.

*Typy - Visually appealing, uniform tuber shape.

A06030-23

A08009-2TE

AO06191-1

A06030-23

At-Harvest Grading Comments & Fresh Market Appearance

Advanced Lines - 2015 Regional Trials				
	Fresh Market Appearance 1-5 (5 = Best)			
Clone	2015	2014	2013	Tuber Appearance Comments*
Early Harvest Regional				
Ranger Russet	3.0	3.0	2.7	Long, skinny, sticky stolons.
Russet Burbank	2.5	1.7	2.7	Mostly typy, smaller, some irregular shapes.
Russet Norkotah	2.5	3.3	3.5	Mostly typy, some points.
Shepody	2.0	1.7	2.0	Short, plump, large, light skin, irregular shapes.
A03141-6	2.0	1.3	4.0	Short, plump, spotty russeting, bad skin.
A03921-2	2.0	3.0	2.0	Light russeting, shape a bit irregular, bad skin.
A06021-1T	3.3	4.0	4.0	Typy, large, skin a bit irregular.
A06084-1TE	3.0	2.7	3.7	Typy, smaller, dark russet.
A06862-18VR	2.0	2.0	-	Short, irregular shaped, light skin.
A06914-3CR	1.0	2.0	-	Light skin, short, round.
AC05039-2RU	3.3	-	-	Typy, looks like Norkotah, some irregular shapes.
AO01114-4	2.5	4.0	3.7	Small, medium, typy, lots of elephant hide.
AO03123-2	3.0	3.2	3.0	Not early! Small, somewhat typy, medium russet.
AOR06070-1KF	1.7	2.0	2.3	Dark spotty skin, long, good size.
CO05068-1RU	3.0	2.7	-	Short, irregular shapes, mostly typy.
CO05110-6RU	2.3	-	-	short, irregular shapes, not early.
CO05175-1RU	3.7	3.3	-	Mostly typy, nice size, puffed wheat skin.
COTX09022-3RuRE/Y	1.0	-	-	Round, Many growth cracks with pink eyes!
COTX09052-2RU	3.3	-	-	Short, some typy, irregular shapes.
OR05039-4	2.0	2.0	2.0	Light skin, mostly typy, with road mapping.
POR06V12-3	3.7	4.0	4.0	Typy, heavy russet.
TX08352-5RU	4.0	-	-	Looks like Classic, except a wider range of sizes.
Late Harvest Regional				
Ranger Russet	2.0	2.7	1.0	Mostly typy, long.
Russet Burbank	2.8	1.8	1.0	Mostly typy, a bit rough, knobs and cracks.
Russet Norkotah	4.0	3.5	3.5	Typy, dark russet. Poor skin set.
A03141-6	1.8	2.0	2.5	Large, bad skin set, bumby
A03921-2	2.3	2.5	-	Bad skin, rhizoc and prescab.
A06021-1T	4.0	3.8	-	Typy medium russet.
A06084-1TE	2.7	2.3	-	Large, blocky, but bad skin! Dehy only?
A06862-18VR	2.0	2.7	-	Short and a bit round.
A06914-3CR	1.5	2.3	4.0	irregular shapes, rough, DISCARD!
AC05039-2RU	3.3	-	-	Lots of smaller ones with curves.
AO03123-2	3.3	2.5	3.0	Larger, mostly typy, okay length.
AOR06070-1KF	2.5	2.5	1.0	Large, Dark Russet, blocky, somewhat typy, bad skin.
CO05068-1RU	2.0	2.8	-	Flat, oval, irregular shapes with bad skin.
CO05175-1RU	4.0	3.0	-	Typy, good size, medium russet.
COTX09022-3RuRE/Y	1.0	-	-	Round, pink eyes, 1/2 cracks, DISCARD!!
COTX09052-2Ru	4.0	-	-	Too small, typy, some round.
OR05039-4	2.5	2.5	2.8	Bad skin, scab, irregular shapes, light skin.
POR06V12-3	4.0	3.8	4.0	Typy, dark russet, nice.
TX08352-5Ru	4.0	-	-	Typy, but too small.

*Typy - Visually appealing, uniform tuber shape

A06021-1T

POR06V12-3

A06021-1T

POR06V12-3

FRESH MARKET MERIT - NEWEST LINES
2013-2015

(5 = best) - Entries ranked by means

EARLY HARVEST - Fresh Market Merit Scores

	Entry	Mean	2015	2014	2013
1	AO06191-1[a]	**3.7**	3.4	4.0	-
2	A06030-23	**3.1**	3.1	-	-
3	A09001-12TE	**2.2**	2.2	-	-
4	A08009-2TE	**2.0**	2.0	-	-
5	Russet Norkotah	**2.0**	1.8	2.5	1.7
6	A061070-3CSR	**1.9**	1.9	-	-
7	Shepody	**1.9**	1.8	2.2	1.8
8	A08433-4VR	**1.9**	1.9	-	-
9	Ranger Russet	**1.8**	1.4	2.6	1.3
10	A06862-14VR	**1.8**	1.8	-	-
11	A061071-3CSR	**1.7**	1.7	-	-
12	A02449-100	**1.6**	1.6	-	-
13	A09001-14TE	**1.4**	1.4	-	-
14	A07008-4T	**1.4**	0.9	1.9	-
15	Russet Burbank	**1.2**	0.6	2.3	0.9

[a]Shatter bruise on AO06191-1 may be a concern

LATE HARVEST - Fresh Market Merit Scores

	Entry	Mean	2015	2014	2013
1	A08433-4VR	**3.8**	3.8	-	-
2	A06030-23	**2.9**	2.9	-	-
3	A08009-2TE	**2.5**	2.5	-	-
4	Russet Norkotah	**2.4**	2.5	2.6	2.0
5	A09001-12TE	**2.3**	2.3	-	-
6	A06862-14VR	**2.2**	2.2	-	-
7	A061070-3CSR	**1.9**	1.9	-	-
8	Ranger Russet	**1.7**	2.6	1.4	1.1
9	A07008-4T	**1.7**	0.9	2.5	-
10	AO06191-1	**1.6**	1.8	1.5	-
11	A061071-3CSR	**1.6**	1.6	-	-
12	Russet Burbank	**1.3**	1.1	1.6	1.1
13	A02449-100	**0.9**	0.9	-	-
14	A09001-14TE	**0.7**	0.7	-	-
13	A02449-100	**0.9**	0.9	-	-
14	A09001-14TE	**0.7**	0.7	-	-

For more information on these cultivars, see the Early and Late Harvest Regional Trial Sections in this Book. The dash (" - ") indicates the clone was not yet entered into the trial.

FRESH MARKET MERIT - ADVANCED LINES
2011-2015

(5 = best) - Entries ranked by means

EARLY HARVEST - Fresh Market Merit Scores

	Entry	Mean	2015	2014	2013	2012	2011
1	A06021-1T	**3.6**	2.1	4.9	3.9	-	-
2	CO05175-1RU	**2.9**	2.9	-	-	-	-
3	TX08352-5Ru	**2.8**	2.8	-	-	-	-
4	AO01114-4	**2.7**	0.9	4.9	1.6	3.1	3.0
5	A03141-6	**2.4**	2.3	2.2	2.8	-	-
6	AC05039-2RU	**2.3**	2.3	-	-	-	-
7	POR06V12-3	**2.2**	2.2	2.8	2.8	1.0	-
8	Ranger Russet	**2.2**	2.7	2.6	1.7	1.6	2.2
9	Shepody	**2.0**	1.8	1.9	2.3	-	-
10	A06084-1TE	**1.9**	2.5	1.4	2.3	1.4	-
11	Russet Norkotah	**1.9**	1.7	2.3	2.0	1.3	2.0
12	OR05039-4	**1.8**	1.8	1.8	1.8	0.9	3.0
13	CO05068-1RU	**1.8**	2.5	1.1	-	-	-
14	A03921-2	**1.7**	0.7	3.4	1.3	1.4	-
15	AOR06070-1KF	**1.4**	1.6	1.3	1.4	-	-
16	AO03123-2	**1.4**	1.2	2.0	1.5	1.0	-
17	A06914-3CR	**1.4**	1.4	1.4	-	-	-
18	Russet Burbank	**1.3**	1.3	0.9	1.2	0.5	2.8
19	COTX09052-2Ru	**1.2**	1.2	-	-	-	-
20	CO05110-6RU	**1.1**	1.1	-	-	-	-
21	A06862-18VR	**1.0**	1.0	1.0	-	-	-
22	COTX09022-3RuRE/Y	**0.3**	0.3	-	-	-	-

LATE HARVEST - Fresh Market Merit Scores

	Entry	Mean	2015	2014	2013	2012	2011
1	POR06V12-3	**3.4**	3.1	4.0	4.1	2.3	-
2	CO05175-1RU	**3.0**	2.3	3.7	-	-	-
3	A06021-1T	**2.6**	3.1	3.2	3.4	0.8	-
4	AO03123-2	**2.2**	2.3	1.1	3.5	2.1	-
5	OR05039-4	**2.2**	1.7	2.0	2.2	1.5	3.5
6	A06914-3CR	**2.1**	1.6	1.4	3.3	-	-
7	Russet Norkotah	**2.0**	2.5	3.5	1.0	1.2	2.0
8	A03921-2	**2.0**	1.1	1.5	3.5	-	-
9	A06084-1TE	**1.9**	1.6	0.7	1.9	3.5	-
10	AC05039-2RU	**1.9**	1.9	-	-	-	-
11	TX08352-5Ru	**1.9**	1.9	-	-	-	-
12	CO05068-1RU	**1.8**	1.7	1.9	-	-	-
13	Ranger Russet	**1.7**	1.8	1.3	0.9	1.8	2.9
14	A03141-6	**1.7**	1.5	1.4	2.1	-	-
15	A06862-18VR	**1.6**	1.7	1.6	-	-	-
16	COTX09052-2Ru	**1.6**	1.6	-	-	-	-
17	AOR06070-1KF	**1.6**	1.9	1.4	1.4	-	-
18	Russet Burbank	**1.2**	1.4	0.4	0.6	0.9	2.7
19	COTX09022-3RuRE/Y	**0.1**	0.1	-	-	-	-

For more information on these cultivars, see the Early and Late Harvest Regional Trial Sections in this Book. The dash (" - ") indicates the clone was not yet entered into the trial.

PROCESS MARKET MERIT - NEWEST LINES

2013-2015

(5 = best) - Entries ranked by Field Performance means

EARLY HARVEST - Process Market Merit Scores

	Entry	Field Performance Mean	Field Performance Only* 2015	2014	2013
1	A09001-12TE	**4.2**	4.2	-	-
2	A06862-14VR	**3.7**	3.7	-	-
3	AO06191-1	**3.6**	3.6	-	-
4	A08009-2TE	**3.4**	3.4	-	-
5	A07008-4T	**3.2**	3.4	3.1	-
6	A08433-4VR	**3.2**	3.2	-	-
7	A09001-14TE	**3.1**	3.1	-	-
8	Shepody	**3.0**	2.9	3.3	2.8
9	Ranger Russet	**3.0**	4.0	2.8	2.7
10	A06030-23	**2.8**	2.8	-	-
11	A061071-3CSR	**2.8**	2.8	-	-
12	Russet Norkotah	**2.8**	2.6	2.0	3.3
13	A061070-3CSR	**2.6**	2.6	-	-
14	A02449-100	**2.6**	2.6	-	-
15	Russet Burbank	**2.3**	1.3	3.5	1.6

*Postharvest values are not given for the Early Harvest Trial because all varieties typically fry well when delivered directly from the field and cold storage is not typical. The dash (" - ") indicates the clone was not yet entered into the trial.

LATE HARVEST - Process Market Merit Scores

		Field & Postharvest Processing Performance							
		All Years		2015		2014		2013	
	Entry	Field Mean	Post Harvest Mean	Field	Post Harv	Field	Post Harv	Field	Post Harv
1	A061070-3CSR	**4.1**	**4.7**	4.1	4.7	-	-	-	-
2	A08009-2TE	**3.9**	**3.6**	3.9	3.6	-	-	-	-
3	A061071-3CSR	**3.7**	**4.4**	3.7	4.4	-	-	-	-
4	Ranger Russet	**3.6**	**3.4**	4.1	4.4	2.8	2.7	3.7	3.2
5	A06030-23	**3.4**	**4.9**	3.4	4.9	-	-	-	-
6	A06862-14VR	**3.4**	**4.5**	3.4	4.5	-	-	-	-
7	A08433-4VR	**3.4**	**3.8**	3.4	3.8	-	-	-	-
8	A09001-12TE	**2.5**	**4.3**	2.5	4.3	-	-	-	-
9	A07008-4T	**2.4**	**4.4**	1.8	4.8	3.1	3.9	-	-
10	AO06191-1	**2.3**	**3.9**	2.4	4.7	2.3	3.1	-	-
11	Russet Burbank	**2.3**	**1.9**	1.3	2.2	3.1	2.0	2.5	1.6
12	A09001-14TE	**2.2**	**4.7**	2.2	4.7	-	-	-	-
13	A02449-100	**1.1**	**4.2**	1.1	4.2	-	-	-	-

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

PROCESS MARKET MERIT - ADVANCED LINES

2011-2015

(5 = best) - Entries ranked by Field Performance means

EARLY HARVEST - Process Market Merit Scores

	Entry	Field Performance Mean	Field Performance Only* 2015	2014	2013	2012	2011
1	AC05039-2RU	**4.1**	4.1	-	-	-	-
2	CO05068-1RU	**3.9**	4.3	3.5	-	-	-
3	CO05175-1RU	**3.8**	3.6	4.1	-	-	-
4	A03921-2	**3.7**	2.8	4.7	3.7	-	-
5	Ranger Russet	**3.7**	3.6	4.3	2.7	4.0	4.0
6	A03141-6	**3.7**	4.3	4.4	2.4	-	-
7	OR05039-4	**3.5**	4.5	3.1	2.2	3.8	3.8
8	CO05110-6RU	**3.5**	3.5	-	-	-	-
9	A06021-1T	**3.4**	2.9	4.2	3.2	-	-
10	Shepody	**3.3**	3.4	3.8	2.6	-	-
11	AO01114-4	**3.3**	2.2	4.9	1.5	3.8	3.8
12	AOR06070-1KF	**3.2**	4.0	3.1	2.7	-	-
13	A06914-3CR	**3.2**	2.2	4.2	-	-	-
14	COTX09052-2Ru	**3.1**	3.1	-	-	-	-
15	POR06V12-3	**3.0**	3.7	2.7	2.6	-	-
16	Russet Norkotah	**2.9**	3.3	2.6	2	3.2	3.2
17	A06084-1TE	**2.8**	4.1	2.2	2.2		
18	TX08352-5Ru	**2.8**	2.8	-	-	-	-
19	AO03123-2	**2.7**	3.6	2.4	2.2	-	-
20	Russet Burbank	**2.7**	2.9	1.3	1.4	4.0	4.0
21	A06862-18VR	**2.6**	2.7	2.5	-	-	-
22	COTX09022-3RuRE/Y	**0.8**	0.8	-	-	-	-

*Postharvest values are not given for the Early Harvest Trial because all varieties typically fry well when delivered directly from the field and cold storage is not typical. The dash (" - ") indicates the clone was not yet entered into the trial.

LATE HARVEST - Process Market Merit Scores

Field & Postharvest Processing Performance

		All Years		2015		2014		2013		2012		2011	
	Entry	Field Mean	Post Harvest Mean	Field	Post Harv	Field	Post Harv	Field	Post Harv	Field	Post Harv	Field	Post Harv
1	POR06V12-3	**4.4**	**4.0**	3.6	4.7	4.9	3.5	4.9	4.4	4.1	3.5	-	-
2	A03141-6	**4.3**	**4.5**	4.1	4.7	4.5	4.3	-	-	-	-	-	-
3	Ranger Russet	**3.9**	**3.7**	3.8	4.9	2.5	2.8	4.4	3.8	4.6	3.1	4.5	4.1
4	AO03123-2	**3.7**	**4.3**	3.5	4.7	2.9	3.5	4.7	4.6	3.8	4.3		
5	CO05068-1RU	**3.5**	**4.3**	2.8	4.7	4.1	3.9	-	-	-	-	-	-
6	A03921-2	**3.3**	**4.1**	2.3	4.6	3.3	3.5	3.3	4.2	4.3	4.1	-	-
7	CO05175-1RU	**3.3**	**3.5**	2.4	4.1	4.2	2.8	-	-	-	-	-	-
8	OR05039-4	**3.2**	**3.8**	3.5	4.4	2.9	3.5	3.9	2.7	2.8	3.6	3.2	4.8
9	AOR06070-1KF	**3.2**	**4.0**	3.7	4.3	3.1	3.8	2.8	4.0	-	-	-	-
10	A06021-1T	**2.8**	**3.0**	2.5	4.2	2.8	2.1	3.2	2.6	-	-	-	-
11	AC05039-2RU	**2.8**	**3.9**	2.8	3.9	-	-	-	-	-	-	-	-
12	A06862-18VR	**2.8**	**4.0**	3.8	4.3	1.7	3.7	-	-	-	-	-	-
13	A06914-3CR	**2.3**	**4.3**	2.7	4.5	1.9	4.0	-	-	-	-	-	-
14	A06084-1TE	**2.1**	**3.8**	2.2	4.2	1.2	3.3	3.3	3.9	1.8	3.8	-	-
15	Russet Burbank	**1.8**	**2.5**	1.2	2.7	1.2	2.0	1.7	1.9	1.6	1.9	3.5	3.9
16	TX08352-5Ru	**1.5**	**2.3**	1.5	2.3	-	-	-	-	-	-	-	-
17	COTX09052-2Ru	**1.4**	**3.4**	1.4	3.4	-	-	-	-	-	-	-	-
18	COTX09022-3RuRE/Y	**0.2**	**3.9**	0.2	3.9	-	-	-	-	-	-	-	-

For more information on these cultivars, see the Early and Late Harvest Regional Trial sections in this book. Varieties with 'fresh' were designated for direct processing or fresh market only.

Fresh Market Value - Methods

Economic Potential

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

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

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

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

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

[c]Sales F.O.B. Shipping Point, market periods 2008-2011 (USDA Federal-State Market News Service 2008-2011). 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 $133/ton.
   a. Base price is an average of early-harvest Ranger Russet contracts from Washington processors.
2. To compensate for yield loss due to early harvest, the base price was increased by $1.00/ton per day for each day potatoes were harvested earlier than Sept. 1.
3. Early harvest quality parameters were identical to those mentioned below in the Late Harvest Process Value – Methods.

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: $133/ton for market (U.S. #1 & 2) grade tubers.
2. **Six oz clause:** Premiums for market grade tubers 6 oz or greater of $0.80/ton for each percentage point >53% of the total tuber yield composite, with premium maximum not to exceed a total of $12.00/ton. Penalties were $1.00/ton for each percentage point below 53% > 6 oz tubers; below 40% > 6 oz, lots were penalized $20/ton.
3. **US #1 clause:** Premiums for US #1 grade tubers 6 oz or greater of $0.40/ton for each percentage point >60% of the total tuber yield composite, with premium maximum not to exceed a total of $10.00/ton. Penalties were $0.20/ton for each percentage point below 60% > 6 oz US #1 tubers, with the penalty maximum not to exceed a total of $4.20/ton.
4. **Undersized clause:** Market grade potatoes <4 oz (process culls) were valued at $60.00/ton.
5. **Specific Gravity clause:** Premiums per ton were $1.00 at 1.078, $3.00 at 1.079, $5.00 at 1.080, $7.00 at 1.081, $8.00 at 1.082, $9.00 at 1.083, with a maximum of $10.00 for 1.084 through 1.088. Above 1.088 premiums were as follows: $9.00 at 1.089, $8.00 at 1.090, $7.00 at 1.091, $6.00 at 1.092, $5.00 at 1.093, $4.00 at 1.094, $3.00 at 1.095, $2.00 at 1.096, $1.00 at 1.097. $0.00 at 1.098 and $0.00 at 1.099. Above 1.099, lots were penalized $1.00/ton with no ceiling. No premium or penalty for a value of 1.077. Penalties per ton were $5.00 at 1.076, $10.00 at 1.075, and $15.00 at 1.074. Below 1.074, lots were penalized $20.00/ton with no rejection minimum.
6. No premiums or penalties were applied for bruise, tuber fry color, sugar content, or internal defects.

2015 Postharvest Procedures

EARLY HARVEST

Culinary and quality characteristics of clones from the Red/Specialty Trial were evaluated after oven-baking, microwaving, boiling, chipping and French Frying. 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 1.2-mm-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:	
48°F fry color (0-5)	5**
48°F Reducing sugars (1-5)	5
44°F fry color (0-5)	5**
44°F 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.

Evaluations 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

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

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

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

Tuber shape characteristics - The lengths and widths of up to twenty five 8- to 10-ounce tubers of each clone from each state 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)

2015 Early Harvest Tri-State Trial

Location: WSU Research Center – Othello, WA
Planting Date: March 31 Vine Kill Date: July 17
Harvest Date: August 4 Days Grown: 112

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 2015 trial compared 4 local reference varieties to 11 new clones. The following is a summary of the Washington field and post-harvest results. See also: grading comments and merit scores near front of book.

Fresh Market Standout(s): AO06191-1 and A06030-23.
Process Market Standout(s): A06862-14VR, and AO06191-1.

Standcounts

- 30 Day
  Slow emergence: A02449-100, A06030-23, A09001-14TE and AO06191-1 each (0%).
  Best emergence: A06862-14VR (89%) and Ranger Russet (56%).

- 40 Day
  Slow emergence: AO06191-1 (4%) and A06030-23 (42%).
  Best emergence: A08009-2TE (100%) and Ranger Russet (98%).

- 60 Day
  Full emergence: All entries except AO06191-1 were at least 91% emerged.

Plant and Tuber Growth & Development

- Stem Number Per Plant – Above Ground
  Most: A08009-2TE (3.2) and A06862-14VR (2.6).
  Least: A02449-100, A08433-4VR and AO06191-1 each (1.3).

- Average Tuber Number Per Plant
  Most: A08009-2TE (10.3) and A07008-4T (9.2).
  Least: AO06191-1 (4.3); Shepody, A02449-100 and A061071-3CSR each (6.3).

- Average Tuber Size (oz)
  Largest: AO06191-1 (9.5) and A02449-100 (8.9).
  Smallest: A07008-4T and A08009-2TE each (5.2).

- Undersized Tubers (< 4 oz)
  Most: A08009-2TE and A07008-4T.
  Fewest: AO06191-1, Shepody, and Norkotah.

Yield and Economic Data

- Total Yield
  Highest: A02449-100 (524 CWT/A) and A06862-14VR (517 CWT/A).
  Lowest: AO06191-1 (394 CWT/A) and Russet Burbank (435 CWT/A).

- % U.S. #1's (>4 oz)
  Highest: AO06191-1 (91%), A09001-12TE (90%).
  Lowest: Russet Burbank (56%), A02449-100 (67%).

- Carton Yield (100 to 50 Count (7 to 18 oz U.S.#1 Tubers))
  Highest: A09001-12TE (15.6 Tons/A), A061070-3CSR (14.5 Tons/A).
  Lowest: A07008-4T (6.7 Tons/A), Russet Burbank (7.6 Tons/A).

- Specific Gravity
  Highest: A06862-14VR (1.091), A07008-4T (1.089) and Ranger Russet (1.086).
  Lowest: Shepody (1.072), A08009-2TE (1.074).

- Gross Return ($/acre)
  Fresh Market Highest: A09001-12TE, A061070-3CSR, and AO06191-1.
  Fresh Market Lowest: Russet Burbank, A07008-4T, and A08009-2TE.
  Process Market Highest : A09001-12TE, A06862-14VR, and Shepody.
  Process Market Lowest: Russet Burbank, A07008-4T, and A06030-23.

Tuber Defects (30 tuber sample of 8-12 oz tubers)

- External Defects
  Notable Defects: All entries were relatively free of external defects, Russet Burbank had 10% cracked tubers and A02449-100 had 9% green tubers.

- Internal Defects
  Notable Defects: All entries were relatively free of internal defects. The highest internal defect was (3%).

- Bruise
  Highest Blackspot: Ranger Russet and Russet Burbank each (13%).
  Highest Shatter: AO06191-1 (73%), A06862-14VR (63%) and A07008-4T (50%).

2015 Early Harvest Tri-State 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	Tons/A	% of Total Yield			% of Total Yield	Tons/A	% of Total Yield	Tons/A
Ranger Russet	476	23.8	82	2	16	49	12.0	65	15.4
Russet Burbank	435	21.7	56	12	32	31	7.6	52	11.3
Russet Norkotah	478	23.9	75	7	18	49	12.6	66	16.0
Shepody	494	24.7	82	3	15	51	13.1	72	18.0
A02449-100	524	26.2	67	10	23	36	10.7	67	17.6
A06030-23	458	22.9	83	0	17	51	11.6	59	13.9
A061070-3CSR	464	23.2	89	0	11	62	14.5	73	16.9
A061071-3CSR	462	23.1	88	0	12	60	13.8	73	17.0
A06862-14VR	517	25.8	78	1	21	49	13.0	63	16.4
A07008-4T	455	22.8	74	1	24	29	6.7	49	11.0
A08009-2TE	506	25.3	76	0	24	36	9.2	51	12.8
A08433-4VR	472	23.6	88	0	12	53	12.5	66	15.6
A09001-12TE	510	25.5	90	0	10	61	15.6	74	18.9
A09001-14TE	480	24.0	84	1	15	46	11.3	60	14.5
AO06191-1	394	19.7	91	2	7	70	14.1	86	17.0
LSD (0.05)	**96**	**5**							

ENTRY	US # 1 YIELD					> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	> 4 oz CWT/A	> 4 oz Tons/A	4-7 oz*	7-14 oz*	> 14 oz*		% HH	% BC	% IBS
			%						
Ranger Russet	389	19.5	38	56	5	1.086	0	0	0
Russet Burbank	247	12.3	37	51	12	1.078	0	0	0
Russet Norkotah	369	18.5	28	60	12	1.077	3	0	0
Shepody	408	20.4	24	52	24	1.072	0	0	0
A02449-100	352	17.6	24	46	30	1.075	0	3	0
A06030-23	385	19.3	40	57	4	1.079	0	0	0
A061070-3CSR	413	20.7	30	62	8	1.075	0	3	0
A061071-3CSR	407	20.3	25	59	15	1.077	0	0	0
A06862-14VR	404	20.2	33	59	7	1.091	0	0	0
A07008-4T	338	16.9	60	37	3	1.089	0	0	0
A08009-2TE	388	19.4	53	45	2	1.074	0	0	0
A08433-4VR	415	20.8	40	56	4	1.078	0	0	0
A09001-12TE	460	23.0	27	57	15	1.082	0	0	0
A09001-14TE	404	20.2	44	52	3	1.078	0	0	0
AO06191-1	357	17.8	14	60	27	1.082	0	0	0
LSD (0.05)	**108**	**5**							

* Percent values may not total 100% due to rounding

ENTRY	30 DAY STAND % Emerged	40 DAY STAND % Emerged	50 DAY STAND % Emerged	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) (8-12 oz tubers) SHATTER
Ranger Russet	56	98	100	2.0	6.1	8.2	4	5	13	20
Russet Burbank	38	91	100	1.5	6.7	6.9	3	3	13	27
Russet Norkotah	40	91	100	1.9	7.5	6.7	4	3	7	20
Shepody	38	96	100	1.8	8.1	6.3	4	3	7	13
A02449-100	0	71	91	1.3	8.9	6.3	4	3	0	13
A06030-23	0	42	91	1.8	6.2	7.6	5	4	0	40
A061070-3CSR	9	93	100	2.2	7.1	6.8	4	3	10	13
A061071-3CSR	9	96	98	1.5	7.8	6.3	4	3	7	47
A06862-14VR	89	91	100	2.6	6.6	8.2	3	3	0	63
A07008-4T	4	91	98	2.5	5.2	9.2	4	3	7	50
A08009-2TE	22	100	100	3.2	5.2	10.3	4	3	10	40
A08433-4VR	2	82	96	1.3	6.7	7.4	3	2	0	15
A09001-12TE	7	91	98	1.5	7.7	7.0	4	2	0	30
A09001-14TE	0	69	91	2.4	6.3	8.0	3	2	4	14
AO06191-1	0	4	84	1.3	9.5	4.3	4	3	7	73

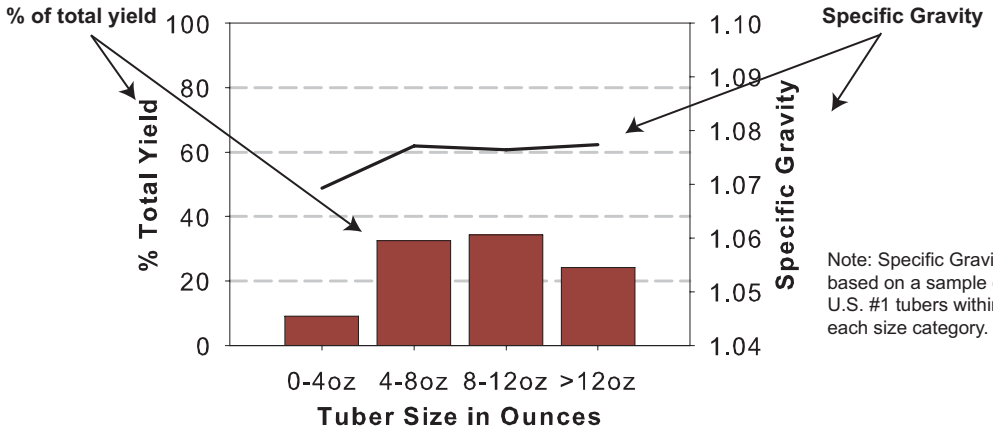
Planting the 2015 Clearwater Russet In-Row Spacing Trial.

A simple switch of the discs between plots allows for spacing to go from 12 to 8 inches. Treatments included 8, 10, 12, 14, and 16 inches.

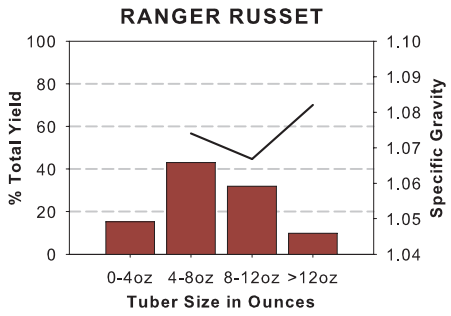
2015 Early Harvest Tri-State Trial

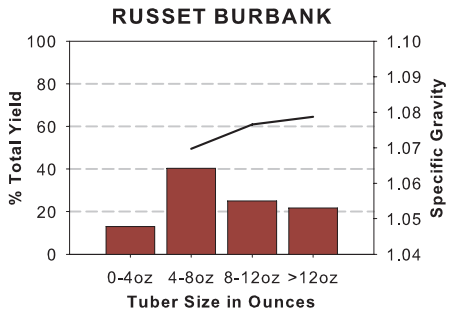
Tuber Yield and Specific Gravity Distributions

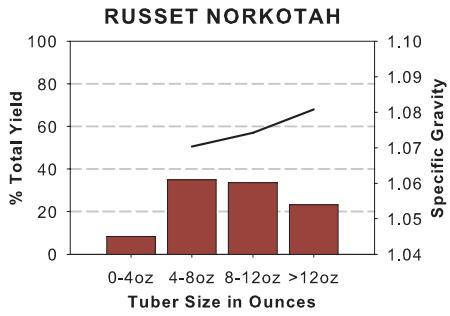
12 inch In-Row Spacing

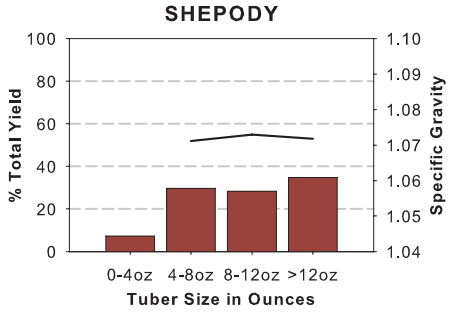


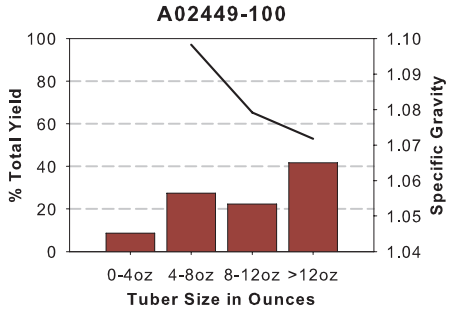
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

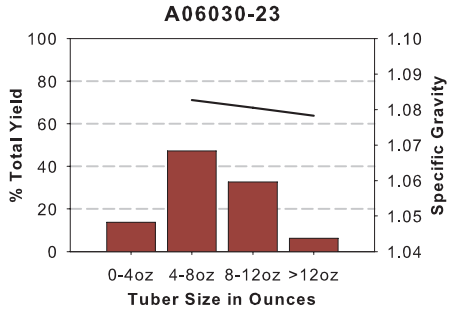


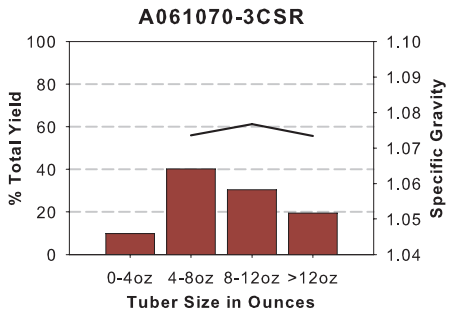


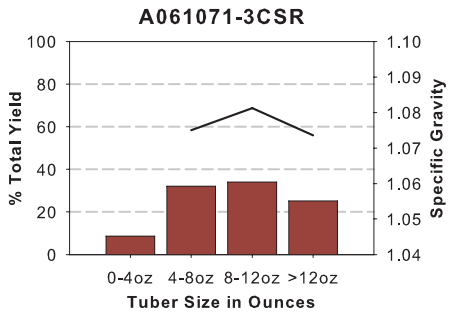


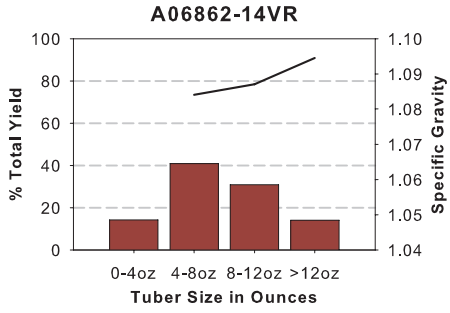


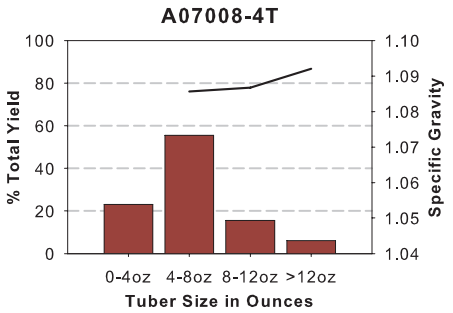


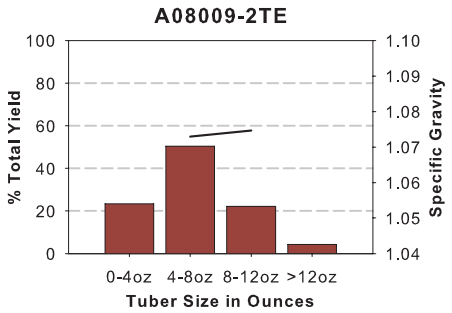


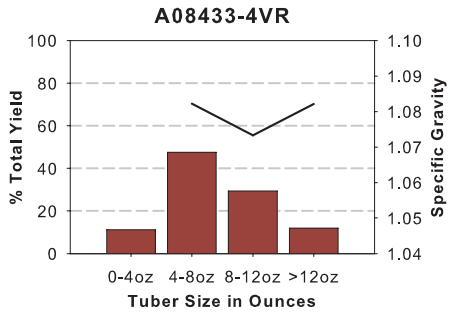


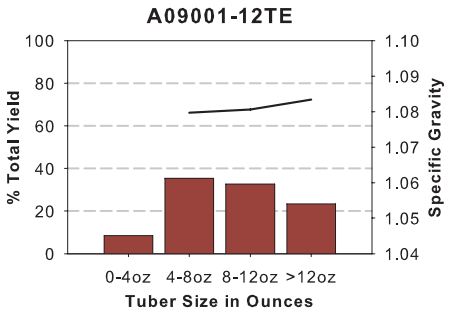


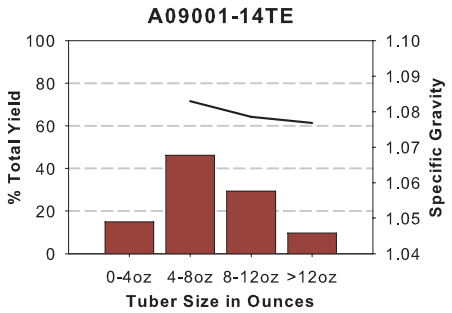


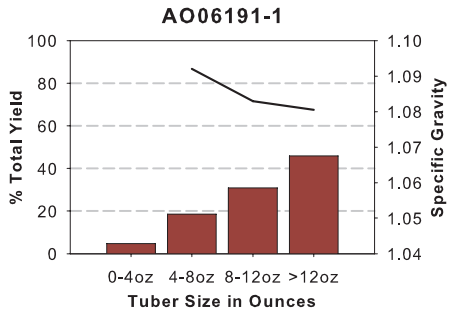








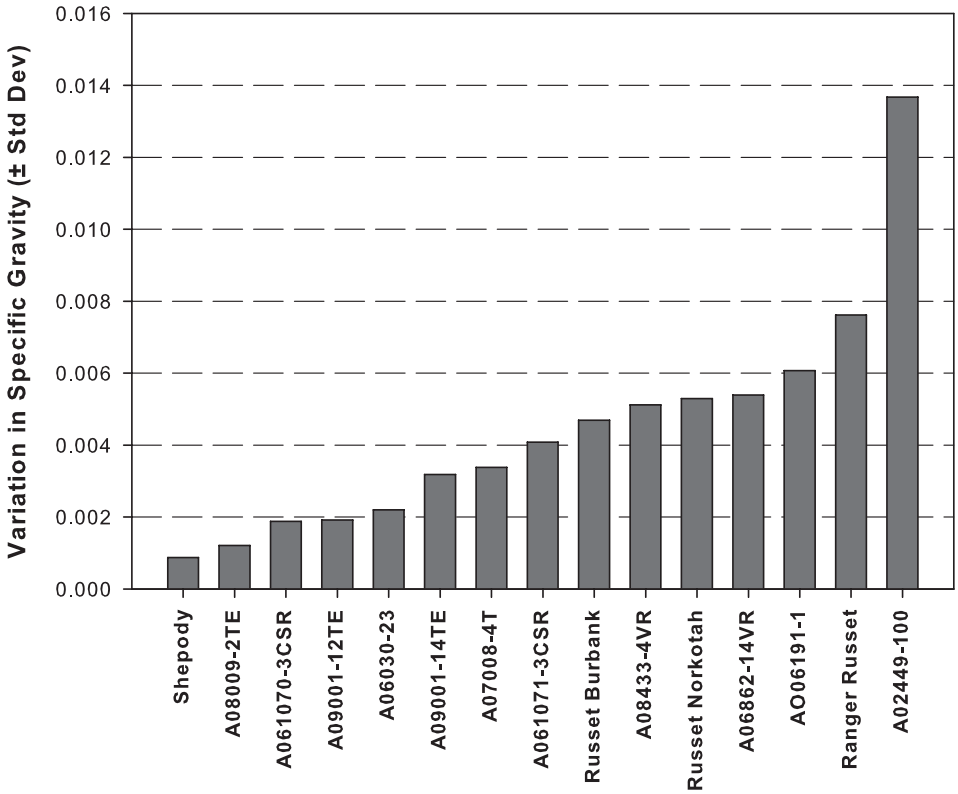




Clone - Dependent Variation in Specific Gravity

Variability among 12, 10lb samples from each entry (all tuber sizes)

2015 Early-Harvest Tri-State Trial



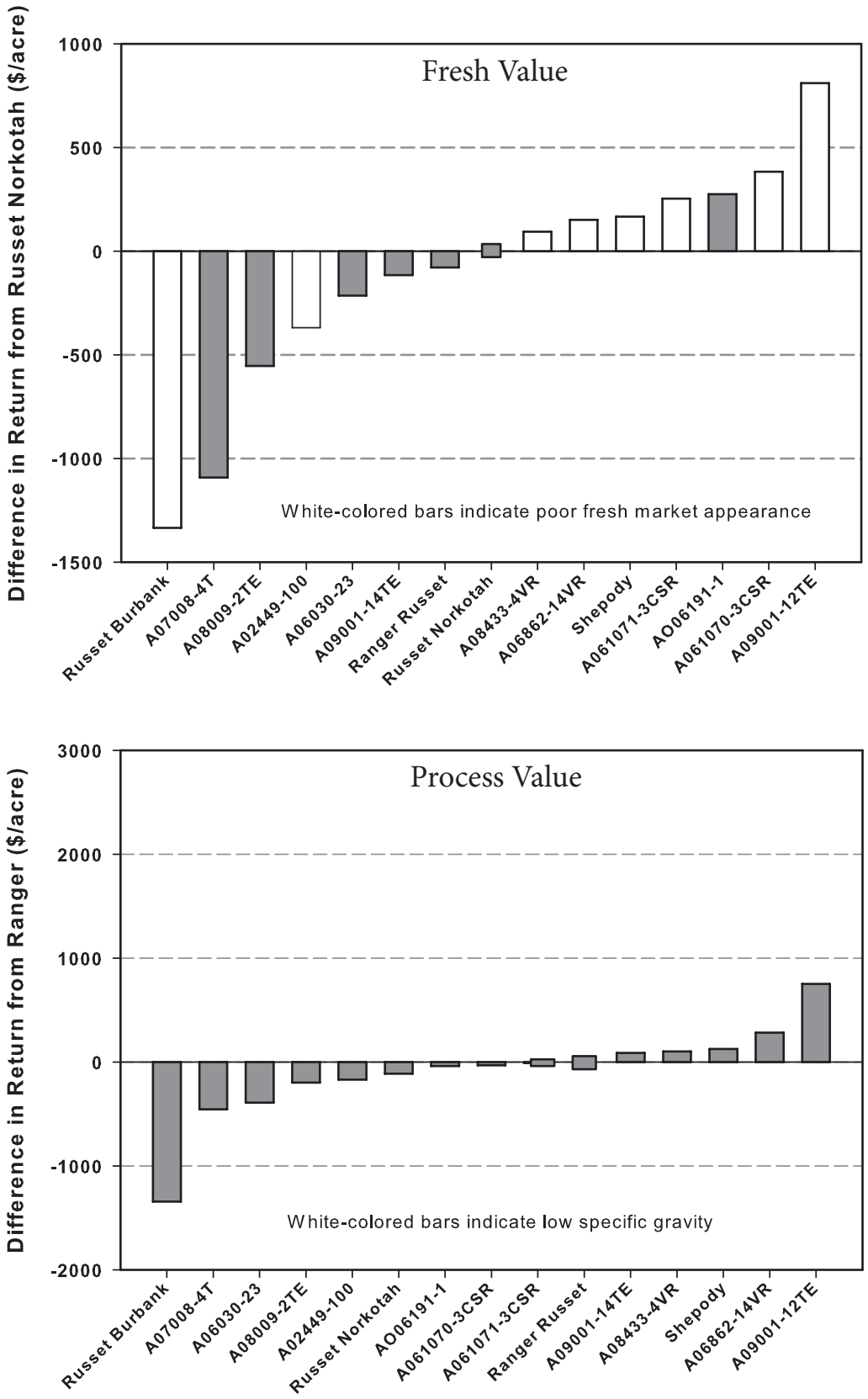


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. **Figure 2 (Bottom).** Difference in gross return per acre (Process Market) from Ranger Russet calculated by subtracting the gross return of Ranger Russet from the gross return of the particular entry. Entries with the white-colored bars would be penalized due to a low specific gravity.

