

2015

Klamath Basin Potato Variety Development Summary

Oregon State
UNIVERSITY **OSU** Klamath Basin Research
and Extension Center



Brian A. Charlton – Asst. Professor

Prepared December 2015 by:
Nichole A. Baley – Faculty Research Asst.

Oregon State University
Klamath Basin Res. & Ext. Center

Introduction	3
Acknowledgements	4
Contributors	5
2015 Weather	6-7
2015 Insect Trapping Results	8-10
Guide to Clone Designations	11
Single-hill Screening Results	12
Four-hill Specialty Screening	13
Fresh Market Value Methods	14
Replicated Trial Cultural Information	15
Russet Potato Variety Development Trials	
Preliminary Yield Trial (PYT-2)	16
Statewide Trial	17-25
Tri-State Trial	26-31
Red/Specialty Potato Variety Development Trials	
Preliminary Yield Trial (PYT-2)	32
Statewide Trial	33-36
Tri-State	37-40
Chip Potato Variety Development Trial	
Preliminary Yield Trial (PYT-2)	41
Statewide Trial	42-45
Regional Trial	46-49
Chip Processing Results	50

Introduction

Since its inception in 1985, the Tri-State variety development program has primarily focused on the development of processing and dual-purpose (process and fresh) russets. Recent breeding efforts have focused more on improving genetic resistance to various pests and diseases as a means of lowering production costs. During the past decade, Oregon has been the lead state in the release of eleven russet varieties. Although the development of russet varieties remains the primary focus, recent efforts have included red-skinned and specialty-type selections. Many of these selections offer unique skin and/or flesh color combinations along with enhanced nutritional qualities including elevated antioxidant and Vitamin C content. In total, more than 25 new varieties have been released by the Tri-State variety development program since 1985. More recently Klamath Basin growers have identified the need for chipping potatoes suitable for export markets. Trials were initiated in 2008 and 2009, with funding from the Oregon Potato Commission, to identify acceptable chipping varieties using advanced selections and recently released varieties from the Tri-State, Southwest, North-central, and Eastern breeding programs.

Screening for resistance to various species of nematodes and related diseases is being accomplished at several locations. The Klamath Basin Research and Extension Center (KBREC) routinely screens selections for resistance to root-knot nematode (*Meloidogyne chitwoodi* and *Meloidogyne hapla*) and corky ringspot disease (CRS) resulting from infection of Tobacco rattle virus which is vectored by stubby-root (*Paratrichodorus* spp.) nematodes. Other cooperating sites within the Tri-State area also work on resistant screening and other production limitations most suited to their respective location. The overall objective is that future releases will offer genetic resistance to many economically important pests and diseases which will help reduce production inputs as these costs continue to rise.

The Klamath Basin Research and Extension Center (KBREC) also serves as an initial field screening location for first-generation selections of russet, specialty, and chipping clones (single-hills). Second-year evaluations of four-hill red/specialty and chip selections also take place in Klamath; however, russet selections are currently sent to the Central Oregon Agricultural Research Center (COARC). Breeding progeny are supplied by programs at the USDA Agricultural Research Service (ARS) facility in Prosser, Washington, and Aberdeen, Idaho, as well as, Oregon State University (OSU), Colorado State University, and North Dakota State University.

The purpose of this summary booklet is to report the results of our variety trial efforts. In 2009, KBREC participated in the following research trials: Russet Preliminary Yield 2 (PYT-2), Statewide Russet, Tri-state Russet, Western Regional Russet, Red/Specialty PYT- 1, Statewide Specialty, Tri-state Specialty, Western Regional Red/Specialty, and a modified Western Regional Chip Trial. A brief summary of weather during the growing season, insect trapping results, single-hill selections, and specialty 4-hill selections are also included in this research summary.

Acknowledgements

The ultimate goal of variety development at OSU-KBREC and cooperating Tri-state partners is the development and commercialization of new potato varieties to benefit the Northwest potato industry. The effect of the Tri-state Potato Variety Development Program on the Northwest potato industry has been substantial. The fresh market industry, French fry processors and chippers have incorporated many varieties developed through this program into their businesses. Ranger Russet, Western Russet, Umatilla Russet, and Alturas are examples of russet cultivars released from the Tri-State program that have greatly benefited the Northwest potato industry, being the 3rd, 5th, 7th, and 8th most widely grown cultivars in Oregon and accounted for 27% of total acreage. As expected, recently released russet varieties have found greater adoption by Northwest processors compared to fresh market usage in the Klamath Basin. However, several varieties have found fresh market niches in the Klamath Basin including GemStar Russet, Premier Russet, and most recently Classic Russet.

Varieties recently released by the Tri-State program are now produced on over 140,000 acres in the Pacific Northwest with value to growers estimated at approximately \$390 million. A recent economic analysis of the Tri-state breeding effort revealed that every dollar invested in the program results in a \$39 return (Araji and Love, 2002). The current focus of Tri-state variety development efforts is to develop improved varieties that increase quality and production efficiency while decreasing fertilizer and pesticide inputs.

The success of OSU-KBREC potato variety development is made possible with funding from USDA CREES, USDA ARS, and the generous support of the Oregon Potato Commission. In addition, the Klamath Potato Growers Association annually contributes to OSU-KBREC research and Extension activities.

References

Araji, A.A. and S. Love. 2002. The economic impact of investment in the Pacific Northwest potato variety development program. **Amer. J. Potato Res.** 79:411-420.

Special Acknowledgment

OSU-KBREC plagiarized the design and layout for this publication from the WSU Potato Cultivar Yield and Postharvest Quality Evaluation publication. This is an excellent publication which provides a vast amount of data in a 'grower friendly' venue. The publication below, by the Washington State University Potato Research Group, can be found at the listed website.

Mark Pavek, Rick Knowles, Zach Holden, Nora Fuller. 2009. Washington State University Potato Research Group, Pullman, WA. **2009 Potato Cultivar Yield and Postharvest Quality Evaluations.** <http://www.potatoes.wsu.edu>

Contributors

Oregon Cooperators:

Solomon Yilma, Corvallis, OR

Vidyasagar Sathuvalli, Hermiston Agricultural Research & Extension Center, Hermiston, OR

Clint Shock, Erik Feibert, Malheur Experiment Station, Ontario, OR

Tri-state Cooperators:

Mark Pavsek, Rick Knowles, Zach Holden, Nora Fuller, Washington State University, Pullman, WA

Chuck Brown, USDA/ARS, Prosser, WA

Jeff Stark, Peggy Bain, University of Idaho, Aberdeen, ID

Mike Thornton, University of Idaho, Parma, ID

Rich Novy, Jonathan Whitworth, Brian Schneider, USDA/ARS, Aberdeen, ID

Regional Cooperators:

David Holm, Farhettin Goktepe, Colorado State University, San Luis Valley, CO

Creighton Miller, Douglas Schuering, Jeff Koym, Texas A&M University, Springlake, TX

Rob Wilson, Darrin Culp, University of California, Tulelake, CA

Industry Cooperators:

Rebecca Jones, Allan French, J.R. Simplot Co.

Baley-Trotman Farms, Malin, OR

J&W Farms, Malin, OR

Wong Potatoes, Klamath Falls, OR

Ed Stastny, Malin, OR

Roy Wright, Tulelake, CA

Basin Fertilizer & Chemical, Merrill, OR

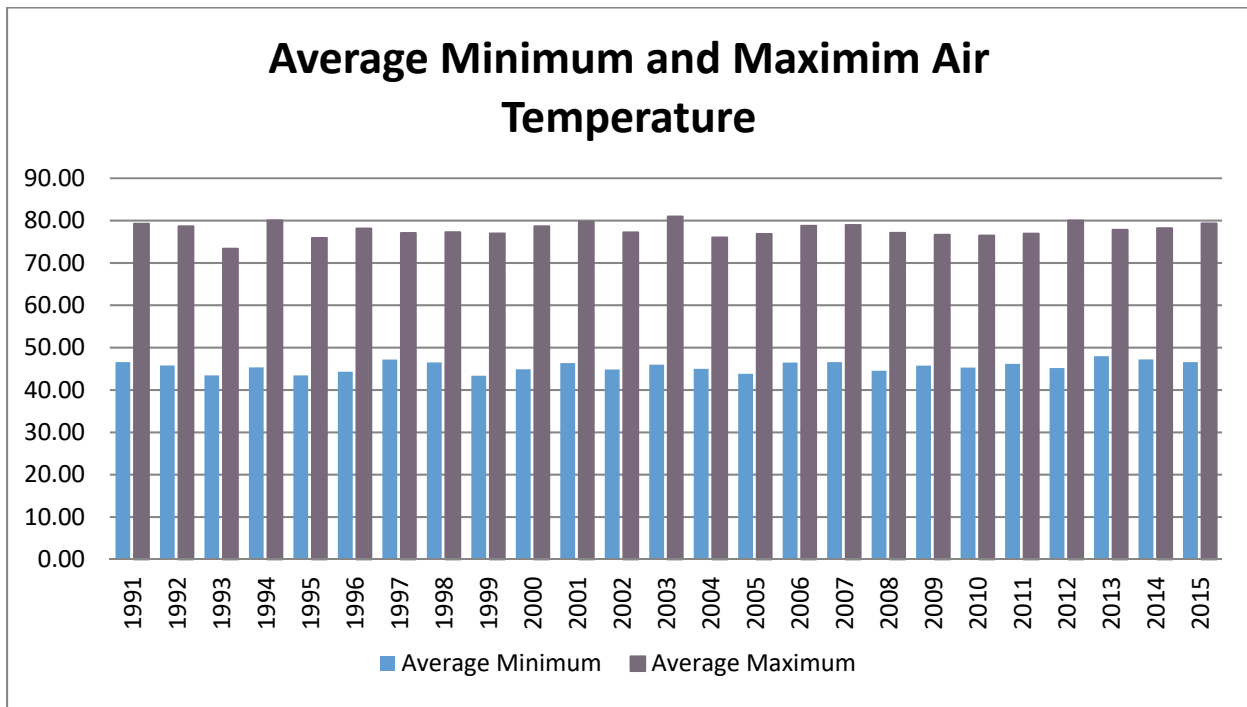
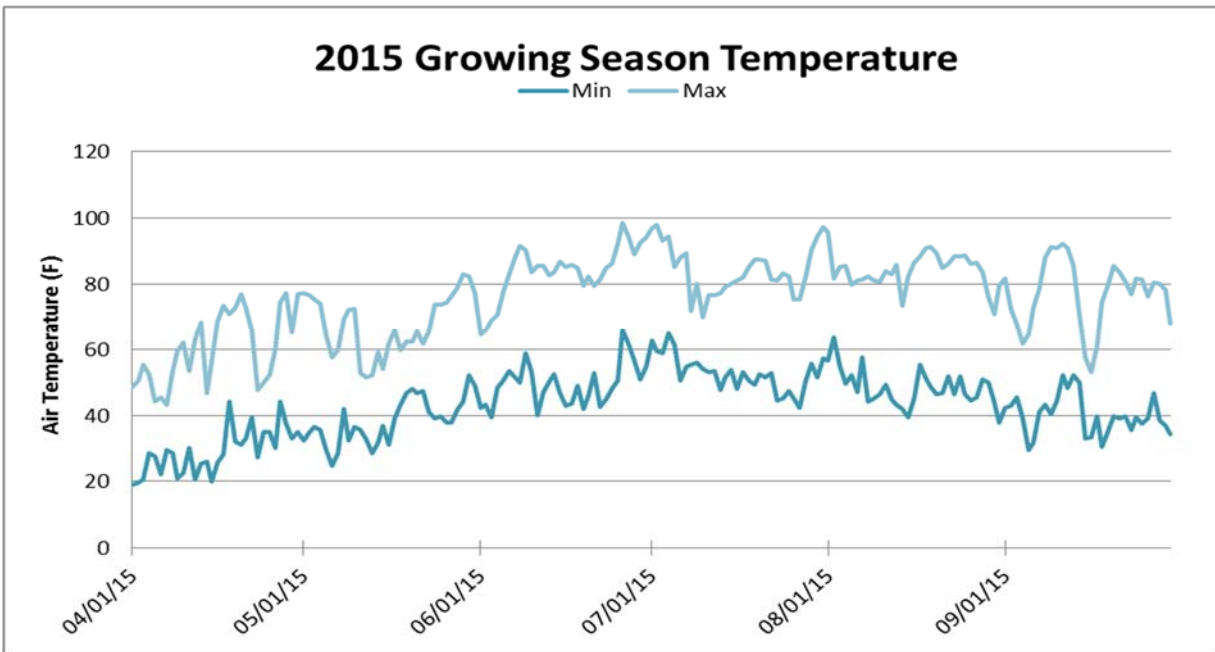
Macy Flying Service, Newell, CA

