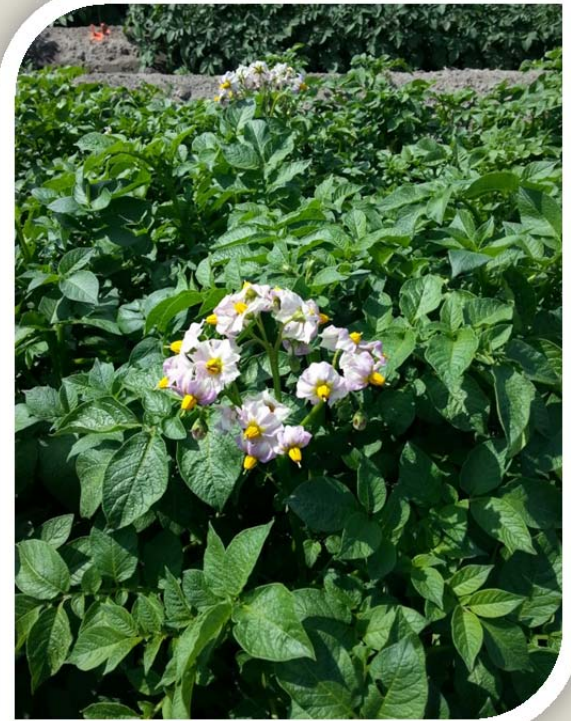


2016

Klamath Basin Potato Variety Development Summary

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



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Klamath Basin Res. & Ext. Center

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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>

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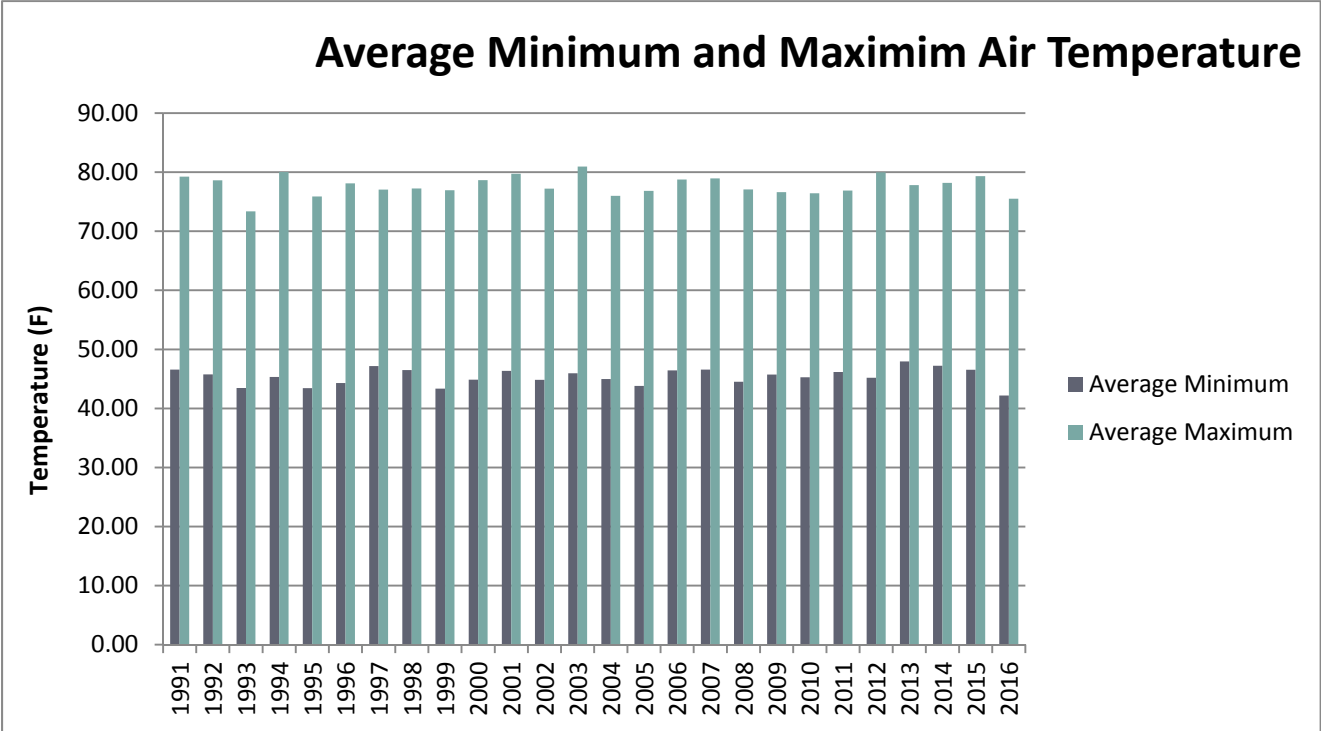
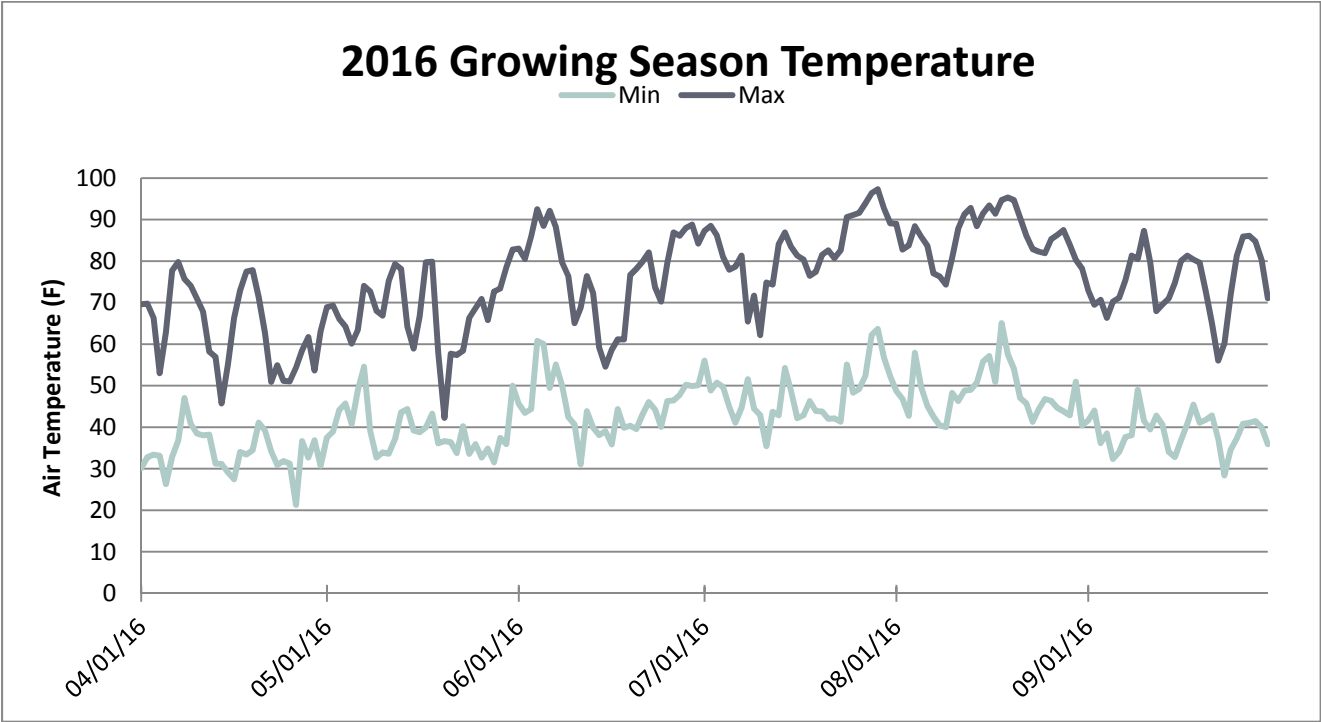
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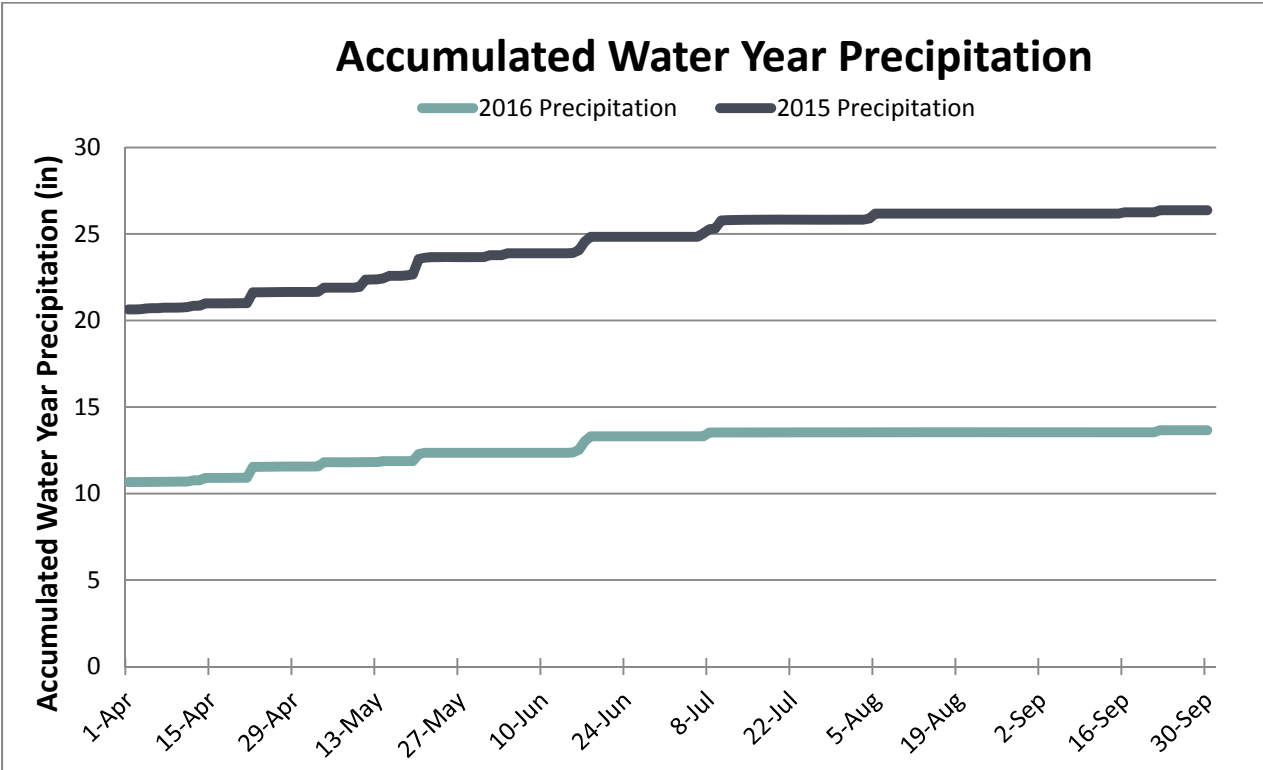
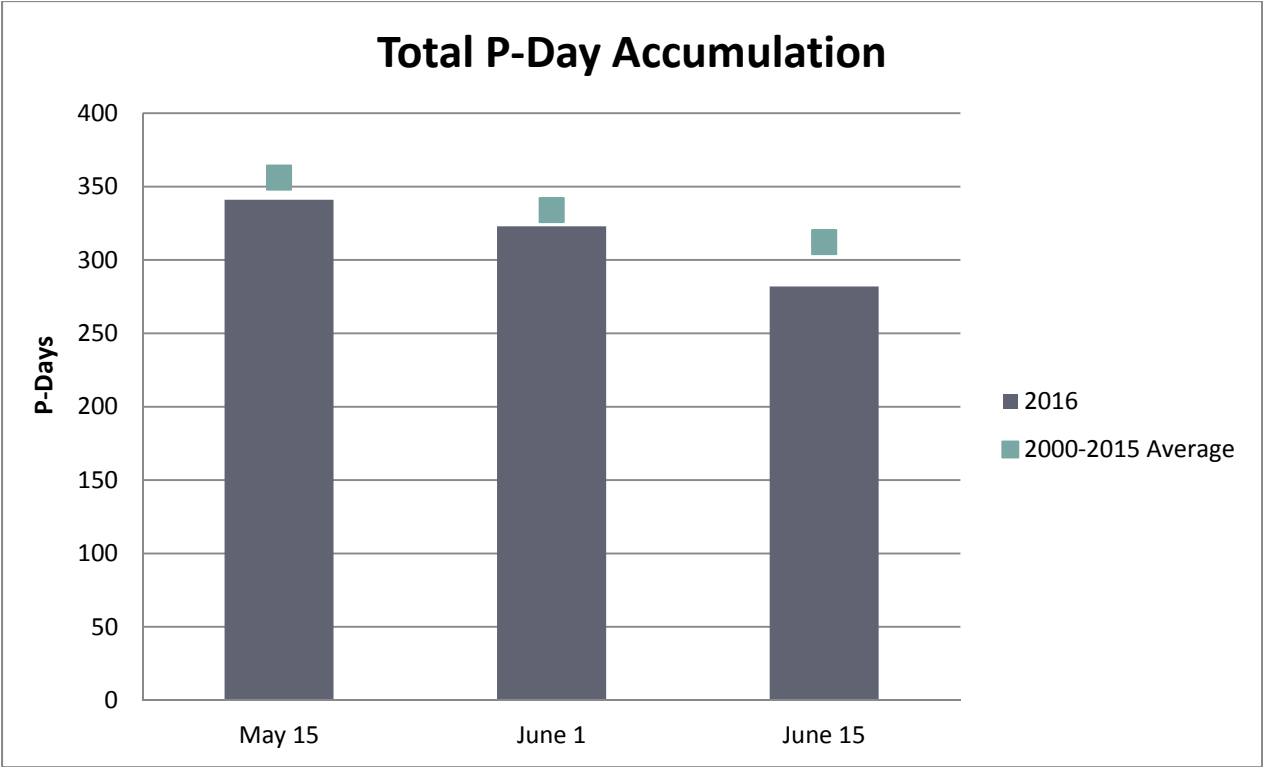
Commissions and Associations