2015 Early Harvest Tri-State Trial

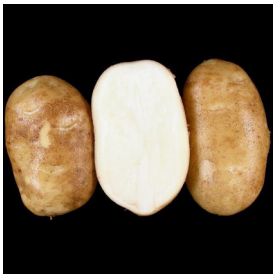
Tubers

Ranger Russet

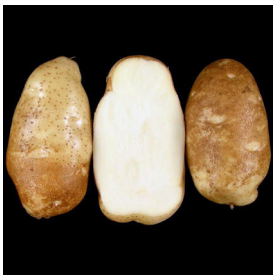
A02449-100

A06030-23

A01070-3CSR



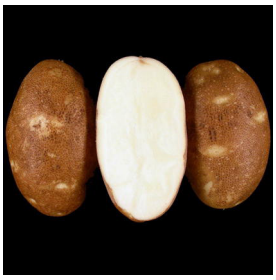
Russet Burbank



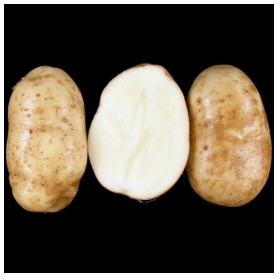
A06862-14VR

A07008-4T

A08009-2TE

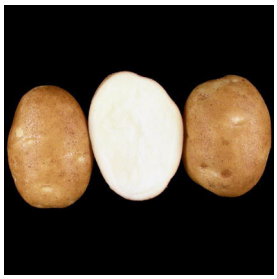


Russet Norkotah



A09001-12TE

A09001-14TE



AO06191-1

Shepody

A061071-3CSR

A08433-4VR

2015 Late Harvest Tri-State Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 7
Harvest Date: September 16
In-Row Spacing: 10 in.
Vine Kill Date: September 9
Days Grown: 155

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. See also: grading comments and merit scores near front of book.

Fresh Market Standout(s): A08433-4VR and A06030-23.
Process Market Standout(s): A061070-3CSR, A061071-3CSR, A06030-23, and A08009-2TE.

Standcounts

- 30 Day
  Slow emergence: AO06191-1 (0%)
  Best emergence: A06862-14VR (94%)

- 40 Day
  Slow emergence: A09001-14TE and AO06191-1 each (65%)
  Best emergence: A06862-14VR (98%)

- 60 Day
  Full emergence: Ranger Russet, Russet Norkotah, A06030-23, A061071-3CSR, A07008-4T and A08009-2TE were 100%.
  Best emergence: All other entries were at least 91% at 60 DAP.

Plant and Tuber Growth & Development

- Above Ground Stem Number Per Plant
  Most: A08009-2TE (2.7) and A06862-14VR (2.5).
  Least: A02449-100 (1.2)

- Average Tuber Number Per Plant
  Most: A08009-2TE (9.8) and A061070-3CSR (9.2).
  Least: AO06191-1 (4.4) and A09001-12TE and A06030-23 each (7.4).

- Average Tuber Size (oz)
  Largest: AO06191-1 (12.2), A061071-3CSR and A09001-12TE each (9.2)
  Smallest: A07008-4T (6.1) and Russet Norkotah (7.0)

- Undersized Tubers (< 4 oz)
  Most: A07008-1T and A08009-2TE.
  Least: AO06191-1 and A09001-12TE.

Yield and Economic Data

- Total and US #1
  Highest: A061070-3CSR had the highest total yield (946 CWT/A); A061070-3CSR had the highest US #1 yield (777 CWT/A). A08433-4VR had the second highest total yield (872 CWT/A); A08433-4VR had the second highest US #1 yield (774 CWT/A).
  Lowest: A07008-4T had the lowest total yield (573 CWT/A) and US #1 yield (471 CWT/A).

- % U.S. #1's Greater Than 4 oz.
  Highest: AO06191-1 (93%), A061071-3CSR and A08433-4VR each (89%).
  Lowest: A02449-100 (75%), A08009-2TE (77%).

- Carton Yield (100 to 50 Count (7 to 18 oz US #1 Tubers))
  Highest: A08433-4VR (27.8 Tons/A), A061070-3CSR (27.0Tons/A).
  Lowest: A07008-4T (12.9 Tons/A), Russet Burbank (16.9 Tons/A).

- Gross Return ($/acre)
  Fresh Market Highest: A08433-4VR, A061070-3CSR, and A09001-12TE.
  Fresh Market Lowest: A07008-4T, Russet Burbank, and Russet Norkotah.
  Process Market Highest: A061070-3CSR.
  Process Market Lowest: A07008-4T, Russet Burbank and A02449-100.

Tuber Defects (30 tuber sample of 8-12 oz tubers)

- External Defects
  Notable Defects: A02449-100 had 14% tubers that were green, all other entries had little to no external defects.

- Internal Defects
  Notable Defects: A08009-2TE had 16% internal brown spot and A07008-4T had 10% internal brown spot. Other defects were present at 6% or less. Most entries were relatively free of internal defects.

- Bruise
  Highest Blackspot: AO06191-1 (22%) and Ranger Russet (17%).
  Lowest Blackspot: Russet Burbank (0%) and A08433-4VR (3%).
  Highest Shatter: A07008-4T (100%) and AO06191-1 (97%).
  Lowest Shatter: Ranger Russet (23%) and Russet Norkotah (26%).

2015 Late Harvest Tri-State Trial

Postharvest Information

Samples were obtained from the Washington, Idaho and Oregon field adaptation trials for analysis in Pullman. Eleven numbered entries and two cultivars were tested from ID, WA and OR. Details are summarized below. An asterisk (*) indicates similar performance and/or ranking in trials from previous years.

- Overall Postharvest Rating

  Highest scoring clones: A09001-14TE, A07008-4T, A06030-23, A06862-14VR, AO06191-1
  Lowest scoring clones: RB*, A02449-100, A08009-2TE

- Low Temperature Sweetening

  Most resistant: A06030-23, A06862-14VR, A09001-14TE, A07008-4T, A061070-3CSR
  Most susceptible: RB, A08009-2TE, A08433-4VR

- Taste Panel

  Highest rated: A07008-4T, AO06191-1, A09001-14TE
  Lowest rated: RB, A08009-2TE, A08433-4VR

- Blackspot Bruise Susceptibility

  Most resistant: A08433-4VR, A07008-4T
  Most susceptible: A09001-14TE, RR*, A06862-14VR

- Variability in Tuber Shape & Fry Yield (8- to 10-oz tubers)

  Lowest L/W: A09001-14TE, A09001-12TE, A061071-3CSR
  Highest L/W: RR*, RB*, A07008-4T*, A08009-2TE
  Least variable: RB*, A02449-100, RR*, A06862-14VR
  Most variable: A09001-14TE, AO06191-1, A061070-3CSR

Details

- Averaged across states, all entries received higher postharvest scores than Russet Burbank.
- A09001-14TE, A07008-4T, A06030-23, A06862-14VR, and AO06191-1 were the highest rated entries, scoring 35.4, 34.7, 34.0, 33.8 and 33.7 out of 38 points, respectively.
- A06030-23, A06862-14VR, A09001-14TE, A07008-4T and A061070-3CSR were resistant to low temperature sweetening, with samples from all states producing highly acceptable light colored fries (USDA 0 after 60 d at 44°F; USDA 1 at 40°F; average of stem ends). However, A061070-3CSR had non-uniform fry color after storage at 44°F (OR) and A06862-14VR, A07008-4T and A061070-3CSR had non-uniform fry color after storage at 40°F from WA and/or OR. Retention of fry color (60 days at 44°F) for A07008-4T, A02449-100, A09001-12TE, A09001-14TE and A06030-23 was minimally affected by growing location. In contrast, retention of fry color in RB, A061071-3CSR, A08009-2TE, RR and A08433-4VR was highly variable across the three production sites.
- RB, A02449-100 and A08009-2TE received the lowest overall postharvest scores (18.2, 30.5 and 26.9 out of 38, respectively).
- Average (across states) gravities of A02449-100 and RB were 1.070 and 1.074, respectively; too low for frozen processing contracts. In contrast, average gravities of 6 of 13 entries ranged from 1.082-1.086, which is ideal for most contracts.
- A07008-4T, AO06191-1, and A09001-14TE were the favorites in the taste panels, scoring 3.8, 3.7 and 3.7,

respectively, across growing locations (5 is best). RB, A08009-2TE, and A08433-4VR received the lowest taste panel scores (avg = 3.2).

- 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). RR*, A09001-14TE, and A060862-14VR were the most susceptible, scoring 92, 79, 72 and 72% bruise (stem end), respectively, in the controlled impact study. These clones also had the highest bruise severity, averaging 3.3/5. A08433-4VR and A07008-4T were the most resistant, averaging 6% bruise (stem end) and 1.2/5 severity rating.

- The 8- to 10-oz tubers of A09001-14TE, A09001-12TE and A061071-3CSR had low length to width ratios (avg. L/W=1.45), resulting in yields of 3-inch or longer fries averaging only 61% by number. A09001-14TE, AO06191-1 and A061070-3CSR had the greatest variation in L/W ratio; usable fry yields ranged from 52 to 71%, depending on production area and clone. RR*, RB*, A07008-4T* and A08009-2TE had the highest L/W ratios across all states, resulting in an average of 76% yield of French fries by number.

- Reconditioning (60°F, 21 days) tubers of A08433-4VR, A06862-14VR, A08009-2TE, A061070-3CSR and A061071-3CSR that had been stored at 40°F for 60 days resulted in the greatest improvement in stem end fry color compared with the other clones. By contrast, fry color of A09001-12TE and AO06191-1 worsened with reconditioning, while A02449-100 changed little in response to reconditioning. A08009-2TE and RR appeared more susceptible to sugar end development based on attenuated reconditioning of the stem versus bud end of tubers following storage at 40°F.

- Following 60 days storage at 48°F, tubers of A06862-14VR, A061070-3CSR, A061071-CSR and A08009-2TE were showing 93%, 76%, 57% and 51% sprouting, respectively, with average sprout lengths of 0.5 inches, compared with 58% of RR tubers sprouted (avg sprout length = 0.5 inches). In contrast, tubers of A06030-23, RB, A02449-100 and A07008-4T had no sprouts. The remaining entries sprouted 14% on average, with sprouts averaging 0.2 inches, indicating dormancy intermediate between RB and RR.

Overall Tri-State Postharvest Merit Scores

	Postharvest Merit Scores			3 state
Clone	WA	ID	OR	Average
12 A09001-14TE	4.7	4.6	4.7	4.7
8 A07008-4T	4.8	4.3	4.6	4.6
4 A06030-23	4.9	4.4	4.1	4.5
7 A06862-14VR	4.5	4.3	4.5	4.4
13 AO06191-1	4.7	4.2	4.4	4.4
6 A061071-3CSR	4.4	4.7	3.9	4.3
1 Ranger Russet	4.4	4.7	3.7	4.3
11 A09001-12TE	4.3	4.2	4.3	4.3
5 A061070-3CSR	4.7	4.5	3.4	4.2
10 A08433-4VR	3.8	4.4	4.0	4.1
3 A02449-100	4.2	No Sample	3.9	4.0
9 A08009-2TE	3.6	3.1	4.0	3.5
2 Russet Burbank	2.2	2.8	2.1	2.4

2015 Late Harvest Tri-State 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	Tons/A	% of Total Yield			% of Total Yield	Tons/A	% of Total Yield	Tons/A
Ranger Russet	851	42.6	81	7	12	49	21.0	77	32.6
Russet Burbank	688	34.4	78	8	14	49	16.9	69	23.8
Russet Norkotah	646	32.3	86	1	13	56	18.0	69	22.5
A02449-100	726	36.3	75	1	23	48	17.6	65	23.5
A06030-23	680	34.0	87	2	11	62	21.1	77	26.4
A061070-3CSR	946	47.3	82	5	13	57	27.0	80	37.8
A061071-3CSR	807	40.4	89	1	10	56	22.5	81	32.8
A06862-14VR	762	38.1	83	3	14	56	21.4	75	28.6
A07008-4T	573	28.6	82	2	16	45	12.9	61	17.6
A08009-2TE	830	41.5	77	9	14	53	21.9	75	31.2
A08433-4VR	872	43.6	89	2	9	64	27.8	80	35.2
A09001-12TE	776	38.8	88	0	12	65	25.3	79	30.8
A09001-14TE	704	35.2	79	2	19	53	18.8	69	24.1
AO06191-1	620	31.0	93	1	5	61	18.9	90	28.1
LSD (0.05)	**106**	**5**							

ENTRY	US # 1 YIELD		4-7 oz*	7-14 oz*	> 14 oz*	> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	> 4 oz CWT/A	> 4 oz Tons/A	%				% HH	% BC	% IBS
Ranger Russet	688	34.4	21	48	31	1.086	0	0	0
Russet Burbank	538	26.9	33	56	11	1.064	0	0	0
Russet Norkotah	556	27.8	31	58	10	1.072	0	0	4
A02449-100	545	27.2	25	48	28	1.077	0	0	0
A06030-23	595	29.8	21	59	20	1.085	0	0	0
A061070-3CSR	777	38.9	13	47	39	1.085	6	0	3
A061071-3CSR	718	35.9	16	44	40	1.084	3	0	0
A06862-14VR	631	31.6	20	53	26	1.090	0	0	3
A07008-4T	471	23.5	44	51	5	1.094	0	0	10
A08009-2TE	635	31.7	25	57	19	1.085	0	0	16
A08433-4VR	774	38.7	18	55	27	1.076	0	0	0
A09001-12TE	681	34.0	16	57	27	1.089	0	0	0
A09001-14TE	560	28.0	23	55	22	1.092	0	0	3
AO06191-1	578	28.9	8	40	53	1.093	0	0	0
LSD (0.05)	**88**	**4**							

ENTRY	30 DAY STAND	40 DAY STAND	50 DAY STAND	STEMS PER PLANT	AVERAGE TUBER WEIGHT	AVERAGE TUBER NUMBER	SKIN SET 1 = Poor	TUBER SHAPE 1 = Round	BRUISE (%) (8-12 oz tubers)	
	% Emerged	% Emerged	% Emerged	Above Ground	Ounces	Tubers/Plant	5 = Good	5 = Long	BLACKSPOT	SHATTER
Ranger Russet	80	95	100	1.9	8.4	8.8	4	4	17	23
Russet Burbank	91	93	99	1.9	7.4	8.0	4	4	0	77
Russet Norkotah	90	94	100	2.1	7.0	8.1	4	4	9	26
A02449-100	36	85	91	1.2	8.0	7.9	4	2	9	58
A06030-23	14	81	100	1.9	8.0	7.4	4	3	16	52
A061070-3CSR	80	93	99	2.1	8.8	9.2	2	2	6	53
A061071-3CSR	75	96	100	1.6	9.2	7.7	4	3	6	76
A06862-14VR	94	98	99	2.5	8.1	8.2	3	4	9	74
A07008-4T	59	94	100	2.1	6.1	8.1	4	3	10	100
A08009-2TE	54	96	100	2.7	7.3	9.8	4	4	6	53
A08433-4VR	46	90	99	1.3	8.7	8.7	4	3	3	33
A09001-12TE	30	85	91	1.6	9.2	7.4	3	2	11	64
A09001-14TE	1	65	93	2.2	7.3	8.4	4	2	15	91
AO06191-1	0	65	95	1.3	12.2	4.4	5	4	22	97

* Percent values may not total 100% due to rounding

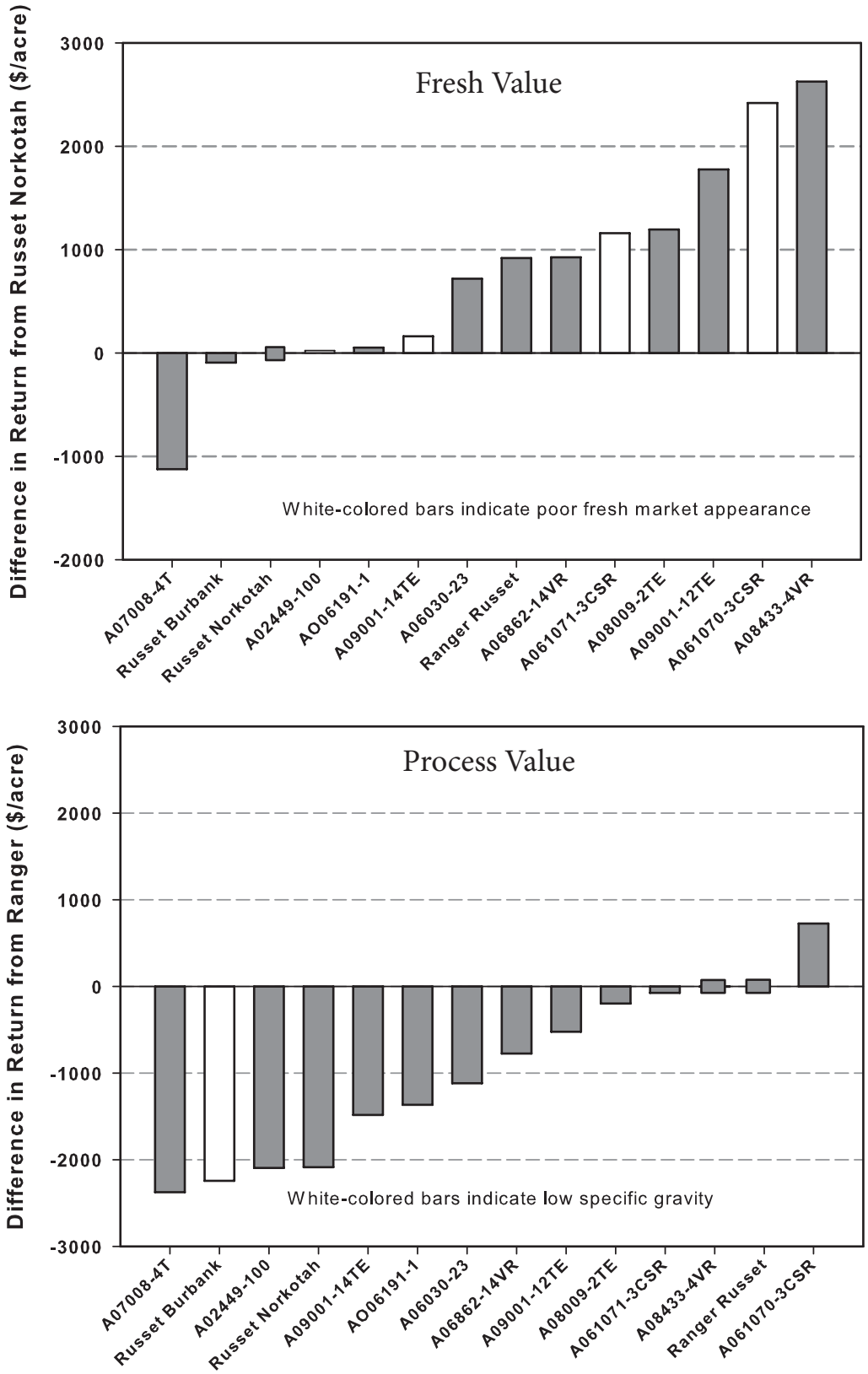
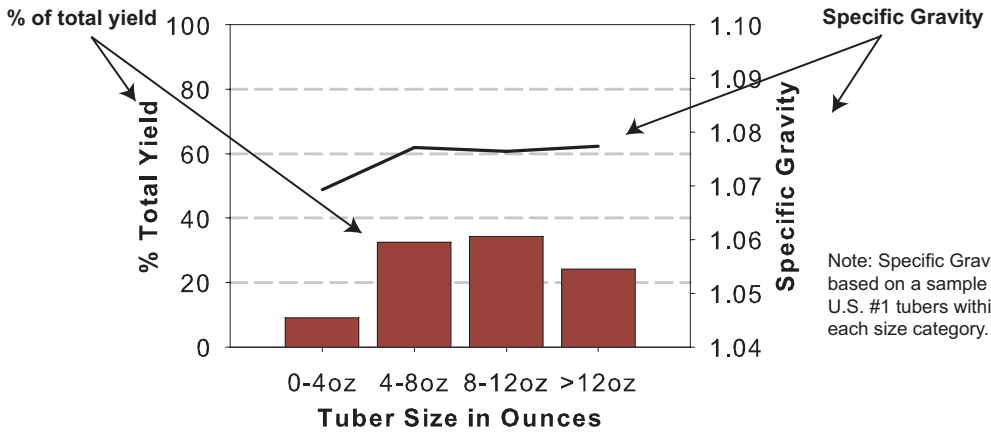


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to undesirable shape or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

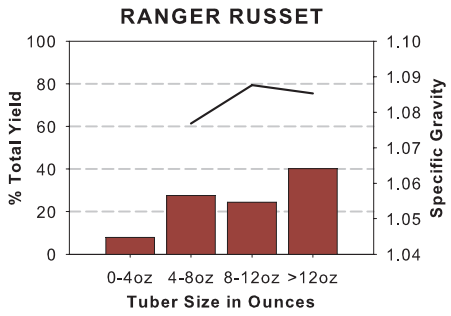
2015 Late Harvest Tri-State Trial

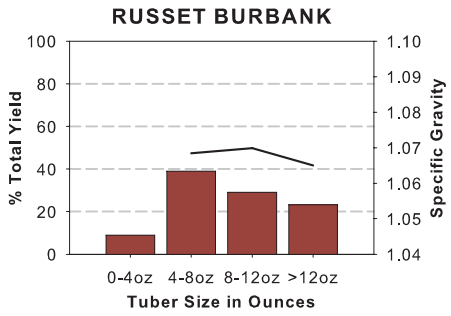
Tuber Yield and Specific Gravity Distributions

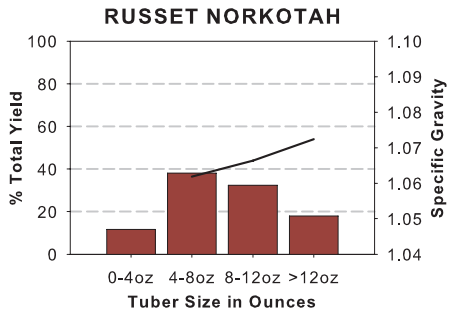
10 inch In-Row Spacing

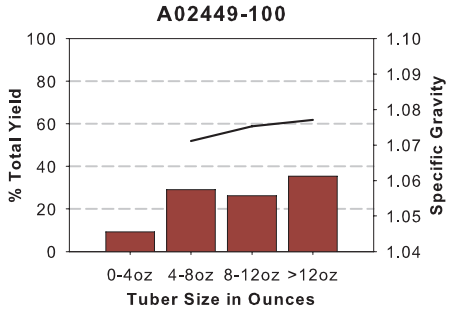


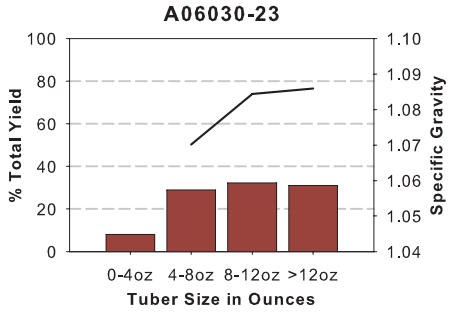
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

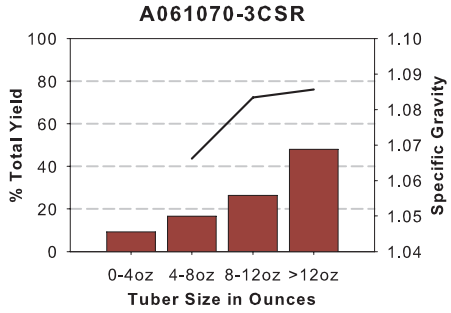


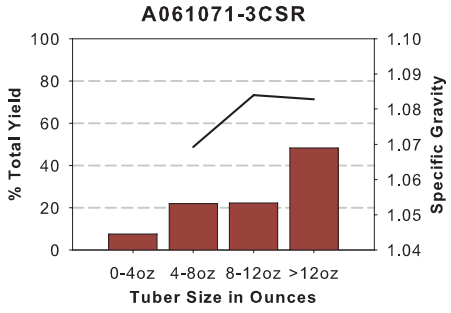


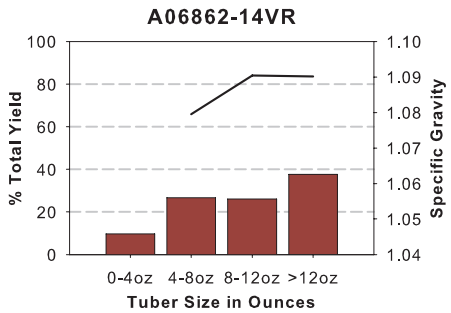


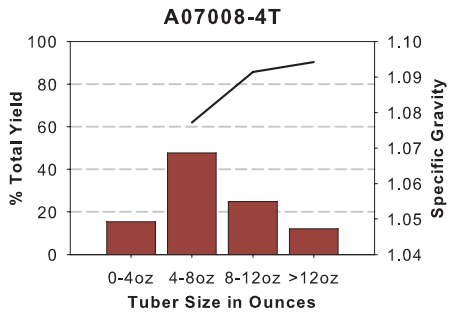


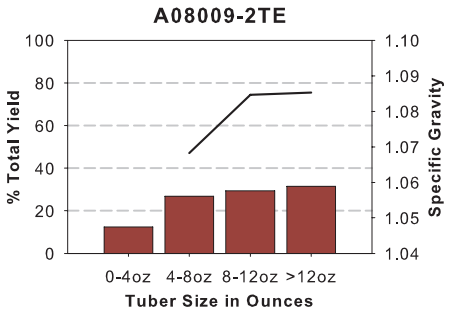


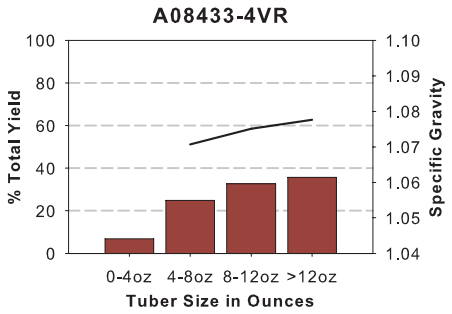


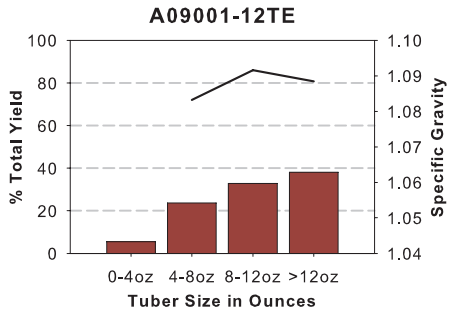


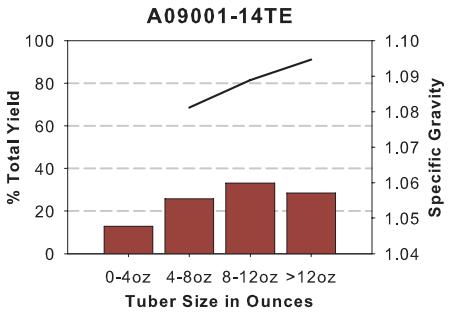


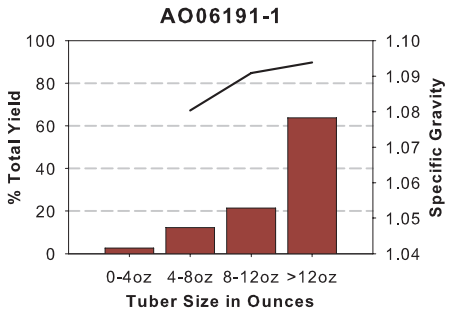


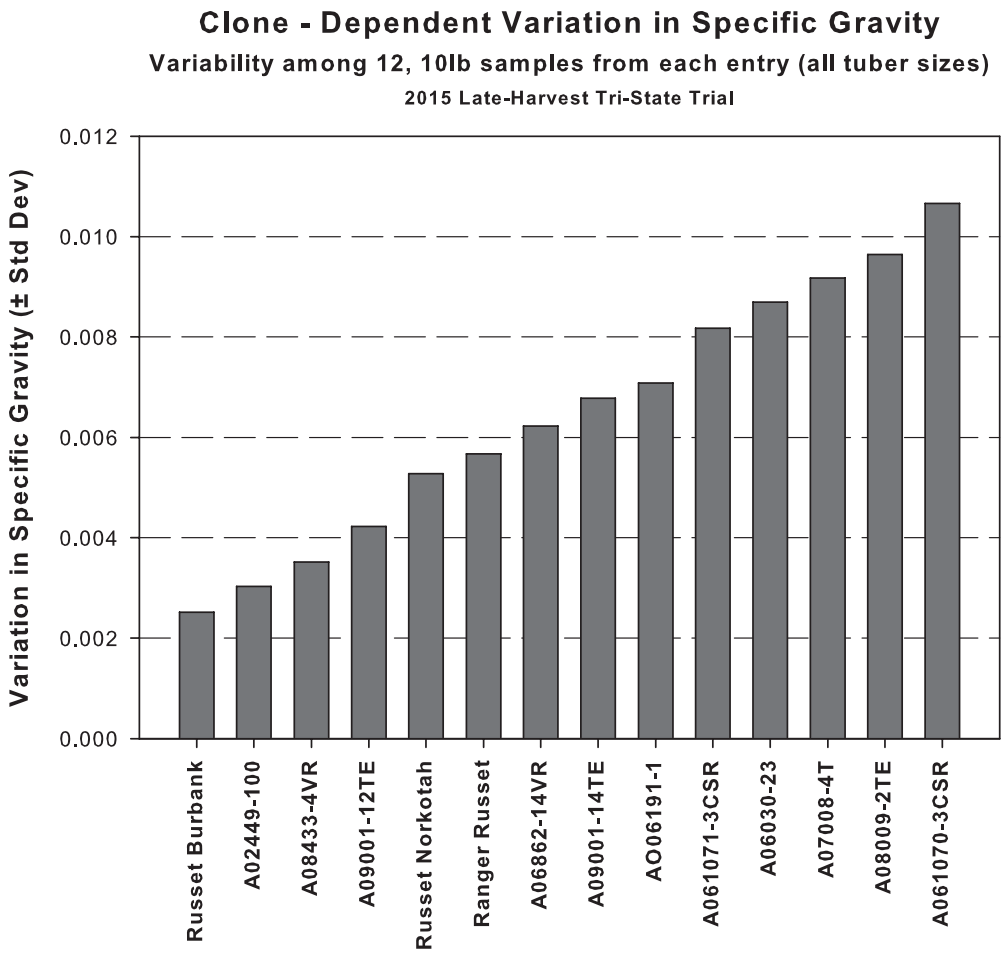

A08009-2TE
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


A08433-4VR
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

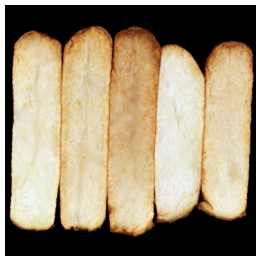
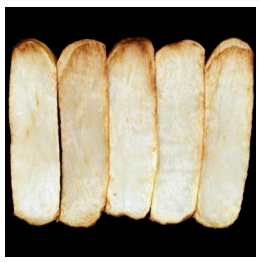
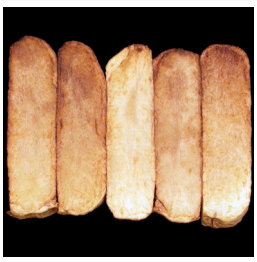
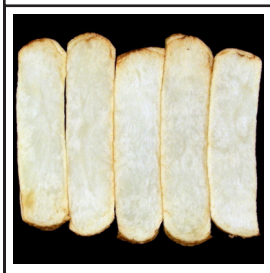
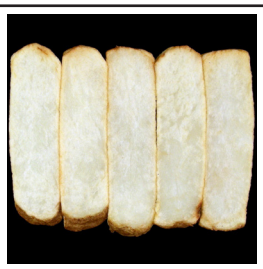
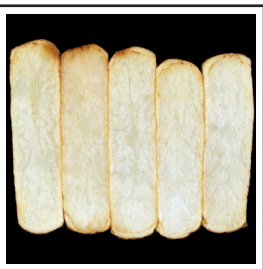
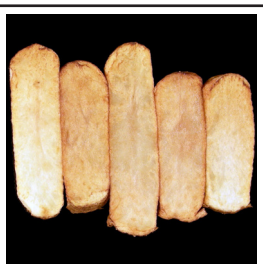
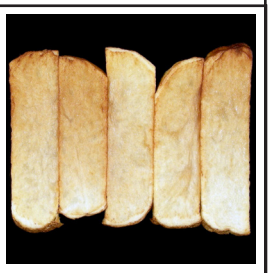
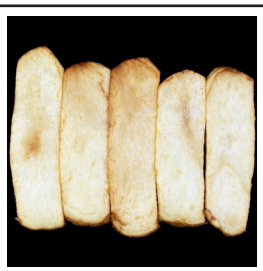
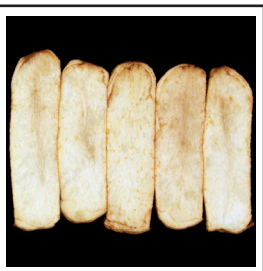

A09001-12TE
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


A09001-14TE
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

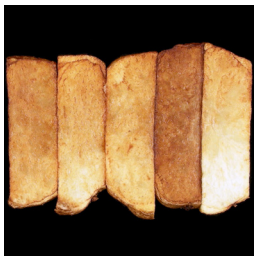
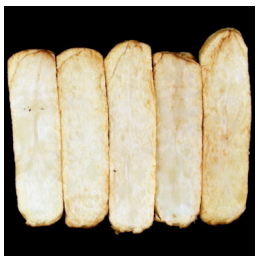
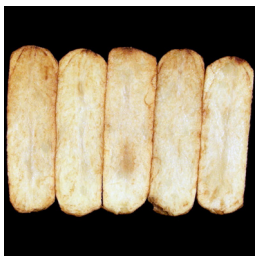
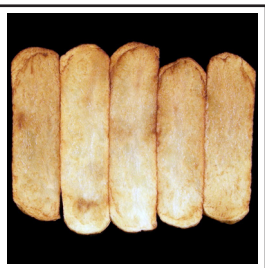
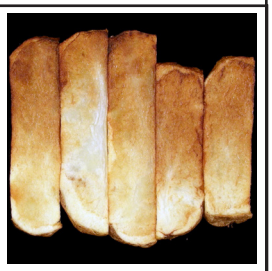
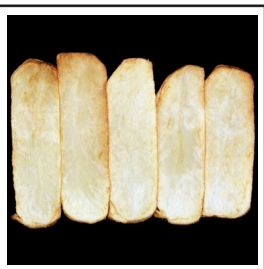
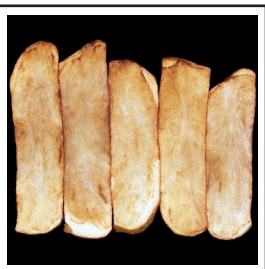
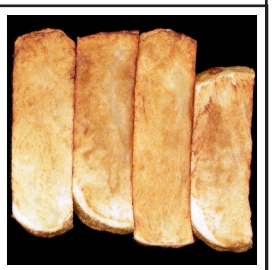

AO06191-1
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


Clone - Dependent Variation in Specific Gravity
Variability among 12, 10lb samples from each entry (all tuber sizes)
2015 Late-Harvest Tri-State Trial
Variation in Specific Gravity (± Std Dev)
Russet Burbank
A02449-100
A08433-4VR
A09001-12TE
Russet Norkotah
Ranger Russet
A06862-14VR
A09001-14TE
AO06191-1
A061071-3CSR
A06030-23
A07008-4T
A08009-2TE
A061070-3CSR

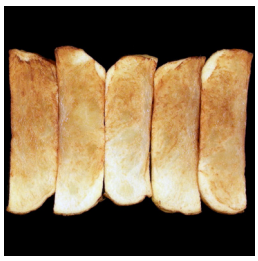
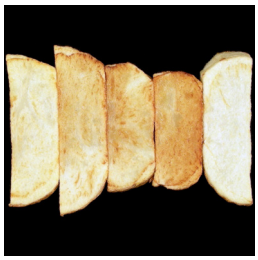
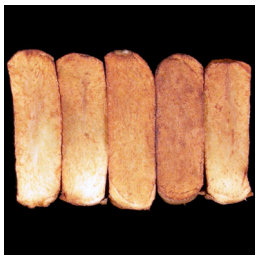
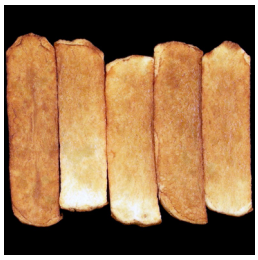
Tubers	WA Late Harvest Tri-State Trial Comments
Ranger Russet	
	**Tubers:** Oblong to long tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, uniform; Reconditioned = light, non-uniform.
Russet Burbank	
	**Tubers:** Oblong to long tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, non-uniform; 48°F = light, non-uniform; 44°F = relatively dark, non-uniform; 40°F = unnacceptably dark, uniform; Reconditioned = relatively dark, non-uniform.
A02449-100	
	**Tubers:** Round to oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, non-uniform; Reconditioned = light, non-uniform.
A06030-23	
	**Tubers:** Oblong tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; Reconditioned = light, uniform.
A061070-3CSR	
	**Tubers:** Round to oblong tubers. Poor skin set; moderately deep eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; Reconditioned = light, uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
Ranger Russet				
				
Russet Burbank				
				
A02449-100				
				
A06030-23				
				
A061070-3CSR				
				

Tubers	WA Late Harvest Tri-State Trial Comments
A061071-3CSR	
	**Tubers:** Oblong tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, uniform; Reconditioned = light, uniform.
A06862-14VR	
	**Tubers:** Oblong to long tubers. Fair skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, non-uniform; Reconditioned = light, non-uniform.
A07008-4T	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, non-uniform; Reconditioned = light, non-uniform.
A08009-2TE	
	**Tubers:** Oblong to long tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, non-uniform; 48°F = light, non-uniform; 44°F = light, uniform; 40°F = unnacceptably dark, uniform; Reconditioned = light, non-uniform.
A08433-4VR	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = unnacceptably dark, uniform; Reconditioned = light, uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
A061071-3CSR				
				
A06862-14VR				
				
A07008-4T				
				
A08009-2TE				
				
A08433-4VR				
				

Tubers	WA Late Harvest Tri-State Trial Comments
A09001-12TE	
	**Tubers:** Round to oblong tubers. Fair skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, non-uniform; 44°F = light, uniform; 40°F = relatively dark, non-uniform; Reconditioned = light, non-uniform.
A09001-14TE	
	**Tubers:** Round to oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, uniform; Reconditioned = light, uniform.
AO06191-1	
	**Tubers:** Oblong to long tubers. Very good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 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.
A09001-12TE				
				
A09001-14TE				
				
AO06191-1				
				

2015 Late Harvest Tri-State Trial

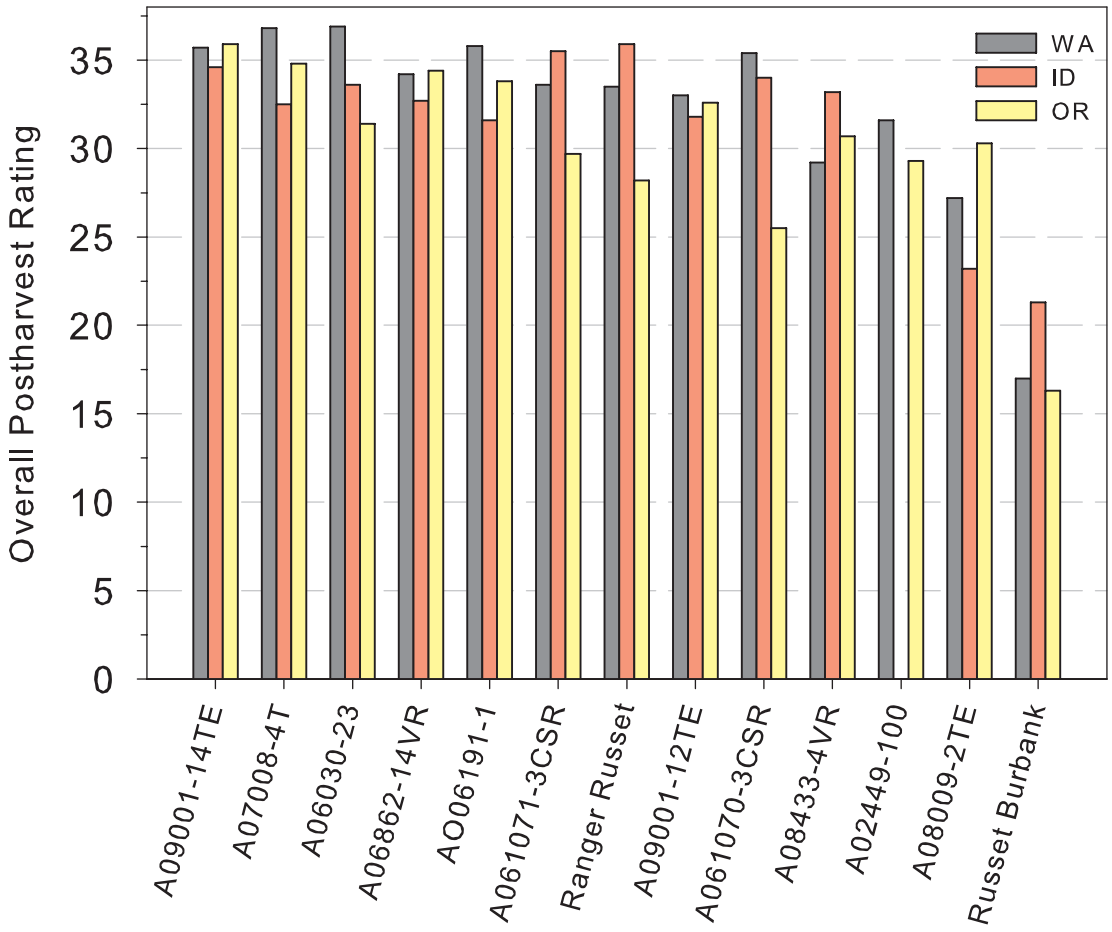
Accumulated Total Postharvest Rating of Clones

Clone	WA Rating Total §	WA Discard §§	ID Rating Total §	ID Discard §§	OR Rating Total §	OR Discard §§	3 State av. Rating Total
12 A09001-14TE	35.7		34.6		35.9		35.4
8 A07008-4T	36.8		32.5		34.8		34.7
4 A06030-23	36.9		33.6		31.4	Sp. Gr.	34.0
7 A06862-14VR	34.2		32.7		34.4		33.8
13 AO06191-1	35.8		31.6		33.8		33.7
6 A061071-3CSR	33.6		35.5		29.7	Sp. Gr.	32.9
1 Ranger Russet	33.5		35.9		28.2	Sp. Gr.	32.5
11 A09001-12TE	33.0		31.8		32.6		32.5
5 A061070-3CSR	35.4		34.0		25.5	Sp. Gr.	31.6
10 A08433-4VR	29.2		33.2		30.7		31.0
3 A02449-100	31.6	Sp. Gr.	No Sample		29.3	Sp. Gr.	30.5
9 A08009-2TE	27.2		23.2		30.3		26.9
2 Russet Burbank	17.0	Sp. Gr.	21.3		16.3	Sp. Gr.	18.2
	32.3		31.7		30.2		31.4

As one component of internal quality, tubers are sliced in half to assess internal defects.