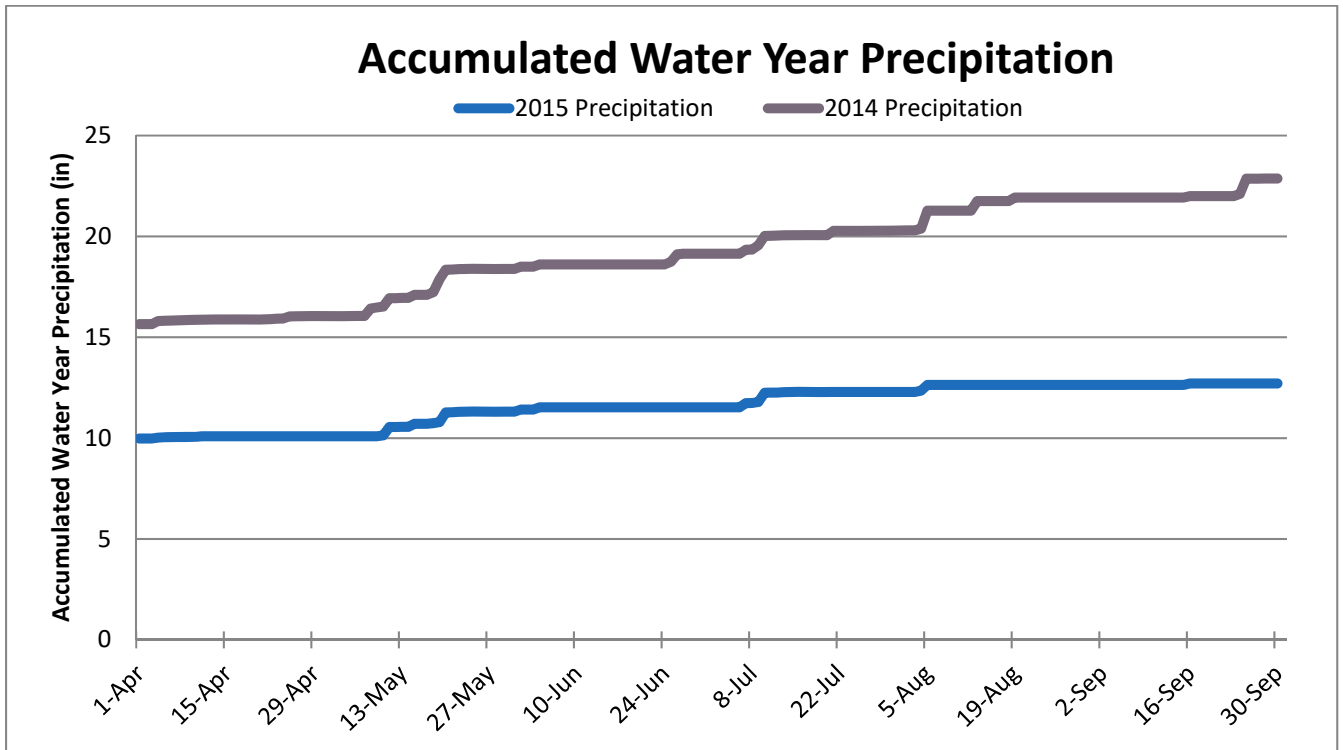
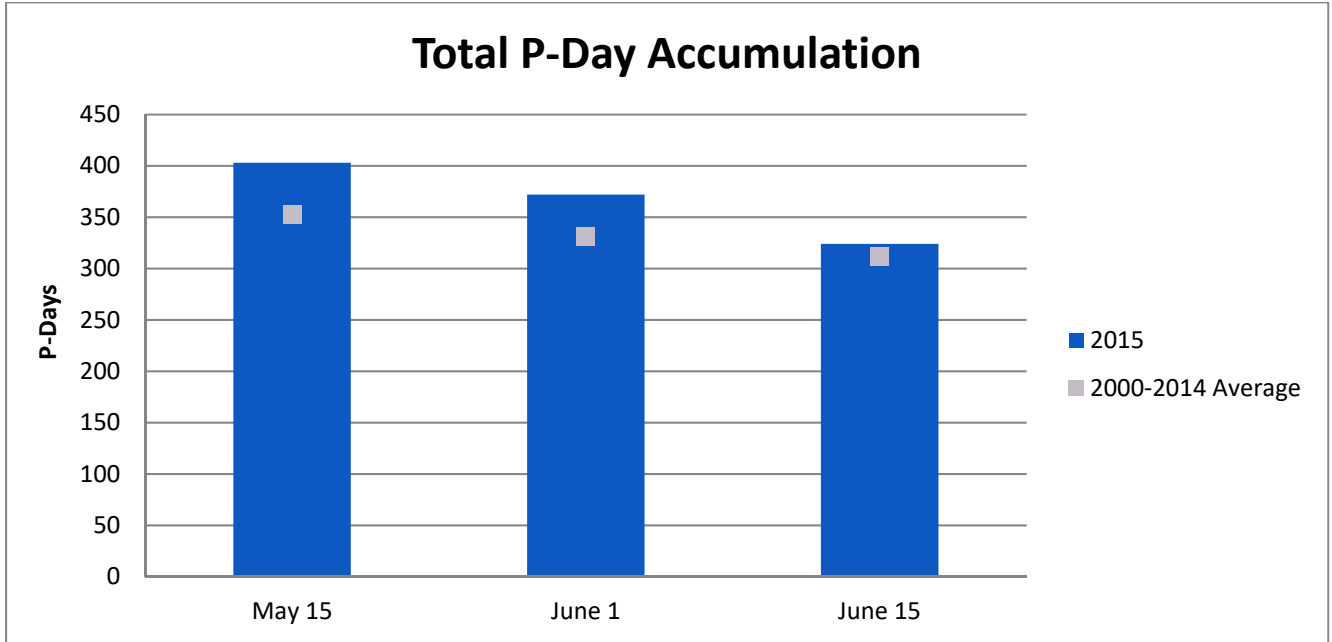
Commissions and Associations

Bill Brewer, Jennifer Fletcher, Judy Schwartz, Oregon Potato Commission, Portland, OR

Klamath Potato Growers Association, Klamath Falls, OR

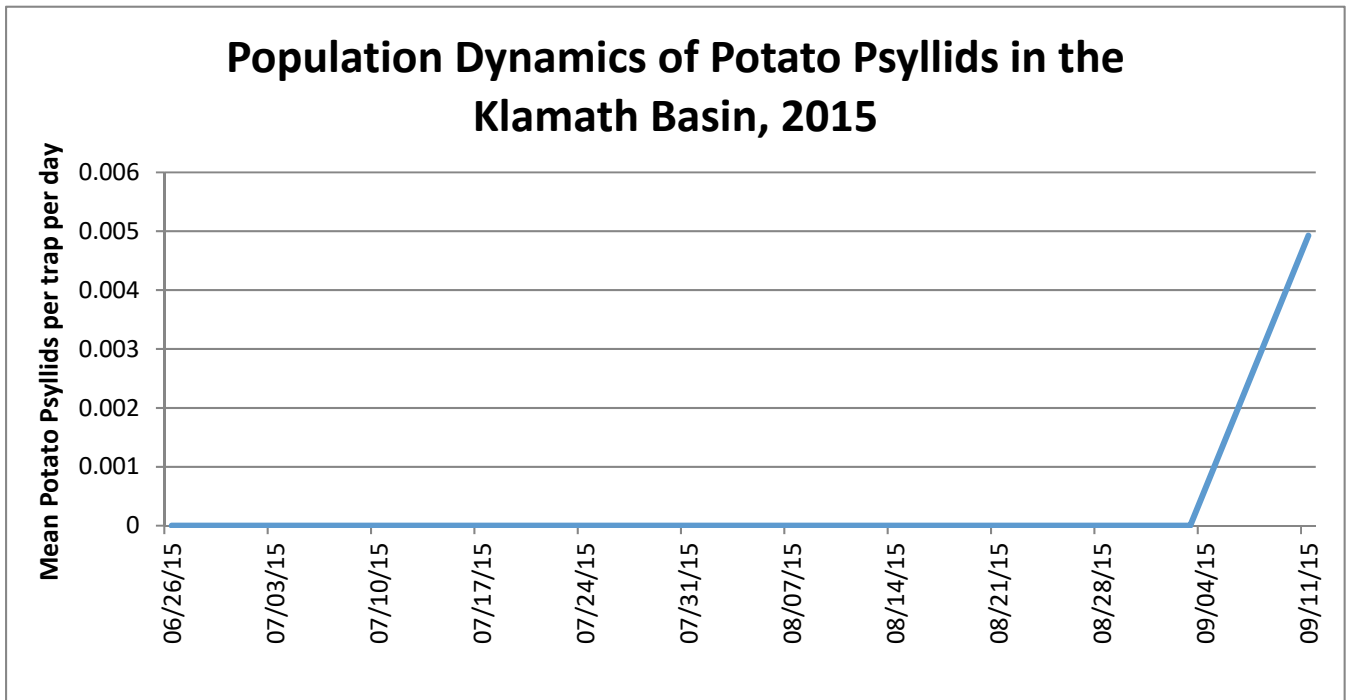
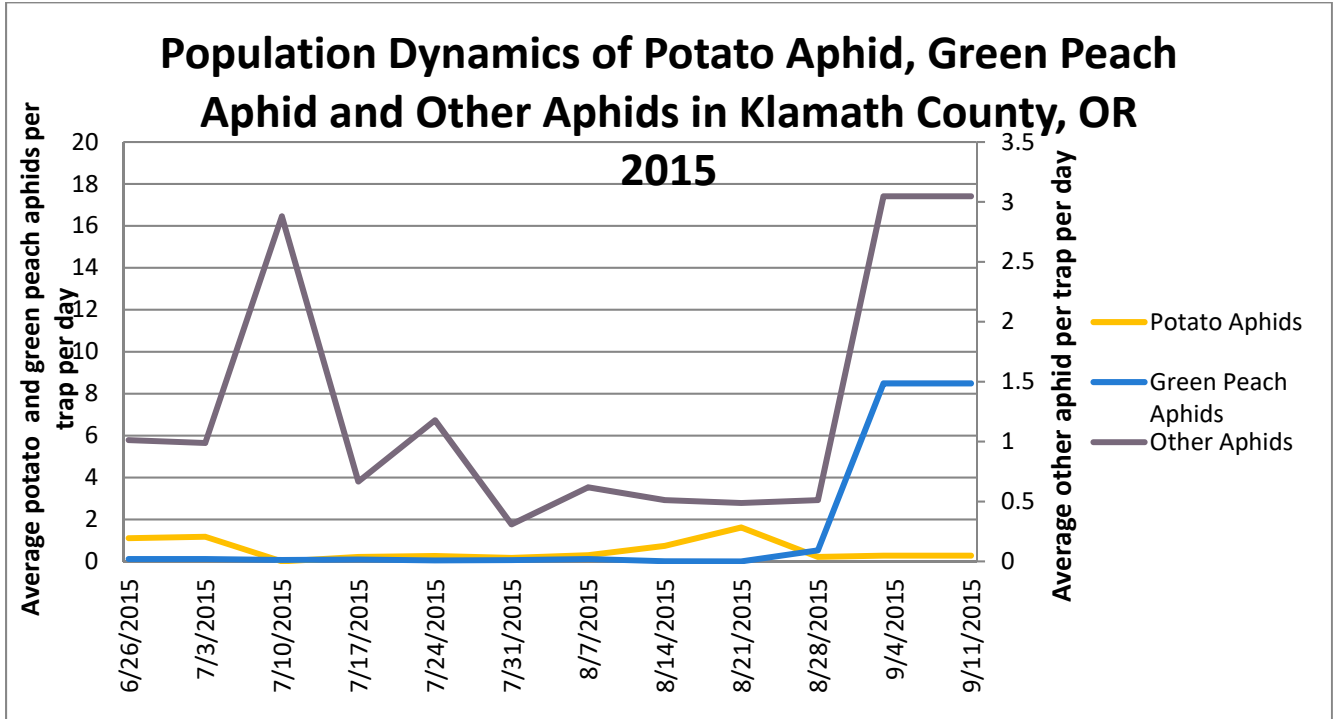
Weather Data

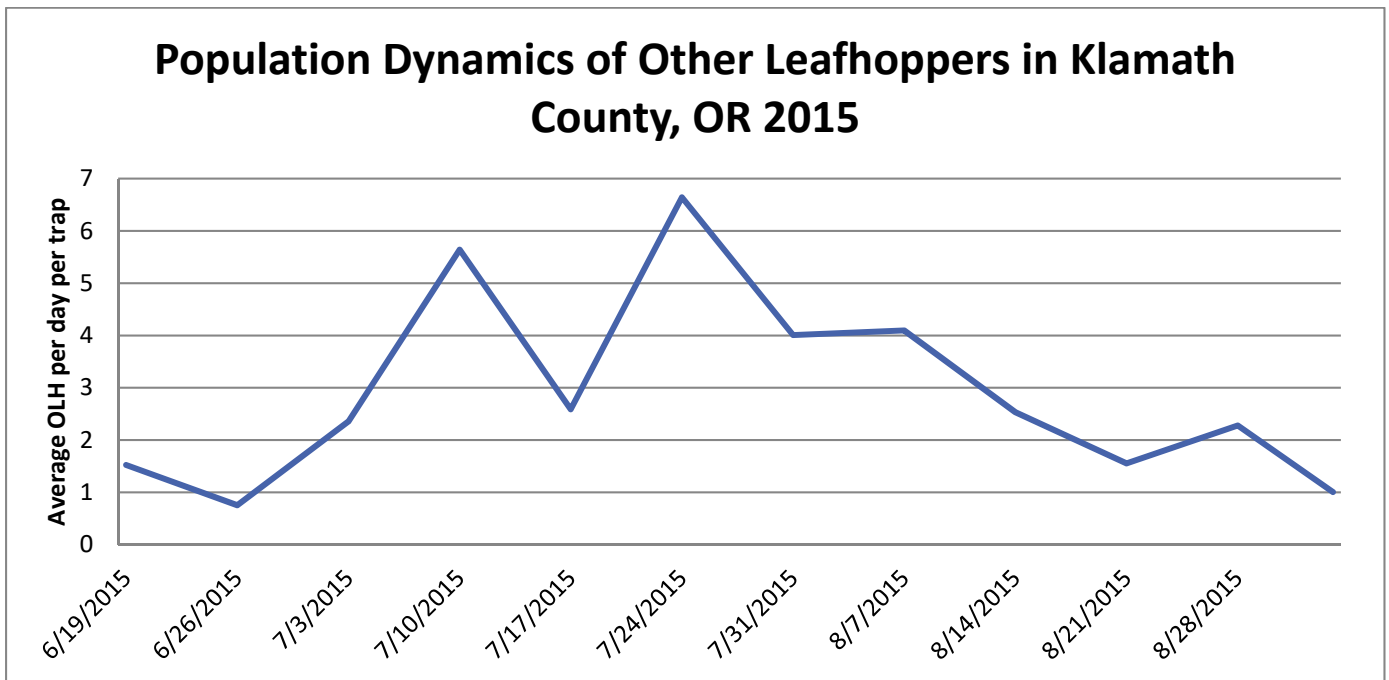
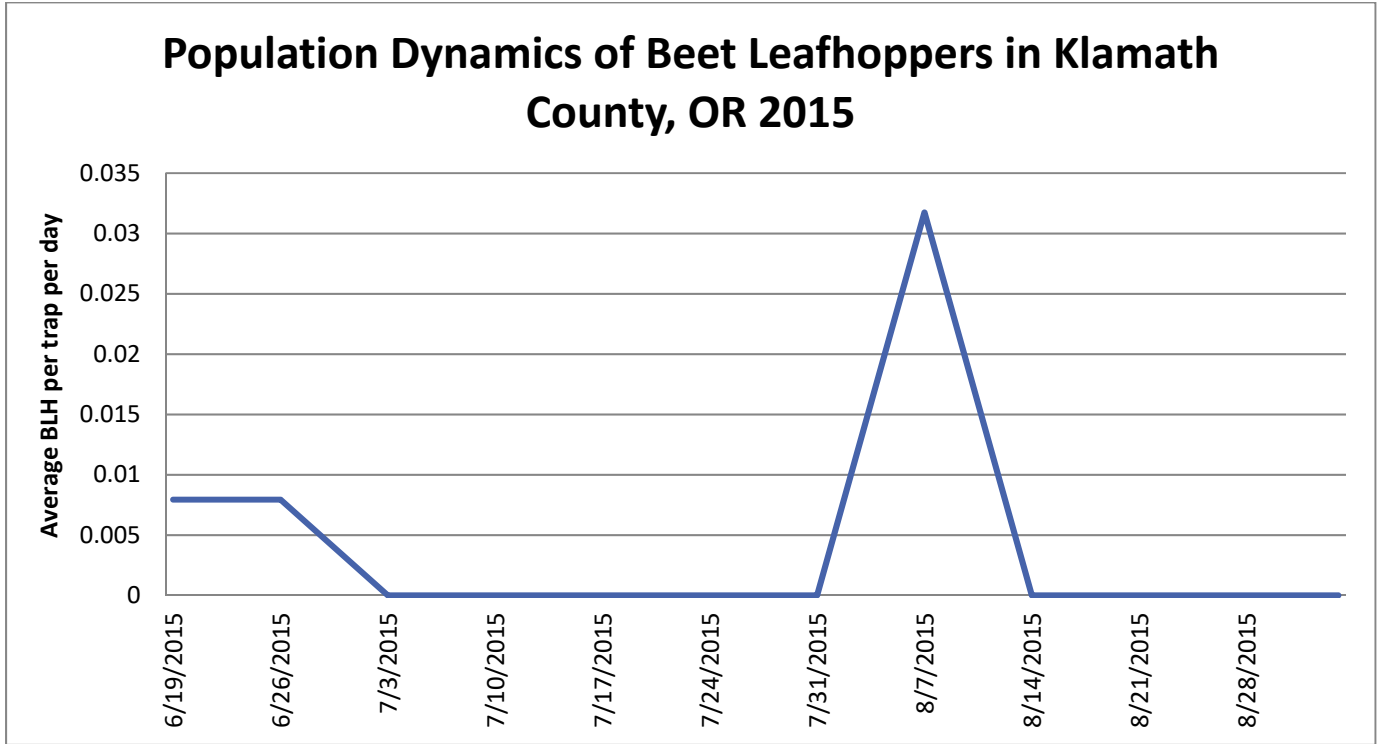