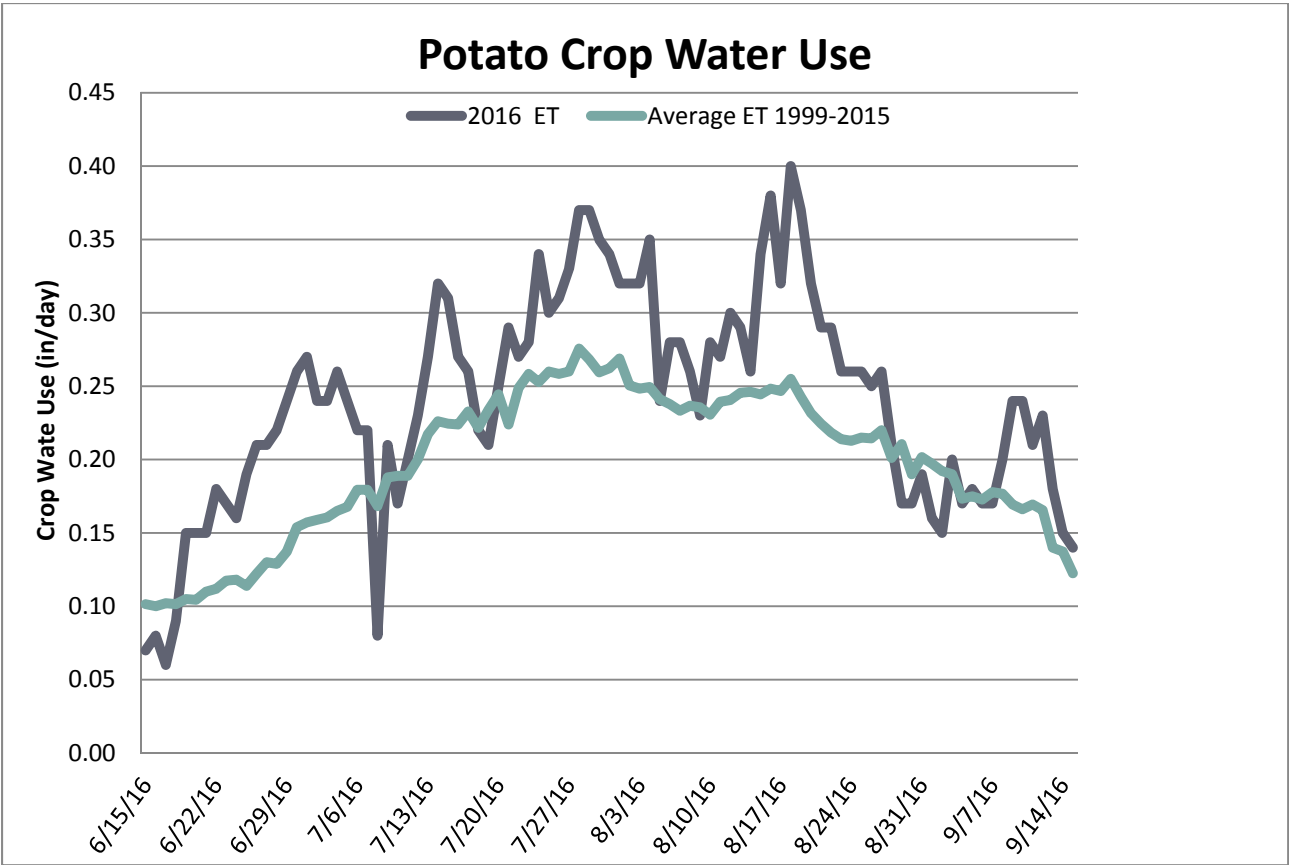
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Weather Data

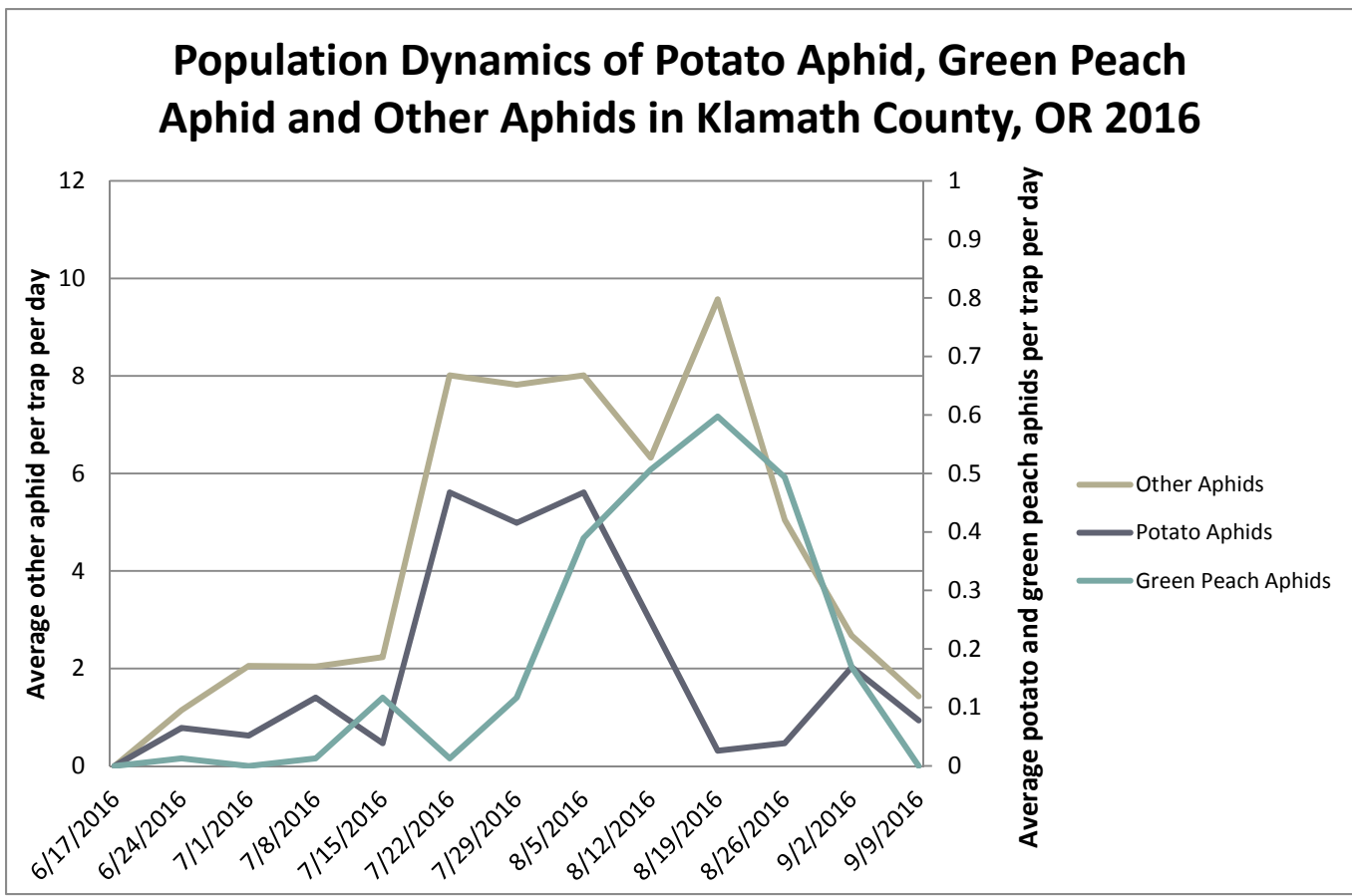




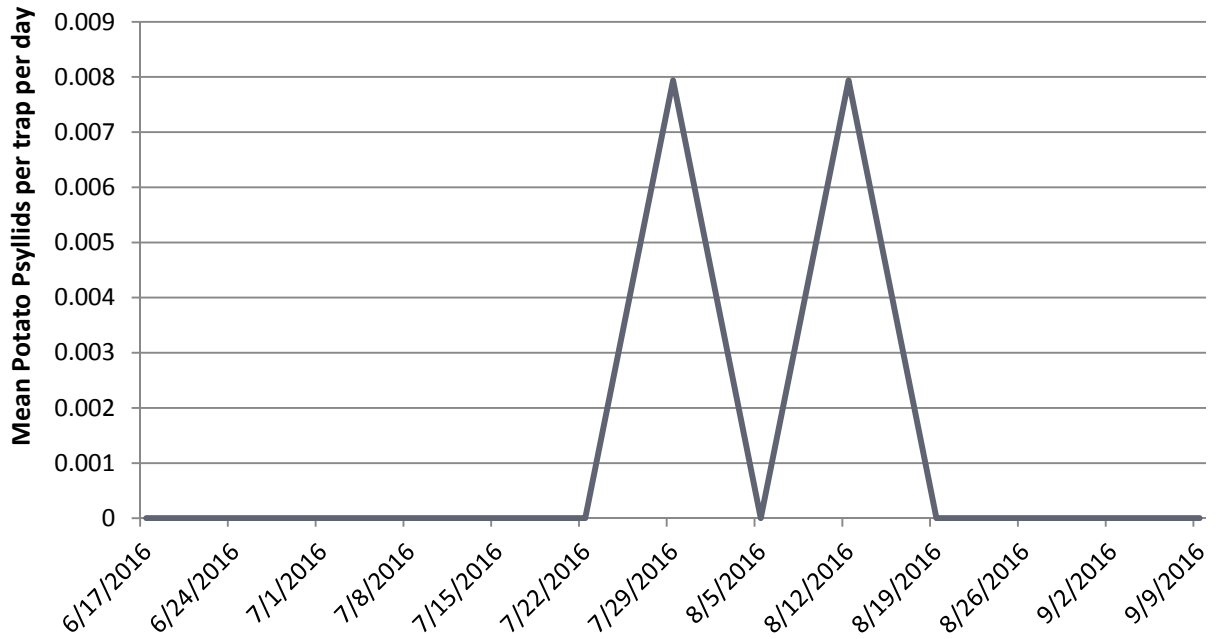


2016 Insect Trapping Results

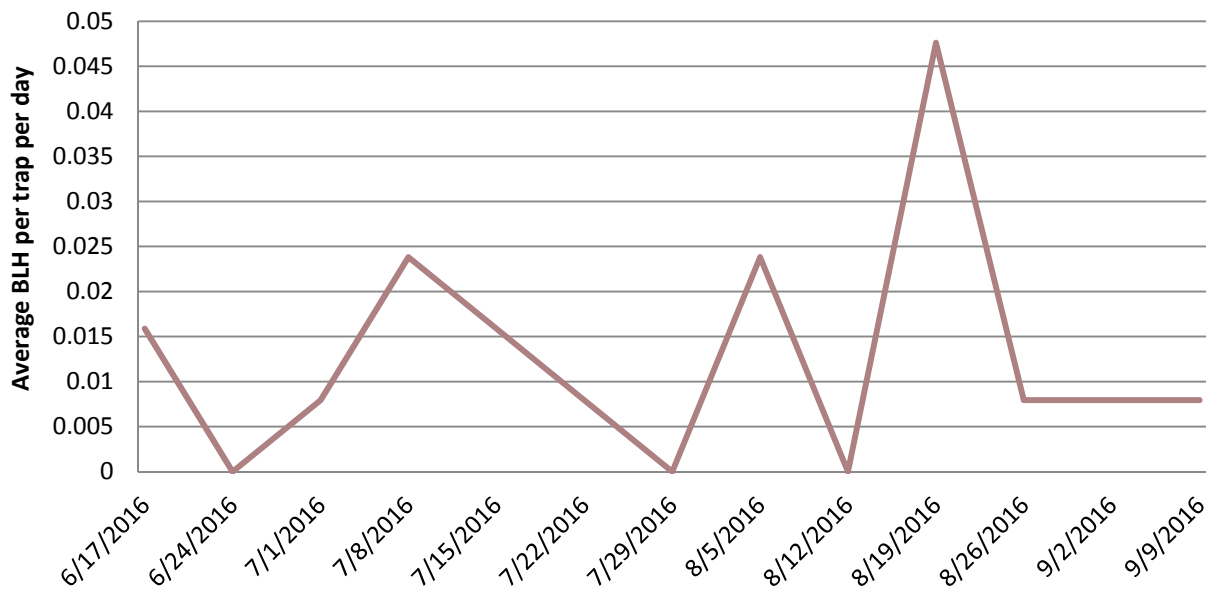
Potato tuberworm was first detected in the Klamath Basin in late August of 2005. KBREC initiated an extensive trapping program the following year (2006) and have continued this effort annually. In 2009, we expanded our trapping efforts to include aphids, leafhoppers, and psyllids. Eighteen Delta traps (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.