2015 Late Harvest Tri-State Trial

Late Harvest Tri-State Postharvest Ratings



2015 Late Harvest Tri-State Trial

Entries Retained from the 2014 Trials Currently in the Tri-State Trial

Harvested fall of 2014
Held at 48° F until December 21, 2014
Stored at 44° F until analysis

In addition to Ranger and Russet Burbank (RB), two clones were retained from the 2014 Tri-State Trial. When averaged across states, A07008-4T produced the lightest fries (40.4 ref units). The uniformity of fry color was unacceptable for all clones. Sprout lengths ranged from 0.3 to 2.5 inches and were highly variable depending on clone and state. AO06191-1 tubers from ID and OR did not sprout over the 7-mo period, indicating long dormancy.

	PHOTOVOLT READING				USDA	% REDUCING SUGAR			Sprouting	
Clone	stem	bud	avg	DIFF	COLOR	stem	bud	avg	percent	length (in.)
Washington										
1 Ranger Russet	23.9	38.6	31.2	14.8	2	2.1	0.8	1.4	100	2.3
2 Russet Burbank	19.3	42.7	31.0	23.4	3	2.8	0.6	1.7	100	0.3
3 A07008-4T	35.0	48.7	41.9	13.7	0	1.0	0.5	0.8	100	2.5
4 AO06191-1	28.3	40.3	34.3	12.8	1	1.6	0.7	1.1	100	0.8
		LSD 0.05	*3.7*	*6.2*						
Average	26.6	42.6	34.6	16.2	1.5	1.9	0.7	1.3	100	
Idaho										
1 Ranger Russet	22.1	37.8	30.0	15.7	2	2.4	0.8	1.6	100	1.3
2 Russet Burbank	21.3	39.4	30.3	18.1	2	2.5	0.8	1.6	100	0.8
3 A07008-4T	36.3	45.2	40.7	9.7	0	0.9	0.6	0.7	100	1.0
4 AO06191-1	24.4	40.7	32.5	16.3	2	2.0	0.7	1.4	0	
		LSD 0.05	*3.5*	*6.5*						
Average	26.0	40.8	33.4	15.0	1.5	1.9	0.7	1.3	75	
Oregon										
1 Ranger Russet	25.7	41.0	33.3	15.3	1	1.9	0.7	1.3	100	1.5
2 Russet Burbank	17.3	44.3	30.8	26.9	3	3.1	0.6	1.9	100	0.8
3 A07008-4T	29.3	48.1	38.7	18.9	1	1.5	0.5	1.0	100	1.0
4 AO06191-1	26.9	39.9	33.4	12.9	1	1.7	0.7	1.2	0	
		LSD 0.05	*4.8*	*5.5*						
Average	24.8	43.3	34.0	18.5	1.5	2.0	0.6	1.3	75	

Date test performed:

Washington	May 5
Idaho	May 5
Oregon	May 5

2015 Late Harvest Tri-State Trial
Prior to Storage

Clone	PHOTOVOLT READING stem	bud	av	rtg §	DIFF	USDA COLOR	SPECIFIC GRAVITY	rtg
Washington								
1 Ranger Russet	40.9	44.3	42.6	**5+**	4.5	0	1.085	**5**
2 Russet Burbank	34.4	42.9	38.6	**4-**	9.1	0	1.072	**0**
3 A02449-100	44.1	45.5	44.8	**5+**	3.5	0	1.075	**0**
4 A06030-23	50.4	47.3	48.9	**5+**	4.0	0	1.083	**5**
5 A061070-3CSR	54.5	55.9	55.2	**5+**	2.5	0	1.082	**4**
6 A061071-3CSR	52.0	50.0	51.0	**5+**	3.3	0	1.079	**2**
7 A06862-14VR	47.6	49.0	48.3	**5+**	4.7	0	1.093	**3**
8 A07008-4T	53.3	55.1	54.2	**5+**	3.6	0	1.088	**5**
9 A08009-2TE	31.2	42.4	36.8	**4-**	11.3	0	1.082	**4**
10 A08433-4VR	37.6	42.3	40.0	**4+**	5.4	0	1.078	**2**
11 A09001-12TE	41.0	47.0	44.0	**5+**	6.2	0	1.086	**5**
12 A09001-14TE	44.1	45.7	44.9	**5+**	3.3	0	1.090	**4**
13 AO06191-1	46.1	49.9	48.0	**5+**	4.3	0	1.089	**4**
		LSD 0.05	*2.8*		*3.4*		*0.007*	
Average	44.4	47.5	45.9		5.1	0	1.083	
Idaho								
1 Ranger Russet	40.4	41.4	40.9	**5+**	5.8	0	1.090	**4**
2 Russet Burbank	32.7	45.0	38.8	**4-**	12.4	0	1.079	**2**
3 A02449-100	No Sample						No Sample	
4 A06030-23	49.8	47.1	48.5	**5+**	6.2	0	1.095	**2**
5 A061070-3CSR	45.9	50.3	48.1	**5+**	4.9	0	1.094	**2**
6 A061071-3CSR	49.4	46.8	48.1	**5+**	3.9	0	1.091	**4**
7 A06862-14VR	48.5	46.2	47.4	**5+**	5.8	0	1.100	**1**
8 A07008-4T	51.9	42.0	46.9	**5-**	10.0	0	1.092	**3**
9 A08009-2TE	30.8	32.9	31.9	**3+**	3.0	0	1.094	**2**
10 A08433-4VR	40.1	42.4	41.3	**5+**	5.9	0	1.095	**2**
11 A09001-12TE	44.7	44.2	44.5	**5+**	6.8	0	1.100	**1**
12 A09001-14TE	45.9	43.4	44.7	**5+**	4.3	0	1.093	**3**
13 AO06191-1	40.8	41.1	40.9	**5+**	4.1	0	1.097	**1**
		LSD 0.05	*3.0*		*3.8*		*0.004*	
Average	43.4	43.6	43.5		6.1	0	1.093	
Oregon								
1 Ranger Russet	42.1	48.2	45.1	**5+**	7.0	0	1.073	**0**
2 Russet Burbank	23.3	42.8	33.1	**3-**	19.5	2	1.070	**0**
3 A02449-100	39.2	42.8	41.0	**5+**	5.7	0	1.065	**0**
4 A06030-23	47.4	48.0	47.7	**5+**	5.1	0	1.066	**0**
5 A061070-3CSR	42.5	53.0	47.7	**5-**	10.5	0	1.073	**0**
6 A061071-3CSR	45.7	45.9	45.8	**5+**	5.8	0	1.075	**0**
7 A06862-14VR	47.4	48.5	48.0	**5+**	3.9	0	1.093	**3**
8 A07008-4T	45.8	53.0	49.4	**5+**	8.4	0	1.080	**3**
9 A08009-2TE	39.4	40.7	40.0	**4+**	6.8	0	1.080	**3**
10 A08433-4VR	36.6	40.5	38.5	**4+**	6.9	0	1.085	**5**
11 A09001-12TE	43.9	49.9	46.9	**5+**	7.3	0	1.086	**5**
12 A09001-14TE	44.2	46.1	45.1	**5+**	5.1	0	1.091	**4**
13 AO06191-1	40.0	46.8	43.4	**5+**	6.9	0	1.085	**5**
		LSD 0.05	*3.6*		*4.3*		*0.007*	
Average	41.3	46.6	44.0		7.6	0	1.079	

Date test performed:

Washington	Oct. 6	Oct. 2
Idaho	Sept. 24	Sept. 21
Oregon	Oct. 6	Oct. 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.

2015 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	**3.5**	96	13	4.0	1.3	11	13
2 Russet Burbank	**3.0**	21	4	1.5	1.1	16	15
3 A02449-100	**3.6**	17	4	1.4	1.1	11	13
4 A06030-23	**3.9**	83	8	3.3	1.2	10	11
5 A061070-3CSR	**3.4**	92	0	3.8	1.0	7	5
6 A061071-3CSR	**3.6**	63	17	2.5	1.3	9	14
7 A06862-14VR	**3.2**	96	13	3.9	1.3	11	15
8 A07008-4T	**3.8**	13	0	1.3	1.0	17	19
9 A08009-2TE	**3.2**	42	8	1.9	1.2	15	14
10 A08433-4VR	**3.2**	4	0	1.1	1.0	11	12
11 A09001-12TE	**3.0**	17	0	1.5	1.0	7	6
12 A09001-14TE	**3.7**	92	29	3.6	1.6	8	11
13 AO06191-1	**3.8**	92	4	3.5	1.1	11	13
LSD 0.05	*0.4*	*27*	*12*			*4*	*5*
Average	3.4	55.8	7.7	2.6	1.2	11.0	12.3
Idaho							
1 Ranger Russet	**3.9**	88	13	3.5	1.3	11	14
2 Russet Burbank	**3.3**	33	4	1.7	1.1	10	12
3 A02449-100	**No Sample**	No Sample		No Sample		No Sample	
4 A06030-23	**3.6**	58	4	2.3	1.1	12	10
5 A061070-3CSR	**4.0**	54	0	2.1	1.0	10	9
6 A061071-3CSR	**3.5**	25	0	1.5	1.0	26	15
7 A06862-14VR	**3.7**	71	13	2.6	1.3	20	19
8 A07008-4T	**3.5**	38	0	1.8	1.0	16	13
9 A08009-2TE	**3.2**	13	4	1.3	1.1	15	15
10 A08433-4VR	**3.2**	0	0	1.0	1.0	12	10
11 A09001-12TE	**3.8**	29	4	1.6	1.1	11	10
12 A09001-14TE	**3.6**	92	21	3.6	1.4	11	11
13 AO06191-1	**3.6**	46	0	2.0	1.0	9	10
LSD 0.05	*0.4*	*30*	*13*			*7*	*4*
Average	3.6	45.5	5.2	2.1	1.1	13.7	12.3
Oregon							
1 Ranger Russet	**3.2**	92	0	3.9	1.0	8	8
2 Russet Burbank	**3.3**	71	4	2.9	1.1	7	6
3 A02449-100	**3.3**	71	4	2.8	1.1	13	10
4 A06030-23	**3.4**	46	8	2.0	1.2	9	8
5 A061070-3CSR	**3.5**	38	0	1.9	1.0	6	6
6 A061071-3CSR	**3.7**	13	0	1.3	1.0	10	5
7 A06862-14VR	**3.4**	50	4	2.5	1.1	9	9
8 A07008-4T	**3.8**	4	4	1.1	1.1	8	10
9 A08009-2TE	**3.3**	21	0	1.5	1.0	13	10
10 A08433-4VR	**3.7**	8	0	1.2	1.0	10	8
11 A09001-12TE	**3.6**	17	8	1.3	1.2	9	6
12 A09001-14TE	**3.9**	54	21	2.5	1.5	9	6
13 AO06191-1	**3.8**	79	13	3.1	1.3	11	11
LSD 0.05	*0.4*	*20*	*15*			*4*	*3*
Average	3.5	43.3	1.1	2.1	1.1	9.6	8.2

Date test performed:

Washington	Oct. 14	Oct. 29	Nov. 17
Idaho	Oct. 13	Oct. 22	Nov. 10
Oregon	Oct. 15	Nov. 3	Nov. 20

2015 Late Harvest Tri-State Trial

Stored at 48°F for 60 Days

	PHOTOVOLT READING				DIFF	USDA	% REDUCING SUGAR			SPROUTING	
Clone	stem	bud	average	rtg §		COLOR	stem	bud	rtg	(%)	length (in)
Washington											
1 Ranger Russet	37.7	44.3	41.0	**5+**	7.9	0	0.8	0.6	**5**	60	0.25
2 Russet Burbank	29.5	43.0	36.2	**4-**	13.5	1	1.4	0.6	**4**	0	
3 A02449-100	47.1	48.8	47.9	**5+**	3.2	0	0.5	0.5	**5**	0	
4 A06030-23	50.2	47.2	48.7	**5+**	5.3	0	0.5	0.5	**5**	0	
5 A061070-3CSR	52.1	52.9	52.5	**5+**	4.3	0	0.5	0.5	**5**	87	0.25
6 A061071-3CSR	49.1	48.5	48.8	**5+**	3.0	0	0.5	0.5	**5**	60	0.50
7 A06862-14VR	43.6	47.0	45.3	**5+**	3.9	0	0.6	0.5	**5**	100	0.50
8 A07008-4T	45.4	48.8	47.1	**5+**	3.9	0	0.6	0.5	**5**	0	
9 A08009-2TE	34.5	43.4	38.9	**4-**	9.0	0	1.0	0.6	**5**	47	0.25
10 A08433-4VR	39.6	43.9	41.7	**5+**	4.8	0	0.7	0.6	**5**	0	
11 A09001-12TE	35.3	45.5	40.4	**4-**	10.2	0	1.0	0.6	**5**	40	0.13
12 A09001-14TE	48.2	48.2	48.2	**5+**	2.0	0	0.5	0.5	**5**	0	
13 AO06191-1	44.9	48.6	46.8	**5+**	5.2	0	0.6	0.5	**5**	8	0.25
		LSD 0.05	*2.4*		*3.4*					*20*	
Average	42.8	46.9	44.9		5.9	0	0.7	0.6		31	
Idaho											
1 Ranger Russet	43.3	45.0	44.1	**5+**	4.5	0	0.6	0.6	**5**	60	0.13
2 Russet Burbank	30.1	45.5	37.8	**4-**	15.4	1	1.4	0.6	**4**	0	
3 A02449-100	No Sample						No Sample			No Sample	
4 A06030-23	48.2	45.9	47.0	**5+**	4.8	0	0.5	0.5	**5**	0	
5 A061070-3CSR	51.9	54.2	53.1	**5+**	3.9	0	0.5	0.5	**5**	53	0.25
6 A061071-3CSR	51.3	47.6	49.5	**5+**	4.3	0	0.5	0.5	**5**	57	0.13
7 A06862-14VR	51.4	47.3	49.4	**5+**	4.2	0	0.5	0.5	**5**	100	0.25
8 A07008-4T	50.2	49.5	49.8	**5+**	5.5	0	0.5	0.5	**5**	0	
9 A08009-2TE	33.1	34.7	33.9	**3+**	4.2	0	1.1	1.0	**4**	53	0.25
10 A08433-4VR	40.3	43.9	42.1	**5+**	6.1	0	0.7	0.6	**5**	0	
11 A09001-12TE	44.5	49.2	46.9	**5+**	6.7	0	0.6	0.5	**5**	47	0.13
12 A09001-14TE	45.1	44.3	44.7	**5+**	5.3	0	0.6	0.6	**5**	14	0.13
13 AO06191-1	38.1	42.9	40.5	**5+**	6.5	0	0.8	0.6	**5**	0	
		LSD 0.05	*2.3*		*3.5*					*20*	
Average	44.0	45.8	44.9		5.9	0	0.7	0.6		32	
Oregon											
1 Ranger Russet	45.8	49.7	47.8	**5+**	7.4	0	0.6	0.5	**5**	53	1.00
2 Russet Burbank	23.2	40.2	31.7	**3-**	17.0	2	2.2	0.7	**3**	0	
3 A02449-100	38.6	41.9	40.2	**4+**	7.2	0	0.8	0.7	**5**	0	
4 A06030-23	50.2	50.4	50.3	**5+**	2.2	0	0.5	0.5	**5**	0	
5 A061070-3CSR	45.8	52.8	49.3	**5-**	9.6	0	0.6	0.5	**5**	87	0.75
6 A061071-3CSR	46.4	50.4	48.4	**5+**	8.8	0	0.5	0.5	**5**	53	1.00
7 A06862-14VR	44.6	48.1	46.4	**5+**	4.6	0	0.6	0.5	**5**	80	1.00
8 A07008-4T	49.4	54.6	52.0	**5+**	5.4	0	0.5	0.5	**5**	0	
9 A08009-2TE	39.5	42.8	41.1	**5+**	7.0	0	0.8	0.6	**5**	53	1.00
10 A08433-4VR	37.2	44.1	40.6	**5-**	11.5	0	0.9	0.6	**5**	33	0.50
11 A09001-12TE	42.3	47.8	45.0	**5-**	9.0	0	0.6	0.5	**5**	0	
12 A09001-14TE	47.2	51.6	49.4	**5+**	6.0	0	0.5	0.5	**5**	27	1.00
13 AO06191-1	40.6	48.0	44.3	**5+**	7.9	0	0.7	0.5	**5**	0	
		LSD 0.05	*3.6*		*4.3*					*21*	
Average	42.4	47.9	45.1		8.0	0	0.8	0.6		30	

Date test performed:

Washington	Dec. 6	Dec. 6	Dec. 18
Idaho	Dec. 3	Dec. 3	Dec. 18
Oregon	Dec. 15	Dec. 15	Dec. 18

§ 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.

2015 Late Harvest Tri-State Trial

Stored at 44°F for 60 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg
Washington									
1 Ranger Russet	33.7	43.9	38.8	**4-**	10.3	0	1.1	0.6	**5**
2 Russet Burbank	23.4	37.4	30.4	**2-**	14.0	2	2.2	0.9	**3**
3 A02449-100	40.9	43.8	42.3	**5+**	5.2	0	0.7	0.6	**5**
4 A06030-23	50.6	48.8	49.7	**5+**	3.7	0	0.5	0.5	**5**
5 A061070-3CSR	46.5	51.7	49.1	**5+**	5.3	0	0.5	0.5	**5**
6 A061071-3CSR	38.7	45.9	42.3	**5+**	7.2	0	0.8	0.5	**5**
7 A06862-14VR	44.4	48.8	46.6	**5+**	5.4	0	0.6	0.5	**5**
8 A07008-4T	47.1	50.3	48.7	**5+**	4.4	0	0.5	0.5	**5**
9 A08009-2TE	31.7	39.3	35.5	**4+**	7.7	0	1.2	0.8	**4**
10 A08433-4VR	31.8	36.2	34.0	**3+**	6.0	0	1.2	0.9	**4**
11 A09001-12TE	37.7	43.5	40.6	**5+**	8.0	0	0.8	0.6	**5**
12 A09001-14TE	46.6	48.6	47.6	**5+**	4.4	0	0.5	0.5	**5**
13 AO06191-1	43.3	49.0	46.1	**5+**	5.7	0	0.6	0.5	**5**
		LSD 0.05	*2.7*		*3.2*				
Average	39.7	45.2	42.4		6.7	0	0.9	0.6	
Idaho									
1 Ranger Russet	40.6	45.7	43.1	**5+**	8.2	0	0.7	0.6	**5**
2 Russet Burbank	28.8	39.9	34.4	**3-**	11.1	1	1.5	0.7	**4**
3 A02449-100			No Sample					No Sample	
4 A06030-23	47.1	45.4	46.3	**5+**	4.7	0	0.5	0.6	**5**
5 A061070-3CSR	47.1	51.8	49.4	**5+**	5.0	0	0.5	0.5	**5**
6 A061071-3CSR	51.5	47.6	49.5	**5+**	5.4	0	0.5	0.5	**5**
7 A06862-14VR	51.0	49.7	50.3	**5+**	3.3	0	0.5	0.5	**5**
8 A07008-4T	47.9	44.1	46.0	**5+**	5.1	0	0.5	0.6	**5**
9 A08009-2TE	27.8	29.5	28.6	**2+**	3.5	1	1.6	1.4	**3**
10 A08433-4VR	42.4	43.0	42.7	**5+**	2.9	0	0.6	0.6	**5**
11 A09001-12TE	39.4	36.2	37.8	**4+**	4.7	0	0.8	0.9	**5**
12 A09001-14TE	43.7	42.2	43.0	**5+**	3.4	0	0.6	0.6	**5**
13 AO06191-1	38.6	41.5	40.0	**4+**	5.3	0	0.8	0.7	**5**
		LSD 0.05	*2.7*		*3.4*				
Average	42.2	43.0	42.6		5.2	0	0.8	0.7	
Oregon									
1 Ranger Russet	33.5	45.0	39.2	**4-**	12.2	0	1.1	0.6	**5**
2 Russet Burbank	26.5	39.1	32.8	**3-**	13.4	1	1.8	0.8	**4**
3 A02449-100	38.8	40.6	39.7	**4+**	5.2	0	0.8	0.7	**5**
4 A06030-23	42.6	44.1	43.3	**5+**	4.8	0	0.6	0.6	**5**
5 A061070-3CSR	39.3	50.5	44.9	**5-**	11.7	0	0.8	0.5	**5**
6 A061071-3CSR	42.2	49.7	46.0	**5-**	9.4	0	0.6	0.5	**5**
7 A06862-14VR	43.1	49.3	46.2	**5+**	6.8	0	0.6	0.5	**5**
8 A07008-4T	38.6	47.1	42.8	**5+**	8.9	0	0.8	0.5	**5**
9 A08009-2TE	30.5	36.6	33.5	**3+**	7.8	0	1.3	0.9	**4**
10 A08433-4VR	33.8	35.9	34.8	**3+**	7.1	0	1.1	0.9	**4**
11 A09001-12TE	36.2	47.3	41.7	**5-**	11.2	0	0.9	0.5	**5**
12 A09001-14TE	44.4	48.5	46.5	**5+**	6.4	0	0.6	0.5	**5**
13 AO06191-1	33.1	42.6	37.9	**4-**	9.8	0	1.1	0.6	**5**
		LSD 0.05	4.3		5.0				
Average	37.1	44.3	40.7		8.8	0	0.9	0.6	

Date test performed:

Washington	Dec. 7		Dec. 7
Idaho	Dec. 4	Dec. 4	
Oregon	Dec. 16		Dec. 16

§ 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.

2015 Late Harvest Tri-State Trial

Stored at 40°F for 60 Days and Reconditioned

		PHOTOVOLT (60 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	18.4	23.9	21.1	5.5	3	26.6	38.8	32.7	12.3	1
2 Russet Burbank	0	11.6	19.0	15.3	7.4	4	18.5	27.6	23.0	9.2	3
3 A02449-100	0	22.8	32.2	27.5	9.7	2	25.1	34.3	29.7	9.2	1
4 A06030-23	0	31.9	33.3	32.6	4.2	0	40.7	44.7	42.7	6.0	0
5 A061070-3CSR	0	28.9	35.6	32.3	6.7	1	37.2	42.8	40.0	8.5	0
6 A061071-3CSR	0	18.1	24.5	21.3	6.7	3	29.3	36.7	33.0	8.7	1
7 A06862-14VR	0	22.9	39.6	31.3	16.7	2	35.9	48.4	42.2	12.6	0
8 A07008-4T	0	24.0	41.6	32.8	17.6	2	34.3	48.0	41.2	13.7	0
9 A08009-2TE	0	14.3	18.8	16.5	4.8	4	24.2	40.7	32.4	16.5	2
10 A08433-4VR	0	12.8	18.8	15.8	6.0	4	33.3	34.1	33.7	2.0	0
11 A09001-12TE	0	20.3	32.2	26.3	11.9	2	29.0	36.3	32.7	9.0	1
12 A09001-14TE	0	24.1	28.3	26.2	4.5	2	44.3	46.8	45.6	3.3	0
13 AO06191-1	0	19.1	26.7	22.9	7.7	3	29.1	33.3	31.2	4.6	1
LSD 0.05	*ns*			*3.4*	*3.7*				*4.6*	*4.2*	
Average	0	20.7	28.8	24.8	8.4	2	31.3	39.4	35.4	8.9	1
Idaho											
1 Ranger Russet	0	24.3	29.2	26.7	6.2	2	25.7	37.4	31.6	11.7	1
2 Russet Burbank	0	14.7	18.6	16.7	4.5	3	19.3	31.5	25.4	13.2	3
3 A02449-100	None			No Sample					No Sample		
4 A06030-23	0	28.9	28.1	28.5	4.0	1	37.4	38.0	37.7	5.6	0
5 A061070-3CSR	0	33.3	35.2	34.3	4.3	0	41.0	48.6	44.8	7.9	0
6 A061071-3CSR	0	23.1	25.6	24.3	5.4	2	34.0	38.1	36.0	4.7	0
7 A06862-14VR	0	35.2	42.0	38.6	7.1	0	46.4	48.0	47.2	2.4	0
8 A07008-4T	0	27.7	34.4	31.0	8.3	1	39.8	47.8	43.8	9.0	0
9 A08009-2TE	0	16.5	18.5	17.5	3.0	3	26.7	32.9	29.8	8.1	1
10 A08433-4VR	0	17.1	26.0	21.5	8.9	3	29.1	34.8	31.9	5.9	1
11 A09001-12TE	0	25.9	30.3	28.1	5.6	1	31.8	37.1	34.5	6.4	0
12 A09001-14TE	0	24.9	29.2	27.1	4.8	1	44.3	45.1	44.7	5.0	0
13 AO06191-1	0	20.6	25.6	23.1	5.7	2	24.6	35.7	30.2	11.6	1
LSD 0.05	ns			*2.8*	*3.0*				*4.1*	*4.3*	
Average	0	24.4	28.5	26.4	5.6	2	33.3	39.6	36.4	7.6	1
Oregon											
1 Ranger Russet	0	22.3	33.0	27.6	11.0	2	24.6	36.9	30.7	15.5	1
2 Russet Burbank	0	15.6	26.3	21.0	10.7	3	20.5	32.7	26.6	12.6	2
3 A02449-100	0	24.6	30.9	27.7	7.1	1	22.6	26.9	24.7	4.8	2
4 A06030-23	0	27.6	30.2	28.9	5.7	1	30.9	34.4	32.7	5.1	0
5 A061070-3CSR	0	24.8	38.9	31.9	14.2	1	35.1	41.3	38.2	13.3	0
6 A061071-3CSR	0	26.3	30.4	28.4	7.5	1	30.0	41.9	35.9	13.5	1
7 A06862-14VR	0	29.1	43.7	36.4	15.5	1	39.4	48.1	43.8	9.4	0
8 A07008-4T	0	27.1	42.5	34.8	15.3	1	25.6	45.9	35.8	20.3	1
9 A08009-2TE	0	16.9	20.7	18.8	4.4	3	23.2	32.8	28.0	9.5	2
10 A08433-4VR	0	13.4	16.5	15.0	5.4	4	24.1	30.8	27.4	7.5	2
11 A09001-12TE	0	30.4	38.2	34.3	8.7	1	32.7	45.2	38.9	13.8	0
12 A09001-14TE	0	26.8	35.5	31.1	9.7	1	41.8	46.0	43.9	6.1	0
13 AO06191-1	0	19.3	27.3	23.3	8.4	3	24.2	38.6	31.4	14.4	2
LSD 0.05	*ns*			*3.5*	*4.7*				*4.3*	*5.7*	
Average	0	23.4	31.9	27.6	9.5	2	28.8	38.6	33.7	11.2	1

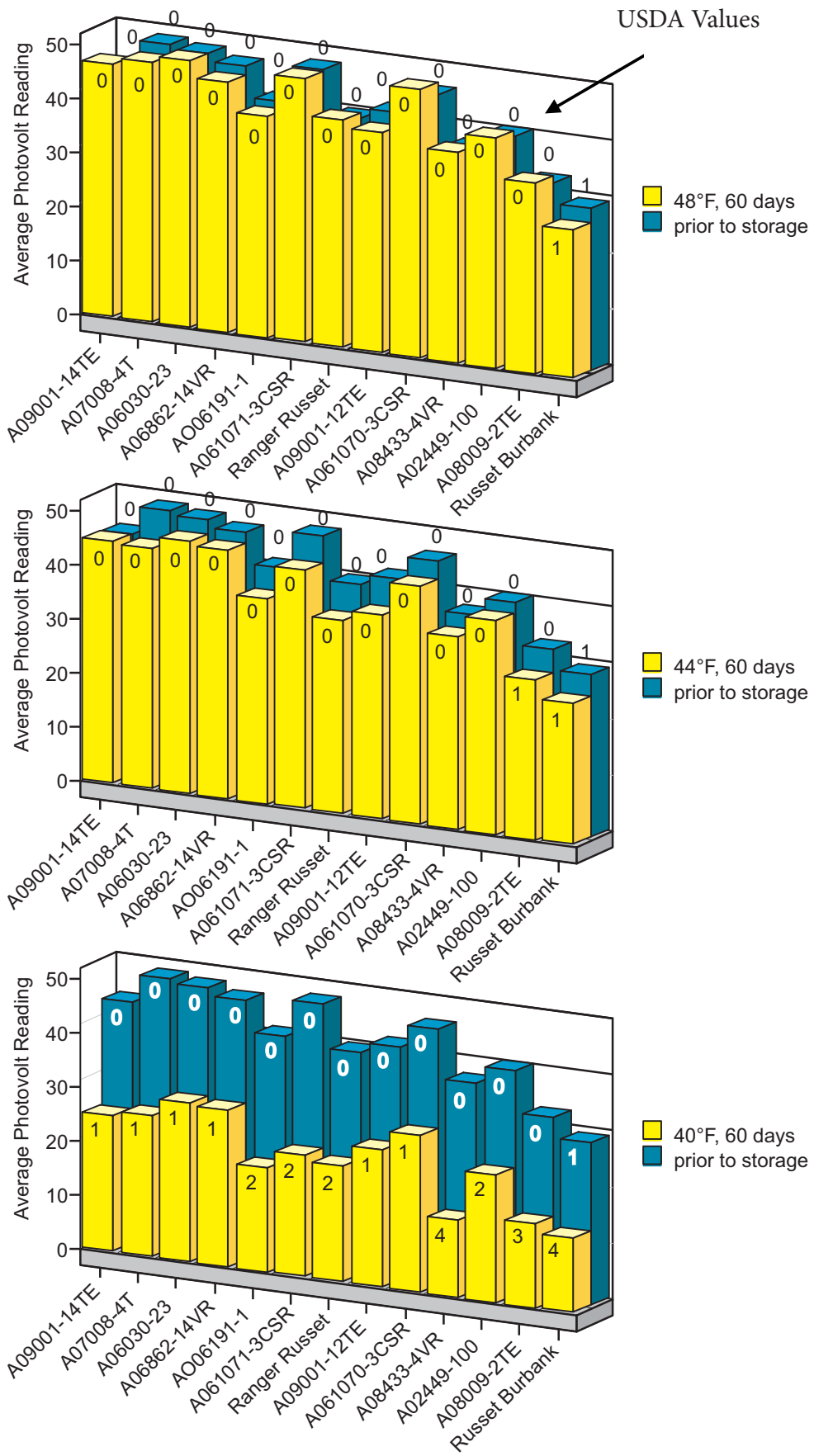
Date test performed:

Washington	Dec. 16	Dec. 8	Dec. 17
Idaho	Dec. 16	Dec. 5	Dec. 16
Oregon	Dec. 16	Dec. 16	Dec. 17

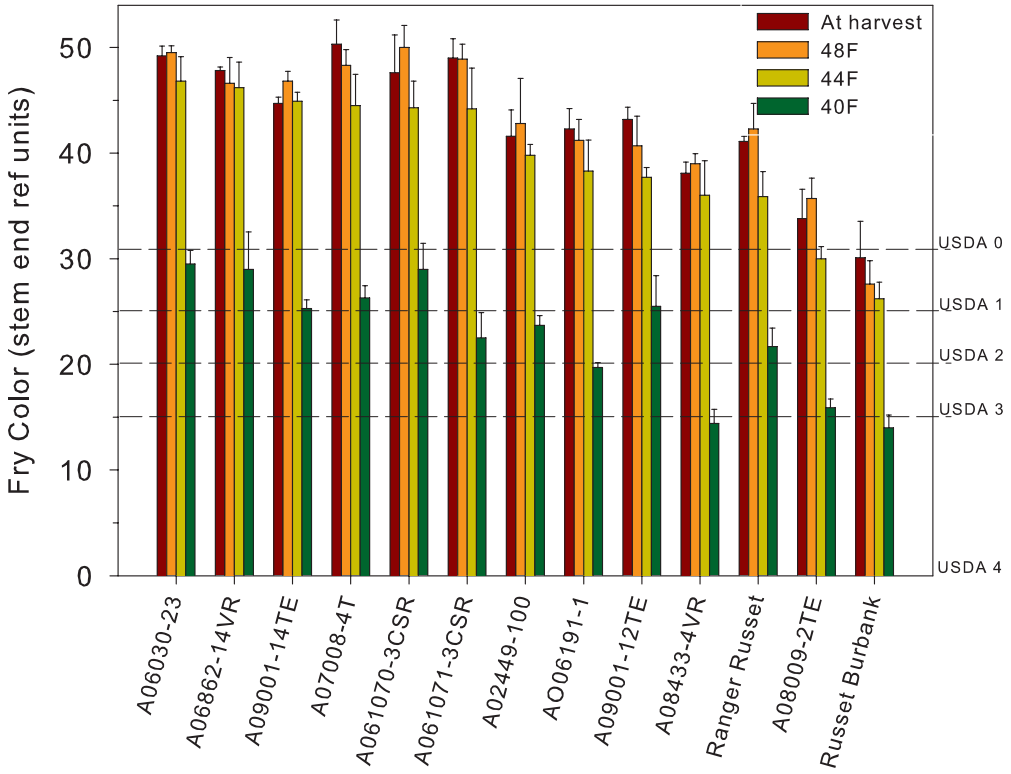
DIFF = Absolute difference between bud and stem Photovolt reading.