2015 Insect Trapping Results

Potato tuberworm was first detected in the Klamath Basin in late-August of 2005. KBREC initiated an extensive trapping program the following year (2006) and have continued this effort annually. In 2009, we expanded our trapping efforts to include aphids, leafhoppers, and psyllids. Eighteen Delta traps (tuber moth), ten yellow water-pan traps (aphids), and eighteen sticky cards (leafhoppers and psyllids) were placed in growers' fields shortly after crop emergence. Traps were checked weekly during the growing season and results were tabulated and made available to growers, crop consultants, and other industry personnel electronically in newsletter titled *Potato Bytes*. This newsletter was also published on the KBREC website at <http://oregonstate.edu/dept/kbrec/>. Collected data provided Basin producers with pertinent information to improve pest management strategies. Potato tuberworm has not been found despite an extensive eight-year trapping program. The following graphs show population dynamic trends for aphids and leafhoppers throughout the growing season.





Guide to Clone Designation

Example: AC99375-1RU	AC99375-1RU	Breeding Program (A berdeen, ID)
	AC99375-1RU	Selection Site (C olorado)
	AC 99 375-1RU	Year of Cross (1999)
	AC 99375 -1RU	Cross Number (375)
	AC99375- 1 RU	Tuber Selection (1)
	AC99375-1 R U	Russet (Ru)

Location Codes

Designation	Breeding Program	Selection Program	Other
A	Aberdeen, Idaho	Aberdeen, Idaho	
AO	Aberdeen, Idaho	Oregon	
AOA	Aberdeen, Idaho	Oregon	
AOR	Aberdeen, Idaho	Oregon	
ATX	Aberdeen, Idaho	Texas	
BTX	Beltsville, Maryland	Texas	
CO	Colorado		
MWTX	Madison, Wisconsin	Texas	
NDA	North Dakota	Aberdeen, Idaho	
NY	New York		
PA	Prosser, Washington	Aberdeen, Idaho	
POR	Prosser, Washington	Oregon	
TC	Texas	Colorado	
TE	Tetonia, Idaho		
TXA	Texas	Aberdeen, Idaho	
TXNS	Texas		Norkotah Strain

Miscellaneous Designations

B	Chuck B rown's Cross
LS	Low S ugar
P/P	Purple skin/ P urple flesh
R	Red skin
R/R	Red skin/ R ed flesh
R/Y	Red skin/ Y ellow flesh
Ru	R usset
W/Y	W hite skin/ Y ellow flesh
LB	Late B light resistance
PW/Y	Purple skin with W hite eyes/ Y ellow flesh
P/Y	Purple skin/ Y ellow flesh
P/PW	Purple skin/ P urple and W hite flesh

Single Hill Results

Approximately, sixty one thousand (61,000) greenhouse-produced seedling tubers were planted at a remote site near Dairy Oregon on May 29, 2015. Located about 20 miles east of Klamath Falls, soils are very sandy with approximately 1.3 percent organic matter and a pH of 5.8. The location provides good isolation from other potato production areas and intensively fumigated soils allows us to harvest very clean material for seed increase. Progeny included 41 families from Oregon State University; 51 from USDA, Prosser, WA; 247 from USDA, Aberdeen, Idaho; 12 from Colorado State University; 10 from Cornell University, New York. Several crosses included russet parents with virus, late blight and potato tuber worm resistance.

Tuber families were lifted with a two-row, level-bed digger on October 7. A selection team including researchers, extension agents, growers and industry personnel selected desirable clones from various families immediately after lifting. As expected, selection was based primarily on external appearance; however, internal evaluation was performed on a limited number of selections. All retained material was transported to Klamath Falls, Oregon for storage at the Klamath Basin Research and Extension Center (KBREC). The following table outlines the number of single- hills provided by each breeding program and selection rate.

Location	General Cross Types	Number of Progeny Planted	Number of Progeny Selected	% Selection Rate
ARS Prosser, WA	Disease resistance, pigmented	5,058	105	2.07
Oregon State University	Disease resistance, mixed type	6,320	76	1.20
Colorado State University	Disease resistance, russet	2,808	31	1.10
ARS Aberdeen, ID	Disease resistance, russet	45,236	1,019	2.25
Cornell University, NY		2,102	30	1.42
Total		61,524	1,261	2.04

Preliminary Yield (PYT-1) Russet Screening

Eight hundred ninety seven (897) selections from 2014 single-hills were planted in 16-hill seed increase plots at KBREC. Potato tubers were lifted using a two-row, level-bed digger on October 7, 2015. A team of about 20 research and industry personnel selected 22 clones for further evaluation based on market potential and possible disease resistance. Tubers from these selections were retained and stored at KBREC for seed increase. This material will be evaluated in a Preliminary Yield Trial (PYT-2 Russet) conducted at KBREC and other locations throughout the Pacific Northwest in 2016.

Preliminary Yield (PYT-1) Specialty Screening

Thirty (30) selections from 2014 single-hills were planted in 16-hill seed increase plots at KBREC. Potato tubers were lifted using a two-row, level-bed digger on October 7, 2015. A team of about 20 research and industry personnel selected 4 clones for further evaluation based on market potential and possible disease resistance. Tubers from these selections were retained and stored at KBREC for seed increase. This material will be evaluated in a Preliminary Yield Trial (PYT-2 Specialty) conducted at KBREC and other locations throughout the Pacific Northwest in 2016.

Preliminary Yield (PYT-1) Chip Screening

Ninety seven (97) chip selections from 2014 single-hills were planted in 16-hill seed increase plots at KBREC. Potato tubers were lifted using a two-row, level-bed digger on October 7, 2015. Research and industry personnel selected 9 clones for further evaluation based on chipping potential and possible cold sweetening resistance. Seed of these selections was hand collected and stored at the KBREC potato facilities. This material will be evaluated in a Preliminary Yield Trial (PYT-2 Chip) conducted at KBREC and other locations throughout the Pacific Northwest in 2016. KBREC will also be increasing seed for future evaluation.

Fresh Market Value – Methods

Graphs showing the difference in gross returns per acre (Fresh Market Value) compared to Russet Norkotah are provided for all entries in both the Tri-state and Western Regional Russet Trials. Values were calculated by subtracting the gross return of Russet Norkotah from the gross return of each particular entry. Net packing shed returns to growers were calculated using a five-year average of fresh potato prices in the Klamath Basin and a packing shed cost of \$6.10/cwt. Consultations with several growers and shippers confirmed that these assumptions were valid comparisons to actual prices observed in the Klamath Basin. Assessing the fresh value of a given entry is difficult as packing sheds utilize various tuber sizes to meet current market orders. For example, all tubers that meet 90 or 100 count carton specifications are sometimes used to fill 5 and 10 lb. bale orders. As expected, these types of scenarios are not accounted for in our assumptions. In addition, this type of economic analysis does not account for consumer preference. As such, entries which appear to lack fresh market appeal are highlighted as white bars. The table below lists point prices per tuber size and grade with associated pack fees for grade and size categories used.

KBREC Grade Size	Markets/Packaging¹	Five Year Klamath Basin Avg. \$/cwt	Packaging and Handling
4-6 oz.	10.0 lb. poly bags	\$11.40	\$6.10
	5.0 lb. poly bags	\$13.40	\$6.10
6-10 oz.	70, 80, 90 and 100 count	\$20.86	\$6.10
10-20 oz.	40, 50, 60 and 70 count	\$23.92	\$6.10
<4 oz. and culls	Washed Processed Grade		\$6.10
No. 2	10-20 oz (50 lb. sacks)	\$12.86	\$6.10
	6-10 oz (50 lb. sacks)	\$9.47	\$6.10

¹Count = tuber number per 50 lb. carton.

2015 Replicated Trial Cultural Information

Location:	Klamath Falls, OR
Soil Type:	Poe fine sandy loam, pH 6.8
Planting Date:	5/14-5/15
Vine Kill Date:	August 21 st : Chopped vines
Harvest Date:	September 17 th
Irrigation:	Solid-set sprinkler + natural precipitation = 18.3 inches
Plot Length:	25 hills (19.27 ft.)
In-row spacing:	9.25 inches
Row spacing:	36 inches
Number of Reps:	4 reps for Statewide Trials and 2 reps for PYT Trials
Fertilizer:	181-125-150-231
Weed Control:	Prowl, Matrix, Outlook
Insecticides:	Transform, Movento
Fungicides:	Ridomil/Bravo, Luna Tranquility, Manzate
Nematode Control:	Spring 2014 application of Telone

2015 Preliminary Yield (PYT-2) Russet Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 13

Harvest Date: September 8

Fertility: 180-80-200-215

Vine Kill Date: August 21

Days to Vine kill: 117

In-Row Spacing: 9.25 inch

The PYT-2 Russet Trial evaluates recently selected clones, often only three years removed from single-hill selection. Retained entries are further evaluated in replicated trials at several Oregon locations before advancing (if applicable) to the Tri-state trial which includes testing locations in Washington and Idaho. This trial included 3 standard varieties and 88 new entries. The Oregon Potato Variety Development Team chose to advance 23 selections to the Statewide Russet Trial in 2016 and discarded the remaining selections due to poor performance. **Only retained selections are listed in the following tables.**

Clone	Female Parent	Male Parent
AOR11018-2	A02060-3TE	COA06037-4
AOR11037-2	A03158-2TE	COA06191-2
AOR11126-1	A06041-2TE	COA06037-3
AOR11132-1	A06140-1	A03082-4
AOR11141-2	A06140-4	COA06037-4
AOR10140-1	A05090-7	A05548-1
AOR10204-3	COA05110-3	A05066-9
AOR11217-3	A01010-3	NDA070929B-3
AOR11217-4	A01010-4	NDA070929B-4
OR12316-1	A02507-2LB	SILVERTON RUSSET
AOR09146-1	A02516-102LB	PA03NM5-1
AOR10594-3	A96953-15	A98345-3
AOR10595-1	A96953-13	A01025-4
AOR10633-1	A03974-1	A98345-1
AOR11908-1	A02782-2	AO02183-2
AOR11911-1	A02782-2	A061032-1CR
OR11042-1	OR05063-5PVY	AO96365-3
OR12133-10	A98345-10	SILVERTON RUSSET
OR12135-1	OR03085-5	SILVERTON RUSSET
OR12307-1	OR09158-68	SAGE RUSSET
POR13EA113-1	CLASSIC RUSSET	ND06076113-1
AOR10675-1	A05379-217	Dakota Trailblazer
AOR10625-2	A02706-5	Sage Russet

2015 Statewide Russet Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

The Statewide Russet Trial evaluates selections retained from the PYT-2 Russet Trial at three locations in Oregon. As mentioned earlier, selections retained from this trial are advanced to the Tri-State Trial which includes testing locations in Washington and Idaho. Testing locations in Oregon represent diverse climatic conditions (hot, long-season and cool, short-season) which allow for the retention of selections that exhibit stability over multiple locations. Oregon selections remain in the Statewide Trial until they complete Tri-State and Western Regional evaluation or are discarded. Despite a warmer season, potato plots at the KBREC site performed above average. The following is a summary of the Klamath Falls field results.