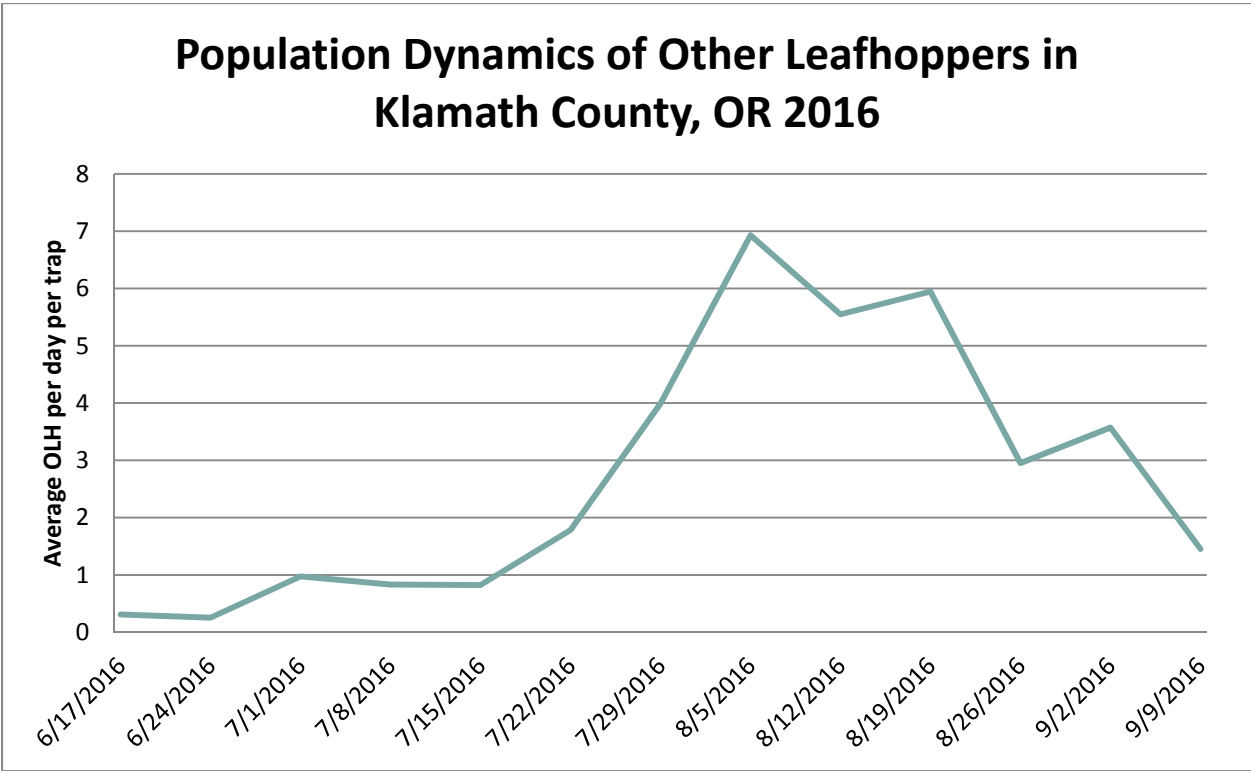


Population Dynamics of Potato Psyllids in the Klamath Basin, 2016



Population Dynamics of Beet Leafhoppers in Klamath County, OR 2016





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)
	AC99 375 -1RU	Cross Number (375)
	AC99375-1 R U	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	L ow S ugar
P/P	P urple skin/ P urple flesh
R	R ed skin
R/R	R ed skin/ R ed flesh
R/Y	R ed skin/ Y ellow flesh
Ru	R usset
W/Y	W hite skin/ Y ellow flesh
LB	L ate 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 Rock Creek Ranch five miles west of Running Y Ranch on May 29, 2015. Located about 20 miles west of Klamath Falls, soils are approximately 6.1 percent organic matter and a pH of 6.3. 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	10,006	122	1.21
Oregon State University	Disease resistance, mixed type	14,190	159	1.12
North Dakota	Disease resistance, russet	3,239	23	0.71
ARS Aberdeen, ID	Disease resistance, russet	34,093	747	2.19
Cornell University, NY		3,341	61	1.83
Total		64,528	1,112	1.72

Preliminary Yield (PYT-1) Russet Screening

Seven hundred twenty one (721) selections from 2016 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 6, 2016. A team of about 20 research and industry personnel selected 80 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 2017.

Preliminary Yield (PYT-1) Specialty Screening

Sixty six (66) selections from 2015 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 6, 2016. A team of about 20 research and industry personnel selected 9 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 2017.

Preliminary Yield (PYT-1) Chip Screening

Ninety one (91) chip selections from 2015 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 6, 2016. Research and industry personnel selected 27 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.

2016 Replicated Trial Cultural Information

Location:	Klamath Falls, OR
Soil Type:	Poe fine sandy loam, pH 6.8
Planting Date:	5/21-5/23
Vine Kill Date:	August 17 th : Mechanical (vine chop)
Harvest Date:	September 28 th - 30th
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:	184-158-208-236 Sulfur + 2.25 Boron
Weed Control:	Prowl, Matrix, Outlook
Insecticides:	Leverage 360
Fungicides:	Ridomil/Bravo, Tanos-
Nematode Control:	Spring 2016 application of Telone II (15GPA)

2016 Preliminary Yield (PYT-2) Russet Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 22

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 108

Fertility: 184-158-208-236 Sulfer+2.25 Boron 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 26 new entries. The Oregon Potato Variety Development Team chose to advance 8 selections to the Statewide Russet Trial in 2017 and discarded the remaining selections due to poor performance. **Only retained selections are listed in the following tables.**

Clone	Female Parent	Male Parent
AOR11075-2	A06016-3TE	A05084-11
AOR11129-2	A06140-1	A02060-3TE
AOR11136-5	A06140-1	Premier Russet
AOR11395-4	AO02183-2	PA08NCK1-1
AOR12144-1	AF3317-15	ND028673B-2Russ
AOR12403-2	Premier Russet	AC96052-1RU
AOR10633-1	A03974-1	A98345-1
AOR11097-3	A06018-16TE	A06026-13T

2016 Statewide Russet Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 109

Fertility: 184-158-208-236 Sulfur+2.25 Boron

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: POR13EA113-1 (76%)

➤ **45 Day:** All entries had greater than 92% final emergence

Plant and Tuber Growth and Development

➤ **Average Tuber Number Per Plant**

Most: AOR10594-3 and OR12133-10 (9)

Least: OR12316-1 (4), POR13EA113-1 (5)

➤ **Average Tuber Size (oz.)**

Largest: OR12316-1 (12), OR11042-1 (8.9)

Smallest: COA10081-2 (4.8), AOR11217-3 (4.9)

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

Most: COA10081-2 (97), AOR11217-3 (88)

Least: OR12316-1 (12), AOR07781-5 (25)

Yield and Economic Data

➤ **Total Yield (cwt/Acre)**

Highest: AOR06576-1 (610), AOR10625-2 (597)

Lowest: POR13EA113-1 and AOR11911-1 (354)

➤ **US No. 1 Yield (cwt/Acre)**

Highest: AOR06576-1 (498), AOR10594-3 (491)

Lowest: OR12135-1 (222), POR13EA113-1 (338)

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

Highest: AOR10140-1 (390), AOR06576-1 (389)

Lowest: AOR11217-3 (164), OR12135-1 and AOR11911-1 (187)

➤ **Gross Return (\$/acre)**

Fresh Market Highest: AOR10140-1

Fresh Market Lowest: AOR11217-3

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

➤ **Hollow Heart**

Notable Defects: OR12135 (1%)

➤ **Vascular Discoloration**

Notable Defects: POR12NCK50-1, AOR11217-4 (2.8)

➤ **Stem End Browning**

Notable Defects: POR12NCK50-1 (2.8)

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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	472	EFGHIJKL	84	5	10	1	68	320
Russet Burbank	543	ABCDEF	76	7	16	1	57	311
Russet Norkotah	446	IJKL	76	7	12	5	62	275
AOR06576-1	611	A	82	4	12	2	63	386
AOR07821-1	546	ABCDE	76	9	12	3	62	339
AOR08032-1	495	DEFGHIJK	81	3	15	1	51	250
AOR07781-5	418	KLM	66	12	14	9	57	236
AOR10214-2	446	IJKL	66	15	10	9	57	255
POR12NCK50-1	516	BCDEFGHI	74	6	19	1	51	262
AOR08540-1	559	ABCD	78	2	19	1	57	320
OR10006-2	589	AB	75	8	14	3	57	338
COA10081-2	426	JKLM	73	2	24	1	45	193
AOR11018-2	419	KLM	69	7	20	4	53	224
AOR11037-2	463	GHIJKL	72	6	16	5	52	240
AOR11126-1	449	IJKL	80	6	13	1	64	286
AOR11132-1	582	AB	71	4	19	7	60	349
AOR11141-2	504	CDEFGHI	75	8	13	4	58	293
AOR10140-1	543	ABCDEF	82	5	7	6	72	390
AOR10204-3	535	ABCDEFGH	81	7	8	4	67	359
AOR11217-3	413	LM	67	7	26	0	40	164
AOR11217-4	468	GHIJKL	74	8	18	1	49	230
OR12316-1	499	DEFGHI	55	11	8	26	53	263
AOR09146-1	538	ABCDEFGF	73	5	14	9	60	322
AOR10594-3	572	ABCD	86	1	13	0	59	337
AOR10595-1	470	EFGHIJKL	74	5	17	4	54	255
AOR11908-1	541	ABCDEFGF	63	13	18	6	52	281
AOR11911-1	396	LM	61	25	13	1	47	187
OR11042-1	499	DEFGHI	79	5	11	5	72	359
OR12133-10	579	ABC	73	6	19	2	50	292
OR12135-1	404	LM	55	12	21	12	46	187
OR12307-1	457	HIJKL	71	6	16	7	59	268
POR13EA113-1	354	M	67	7	10	15	55	195
AOR10625-2	598	A	64	12	17	8	51	305
LSD (.05)		78						

*Percent values may not total 100% due to rounding

Klamath Basin Potato Variety Development Summary | 2016

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

***Entries retained for further testing in 2017

Entry	US # 1 Yield					6-10 oz	Internal Defects (%)			
	>4 oz.	STATS**	%*			Specific	6-10 oz. tubers****			
	(cwt/A)		4-6 oz.	6-10 oz	>10 oz	Gravity	HH	IB	SEB	VD
Ranger Russet	396	CDEFGH	19	37	44	1.090	0	2	0	1
Russet Burbank	412	CDEF	24	45	31	1.089	0	1	0	0
Russet Norkotah	340	FGHIJK	19	37	44	1.077	0	0	0	1
AOR06576-1	499	A	23	48	29	1.085	0	0	0	0
AOR07821-1	417	CDE	19	43	38	1.095	0	2	1	0
AOR08032-1	399	CDEFG	37	44	19	1.090	0	0	1	2
AOR07781-5	274	KLM	14	37	50	1.093	0	1	1	0
AOR10214-2	293	JKLM	13	36	51	1.097	0	2	1	1
POR12NCK50-1	384	CDEFGHI	32	43	25	1.095	0	1	3	3
AOR08540-1	436	ABC	27	46	27	1.096	0	1	1	0
OR10006-2	441	ABC	24	38	38	1.085	0	1	0	0
COA10081-2	313	IJKL	38	49	13	1.088	0	1	0	0
AOR11018-2	290	JKLM	23	40	37	1.091	0	1	1	0
AOR11037-2	335	GHIJK	28	45	27	1.097	0	0	1	0
AOR11126-1	358	DEFGHIJ	20	43	37	1.096	0	1	1	2
AOR11132-1	411	CDEF	15	34	51	1.086	0	1	0	0
AOR11141-2	376	CDEFGHI	22	36	42	1.086	0	1	1	0
AOR10140-1	443	ABC	12	36	52	1.089	0	1	1	0
AOR10204-3	432	ABC	17	45	38	1.082	0	0	0	0
AOR11217-3	277	KLM	41	44	15	1.099	0	0	0	1
AOR11217-4	344	EFGHIJK	33	41	26	1.098	0	0	1	3
OR12316-1	276	KLM	4	26	70	1.081	0	3	1	0
AOR09146-1	392	CDEFGH	18	38	44	1.098	0	1	0	0
AOR10594-3	492	AB	31	44	25	1.102	0	1	1	0
AOR10595-1	347	EFGHIJK	27	45	28	1.087	0	1	0	0
AOR11908-1	341	FGHIJK	18	33	49	1.094	0	0	1	1
AOR11911-1	243	LM	23	33	44	1.097	0	0	1	1
OR11042-1	395	CDEFGH	9	34	57	1.080	0	2	1	0
OR12133-10	422	BCD	31	43	26	1.089	0	1	1	2
OR12135-1	222	M	16	35	50	1.095	1	1	2	1
OR12307-1	326	HIJK	18	38	44	1.088	1	2	2	1
POR13EA113-1	239	M	18	45	37	1.093	0	1	0	0
AOR10625-2	384	CDEFGHI	21	40	40	1.082	0	1	1	1
LSD (.05)		74								