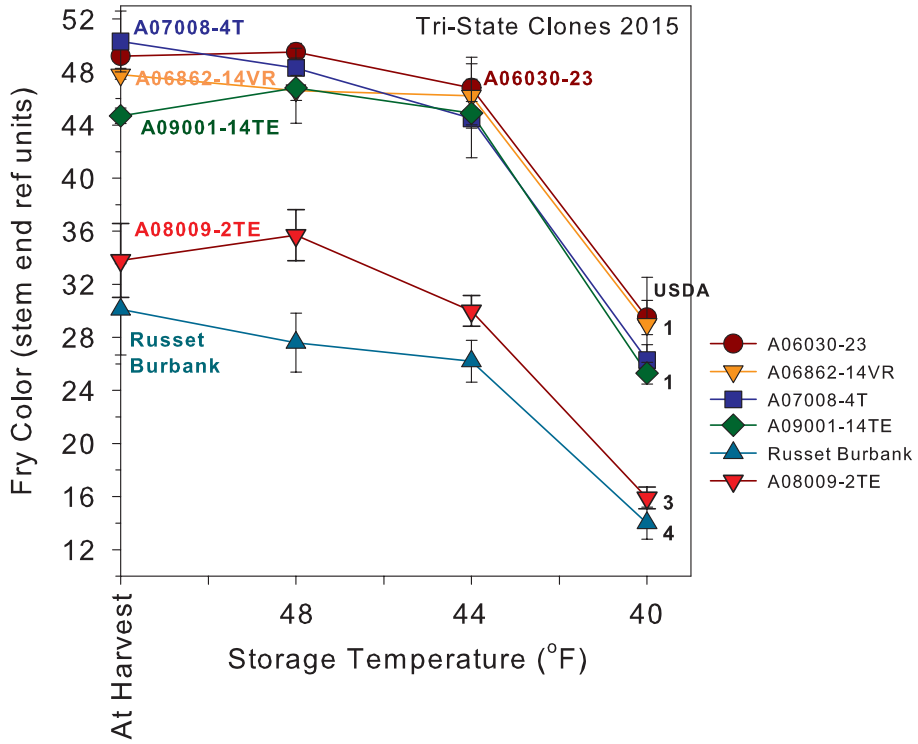
2015 Late Harvest Tri-State Trial

Tri-State Trial - 3 State Average of Stem End



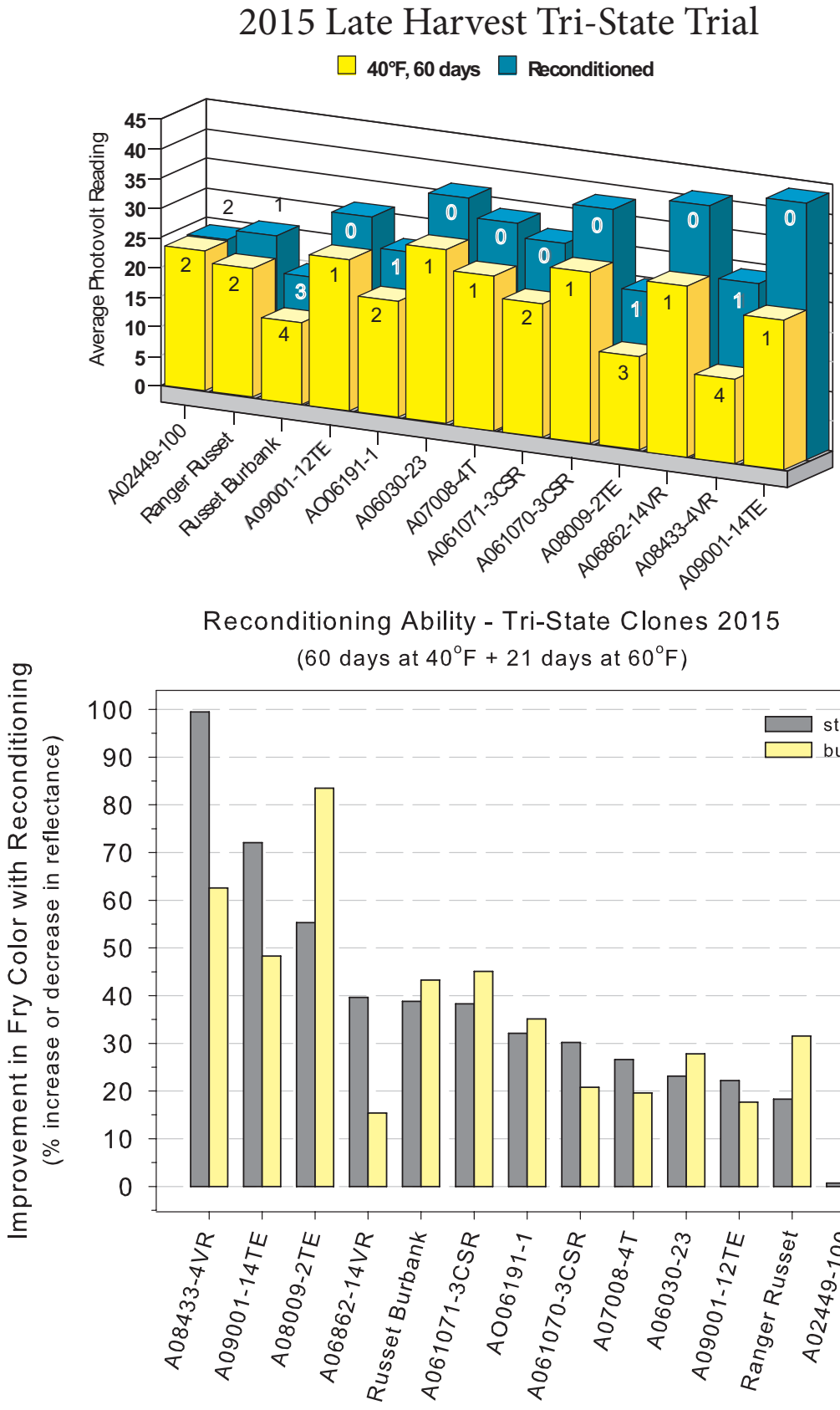
2015 Late Harvest Tri-State Trial





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

Bottom: Line graph depicting the effects of storage temperature on the change in French fry processing quality (stem end fry color) of the best (A7008-4T, A06862-14VR, A09001-14TE, and A06030-23) and worst (A08009-2TE and Russet Burbank) performing clones in the Tri-State Trial. *Indicates similar performance of the clones last year.



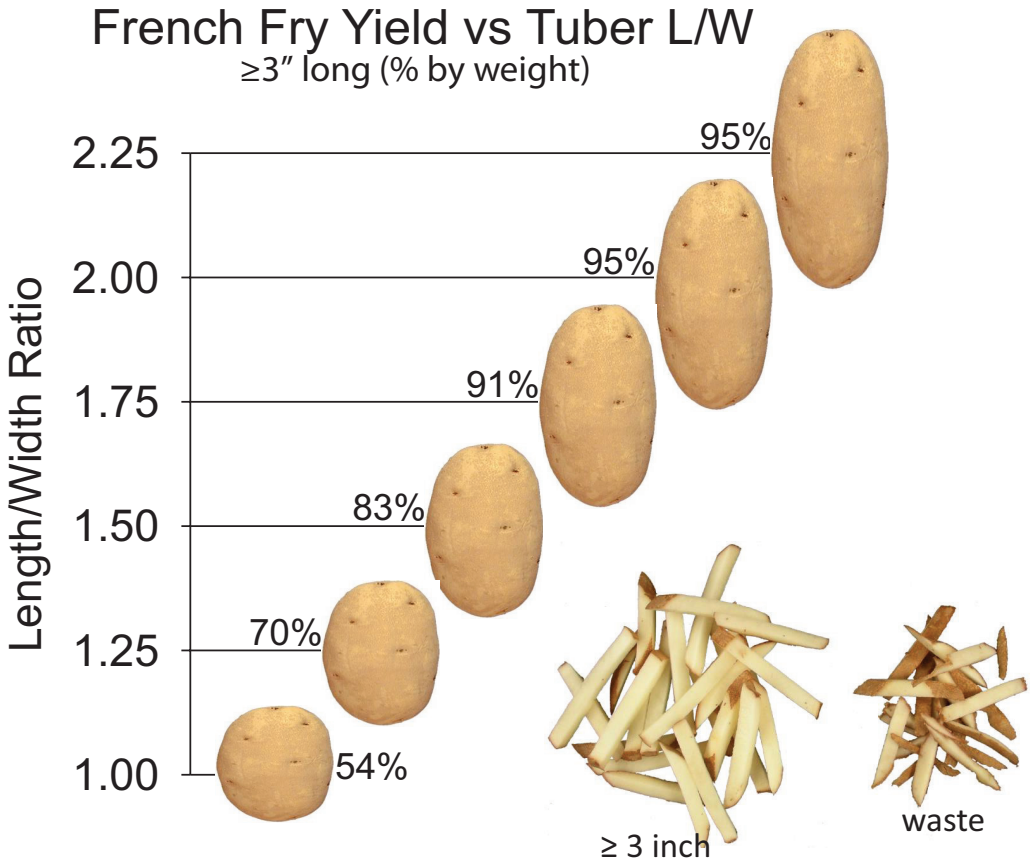
Reconditioning abilities of clones in the 2015 Tri-State Trial (3-state averages). Clones were stored at 40°F for 60 days after harvest and then reconditioned at 60°F for 21 days. Top: Stem end fry color before and after reconditioning. Numbers in bars indicate the USDA color rating of the stem end. Bottom: Percent improvement of stem and bud end fry color with reconditioning.

2015 Late Harvest Tri-State Trial

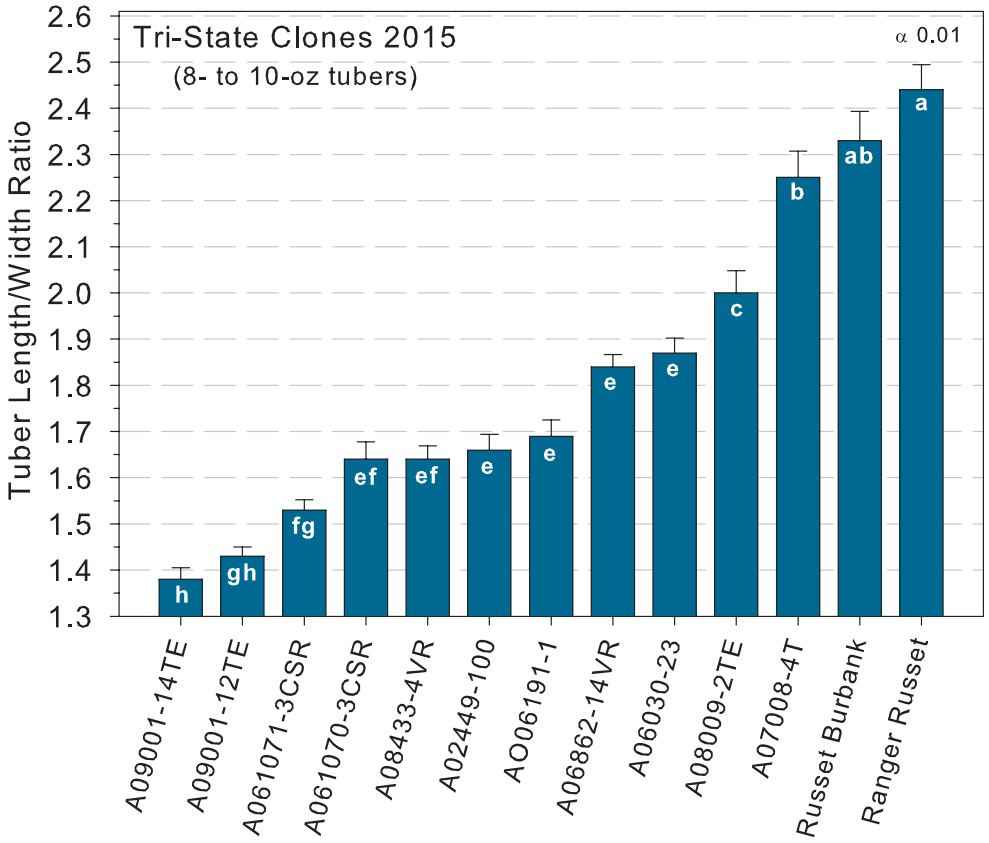
Tuber Shape and Associated French Fry Yields

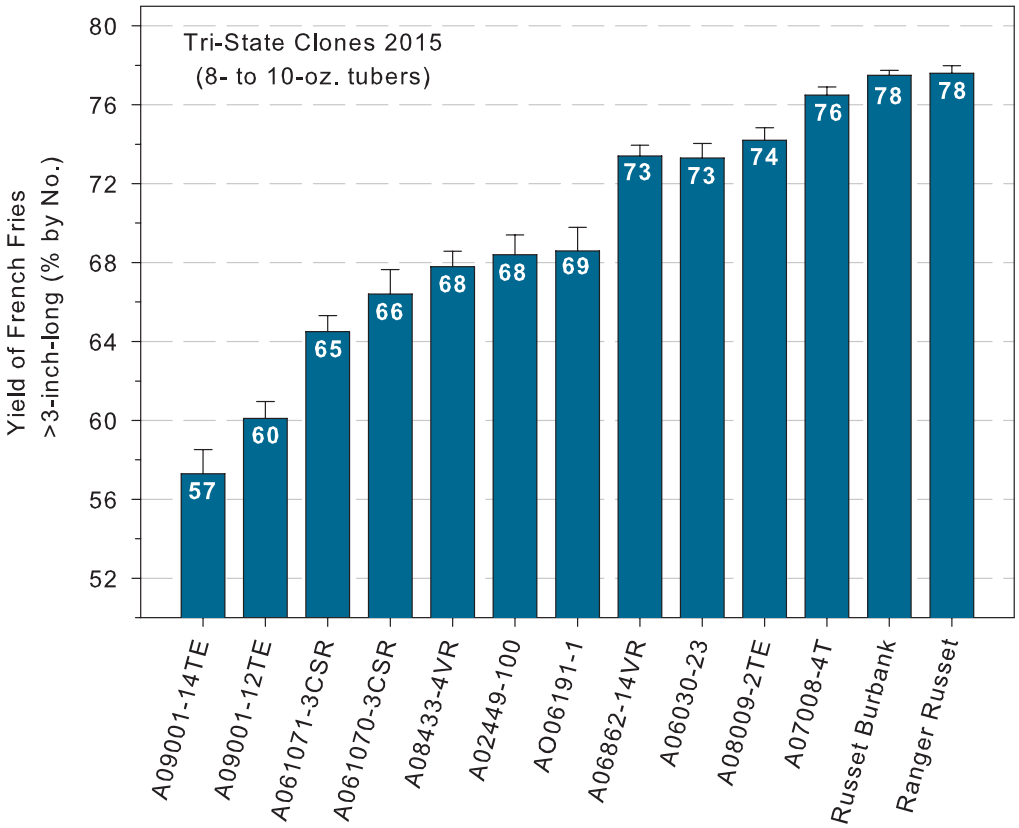
(8- to 10-oz Tubers)

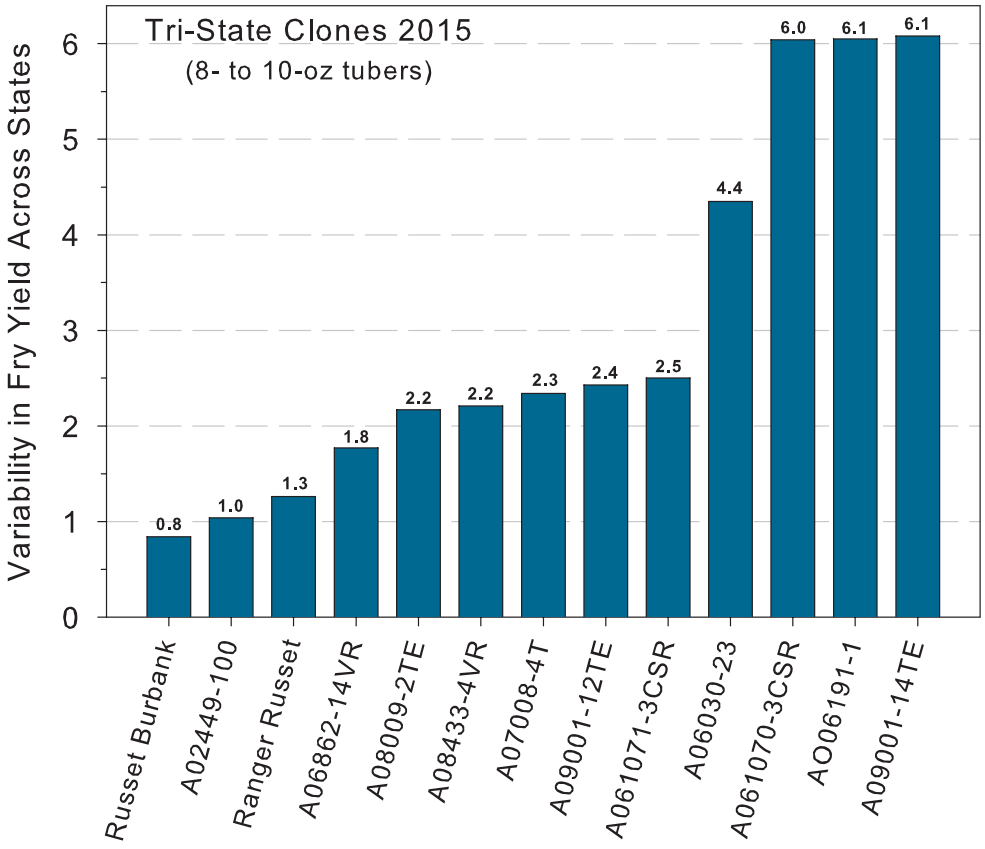
Clone	Length to width ratio				Yield of 3" or longer fries (% by number)			
	WA	ID	OR	3 State Avg.	WA	ID	OR	3 State Avg.
1 Ranger Russet	2.07	2.59	2.66	2.44	76	78	78	78
2 Russet Burbank	2.03	2.08	2.95	2.35	76	78	79	78
3 A02449-100	1.63	No Sample	1.68	1.66	67	No Sample	69	68
4 A06030-23	1.60	2.03	1.99	1.87	67	77	76	73
5 A061070-3CSR	1.41	1.70	1.81	1.64	58	70	71	66
6 A061071-3CSR	1.44	1.56	1.61	1.53	61	66	67	65
7 A06862-14VR	1.72	1.90	1.90	1.84	71	75	74	73
8 A07008-4T	1.79	2.17	2.76	2.24	73	78	79	76
9 A08009-2TE	1.78	2.01	2.22	2.00	71	75	76	74
10 A08433-4VR	1.57	1.58	1.77	1.64	66	66	71	68
11 A09001-12TE	1.36	1.42	1.51	1.43	57	60	63	60
12 A09001-14TE	1.25	1.56	1.34	1.38	51	66	55	57
13 AO06191-1	1.46	1.85	1.79	1.70	60	74	72	69
Average	1.62	1.87	2.00	1.83	66	72	72	70



2015 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, A09001-14TE had a length to width ratio of 1.38 (see previous page), resulting in 57% of the tuber yielding French fries ≥3 inches in length. Tuber shape of this entry also varied the most across production regions (above), resulting in fry yields ranging from 50% to 64% (57±7.2%).

Previous page: Tuber length to width ratios and the associated percent yield of fries. Bars with same letter are not significantly different (P≤0.01).

2015 Early Harvest Regional Trial

Location: WSU Research Center – Othello, WA
Planting Date: March 31 Vine Kill Date: July 17
Harvest Date: August 4 Days Grown: 108

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 2015 early harvest trial compared 4 local reference varieties to 18 new clones on the WSU Othello Research Station. The following is a summary of the Washington field and post-harvest results. See also: grading comments and merit scores near front of book.

Fresh Market Standout(s): A06021-1T
Process Market Standout(s): A03921-2, A03141-6, and CO05068-1RU.

Standcounts

- 30 Day
  Slow emergence: A03141-6, A06021-1T, AO01114-4, AO03123-2, COTX09052-2RU and POR06V12-3 each (0%).
  Best emergence: COTX09022-3RuRE/Y (78%), A06862-18VR (62%).

- 40 Day
  Slow emergence: A06021-1T and COTX09052-2RU each (29%).
  Best emergence: OR05039-4 (100%).

- 50 Day
  Full emergence: A03921-2, A06914-3CR and OR05039-4
  Poor emergence: All varieties were above (87%).

Plant and Tuber Growth & Development

- Above Ground Stem Number Per Plant
  Most: COTX09022-3RuRE/Y (3.1) and CO05175-1RU (2.6).
  Least: A06021-1T (1.1) and COTX09052-2RU (1.4).

- Average Tuber Number Per Plant
  Most: COTX09052-2RU (9.0) and POR06V12-3 (8.3).
  Least: A06021-1T (4.7) and AO01114-4 (5.1).

- Average Tuber Size (oz)
  Largest: A03141-6 (8.4), A06021-1T (7.9), and CO05175-1RU (7.8).
  Smallest: AO03123-2 (5.3); Russet Burbank, A06084-1TE, AO01114-4 and TX08352-5RU each (6.2).

- Undersized Tuber (<4 oz)
  Most: TX09052-2RU, POR06V12-3, and AO03123-2.
  Fewest: A03141-6, A06021-1T, and OR5039-4.

Yield and Economic Data

- Total Yield and U.S. #1 Yield
  Highest: Shepody had the highest total yield (487 CWT/A) and A03141-6 jad the U.S. #1 yield (421 CWT/A). Ranger Russet had the second highest total yield (479 CWT/A) and Shepody had the U.S. #1 yield (413 CWT/A).
  Lowest: AO01114-4 had the lowest total yield (296 CWT/A) and COTX09022-3RuRE/Y had the U.S. #1 yield (210 CWT/A). A03921-2 had the second lowest total yield (320 CWT/A); AO01114-4 had the second lowest U.S. #1 yield (229 CWT/A).

- % U.S. #1's (greater than 4 oz)
  Highest: A03141-6 (92%) and OR05039-4 (91%).
  Lowest: COTX09022-3RuRE/Y (56%); Russet Burbank and COTX09052-2RU each (70%).

- Carton Yield (100 to 50 Count (7 to 18 oz U.S. #1 Tubers))
  Highest: A03141-6 (17.2 Tons/A) and Ranger Russet (13.6 Tons/A).
  Lowest: AO03123-2 and COTX09052-2RU each (6.0 Tons/A).

- Gross Return ($/acre)
  Fresh Market Highest: A03141-6 and Ranger.
  Fresh Market Lowest: COTX09022-3RuRE/Y, AO01114-4, and A03921-2.
  Process Market Highest: A03141-6 and Shepody.

Tuber Defects (30 tuber sample of 8-12 oz tubers)

- External Defects
  Notable Defects: COTX09022-3RuRE/Y had 35% growth cracks, Russet Burbank had many knobs. Most entries had little to no external defects.

- Internal Defects
  Notable Defects: Most entries had no internal defects. A06021-1T had (17%) brown center; A06862-18VR had (10%) brown center and hollow heart.

- Bruise
  Highest Blackspot: CO05110-6RU (30%), Ranger Russet (24%).
  Highest Shatter: A06862-18VR (80%) and A03921-2 (47%).

2015 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	Tons/A	% of Total Yield			% of Total Yield	Tons/A	% of Total Yield	Tons/A
Ranger Russet	479	24.0	84	2	14	57	13.6	68	16.3
Russet Burbank	460	23.0	70	4	26	39	9.0	56	12.7
Russet Norkotah	468	23.4	79	0	21	48	11.1	59	13.9
Shepody	487	24.4	85	2	13	52	12.8	72	17.5
A03141-6	456	22.8	92	0	8	76	17.2	83	19.0
A03921-2	320	16.0	71	1	28	42	6.7	53	8.7
A06021-1T	353	17.6	87	1	12	60	10.5	76	13.4
A06084-1TE	441	22.0	83	1	16	42	9.3	59	12.5
A06862-18VR	396	19.8	86	0	14	50	9.9	64	12.6
A06914-3CR	444	22.2	79	0	21	50	11.1	61	13.6
AC05039-2RU	408	20.4	85	1	14	51	10.4	66	13.5
AO01114-4	296	14.8	72	0	28	44	6.6	53	8.3
AO03123-2	389	19.4	79	1	21	31	6.0	43	8.6
AOR06070-1KF	426	21.3	84	0	15	56	11.9	71	15.3
CO05068-1RU	419	20.9	88	1	12	53	11.2	66	13.8
CO05110-6RU	431	21.6	86	0	14	48	10.3	62	13.4
CO05175-1RU	389	19.5	88	2	10	59	11.4	75	14.7
COTX09022-3RuRE/Y	367	18.4	56	0	44	34	6.3	42	8.0
COTX09052-2RU	418	20.9	70	0	30	29	6.0	42	9.1
OR05039-4	439	22.0	91	1	8	54	11.9	68	15.1
POR06V12-3	421	21.0	76	0	24	37	7.7	53	11.1
TX08352-5RU	414	20.7	83	0	17	41	8.5	56	11.7
LSD (0.05)	**116**	**6**							

ENTRY	US # 1 YIELD					> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	> 4 oz CWT/A	> 4 oz Tons/A	4-7 oz*	7-14 oz*	> 14 oz*		% HH	% BC	% IBS
			%						
Ranger Russet	401	20.0	32	63	4	1.076	0	0	0
Russet Burbank	322	16.1	42	49	9	1.078	0	0	0
Russet Norkotah	368	18.4	39	60	1	1.074	0	0	0
Shepody	413	20.6	26	55	19	1.076	0	0	0
A03141-6	421	21.1	16	68	16	1.083	0	0	0
A03921-2	259	13.0	41	42	18	1.085	0	3	3
A06021-1T	308	15.4	28	56	16	1.080	0	17	0
A06084-1TE	366	18.3	47	49	4	1.081	0	0	0
A06862-18VR	339	17.0	39	54	7	1.091	10	10	0
A06914-3CR	351	17.5	36	57	7	1.075	0	0	0
AC05039-2RU	346	17.3	40	53	7	1.086	0	0	0
AO01114-4	229	11.5	43	55	2	1.082	0	0	0
AO03123-2	309	15.4	63	37	0	1.083	0	0	0
AOR06070-1KF	360	18.0	24	56	19	1.082	0	0	0
CO05068-1RU	367	18.3	38	52	10	1.086	0	0	0
CO05110-6RU	368	18.4	41	55	4	1.085	0	0	0
CO05175-1RU	344	17.2	25	54	21	1.078	0	3	0
COTX09022-3RuRE/Y	210	10.5	30	58	12	1.080	0	0	0
COTX09052-2RU	300	15.0	61	35	4	1.083	0	0	0
OR05039-4	400	20.0	41	57	1	1.080	0	0	0
POR06V12-3	319	15.9	52	46	2	1.083	0	0	0
TX08352-5RU	344	17.2	46	46	8	1.074	0	0	0
LSD (0.05)	**115**	**6**							

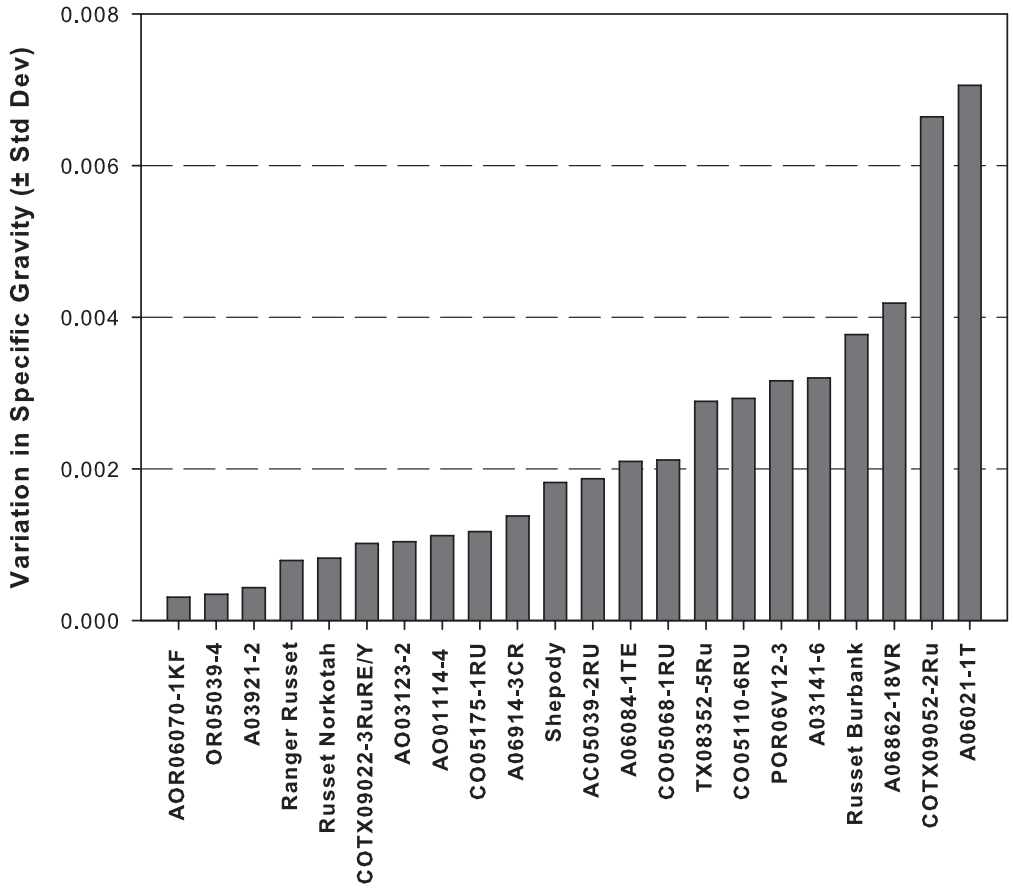
* Percent values may not total 100% due to rounding

ENTRY	30 DAY STAND % Emerged	40 DAY STAND % Emerged	50 DAY STAND % Emerged	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) (8-12 oz tubers) SHATTER
Ranger Russet	47	93	97	1.9	7.1	7.1	3	4	24	10
Russet Burbank	51	93	96	1.9	6.2	7.7	3	4	17	14
Russet Norkotah	58	91	98	2.1	6.3	7.7	4	3	7	10
Shepody	2	91	98	2.2	7.6	6.7	4	2	7	7
A03141-6	0	80	89	2.0	8.4	5.6	2	2	0	20
A03921-2	4	80	100	2.1	6.7	5.6	4	3	10	47
A06021-1T	0	29	91	1.1	7.9	4.7	4	4	0	23
A06084-1TE	33	98	98	2.0	6.2	7.4	4	4	10	10
A06862-18VR	62	82	91	2.3	6.3	6.6	4	2	7	80
A06914-3CR	53	98	100	2.2	6.3	7.3	4	2	13	7
AC05039-2RU	58	98	98	2.2	6.4	6.6	4	3	20	17
AO01114-4	0	78	96	2.0	6.2	5.1	4	3	3	41
AO03123-2	0	67	96	2.3	5.3	7.7	3	3	13	37
AOR06070-1KF	53	98	96	2.4	7.4	6.0	4	4	0	42
CO05068-1RU	31	84	91	2.0	6.6	6.6	3	3	7	27
CO05110-6RU	20	62	87	2.1	6.4	7.1	3	2	30	27
CO05175-1RU	29	87	93	2.6	7.8	5.2	4	4	8	13
COTX09022-3RuRE/Y	78	96	96	3.1	6.6	5.8	4	1	23	10
COTX09052-2RU	0	29	91	1.4	4.9	9.0	4	3	15	10
OR05039-4	7	93	100	2.1	6.7	6.8	4	4	0	13
POR06V12-3	0	53	91	1.8	5.4	8.3	4	4	0	27
TX08352-5RU	7	69	96	2.3	6.2	6.9	4	3	0	20

Clone - Dependent Variation in Specific Gravity

Variability among 12, 10lb samples from each entry (all tuber sizes)

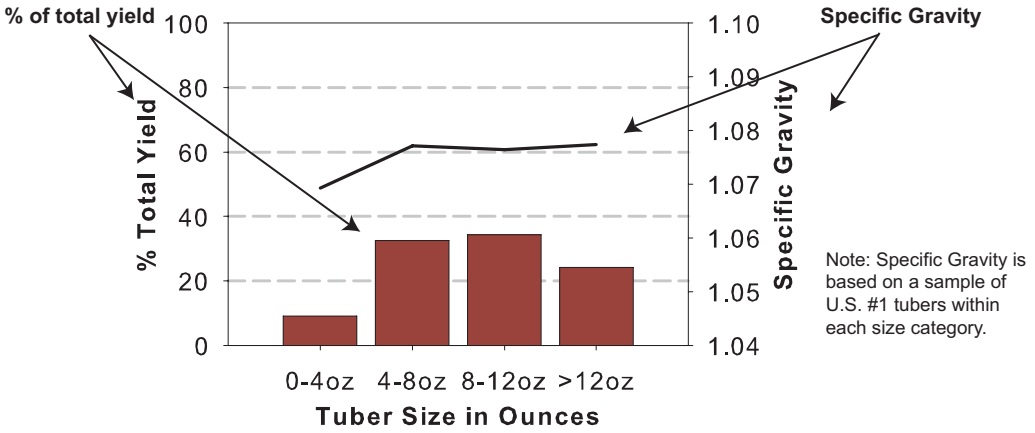
2015 Early-Harvest Regional Trial



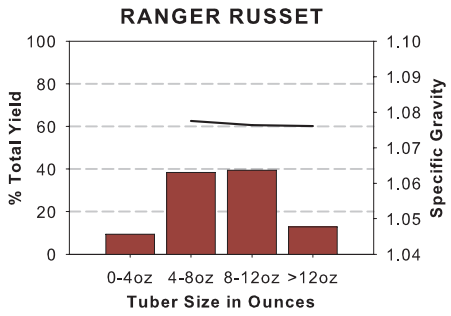
2015 Early Harvest Regional Trial

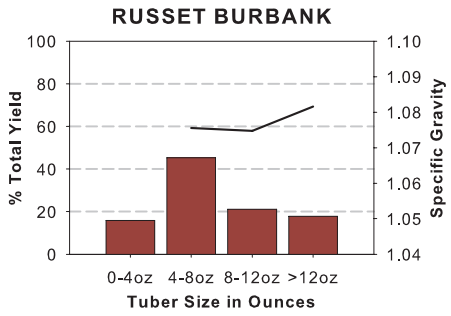
Tuber Yield and Specific Gravity Distributions

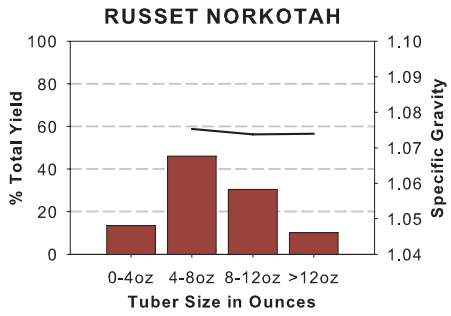
12 inch In-Row Spacing

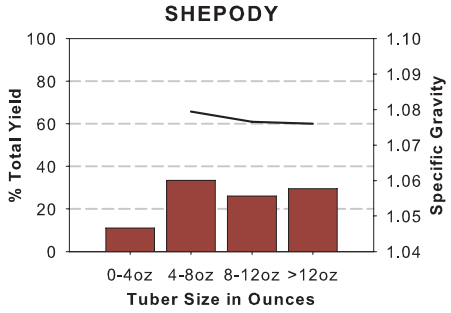


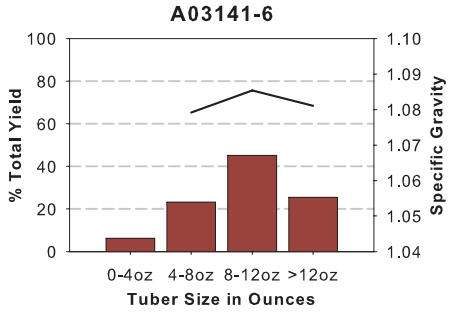
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

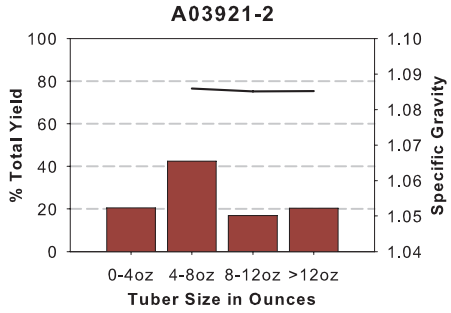


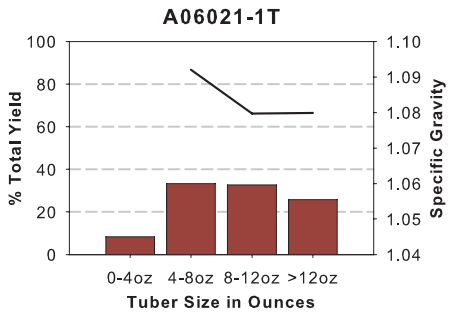


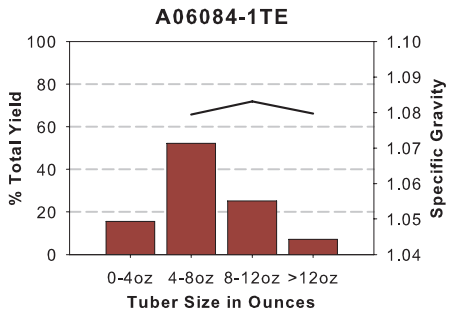


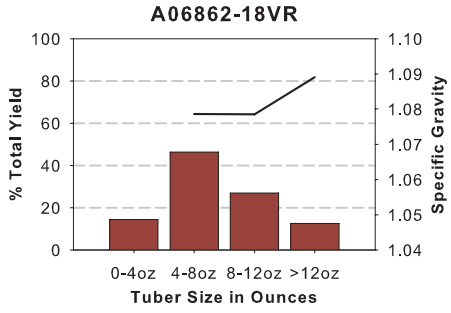


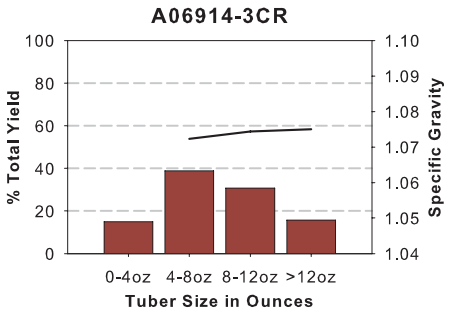


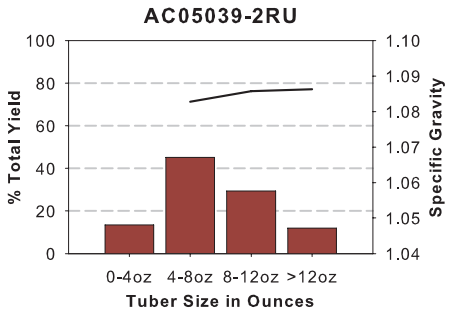


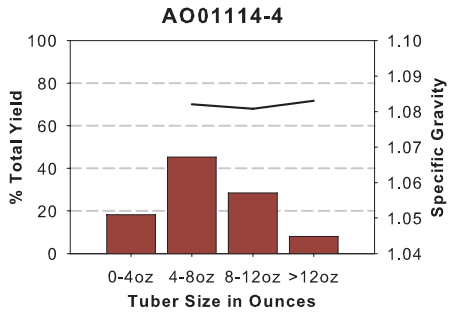







A06914-3CR
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


AC05039-2RU
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


AO01114-4
% Total Yield
Specific Gravity
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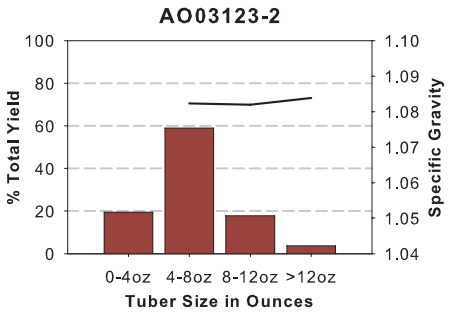
Tuber Size in Ounces


AO03123-2
% Total Yield
Specific Gravity
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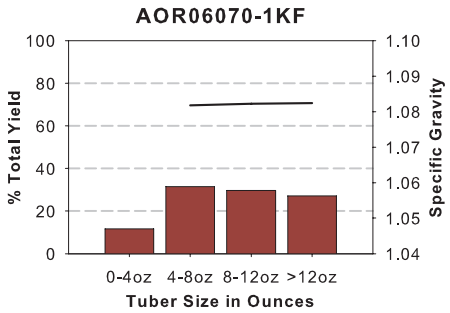
Tuber Size in Ounces


AOR06070-1KF
% Total Yield
Specific Gravity
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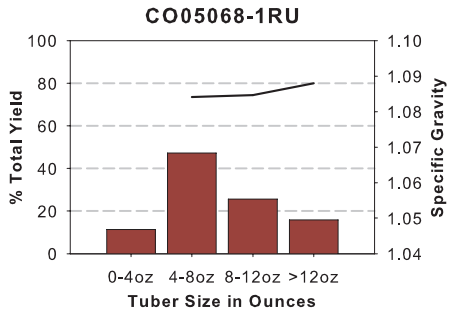
Tuber Size in Ounces


CO05068-1RU
% Total Yield
Specific Gravity
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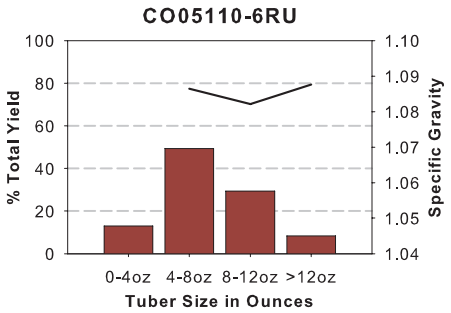
Tuber Size in Ounces


CO05110-6RU
% Total Yield
Specific Gravity
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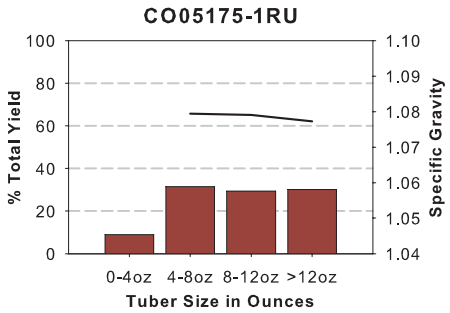
Tuber Size in Ounces


CO05175-1RU
% Total Yield
Specific Gravity
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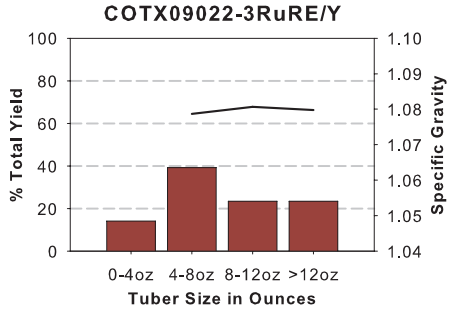
Tuber Size in Ounces