Stand Counts

➤ **30 Day**

Slow emergence: AOR10089-1-16B (80.0%)

Plant and Tuber Growth and Development

➤ **Average Tuber Number Per Plant**

Most: OR08OP284-2 (10.0)

Least: AOR10007-10 (3.9)

➤ **Average Tuber Size (oz.)**

Largest: A10007-3 (9.8)

Smallest: AOR08241-1 (4.4)

➤ **Undersized Tubers (<4 oz.) cwt/Acre**

Most: AOR08241-1 (104.1)

Least: AOR10089-1 (19.3)

Yield and Economic Data

➤ **Total Yield (cwt/Acre)**

Highest: OR10006-2 (727.6)

Lowest: AOR10007-10 (258.0)

➤ **US No. 1 Yield (cwt/Acre)**

Highest: COA10081-2 (421.5)

Lowest: AOR10062-1 (112.2)

➤ **Carton Yield (6-20 oz.) cwt/Acre**

Highest: COA10081-2 (295.0)

Lowest: Russet Burbank (77.0)

➤ **Gross Return (\$/acre)**

Fresh Market Highest: OR10006-1

Fresh Market Lowest: POR12NCK59-1

Tuber Defect Incidence (40 tuber sample of 10-14 oz. tubers)

➤ **Hollow Heart**

Notable Defects: AOR07892-17

➤ **Vascular Discoloration**

Notable Defects: AOR08032-1, POR12NCK50-1, AOR10097-3, AOR10007-10 (5.0%)

➤ **Stem End Browning**

Notable Defects: AOR06576-1 (14.4%), POR12NCK50-1 (10.0)

Klamath Basin Potato Variety Development Summary | 2015

Entry	Total Yield		US # 1s > 4 oz.	US # 2s > 4 oz.	Culls & <4 oz.	Oversized >20 oz.	Carton Yield 100-50 count (US 1's 6-20 oz)	
	(cwt/A)	stats**	% of total yield*				% of total yield	(cwt/A)
Ranger Russet	435	FGHIJK	49	27	22	2	34	147
Russet Burbank	402	HIJK	31	36	32	1	19	77
Russet Norkotah	448	DEFGHIJ	55	19	22	4	45	201
AOR06576-1	617	B	64	15	19	2	53	329
AOR07821-1	545	BCDE	68	9	22	1	50	271
OR08OP284-2	443	EFGHIJ	47	12	41	0	30	132
POR11NCK1-2	570	BC	29	33	37	2	23	130
AOR08032-1	487	CDEFGH	69	9	22	0	50	245
AOR07781-5	550	BCD	55	21	22	2	44	240
AOR10007-3	490	CDEFGH	55	17	28	0	32	158
AOR10007-10	258	L	51	19	28	2	42	108
AOR10015-6	432	GHIJK	54	18	26	1	44	188
AOR10016-1	475	CDEFGH	39	33	28	1	31	146
AOR10062-1	370	L	30	31	37	1	24	90
AOR10089-1	453	GHIJK	39	33	20	8	34	152
AOR10097-3	462	CDEFGHI	53	16	26	5	44	205
AOR10214-2	471	IJK	51	20	26	3	40	188
AOR08477-2	398	DEFGHIJ	57	10	31	1	42	168
AOR07891-3	462	DEFGHI	54	26	15	5	44	203
AOR07892-3	390	HIJK	63	20	16	1	51	198
AOR07892-9	348	JKL	52	16	32	0	33	116
POR12NCK50-1	495	CDEFGH	71	9	20	0	52	259
AOR07892-17	471	CDEFGHI	47	20	24	9	38	177
AOR08540-1	511	BCDEFG	64	7	25	4	46	235
AOR10028-1	419	GHIJK	41	25	33	1	29	122
OR10006-2	728	A	52	22	18	8	45	327
POR12NCK59-1	335	KL	34	24	42	0	20	66
AOR10007-2	455	DEFGHI	67	13	15	4	52	238
A10007-3	539	BCDEF	41	14	27	18	37	199
COA10081-2	550	BCD	77	6	17	0	54	295
COA10083-3	541	BCDE	65	11	17	8	54	290
A08439-5	543	BCDE	69	9	22	0	46	250
AOR08241-1	471	CDEFGHI	53	7	39	0	35	165
AOR10089-1-16B	451	DEFGHIJ	39	28	24	9	34	154
LSD (0.05)		106						

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

Klamath Basin Potato Variety Development Summary | 2015

Entry	US # 1 Yield					6-10 oz	Internal Defects (%)			
	>4 oz.	STATS**	%*			Specific	10-14 oz. tubers***			
	(cwt/A)		4-6 oz.	6-10 oz	>10 oz	Gravity	HH	IB	SEB	VD
Ranger Russet	212	HIJK	31	46	24	1.082	0.0	2.5	25.0	2.5
Russet Burbank	125	KL	39	47	15	1.073	0.0	0.0	17.5	0.0
Russet Norkotah	247	EFGHIJ	19	37	45	1.069	2.5	5.0	17.5	5.0
AOR06576-1	395	AB	17	37	47	1.078	0.0	2.5	57.5	0.0
AOR07821-1	370	ABC	27	45	28	1.082	2.5	2.5	7.5	0.0
OR08OP284-2	207	IJK	36	42	22	1.089	0.0	2.5	20.0	2.5
POR11NCK1-2	163	JKL	20	36	44	1.074	0.0	2.5	12.5	0.0
AOR08032-1	336	ABCDE	27	49	24	1.082	0.0	2.5	7.5	5.0
AOR07781-5	302	CDEFG	21	39	41	1.086	0.0	2.5	20.0	0.0
AOR10007-3	271	DEFGH	42	45	14	1.069	0.0	7.5	22.5	2.5
AOR10007-10	130	KL	17	38	45	1.064	0.0	5.0	7.5	5.0
AOR10015-6	232	GHIJ	19	34	47	1.077	0.0	0.0	10.0	0.0
AOR10016-1	183	IJKL	20	41	39	1.077	0.0	2.5	2.5	0.0
AOR10062-1	112	L	20	31	49	1.073	0.0	0.0	2.5	0.0
AOR10089-1	177	JKL	14	34	52	1.085	0.0	5.0	7.5	0.0
AOR10097-3	244	FGHI	16	35	49	1.093	0.0	0.0	12.5	5.0
AOR10214-2	243	FAGHIJ	23	45	33	1.080	0.0	5.0	2.5	0.0
AOR08477-2	227	GHIJ	26	45	29	1.090	0.0	0.0	5.0	0.0
AOR07891-3	250	EFGHIJ	18	35	46	1.090	0.0	0.0	0.0	0.0
AOR07892-3	246	EFGHIJ	19	40	41	1.069	0.0	2.5	0.0	0.0
AOR07892-9	180	IJKL	36	45	20	1.066	0.0	5.0	7.5	0.0
POR12NCK50-1	353	ABCD	27	42	31	1.083	0.0	7.5	40.0	5.0
AOR07892-17	223	GHIJ	20	30	50	1.089	10.0	7.5	25.0	0.0
AOR08540-1	325	BCDEF	28	37	35	1.088	0.0	0.0	5.0	0.0
AOR10028-1	172	JKL	29	42	29	1.074	2.5	0.0	12.5	0.0
OR10006-2	379	ABC	14	31	55	1.082	0.0	2.5	2.5	0.0
POR12NCK59-1	113	L	42	45	13	1.087	0.0	2.5	5.0	0.0
AOR10007-2	306	BCDEFG	22	36	42	1.079	0.0	0.0	30.0	0.0
A10007-3	223	GHIJ	10	35	54	1.070	0.0	5.0	15.0	0.0
COA10081-2	422	A	30	40	30	1.080	0.0	5.0	12.5	0.0
COA10083-3	352	ABCD	18	40	42	1.075	2.5	0.0	2.5	0.0
A08439-5	374	ABC	33	43	24	1.081	0.0	7.5	2.5	0.0
AOR08241-1	251	EFGHIJ	34	45	20	1.084	0.0	10.0	5.0	0.0
AOR10089-1-16B	176	JKL	13	35	52	1.085	0.0	10.0	12.5	0.0
LSD (0.05)	91									

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

***Internal Defects: HH=hollow heart, BC= Brown Center, SEB=stem end browning, VD=vascular discoloration

Klamath Basin Potato Variety Development Summary | 2015

Entry	Stand %	Average Tuber		Growth Cracks (1-5 ex)	Rhizoc (1-5none)	Skin Color (1-5 dark)	Russeting (1-5 hvy)	Shape (1-5 long)	Shape Uniformity (1-5 ex.)	Eye Depth (1-5 shal.)
		Wt. (oz.)	No. tubers/plant							
Ranger Russet	93.0	5.6	7.2	4.0	4.4	3.6	3.5	5.0	2.6	3.6
Russet Burbank	92.2	5.3	7.1	2.1	4.1	4.0	4.0	4.6	1.6	3.5
Russet Norkotah	100.0	6.6	5.7	4.1	4.5	4.3	4.3	4.9	3.3	2.8
AOR06576-1	92.0	7.7	7.5	3.9	4.0	3.9	3.8	4.5	3.3	4.0
AOR07821-1	96.0	5.9	8.2	3.6	3.6	4.8	5.0	3.9	3.8	4.8
OR08OP284-2	85.0	4.5	10.0	3.6	4.3	4.5	4.4	4.6	3.0	3.5
POR11NCK1-2	96.0	8.1	6.3	2.5	4.6	2.6	2.8	4.6	1.9	4.1
AOR08032-1	96.0	5.8	7.5	3.9	4.6	4.3	4.1	3.9	3.8	3.5
AOR07781-5	98.0	6.9	7.0	3.6	3.4	4.6	14.6	4.4	3.3	3.1
AOR10007-3	100.0	5.5	7.8	3.6	3.4	2.5	2.8	5.0	3.6	4.1
AOR10007-10	96.0	4.8	4.0	3.3	4.5	5.0	5.0	4.9	3.8	3.6
AOR10015-6	96.0	6.8	5.6	3.8	3.1	3.5	3.5	4.3	2.9	2.9
AOR10016-1	94.0	6.7	6.5	2.1	4.0	3.4	3.5	4.1	2.3	4.5
AOR10062-1	88.0	7.0	5.3	2.5	4.3	3.8	3.8	4.6	2.5	3.6
AOR10089-1	90.0	9.4	4.6	1.9	3.5	4.3	4.3	4.0	2.1	3.9
AOR10097-3	98.0	6.9	5.8	3.8	2.6	3.8	3.6	4.4	3.5	4.6
AOR10214-2	89.0	7.6	6.1	3.5	4.6	5.0	5.0	4.3	3.3	4.4
AOR08477-2	92.0	5.5	6.6	4.4	4.4	2.9	3.1	4.5	3.0	3.9
AOR07891-3	89.0	7.2	6.2	4.4	4.8	4.6	4.6	4.4	3.6	4.1
AOR07892-3	89.0	7.6	4.9	3.6	4.1	4.6	4.8	3.4	3.4	4.1
AOR07892-9	95.0	4.6	6.7	4.1	4.4	2.6	2.9	3.9	3.3	4.6
POR12NCK50-1	99.0	5.6	7.7	4.3	4.9	4.1	4.0	4.6	3.5	4.0
AOR07892-17	95.0	8.5	5.5	3.1	5.0	4.3	4.4	4.5	2.8	3.1
AOR08540-1	95.0	5.5	8.1	4.5	5.0	4.1	4.1	4.4	3.8	3.9
AOR10028-1	95.0	5.9	6.8	2.3	4.6	4.6	4.6	4.3	2.9	3.9
OR10006-2	95.0	8.9	7.4	3.3	4.3	4.4	4.5	4.9	2.9	3.6
POR12NCK59-1	88.0	5.0	6.5	1.0	4.4	4.8	4.9	4.0	2.5	4.8
AOR10007-2	89.0	7.1	6.2	4.0	4.3	4.0	4.0	4.1	3.4	3.4
A10007-3	96.0	9.8	4.9	3.3	4.9	3.5	3.3	5.0	3.4	4.1
COA10081-2	98.0	5.6	8.7	4.6	4.8	4.3	4.3	4.0	4.0	4.0
COA10083-3	93.0	7.7	6.5	4.6	5.0	2.4	2.8	4.5	3.8	4.3
A08439-5	99.0	5.2	9.0	3.9	3.4	4.1	4.0	3.3	3.5	4.0
AOR08241-1	92.0	4.4	9.8	4.6	4.8	4.1	4.0	4.3	4.0	4.6
AOR10089-1-16B	80.0	9.0	5.6	2.1	3.6	4.0	4.0	4.3	1.9	3.4


*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

***Internal Defects: HH=hollow heart, BC= Brown Center, SEB=stem end browning, VD=vascular discoloration

Entry	2015 KBREC- Statewide Russet Comments
Ranger Russet	boomerang x2, crooky x4, pointy stem end x3, blotchy skin
Russet Burbank	knobs x2, small, pointy stem end x2, irregular size, misshape, growth crack, ugly, pointy, skinning
Russet Norkotah	uneven skin, pointy stem end x4, skinny x2, best red, long, lent scaring , really dark
AOR06576-1	pointy stem end x2, lent scaring, process only, ok, pointy, blotchy skin, typy
AOR07821-1	small, green, heavy hide x2, flat x2 typy, pancake, dents, blocky
OR08OP284-2	misshape x3, nice skin x2, small, typy
POR11NCK1-2	junk, thumbnail cracks x2, pointy stem end x2, lent scaring, process only, misshape, internal heat necrosis
AOR08032-1	plumpy, thumbnail cracks, growth cracks, round, dented, some pointy stem end, typy, long, small, nice
AOR07781-5	pointy stem end x3, lumpy x4, small, round, misshape
AOR10007-3	process only x2, small x2, thumbnail crack, long x2, skinny x3, pop eyes
AOR10007-10	process only, pop eyes, dark x4, low set, drop, irregular size, ugly, long, skinny, typy
AOR10015-6	process only, irregular size, lent scaring, round, pointy stem end, dented, ugly, misshape, drop
AOR10016-1	1 rot, pop eyes x2, pointy stem end x2, misshape, not fresh, growth crack, blotchy skin x2, drop, #2s
AOR10062-1	boomerang, low set, pop eyes, misshape x3, ugly, big, drop, total crap, growth crack, uneven skin,
AOR10089-1	misshape x4, blocky, ugly x2, drop x2, growth crack x2, skinning
AOR10097-3	not fresh x3, misshape, rhizoc, drop, irregular size, long, bulgy eyes, blotchy
AOR10214-2	too dark x4, misshape, heavy hide, low set, drop, big
AOR08477-2	pointy stem end, small, irregular size, low set, green, drop, not fresh
AOR07891-3	boomerang x2, lent scaring, pointy stem end x2, crooks x2, sliced x2, too dark, dented, big
AOR07892-3	plumpy x3, not fresh, sliced, round x2, low set, skinning
AOR07892-9	process only x2, pointy stem end x3, drop x2, not fresh, small x2, misshape,
POR12NCK50-1	typy x2, skinning x4, crooks, long
AOR07892-17	pop eyes, low set, misshape x2, nice skin, big x2, deep eyes, fresh potential
AOR08540-1	some pop eyes, skinning x2, blocky, keep x2, small, typy x2, ok, fresh potential
AOR10028-1	drop x2, irregular size, growth crack x2, sliced, round, nice skin, irregular shape
OR10006-2	misshape x2, pointy stem end x3, big, #2s, thumbnail cracks x2, huge, pop eyes, growth cracks, nice, keep
POR12NCK59-1	skinning, small x3, growth cracks x2, heavy hide, drop
AOR10007-2	pointy stem end, irregular shape, lent scaring, apical sprouts x2, irregular size, blocky, skinning, big
A10007-3	#2s, growth crack, big x2, thumbnail cracks, russeting patches x2, huge, lent scaring x2, typy
COA10081-2	keep, flat x3, typy x2, small x2, thumbnail cracks, small, wider spacing, dents, divots
COA10083-3	typy, blotchy skin, lent scaring x2, blocky, process only x3, apical sprouts
A08439-5	small x3, round x3, skinning x2, thumbnail cracks, plump, lent scaring, rhizoc
AOR08241-1	typy x4, small x3, some pointy stem end, thumbnail cracks, lent scaring, fresh potential, keep
AOR10089-1-16B	big x2, misshape x4, drop x2, thumbnail cracks, ugly x2, growth cracks x3, pop eyes