Klamath Basin Potato Variety Development Summary **2016**

*Percent values may not total 100% due to rounding

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

***Entries retained for further testing in 2017

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

Entry	Stand %	Average Tuber		Growth Cracks (1-5 best)	Rhizoc (1-5 none)	Skin Color (1-5 dark)	Russeting (1-5 hv)	Shape (1-5 long)	Shape Uniformity (1-5 best)	Eye Depth (1-5 shal.)
		Wt. (oz.)	No. tubers/plant							
Ranger Russet	99	7.5	6	4.4	4.6	4.1	4.3	5.0	3.4	3.8
Russet Burbank	100	5.8	8	3.9	4.5	4.9	5.0	4.3	3.0	3.6
Russet Norkotah	100	7.0	5	4.3	4.9	4.9	4.8	4.6	3.8	3.9
AOR06576-1	100	6.4	8	4.4	4.9	3.8	3.8	4.3	3.5	4.1
AOR07821-1	99	7.0	7	4.1	4.4	4.8	5.0	4.4	3.3	4.1
AOR08032-1	100	5.7	7	4.9	4.8	4.4	4.3	4.0	4.3	3.9
AOR07781-5	99	7.9	5	4.0	4.8	4.4	4.6	4.5	3.0	3.8
AOR10214-2	99	7.9	5	3.5	3.3	5.0	5.0	4.6	3.3	4.4
POR12NCK50-1	100	5.6	8	3.9	4.8	4.3	4.5	4.4	3.6	4.1
AOR08540-1	100	5.9	8	5.0	5.0	4.3	4.5	4.3	4.1	3.9
OR10006-2	99	6.7	8	4.5	4.3	4.0	4.0	5.0	4.0	4.1
COA10081-2	100	4.9	7	4.9	4.4	4.3	4.5	3.4	4.1	4.1
AOR11018-2	100	5.5	6	3.9	4.8	4.5	4.5	4.9	2.9	3.3
AOR11037-2	99	5.9	7	4.5	2.1	3.5	3.8	4.8	3.5	4.0
AOR11126-1	100	6.5	6	4.4	4.0	4.1	4.3	4.0	3.0	3.8
AOR11132-1	100	8.0	6	4.3	2.9	3.4	3.4	5.0	2.8	4.1
AOR11141-2	99	7.0	6	4.4	4.5	4.0	4.1	4.4	3.5	3.9
AOR10140-1	104	8.6	5	4.6	4.8	4.4	4.3	4.6	3.9	4.4
AOR10204-3	99	7.5	6	4.0	4.5	4.5	4.6	4.1	3.9	3.9
AOR11217-3	100	4.9	7	3.3	3.3	4.4	4.5	3.6	3.8	4.4
AOR11217-4	100	5.6	7	4.0	3.6	4.6	4.6	4.6	3.4	4.5
OR12316-1	100	12.1	4	4.4	3.8	4.4	4.9	5.0	2.6	4.4
AOR09146-1	99	7.3	6	4.4	3.1	4.3	4.3	4.0	3.8	4.0
AOR10594-3	99	5.5	9	5.0	2.4	3.1	3.1	4.3	4.0	3.9
AOR10595-1	97	6.0	7	4.9	4.1	3.3	3.4	4.8	3.6	4.4
AOR11908-1	99	7.7	6	3.6	3.8	4.3	4.3	4.8	3.0	3.3
AOR11911-1	94	7.1	5	2.0	3.6	5.0	5.0	4.0	3.0	3.8
OR11042-1	100	9.0	5	4.8	5.0	4.6	4.8	4.8	3.8	3.9
OR12133-10	100	5.8	9	4.4	1.8	3.1	3.1	4.8	3.1	4.5
OR12135-1	99	6.8	5	2.9	4.8	4.3	4.5	4.8	3.6	4.5
OR12307-1	100	7.2	5	4.4	3.5	4.0	4.0	5.0	3.5	4.5
POR13EA113-1	92	7.1	5	4.8	3.6	4.9	5.0	5.0	3.9	4.8
AOR10625-2	100	6.7	8	2.6	1.9	3.4	3.4	4.1	1.6	2.6

***Entries retained for further testing in 2015

Entry	2016 KBREC- Statewide Russet Comments
Ranger Russet	some crooks, long skinny typy x3
Russet Burbank	misshaped, knobs, skinning, long, 1 rep long and typy
Russet Norkotah	typy, really nice, a few misshapes, big
AOR06576-1	process only, TNC, shatter bruise, impact bruise, small round plump
AOR07821-1	dark, long, flat x 2, dents, rough hide, dark, 1 rep blocky typy fresh
AOR08032-1	typy, small, fresh, TNC, skinny
AOR07781-5	TNC, blocky, mice damage, irregular size and shape,
AOR10214-2	really dark, heavy hide, no eyes, stitching
POR12NCK50-1	small, fresh potential, typy, some growth cracks and TNC
AOR08540-1	typy, nice fresh, keep, some skinning
OR10006-2	big long typy blocky, some crooks and pointy stem ends and crooks
COA10081-2	nice hide, round, small
AOR11018-2	fresh, typy, keep deep eyes, crooks, green
AOR11037-2	irregular size, long, process only, impact bruise, lent. Scaring
AOR11126-1	Pointy stem end x 3, rhizoc, small round, pears
AOR11132-1	long, process only, irregular size and shape x2, culls, TNC
AOR11141-2	typy, blocky nice, nice skin, some bulgy eyes and off types
AOR10140-1	big long, fresh potential, mechanical damage, sticky stolon x 2 typy x 3
AOR10204-3	fresh potential, plumpy, typy, blocky nice keep
AOR11217-3	fresh potential, skinning x 3, small x 3,
AOR11217-4	flat, skinning x2, process and fresh potential, mechanical damage
OR12316-1	big, knobs, popeyes, drop, skinning
AOR09146-1	Plumpy, typy, fresh potential, Rhizoc
AOR10594-3	process only, TNC x3, Rhizoc X 2,
AOR10595-1	irregular size, process only, impact bruise, dented
AOR11908-1	blocky, crooks x 3, growth cracks, misshapes
AOR11911-1	short, round, growth cracks x4, dark, no yield
OR11042-1	blocky x 4, typy, fresh, few rotten
OR12133-10	Process only, lenticel scaring x4, some misshapes and pointy stem ends
OR12135-1	fresh potential, blocky, growth cracks x 3, nice

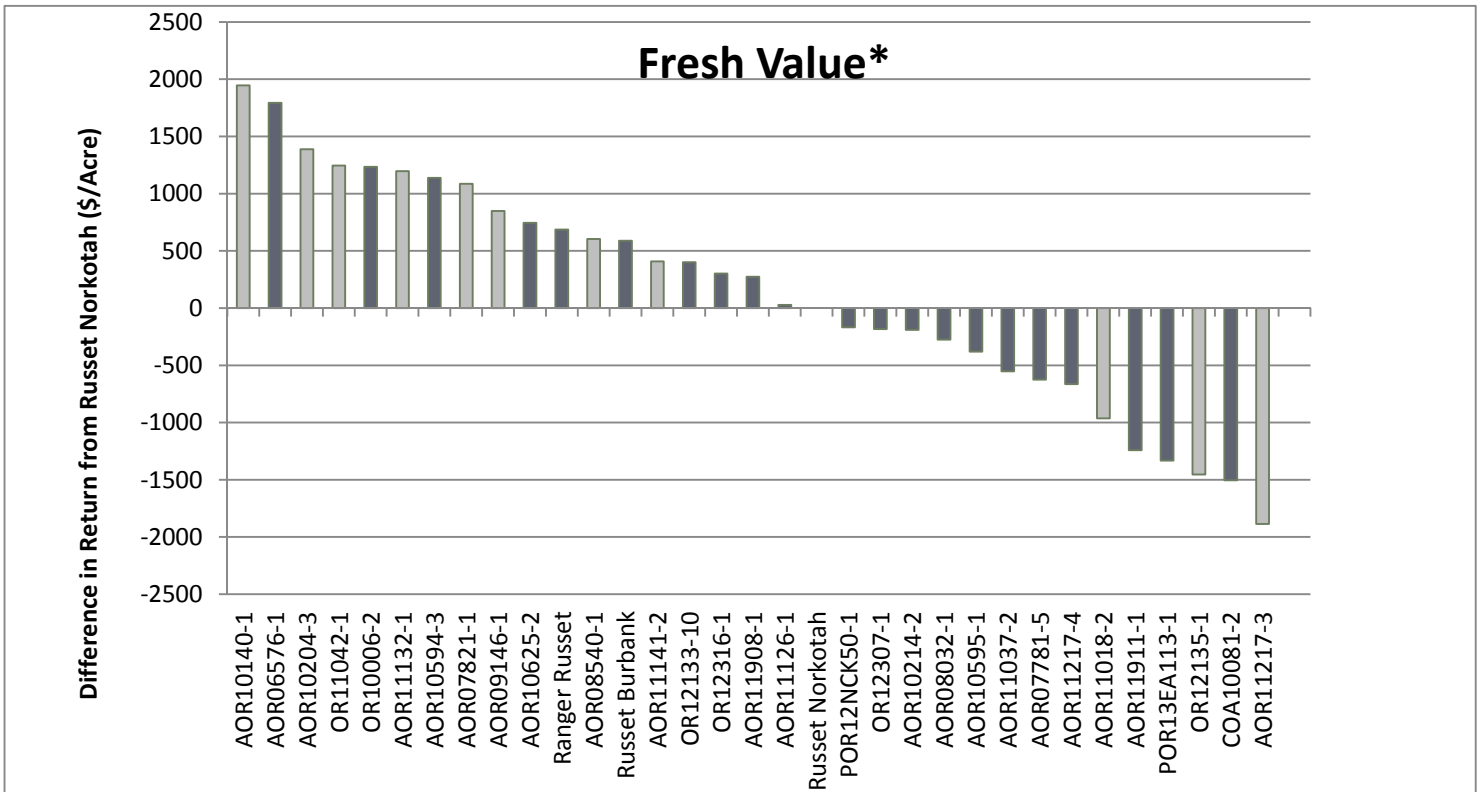
OR12307-1	irregular size x 2, dingy skin, TNC x2, crooks and misshapes
POR13EA113-1	bulgy eyes x2, dark, heavy russetting, long
AOR10625-2	big, ugly, drop, misshapes x 3, irregular size and shape, Rhizoc