COTX09022-3RuRE/Y
% Total Yield
Specific Gravity
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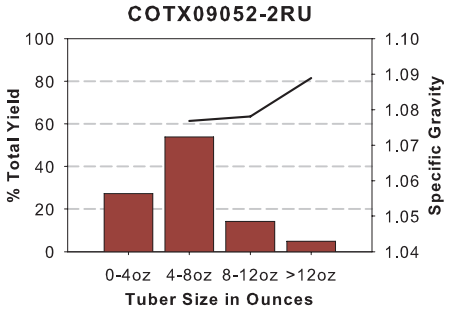
Tuber Size in Ounces


COTX09052-2RU
% Total Yield
Specific Gravity
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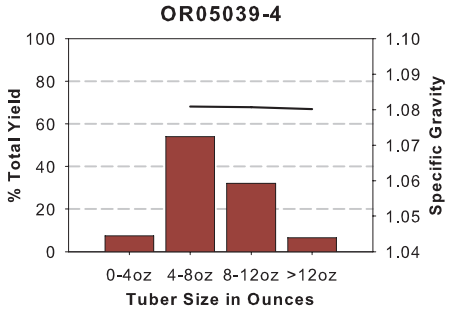
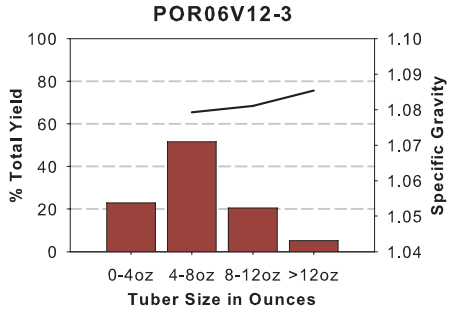
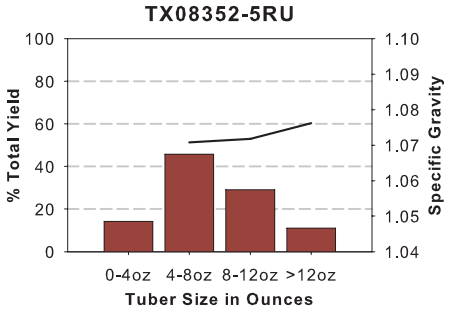
Tuber Size in Ounces


OR05039-4
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

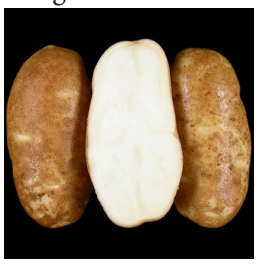

POR06V12-3
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces


TX08352-5RU
% Total Yield
Specific Gravity
0-4oz 4-8oz 8-12oz >12oz
Tuber Size in Ounces

2015 Early Harvest Regional Trial

Tubers

Ranger Russet



Shepody

A03141-6

A03921-2

OR05039-4

Russet Burbank

A06021-1T

A06084-1TE

A06862-18VR

AO01114-4

Russet Norkotah

A06914-3CR

AC05039-2RU

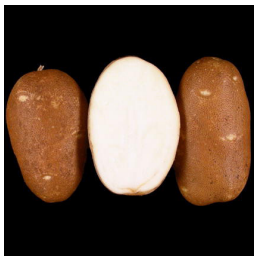
POR06V12-3

TX08352-5RU

AO03123-2

AOR06070-1KF

CO05068-1RU



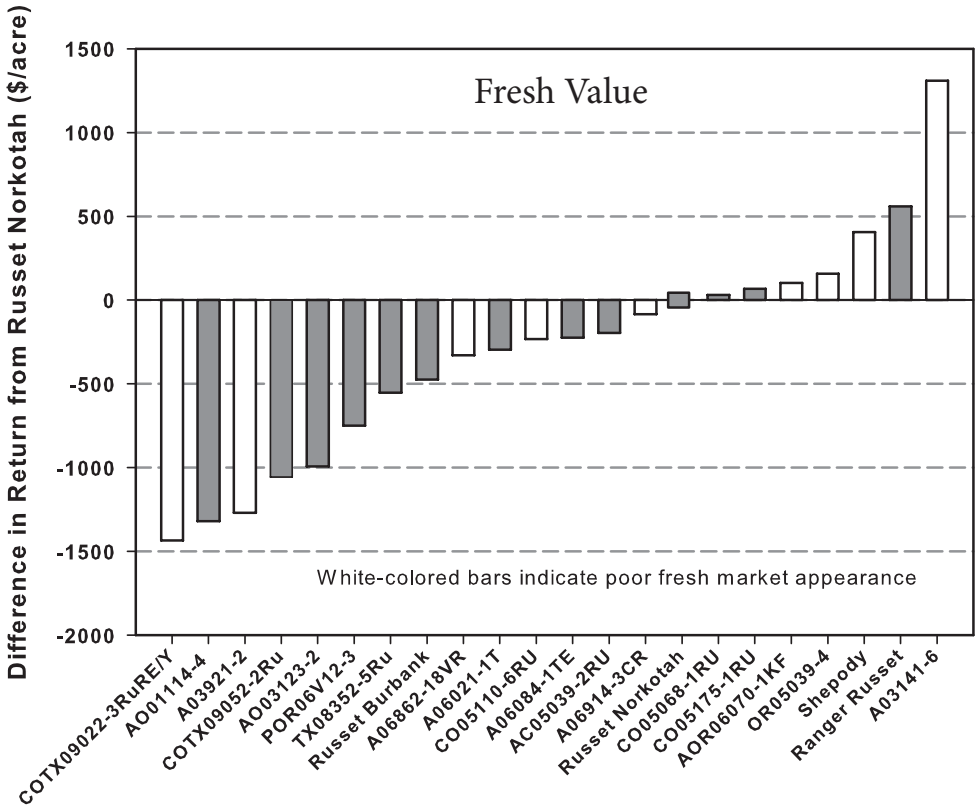
CO05110-6RU

CO05175-1RU

OR05039-4

COTX09052-2RU

COTX09022-3RuRE/Y



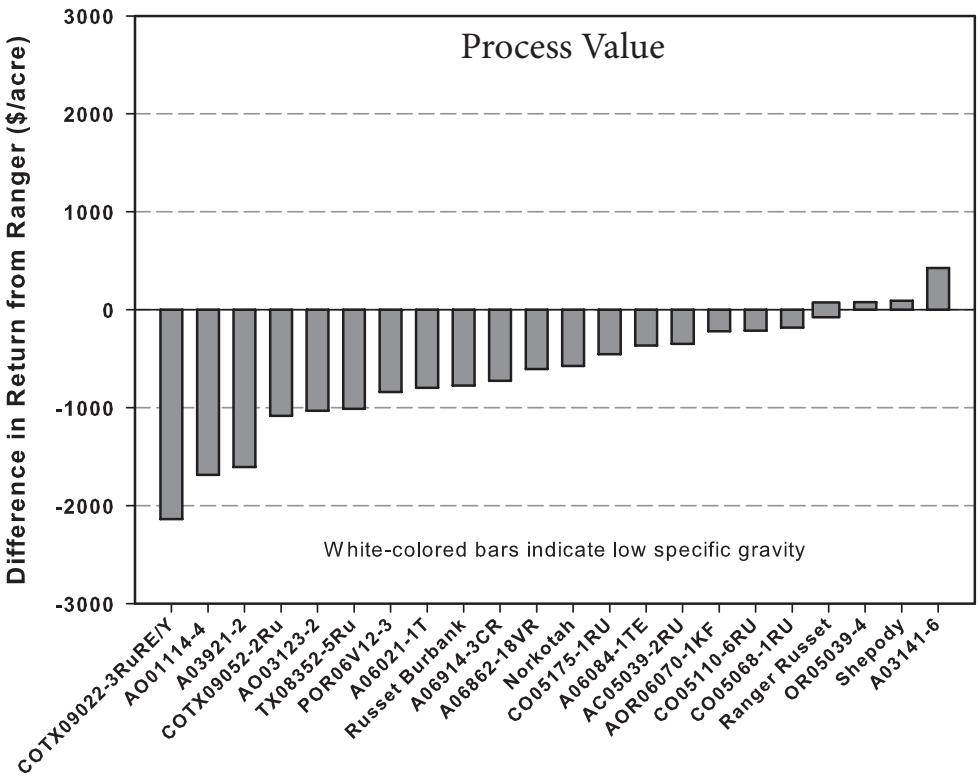


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to the undesirable shape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

2015 Late Harvest Regional Trial

Location: WSU Research Center – Othello, WA
Planting Date: April 9 Vine Kill Date: Sept 9
Harvest Date: Sept 16 Days Grown: 153
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. 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): A06021-1T and POR06V12-3.
Process Market Standout(s): A03141-6, POR06V12-3, and AO03123-2.

Standcounts

- 30 Day
  Slow emergence: A06021-1T and COTX09052-2RU each (0%).
  Best emergence: A06862-18VR (89%).

- 40 Day
  Slow emergence: COTX09052-2RU (66%) and A06021-1T (80%).
  Best emergence: AC05039-2RU (99%)

- 50 Day
  Full emergence: Ranger Russet (100%).
  Best emergence: All entries were at least 89% emerged at 60 DAP.

Plant and Tuber Growth & Development

- Above Ground Stem Number Per Plant
  Most: COTX09022-3ruRE/Y (3.1) and TX08352-5RU (2.5).
  Least: COTX09052-2RU (1.4), A06021-1T (1.6).

- Average Tuber Number Per Plant
  Most: COTX09052-2RU (10.9), Ranger Russet (8.8).
  Least: A03141-6 (5.3), CO05175-1RU (6.0).

- Average Tuber Size (oz)
  Largest: A03141-6 (12.9), A06862-18VR (10.8), and CO05175-1RU (9.7).
  Smallest: COTX09052-2RU (5.0), TX08352-5RU (5.5).

- Undersized Tubers (< 4 oz)
  Most: COTX09052-2RU and TX08352-5RU.
  Least: A03141-6, A06862-18VR, AOR06070-1KF, and CO05068-1RU.

Yield and Economic Data

- Total and U.S. #1 Yield
  Highest: A06862-18VR had the highest total yield (1001 CWT/A); A06862-18VR had the highest U.S. # 1 yield (929 CWT/A). Ranger Russet had the second highest total yield (851 CWT/A); AOR06070-1KF had the second highest U.S. #1 yield (723 CWT/A).
  Lowest: TX08352-5RU had the lowest total yield (573 CWT/A) and COTX09022-3RuRE/Y had the lowest U.S. #1 yield (413 CWT/A).

- % U.S. #1 Yield Greater Than 4oz.
  Highest: A06862-18VR (93%), AOR06070-1KF (92%), and AO03123-2(90%).
  Lowest: COTX09022-3RuRE/Y (64%), COTX09052-2RU (70%).

- Carton Yield (100 to 50 Count (7 to 18 oz US #1 Tubers))
  Highest: Ranger Russet (21.0 Tons/A), AC05039-2RU (18.3 Tons/A)
  Lowest: A06914-3CR (7.2 Tons/A), AOR06070-1KF (7.7 Tons/A)

- Gross Return ($/acre)
  Fresh Market Highest: A06862-18VR, AOR06070-1KF, and CO05068-1RU.
  Fresh Market Lowest: TX08352-5RU, COTX09052-2RU, and COTX09052-2RU
  Process Market Highest: A06862-18VR and Ranger Russet.
  Process Market Lowest: COTX09022-3RuRE/Y, TX08352-5RU, and COTX09052-2RU.

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

- External Defects
  Notable Defects: COTX09022-3RuRE/Y had 25% growth cracks, all other entries had little to no external defects.

- Internal Defects
  Notable Defects: A06862-18VR had 6% hollow heart. CO05175-1RU had 6% brown center. Other defects were present at 5% or less. Most entries were relatively free of internal defects.

- Bruise
  Highest Blackspot: COTX09022-3RuRE/Y (42%) and Russet Burbank (41%).
  Lowest Blackspot: A03921-2, AOR06070-1KF, CO05175-1RU and POR06V12-3 all had (0%).
  Highest Shatter: CO05068-1RU (100%), AO03123-2 (96%).
  Lowest Shatter: Ranger Russet (23%), Russet Norkotah (29%).

2015 Late Harvest Regional Trial

Postharvest Information

The 2015 trial evaluated sixteen numbered clones along with Ranger Russet and Russet Burbank as check cultivars from each growing location. When averaged across states, all entries except TX08352-5Ru received higher overall postharvest scores than Russet Burbank (RB). An asterisk (*) indicates similar performance and/or ranking in trials from previous years.

- Overall Postharvest Rating

  Highest scoring: POR06V12-3, A03141-6, CO05068-1RU*, AOR06070-1KF
  Lowest scoring: TX08352-5Ru, RB*, AC05039-2Ru, COTX09022-3RuRE/Y

- Low Temperature Sweetening

  Most resistant: A03141-6, AOR06070-1KF, A03921-2*, A06084-1TE*, POR06V12-3*
  Most susceptible: TX08352-5Ru, RB*, AC05039-2Ru

- Taste Panel

  Highest rated: A06914-3CR, A03141-6, POR06V12-3*, A06084-1TE*
  Lowest rated: TX08352-5Ru, RB*, COTX09052-2Ru

- Blackspot Bruise Susceptibility

  Most resistant: POR06V12-3*, AC05039-2RU, AO03123-2, AOR06070-1KF, COTX09052-2Ru
  Most susceptible: RR*, A06862-18VR, CO05068-1RU, A03921-2*, A06084-1TE

- Variability in Tuber Shape & Fry Yield (8- to 10-oz tubers)

  Lowest L/W: COTX09022-3RuRE/Y, A06862-18VR
  Highest L/W: RR*, RB*, OR05039-4*, CO05175-1RU*, A06084-1TE*
  Least variable: AC05039-2RU, RR, RB, AOR06070-1KF, AO03123-2
  Most variable: A06862-18VR, A06914-3CR, COTX09022-3RuRE/Y

Details

- POR06V12-3, A03141-6, CO05068-1RU*, AOR06070-1KF were the highest rated entries, accumulating an average of 35.4, 34.5, 34.0, and 34.0 of 38 possible points, respectively.

- A03141-6, AOR06070-1KF, A03921-2*, A06084-1TE* and POR06V12-3*were resistant to low temperature sweetening (LTS), producing USDA 0 fries (stem end) when stored for 60 days at 40°F averaged across locations. TX08352-5Ru, RB* and AC05039-2Ru were susceptible to LTS, producing USDA 2-4 fries after 60 days at 40°F.

- AOR06070-1KF, AO03123-2, A01041-6, A06121-1T and POR06V12-3* contained ~50, 42, 41, 33 and 30% lower concentrations ($P<0.05$) of asparagine (acrylamide precursor) than RB, respectively. POR06V12-3 contained 49% and 30% less asparagine than RB in 2013 and 2014, respectively. Several of these entries are currently undergoing further evaluations in the 2015 National Fry Processing Trials and/or the Advanced Agronomic Trials for development of low acrylamide varieties (USDA SCRI funded).

- TX08352-5Ru, RB*, AC05039-2Ru and COTX09022-3RuRE/Y scored lowest on overall postharvest performance with 18.3, 18.9, 28.2 and 28.5 of 38 possible points, respectively.

- The specific gravities of TX08352-5Ru, RB* and COTX09022-3RuRE/Y averaged 1.065, 1.073 and 1.073,

respectively; too low for processing contracts. By contrast, gravities of RR*, A06021-1T, AO03123-2, A06862-18VR, A03141-6and POR06V12-3 ranged from 1.082-1.089, which is ideal for most contracts.

- A06914-3CR, A03141-6, POR06V12-3* and A06084-1TE*were the favorites in the taste panels, averaging 3.8/5 across growing locations (5 is best). TX08352-5Ru, RB* and COTX09052-2Ru were the lowest scoring clones (avg=3.0/5). Except for TX08352-5Ru (2.7/5), the narrow range of taste panel scores (3.2-3.8) across entries indicates that all were rated favorably for French fry culinary quality.

- On average, tubers grown in ID produced the lightest fry colors at harvest. The Regional entries retained 98% and 86% of their at-harvest process quality (stem end fry color) when stored at 48 and 44°F for 60 days, respectively.

- At harvest, only 2 of 18 entries (RB & A06862-18VR) averaged non-uniform fry color across states. In contrast to 2014, only 11 to 22% of entries showed non-uniform fry color after 60 days storage at 48 and 44°F. RB and AO03123-2 varied the most in ability to retain process quality during storage for 60 days at 44°F across production sites.

- A06862-18VR, CO05175-1RU*, RB, and A06914-3CR showed the greatest improvement in stem end fry color when reconditioned at 60°F following storage for 60 days at 40°F. Reconditioning AOR06070-1KF, A06021-1T, COTX09052-2Ru, POR06V12-3 and COTX09022-3RuRE/Y had little effect on change in stem end fry color. Differences between bud and stem end fry color increased substantially in CO05175-1RU, RR, RB, COTX09022-3RuRE/Y and A06084-1TE during reconditioning, reflecting less improvement of stem vs bud end fry color and indicating that these clones may be more susceptible to sugar ends.

- POR06V12-3*, AC05039-2RU, AO03123-2, AOR06070-1KF and COTX09052-2Ru were resistant to blackspot, with an average of 10% (stem end) in the controlled impact study (3-state average). These entries also scored lowest in bruise severity, averaging 1.2/5 (1= no bruise; 5= 100% of impact area is dark). RR*, A06862-18VR, CO05068-1RU, A03921-2* and A06084-1TE were highly susceptible with 85, 81, 72, 71 and 66% bruise, respectively. Bruise severity was also greatest in these four entries (average 3.0/5).

- OR-grown tubers (8-10-oz) had the highest L/W ratios (2.1) compared with those grown in ID (1.9) and WA (1.7). COTX09022-3RuRE/Y and A06862-18VR had the lowest L/W ratios (avg. 1.45), indicating round tubers. RR*, RB*, OR05039-4*, CO05175-1RU* and A06084-1TE* had the highest L/W ratios (2.0-2.4). A06862-18VR, A06914-3CR and COTX09022-3RuRE/Y had the greatest variation in L/W ratios of 8- to 10-oz tubers across production sites. In contrast, the L/W ratios of AC05039-2RU, RR, RB, AOR06070-1KF and AO03123-2 were least affected by growing location.

- On average, 93% of tubers of COTX09022-3RuRE/Y had 1.75-inch-long sprouts after 60 days at 48°F compared with 40% of RR tubers (avg sprout length = 0.42 inch). Sprouting of A06862-18VR, CO05068-1RU and POR06V12-3 averaged 55% with sprout lengths ranging from 0.42-0.79 inches (0.1-0.6 cm) compared with no sprouting for RB, AOR06070-1KF, AO03123-2, A06021-1T and TX08352-5Ru tubers.

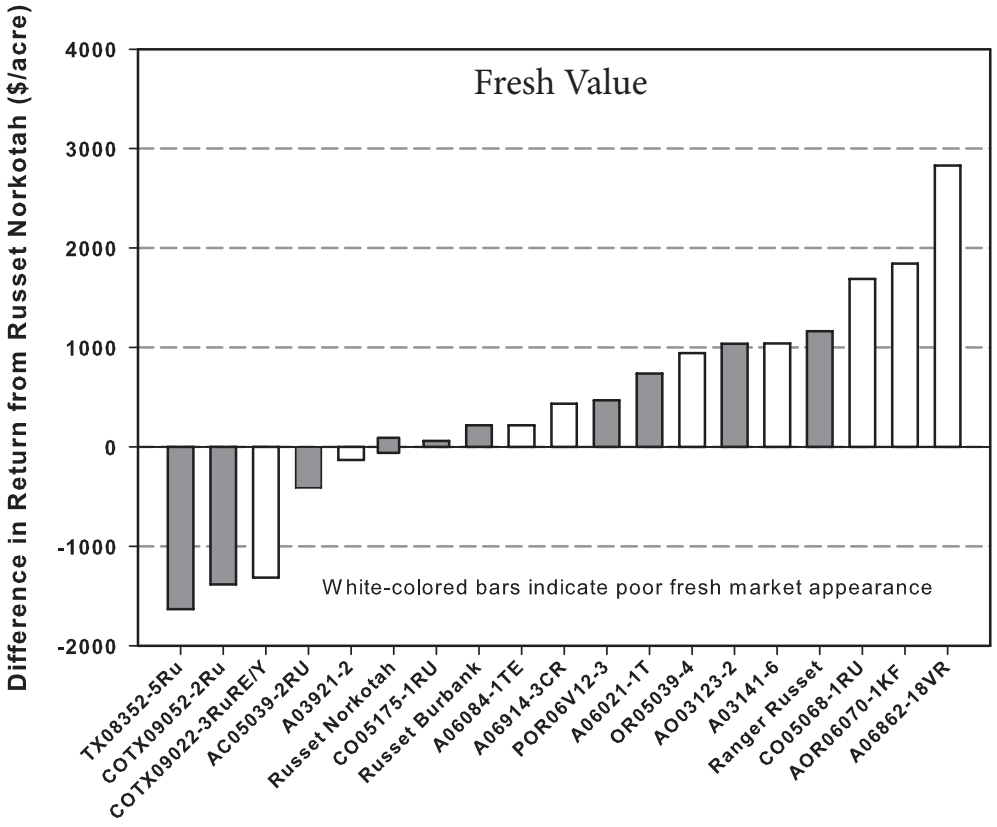
- In longer term (7-month) storage studies, CO05068-1RU, RR, A06084-1TE, A06084-1TE*, and A06914-3CR had relatively short dormancy, producing sprouts averaging 1.5 inches after 7 months storage, considerably longer than RB (0.6 in), indicating relatively short dormancy. In contrast, A06021-1T* produced 0.25-in-long sprouts after 7 months, indicating shorter dormancy than RB.

- When stored for 7 months, RB produced USDA 3 fries from all states. The remaining entries averaged

USDA 0 fries across production sites. When averaged across states, A03141-6 (49.9 ref. units), A03921-2 (47.7 ref units), A06084-1TE (46.4 ref. units) and POR06V12-3 (45.7 ref units) produced the lightest fries. POR06V12-3 also produced the lightest fries in long-term studies last year. Uniformity of fry color was unacceptable for six of the fourteen entries. A06084-1TE, A06914-3CR and CO05068-1Ru were the only entries to produce uniform fries from all three states.

Overall Regional Postharvest Merit Scores

	Postharvest Merit Scores			3 state
Clone	WA	ID	OR	Average
17 POR06V12-3	4.7	4.5	4.8	4.7
3 A03141-6	4.7	4.4	4.4	4.5
11 AOR06070-1KF	4.3	4.3	4.8	4.5
12 CO05068-1RU	4.7	4.3	4.5	4.5
1 Ranger Russet	4.9	4.8	3.7	4.5
4 A03921-2	4.6	4.3	4.2	4.4
6 A06084-1TE	4.2	4.7	4.1	4.4
5 A06021-1T	4.2	4.6	4.3	4.4
10 AO03123-2	4.7	4.1	4.3	4.3
16 OR05039-4	4.4	4.3	4.1	4.2
7 A06862-18VR	4.3	4.7	3.8	4.2
13 CO05175-1RU	4.1	4.5	3.8	4.2
8 A06914-3CR	4.5	4.5	3.5	4.1
15 COTX09052-2Ru	3.4	4.3	3.9	3.9
14 COTX09022-3RuRE/Y	3.9	No Sample	3.6	3.8
9 AC05039-2RU	3.9	3.5	3.7	3.7
2 Russet Burbank	2.7	2.7	2.1	2.5
18 TX08352-5Ru	2.3	2.0	2.9	2.4



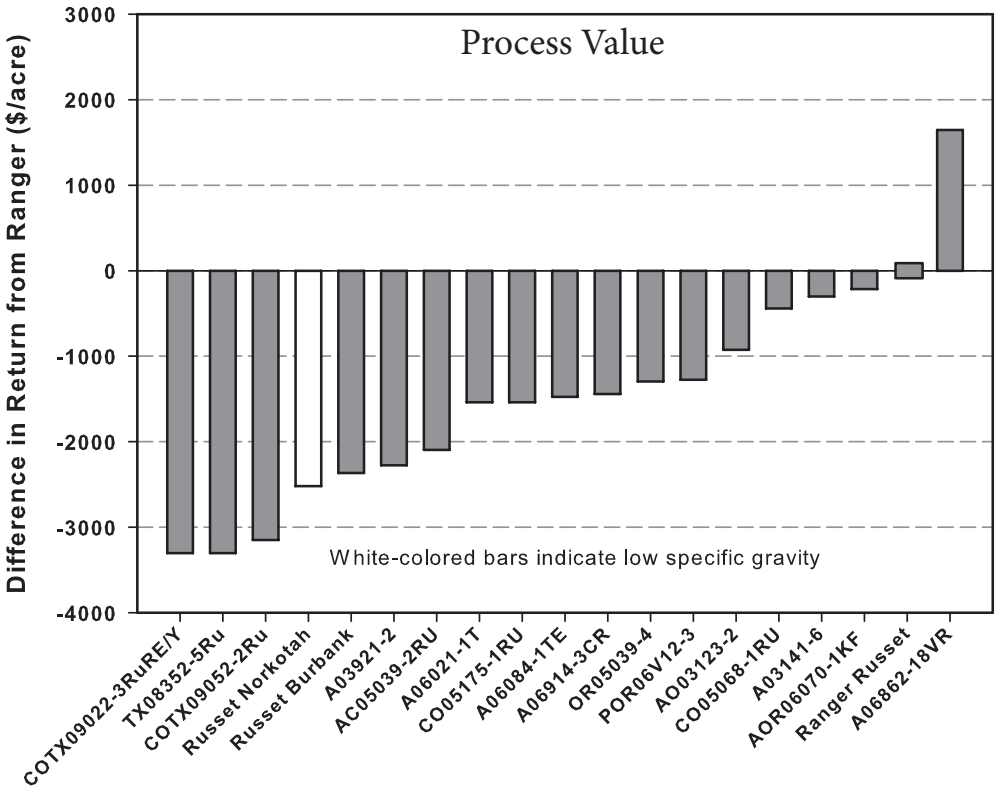


Figure 1 (Top). Difference in gross return per acre (Fresh Market) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with the white-colored bars may not appeal to fresh market consumers due to the undesirable shape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

2015 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	Tons/A	% of Total Yield			% of Total Yield	Tons/A	% of Total Yield	Tons/A
Ranger Russet	851	42.6	81	7	12	49	21.0	77	32.6
Russet Burbank	677	33.8	76	6	18	34	11.6	70	23.7
Russet Norkotah	602	30.1	87	0	12	55	16.7	70	21.1
A03141-6	790	39.5	88	2	10	35	13.6	87	34.3
A03921-2	590	29.5	83	0	17	45	13.2	71	21.1
A06021-1T	639	32.0	89	0	11	43	13.7	78	24.9
A06084-1TE	657	32.8	87	1	11	47	15.4	76	25.1
A06862-18VR	1001	50.0	93	1	6	23	11.5	88	43.9
A06914-3CR	720	36.0	78	3	19	20	7.2	71	25.5
AC05039-2RU	575	28.8	83	5	13	64	18.3	68	19.6
AO03123-2	693	34.6	90	1	9	47	16.3	79	27.4
AOR06070-1KF	789	39.5	92	1	8	20	7.7	84	33.0
CO05068-1RU	781	39.1	88	2	10	30	11.9	82	32.0
CO05175-1RU	666	33.3	85	4	12	25	8.4	80	26.6
COTX09022-3RuRE/Y	641	32.0	64	0	36	51	16.2	54	17.7
COTX09052-2RU	624	31.2	70	0	30	46	14.3	45	14.2
OR05039-4	677	33.8	85	3	12	32	10.7	78	26.3
POR06V12-3	652	32.6	89	0	11	36	11.7	77	25.1
TX08352-5RU	573	28.6	76	1	23	44	12.7	49	13.9
LSD (0.05)	**77**	**4**							

ENTRY	US # 1 YIELD					> 4 oz SPECIFIC GRAVITY	INTERNAL DEFECTS (%) (8-12 oz tubers)		
	> 4 oz CWT/A	> 4 oz Tons/A	4-7 oz*	7-14 oz*	> 14 oz*		% HH	% BC	% IBS
			%						
Ranger Russet	688	34.4	21	48	31	1.086	0	0	0
Russet Burbank	514	25.7	27	62	11	1.072	0	3	0
Russet Norkotah	525	26.2	34	58	8	1.065	0	0	0
A03141-6	697	34.9	5	39	56	1.089	0	0	0
A03921-2	490	24.5	23	53	24	1.095	0	0	3
A06021-1T	570	28.5	21	56	23	1.080	0	0	0
A06084-1TE	574	28.7	23	48	30	1.079	0	0	9
A06862-18VR	929	46.4	10	41	49	1.086	6	3	3
A06914-3CR	566	28.3	22	50	28	1.081	0	3	0
AC05039-2RU	476	23.8	33	63	4	1.082	0	0	0
AO03123-2	625	31.2	24	56	20	1.090	0	0	0
AOR06070-1KF	723	36.2	16	50	34	1.095	0	0	0
CO05068-1RU	691	34.5	16	50	34	1.094	5	0	0
CO05175-1RU	565	28.3	16	49	34	1.079	0	6	0
COTX09022-3RuRE/Y	413	20.7	19	46	35	1.077	0	0	4
COTX09052-2RU	439	22.0	49	45	5	1.074	0	0	3
OR05039-4	575	28.8	21	56	22	1.083	0	0	0
POR06V12-3	578	28.9	19	50	31	1.086	0	0	0
TX08352-5RU	436	21.8	58	40	2	1.074	0	0	0
LSD (0.05)	**83**	**4**							

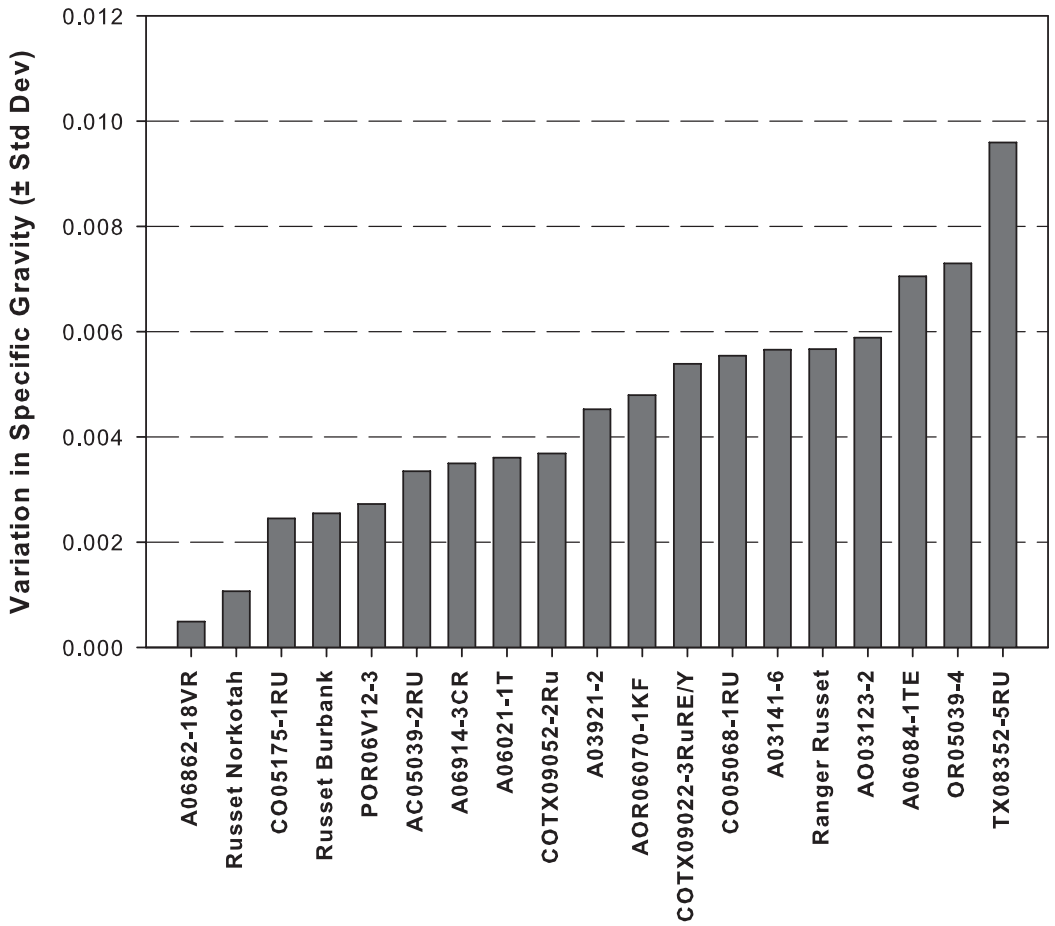
* Percent values may not total 100% due to rounding

ENTRY	30 DAY STAND % Emerged	40 DAY STAND % Emerged	60 DAY STAND % Emerged	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	BRUISE (%) (8-12 oz tubers) BLACKSPOT	BRUISE (%) (8-12 oz tubers) SHATTER
Ranger Russet	80	95	100	1.9	8.4	8.8	4	4	17	23
Russet Burbank	84	91	95	1.9	7.3	8.0	4	4	41	59
Russet Norkotah	74	95	99	1.9	6.9	7.6	3	3	21	29
A03141-6	29	86	96	2.0	12.9	5.3	3	3	6	94
A03921-2	13	91	99	1.9	8.1	6.3	4	3	0	88
A06021-1T	0	80	91	1.6	8.2	6.8	4	3	20	84
A06084-1TE	61	95	99	2.0	8.4	6.8	4	3	15	64
A06862-18VR	89	91	93	2.3	10.8	8.0	3	2	32	84
A06914-3CR	64	88	96	1.8	7.7	8.2	4	3	12	61
AC05039-2RU	78	99	99	2.4	6.9	7.3	4	3	18	64
AO03123-2	9	80	95	2.0	8.4	7.2	4	3	4	96
AOR06070-1KF	63	91	96	2.3	9.4	7.3	4	3	0	82
CO05068-1RU	43	84	89	1.8	9.4	7.2	4	3	10	100
CO05175-1RU	56	89	96	2.4	9.7	6.0	4	3	0	81
COTX09022-3RuRE/Y	65	95	95	3.1	7.9	7.0	4	1	42	46
COTX09052-2RU	0	66	95	1.4	5.0	10.9	4	4	8	61
OR05039-4	35	85	89	1.7	8.5	6.9	0	3	5	45
POR06V12-3	8	81	91	1.9	8.2	6.9	5	3	0	73
TX08352-5RU	23	83	91	2.5	5.5	9.1	3	3	15	38

Clone - Dependent Variation in Specific Gravity

Variability among 12, 10lb samples from each entry (all tuber sizes)

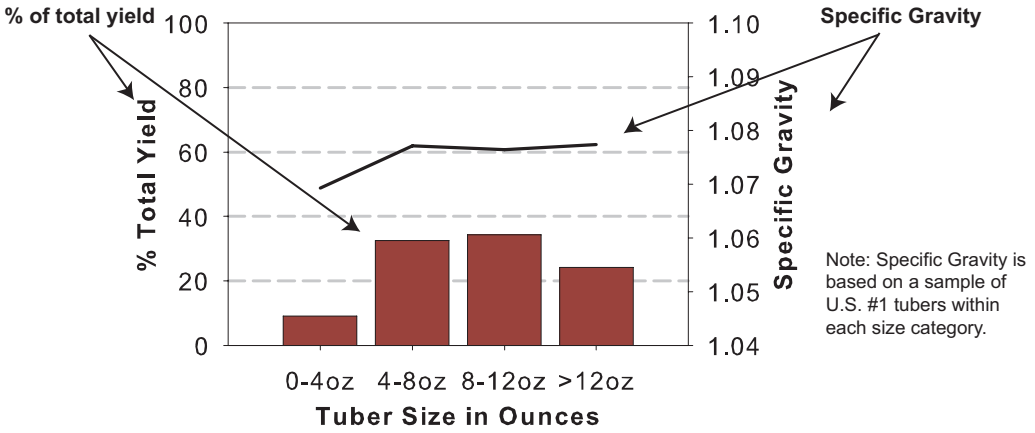
2015 Late-Harvest Regional Trial



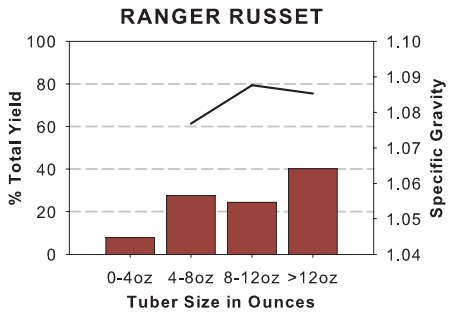
2015 Late Harvest Regional Trial

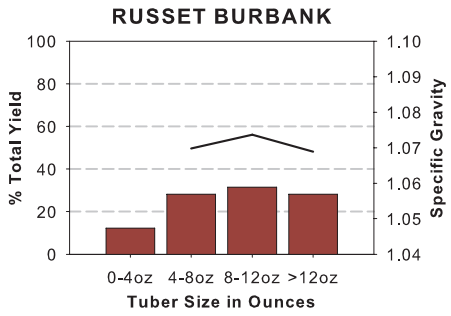
Tuber Yield and Specific Gravity Distributions

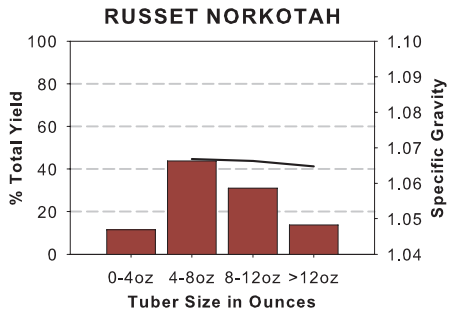
10 inch In-Row Spacing

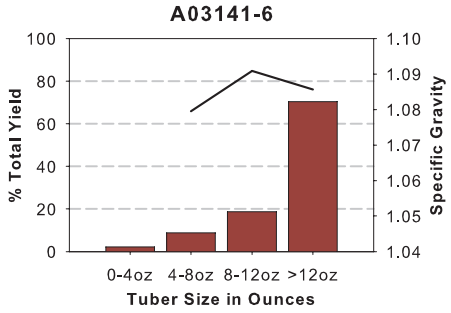


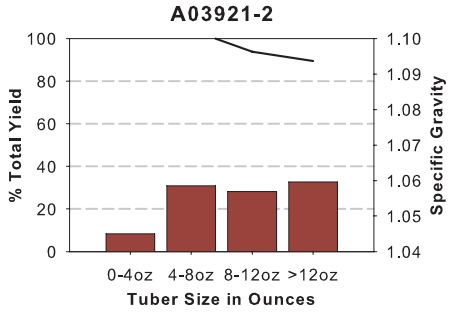
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category.