Entries Retained for Further Evaluation in 2016

Entry	2015 KBREC- State Russet Comment	Entry	2015 KBREC- State Russet Comment
<p>Ranger Russet</p> 	<p>boomerang x2, crooky x4, pointy stem end x3, blotchy skin</p>	<p>Russet Burbank</p> 	<p>knobs x2, small, pointy stem end x2, irregular size, misshape, growth crack, ugly, pointy, skinning</p>
<p>Russet Norkotah</p> 	<p>uneven skin, pointy stem end x4, skinny x2, best red, long, lent scaring , really dark</p>	<p>AOR06576-1</p> 	<p>pointy stem end x2, lenticel scaring, process only, ok, pointy, blotchy skin, typy</p>
<p>AOR07821-1</p> 	<p>small, green, heavy hide x2, flat x2 typy, pancake, dents, blocky</p>	<p>AOR08032-1</p> 	<p>plumpy, thumbnail cracks, growth cracks, round, dented, some pointy stem end, typy, long, small, nice</p>
<p>AOR07781-5</p> 	<p>pointy stem end x3, lumpy x4, small, round, misshape</p>	<p>AOR10214-2</p> 	<p>too dark x4, misshape, heavy hide, low set, drop, big</p>

POR12NCK50-1



typy x2, skinning x4, crooks, long

AOR08540-1



some pop eyes, skinning x2, blocky, keep x2, small, typy x2, ok, fresh potential

OR10006-2

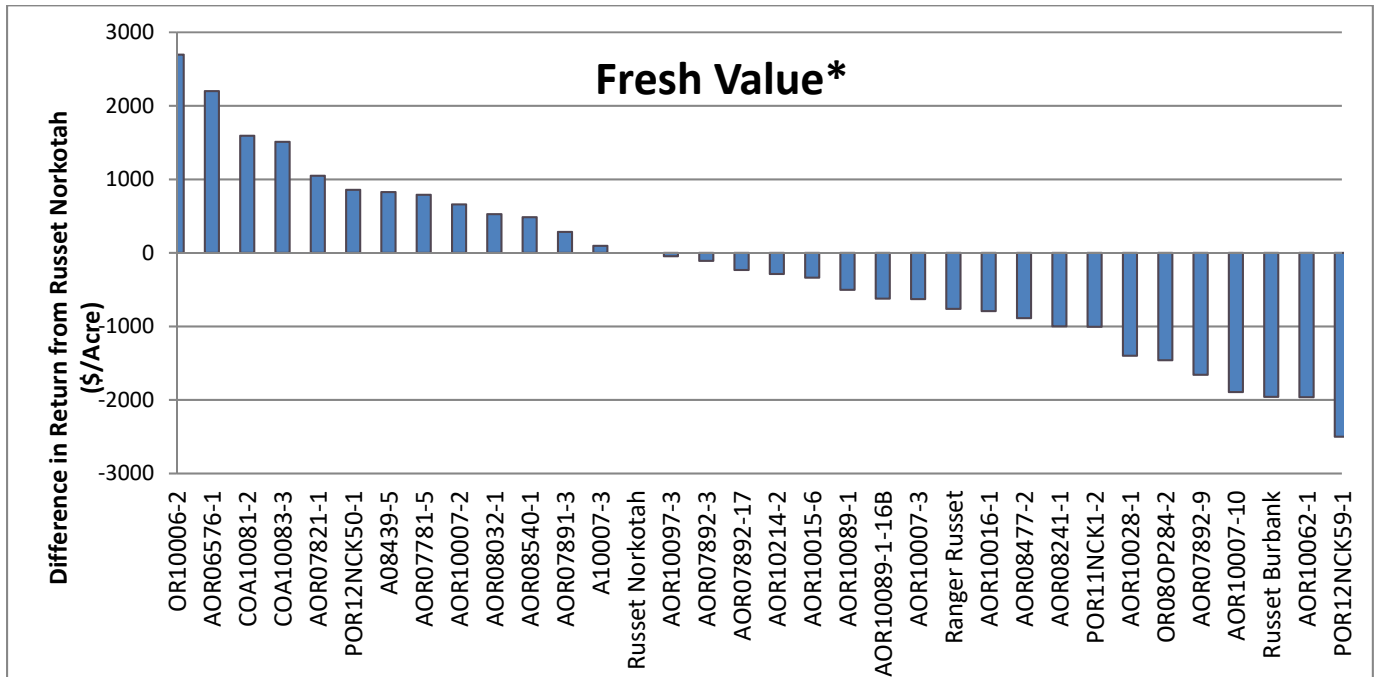


misshape x2, pointy stem end x3, big, #2s, thumbnail cracks x2, huge, pop eyes, growth cracks, nice, keep

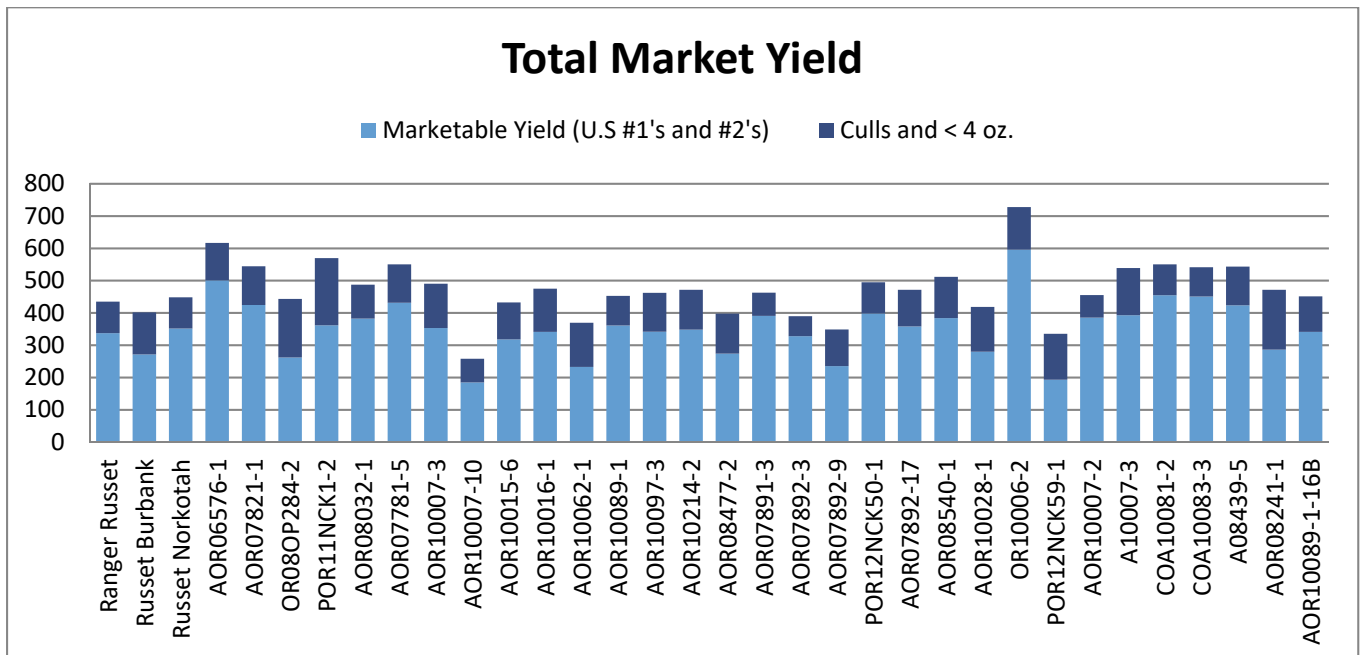
COA10081-2



keep, flat x3, typy x2, small x2, thumbnail cracks, small, wider spacing, dents, divots



*Difference in gross return per acre (Fresh Value) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with white-colored bars may not appeal to fresh market consumers due to the undesirable shape or appearance. Refer to page 14 for parameters used to collect gross return to growers.



2015 Tri-State Russet Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

The Tri-state Russet Trial evaluates relatively advanced selections originally selected in both Oregon and Idaho. Entries are evaluated for both fresh market and processing potential in Washington, Idaho, and Oregon. Disposition of entries in this trial are determined by the Tri-state Technical Committee and if retained, advance to the Western Regional Russet Trial. Despite a warmer season, potato plots at the KBREC site performed above average. The following is a summary of the Klamath Falls field results.

Stand Counts

➤ **30 Day**

Slow emergence: A09001-12TE (87%)

Plant and Tuber Growth and Development

➤ **Average Tuber Number Per Plant**

Most: A08433-4VR (8.7)

Least: A061071-3CSR and Russet Norkotah (5.0)

➤ **Average Tuber Size (oz.)**

Largest: A061071-3CSR (9.1)

Smallest: Russet Burbank and A061071-3CSR (4.9)

➤ **Undersized Tubers (<4 oz.) cwt/Acre**

Most: A08433-4VR (94.7)

Least: A061071-3CSR (26.2)

Yield and Economic Data

➤ **Total Yield (cwt/Acre)**

Highest: A09001-14TE (549.5)

Lowest: Russet Norkotah (351.7)

➤ **US No. 1 Yield (cwt/Acre)**

Highest: A09001-14TE (415.0)

Lowest: Russet Burbank (172.5)

➤ **Carton Yield (6-20 oz.) cwt/Acre**

Highest: A09001-14TE (326.0)

Lowest: Russet Burbank (96.0)

➤ **Gross Return (\$/acre)**

Fresh Market Highest: A08433-4VR

Fresh Market Lowest: Russet Burbank

Tuber Defect Incidence (40 tuber sample of 8-12 oz. tubers)

➤ **Hollow Heart**

Notable Defects: Russet Norkotah (7.5%)

➤ **Stem End Browning**

Notable Defects: A08009-2TE (40.0%)

Entry	Total Yield		US # 1's > 4 oz.	US # 2's > 4 oz.	Culls & <4 oz.	Oversized >20 oz.	Carton Yield 100-50 count (US 1's 6-20 oz)	
	(cwt/A)	STATS**					% of Total Yield*	
Ranger Russet	404	DEF	54	17	29	0	37	148
Russet Burbank	380	EF	45	20	35	0	25	96
Russet Norkotah	352	F	73	6	18	3	58	203
A02449-100	475	ABC	56	13	28	4	47	222
A06030-23	440	CDE	68	12	20	1	51	224
A061070-3CSR	522	AB	59	16	25	0	41	214
A061071-3CSR	453	BCDE	63	16	11	10	51	231
A06862-14VR	427	CDEF	69	9	21	1	53	227
A07008-4T	498	ABC	69	8	21	1	50	250
A08009-2TE	489	ABC	67	12	19	2	51	251
A08433-4VR	501	ABC	63	7	30	0	37	186
A09001-12TE	470	BCD	76	5	15	4	56	264
A09001-14TE	550	A	76	8	15	1	59	326
A006191-1	430	CDE	57	12	21	10	47	203
LSD(0.05)		77						

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

Klamath Basin Potato Variety Development Summary | 2015

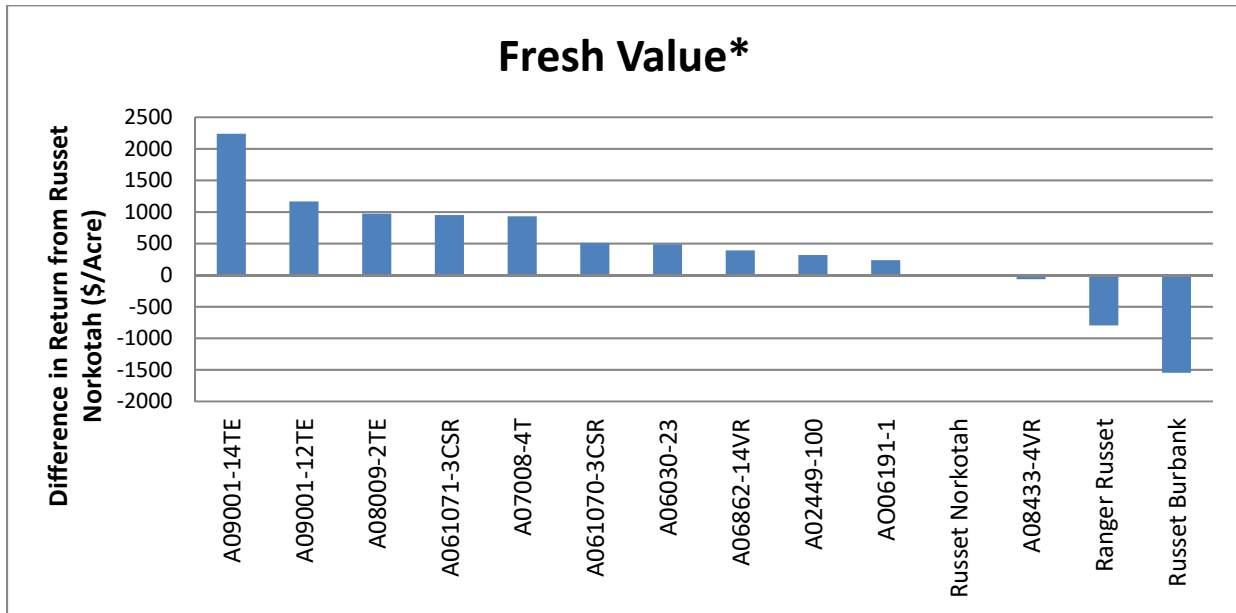
Entry	US # 1 Yield					6-10 oz. Specific Gravity	Internal Defects (%) 10-14 oz. tubers***			
	>4 oz. (cwt/A)	STATS**	%*				HH	IB	SEB	VD
			4-6 oz.	6-10 oz.	>10 oz.					
Ranger Russet	217	FG	32	48	20	1.078	0.0	2.5	32.5	7.5
Russet Burbank	173	G	44	39	56	1.076	0.0	0.0	10.0	0.0
Russet Norkotah	256	DEF	21	42	79	1.069	7.5	2.5	10.0	2.5
A02449-100	264	CDEF	16	46	84	1.076	0.0	7.5	10.0	0.0
A06030-23	298	BCDEF	25	46	75	1.080	0.0	0.0	27.5	0.0
A061070-3CSR	306	BCDE	30	41	70	1.086	0.0	0.0	42.5	0.0
A061071-3CSR	285	BCDEF	19	38	81	1.079	0.0	0.0	10.0	0.0
A06862-14VR	295	BCDEF	23	51	77	1.092	0.0	2.5	0.0	0.0
A07008-4T	345	ABC	27	46	73	1.093	2.5	5.0	12.5	0.0
A08009-2TE	328	BCD	23	50	77	1.084	0.0	0.0	40.0	0.0
A08433-4VR	315	BCDE	41	42	59	1.081	0.0	0.0	12.5	0.0
A09001-12TE	355	AB	26	48	74	1.086	0.0	0.0	27.5	0.0
A09001-14TE	415	A	21	45	79	1.090	0.0	0.0	10.0	0.0
AO06191-1	247	EFG	18	39	82	1.082	0.0	0.0	2.5	0.0
LSD(0.05)		80								