Entries Retained for Further Evaluation in 2017

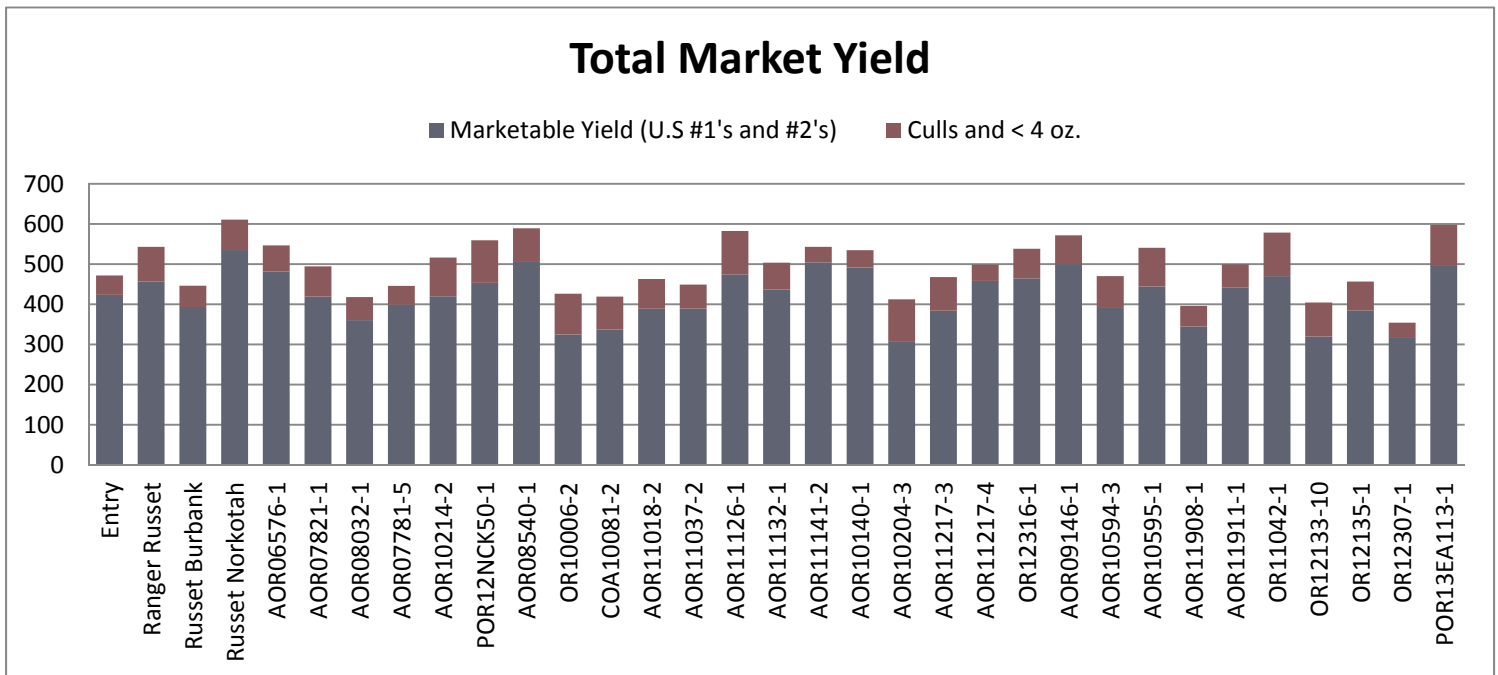
Entry	2016 KBREC- State Russet Comment	Entry	2016 KBREC- State Russet Comment
Ranger Russet 	some crooks, long skinny typy x3	Russet Burbank 	misshaped, knobs, skinning, long, 1 rep long and typy
Russet Norkotah 	typy, really nice, a few misshapes, big	POR12NCK50-1 	small, fresh potential, typy, some growth cracks and TNC
AOR08540-1 	typy, nice fresh, keep, some skinning	AOR11018-2 	fresh, typy, keep deep eyes, crooks, green
AOR11141-2 	typy, blocky nice, nice skin, some bulgy eyes and off types	AOR10140-1 	big long, fresh potential, mechanical damage, sticky stolon x 2 typy x 3
AOR10204-3 	fresh potential, plumpy, typy, blocky nice keep	AOR11217-3 	fresh potential, skinning x 3, small x 3
OR12133-10			



Process only, lenticel scaring
x4, some misshapes and
pointy stem ends



*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.



2016 Tri-State Russet Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 23

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 107

Fertility: 184-158-208-236 Sulfer+2.25 Boron

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: AOR07821-1 (84%)

➤ **45 Day**

All entries had greater than 96% final emergence

Plant and Tuber Growth and Development

➤ **Average Tuber Number Per Plant**

Most: A07061-6 and A071012-4BF (9)

Least: AOR07781-5 (5), A10214-2TE (5)

➤ **Average Tuber Size (oz.)**

Largest: AOR07781-5 (7.5), AOR07821-1 (8.1)

Smallest: A07088-6 (4.0), A10210-7TE (4.2)

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

Most: A10210-7TE (129), A071012-4BF (127)

Least: AOR07781-5 (33), A10214-2TE (36)

Yield and Economic Data

➤ **Total Yield (cwt/Acre)**

Highest: A07061-6 (574), AOR06576-1 (569)

Lowest: A06403-12 (385), A06030-23 (404)

➤ **US No. 1 Yield (cwt/Acre)**

Highest: A07061-6 (445), AOR06576-1 (569)

Lowest: A06403-12, A10210-7TE (242),

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

Highest: AOR06576-1 (337)

Lowest: A06403-12 (128)

- **Gross Return (\$/acre)**
 Fresh Market Highest: A06030-23
 Fresh Market Lowest: A06021-1T

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

- **Hollow Heart**
 Notable Defects: Russet Norkotah (8%)
- **Stem End Browning**
 Notable Defects: A07088-6, A01010-1 (5%)

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*				% of Total Yield	(cwt/A)
Ranger Russet	480	BCDE	78	5	13	4	62	295
Russet Burbank	490	ABCDE	80	8	12	0	59	288
Russet Norkotah	469	CDEF	79	3	14	3	62	289
A06030-23	404	EF	78	5	17	0	54	217
A061070-3CSR	462	CDEF	86	2	10	3	68	313
A06403-12	385	F	63	7	31	0	33	128
A07061-6	574	A	78	2	20	0	52	297
A07088-6	410	DEF	67	2	31	0	34	140
A071012-4BF	511	ABC	67	2	29	2	35	176
A08009-2TE	435	CDEF	79	5	15	1	58	251
A08422-2Vrsto	434	CDEF	74	2	22	2	48	208
A10210-7TE	443	CDEF	61	6	32	1	31	139
A10214-2TE	441	CDEF	77	9	12	2	63	278
AOR06576-1	569	AB	77	4	17	2	59	337
AOR07781-5	428	CDEF	70	10	15	4	57	246
AOR07821-1	503	ABCD	68	15	12	5	56	283
AOR08032-1	430	CDEF	82	4	13	1	58	248
A06021-1T	416	DEF	81	2	17	0	59	247
A01010-1	468	CDEF	84	7	9	0	59	278
LSD (.05)		93						

*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 | 2016

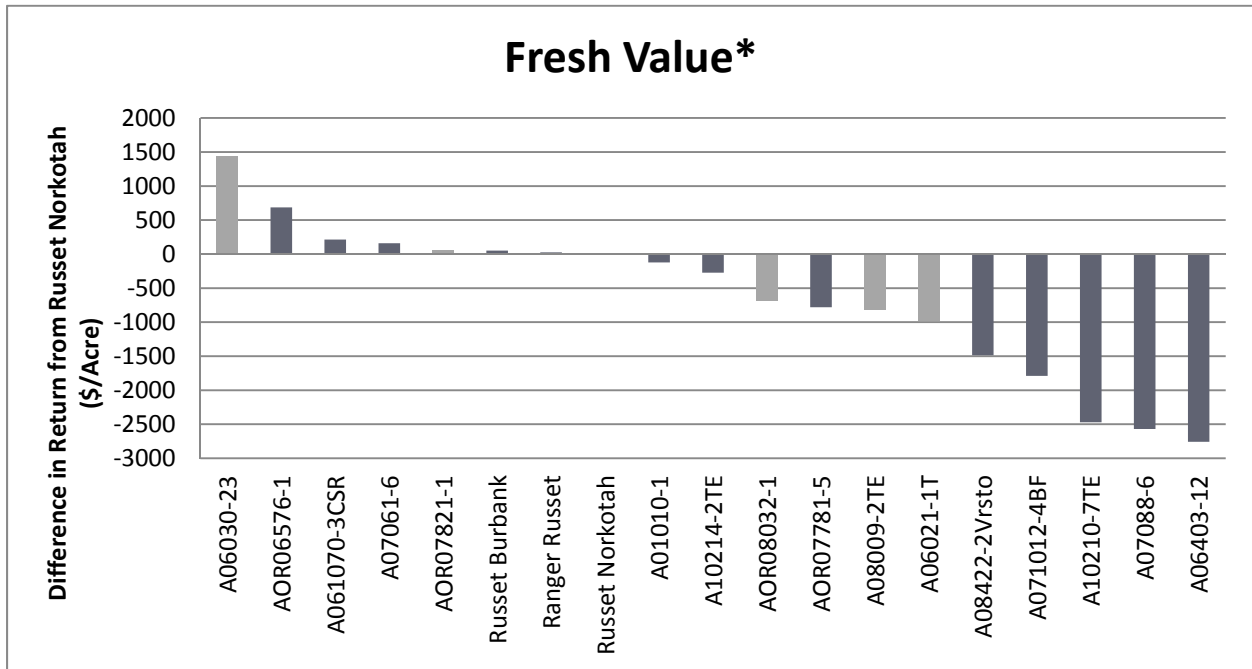
Entry	US # 1 Yield					6-10 oz. Specific Gravity	Internal Defects (%) 10-14 oz. tubers***			
	>4 oz. (cwt/A)	STATS**	%*				HH	IB	SEB	VD
			4-6 oz.	6-10 oz.	>10 oz.					
Ranger Russet	376	ABC	22	41		1.098	0	5	3	0
Russet Burbank	392	ABC	27	38		1.092	5	3	0	10
Russet Norkotah	372	ABC	22	29		1.080	8	3	0	3
A06030-23	315	BCDE	31	42		1.097	0	8	0	5
A061070-3CSR	396	AB	21	43		1.092	0	10	0	0
A06403-12	242	E	47	38		1.097	0	3	0	0
A07061-6	445	A	33	39		1.085	0	8	0	0
A07088-6	274	DE	49	38		1.102	0	5	5	5
A071012-4BF	340	BCD	48	38		1.103	0	8	0	3
A08009-2TE	343	BCD	27	48		1.100	0	0	0	13
A08422-2Vrsto	322	BCDE	35	45		1.092	3	5	0	0
A10210-7TE	272	DE	49	35		1.095	0	3	0	0
A10214-2TE	341	BCD	19	38		1.088	0	3	0	0
AOR06576-1	441	A	24	43		1.090	0	8	0	3
AOR07781-5	301	CDE	18	35		1.097	0	3	0	0
AOR07821-1	341	BCD	17	35		1.098	0	8	3	0
AOR08032-1	352	ABCD	30	36		1.094	0	3	3	3
A06021-1T	339	BCD	27	48		1.091	0	0	3	0
A01010-1	393	ABC	29	43		1.092	0	0	5	5
LSD (.05)		94								

*Percent values may not total 100% due to rounding

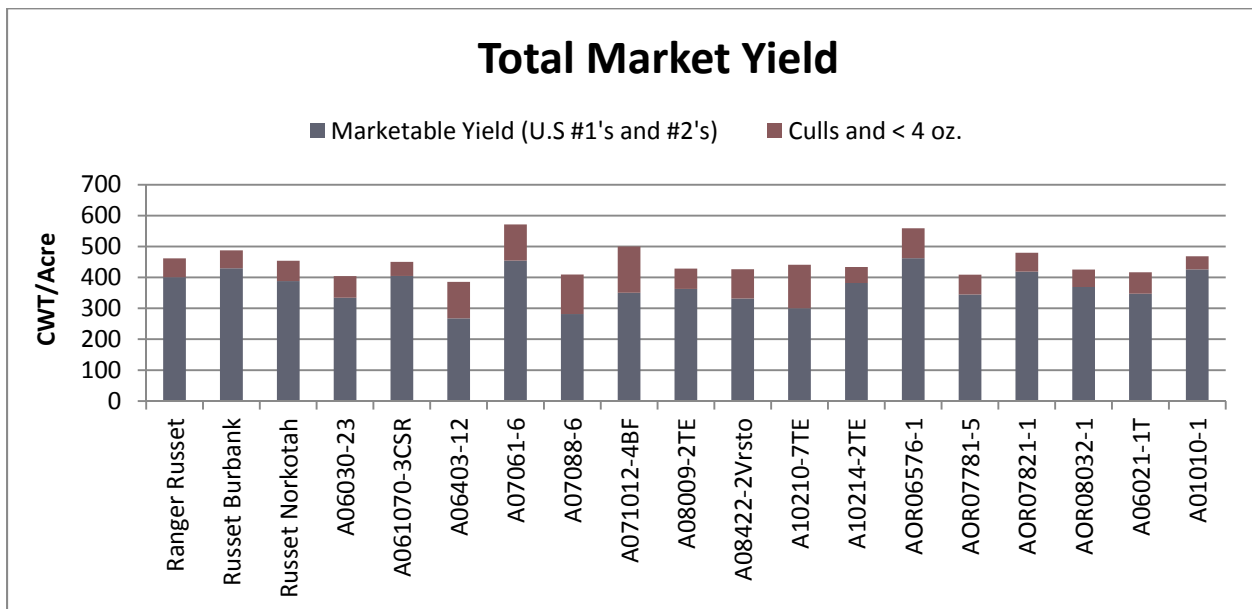
**Entries showing the same letter are not significantly different at the 5% level











***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 best)	Eye Depth (1-5 shal.)
		Wt. (oz.)	Number tubers/plant							
Ranger Russet	99	5.7	6	3.9	4.5	4.5	4.5	4.4	3.1	4.0
Russet Burbank	99	5.3	7	4.3	4.3	3.8	3.6	4.3	3.5	4.0
Russet Norkotah	100	6.2	6	3.5	4.1	4.3	4.3	4.4	4.1	4.0
A06030-23	100	4.6	6	4.5	4.3	3.8	3.5	3.9	3.9	3.9
A061070-3CSR	100	6.3	6	5.0	4.3	4.1	4.1	4.6	3.6	3.5
A06403-12	97	4.5	7	4.0	3.9	4.3	4.3	4.4	3.3	3.3
A07061-6	99	4.8	9	5.0	4.0	3.8	3.6	4.0	3.4	3.9
A07088-6	97	4.0	9	3.8	3.9	4.5	4.5	4.4	3.1	3.8
A071012-4BF	100	4.7	9	4.4	4.5	3.8	4.0	4.3	3.4	3.6
A08009-2TE	99	5.8	6	3.9	4.0	4.1	4.3	4.4	3.1	3.9
A08422-2Vrsto	96	5.0	7	4.3	4.1	4.8	4.8	4.1	3.5	3.8
A10210-7TE	100	4.2	9	4.4	4.0	4.6	4.6	4.3	3.6	3.8
A10214-2TE	100	6.8	5	4.3	5.0	4.0	4.1	3.8	3.8	3.8
AOR06576-1	99	6.0	7	4.9	4.3	4.6	4.6	4.4	3.9	3.4
AOR07781-5	100	7.5	5	4.0	4.8	4.5	4.5	4.4	3.8	3.6
AOR07821-1	98	8.1	6	3.9	3.9	3.9	3.9	4.3	3.3	4.3
AOR08032-1	97	5.7	6	4.8	4.8	4.3	4.4	4.1	3.4	4.0
A06021-1T	99	5.2	6	4.1	3.9	4.0	4.1	4.4	3.4	4.1
A01010-1	99	6.0	6	4.4	3.5	4.1	4.3	4.3	3.5	3.9