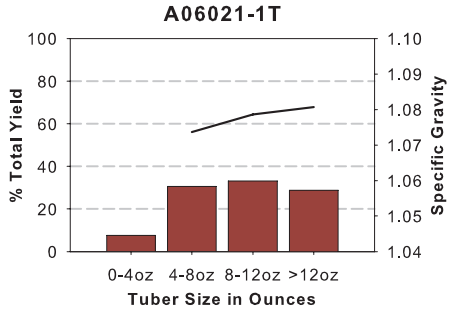


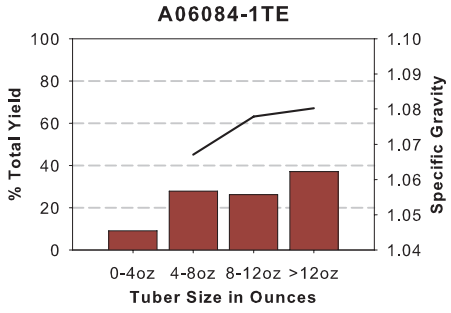


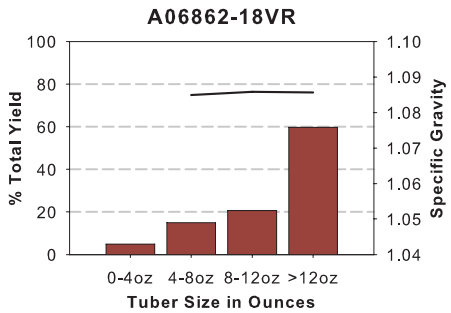


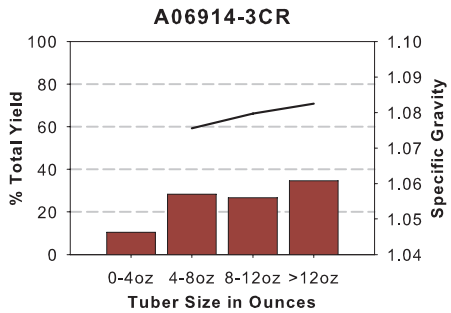




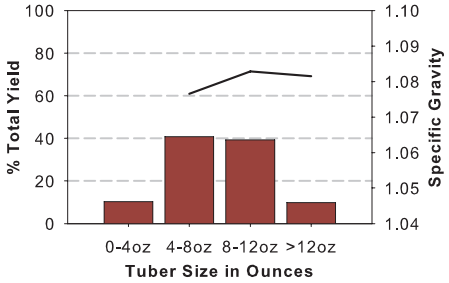




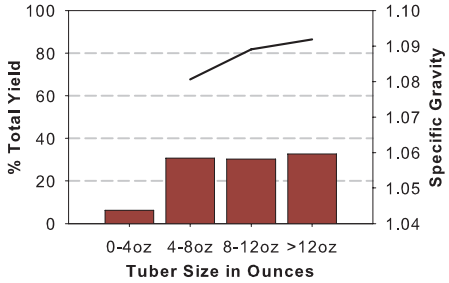




AC05039-2RU



AO03123-2



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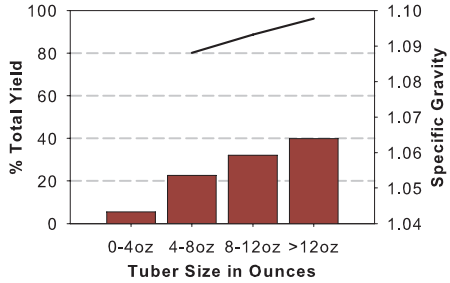

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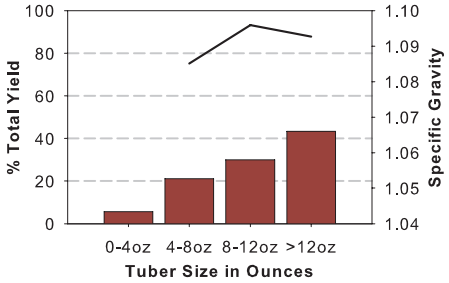

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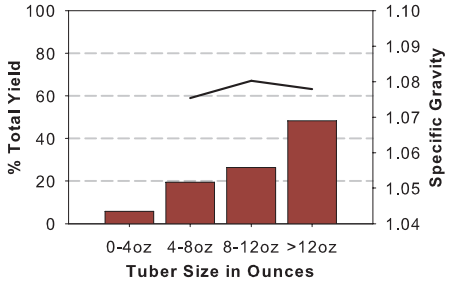

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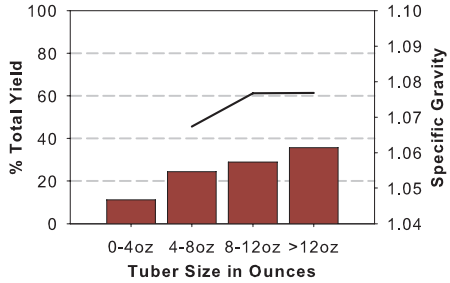

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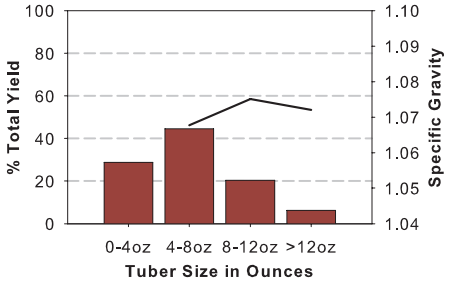
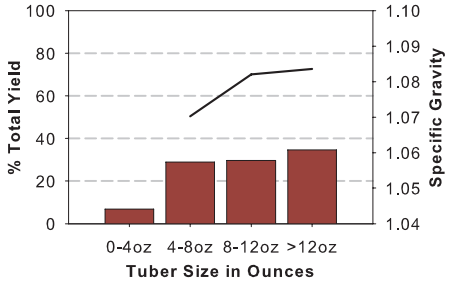
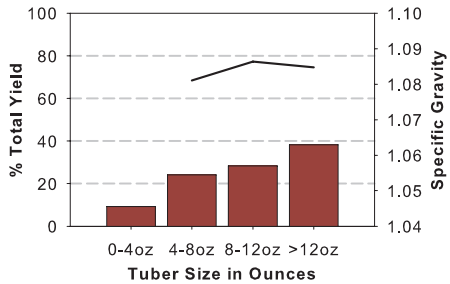


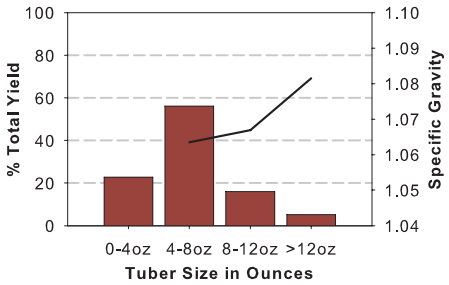
OR05039-4



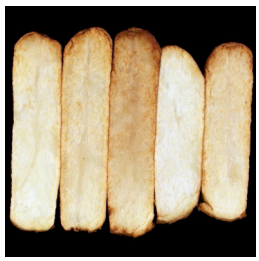
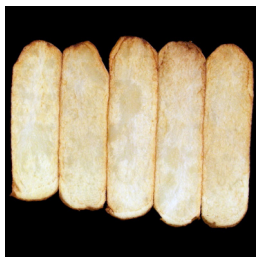
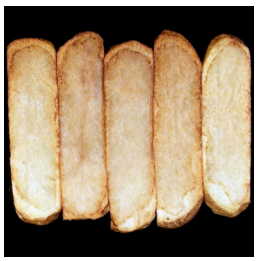
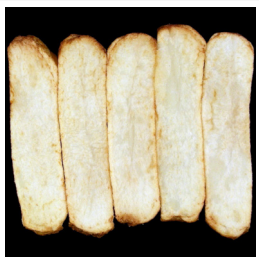
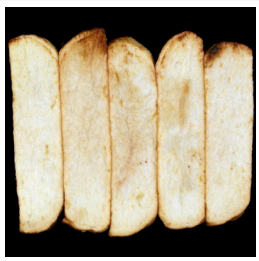
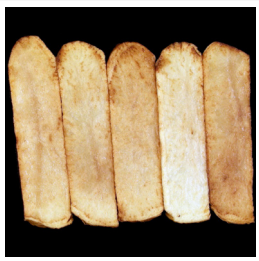
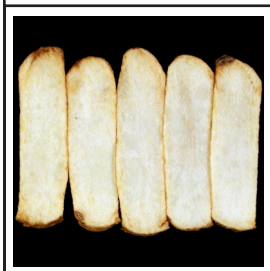
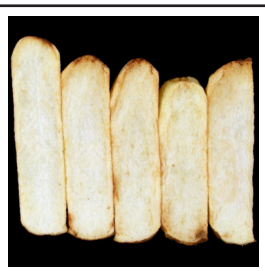
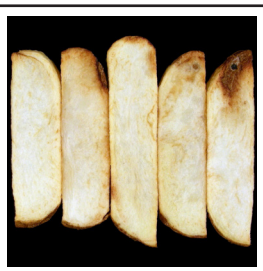
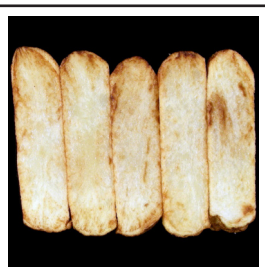
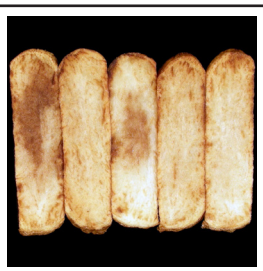
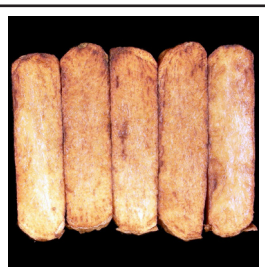
POR06V12-3



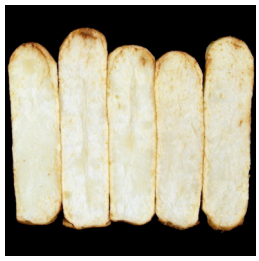
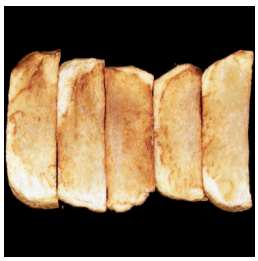
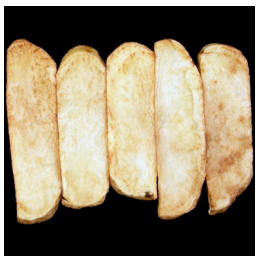
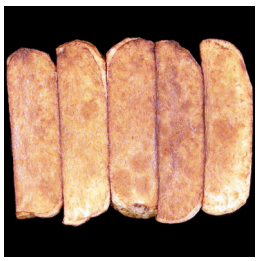
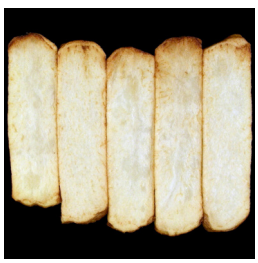
TX08352-5RU

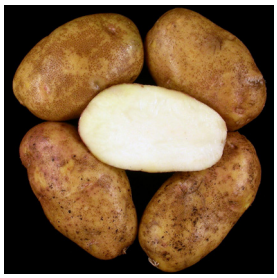
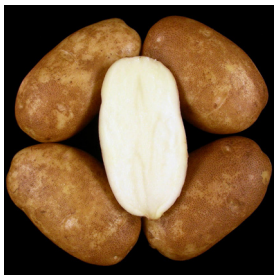


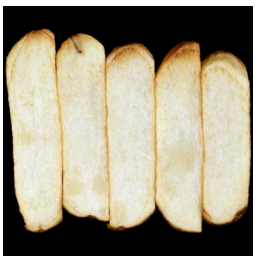
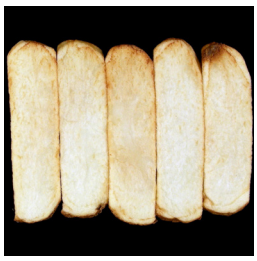
Tubers	WA Late Harvest Regional Trial Comments
Ranger Russet	
	**Tubers:** Round to oblong tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, uniform; Reconditioned = light, non-uniform.
Russet Burbank	
	**Tubers:** Oblong to long tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, non-uniform; 48°F = light, non-uniform; 44°F = light, non-uniform; 40°F = unnaceptably dark, uniform; Reconditioned = relatively dark, non-uniform.
A03141-6	
	**Tubers:** Oblong tubers. Fair skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; Reconditioned = light, uniform.
A03921-2	
	**Tubers:** Oblong tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, non-uniform; Reconditioned = light, uniform.
A06021-1T	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, uniform; Reconditioned = relatively dark, uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
Ranger Russet				
				
Russet Burbank				
				
A03141-6				
				
A03921-2				
				
A06021-1T				
				

Tubers	WA Late Harvest Regional Trial Comments
A06084-1TE	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; Reconditioned = light, non-uniform.
A06862-18VR	
	**Tubers:** Round to oblong tubers. Fair skin set; shallow eyes. **Fry color:** At harvest= light, non-uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, non-uniform; Reconditioned = light, uniform.
A06914-3CR	
	**Tubers:** Oblong tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, uniform; Reconditioned = light, uniform.
AC05039-2RU	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, uniform; Reconditioned = relatively dark, uniform.
AO03123-2	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 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.
A06084-1TE				
				
A06862-18VR				
				
A06914-3CR				
				
AC05039-2RU				
				
AO03123-2				
				

Tubers	WA Late Harvest Regional Trial Comments
AOR06070-1KF	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, uniform; Reconditioned = light, uniform.
CO05068-1RU	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, non-uniform; Reconditioned = light, non-uniform.
CO05175-1RU	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, non-uniform; Reconditioned = light, non-uniform.
COTX09022-3RuRE/Y	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, non-uniform; 40°F = relatively dark, uniform; Reconditioned = relatively dark, non-uniform.
COTX09052-2RU	
	**Tubers:** Oblong to long tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, non-uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, non-uniform; Reconditioned = light, uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
AOR06070-1KF				
				
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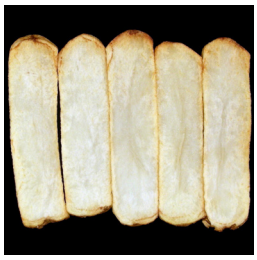
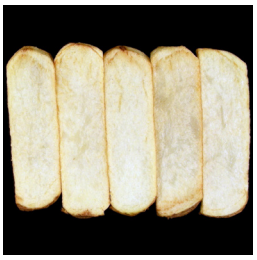
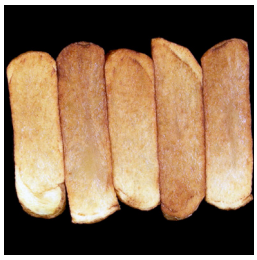
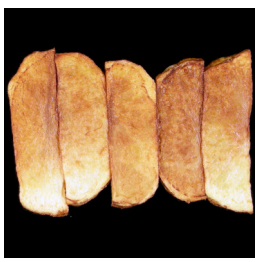
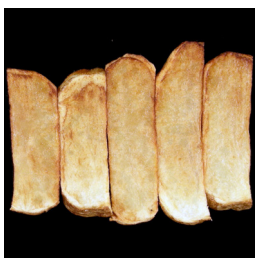
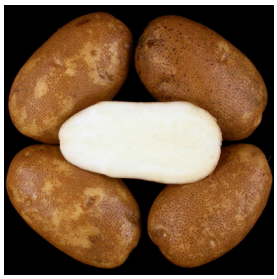
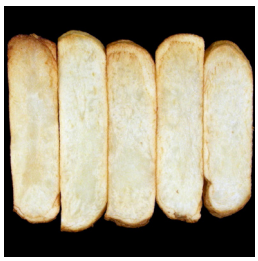
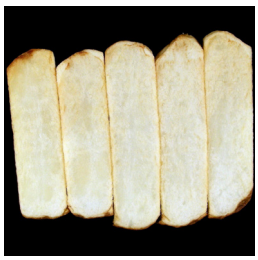
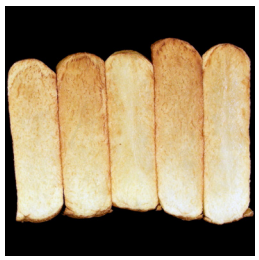
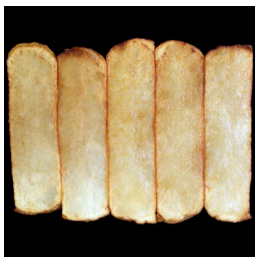
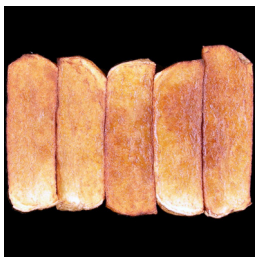
				
CO05175-1RU				
				
COTX09022-3RuRE/Y				
				
COTX09052-2RU				
				

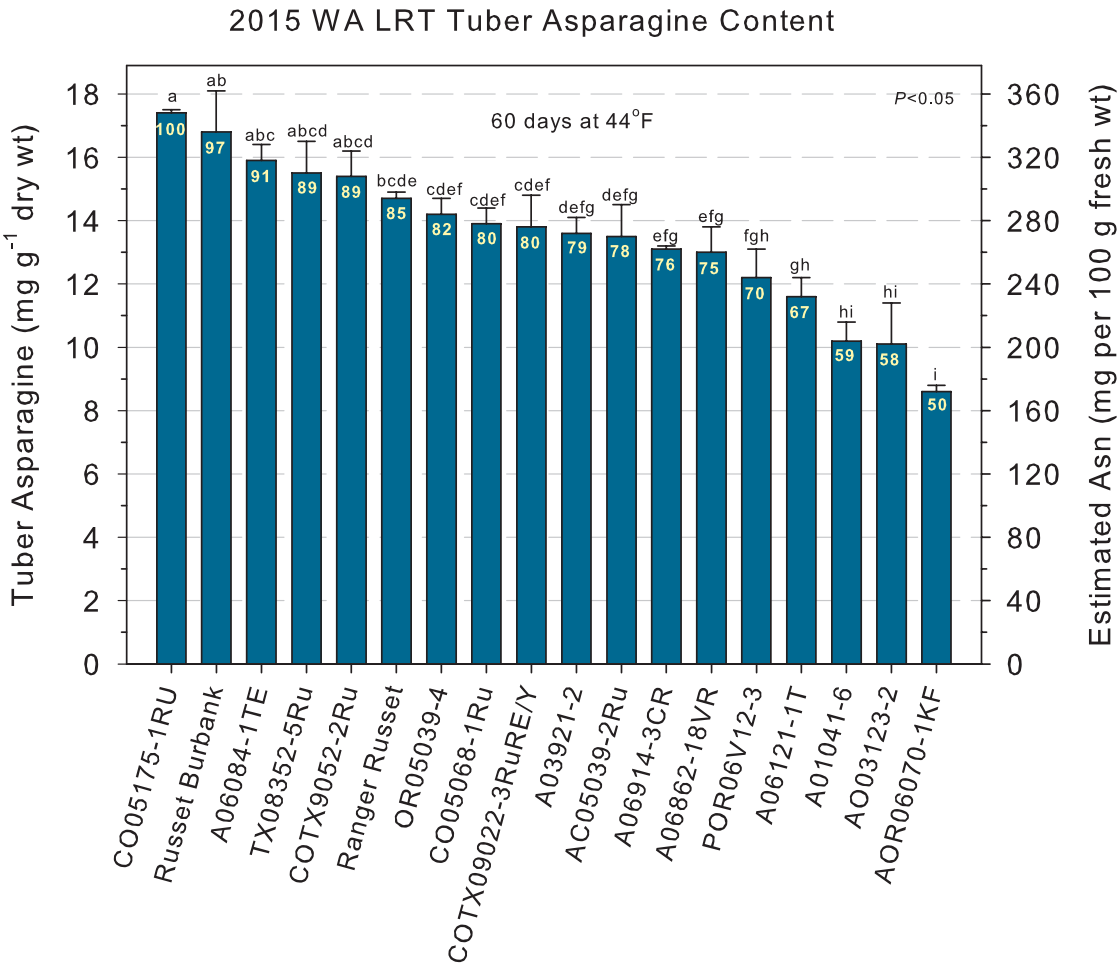
Tubers	WA Late Harvest Regional Trial Comments
OR05039-4	
	**Tubers:** Oblong tubers. Good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = relatively dark, non-uniform; Reconditioned = relatively dark, uniform.
POR06V12-3	
	**Tubers:** Oblong tubers. Very good skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = light, uniform; 44°F = light, uniform; 40°F = light, non-uniform; Reconditioned = light, non-uniform.
TX08352-5RU	
	**Tubers:** Oblong tubers. Fair skin set; shallow eyes. **Fry color:** At harvest= light, uniform; 48°F = relatively dark, uniform; 44°F = relatively dark, uniform; 40°F = unnaceptably dark, uniform; Reconditioned = unnaceptably dark, uniform.

Initial Fries	48º F Storage	44º F Storage	40º F Storage	40º F Recon.
OR05039-4				
				
POR06V12-3				
				
TX08352-5RU				
				

2015 Late Harvest Regional Trial

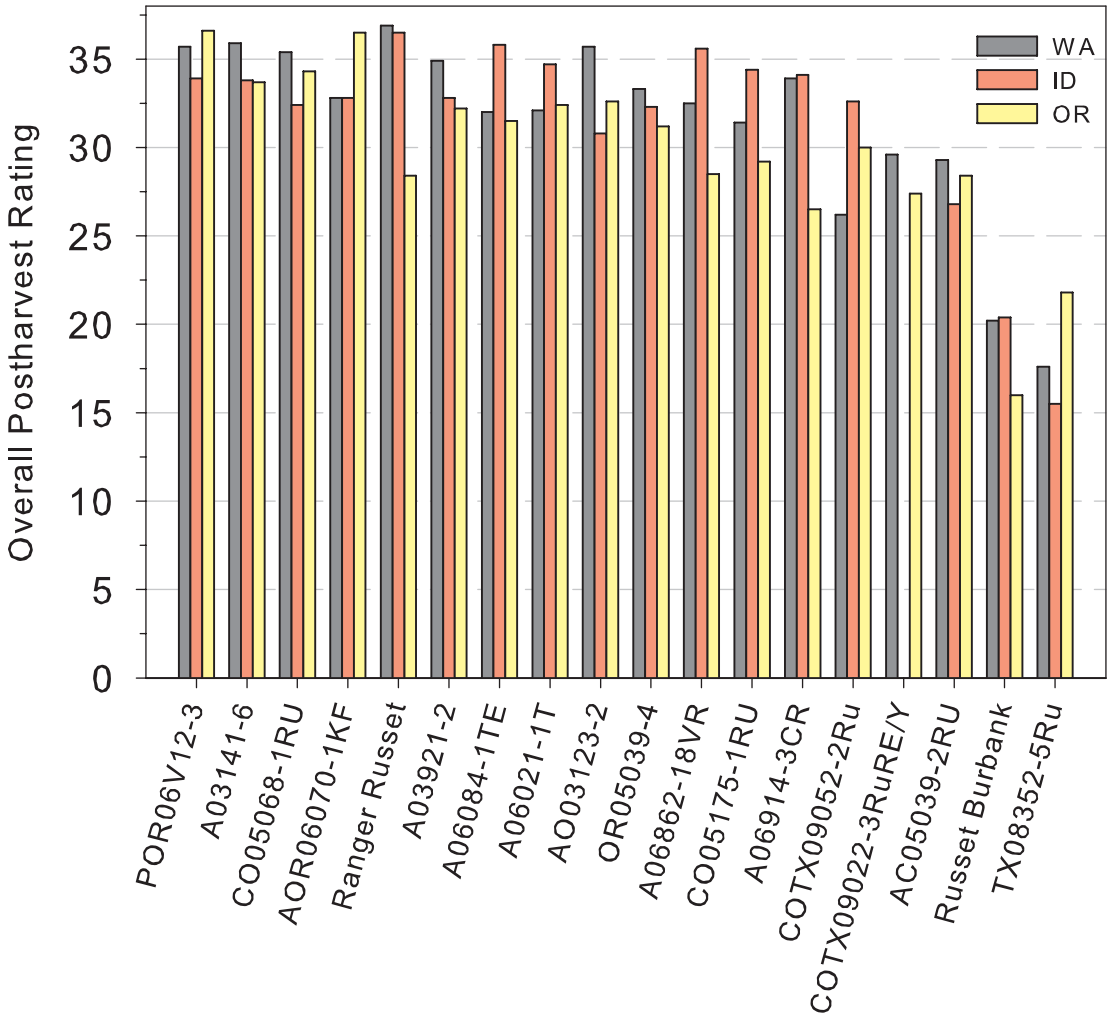
Accumulated Total Postharvest Ratings of Clones

Clone	WA Rating Total §	WA Discard §§	ID Rating Total §	ID Discard §§	OR Rating Total §	OR Discard §§	3 State av. Rating Total
17 POR06V12-3	35.7		33.9		36.6		35.4
3 A03141-6	35.9		33.8		33.7		34.5
12 CO05068-1RU	35.4		32.4		34.3		34.0
11 AOR06070-1KF	32.8		32.8		36.5		34.0
1 Ranger Russet	36.9		36.5		28.4	Sp. Gr.	33.9
4 A03921-2	34.9		32.8		32.2		33.3
6 A06084-1TE	32.0	Sp. Gr.	35.8		31.5	Sp. Gr.	33.1
5 A06021-1T	32.1		34.7		32.4		33.1
10 AO03123-2	35.7		30.8		32.6		33.0
16 OR05039-4	33.3		32.3		31.2	Sp. Gr.	32.3
7 A06862-18VR	32.5		35.6		28.5		32.2
13 CO05175-1RU	31.4		34.4		29.2	Sp. Gr.	31.7
8 A06914-3CR	33.9		34.1		26.5	Sp. Gr.	31.5
15 COTX09052-2Ru	26.2	Sp. Gr.	32.6		30.0	Sp. Gr.	29.6
14 COTX09022-3RuRE/Y	29.6		No Sample		27.4	Sp. Gr.	28.5
9 AC05039-2RU	29.3		26.8		28.4	Sp. Gr.	28.2
2 Russet Burbank	20.2	Sp. Gr.	20.4		16.0	Sp. Gr.	18.9
18 TX08352-5Ru	17.6	Sp. Gr.	15.5	Sp. Gr.	21.8	Sp. Gr.	18.3
	31.4		31.4		29.8		30.9



2015 Late Harvest Regional Trial

Late Harvest Regional Postharvest Ratings



2015 Late Harvest Regional Trial

Prior to Storage

Clone	PHOTOVOLT READING stem	bud	av	rtg §	DIFF	USDA COLOR	SPECIFIC GRAVITY	rtg
Washington								
1 Ranger Russet	46.6	47.6	47.1	**5+**	4.1	0	1.087	**5**
2 Russet Burbank	30.7	45.0	37.9	**4-**	14.3	0	1.071	**0**
3 A03141-6	52.8	51.1	51.9	**5+**	2.5	0	1.091	**4**
4 A03921-2	50.8	54.1	52.5	**5+**	4.6	0	1.093	**3**
5 A06021-1T	43.3	50.1	46.7	**5+**	7.2	0	1.081	**4**
6 A06084-1TE	53.3	52.7	53.0	**5+**	2.1	0	1.075	**0**
7 A06862-18VR	36.9	44.2	40.5	**5-**	10.3	0	1.089	**4**
8 A06914-3CR	48.0	48.1	48.1	**5+**	5.7	0	1.078	**2**
9 AC05039-2RU	43.0	52.3	47.6	**5-**	9.2	0	1.080	**3**
10 AO03123-2	51.3	53.2	52.3	**5+**	3.9	0	1.091	**4**
11 AOR06070-1KF	53.5	51.5	52.5	**5+**	3.0	0	1.098	**1**
12 CO05068-1RU	43.3	45.8	44.5	**5+**	3.3	0	1.090	**4**
13 CO05175-1RU	39.8	47.4	43.6	**5+**	8.7	0	1.078	**2**
14 COTX09022-3RuRE/Y	44.4	47.7	46.1	**5+**	4.5	0	1.076	**1**
15 COTX09052-2Ru	34.2	42.0	38.1	**4-**	9.4	0	1.070	**0**
16 OR05039-4	43.8	48.6	46.2	**5+**	5.0	0	1.079	**2**
17 POR06V12-3	48.1	51.3	49.7	**5+**	4.3	0	1.091	**4**
18 TX08352-5Ru	30.0	37.7	33.8	**3+**	7.7	1	1.065	**0**
		LSD 0.05	*2.8*		*3.9*		*0.006*	
Average	44.1	48.4	46.2		6.1	0	1.082	
Idaho								
1 Ranger Russet	46.2	47.4	46.8	**5+**	4.4	0	1.086	**5**
2 Russet Burbank	39.0	48.9	43.9	**5-**	12.0	0	1.077	**1**
3 A03141-6	54.3	47.3	50.8	**5+**	6.9	0	1.095	**2**
4 A03921-2	52.5	46.0	49.3	**5+**	6.6	0	1.103	**1**
5 A06021-1T	50.9	48.8	49.9	**5+**	2.3	0	1.090	**4**
6 A06084-1TE	56.5	53.9	55.2	**5+**	3.1	0	1.082	**4**
7 A06862-18VR	51.9	52.6	52.3	**5+**	3.2	0	1.091	**4**
8 A06914-3CR	48.0	44.8	46.4	**5+**	7.0	0	1.088	**5**
9 AC05039-2RU	43.4	50.9	47.1	**5-**	9.5	0	1.081	**4**
10 AO03123-2	57.7	48.3	53.0	**5-**	9.4	0	1.090	**4**
11 AOR06070-1KF	54.3	50.3	52.3	**5+**	4.5	0	1.098	**1**
12 CO05068-1RU	44.5	42.8	43.7	**5+**	3.0	0	1.094	**2**
13 CO05175-1RU	45.8	48.6	47.2	**5+**	5.9	0	1.085	**5**
14 COTX09022-3RuRE/Y			No Sample				No Sample	
15 COTX09052-2Ru	36.6	41.6	39.1	**4+**	7.0	0	1.089	**4**
16 OR05039-4	48.3	46.9	47.6	**5+**	3.0	0	1.090	**4**
17 POR06V12-3	51.5	49.2	50.4	**5+**	4.7	0	1.094	**2**
18 TX08352-5Ru	40.1	35.8	38.0	**4+**	6.7	0	1.072	**0**
		LSD 0.05	*2.7*		*3.4*		*0.004*	
Average	48.3	47.3	47.8		5.8	0		
Oregon								
1 Ranger Russet	42.1	48.2	45.1	**5+**	7.0	0	1.073	**0**
2 Russet Burbank	23.3	42.8	33.1	**3-**	19.5	2	1.070	**0**
3 A03141-6	52.0	52.2	52.1	**5+**	3.3	0	1.079	**2**
4 A03921-2	52.4	49.9	51.1	**5+**	3.9	0	1.097	**1**
5 A06021-1T	45.3	49.4	47.3	**5+**	4.8	0	1.076	**1**
6 A06084-1TE	54.1	54.0	54.1	**5+**	2.7	0	1.075	**0**
7 A06862-18VR	36.1	47.3	41.7	**5-**	15.7	0	1.077	**1**
8 A06914-3CR	41.6	48.1	44.8	**5+**	7.7	0	1.068	**0**
9 AC05039-2RU	44.0	48.5	46.3	**5+**	6.6	0	1.073	**0**
10 AO03123-2	49.5	50.6	50.0	**5+**	4.8	0	1.076	**1**
11 AOR06070-1KF	47.0	51.4	49.2	**5+**	8.1	0	1.086	**5**
12 CO05068-1RU	42.4	44.3	43.4	**5+**	4.2	0	1.092	**3**
13 CO05175-1RU	43.0	47.3	45.1	**5+**	7.9	0	1.069	**0**
14 COTX09022-3RuRE/Y	42.0	46.4	44.2	**5+**	7.1	0	1.071	**0**
15 COTX09052-2Ru	39.1	43.9	41.5	**5+**	5.3	0	1.068	**0**
16 OR05039-4	47.2	51.4	49.3	**5+**	6.5	0	1.068	**0**
17 POR06V12-3	49.5	50.5	50.0	**5+**	4.1	0	1.083	**5**
18 TX08352-5Ru	37.4	38.8	38.1	**4+**	5.3	0	1.059	**0**
		LSD 0.05	*3.5*		*4.8*		*0.007*	
Average	43.8	48.1	45.9		6.9	0	1.075	

Date test performed:

Washington	Oct. 5	Oct. 2	
Idaho	Sept. 23		Sept. 22
Oregon	Oct. 9		Oct. 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.

2015 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	**3.9**	92	21	3.7	1.5	14	13
2 Russet Burbank	**3.2**	54	8	2.2	1.2	15	16
3 A03141-6	**3.9**	50	0	2.2	1.0	10	9
4 A03921-2	**3.9**	71	8	2.9	1.3	11	15
5 A06021-1T	**3.1**	25	4	1.6	1.1	12	11
6 A06084-1TE	**4.0**	88	29	3.7	1.6	14	14
7 A06862-18VR	**3.5**	96	13	3.8	1.4	12	14
8 A06914-3CR	**3.9**	58	29	2.5	1.7	8	11
9 AC05039-2RU	**3.3**	13	0	1.3	1.0	9	10
10 AO03123-2	**3.7**	29	4	1.7	1.1	9	7
11 AOR06070-1KF	**3.8**	25	8	1.5	1.2	10	12
12 CO05068-1RU	**3.4**	75	13	3.0	1.3	9	9
13 CO05175-1RU	**3.4**	46	13	2.0	1.3	12	17
14 COTX09022-3RuRE/Y	**3.6**	71	0	3.3	1.3	15	16
15 COTX09052-2Ru	**3.2**	29	8	1.6	1.2	12	16
16 OR05039-4	**3.3**	42	4	1.8	1.1	9	8
17 POR06V12-3	**3.7**	8	4	1.2	1.2	10	12
18 TX08352-5Ru	**2.6**	38	0	1.8	1.0	10	13
LSD 0.05	*0.4*	*28*	*18*			*4*	*5*
Average	3.5	50.5	9.3	2.3	1.2	11.1	12.4
Idaho							
1 Ranger Russet	**3.5**	71	0	2.8	1.0	11	14
2 Russet Burbank	**3.4**	13	4	1.3	1.1	9	7
3 A03141-6	**3.8**	17	0	1.3	1.0	10	9
4 A03921-2	**3.8**	83	4	3.1	1.1	11	13
5 A06021-1T	**3.7**	54	0	2.2	1.0	10	12
6 A06084-1TE	**3.8**	33	0	1.7	1.0	13	12
7 A06862-18VR	**3.6**	83	46	3.4	1.9	8	9
8 A06914-3CR	**4.1**	58	4	2.3	1.1	8	10
9 AC05039-2RU	**3.8**	0	0	1.0	1.0	6	7
10 AO03123-2	**3.8**	0	0	1.0	1.0	7	7
11 AOR06070-1KF	**3.8**	13	0	1.3	1.0	7	13
12 CO05068-1RU	**3.4**	75	8	2.8	1.2	8	8
13 CO05175-1RU	**3.4**	13	4	1.3	1.1	11	13
14 COTX09022-3RuRE/Y	**No Sample**	No Sample		No Sample		No Sample	
15 COTX09052-2Ru	**3.6**	17	0	1.3	1.0	10	9
16 OR05039-4	**3.3**	33	0	1.7	1.0	6	6
17 POR06V12-3	**3.9**	0	0	1.0	1.0	11	12
18 TX08352-5Ru	**2.5**	25	8	1.6	1.2	8	11
LSD 0.05	*0.4*	*24*	*10*			*3*	*3*
Average	3.6	34.6	4.7	1.8	1.1	9.0	10.1
Oregon							
1 Ranger Russet	**3.4**	92	0	3.9	1.0	8	8
2 Russet Burbank	**3.0**	71	4	2.9	1.1	7	6
3 A03141-6	**3.7**	8	0	1.2	1.0	6	7
4 A03921-2	**3.2**	58	38	2.3	1.8	12	11
5 A06021-1T	**3.4**	0	4	1.0	1.1	11	8
6 A06084-1TE	**3.5**	77	14	3.2	1.4	10	11
7 A06862-18VR	**3.5**	64	14	2.5	1.3	9	6
8 A06914-3CR	**3.5**	4	4	1.1	1.1	9	6
9 AC05039-2RU	**3.4**	0	0	1.0	1.0	8	8
10 AO03123-2	**3.6**	8	0	1.2	1.0	9	7
11 AOR06070-1KF	**3.5**	4	0	1.1	1.0	11	11
12 CO05068-1RU	**3.3**	67	58	2.7	2.3	8	7
13 CO05175-1RU	**3.2**	33	13	1.8	1.3	7	11
14 COTX09022-3RuRE/Y	**3.4**	8	8	1.3	1.3	13	14
15 COTX09052-2Ru	**3.0**	4	0	1.0	1.0	13	10
16 OR05039-4	**3.2**	4	0	1.1	1.0	8	7
17 POR06V12-3	**3.6**	0	0	1.0	1.0	9	7
18 TX08352-5Ru	**2.8**	4	4	1.1	1.1	12	11
LSD 0.05	*0.4*	*20*	*16*			*4*	*3*
Average	3.3	28.2	1.2	1.7	1.2	9.4	8.6

Date test performed:

Washington	Oct. 19	Oct. 28	Nov. 13
Idaho	Oct. 16	Oct. 23	Nov. 6
Oregon	Oct. 20	Nov. 3	Nov. 18

2015 Late Harvest Regional Trial

Stored at 48°F for 60 Days

	PHOTOVOLT READING				DIFF	USDA	% REDUCING SUGAR			SPROUTING	
Clone	stem	bud	average	rtg §		COLOR	stem	bud	rtg	(%)	length (in)
Washington											
1 Ranger Russet	40.9	44.6	42.7	**5+**	4.3	0	0.7	0.6	**5**	67	0.25
2 Russet Burbank	29.7	44.7	37.2	**4-**	15.0	1	1.4	0.6	**5**	0	
3 A03141-6	51.2	52.2	51.7	**5+**	4.4	0	0.5	0.5	**5**	0	
4 A03921-2	52.7	55.7	54.2	**5+**	4.8	0	0.5	0.5	**5**	0	
5 A06021-1T	40.1	48.1	44.1	**5+**	8.0	0	0.7	0.5	**5**	0	
6 A06084-1TE	52.3	53.3	52.8	**5+**	1.9	0	0.5	0.6	**5**	27	0.13
7 A06862-18VR	42.1	47.3	44.7	**5+**	8.1	0	0.6	0.5	**5**	100	1.50
8 A06914-3CR	49.9	46.2	48.1	**5+**	6.0	0	0.5	0.5	**5**	7	0.25
9 AC05039-2RU	42.3	50.9	46.6	**5+**	8.6	0	0.6	0.5	**5**	53	0.13
10 AO03123-2	51.4	53.8	52.6	**5+**	4.0	0	0.5	0.5	**5**	0	
11 AOR06070-1KF	54.5	53.9	54.2	**5+**	3.5	0	0.5	0.5	**5**	0	
12 CO05068-1RU	45.4	47.1	46.3	**5+**	3.8	0	0.6	0.5	**5**	93	0.50
13 CO05175-1RU	46.1	53.6	49.9	**5+**	7.7	0	0.5	0.5	**5**	40	0.25
14 COTX09022-3RuRE/Y	42.7	49.8	46.2	**5+**	7.6	0	0.6	0.5	**5**	100	1.50
15 COTX09052-2Ru	38.7	44.3	41.5	**5+**	6.2	0	0.8	0.6	**5**	0	
16 OR05039-4	44.1	48.3	46.2	**5+**	5.0	0	0.6	0.5	**5**	0	
17 POR06V12-3	48.7	53.4	51.1	**5+**	4.7	0	0.5	0.6	**5**	0	
18 TX08352-5Ru	28.2	32.3	30.3	**2+**	4.9	1	1.6	1.2	**4**	0	
		LSD 0.05	*2.7*		*3.3*					*17*	
Average	44.5	48.9	46.7		6.0	0	0.7	0.6		27	
Idaho											
1 Ranger Russet	41.8	44.3	43.1	**5+**	3.0	0	0.7	0.6	**5**	0	
2 Russet Burbank	30.1	39.0	34.5	**3-**	9.8	1	1.4	0.8	**4**	0	
3 A03141-6	51.1	43.8	47.4	**5+**	8.1	0	0.5	0.6	**5**	0	
4 A03921-2	53.3	50.5	51.9	**5+**	4.1	0	0.6	0.5	**5**	0	
5 A06021-1T	42.9	45.6	44.2	**5+**	4.7	0	0.6	0.6	**5**	0	
6 A06084-1TE	54.6	51.6	53.1	**5+**	4.5	0	0.5	0.5	**5**	0	
7 A06862-18VR	51.3	54.7	53.0	**5+**	4.9	0	0.5	0.5	**5**	33	0.13
8 A06914-3CR	43.6	43.7	43.7	**5+**	5.2	0	0.6	0.6	**5**	0	
9 AC05039-2RU	38.0	47.3	42.7	**5-**	10.7	0	0.8	0.5	**5**	0	
10 AO03123-2	53.9	49.2	51.5	**5+**	4.7	0	0.5	0.5	**5**	0	
11 AOR06070-1KF	54.6	52.1	53.4	**5+**	6.4	0	0.5	0.5	**5**	0	
12 CO05068-1RU	43.7	46.1	44.9	**5+**	3.5	0	0.6	0.5	**5**	33	0.13
13 CO05175-1RU	44.6	49.3	46.9	**5+**	6.2	0	0.6	0.5	**5**	0	
14 COTX09022-3RuRE/Y			No Sample					No Sample		No Sample	
15 COTX09052-2Ru	43.2	44.8	44.0	**5+**	5.9	0	0.6	0.6	**5**	0	
16 OR05039-4	46.9	51.3	49.1	**5+**	4.6	0	0.5	0.5	**5**	0	
17 POR06V12-3	41.6	47.0	44.3	**5+**	7.3	0	0.7	0.5	**5**	0	
18 TX08352-5Ru	26.9	31.1	29.0	**2+**	5.4	1	1.7	1.3	**3**	0	
		LSD 0.05	*3.6*		*3.8*					*12*	
Average	44.8	46.5	45.7		5.8	0	0.7	0.6		4	
Oregon											
1 Ranger Russet	45.8	49.7	47.8	**5+**	7.4	0	0.6	0.5	**5**	53	1.00
2 Russet Burbank	23.2	40.2	31.7	**3-**	17.0	2	2.2	0.7	**3**	0	
3 A03141-6	53.3	56.5	54.9	**5+**	6.7	0	0.6	0.5	**5**	7	0.13
4 A03921-2	54.6	52.4	53.5	**5+**	3.1	0	0.5	0.5	**5**	13	0.13
5 A06021-1T	43.2	46.1	44.7	**5+**	4.9	0	0.6	0.5	**5**	0	
6 A06084-1TE	50.8	51.8	51.3	**5+**	3.1	0	0.5	0.5	**5**	53	0.50
7 A06862-18VR	37.6	48.8	43.2	**5-**	15.8	0	0.8	0.5	**5**	53	0.75
8 A06914-3CR	38.2	45.3	41.8	**5-**	11.1	0	0.8	0.6	**5**	20	0.25
9 AC05039-2RU	39.6	45.0	42.3	**5+**	6.3	0	0.7	0.6	**5**	100	0.25
10 AO03123-2	50.1	49.0	49.6	**5+**	3.6	0	0.5	0.5	**5**	0	
11 AOR06070-1KF	50.8	53.2	52.0	**5+**	4.4	0	0.5	0.6	**5**	0	
12 CO05068-1RU	47.7	45.8	46.7	**5+**	2.9	0	0.5	0.6	**5**	100	1.00
13 CO05175-1RU	44.4	50.6	47.5	**5+**	6.4	0	0.6	0.5	**5**	67	0.75
14 COTX09022-3RuRE/Y	40.8	49.1	44.9	**5-**	10.2	0	0.7	0.5	**5**	87	2.00
15 COTX09052-2Ru	41.4	44.6	43.0	**5+**	6.3	0	0.7	0.6	**5**	7	0.13
16 OR05039-4	46.6	51.7	49.2	**5+**	6.8	0	0.5	0.5	**5**	7	0.13
17 POR06V12-3	49.3	49.4	49.4	**5+**	3.7	0	0.5	0.5	**5**	80	1.25
18 TX08352-5Ru	30.4	36.8	33.6	**3+**	7.2	1	1.4	0.9	**4**	0	
		LSD 0.05	*3.7*		*4.6*					*20*	
Average	43.8	48.1	45.9		7.1	0	0.7	0.6		36	

Date test performed:			
Washington	Dec. 9	Dec. 9	Dec. 18
Idaho	Nov. 30	Nov. 30	Dec. 18
Oregon	Dec. 11	Dec. 11	Dec. 18

§ 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.