*Percent values may not total 100% due to rounding

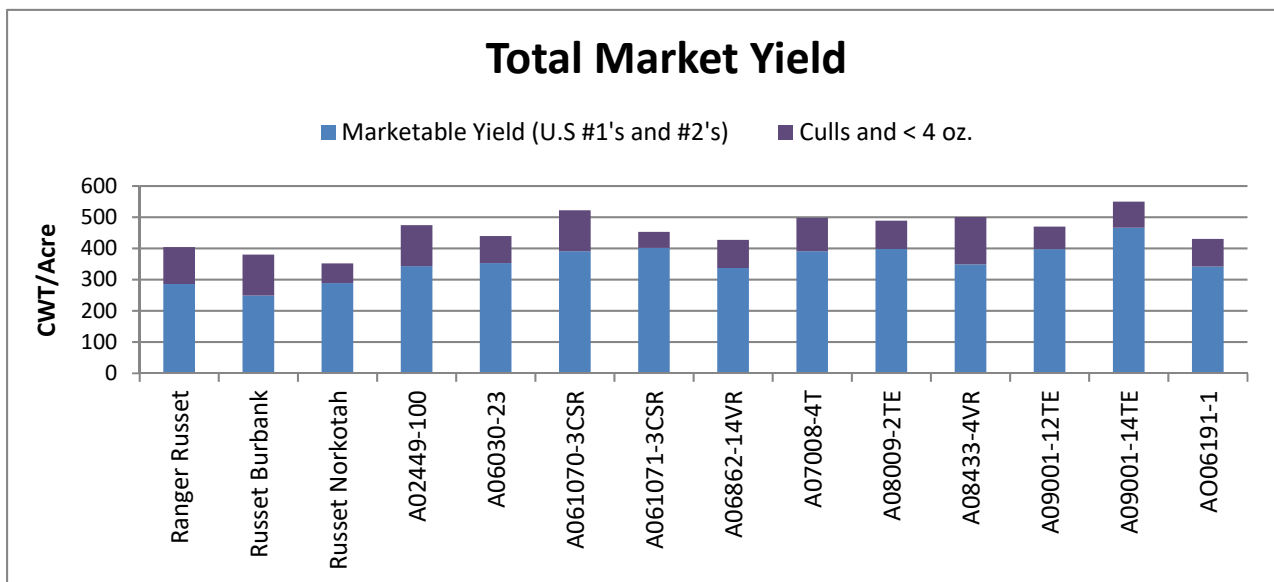
**Entries showing the same letter are not significantly different at the 5% level

***Internal Defects: HH=hollow heart, IB= impact bruise, SEB=stem end browning, VD= vascular discoloration

Entry	Stand %	Average Tuber		Green (1-5 none)	Growth Cracks (1-5 none)	Skin Color (1-5 dark)	Russetting (1-5 hvy)	Shape (1-5 long)	Shape Uniformity (1-5 ex.)	Eye Depth (1-5 shal.)
		Wt. (oz.)	Number tubers/plant							
Ranger Russet	98	5.6	6.5	3.6	3.6	3.6	3.8	5.0	2.6	3.5
Russet Burbank	98	5.0	6.6	3.9	3.0	3.6	3.8	4.5	2.4	4.4
Russet Norkotah	98	6.3	5.1	4.1	4.9	4.6	4.8	4.8	4.0	3.5
A02449-100	93	7.6	5.8	1.6	3.9	3.3	3.0	4.6	3.4	3.8
A06030-23	100	6.1	6.2	3.5	3.5	4.1	4.0	4.0	3.9	4.3
A061070-3CSR	99	6.3	7.2	2.9	2.9	3.3	3.3	3.8	2.8	4.1
A061071-3CSR	99	9.1	5.0	3.5	3.1	4.0	4.0	4.0	3.9	3.3
A06862-14VR	100	6.0	6.2	3.5	2.4	3.4	3.3	4.0	3.5	3.9
A07008-4T	97	5.4	8.0	4.3	4.3	4.0	4.3	4.1	3.5	3.3
A08009-2TE	94	7.1	6.7	4.1	4.1	4.3	4.3	4.1	3.6	4.6
A08433-4VR	93	4.9	8.8	3.6	4.0	3.8	3.6	3.0	3.5	4.5
A09001-12TE	87	7.1	6.1	3.4	4.0	3.0	3.1	3.3	3.0	3.1
A09001-14TE	98	6.6	7.3	3.9	3.9	3.9	3.9	3.6	3.5	3.8
AO06191-1	97	8.1	5.5	3.6	4.4	5.0	5.0	4.3	3.6	3.5



*Difference in gross return per acre (Fresh Value) from Russet Norkotah calculated by subtracting the gross return of Russet Norkotah from the gross return of the particular entry. Entries with white-colored bars may not appeal to fresh market consumers due to the undesirable shape or appearance. Refer to page 15 for parameters used to collect gross return to growers.



Entry	2015 KBREC- Tri-State Russet Comment	Entry	2015 KBREC- Tri-State Russet Comment
Ranger Russet	 crooks x3, long x2, skinny x4, small, pointy stem end	Russet Burbank	 misshape, skinny, growth cracks, small x2, pop eyes, irregular shape
Russet Norkotah	 nice, typy x4, looks good, some pointy stem ends	A02449-100	 good size, process only x2, a little lumpy, long, skinny, not fresh x2, lent scaring, misshaped
A06030-23	 typy x3, small, nice x3, slight crooks x2	A061070-3CSR	 growth cracks x3, misshaped x2, #2s, irregular size, too round, small
A061071-3CSR	 big x2, blotchy skin, plumpy x2, flat, typy, nice, keep	A06862-14VR	 blotchy skin x2, process only, typy, small, skin issues, thumbnail cracks x2, not fresh

<p>A07008-4T</p>  <p>typy x3, small x3, lent scaring, pointy stem ends x2, skinny</p>	<p>A08009-2TE</p>  <p>nice x2, irregular shape, typy x2, ok, dented, slight crooks</p>
<p>A08433-4VR</p>  <p>round x3, ugly skin, thumbnail crack, rhizoc, flat, marbles, flat</p>	<p>A09001-12TE</p>  <p>round x2, process only, misshaped, irregular shape, drop, plumpy</p>
<p>A09001-14TE</p>  <p>flat x2, round x4, small x2, lent scaring</p>	<p>AO06191-1</p>  <p>typy x3, some misshape, stitching, nice, dark, thick hide, thumbnail cracks, irregular size</p>

2015 Preliminary Yield (PYT-2) Specialty Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

The PYT-2 Specialty Trial evaluates recently selected clones, often only two years removed from single-hill selection. Retained entries are further evaluated in replicated trials at several Oregon locations before advancing (if applicable) to the Tri-State trial which includes testing locations in Washington and Idaho. This trial included 2 standard varieties 9 entries. The Oregon Potato Variety Development Team chose to advance 2 selections to the Statewide Specialty Trial in 2015 and discarded the remaining selections due to poor performance. **Only retained selections are listed in the following tables.**

Entry	Female Parent	Male Parent
POR13PG106-3	AOR06262-3	A23-3
POR13PG111-1	AMAROSA	A170

2015 Statewide Specialty Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 15

Harvest Date: September 23

Fertility: 181-125-150-231

Vine Kill Date: September 2

Days to Vine kill: 111

In-Row Spacing: 9.25 inch

The Statewide Specialty Trial evaluates selections retained from the PYT-2 Specialty Trial at three locations in Oregon. As mentioned earlier, selections retained from this trial are advanced to the Tri-State Trial which includes testing locations in Washington and Idaho. Testing locations in Oregon represent diverse climatic conditions (hot, long-season and cool, short-season) which allow for the retention of selections that exhibit stability over multiple locations. Oregon selections remain in the Statewide Trial until they complete Tri-State and Western Regional evaluation or are discarded. Despite a warmer than average growing season and high nematode pressure, potato plots at the KBREC site performed above average. The following is a summary of the Klamath Falls field results.

Stand Counts

➤ 30 Day

Slow emergence: POR12PG26-2 (24.0%)

Plant and Tuber Growth and Development

➤ Average Tuber Number Per Plant

Most: POR12PG26-2 (26.5)

Least: Yukon Gold (7.0)

➤ Average Tuber Size (oz.)

Largest: Purple Majesty (13.1)

Smallest: POR12PG56-4 (1.3)

➤ C Size Tubers (\leq 1.875 inch diameter and <4 oz.) cwt/Acre

Most: AOR06296-1 (140.7)

Least: Yukon Gold (6.6)

➤ B Size Tubers (1.875-2.25 inch diameter and <4 oz.) cwt/Acre

Most: AOR06296-1 (296.0)

Least: Red LaSoda (35.3)

Yield Data

➤ Total Yield (cwt/Acre)

Highest: POR12PG69-1 (773.2)

Lowest: POR12PG26-2 (116.2)

➤ US No. 1 Yield (cwt/Acre)

Highest: POR12PG69-1 (598.0)

Lowest: POR12PG26-2 (110.0)

Klamath Basin Potato Variety Development Summary | 2015

Tuber Defect Incidence (40 tuber sample)

➤ External Defects

High incidence of and moderate greening observed in POR11PG20-2.

➤ Internal Defects

Vascular Discoloration: POR12PG26-2 (6.9%)

Entry	Skin Color	Primary skin color (1-5 dark)	Flesh Color	Primary flesh color (1-5 dark)	Total Yield		US # 1's* > 0 oz.	Culls > 0 oz.***	External Defects (1-5 none)		
					(cwt/A)	STATS**			% of Total Yield	Green	Growth crack
Yukon Gold	Y	1.8	Y	1.9	486	BCDE	69	31	4.4	3.1	4.9
Red LaSoda	R	2.3	Y	1.0	567	BC	66	34	3.4	2.4	3.6
P. Majesty	P	5.0	P	4.8	601	B	92	8	5.0	4.1	4.8
POR10PG3-5	RY	4.0	Y	4.1	307	FG	96	4	4.6	5.0	5.0
AOR06267-3	R	3.8	Y	1.8	407	DEF	88	12	4.1	4.9	5.0
POR11PG20-2	Y	2.5	Y	2.4	720	A	76	24	2.6	4.1	4.5
POR11PG62-3	RY	1.9	Y	1.0	378	EFG	79	21	4.8	5.0	3.8
POR11PG62-6	RY	2.4	Y	2.3	462	CDE	85	15	4.4	4.8	3.8
AOR06296-1	RY	2.8	Y	1.6	512	BCD	96	4	4.8	5.0	5.0
POR12PG10-1	Y	3.0	Y	3.0	370	EFG	89	11	4.0	4.4	5.0
POR12PG26-2	RY	3.0	Y	3.3	116	H	94	6	4.6	4.9	4.4
POR12PG69-1	P	4.6	Y	4.0	773	A	76	24	5.0	1.6	3.5
POR12PG73-1	R	3.8	Y	1.1	576	BC	74	26	4.6	4.8	5.0
POR12PG76-2	Y	4.0	Y	4.1	436	DE	85	15	4.3	4.1	4.8
OR10220-1	RY	2.5	Y	1.6	273	G	98	2	4.5	5.0	5.0
POR12PG56-4	RY	3.1	Y	3.5	263	G	96	4	4.5	5.0	4.3
LSD						116					

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

***Including >20oz. and #2's

Klamath Basin Potato Variety Development Summary | 2015

Entry	US # 1 Yield							Specific Gravity	Internal Defects (%)****			
	(cwt/A)	STATS**	%*						HH	SEB	VD	IB
			C size	B size	4-6 oz.	6-10 oz.	10-14 oz.					
Yukon Gold	337	DEF	2	15	23	40	20	1.081	0.6	1.9	0.0	3.1
Red LaSoda	376	CDE	2	9	21	44	23	1.060	0.0	0.6	0.0	0.0
P. Majesty	555	AB	11	33	30	21	4	1.083	0.0	0.0	0.0	0.0
POR10PG3-5	296	FGH	35	50	13	3	0	1.072	0.0	0.6	0.0	0.0
AOR06267-3	360	DEFG	14	35	28	22	0	1.078	0.0	2.5	0.6	1.9
POR11PG20-2	545	AB	5	26	29	31	10	1.081	0.0	0.6	1.3	0.0
POR11PG62-3	299	FHG	33	60	6	0	0	1.080	0.0	0.0	0.0	0.6
POR11PG62-6	395	DE	21	48	23	8	0	1.083	0.0	0.0	0.0	0.6
AOR06296-1	491	BC	29	60	10	1	0	1.094	0.0	0.6	1.3	0.6
POR12PG10-1	329	EFGH	27	55	15	3	0	1.076	0.0	0.0	0.0	0.0
POR12PG26-2	110	I	27	65	7	1	0	1.072	0.0	0.6	6.9	0.0
POR12PG69-1	589	A	3	15	27	42	12	1.080	0.0	0.0	0.0	0.0
POR12PG73-1	424	CD	4	25	28	33	9	1.083	0.0	4.4	0.0	0.6
POR12PG76-2	369	DEF	14	35	22	21	8	1.071	0.0	0.0	0.0	0.0
OR10220-1	268	GH	26	70	4	0	0	1.084	0.0	0.6	0.0	0.0
POR12PG56-4	252	H	29	62	7	2	0	1.060	0.0	0.0	0.0	0.6
LSD (0.05)		93										