*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	2016 KBREC- Tri-State Russet Comment	Entry	2016 KBREC- Tri-State Russet Comment
Ranger Russet	 long x2, typy x2, crooks x2, typy	Russet Burbank	 growth cracks, not bad, misshaped x3
Russet Norkotah	 typy, dark x2, nice	A06030-23	 typy, nice, fresh potential
A061070-3CSR	 plumpy, round, short, x3 fresh potential, TNC	A06403-12	 process only, short, typy x1, small
A07061-6	 typy, process only, shepody look alike, lent scaring x 2	A07088-6	 flat, dingy, small but typy
A071012-4BF	 round, small, some MS, dingy x 2	A08009-2TE	 fresh potential, typy, long skinny, green ends
A08422-2Vrsto		A10210-7TE	

	<p>TNC x2 , small but typy x 3</p>		<p>small, GC, not fresh, irregular size</p>
<p>A10214-2TE</p>		<p>AOR06576-1</p>	
	<p>dark, plump, low yield, sticky stolon, no eyes</p>		<p>sticky stolon x 2, irr size x 2, plumpy</p>
<p>AOR07781-5</p>		<p>AOR07821-1</p>	
	<p>MS x 3, dents, fresh potential, bulgy eyes</p>		<p>fresh potential, blocky, green and popeyes x1, MS x2</p>
<p>AOR08032-1</p>		<p>AOR06070-1KF</p>	
	<p>typy, fresh potential, lenticel scaring, sticky stolon x 2</p>		<p>fresh potential, typy, lenticel scaring</p>
<p>A01010-1</p>			
	<p>small, dented, GC x3 typy x 3</p>		

2016 Preliminary Yield (PYT-2) Specialty Trial

Location: OSU KBREC – Klamath Falls, OR
 Planting Date: May 21 Vine Kill Date: September 6
 Harvest Date: October 10 Days to Vine kill: 109
 Fertility: 184-158-208-236 Sulfur+2.25 Boron 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 3 standard varieties 4 entries. The Oregon Potato Variety Development Team chose to advance 3 selections to the Statewide Specialty Trial in 2017 and discarded the remaining selections due to poor performance. **Only retained selections are listed in the following tables.**

Entry	Female Parent	Male Parent
POR14PG14-1	AOR06262-1	AL3-1
POR14PG219-1	AmaRosa	57-2
POR14PG14-5	AOR06262-1	AL3-1

2016 Statewide Specialty Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 109

Fertility: 184-158-208-236 Sulfer+2.25 Boron

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 (42%), POR13PG106-3 (76%)

➤ **45 Day**

Slow emergence: POR12PG26-2 (51%) all other entries had greater than 90% final emergence

Plant and Tuber Growth and Development

➤ **Average Tuber Number Per Plant**

Most: POR12PG73-1 (16), POR11PG62-3 (16)

Least: Yukon Gold (6), Red LaSoda (7)

➤ **Average Tuber Size (oz.)**

Largest: Yukon Gold (6.7), Red LaSoda (6.5)

Smallest: POR11PG62-3 (1.7), OR10220-1 (2.4)

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

Most: POR12PG73-1 (214), POR13PG106-3 (195)

Least: Red LaSoda and Yukon Gold (37)

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

Most: POR11PG62-3 (102), POR13PG106-3 (44)

Least: Yukon Gold (4), Red LaSoda (5)

Yield Data

➤ **Total Yield (cwt/Acre)**

Highest: POR11PG20-2 (580), POR12PG73-1 (551)

Lowest: POR12PG26-2 (214), OR10220-1 (298)

➤ **US No. 1 Yield (cwt/Acre)**

Highest: POR11PG20-2 (524), POR12PG73-1 (515)

Lowest: POR12PG26-2 (133), OR10220-1 (273)

Tuber Defect Incidence (40-tuber sample)

➤ **External Defects**

Red LaSoda had high incidence of growth cracks.

➤ **Internal Defects**

Corky Ring Spot: Yukon Gold (63%), POR12PG26-2 (45%), POR12PG73-1 (40%)

Entry	Skin Color	Primary skin color (1-5 dark)	Flesh Color	Primary flesh color (1-5 dark)	Total Yield		US # 1's 0-14 oz.	Culls***	External Defects (1-5 none)		
					(cwt/A)	STATS**			Green	Growth crack	Knobs
					% of Total Yield*						
Yukon Gold	Y	2.5	Y	2.1	449	B	81	19	4.4	5.0	4.8
Red LaSoda	R	3.6	Y	1.3	499	AB	83	17	3.8	3.4	4.6
POR11PG20-2	Y	2.8	Y	3.3	580	A	90	10	3.5	5.0	4.3
POR11PG62-3	Y/R	3.0	Y	2.0	313	C	92	8	4.4	4.8	3.8
POR12PG26-2	Y/R	3.6	Y	2.8	215	C	62	38	3.9	5.0	4.4
POR12PG73-1	Y	4.0	Y	3.5	551	AB	94	6	4.1	4.8	4.9
OR10220-1	Y/P	3.9	Y	3.8	299	C	91	9	4.1	4.8	3.8
POR13PG106-3	R	3.1	Y	3.1	460	B	94	6	2.9	4.9	4.6
POR13PG111-1	Y/P	1.9	Y	1.0	468	AB	92	8	3.3	5.0	4.5
LDS (.05)						116					

*Percent values may not total 100% due to rounding

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

***Including >14oz. and #2's

Entry	US # 1 Yield							Specific Gravity	Internal Defects (%)****			
	(cwt/A)	STATS**	%*						HH	SEB	CRS	IB
			C size	B size	4-6 oz.	6-10 oz.	10-14 oz.					
Yukon Gold	364		10	1	22	41	26	1.089	0	0	10	3
Red LaSoda	415		9	1	23	46	21	1.083	0	0	63	0
POR11PG20-2	525		33	8	27	25	7	1.088	0	0	15	0
POR11PG62-3	287		56	36	7	2	0	1.081	0	0	8	0
POR12PG26-2	134		43	16	17	12	12	1.082	3	0	13	0
POR12PG73-1	516		41	8	27	19	4	1.081	0	0	45	0
OR10220-1	273		43	13	32	12	0	1.079	0	0	40	0
POR13PG106-3	431		45	10	28	15	2	1.088	0	0	35	0
POR13PG111-1	428		32	8	29	25	6	1.072	0	0	15	0
LDS (.05)												

*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, CRS=corky ring spot
IB=impact bruise

Entry	Stand %	Average Tuber		Shape Uniform (1-5 best)	Rhizoc (1-5 none)	Russeting (1-5 hvy)	Shape (1-5 long)	Size uniformity (1-5 best)	Shape uniformity (1-5 best)	Eye Depth (1-5 shal.)
		Wt. (oz.)	Number tubers/plant							
Yukon Gold	95	6.7	6	3.1	3.9	2.3	3.1	2.9	3.1	4.0
Red LaSoda	98	6.6	7	2.3	4.1	2.4	3.3	5.8	2.3	2.6
POR11PG20-2	100	3.7	14	2.9	4.1	2.0	2.6	2.9	2.9	3.8
POR11PG62-3	97	1.7	16	2.8	5.0	1.5	5.0	3.0	2.8	4.4
POR12PG26-2	51	5.8	10	3.8	4.9	1.8	4.4	3.1	3.8	4.3
POR12PG73-1	97	3.0	16	3.1	4.8	1.9	3.0	2.5	3.1	2.6
OR10220-1	100	2.5	10	3.9	4.9	1.8	3.0	3.1	3.9	2.5
POR13PG106-3	95	2.8	15	3.3	4.0	2.1	2.5	3.9	3.3	3.0
POR13PG111-1	97	3.4	12	2.9	4.4	1.8	2.9	2.4	2.9	3.5

Entry	2016 KBREC State Specialty Comments
Yukon Gold	dull x2 IB, CRS x 2, irregular size
Red LaSoda	FBE x 2, bronzed x 2, skinned, CRS x 2
POR11PG20-2	CRS, sprouting, lumpy, pointy SE
POR11PG62-3	pointy SE, CRS x2, irregular pink, bulgy eyes
POR12PG26-2	no yield x 3, bulgy eyes, CRS, sprouting
POR12PG73-1	sticky stolon x 2, sprouting x2, TNC
OR10220-1	lumpy x 3, irregular pink, sticky stolon x 2
POR13PG106-3	Dull, bronzed, sticky stolon x2, sprouting x2, CRS
POR13PG111-1	CRS, lenticel scaring, misshaped, green, ok

Entries Retained for Further Evaluation in 2017

Entry	2016 KBREC- Statewide Specialty Comment	Entry	2016 KBREC- Statewide Specialty Comment
Yukon Gold		Red LaSoda	
	dull x2 IB, CRS x 2, irregular size		FBE x 2, bronzed x 2, skinned, CRS x 2
POR11PG62-3			



pointy SE, CRS x2, irregular
pink, bulgy eyes

2016 Tri-State Specialty Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 109

Fertility: 184-158-208-236 Sulfur+2.25 Boron

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: COA07365-4RY (71%), NDA050237B-1R (81%)

➤ 45 Day

Slow Emergence: COA07365-4RY (89%) All other entries have greater than 90% final emergence

Plant and Tuber Growth and Development

➤ Average Tuber Number Per Plant

Most: POR11PG62-3 (16), POR11PG20-2 (14)

Least: Yukon Gold (5), Chieftain (6)

➤ Average Tuber Size (oz.)

Largest: Yukon Gold (6.8), Chieftain (6.4)
 Smallest: POR11PG62-3 (2.0), A06336-5Y (2.9)

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

Most: POR11PG62-3 (75), A06336-5Y (41.5)
 Least: Yukon Gold (5.5), Chieftain (5.7)

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

Most: POR11PG62-3 (234.2), A06336-5Y (203.5)
 Least: Yukon Gold (29.7), Chieftain (5.7)

Yield Data

➤ **Total Yield (cwt/Acre)**

Highest: POR11PG20-2 (648), NDA050237B-1R (563)
 Lowest: COA07365-4RY (318), A06336-2Y (349)

➤ **US No. 1 Yield (cwt/Acre)**

Highest: POR11PG20-2 (571), NDA050237B-1R (508)
 Lowest: COA07365-4RY (294), A06336-2Y (329)

Tuber Defect Incidence (40-tuber sample)

- **External Defects** Chieftain had high incidence of growth cracks
- **Internal Defects:** Yukon Gold had 5% stem end browning

Entry	Skin Color	Primary skin color (1-5 dark)	Flesh Color	Primary flesh color (1-5 dark)	Total Yield		US # 1's 0-14 oz.	Culls***	External Defects (1-5 none)		
					(cwt/A)	STATS**			% of Total Yield*	Green	Growth crack
Chieftain	R	3.1	Y	1.0	478	BC	77	23	4.5	3.0	4.6
Yukon Gold	Y	2.3	Y	2.0	396	CDE	81	19	4.6	5.0	5.0
A06336-2Y	Y	3.4	Y	2.1	376	DE	95	5	4.4	5.0	4.4
A06336-5Y	Y	4.0	Y	2.0	476	CD	92	8	4.8	5.0	4.9
POR11PG20-2	Y	2.5	Y	2.3	585	A	89	11	4.0	5.0	3.8
POR11PG62-3	R/Y	2.9	Y	2.0	422	CDE	94	6	4.6	5.0	3.7
NDA050237B-1R	R	4.4	Y	1.0	520	AB	87	13	4.6	3.8	4.9
COA07365-4RY	R	4.4	Y	2.0	297	E	95	5	4.4	5.0	4.8
LDS (.05)					116						

Klamath Basin Potato Variety Development Summary 2016

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	371	CD	13	1	23	35	28	70	1.077	0.0	0.0	0.0	0.0
Yukon Gold	322	CD	20	3	23	35	19	60	1.088	0.0	5.0	0.0	0.0
A06336-2Y	358	CD	37	7	35	19	2	0	1.080	0.0	0.0	0.0	0.0
A06336-5Y	440	BC	44	9	30	16	1	2	1.073	0.0	0.0	0.0	5.0
POR11PG20-2	522	A	36	8	26	26	5	13	1.083	0.0	0.0	0.0	0.0
POR11PG62-3	396	CD	55	17	17	8	3	0	1.080	0.0	2.5	0.0	0.0
NDA050237B-1R	455	AB	31	5	24	31	8	21	1.069	0.0	0.0	2.5	0.0
COA07365-4RY	281	D	29	6	32	30	3	0	1.079	2.5	0.0	0.0	0.0
LDS (.05)		113											