2015 Late Harvest Regional Trial

Stored at 44°F for 60 Days

Clone	PHOTOVOLT READING stem	bud	average	rtg §	DIFF	USDA COLOR	% REDUCING SUGAR stem	bud	rtg
Washington									
1 Ranger Russet	38.2	44.1	41.1	**5+**	6.4	0	0.8	0.6	**5**
2 Russet Burbank	24.8	38.1	31.4	**3-**	13.2	1	2.0	0.8	**4**
3 A03141-6	49.0	51.2	50.1	**5+**	2.7	0	0.5	0.5	**5**
4 A03921-2	45.0	50.4	47.7	**5+**	6.5	0	0.6	0.5	**5**
5 A06021-1T	32.0	38.5	35.3	**3+**	7.4	0	1.2	0.8	**4**
6 A06084-1TE	44.8	50.4	47.6	**5+**	6.2	0	0.6	0.5	**5**
7 A06862-18VR	35.2	40.6	37.9	**4+**	6.7	0	1.0	0.7	**5**
8 A06914-3CR	41.1	42.6	41.8	**5+**	4.8	0	0.7	0.6	**5**
9 AC05039-2RU	31.1	44.5	37.8	**4-**	14.5	0	1.3	0.6	**5**
10 AO03123-2	40.8	46.8	43.8	**5+**	6.6	0	0.7	0.5	**5**
11 AOR06070-1KF	49.7	51.8	50.7	**5+**	3.6	0	0.5	0.5	**5**
12 CO05068-1RU	41.4	46.7	44.0	**5+**	5.3	0	0.7	0.5	**5**
13 CO05175-1RU	37.7	50.9	44.3	**5-**	13.2	0	0.8	0.5	**5**
14 COTX09022-3RuRE/Y	31.9	41.4	36.6	**4-**	10.0	0	1.2	0.7	**5**
15 COTX09052-2Ru	32.1	39.5	35.8	**4+**	7.4	0	1.2	0.8	**4**
16 OR05039-4	43.4	48.6	46.0	**5+**	5.3	0	0.6	0.5	**5**
17 POR06V12-3	42.6	50.1	46.4	**5+**	7.5	0	0.6	0.5	**5**
18 TX08352-5Ru	19.5	24.6	22.0	**1+**	5.4	2	2.8	2.0	**2**
		LSD 0.05	*3.0*		*3.6*				
Average	37.8	44.5	41.1		7.4	0	1.0	0.7	
Idaho									
1 Ranger Russet	38.4	42.9	40.7	**5+**	6.5	0	0.8	0.6	**5**
2 Russet Burbank	27.4	40.5	33.9	**3-**	13.2	1	1.7	0.7	**4**
3 A03141-6	49.9	46.4	48.1	**5+**	5.3	0	0.5	0.5	**5**
4 A03921-2	46.0	48.2	47.1	**5+**	3.9	0	0.5	0.5	**5**
5 A06021-1T	37.9	37.4	37.6	**4+**	2.2	0	0.8	0.9	**5**
6 A06084-1TE	47.0	45.2	46.1	**5+**	5.7	0	0.5	0.6	**5**
7 A06862-18VR	43.5	46.3	44.9	**5+**	5.8	0	0.6	0.5	**5**
8 A06914-3CR	34.9	32.0	33.4	**3+**	6.8	0	1.0	1.2	**4**
9 AC05039-2RU	25.5	37.1	31.3	**3-**	11.6	1	1.9	0.9	**4**
10 AO03123-2	29.5	36.6	33.0	**3+**	8.7	1	1.4	0.9	**4**
11 AOR06070-1KF	49.5	49.3	49.4	**5+**	5.1	0	0.5	0.5	**5**
12 CO05068-1RU	38.2	41.8	40.0	**4+**	6.8	0	0.8	0.7	**5**
13 CO05175-1RU	37.8	48.0	42.9	**5-**	13.4	0	0.8	0.5	**5**
14 COTX09022-3RuRE/Y			No Sample					No Sample	
15 COTX09052-2Ru	36.7	46.1	41.4	**5-**	11.9	0	0.9	0.5	**5**
16 OR05039-4	32.4	45.7	39.0	**4-**	13.3	0	1.2	0.6	**5**
17 POR06V12-3	43.4	48.9	46.2	**5+**	6.4	0	0.6	0.5	**5**
18 TX08352-5Ru	19.9	28.8	24.4	**1-**	9.4	2	2.7	1.5	**2**
		LSD 0.05	*3.4*		*3.9*				
Average	37.5	42.4	40.0		8.0	0	1.0	0.7	
Oregon									
1 Ranger Russet	33.5	45.0	39.2	**4-**	12.2	0	1.1	0.6	**5**
2 Russet Burbank	26.5	39.1	32.8	**3-**	13.4	1	1.8	0.8	**4**
3 A03141-6	53.4	55.8	54.6	**5+**	3.8	0	0.6	0.5	**5**
4 A03921-2	50.5	52.4	51.5	**5+**	4.8	0	0.5	0.5	**5**
5 A06021-1T	41.6	42.4	42.0	**5+**	2.8	0	0.7	0.6	**5**
6 A06084-1TE	48.4	53.0	50.7	**5+**	4.6	0	0.5	0.5	**5**
7 A06862-18VR	42.2	47.6	44.9	**5+**	7.0	0	0.6	0.5	**5**
8 A06914-3CR	43.1	36.9	40.0	**4-**	11.5	0	0.6	0.9	**5**
9 AC05039-2RU	32.2	36.3	34.2	**3+**	5.1	0	1.2	0.9	**4**
10 AO03123-2	43.8	46.9	45.4	**5+**	5.2	0	0.6	0.5	**5**
11 AOR06070-1KF	51.7	52.5	52.1	**5+**	4.1	0	0.5	0.5	**5**
12 CO05068-1RU	43.3	44.1	43.7	**5+**	2.9	0	0.6	0.6	**5**
13 CO05175-1RU	37.2	46.9	42.1	**5-**	10.1	0	0.9	0.5	**5**
14 COTX09022-3RuRE/Y	38.8	47.1	43.0	**5-**	9.4	0	0.8	0.5	**5**
15 COTX09052-2Ru	38.4	41.2	39.8	**4+**	4.8	0	0.8	0.7	**5**
16 OR05039-4	41.8	48.8	45.3	**5+**	8.1	0	0.7	0.5	**5**
17 POR06V12-3	48.0	49.5	48.8	**5+**	3.7	0	0.5	0.5	**5**
18 TX08352-5Ru	27.1	29.7	28.4	**2+**	3.8	1	1.7	1.4	**3**
		LSD 0.05	*3.6*		*4.8*				
Average	41.2	45.3	43.2		6.5	0	0.8	0.7	

Date test performed:		
Washington	Dec. 10	Dec. 10
Idaho	Dec. 1	Dec. 1
Oregon	Dec. 13	Dec. 13

§ 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.

2015 Late Harvest Regional Trial

Stored at 40°F for 60 Days and Reconditioned

		PHOTOVOLT(60 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	18.9	25.8	22.3	6.9	3	25.5	35.5	30.5	10.0	1
2 Russet Burbank	0	13.6	19.1	16.3	5.7	4	18.8	28.5	23.7	9.7	3
3 A03141-6	0	39.9	42.8	41.4	6.5	0	43.3	45.1	44.2	4.3	0
4 A03921-2	0	35.3	46.8	41.0	11.5	0	39.4	46.2	42.8	6.8	0
5 A06021-1T	0	20.7	26.2	23.4	6.1	2	22.5	27.7	25.1	5.8	2
6 A06084-1TE	0	30.2	39.2	34.7	8.9	1	35.3	45.5	40.4	12.2	0
7 A06862-18VR	0	18.5	30.2	24.3	12.7	3	33.7	38.8	36.2	6.0	0
8 A06914-3CR	0	26.2	25.4	25.8	3.5	1	32.7	32.5	32.6	3.4	0
9 AC05039-2RU	0	22.1	26.6	24.4	6.1	2	22.0	26.8	24.4	4.9	2
10 AO03123-2	0	26.3	33.1	29.7	6.9	1	28.3	37.0	32.6	8.9	1
11 AOR06070-1KF	0	37.2	44.5	40.8	8.3	0	35.0	43.7	39.4	8.9	0
12 CO05068-1RU	0	23.8	33.2	28.5	10.3	2	25.2	35.8	30.5	10.6	1
13 CO05175-1RU	0	18.8	34.5	26.6	15.7	3	24.2	47.4	35.8	23.2	2
14 COTX09022-3RuRE/Y	0	23.1	30.8	27.0	7.7	2	25.7	35.0	30.3	9.5	1
15 COTX09052-2Ru	0	22.2	33.1	27.6	10.8	2	27.0	34.3	30.6	7.6	1
16 OR05039-4	0	23.9	35.6	29.7	11.7	2	23.6	32.0	27.8	8.8	2
17 POR06V12-3	0	31.7	45.8	38.8	14.1	0	33.4	42.7	38.1	9.3	0
18 TX08352-5Ru	0	10.3	11.9	11.1	1.8	4	14.7	15.0	14.9	2.1	3
LSD 0.05	*ns*			*3.4*	*3.7*				*4.2*	*4.3*	
Average	0	24.6	32.5	28.5	8.6	2	28.3	36.1	32.2	8.4	1
Idaho											
1 Ranger Russet	0	22.5	30.1	26.3	7.6	2	27.6	41.5	34.5	14.8	1
2 Russet Burbank	0	14.0	17.4	15.7	4.5	4	21.4	31.1	26.3	9.8	2
3 A03141-6	0	33.9	26.9	30.4	7.6	0	42.7	42.4	42.6	5.3	0
4 A03921-2	0	31.0	33.7	32.3	4.7	0	37.5	45.0	41.3	8.3	0
5 A06021-1T	0	21.6	24.2	22.9	3.4	2	25.4	32.7	29.1	7.5	1
6 A06084-1TE	0	36.4	37.9	37.2	3.6	0	44.4	43.5	43.9	3.8	0
7 A06862-18VR	0	26.8	32.8	29.8	6.0	1	42.9	46.0	44.4	4.5	0
8 A06914-3CR	0	23.5	27.5	25.5	6.1	2	29.1	29.7	29.4	2.6	1
9 AC05039-2RU	0	15.8	17.7	16.7	2.4	3	25.4	24.0	24.7	5.8	1
10 AO03123-2	0	27.0	30.8	28.9	7.3	1	32.1	36.7	34.4	6.0	0
11 AOR06070-1KF	0	40.9	41.5	41.2	3.7	0	44.4	46.2	45.3	5.3	0
12 CO05068-1RU	0	30.7	31.3	31.0	3.4	0	34.6	35.1	34.9	4.8	0
13 CO05175-1RU	0	22.6	31.3	27.0	9.4	2	36.0	44.4	40.2	10.1	0
14 COTX09022-3RuRE/Y	None			No Sample					No Sample		
15 COTX09052-2Ru	0	35.3	38.3	36.8	5.2	0	31.8	37.3	34.6	7.8	0
16 OR05039-4	0	25.4	35.4	30.4	10.0	1	31.1	41.8	36.4	12.2	0
17 POR06V12-3	0	30.0	37.2	33.6	7.2	1	32.5	41.8	37.2	9.3	0
18 TX08352-5Ru	0	14.4	15.1	14.7	1.2	4	19.6	22.4	21.0	4.1	2
LSD 0.05	*ns*			*3.1*	*2.8*				*4.2*	*4.1*	
Average	0	26.6	29.9	28.2	5.5	1	32.9	37.7	35.3	7.2	0
Oregon											
1 Ranger Russet	0	22.3	33.0	27.6	11.0	2	24.6	36.9	30.7	15.5	1
2 Russet Burbank	0	15.6	26.3	21.0	10.7	3	20.5	32.7	26.6	12.6	2
3 A03141-6	0	41.1	44.5	42.8	5.3	0	43.0	51.5	47.2	12.3	0
4 A03921-2	0	41.6	44.7	43.1	4.4	0	43.9	46.7	45.3	4.7	0
5 A06021-1T	0	26.2	28.7	27.4	3.4	1	21.2	24.4	22.8	6.0	2
6 A06084-1TE	0	37.6	44.4	41.0	8.3	0	40.5	48.9	43.0	13.4	0
7 A06862-18VR	0	30.2	40.8	35.5	13.9	1	40.6	43.3	42.0	7.2	0
8 A06914-3CR	0	23.4	27.0	25.2	5.5	2	27.4	33.8	30.6	9.8	1
9 AC05039-2RU	0	21.0	22.1	21.5	4.2	2	22.0	23.8	22.9	4.0	2
10 AO03123-2	0	23.2	23.7	23.5	4.0	2	27.7	37.7	32.7	10.8	1
11 AOR06070-1KF	0	39.8	46.4	43.1	9.0	0	37.1	48.2	42.6	11.2	0
12 CO05068-1RU	0	31.7	34.4	33.0	4.9	0	32.9	37.8	35.3	5.8	0
13 CO05175-1RU	0	17.6	25.2	21.4	8.2	3	23.9	39.4	31.7	16.1	2
14 COTX09022-3RuRE/Y	0	20.4	28.3	24.3	8.8	2	21.2	31.0	26.1	10.5	2
15 COTX09052-2Ru	0	25.2	28.3	26.7	4.1	1	28.0	33.9	31.0	7.0	1
16 OR05039-4	0	34.9	38.6	36.7	4.6	0	43.9	47.5	45.7	7.4	0
17 POR06V12-3	0	44.9	45.4	45.2	5.3	0	44.9	46.8	45.8	5.2	0
18 TX08352-5Ru	0	17.3	15.5	16.4	3.5	3	19.0	19.2	19.1	2.2	3
LSD 0.05	*ns*			*4.1*	*4.2*				*4.6*	*5.8*	
Average	0	28.5	33.2	30.9	6.6	1	31.2	38.0	34.5	9.0	1

Date test performed:

Washington	Dec. 15	Dec. 11	Dec. 17
Idaho	Dec. 15	Dec. 2	Dec. 17
Oregon	Dec. 15	Dec. 14	Dec. 17

DIFF = Absolute difference between bud and stem Photovolt reading.

Entries Retained from the 2014 Trials Currently in the Regional Trial

Harvested fall of 2014 Held at 48°F until December 21 Stored at 44°F until analysis

Five clones were advanced from the 2014 Tri-State Trial into the 2015 Regional Trial (A03141-6, A06862-18VR, A06914-3CR, AO03123-2, AOR06070-1KF). Seven clones were retained in the Regional Trial. When averaged across states, A03141-6 (49.9 ref. units), A03921-2 (47.7 ref units), A06084-1TE (46.4 ref. units) and POR06V12-3 (45.7 ref units) produced the lightest fries. POR06V12-3 also produced the lightest fries in long-term studies last year. Uniformity of fry color was unacceptable for six of the fourteen entries. A06084-1TE, A06914-3CR and CO05068-1Ru were the only entries to produce uniform fries from all three states. All entries sprouted. CO05068-1Ru had relatively short dormancy, producing 1.75-inch sprouts. A06021-1T appeared to have the longest dormancy with 0.25-inch sprouts

	PHOTOVOLT READING				USDA	% REDUCING SUGAR			Sprouting	
Clone	stem	bud	avg	DIFF	COLOR	stem	bud	avg	percent	length (in.)
Washington										
1 Ranger Russet	23.9	38.6	31.2	14.8	2	2.1	0.8	1.4	100	2.3
2 Russet Burbank	19.3	42.7	31.0	23.4	3	2.8	0.6	1.7	100	0.3
3 A03141-6 §			No Sample							
4 A03921-2	50.7	54.7	52.7	6.9	0	0.5	0.5	0.5	100	0.8
5 A06021-1T	21.2	32.5	26.9	11.3	2	2.5	1.2	1.8	100	0.3
6 A06084-1TE	47.4	50.1	48.8	6.5	0	0.5	0.5	0.5	100	2.0
7 A06862-18VR §	35.6	41.9	38.7	7.3	0	1.0	0.7	0.8	100	2.0
8 A06914-3CR §	34.5	39.9	37.2	7.6	0	1.0	0.7	0.9	100	2.3
9 AO03123-2 §	43.7	48.6	46.1	8.3	0	0.6	0.5	0.6	100	1.0
10 AOR06070-1KF §	34.0	47.9	40.9	16.9	0	1.1	0.5	0.8	100	2.3
11 CO05068-1RU	42.8	45.6	44.2	5.8	0	0.6	0.6	0.6	100	2.0
12 CO05175-1RU	30.1	45.5	37.8	15.5	1	1.4	0.6	1.0	100	2.3
13 OR05039-4	40.1	46.7	43.4	6.7	0	0.7	0.5	0.6	100	1.3
14 POR06V12-3	47.6	53.0	50.3	6.7	0	0.5	0.5	0.5	100	1.8
		LSD 0.05	*4.2*	*5.1*						
Average	36.2	45.2	40.7	10.6	1	0.9	0.6	0.9	100	
Idaho										
1 Ranger Russet	24.7	35.5	30.1	11.3	1	2.0	1.0	1.5	100	1.3
2 Russet Burbank	16.9	36.8	26.8	19.9	3	3.2	0.9	2.1	100	0.8
3 A03141-6 §	50.5	48.9	49.7	4.1	0	0.5	0.5	0.5	100	0.8
4 A03921-2	33.6	43.7	38.6	10.2	0	1.1	0.6	0.8	100	0.3
5 A06021-1T	27.3	32.4	29.8	6.7	1	1.7	1.2	1.4	100	0.3
6 A06084-1TE	43.5	46.4	45.0	4.6	0	0.6	0.5	0.6	100	1.3
7 A06862-18VR §	39.8	46.8	43.3	7.3	0	0.7	0.5	0.6	100	1.0
8 A06914-3CR §	33.5	38.2	35.9	7.7	0	1.1	0.8	1.0	100	1.0
9 AO03123-2 §	41.1	50.2	45.7	9.2	0	0.7	0.5	0.6	100	0.5
10 AOR06070-1KF §	41.8	44.3	43.0	5.5	0	0.7	0.6	0.6	100	1.3
11 CO05068-1RU	35.6	38.2	36.9	4.0	0	1.0	0.8	0.9	100	1.8
12 CO05175-1RU	36.5	44.5	40.5	9.9	0	0.9	0.6	0.7	100	0.3
13 OR05039-4	32.6	48.0	40.3	15.4	0	1.2	0.5	0.8	100	0.8
14 POR06V12-3	35.3	45.3	40.3	10.1	0	1.0	0.6	0.8	100	1.0
		LSD 0.05	*3.8*	*5.2*						
Average	32.8	40.6	36.7	9.5	1	1.5	0.8	1.2	100	
Oregon										
1 Ranger Russet	25.7	41.0	33.3	15.3	1	1.9	0.7	1.3	100	1.5
2 Russet Burbank	17.3	44.3	30.8	26.9	3	3.1	0.6	1.9	100	0.8
3 A03141-6 §	50.3	50.0	50.1	7.3	0	0.5	0.5	0.5	100	0.3
4 A03921-2	53.1	50.6	51.8	4.2	0	0.6	0.5	0.5	100	0.5
5 A06021-1T	38.6	41.5	40.1	5.8	0	0.8	0.7	0.7	0	
6 A06084-1TE	43.9	46.9	45.4	6.3	0	0.6	0.5	0.6	100	1.0
7 A06862-18VR §	32.2	42.8	37.5	12.4	0	1.2	0.6	0.9	100	1.3
8 A06914-3CR §	37.1	36.8	36.9	4.1	0	0.9	0.9	0.9	100	1.0
9 AO03123-2 §	41.9	47.6	44.7	8.1	0	0.7	0.5	0.6	100	0.3
10 AOR06070-1KF §	42.0	45.6	43.8	7.3	0	0.7	0.6	0.6	100	1.0
11 CO05068-1RU	42.4	42.9	42.7	3.2	0	0.6	0.6	0.6	100	1.5
12 CO05175-1RU	48.1	53.9	51.0	6.6	0	0.5	0.5	0.5	100	0.5
13 OR05039-4	44.7	46.6	45.7	6.3	0	0.6	0.5	0.6	100	0.5
14 POR06V12-3	46.1	46.8	46.4	5.5	0	0.5	0.5	0.5	100	0.8
		LSD 0.05	*3.3*	*4.6*						
Average	40.2	45.5	42.9	8.5	0	0.9	0.6	0.8	93	

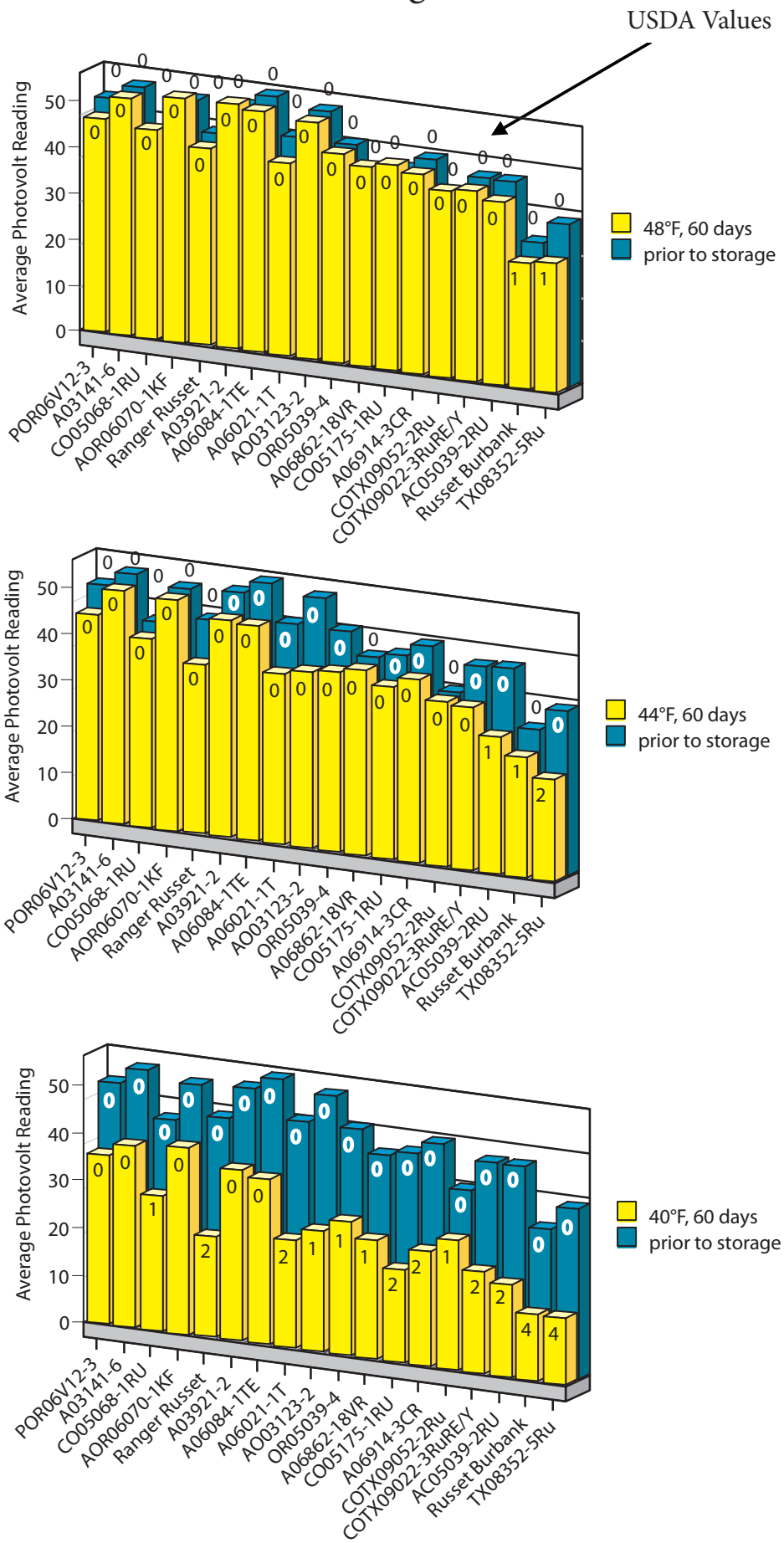
§ Advanced from 2014 Tri-State Trial.

Date test performed:

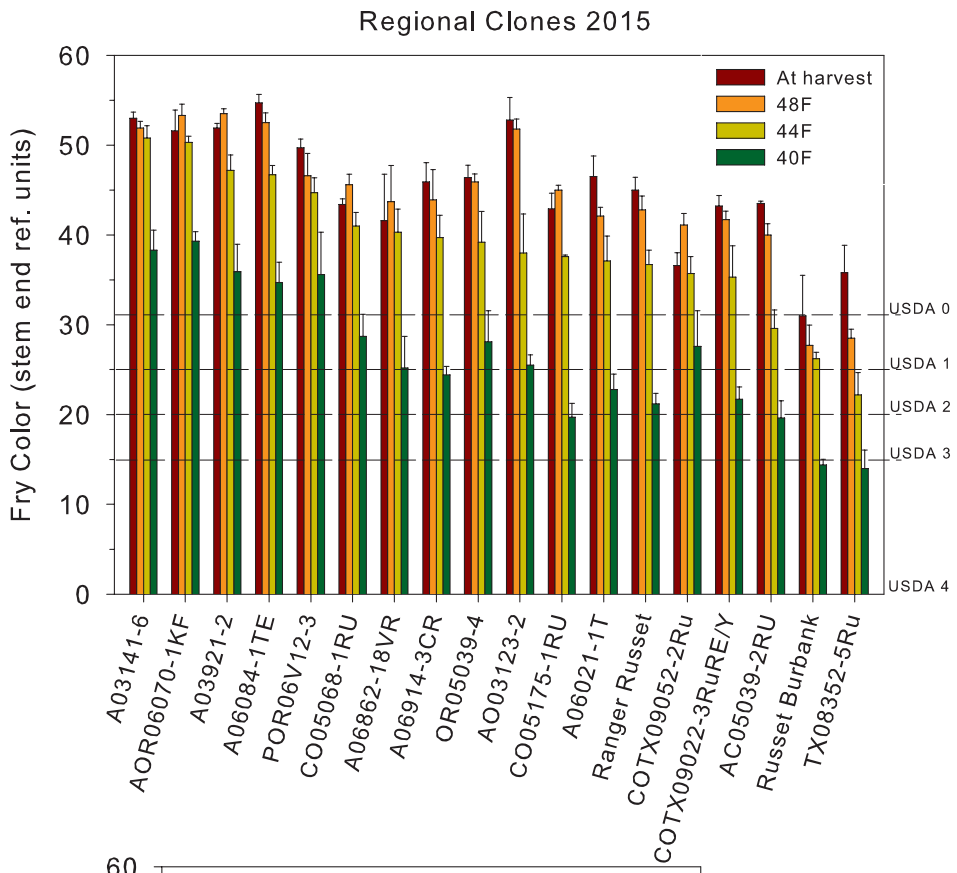
Washington	May 5
Idaho	May 5
Oregon	May 5

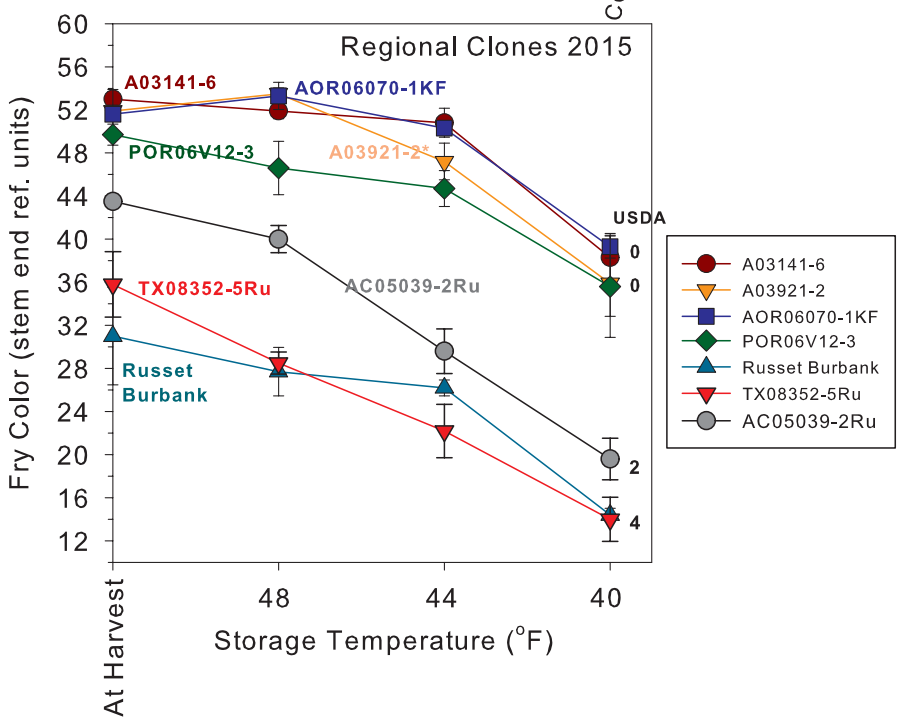
2015 Late Harvest Regional Trial

Regional Trial - 3 State Average of Stem End



2015 Late Harvest Regional Trial

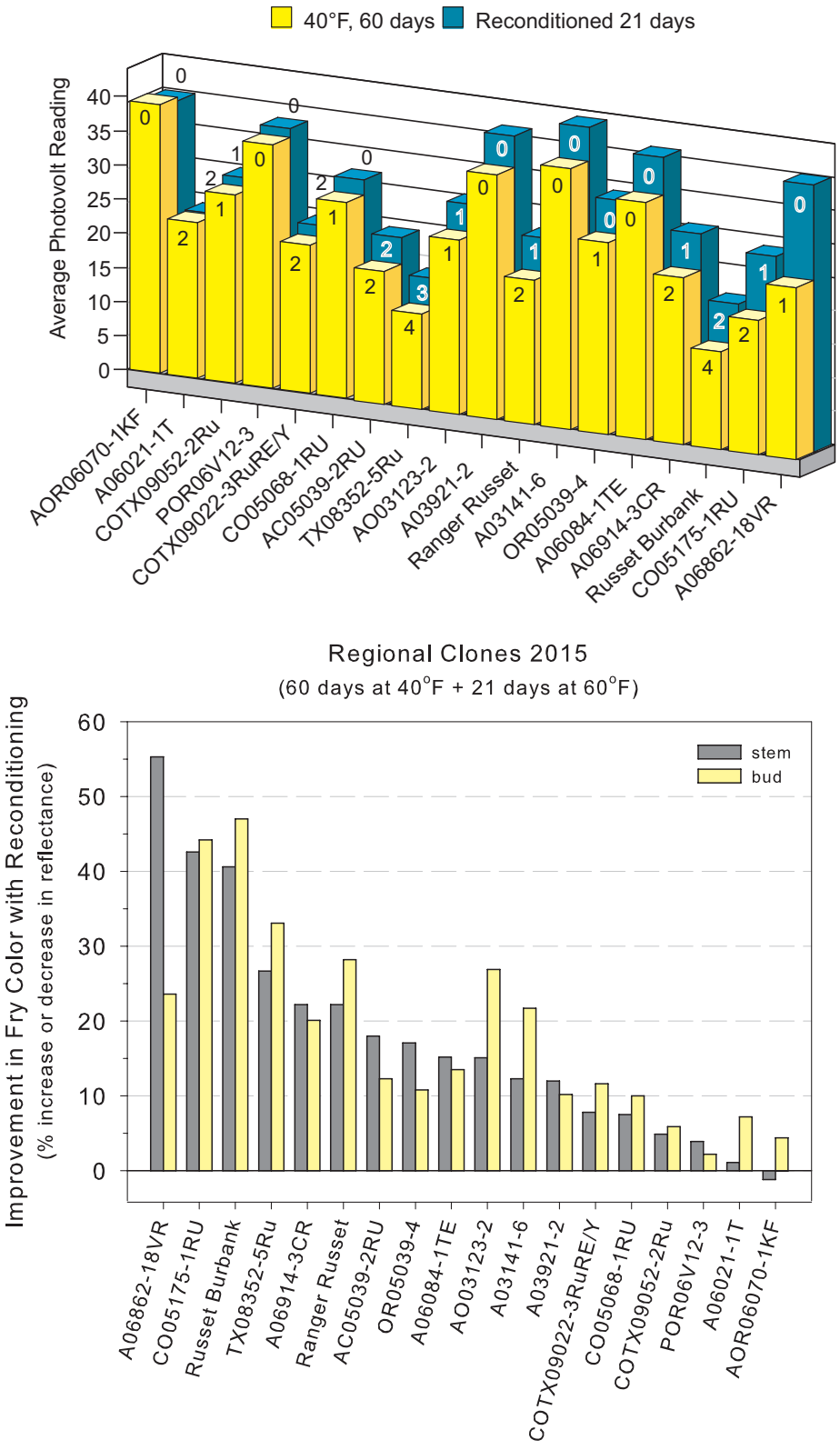




Top: At-harvest and after-storage French fry colors (stem end) of clones in the Regional Trial. Tubers were stored for 60 days at 48, 44 and 40°F. The clones are ranked from best to worst based on fry color of the 44°F-stored tubers. High reflectance values indicate light colored fries.

Bottom: Line graph depicting the effects of storage temperature on the change in French fry processing quality (stem end fry color) of the best (A03141-6, AOR06070-1KF, A03921-2*, and POR06V12-3) and worst (AC05039-2RU, TX08352-5RU, and Russet Burbank) performing clones in the Regional Trial. *Indicates similar performance of the clones last year.

2015 Late Harvest Regional Trial



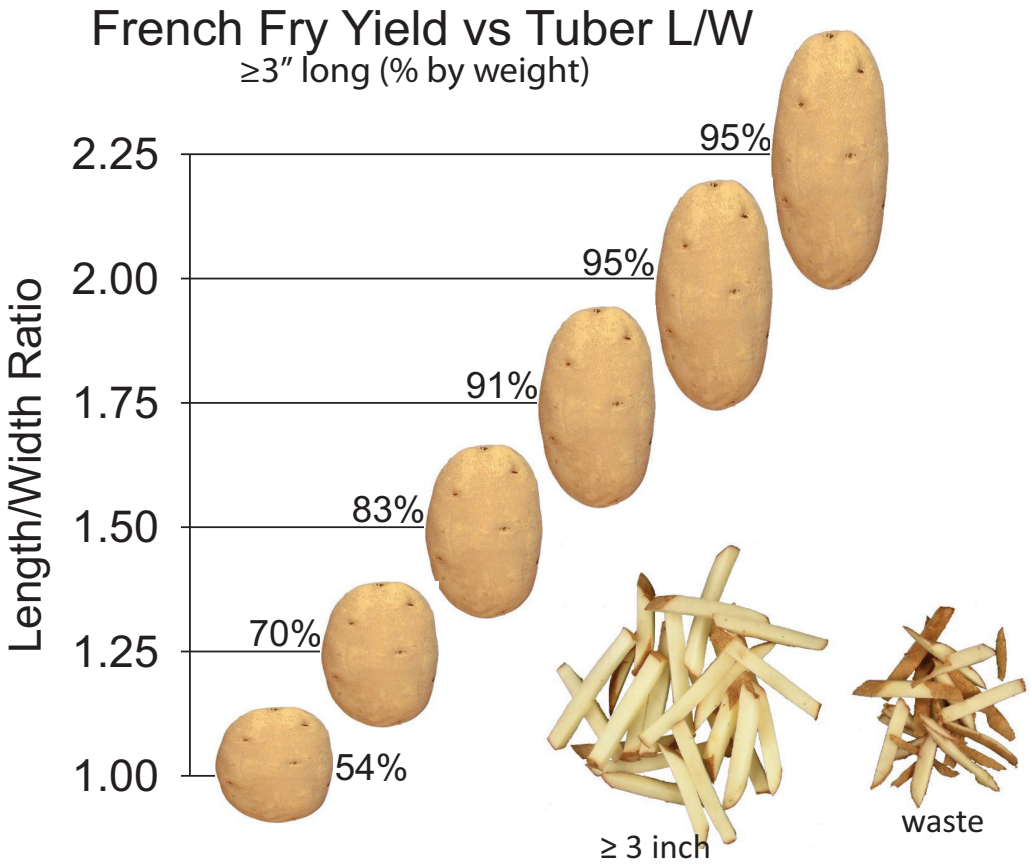
Reconditioning abilities of clones in the 2015 Regional Trial (3-state averages). Clones were stored at 40°F for 60 days after harvest and then reconditioned at 60°F for 21 days. Top: Stem end fry color before and after reconditioning. Numbers in bars indicate the USDA color rating of the stem end. Bottom: Percent improvement of stem and bud end fry color with reconditioning.