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

****Internal Defects: VD= Vascular Discoloration, IBS= internal brown center, SEB=stem end browning, IB= impact bruise

Klamath Basin Potato Variety Development Summary | 2015

Entry	Stand %	Average Tuber		Shape Uniform (1-5 ex.)	Rhizoc (1-5 none)	Russeting (1-5 hvy)	Shape (1-5 long)	Size uniformity (1-5 ex.)	Shape uniformity (1-5 ex.)	Eye Depth (1-5 shal.)
		Wt. (oz.)	Number tubers/plant							
Yukon Gold	93.0	6.4	7.0	2.6	4.3	1.5	3.1	2.9	2.6	4.4
Red LaSoda	99.0	6.6	7.4	2.5	3.6	1.0	3.1	3.1	2.5	3.1
P. Majesty	96.0	13.1	10.4	3.4	5.0	1.8	3.9	3.4	3.4	4.5
POR10PG3-5	99.0	6.5	11.8	3.9	4.3	1.0	1.1	3.5	3.9	3.3
AOR06267-3	94.0	3.2	11.7	3.8	3.1	1.6	4.1	4.0	3.8	4.4
POR11PG20-2	96.0	4.5	14.2	3.3	3.0	1.6	2.9	3.0	3.3	4.1
POR11PG62-3	84.0	1.9	20.2	3.9	4.9	1.1	4.3	3.9	3.9	4.3
POR11PG62-6	96.0	2.4	17.1	3.3	3.1	1.4	3.0	3.9	3.3	4.5
AOR06296-1	97.0	1.8	24.7	4.3	4.5	1.5	1.1	4.5	4.3	4.6
POR12PG10-1	97.0	1.5	27.6	3.8	3.8	1.9	2.1	3.8	3.8	4.5
POR12PG26-2	24.0	1.6	26.5	3.1	4.5	1.0	4.3	4.2	3.1	4.1
POR12PG69-1	100.0	5.5	12.0	2.5	5.0	1.9	2.4	3.4	2.5	3.8
POR12PG73-1	100.0	4.6	10.7	2.9	4.8	2.1	3.4	3.6	2.9	3.5
POR12PG76-2	100.0	2.9	12.9	3.8	4.1	1.0	2.1	4.0	3.8	2.8
OR10220-1	99.0	1.5	15.1	4.5	2.4	1.3	4.0	4.4	4.5	4.3
POR12PG56-4	98.0	1.4	17.3	3.4	4.8	1.4	1.3	3.9	3.4	3.3

Entry	2015 KBREC State Specialty Comments
Yukon Gold	growth crack, misshape x3, big, irregular shape, misshape x2, blotchy, lent scaring, NTN
Red LaSoda	skinning x3, growth crack x2, bronzing, nice color, 20% pack out x2, ugly x2, big
P. Majesty	bronzing x4, silver scurf
POR10PG3-5	sprouts x4, lumpy x3, nice
AOR06267-3	rough, bronzing, 20% pack out, skinning x2, purple stem end and rot
POR11PG20-2	russeting spots, pointy stem end 20% pack out x2, rot, lent scaring x2, bulgy
POR11PG62-3	lent scaring x4, uneven splash, CRS, drop, bulgy, pointy stem end
POR11PG62-6	pink eyes, pointy, lent scaring, misshape, pointy stem end x3, bulging eyes
AOR06296-1	round, lent scaring x3, irregular pink, sprouts, russeting
POR12PG10-1	russeting, dull, sprouts x2, lent scaring, dark yellow, irregular shape
POR12PG26-2	big x2, sticky stolon x2, folded bud end, misshape x2, growth crack, NTN apical sprouts
POR12PG69-1	dingy, pointy stem end x4, bronzing x2, drop, misshape x2, no skinning
POR12PG73-1	lumpy x3, deep eyes, sticky stolon x2, sprouting x3, dark yellow, nice, good color
POR12PG76-2	smashed, red eye, small, russeting x2, lent scaring, ok x2, rhizoc, not much pack out
OR10220-1	lumpy x2, 20% pack out, looks mixed x4, rot, sticky stolon
POR12PG56-4	rot, NTN x2, russeting, big, folded bud end x2, growth crack, pears, misshape

Entries Retained for Further Evaluation in 2016

Entry	2015 KBREC- Statewide Specialty Comment	Entry	2015 KBREC- Statewide Specialty Comment
Yukon Gold 	<p>growth crack, misshape x3, big, irregular shape, misshape x2, blotchy, lent scaring, NTN</p>	Red LaSoda 	<p>skinning x3, growth crack x2, bronzing, nice color, 20% pack out x2, ugly x2, big</p>
Purple Majesty 	<p>bronzing x4, silver scurf</p>	POR11PG20-2 	<p>russeting spots, pointy stem end 20% pack out x2, rot, lent scaring x2, bulgy</p>
POR11PG62-3 	<p>lent scaring x4, uneven splash, CRS, drop, bulgy, pointy stem end</p>	POR12PG26-2 	<p>big x2, sticky stolon x2, folded bud end, misshape x2, growth crack, NTN apical sprouts</p>
POR12PG73-1 	<p>lumpy x3, deep eyes, sticky stolon x2, sprouting x3, dark yellow, nice, good color</p>	OR10220-1 	<p>lumpy x2, 20% pack out, looks mixed x4, rot, sticky stolon</p>

2015 Tri-State Specialty Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

The Tri-State Specialty Trial evaluates relatively advanced selections originally selected in both Oregon and Idaho. Entries are evaluated for both fresh market and processing potential in Washington, Idaho, and Oregon. Disposition of entries in this trial are determined by the Tri-State Technical Committee and if retained, advance to the Western Regional Russet Trial. Despite a warmer season, potato plots at the KBREC site performed above average. The following is a summary of the Klamath Falls field results.

Stand Counts

➤ 30 Day

Slow emergence: All entries had greater than 90% emergence.

Plant and Tuber Growth and Development

➤ Average Tuber Number Per Plant

Most: A05182-7Y (14.1)

Least: Chieftain (7.2)

➤ Average Tuber Size (oz.)

Largest: Chieftain (7.3)

Smallest: A06336-5Y (2.9)

➤ C Size Tubers (<1.875 inch diameter and <4 oz.) cwt/Acre

Most: AOR06267-3 (51.5)

Least: Chieftain (7.5)

➤ B Size Tubers (1.875-2.25 inch diameter and <4 oz.) cwt/Acre

Most: AOR06267-3 (253.5)

Least: Yukon Gold (46.5)

Yield Data

➤ Total Yield (cwt/Acre)

Highest: A05182-7Y (701.5)

Lowest: AOR06267-3 (373.0)

➤ US No. 1 Yield (cwt/Acre)

Highest: A05182-7Y (622.2)

Lowest: AOR06267-3 (318.5)

Klamath Basin Potato Variety Development Summary | 2015

Tuber Defect Incidence (40 tuber sample)

- **External Defects** Moderate greening observed in. Chieftain tubers had a high incidence of growth cracks.
- **Internal Defects**
Impact Bruise:
Stem End Browning: Chieftain (3.1%)

Entry	Skin Color	Primary skin color (1-5 dark)	Flesh Color	Primary flesh color (1-5 dark)	Total Yield		US # 1's* > 0 oz.	Culls* > 0 z.***	External Defects (1-5 none)		
					(cwt/A)	STATS**			Green	Growth crack	Shatter Bruise
						% of Total Yield					
Chieftain	R	3.0	Y	1.0	593.1	AB	70	30	3.8	2.5	4.1
NDA050237B-1R	R	4.0	Y	1.0	604.6	AB	78	22	4.5	2.8	5.0
A05180-3PY	P	4.0	Y	1.9	700.3	A	69	31	4.5	2.3	4.0
COA07365-4RY	R	4.3	Y	2.0	482.9	C	83	17	4.3	4.3	4.4
Yukon Gold	Y	1.6	Y	2.0	498.5	BC	80	20	4.6	3.4	4.3
A06336-5Y	Y	3.3	Y	2.4	463.6	CD	89	11	4.3	4.9	4.6
A05182-7Y	Y	2.6	Y	2.0	701.6	A	89	11	3.8	4.6	4.1
AOR06267-3	R	4.0	Y	2.0	372.9	D	85	15	3.9	5.0	5.0
NDA081451CB-1CY	Y	1.6	Y	2.0	682.9	A	86	14	4.1	4.3	4.8
LSD (0.05)						108					

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

***Including >20oz. and #2's

Klamath Basin Potato Variety Development Summary | 2015



Entry	US # 1 Yield							Oversized >14 oz.	Specific Gravity	Internal Defects (%)			
	(cwt/A)	STATS**	%*							HH	SEB	VD	IB
			C size	B size	4-6 oz.	6-10 oz.	10-14 oz.						
Chieftain	593.1	BCD	2	13	20	45	21	33	1.072	0.0	12.5	0.0	2.5
NDA050237B-1R	604.6	B	4	25	28	35	8	11	1.070	0.0	10.0	0.0	5.0
A05180-3PY	700.3	BC	4	18	22	40	16	31	1.080	2.5	0.0	0.0	5.0
COA07365-4RY	482.9	BCD	5	27	37	30	1	0	1.074	0.0	0.0	2.5	0.0
Yukon Gold	498.5	CD	2	13	26	44	15	33	1.082	2.5	5.0	2.5	2.5
A06336-5Y	463.6	BC	10	61	25	4	0	0	1.071	0.0	0.0	0.0	2.5
A05182-7Y	701.6	A	5	28	32	30	4	1	1.077	0.0	5.0	0.0	2.5
AOR06267-3	372.9	D	16	40	26	17	1	0	1.075	0.0	7.5	2.5	2.5
NDA081451CB-1CY	682.9	A	3	21	30	35	11	8	1.092	0.0	2.5	0.0	2.5
LSD (0.05)		91											

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

***Internal Defects: HH=hollow heart, IBS= internal brown center, SEB=stem end browning, IB= impact bruise

Entry	Stand %	Average Tuber		Rhizoc (1-5none)	Russeting (1-5 hvy)	Shape (1-5 long)	Size Uniformity (1-5 ex.)	Shape Uniformity (1-5 ex.)	Eye Depth (1-5 shal.)
		Wt. (oz.)	Number tubers/plant						
Chieftain	94.0	7.4	7.2	3.5	1.6	3.6	3.5	2.8	3.6
NDA050237B-1R	95.0	4.9	11.2	1.8	1.0	2.0	4.0	3.1	4.3
A05180-3PY	98.0	5.7	10.6	5.0	1.0	2.3	3.9	2.6	3.8
COA07365-4RY	98.0	4.3	9.8	5.0	1.0	2.5	4.1	4.1	4.1
Yukon Gold	92.0	6.3	7.4	3.9	2.1	2.9	3.4	3.5	4.4
A06336-5Y	97.0	2.9	13.9	4.9	1.4	1.3	4.6	4.5	4.8
A05182-7Y	96.0	4.4	14.1	1.9	2.0	2.4	3.8	3.9	3.9
AOR06267-3	97.0	3.2	10.4	4.5	1.0	4.1	3.9	4.0	4.1
NDA081451CB-1CY	96.0	5.1	11.7	3.6	1.6	2.5	3.8	3.8	4.6

Entry	2015 KBREC- Tri-State specialty Comments	Entry	2015 KBREC- Tri-State Specialty Comment
Chieftain		NDA050237B-1R	
	misshape x3, 2 rot, ugly x2, skinning x2, big, crooky, bulging eyes, sticky stolon		rhizoc x2, skin issues, skinning, not bad, mechanical, growth crack
A05180-3PY		COA07365-4RY	
	nice color x2, shiny, growth cracks x4, sticky stolons x2, low pack out, looks good, misshape		nice x2, some skinning, bronzing x3, nice skin
Yukon Gold		A06336-5Y	
	growth crack, blotchy x2, irregular shape, size uniformity, pears, russetting		like x2, orangey, small, sprouting, pointy stem end, nice, bruised
A05182-7Y		AOR06267-3	
	pink eyes, ok 40% pack out, rhizoc x2, sticky stolon x2, russetting		purple stem end x2, pointy stem end, skin issues x2, rot, don't like, drop

NDA081451CB-1CY



lent scaring x2, sticky stolon x3,
not bad, nice, round, rhizoc

2015 Preliminary Yield (PYT-2) Chip Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

The PYT-2 Chip Trial evaluates recently selected clones, often only two years removed from single-hill selection. Retained entries are further evaluated in replicated trials at several Oregon locations before advancing (if applicable) to the Tri-State trial which includes testing locations in Washington and Idaho. Five selections were evaluated with two retained for further evaluation.

Clone	Female Parent	Male Parent
AOR09033-2	CO96141-4W	Ivory Crisp
AOR11484-2	A05158-2C	00-3115-11
OR12479-5	ATLANTIC	LIBERATOR
AOR11488-1	A05158-3C	A03449-2C
AOR11455-4	A00206-1C	MSJ316A-LF
AOR11470-1	A03449-2C	M2

2015 Statewide Chip Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

Chipping potatoes comprise a significant portion of Klamath Basin acreage and identification of public varieties suitable for export remains a high priority for Basin producers. Trials were initiated in 2008 and 2009 with funding from the Oregon Potato Commission to identify acceptable chipping varieties for export markets using advanced selections and recently released varieties from the Tri-State, Southwest, North-central, and Eastern breeding programs and have continued annually. In 2015 seven varieties and advanced chipping selections were evaluated for yield, grade, processing quality, and storability to determine their suitability to meet existing export demands for raw product. All field data was collected at the KBREC site. Tubers from each replication were placed in both short and long-term commercial storage with processing evaluations conducted by Baley-Trotman Farms. Results for 2015 are listed below.

Stand Counts

➤ **30 Day**

Slow emergence: All entries had greater than 90% emergence

Plant and Tuber Growth and Development

➤ **Average Tuber Number Per Plant**

Most: AOR09034-3 (10.7)

Least: AOR06209-3 (8.0)

➤ **Average Tuber Size (oz.)**

Largest: AOR06209-3 (5.9)

Smallest: Snowden (4.1)

➤ **Undersized Tubers (<4 oz.) cwt/Acre**

Most: Snowden (135.0)

Least: AOR06209-3 (51.0)

Yield Data

➤ **Total Yield (cwt/Acre)**

Highest: AOR09034-3 (553.2)

Lowest: Snowden (454.7)

➤ **Marketable Yield >4 oz. (cwt/Acre)**

Highest: AOR06209-3 (398.0)

Lowest: Snowden (298.7)

Tuber Defect Incidence (40 tuber sample)

➤ **External Defects:** Moderate greening observed in had a high incidence of shatter bruise.