*Percent values may not total 100% due to rounding

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

***Including >14oz. and #2's

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

Entry	Stand %	Average Tuber		Rhizoc (1-5none)	Russeting (1-5 hvy)	Shape (1-5 long)	Size Uniformity (1-5 best)	Shape Uniformity (1-5 best)	Eye Depth (1-5 shal.)
		Wt. (oz.)	Number tubers/plant						
Chieftain	99	6.4	6	4.5	2.3	3.5	2.5	2.13	3.8
Yukon Gold	96	6.8	5	4.3	2.1	3.1	2.5	3.75	4.1
A06336-2Y	97	3.6	8	5.0	2.0	3.5	4.0	3.50	4.5
A06336-5Y	97	2.9	14	4.9	1.8	2.5	3.9	4.00	4.3
POR11PG20-2	100	3.9	14	4.0	2.3	3.0	2.9	2.63	3.9
POR11PG62-3	94	2.1	16	5.0	1.8	5.0	2.9	3.63	4.6
NDA050237B-1R	95	4.0	13	2.9	1.8	2.6	3.5	4.00	4.3
COA07365-4RY	89	3.8	8	5.0	1.5	2.4	3.6	4.00	4.4

Entry 2016 KBREC- Tri-State specialty Comments	Entry 2016 KBREC- Tri-State Specialty Comment
Chieftain	Yukon Gold

	<p>big, misshaped, skinned x 3, GC x 2, bronzed</p>		<p>irregular size x 2, CRS x 2, lenticel scarring x 2</p>
<p>A06336-2Y</p>		<p>A06336-5Y</p>	
	<p>pointy x 3, knobs on stem end, misshaped</p>		<p>typy and nice x 3 some mechanical damage, TNC x 2</p>
<p>POR11PG20-2</p>		<p>POR11PG62-3</p>	
	<p>pointy stem ends, lenticel scarring x 2, CRS, sprouting x 2</p>		<p>popeyes x 2, knobby stem end, ends turning purple x 2</p>
<p>NDA050237B-1R</p>		<p>COA07365-4RY</p>	
	<p>rhizoc x 2, GC x 2, nice x 2</p>		<p>smooth x 2, bright x 2, some skinning</p>

2016 Preliminary Yield (PYT-2) Chip Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 109

Fertility: 184-158-208-236 Sulfer+2.25 Boron

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. Eight selections were evaluated with two retained for further evaluation.

Clone	Female Parent	Male Parent
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AOR12197-2	V-15-71	CO02321-4W
AOR12197-4	V-15-71	CO02321-4W

2016 Statewide Chip Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 109

Fertility: 184-158-208-236 Sulfer+2.25 Boron

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: AOR11470-1 (88%) All other entries have greater than 92% final emergence

Plant and Tuber Growth and Development

➤ Average Tuber Number Per Plant

Most: AOR11455-4 (10), AOR11488-1 (10)

Least: AOR11484-2 (6), Atlantic (6)

➤ Average Tuber Size (oz.)

Largest: Atlantic (6.1), AOR11484-2 (6.1)

Smallest: AOR11455-4 (3.6), AOR11488-1 (3.8)

➤ Undersized Tubers (<4 oz.) cwt/Acre

Most: AOR11455-4 (183), AOR11488-1 (171)

Least: AOR11484-2 (54), Atlantic (58)

Yield Data

➤ Total Yield (cwt/Acre)

Highest: AOR11455-4 (371), Snowden (366)

Lowest: Atlantic (283), AOR11484-2 (303)

➤ Marketable Yield >4 oz. (cwt/Acre)

Highest: Snowden (179)

Lowest: Atlantic (140)

Tuber Defect Incidence (40-tuber sample)

➤ External Defects: Growth Cracks: AOR09033-2 (2.9)

Shatter: AOR11484-2 (3.8)

➤ Internal Defects

Hollow Heart: Atlantic, AOR11484-2, AOR11470-1 (3%)

Hard Bite: Atlantic (17%), AOR09033-2 (13%)

Entry	Total Yield		> 4 oz.	< 4 oz.	Culls	Oversize > 10 oz.	Skin color (1-5 dark)
	(cwt/A)	STATS**					
Atlantic	283	B	50	21	2	28	2.5
Snowden	366	A	49	44	1	5	11.3

AOR09033-2	331	AB	46	23	7	22	2.4
AOR11484-2	303	B	52	18	2	24	3.3
OR12479-5	319	AB	48	32	2	16	2.0
AOR11488-1	365	A	48	47	2	3	2.3
AOR11455-4	371	A	46	49	2	3	2.0
AOR11470-1	314	AB	52	42	1	5	2.6
LSD (0.05)		58					

Entry	Yield US # 1 (>4 oz.)				External Defects (1-5 none)			
	(cwt/A)	STATS**	%*		Green	Growth crack	Knobs	Shatter
			4-6 oz.	6-10 oz.				
Atlantic	140	B	60	40	4.4	4.8	4.9	4.6
Snowden	179	A	77	23	4.6	4.9	4.9	4.6
AOR09033-2	152	AB	68	32	3.9	2.9	5.0	4.1
AOR11484-2	158	AB	67	33	4.9	3.9	4.9	3.8
OR12479-5	155	AB	70	30	4.4	4.8	4.8	4.1
AOR11488-1	174	AB	76	24	4.4	5.0	5.0	4.6
AOR11455-4	172	AB	76	24	4.4	5.0	4.9	5.0
AOR11470-1	163	AB	74	26	4.5	5.0	4.5	4.8
LSD (0.05)		34						

*Percent values may not total 100% due to rounding

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

Entry	Stand %	Average Tuber			Internal Defects (%)***					
		Wt. (oz.)	Number tubers/plant	Specific Gravity	HH	BC	SEB	VD	HB	IB
Atlantic	94.0	6.1	6	1.100	3	0	0	0	18	0
Snowden	98.0	4.0	9	1.095	0	0	0	0	25	0
AOR09033-2	92.0	5.4	7	1.099	0	0	0	3	13	3
AOR11484-2	100.0	6.1	6	1.094	3	0	0	3	3	0
OR12479-5	100.0	4.7	7	1.084	0	0	0	3	5	0
AOR11488-1	99.0	3.8	10	1.105	0	0	0	3	0	0
AOR11455-4	100.0	3.6	10	1.103	0	0	0	0	10	0
AOR11470-1	88	4.0	9	1.123	3	0	0	0	0	0




Entry	Rhizoc (1-5 best)	Russeting (1-5 hv)	Shape (1-5 long)	Size uniformity (1-5 best)	Shape uniformity (1-5 best)	Eye Depth (1-5 shal.)
Atlantic	4.1	3.1	2.6	3.3	3.9	4.0
Snowden	2.8	3.6	2.6	3.8	3.8	3.8
AOR09033-2	3.1	3.4	3.3	2.5	2.9	4.4
AOR11484-2	3.9	3.5	2.9	3.3	3.3	4.4
OR12479-5	4.8	2.6	2.5	3.5	4.0	4.3
AOR11488-1	4.6	2.4	2.1	3.9	4.1	4.1
AOR11455-4	4.1	2.8	2.4	4.0	4.1	4.5
AOR11470-1	1.4	3.0	2.6	3.8	3.4	4.4

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

Entry	2016 KBREC- Chip Trial Comments
Atlantic	typy, russeting, 9 rotten, lenticel scarring x 2, impact bruise x 2, TNC
Snowden	rhizoc x 2, impact bruise, powdery scab x 2, small x 2, lenticel scarring x 2, dark, typy, mechanical damage
AOR09033-2	growth cracks x 3, rhizoc, heavy russeting x2, 2 rot, blotchy skin x 2, some FBE, lenticel scarring, big, scabbing
AOR11484-2	growth cracks x 2, ugly, lenticel scarring, mechanical damage, flat, TNC x 3, shatter bruise, russeting, 1 rot, big
OR12479-5	9 rot, pointy stem end x2, shatter bruise, typy x 2, smooth, lenticel scarring, TNC, CRS, some pears, nice
AOR11488-1	TNC x 2, pointy stem ends, small x 3, typy, some CRS, some powdery scab, 1/2 have pink eyes VM?
AOR11455-4	chicken tracks x 2, typy x 2, nice, TNC, small, CRS
AOR11470-1	dark, chicken tracks x 2, pointy stem ends x 3, CRS x 2, 3 rot, sticky stolon x 2, rhizoc

Entries Retained for Further Evaluation in 2017

Entry	2016 KBREC- Statewide Chip Comment	Entry	2016 KBREC- Statewide Chip Comment
Atlantic		Snowden	
	typy, russeting, 9 rotten, lenticel scarring x 2, impact bruise x 2, TNC		rhizoc x 2, impact bruise, powdery scab x 2, small x 2, lenticel scarring x 2, dark, typy, mechanical damage

<p>AOR11484-2</p> 	<p>growth cracks x 2, ugly, lenticel scarring, mechanical damage, flat, TNC x 3, shatter bruise, russeting, 1 rot, big</p>	<p>AOR11488-1</p> 	<p>TNC x 2, pointy stem ends, small x 3, tpy, some CRS, some powdery scab, 1/2 have pink eyes VM?</p>
<p>AOR11470-1</p> 	<p>dark, chicken tracks x 2, pointy stem ends x 3, CRS x 2, 3 rot, sticky stolon x 2, rhizoc</p>		

2016 Regional Chip Trial

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21

Vine Kill Date: September 6

Harvest Date: October 10

Days to Vine kill: 109

Fertility: 184-158-208-236 Sulfer+2.25 Boron

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.

Stand Counts

➤ 30 Day

Slow emergence: Atlantic (75%)

➤ 45 Day

Slow emergence: Atlantic (87%) All other entries have greater than 94% final emergence

Plant and Tuber Growth and Development

➤ Average Tuber Number Per Plant

Most: CO07070-13W (10), NDTX081648CB-13W, NDTX091908AB-02W (10)

Least: Atlantic (5), NDTX071109C-01W (5)

➤ Average Tuber Size (oz.)

Largest: Atlantic (6.9), NDTX071109C-01W (6.7)

Smallest: AC05153-1W (3.5), CO07070-13W, and NDTX081648CB-13W (3.9)

➤ Undersized Tubers (<4 oz.) cwt/Acre

Most: CO07070-13W (165), AC05153-1W (164)

Least: Atlantic (35), NDTX071109C-01W (36)

Yield Data

➤ Total Yield (cwt/Acre)

Highest: CO07070-13W (416), TX09396-1W (391)

Lowest: Atlantic (262), NDA081453CAB-2C (282)

➤ Marketable Yield >4 oz. (cwt/Acre)

Highest: TX09396-1W (237), CO07070-13W (204)

Lowest: Atlantic (104), NDTX071109C-01W (157)

➤ % Marketable Yield >4 oz.