2015 Late Harvest Regional Trial

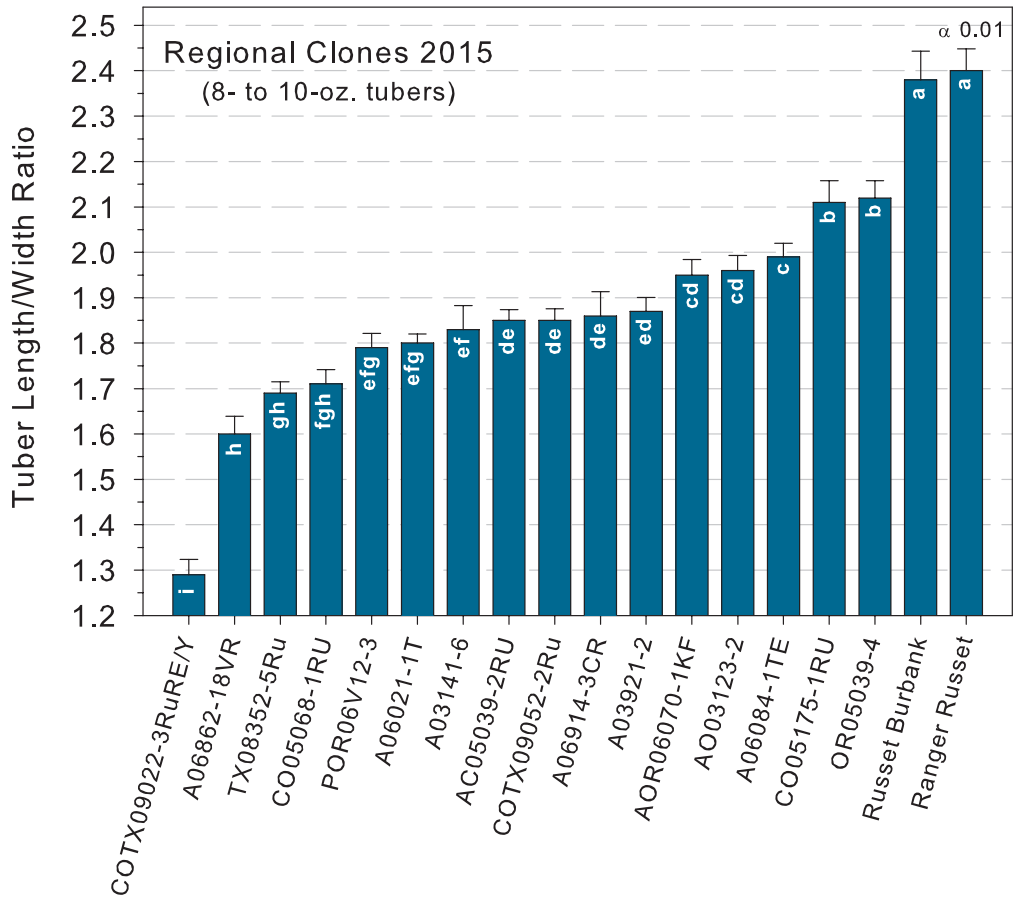
Tuber Shape and Associated French Fry Yields

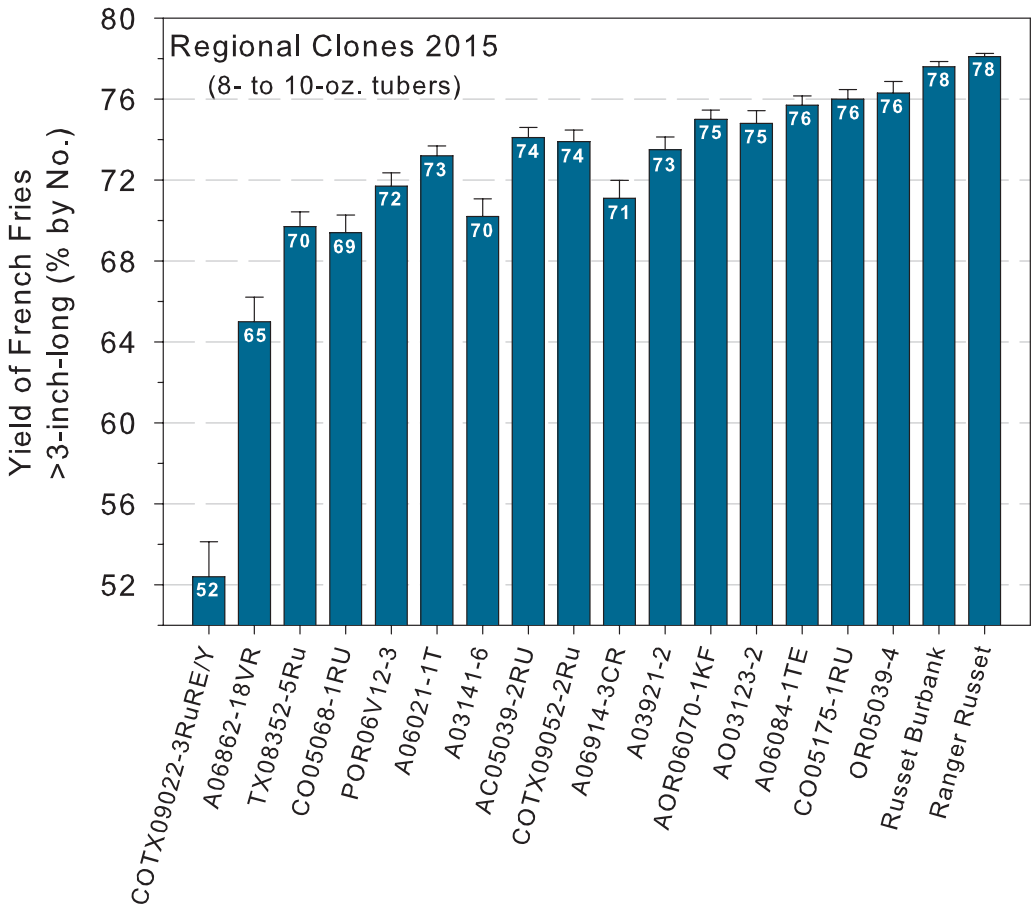
(8- to 10-oz Tubers)

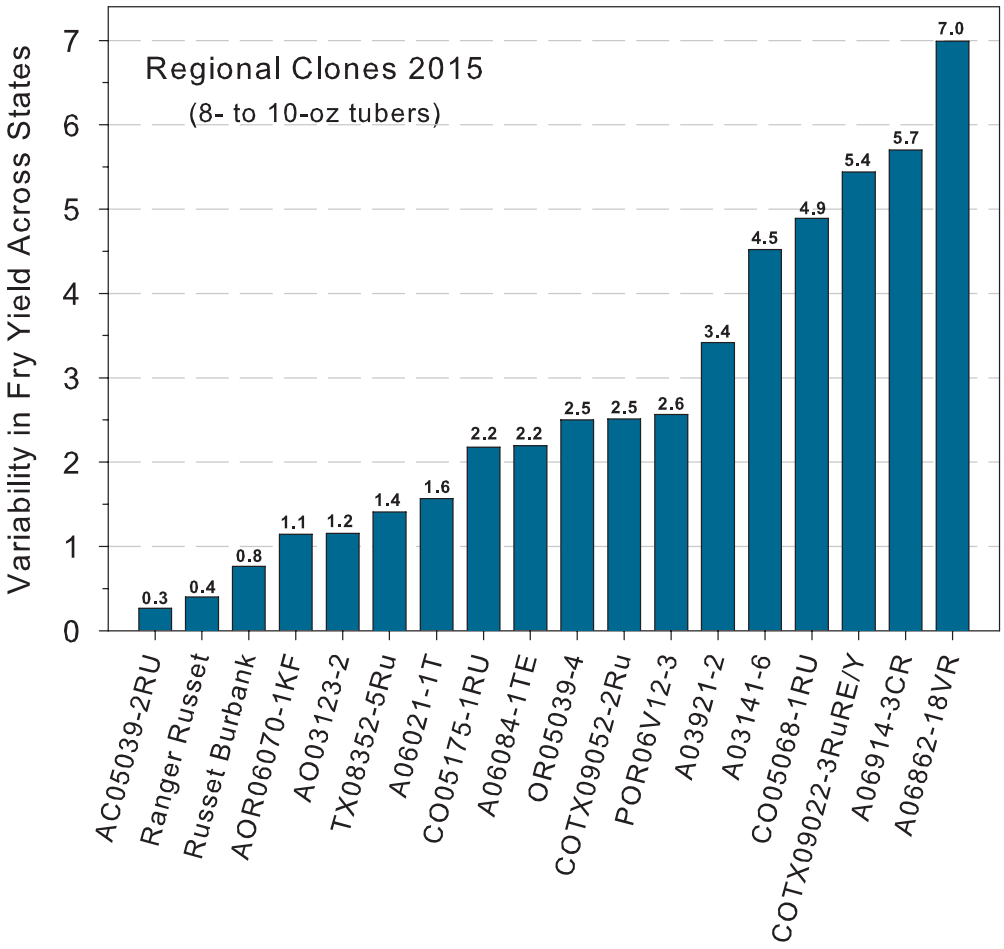
Clone	Length to width ratio				Yield of 3" or longer fries (% by number)			
	WA	ID	OR	3 State Avg.	WA	ID	OR	3 State Avg.
1 Ranger Russet	2.19	2.36	2.66	2.40	78	78	78	78
2 Russet Burbank	2.12	2.13	2.95	2.40	77	78	79	78
3 A03141-6	1.64	1.57	2.34	1.85	68	66	77	70
4 A03921-2	1.66	2.10	1.85	1.87	69	78	73	73
5 A06021-1T	1.72	1.78	1.92	1.81	71	73	75	73
6 A06084-1TE	1.80	2.07	2.10	1.99	73	77	77	76
7 A06862-18VR	1.33	1.72	1.77	1.61	55	71	69	65
8 A06914-3CR	1.49	1.86	2.20	1.85	63	74	75	71
9 AC05039-2RU	1.83	1.82	1.92	1.86	74	74	74	74
10 AO03123-2	1.84	1.89	2.14	1.96	73	75	76	75
11 AOR06070-1KF	1.82	1.94	2.08	1.95	73	75	76	75
12 CO05068-1RU	1.56	1.99	1.60	1.71	66	76	66	69
13 CO05175-1RU	1.80	2.14	2.39	2.11	73	78	78	76
14 COTX09022-3RuRE/Y	1.22	No Sample	1.44	1.29	49	No Sample	60	55
15 COTX09052-2Ru	1.71	1.86	1.99	1.86	71	74	77	74
16 OR05039-4	1.86	2.14	2.36	2.12	73	78	78	76
17 POR06V12-3	1.64	1.84	1.89	1.79	68	73	74	72
18 TX08352-5Ru	1.62	1.75	1.69	1.69	68	72	69	70
Average	1.71	1.94	2.07	1.89	69	75	74	72



2015 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, A06862-18VR had a length to width ratio of 1.6 (see previous page), resulting in only 65% of the tuber yielding French fries ≥3 inches in length. Tuber shape of this entry also varied the most across production regions (above), resulting in fry yields ranging from 58% to 72% (65±7.0%).

Previous page: Tuber length to width ratios and the associated percentage yield of fries. Bars with same letter are not significantly different (P≤0.01).

2015 Tri-State Specialty Trial

Location: WSU Research Center – Othello, WA
Planting Date: March 31 Vine Kill Date: July 17
Harvest Date: August 4 Days Grown: 108
In-Row Spacing: 8 Inch

The Tri-State Specialty trial is a part of the overall Tri-State 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 2 local reference varieties to 8 new clones. The following is a summary of the Washington field and postharvest results.

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

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

Red/White flesh: NDA050237B-R
Red-Purple/Yellow flesh: A05180-3PY
Yellow flesh: A06336-5Y and A05182-7Y.
Suggested Discards: AOR06267-3.

Standcounts

- 50 Day
  Full emergence: Chieftain, COA07365-4RY, and NDA081451CB-1CY were 90% or higher.
  Poor emergence: NDTX5438-11R (68%) and NDTX059759-3R/Y (78%).

Plant and Tuber Growth & Development

- 50 Day Stems per plant
  Most: A06336-5Y (3.8); COA07365-4RY, NDTX059759-3R/Y and NDA081451CB-1CY each (2.8).
  Fewest: NDTX5438-11R (1.9); NDA050237B-1R and Yukon Gold each (2.0).

- Average Tuber Number Per Plant
  Most: A06336-5Y (12.0); A05182-7Y and NDA081451CB-1CY each (10.0).
  Fewest: AOR06267-3 (4.0); NDTX059759-3R/Y and Yukon Gold each (5.0).

- Average Tuber Size (oz)
  Largest: Yukon Gold (7.0), Chieftain (6.0), and NDTX5438-11R (5.0).
  Smallest: AOR06267-3 (2.0).

Yield Data

- Total Yield and U.S. #1 Yield
  Highest: Chieftain had the highest total (659 CWT/A) and the highest U.S. #1 yield (640 CWT/A).
  Lowest: NDTX059759-3R/Y had the lowest total (311 CWT/A) and U.S. #1 yield (300 CWT/A).

- % U.S. #1's
  Highest: AOR06267-3 (100%); all others were 95% or greater.

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

- External Defects
  Most entries were free of external defects.

- Internal Defects
  Most entries were free of internal defects. Yukon Gold had (7%) brown center and (11%) internal brown spot.

- Bruise
  Highest Blackspot: NDA081451CB-1CY (10%) and A05180-3PY (5%).
  Highest Shatter: Chieftain and A06336-5Y each (50%).

Postharvest Analysis

- The top scoring clones were NDA081451CB-1CY, A06336-5Y and Yukon Gold with 57.9, 57.2 and 55.4 points, respectively, in the 2015 culinary evaluations. A05180-3PY has reddish-purple skin and creamy flesh. Chieftain, NDA050237B-1R and NDTX5438-11R have white flesh and red skin. A05180-3 has purple skin & yellow flesh. COA07365-4RY has red skin and yellow flesh as does NDTX059759-3RY.

- The yellow flesh entries include AOR06267-3 (pinkish-yellow skin), A05182-7Y (yellow skin with pink eyes), and Yukon Gold, A06336-5Y and NDA081451CB-1CY (all with yellow skin). As in previous years, culinary scores were high with all entries receiving 69 to 77% of total points possible.

- A05182-7Y and NDTX059759-3RY produced the lightest French fries with average Photovolt readings of 39.8 and 39.3 (USDA 0). Yukon Gold was the only entry that fried non-uniform from stem to bud end. NDTX5438-11R produced the darkest fries with a USDA 2 rating. Fries from all other entries were rated as USDA 0 or 1.

- Following the same trend as when French fried, A05182-7Y produced the lightest chips with a SFA rating of 2.6. Chips from all other entries were darker with ratings ranging from 3.3 to 5 on the SFA scale.

- The range in ratings of baked samples in the 2015 trial was relatively narrow (16.5-19.8 out of 25). All entries had moderate to slight after cooking darkening when oven baked. Texture of the baked samples was favorably rated as “creamy” except NDTX5438-11R which was rated as pasty. The flavor of baked samples was rated as “bland” or “good”. Tuber centers of baked samples received acceptable ratings of “mushy” for all entries except Yukon Gold, which was rated as “fully cooked”. Skins of the baked samples were also rated as acceptable (“fully cooked” or “steamy”) for all entries.

- All entries showed slight to moderate sloughing when boiled. NDTX059759-3RY had moderate after cooking darkening. All other entries had slight after cooking darkening when boiled. The texture of all boiled samples was favorably rated as “creamy” or “fluffy”. The flavor of all boiled samples was rated as “good”. The tuber center of all entries was rated as “mushy”.

- Cooking time for boiled samples was assessed again this year. Cores of tuber tissue (1.3 cm diameter x 1.3 cm long) from the stem and bud ends of all entries were immersed in boiling water and the time to penetration of a 90-g probe was recorded. Stem end cores averaged 5.5 min to fully cook compared with 4.3 min for bud end cores. Cooking times (stem end) ranged from 4.5 min (A05182-7Y) to 7.0 min (A06336-5Y). All entries cooked relatively quickly this year with averages of stem and bud ends ranging from 4.0 minutes (A05182-7Y) to 5.8 minutes (A06336-5Y).

- Microwaving produced "slight" or "moderate" after cooking darkening in all entries. The texture of all microwaved samples was favorably rated as "creamy" or "fluffy". The flavor rating for all entries was "bland" and all entries received "mushy" tuber center ratings. The skin of all entries was rated as either "steamy" or "fully Cooked".

Robert E. Thornton, head of the Thornton Potato Mafia, (center), provides insight at the annual seedlot disease reading.

2015 Regional Red and Specialty Trial

Summaries

ENTRY	TOTAL YIELD CWT/A	TOTAL YIELD Tons/A	US # 1's* > 0 oz % of Total Yield	US # 2's* > 0 oz % of Total Yield	Culls* > 0 oz % of Total Yield	EXTERNAL DEFECTS (%) Knobs	EXTERNAL DEFECTS (%) Malformed	EXTERNAL DEFECTS (%) Growth Cracks	EXTERNAL DEFECTS (%) Green	SPECIFIC GRAVITY
Red Skin/White Flesh										
Chieftain	659	32.9	97	0	3	0	0	2	0	1.075
NDA050237B-1R	342	17.1	99	0	1	0	0	0	0	1.067
NDTX5438-11R	483	24.1	97	1	2	0	0	0	1	1.060
Red-Purple/White Flesh										
A05180-3PY	373	18.7	98	1	1	0	0	0	0	1.058
COA07365-4RY	479	24.0	96	1	3	0	0	2	1	1.069
NDTX059759-3R/Y	311	15.6	97	0	3	0	0	0	3	1.066
Yellow Flesh										
Yukon Gold	517	25.9	97	1	2	0	0	0	0	1.068
A06336-5Y	519	25.9	96	0	4	0	0	0	1	1.079
A05182-7Y	486	24.3	97	0	3	0	0	0	2	1.073
AOR06267-3	129	6.4	100	0	0	0	0	0	0	1.074
NDA081451CB-1CY	495	24.7	95	0	5	0	0	0	4	1.062
LSD (0.05)	**106**	**5**								

ENTRY	US # 1 YIELD CWT/A	US # 1 YIELD Tons/A	0-2 oz* %	2-4 oz* %	4-6 oz* %	6-10 oz* %	> 10 oz* %	INTERNAL DEFECTS (%) (6-10 oz tubers) % HH	% BC	% IBS
Red Skin/White Flesh										
Chieftain	640	32.0	4	16	25	34	20	0	0	4
NDA050237B-1R	337	16.9	12	40	29	16	3	0	0	0
NDTX5438-11R	467	23.4	7	24	24	32	13	0	0	0
Red-Purple/White Flesh										
A05180-3PY	366	18.3	11	34	34	21	0	0	0	0
COA07365-4RY	461	23.1	7	25	29	29	10	0	0	0
NDTX059759-3R/Y	300	15.0	9	30	32	22	7	0	0	0
Yellow Flesh										
Yukon Gold	502	25.1	2	10	14	43	31	0	7	11
A06336-5Y	496	24.8	16	61	21	2	0	0	0	0
A05182-7Y	474	23.7	13	40	31	16	0	0	5	0
AOR06267-3	129	6.4	34	57	9	0	0	0	0	0
NDA081451CB-1CY	473	23.6	12	43	32	13	0	0	0	0
LSD (0.05)	**100**	**5**								

ENTRY	SKIN SET 1 = Poor 5 = Good	TUBER SHAPE 1 = Round 5 = Long	50 DAY STAND % Emerged	STEMS PER PLANT Above Ground	AVERAGE TUBER WEIGHT Ounces	AVERAGE TUBER NUMBER Tubers/Plant	SIZE UNIFORMITY 1 = Poor 5 = Good	SHAPE UNIFORMITY 1 = Poor 5 = Good	BRUISE (%) (6-10 oz tubers) BLACKSPOT	BRUISE (%) (6-10 oz tubers) SHATTER	Length to Width Ratio 1 = Round 2 = Oblong
Red Skin/White Flesh											
Chieftain	3	1	90	2.2	6	8	3	3	0	50	1.3
NDA050237B-1R	4	1	88	2.0	3	7	4	3	0	30	1.2
NDTX5438-11R	3	1	68	1.9	5	7	3	3	0	42	1.2
Red-Purple/White Flesh											
A05180-3PY	4	1	89	2.3	4	7	4	4	5	35	1.1
COA07365-4RY	4	1	90	2.8	4	8	3	3	0	37	1.4
NDTX059759-3R/Y	4	2	78	2.8	4	5	3	3	0	15	1.3
Yellow Flesh											
Yukon Gold	4	1	85	2.0	7	5	3	4	4	44	1.2
A06336-5Y	4	1	86	3.8	3	12	4	4	0	50	1.1
A05182-7Y	4	1	80	2.1	3	10	4	4	0	15	1.2
AOR06267-3	4	4	81	2.4	2	4	3	3	0	20	1.6
NDA081451CB-1CY	4	1	93	2.8	3	10	4	4	10	10	1.0

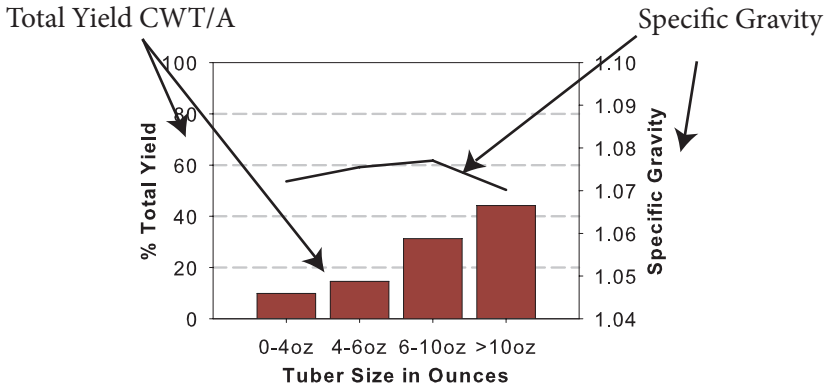
* Percent values may not total 100% due to rounding

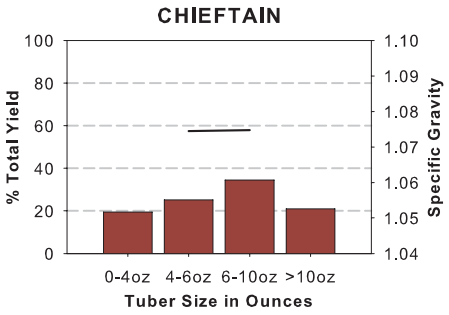
2015 Regional Red and Specialty Trial

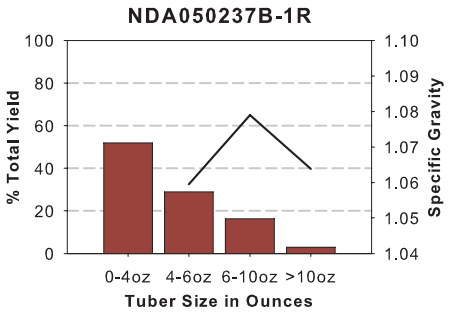
Tuber Yield and Specific Gravity Distributions

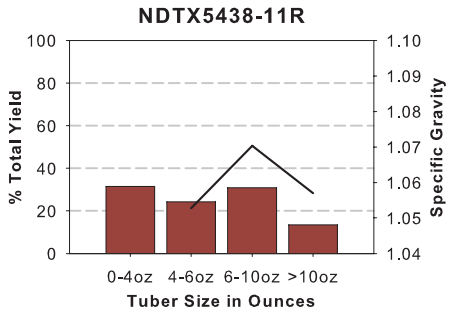
Note: Specific Gravity is based on a sample of U.S. #1 tubers within each size category

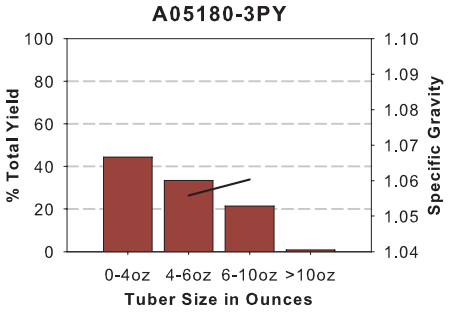
8 inch In-Row Spacing

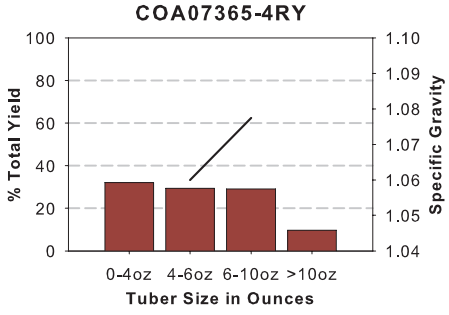


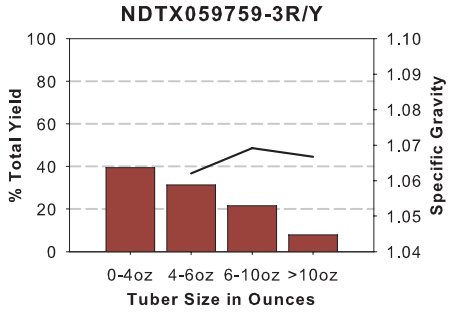


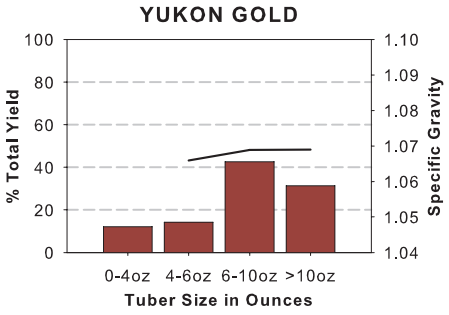


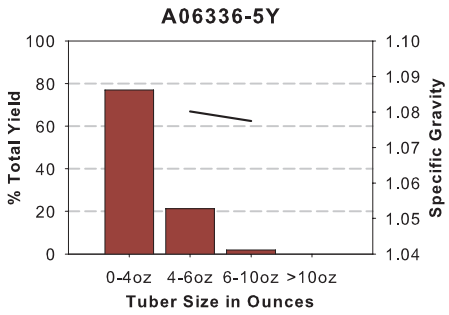


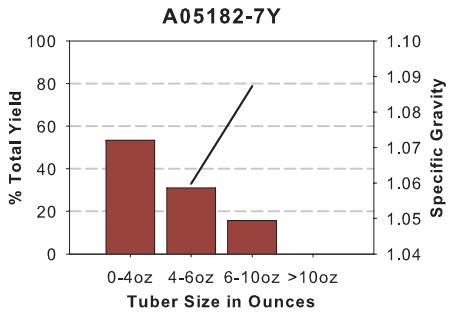


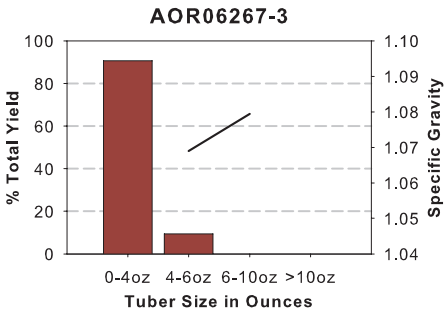


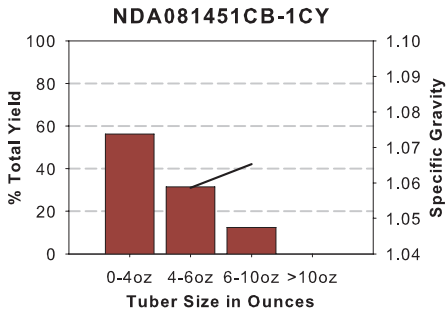




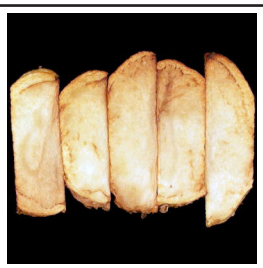
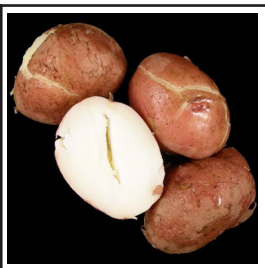


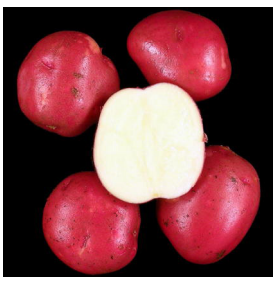


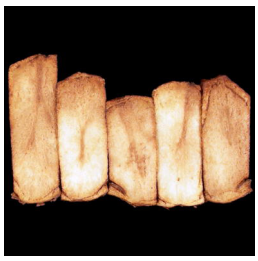
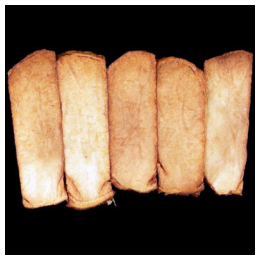
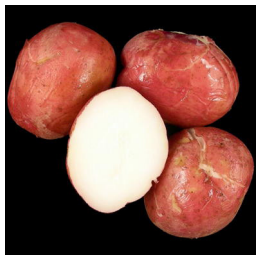
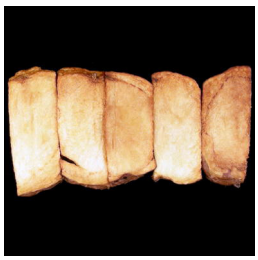
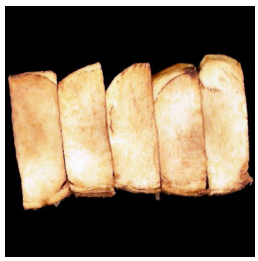
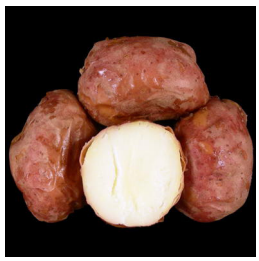
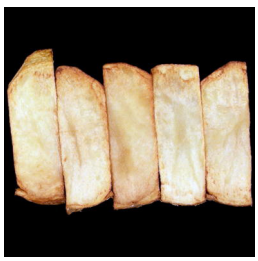
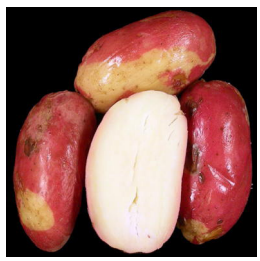


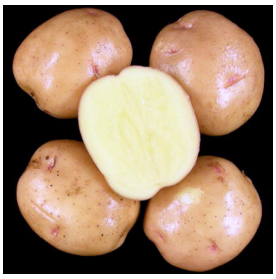


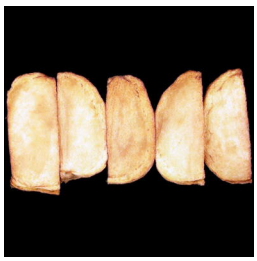
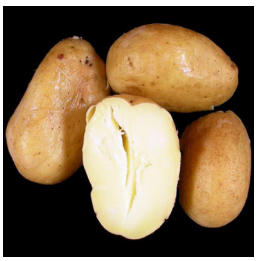
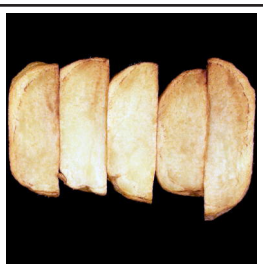
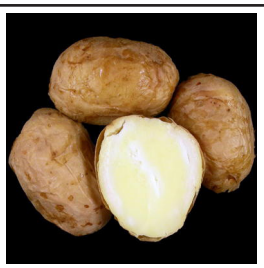
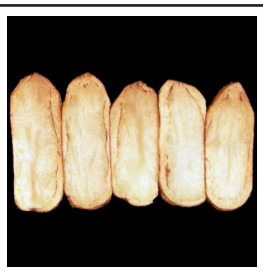
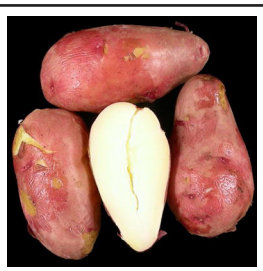
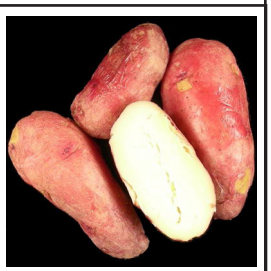
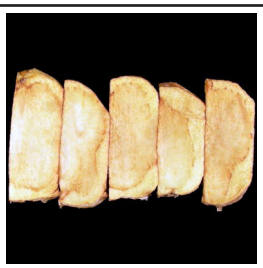
Tubers	WA Tri-State Specialty Trial Comments
Chieftain	
	**Tubers:** Round tubers. Fair skin set; moderate eye depth. **Fry color:** light, uniform. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.

Chips	Fries	Baked	Boiled	Microwaved
Chieftain				
				

Tubers	WA Tri-State Specialty Trial Comments
NDA050237B-1R	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** relatively dark, uniform. **Baked:** slight after cooking darkening, creamy texture, good flavor, mushy tuber center, fully cooked skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin.
NDTX5438-11R	
	**Tubers:** Round tubers. Fair skin set; shallow eyes. **Fry color:** relatively dark, uniform. **Baked:** moderate after cooking darkening, pasty texture, bland flavor, mushy tuber center, steamy skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.
A05180-3PY	
	**Tubers:** Round tubers. Good skin set; moderately deep eyes . **Fry color:** light, uniform. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
COA07365-4RY	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** light, uniform. **Baked:** slight after cooking darkening, creamy texture, good flavor, mushy tuber center, fully cooked skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, fluffy texture, bland flavor, mushy tuber center, steamy skin.
NDTX059759-3R/Y	
	**Tubers:** Round to oblong tubers. Good skit set; shallow eyes. **Fry color:** light, uniform. **Baked:** moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin. **Boiled:** slight sloughing, moderate after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin.

Chips	Fries	Baked	Boiled	Microwaved
NDA050237B-1R				
				
NDTX5438-11R				
				
A05180-3PY				
				
COA07365-4RY				
				
NDTX059759-3R/Y				
				

Tubers	WA Tri-State Specialty Trial Comments
Yukon Gold	
	**Tubers:** Round tubers. Good skin set; moderate eye depth. **Fry color:** light, non-uniform. **Baked:** slight after cooking darkening, creamy texture, good flavor, fully cooked tuber center, fully cooked skin. **Boiled:** slight sloughing, slight after cooking darkening, fluffy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.
A06336-5Y	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** light, uniform. **Baked:** slight after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Boiled:** slight sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** slight after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.
A05182-7Y	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** light, uniform. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.
AOR06267-3	
	**Tubers:** Oblong to long tubers. Good skin set; shallow eyes. **Fry color:** light, uniform. **Baked:** moderate after cooking darkening, creamy texture, good flavor, mushy tuber center, steamy skin. **Boiled:** moderate sloughing, slight after cooking darkening, creamy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, creamy texture, bland flavor, mushy tuber center, steamy skin.
NDA081451CB-1CY	
	**Tubers:** Round tubers. Good skin set; shallow eyes. **Fry color:** light, uniform. **Baked:** slight after cooking darkening, creamy texture, bland flavor, mushy tuber center, fully cooked skin. **Boiled:** slight sloughing, slight after cooking darkening, fluffy texture, good flavor, mushy tuber center. **Microwaved:** moderate after cooking darkening, fluffy texture, bland flavor, mushy tuber center, fully cooked skin.

Chips	Fries	Baked	Boiled	Microwaved
Yukon Gold				
				
A06336-5Y				
				
A05182-7Y				
				
AOR06267-3				
				
NDA081451CB-1CY				
				

Frying Evaluation

	(French Fried) (3/8 x 1 1/8" slices)									(Chips)	(BOILED Cooking Time)		
	Raw				After Frying					Av of 7 raters	Time to Breakdown (min)		
Clone	Stem	Bud	Average	Difference	Stem	Bud	Average	Difference	USDA	SFA	Stem	Bud	Average
1 Chieftain	55.3	53.4	54.4	2.2	31.7	35.7	33.7	6.3	0	4.0	4.9	4.4	4.7
2 NDA050237B-1R	56.3	57.5	56.9	1.6	27.7	31.9	29.8	5.1	1	5.0	4.6	5.5	5.0
3 NDTX5438-11R	53.2	54.0	53.6	1.9	24.4	28.7	26.5	4.8	2	5.0	4.9	4.8	4.8
4 A05180-3PY	52.2	54.7	53.4	2.6	29.0	36.7	32.9	7.7	1	4.1	5.5	4.0	4.7
5 COA07365-4RY	49.2	51.2	50.2	2.5	32.4	40.2	36.3	8.1	0	4.0	6.2	4.6	5.4
6 NDTX059759-3R/Y	51.4	53.4	52.4	2.5	40.6	38.1	39.3	4.2	0	3.9	5.5	3.3	4.4
7 Yukon Gold	50.9	54.1	52.5	3.7	25.2	41.6	33.4	16.3	1	4.0	6.4	3.8	5.1
8 A06336-5Y	51.8	50.0	50.9	2.2	36.1	35.4	35.8	3.9	0	3.7	7.0	4.5	5.8
9 A05182-7Y	56.7	57.8	57.2	1.4	37.5	42.1	39.8	5.3	0	2.6	4.5	3.4	4.0
10 AOR06267-3	57.5	56.4	56.9	1.8	33.7	39.6	36.7	6.8	0	3.4	5.5	3.9	4.7
11 NDA081451CB-1CY	55.9	56.0	55.9	1.4	34.3	38.3	36.3	4.7	0	3.3	5.5	4.7	5.1
*LSD 0.05 **			*1.6*	*1.5*			*3.7*	*3.1*			*1.6*	*0.7*	
Average	53.7	54.4	54.0	2.2	32.1	37.1	34.6	6.7	0	3.9	5.5	4.3	4.9

*Differences between clones equal to or greater than the LSD 0.05 are significant. SFA 1 (lightest) to 5 (darkest).

Culinary Evaluation

	Clone	Boiled (25 max)	Baked (25 max)	Microwaved (25 max)	Total (75 max)
11	NDA081451CB-1CY	18.8	19.8	19.3	57.9
8	A06336-5Y	18.5	19.3	19.5	57.2
7	Yukon Gold	17.9	19.6	17.9	55.4
1	Chieftain	18.0	18.0	18.7	54.7
2	NDA050237B-1R	17.5	19.5	17.4	54.4
6	NDTX059759-3R/Y	17.6	17.9	18.3	53.8
8	A05182-7Y	16.2	19.2	18.3	53.7
10	AOR06267-3	18.0	18.2	16.8	53.0
4	A05180-3PY	17.8	17.6	17.4	52.8
5	COA07365-4RY	16.9	18.6	17.1	52.6
3	NDTX5438-11R	17.6	16.5	17.8	52.0

French Fried:	Aug. 17
Chipped:	Aug. 17
Boiled:	Aug. 14
Microwaved:	Aug. 12
Baked:	Aug. 13
Cooking Time:	Aug. 18

2015 Washington Regional Red and Specialty Trial

Red Clone Culinary Evaluation

Boiled

	Clone	Flavor	After Cooking Darkening	Texture	Tuber Center	Sloughing	Total Rating
1	Chieftain	3.4	4.4	2.7	4.0	3.5	18.0
2	NDA050237B-1R	2.9	4.0	2.8	3.9	3.8	17.5
3	NDTX5438-11R	3.2	4.2	2.6	4.0	3.6	17.6
4	A05180-3PY	3.3	4.1	2.5	4.2	3.8	17.8
5	COA07365-4RY	2.9	3.8	2.7	3.6	3.8	16.9
6	NDTX059759-3R/Y	3.6	3.4	2.9	3.8	3.8	17.6
	LSD 0.05	*ns*	*0.4*	*ns*	*0.6*	*ns*	*ns*
	Average	3.2	4.1	2.7	4.0	3.7	17.6

Oven Baked

	Clone	Flavor	After cooking Darkening	Texture	Tuber Center	Skin Rating	Total Rating
1	Chieftain	3.4	4.0	2.5	4.1	3.9	18.0
2	NDA050237B-1R	3.7	3.7	2.8	4.4	4.9	19.5
3	NDTX5438-11R	2.5	3.3	2.1	4.4	4.3	16.5
4	A05180-3PY	3.3	3.5	2.9	4.1	3.8	17.6
5	COA07365-4RY	3.5	3.9	2.7	3.9	4.6	18.6
6	NDTX059759-3R/Y	3.1	3.3	3.1	4.4	4.1	17.9
	LSD 0.05	*0.8*	*0.7*	*0.9*	*ns*	*1.0*	*2.0*
	Average	3.3	3.7	2.6	4.2	4.3	18.0

Microwaved

	Clone	Flavor	After cooking Darkening	Texture	Tuber Center	Skin Rating	Total Rating
1	Chieftain	3.5	3.7	2.7	3.8	5.0	18.7
2	NDA050237B-1R	3.4	3.4	2.5	3.3	4.8	17.4
3	NDTX5438-11R	3.5	3.6	2.7	3.4	4.6	17.8
4	A05180-3PY	4.0	3.1	2.6	3.8	3.9	17.4
5	COA07365-4RY	2.9	3.5	2.8	3.5	4.4	17.1
6	NDTX059759-3R/Y	3.2	3.2	3.0	3.9	5.0	18.3
	LSD 0.05	*1.0*	*ns*	*ns*	*ns*	*0.8*	*ns*
	Average	3.5	3.5	2.7	3.6	4.5	17.7

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

2015 Washington Regional Red and Specialty Trial

Specialty Clone Culinary Evaluation

Boiled

Clone	Flavor	After Cooking Darkening	Texture	Tuber Center	Sloughing	Total Rating
7 Yukon Gold	3.5	3.9	3.8	3.7	3.0	17.9
8 A06336-5Y	3.7	4.2	2.9	4.1	3.6	18.5
9 A05182-7Y	2.9	3.9	2.9	3.6	2.8	16.2
10 AOR06267-3	3.2	3.6	3.2	4.1	3.9	18.0
11 NDA081451CB-1CY	3.8	4.2	3.6	4.2	3.1	18.8
LSD 0.05	*0.7*	*0.4*	*0.7*	*0.5*	*0.5*	*2.2*
Average	3.4	4.0	3.3	4.0	3.3	17.9

Oven Baked

Clone	Flavor	After cooking Darkening	Texture	Tuber Center	Skin Rating	Total Rating
7 Yukon Gold	3.6	3.7	3.3	4.5	4.5	19.6
8 A06336-5Y	3.5	4.3	2.8	4.3	4.3	19.3
9 A05182-7Y	3.3	4.1	2.7	4.3	4.7	19.2
10 AOR06267-3	3.5	3.2	3.3	4.1	4.1	18.2
11 NDA081451CB-1CY	3.3	4.3	2.9	4.4	4.9	19.8
ns	*0.7*	*ns*	*ns*	*0.8*	*1.5*
Average	3.4	3.9	3.0	4.3	4.5	19.2

Microwaved

Clone	Flavor	After cooking Darkening	Texture	Tuber Center	Skin Rating	Total Rating
7 Yukon Gold	2.7	4.2	2.9	3.1	5.0	17.9
8 A06336-5Y	3.8	4.0	3.0	3.7	5.0	19.5
9 A05182-7Y	2.8	3.9	2.9	3.7	5.0	18.3
10 AOR06267-3	2.8	3.2	2.9	3.7	4.2	16.8
11 NDA081451CB-1CY	3.2	4.2	3.2	3.7	5.0	19.3
ns	*0.8*	*ns*	*ns*	*0.6*	*2.0*
Average	3.1	3.9	3.0	3.6	4.8	18.4

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

Teamwork is an essential element to a successful harvest, as is a strong back.

Index of Clones and Cultivars