➤ **Internal Defects**

Impact Bruise:

Hard Bite:

Entry	Total Yield		> 4 oz.	< 4 oz.	Culls	Oversize > 14 oz.	Skin color (1-5 dark)
	(cwt/A)	STATS**					
Atlantic	497	AB	71	14	6	9	3.4
Snowden	454	B	66	30	1	3	4.4
OR09253-1	457	B	68	21	8	2	1.8
OR09256-2	494	AB	69	25	3	3	4.4
AOR09034-3	553	A	68	18	9	4	2.3
AOR06209-3	538	A	74	10	5	12	1.3
AOR06209-5	461	B	66	23	7	3	1.5
LSD (0.05)		62					

*Percent values may not total 100% due to rounding

**Entries showing the same letter are not significantly different at the 5% level

Entry	Yield US # 1 (>4 oz.)				External Defects (1-5 none)			
	(cwt/A)	STATS**	%*		Green	Growth crack	Knobs	Shatter
			4-6 oz.	6-14 oz.				
Atlantic	352	ABC	39	61	3.9	4.5	4.8	4.3
Snowden	299	D	61	39	4.9	4.6	5.0	4.6
OR09253-1	312	CD	49	51	3.8	4.4	4.8	3.8
OR09256-2	341	BCD	52	48	4.4	4.6	5.0	4.9
AOR09034-3	378	AB	38	62	3.6	3.6	4.9	3.5
AOR06209-3	398	A	40	60	3.9	4.3	5.0	4.1
AOR06209-5	306	CD	46	54	3.9	4.6	4.6	4.3
LSD (0.05)		51						

Entry	Stand %	Average Tuber		Specific Gravity	Internal Defects (%)****					
		Wt. (oz.)	Number tubers/plant		HH	BC	SEB	VD	HB	IB
Atlantic	92.0	5.3	8.7	1.093	0.0	0.0	0.0	0.0	12.5	7.5
Snowden	98.0	4.2	9.6	1.088	0.0	0.0	0.0	0.0	7.5	10.0
OR09253-1	90.0	4.7	9.4	1.095	0.0	0.0	7.5	2.5	10.0	2.5
OR09256-2	100.0	4.2	10.0	1.089	0.0	0.0	2.5	0.0	0.0	0.0
AOR09034-3	93.0	4.7	10.7	1.090	0.0	0.0	2.5	0.0	0.0	10.0
AOR06209-3	96.0	5.9	8.1	1.084	0.0	0.0	0.0	2.5	0.0	2.5
AOR06209-5	90.0	4.4	10.0	1.086	0.0	0.0	7.5	0.0	2.5	7.5

****Internal Defects: HH=hollow heart, BC= brown, SEB=stem end browning, VD= vascular discoloration, HB= hard bite, IB= Impact bruise

Entry	Rhizoc (1-5 ex.)	Russeting (1-5 hvly)	Shape (1-5 long)	Size uniformity (1-5 ex.)	Shape uniformity (1-5 ex.)	Eye Depth (1-5 shal.)
Atlantic	2.9	3.5	2.1	3.9	4.0	3.9
Snowden	2.4	3.8	1.3	4.4	4.0	3.6
OR09253-1	3.1	1.9	1.8	4.0	4.0	4.0
OR09256-2	2.4	4.0	2.4	4.3	4.1	4.0
AOR09034-3	1.5	2.1	1.6	4.1	4.0	4.0
AOR06209-3	3.3	1.5	2.9	2.9	3.1	3.6
AOR06209-5	2.1	1.8	1.5	4.4	3.8	4.0

Entry	2015 KBREC- Chip Trial Comments
Atlantic	shatter bruise x2, lent scaring x3, irregular size, small, nice, dark, fusarium
Snowden	small x2, folded bud end x2, deep eyes, small, round, dark, russeting
OR09253-1	smooth x2, rhizoc, deep eyes, flat, oblong, lent scaring x2, bruising, rot
OR09256-2	small x3, round x2, some pears, rhizoc, dark x3, mechanical damage
AOR09034-3	smooth, shatter bruise, growth crack, lent scaring, misshape, skinning, mechanical damage
AOR06209-3	irregular shape and size, flat x3, smooth x3, rhizoc, bruised, fusarium
AOR06209-5	Fusarium, cork ring spots, smooth x2, ugly, misshape, alligator hide, lenticel scaring, nice, smaller

Entries Retained for Further Evaluation in 2016

Entry	2015 KBREC- Statewide Chip Comment	Entry	2015 KBREC- Statewide Chip Comment
Atlantic		Snowden	
	shatter bruise x2, lent scaring x3, irregular size, small, nice, dark, fusarium		small x2, folded bud end x2, deep eyes, small, round, dark, russetting
OR09253-1		OR09256-2	
	smooth x2, rhizoc, deep eyes, flat, oblong, lent scaring x2, bruising, rot		small x3, round x2, some pears, rhizoc, dark x3, mechanical damage
AOR09034-3			
	smooth, shatter bruise, growth crack, lent scaring, misshape, skinning, mechanical damage		

2015 Regional Chip Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 14

Harvest Date: September 21

Fertility: 181-125-150-231

Vine Kill Date: August 21st

Days to Vine kill: 99

In-Row Spacing: 9.25 inch

Chipping potatoes comprise a significant portion of Klamath Basin acreage and identification of public varieties suitable for export remains a high priority for Basin producers. Trials were initiated in 2008 and 2009 with funding from the Oregon Potato Commission to identify acceptable chipping varieties for export markets using advanced selections and recently released varieties from the Tri-State, Southwest, North-central, and Eastern breeding programs and have continued annually. In 2015 seven varieties and advanced chipping selections were evaluated for yield, grade, processing quality, and storability to determine their suitability to meet existing export demands for raw product. All field data was collected at the KBREC site. Tubers from each replication were placed in long-term commercial storage with processing evaluations conducted by J&W Walker Farms. Results will be published in 2017 annual summary.

Stand Counts

➤ 30 Day

Slow emergence: All entries had greater than 90% final emergence

Plant and Tuber Growth and Development

➤ Average Tuber Number Per Plant

Most: Snowden (9.9)

Least: AC03433-1W (7.3)

➤ Average Tuber Size (oz.)

Largest: AC03452-2W (6.5)

Smallest: AC05153-1W (3.7)

➤ Undersized Tubers (<4 oz.) cwt/Acre

Most: AC05153-1W (139.7)

Least: AC03433-1W (47.5)

Yield Data

➤ Total Yield (cwt/Acre)

Highest: AC03452-2W (662.7)

Lowest: AC05153-1W (435.7)

➤ Marketable Yield >4 oz. (cwt/Acre)

Highest: AC03452-2W (501.7)

Lowest: AC05153-1W (271.2)

Klamath Basin Potato Variety Development Summary | 2015

➤ **% Marketable Yield >4 oz.**

Highest: Snowden and AC00206-2W (75.0%)

Lowest: AC05153-1W (62%)

Tuber Defect Incidence (40 tuber sample)

➤ **Internal Defects**

Impact Bruise:

Stem End Browning:

Entry	Total Yield		> 4 oz.	< 4 oz.	Culls	Oversize > 14 oz.	Skin color rating (1-5 dark)
	(cwt/A)	STATS**					
Atlantic	469	CD	70	16	8	4	3.4
Snowden	550	B	75	20	2	3	4.0
AC00206-2W	463	D	75	17	5	2	1.6
AC03433-1W	498	BCD	73	10	7	4	2.5
AC03452-2W	663	A	76	8	5	9	1.4
AC05153-1W	436	D	62	32	3	2	1.1
OR09256-2	532	BC	73	20	3	2	3.4
LSD		67					

*Percent values may not total 100% due to rounding








**Entries showing the same letter are not significantly different at the 5% level

Entry	Yield US # 1 (>4 oz.)				External Defects (1-5 none)			
	(cwt/A)	STATS**	%*		Green	Growth crack	Knobs	Shatter
			4-6 oz.	6-14 oz.				
Atlantic	329	BC	36	64	3.8	4.3	4.8	4.8
Snowden	415	AB	46	54	4.3	4.5	5.0	4.6
AC00206-2W	348	BC	40	60	4.1	4.6	5.0	4.3
AC03433-1W	361	BC	35	65	3.9	3.1	4.9	5.0
AC03452-2W	502	A	26	74	3.6	4.5	5.0	4.4
AC05153-1W	271	C	54	46	4.3	4.6	5.0	3.0
OR09256-2	389	B	49	51	3.6	4.5	4.5	4.6
LSD		12						

Entry	Stand %	Average Tuber		Specific Gravity	Internal Defects (%)****					
		Wt. (oz.)	Number tubers/plant		HH	BC	SEB	VD	HB	IB
Atlantic	95.0	5.3	7.5	1.094	0	0	0.0	2.5	7.5	0.0
Snowden	91.0	4.9	10.0	1.088	0	0	2.5	0.0	7.5	5.0
AC00206-2W	96.0	4.5	8.7	1.082	0	0	2.5	0.0	2.5	2.5
AC03433-1W	94.0	5.8	7.4	1.086	0	0	12.5	2.5	2.5	2.5
AC03452-2W	99.0	6.6	8.3	1.075	0	0	0.0	0.0	0.0	2.5
AC05153-1W	95.0	3.8	9.9	1.084	0	0	2.5	0.0	0.0	0.0
OR09256-2	98.0	4.5	9.8	1.093	0	0	0.0	0.0	5.0	5.0

****Internal Defects: HH=hollow heart, BC= Brown Center, SEB=stem end browning, VD= vascular discoloration, HB= hard bite, IB= impact bruise

Entry	Rhizoc (1-5 ex.)	Russeting (1-5 hvj)	Shape (1-5 long)	Size uniformity (1-5 ex.)	Shape uniformity (1-5 ex.)	Eye Depth (1-5 shal.)
Atlantic	3.9	3.0	2.6	3.4	3.6	4.1
Snowden	1.0	3.6	2.1	3.9	3.6	3.6
AC00206-2W	4.3	2.0	1.5	4.3	4.3	4.0
AC03433-1W	4.6	2.3	1.9	3.8	3.3	4.3
AC03452-2W	4.5	1.5	2.5	3.4	3.3	3.9
AC05153-1W	4.3	1.4	1.8	4.0	4.1	4.3
OR09256-2	4.0	3.8	2.3	4.1	3.6	4.1

Entry	2015 KBREC- Regional Chip Comment	Entry	2015 KBREC- Regional Chip Comment
Atlantic		Chipeta	
	irregular shape and size, mice, folded bud end, low set, lent scaring, pears, russeting		folded bud end x2, dark x2, flat, small, russeting, sticky stolon x2
AC00206-2W		AC03433-1W	
	nice x2, round x2, lent scaring x2, russeting, blotchy, ok, looks good		folded bud end, sticky stolon, some pink, dark ugly, low set, growth crack x2, lent scaring x2, misshape
AC03452-2W		AC05153-1W	
	folded bud end x4, misshape x2, smooth x3, food size, flat x2, dents		light skin, flat, lent scaring x3, small x2, blotchy, shatter bruise, mice
OR09256-2			
	uneven skin, pears, mechanical damage x2, dark, misshape, pointy stem end		

2014 Regional Chip Processing Results

The processing results of the 2014 Chip Variety Trial are included in the following graphs. Potatoes were processed in April 2015 by Baley Trotman Farms.

Likewise, 2015 processing data will be included in the 2016 report.

Entry	Specific Gravity Field ¹	Fry Color	TDF % ²	Sprouts	Sugars ³	
					Glucose	Sucrose
Atlantic	1.088	4.00	0.13	2.08	0.02	0.40
Chipeta	1.085	3.00	0.12	14.45	0.01	0.33
A02138-2	1.091	3.75	0.22	2.08	0.05	0.52
AC00206-2W	1.082	3.75	0.24	4.23	0.00	0.36
AC03433-1W	1.081	3.75	0.06	6.30	0.02	0.21
AC03452-2W	1.079	3.50	0.09	8.75	0.01	0.24
AC05153-1W	1.088	4.00	0.05	0.00	0.01	0.27

¹Specific gravity measured out of field and after storage for 2 months at 50^o F.

² % Total Defects = % of finished chips out of grade; includes internal & external defects (e.g. HH, Green, Dark Color, etc.)

³Percent fresh weight basis measured after storage for 2 months at 50^o F.

2014 State Chip Processing Results

Entry	Specific Gravity Field ¹	Fry Color	TDF % ²	Sprouts	Sugars ³	
					Glucose	Sucrose
Atlantic	1.088	4.0	0.147	0.0	0.0	0.4
Chipeta	1.091	3.8	0.117	10.0	0.0	0.3
OR09253-1	1.109	3.8	0.206	2.2	0.0	0.5
OR09256-2	1.087	4.0	0.052	7.3	0.0	0.4
AOR00242-2	1.084	4.0	0.194	0.0	0.0	0.3
AOR09032-5	1.090	4.0	0.426	0.0	0.1	0.2
AOR09034-3	1.088	3.8	0.171	0.0	0.0	0.3

¹Specific gravity measured out of field and after storage for 2 months at 500 F.

² % Total Defects = % of finished chips out of grade; includes internal & external defects (e.g. HH, Green, Dark Color, etc.)

³Percent fresh weight basis measured after storage for 2 months at 500 F.

Klamath Basin Research and Extension Center

Potato Research Team

Brian A. Charlton

Assistant Professor

Principal Investigator

Brian.A.Charlton@oregonstate.edu

Prepared December 2015 by:

Nichole A. Baley

Faculty Research Assistant

Nichole.Baley@oregonstate.edu

Oregon State University

Klamath Basin Research and Extension Center

<http://oregonstate.edu/dept/kbrec/>

6941 Washburn Way

Klamath Falls, OR 97603

(541) 883-4590; Fax (541)883-4596

Oregon State University offers educational programs, activities, and materials without discrimination based on age, color, disability, gender identity or expression, material status, national origin, race, religion, sex, sexual orientation, or veteran's status. Oregon State University is an Equal Opportunity Employer.