Highest: OR09256-2 (64%), TX09396-1W (61%)

Lowest: Atlantic (40%), AC05153-1W (48%)

Tuber Defect Incidence (40-tuber sample)

➤ Internal Defects

Hard Bite: Atlantic (30%)

Stem End Browning: AOR09034-3 (3%)

Entry	Yield US # 1 (>4 oz.)	External Defects (1-5 none)
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Klamath Basin Potato Variety Development Summary 2016

	(cwt/A)	STATS**	%*		Green	Growth crack	Knobs	Shatter
			4-6 oz.	6-10 oz.				
Atlantic	104	D	54	46	4.5	4.4	4.8	4.8
Snowden	182	C	74	26	4.4	4.8	5.0	4.6
AC05153-1W	167	C	77	23	4.4	5.0	5.0	4.1
AOR09034-3	182	C	72	28	4.8	4.3	4.9	3.8
CO07070-10W	164	C	72	28	3.8	4.4	5.0	4.9
CO07070-13W	204	ABC	80	20	4.9	5.0	4.9	4.3
NDA081453CAB-2C	162	C	68	32	4.4	5.0	5.0	3.9
NDTX071109C-01W	157	C	66	34	4.8	4.9	4.9	4.9
NDTX081648CB-13W	203	ABC	79	21	4.8	4.9	4.9	4.9
NDTX091908AB-02W	190	BC	76	24	3.9	4.4	4.9	4.9
OR09256-2	250	A	77	23	5.0	5.0	5.0	4.3
OR09253-1	199	BC	73	27	4.0	4.5	4.9	4.9
TX09396-1W	237	AB	79	21	4.5	5.0	4.5	5.0
LSD		50						

*Percent values may not total 100% due to rounding

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

Entry	Stand %	Average Tuber		Specific Gravity	Internal Defects (%)***					
		Wt. (oz.)	Number tubers/plant		HH	BC	SEB	VD	HB	IB
Atlantic	87	7	5	1.106	3	0	0	3	30	3
Snowden	97	5	7	1.098	0	0	0	0	15	0
AC05153-1W	99	4	9	1.094	0	3	0	3	0	3
AOR09034-3	99	5	7	1.104	0	0	3	0	8	3

Klamath Basin Potato Variety Development Summary | 2016

CO07070-10W	100	4	8	1.107	0	0	0	0	18	0
CO07070-13W	99	4	10	1.095	0	0	0	0	0	0
NDA081453CAB-2C	100	5	6	1.098	3	0	0	0	25	0
NDTX071109C-01W	94	7	5	1.080	5	0	0	0	3	0
NDTX081648CB-13W	99	4	10	1.097	0	0	0	0	3	0
NDTX091908AB-02W	100	4	10	1.092	0	0	0	0	0	0
OR09256-2	100	5	9	1.094	0	0	0	0	8	3
OR09253-1	100	6	7	1.109	0	0	0	0	5	3
TX09396-1W	97	5	9	1.108	0	0	0	0	20	3

Entry	Rhizoc (1-5 best)	Russeting (1-5 hvv)	Shape (1-5 long)	Size uniformity (1-5 best)	Shape uniformity (1-5 best)	Eye Depth (1-5 shal.)
Atlantic	3.0	2.9	2.6	2.4	2.6	3.8
Snowden	2.0	3.5	2.6	2.8	3.5	3.3
AC05153-1W	4.0	1.8	2.5	4.0	3.8	4.1
AOR09034-3	2.4	2.6	2.8	3.3	3.1	4.1
CO07070-10W	4.0	2.3	3.0	3.1	3.4	4.4
CO07070-13W	3.6	2.5	2.4	3.8	3.9	3.9
NDA081453CAB-2C	4.0	1.8	2.9	2.3	3.6	4.3
NDTX071109C-01W	5.0	1.8	2.5	3.5	3.5	3.6
NDTX081648CB-13W	4.9	2.5	2.9	3.4	3.3	3.6
NDTX091908AB-02W	4.9	1.5	3.1	3.3	3.5	4.6
OR09256-2	4.6	3.5	2.5	3.1	3.8	3.6
OR09253-1	2.9	2.9	2.5	2.9	2.3	3.9
TX09396-1W	5.0	2.4	2.6	3.0	3.1	4.3




*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, HB=hard bite, IB=impact bruise

Entry	2016 KBREC- Regional Chip Comment	Entry	2016 KBREC- Regional Chip Comment
Atlantic		Snowden	

	<p>pointy stem ends, low set, irregular shape & size, FBE, russeting, 1 rot, big growth cracks, TNC, pears</p>		<p>TNC, small, scab x 4, dark, mechanical damage, rhizoc, russeting, lenticel scarring</p>
<p>AC05153-1W</p>		<p>AOR09034-3</p>	
	<p>TNC x 2, small x 4, lenticel scarring x 2, blotchy skin</p>		<p>TNC x 2, low set, small x 2, rhizoc x 2, pointy stem end, lenticel scarring, mechanical damage, shatter bruise, chicken tracks</p>
<p>CO07070-10W</p>		<p>CO07070-13W</p>	
	<p>irregular size & shape, green, nice, small, lenticel scarring</p>		<p>impact bruise, small x 3, typy, rhizoc</p>
<p>NDA081453CAB-2C</p>		<p>NDTX071109C-01W</p>	
	<p>irregular size x 2, rhizoc, CRS, lenticel scarring x 2, shatter bruise, TNC, nice, smooth</p>	<p style="text-align: center;">NO IMAGE AVAILABLE</p>	<p>smooth x 2, FBE x 2, impact bruise x 2, TNC, misshape</p>
<p>NDTX081648CB-13W</p>		<p>NDTX091908AB-02W</p>	
	<p>flat x 3, small, lenticel scarring, irregular size, some pear shape</p>		<p>smooth x 2, nice x 3, small, oblong, TNC, scab</p>
<p>OR09256-2</p>		<p>OR09253-1</p>	

	<p>typy x 3, flat, small, 1 rot, TNC, mechanical damage, nice, dark</p>		<p>scab x 2, lenticel scarring x 2, rhizoc, nice, typy</p>
<p>TX09396-1W</p>			
	<p>A lot of small, 1 rot, pointy stem end x 3, sticky stolon x 2, TNC, impact bruise, NTN?</p>		

2015 Regional Chip Processing Results

2014 Chip processing data from storage was included in the 2015 report. The processing results of the 2015 Chip Variety Trial are included in the following graphs. Potatoes were processed by J&W farms in April 2016.

Likewise, 2016 processing data will be included in the 2017 report.

Entry	Specific Gravity Field ¹	Specific Gravity ¹	FL Solids	TDF % ²	Potato Temp. F	Sugars ³	
						Glucose	Sucrose
Atlantic	1.094	1.097	19.810	8.065	55.50	0.240	0.178
Snowden	1.088	1.090	18.630	0.074	57.15	0.007	0.156
AC00206-2W	1.082	1.093	19.055	0.000	56.70	0.000	0.093
AC03433-1W	1.086	1.086	17.843	0.065	54.53	0.043	0.092
AC03452-2W	1.075	1.084	17.520	0.075	53.40	0.094	0.077
AC05153-1W	1.084	1.090	18.615	0.007	55.40	0.055	0.109
OR09256-2	1.093	1.094	19.253	0.148	54.33	0.190	0.140

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.

2015 State Chip Processing Results

Entry	Specific Gravity Field ¹	Specific Gravity ¹	FL Solids	TDF % ²	Potato Temp. F	Sugars ³	
						Glucose	Sucrose
Atlantic	1.093	1.099	20.233	0.205	53.93	0.193	0.138
Snowden	1.088	1.087	18.027	0.064	53.90	0.040	0.127
OR09253-1	1.095	1.099	20.133	0.325	54.20	0.596	0.175
OR09256-2	1.089	1.099	20.110	0.176	53.80	0.128	0.141
AOR09034-3	1.090	1.092	18.980	0.099	53.85	0.061	0.118
AOR06209-3	1.084	1.095	19.380	0.000	54.40	0.056	0.117
AOR06209-5	1.086	1.079	16.540	0.109	53.83	0.184	0.096

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.

Effect of Various Nematode Control Products

Location: OSU KBREC – Klamath Falls, OR

Planting Date: May 21 2016

Harvest Date: October 10

Fertility: 184-158-208-236 Sulfur+2.25 Boron

Vine Kill Date: September 6

Days to Vine kill: 109

In-Row Spacing: 9.25 inch

Table 1. Effect of Various Nematode Control Products on Yield and Grade of Russet Norkotah, Klamath Falls, OR. 2016.

Treatment	US No. 1's						B's1	#2's	Culls	Total	Avg Tuber Wt.	Hollow Heart	#1 %
	4-6 oz.	6-10 oz.	10-14 oz.	14-20 oz.	>20 oz.	Total							
Untreated	118	114	27	8	2	269	117	6	25	417	4.2	10	65%
Dominus 10gpa + 35 gal H ₂ O	157	134	29	6	0	325	128	6	18	477	4.2	5	68%
Dominus 10 gpa + 70 gal H ₂ O	144	152	25	9	0	330	141	6	10	488	4.1	5	68%
Telone 12gpa	127	173	69	24	0	393	123	9	12	538	4.8	5	73%
Telone 15gpa	158	165	45	12	0	379	109	16	8	513	4.6	10	74%
Melocon	123	159	33	9	0	323	119	12	14	467	4.2	10	69%
Majestene	130	141	34	12	0	317	127	11	17	472	4.4	8	67%
Em-ume	125	169	39	9	0	342	124	7	15	488	4.4	5	70%
Significant Difference	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 2. Effect of Various Nematode Control Products on Nematode Damage of Russet Norkotah, Klamath Falls, OR. 2016.

Treatment	Columbia Root-knot Nematode		Stubby Root Nematode & Corky Ring Spot			
	% Inf	% Culls	% Inf		% Culls	
Untreated	15	8	60	a	45	a
Dominus 10gpa + 35 gal H ₂ O	3	0	19	ba	11	bc
Dominus 10 gpa + 70 gal H ₂ O	25	23	42	ab	22	abc
Telone 12gpa	2	1	6	c	3	bc
Telone 15gpa	6	2	6	c	1	c
Melocon	17	7	49	ab	30	ab
Majestene	31	22	46	ab	30	ab
Em-ume	3	0.1**	56	a	30	ab
Significant Difference	NS	NS		0.0002		0.0302

^{1/} No Significant Differences Among Treatments, Low Soil CRKN Population, Poor Uniformity of Population Among Reps

Table 3. Effect of Various Control Products on Nematode Damage of GemStar Russet Planted w/Heavily Infected CRKN Seed, Klamath Falls, OR. 2016.

Treatment	Columbia Root-knot Nematode ¹	
	% Inf	% Culls
Untreated	92	76
Dominus 10gpa + 35 gal H ₂ O	84	71
Dominus 10 gpa + 70 gal H ₂ O	NA	NA
Telone 12gpa	NA	NA
Telone 15gpa	87	80
Melocon	92	80
Majestene	94	86
Em-ume	99	84
Significant Difference	NS	NS

Table 4. Effect of Various Control Products on Soil Nematode Population, Klamath Falls, OR. 2016.

Treatment	Columbia Root-knot Nematode ¹			Stubby Root Nematode		
	Pre-Trt	Harvest	RF ¹	Pre-Trt	Harvest	RF ¹
Untreated	8	16	2.1	12	13	1.1
Dominus 10gpa + 35 gal H ₂ O	1	2	2.0	5	6	1.2
Dominus 10 gpa + 70 gal H ₂ O	52	75	1.4	13	19	1.5
Telone 12gpa	1	0	0.0	19	2	0.1
Telone 15gpa	9	4	0.4	27	2	0.1
Melocon	8	35	4.4	15	20	1.3
Majestene	16	85	5.3	32	15	0.5
Em-ume	0	0	0.0	9	10	1.1

1/ Reproductive Factor - Harvest Population/Pre-Treatment Population. Values Above 1.0 Indicated Population Increase while Values Below 1.0 Indicated Decrease

Entry 2016 Nematode Trial Rep 1	Entry 2016 Nematode Trial Rep 4
Untreated Check	Untreated Check
Dominus 10gpa + 35 gal H ₂ O	Dominus 10gpa + 35 gal H ₂ O
Dominus 10 gpa + 70 gal H ₂ O	Dominus 10 gpa + 70 gal H ₂ O



Telone 12gpa



Telone 12gpa



Telone 15gpa



Telone 15gpa



Melocon



Melocon



Majestene

Majestene



Em-ume

Em-ume



DuPont Rhizoc Trial

Location: OSU KBREC – Klamath Falls, OR
Planting Date: May 21 2016
Harvest Date: October 10

Vine Kill Date: September 6
Days to Vine kill: 109

Klamath Basin Potato Variety Development Summary 2016

Fertility: 184-158-208-236 Sulfur+2.25 Boron In-Row Spacing: 9.25 inch

Entry	Rhizoc Incidence	Rhizoc Severity ²	Rhizoc Severity ³	Blackdot Incidence	Blackdot Severity ⁴	Blackdot Severity ⁵	Specific Gravity ⁶	Hollow Heart ⁷	Brown Center ⁷
Vertisan 65 DAP	64	1.88	2.38	94	2.50	2.59	1.076	3	25
Vertisan 85 DAP	55	1.67	2.21	93	2.25	2.35	1.079	0	20
Vertisan 65 & 85 DAP	69	1.96	2.39	82	2.06	2.25	1.077	5	10
Vertisan IF	31	1.37	2.12	86	2.20	2.37	1.078	0	28
Vertisan IF + 65 DAP	33	1.38	2.14	81	2.14	2.36	1.078	5	45
Vertisan IF + 85 DAP	12	1.19	2.43	85	2.18	2.39	1.078	0	33
Vertisan IF + 65 & 85 DAP	35	1.46	2.18	82	2.08	2.28	1.074	3	23
Vertisan (1.5 pt) 85 DAP	53	1.68	2.25	90	2.28	2.42	1.082	3	43
Quadris	29	1.34	2.12	97	2.55	2.61	1.079	0	38
Untreated Check	70	1.88	2.26	92	2.18	2.28	1.076	0	33
Mean	45	1.58	2.25	88	2.24	2.39	1.078	2	30
LSD (0.05)	Sig (0.0002)	Sig (0.0004)	NS	NS	NS	Sig (0.006)	NS	NS	NS

² Includes Asymptomatic Scores

³ Excludes Asymptomatic Scores

⁴ Includes Asymptomatic Scores

⁵ Excludes Asymptomatic Scores

⁶ Weight in Air x Weight in Water Method

⁷ Internal Defects

Treatment	US No. 1's					B's ¹	>20oz	#2's	Culls	Total
	4-6 oz.	6-10 oz.	10-14 oz.	14-20 oz.	Total					
Vertisan 65 DAP	59	160	91	70	379	38	10	62	44	533
Vertisan 85 DAP	70	158	95	61	383	42	3	47	37	512
Vertisan 65 & 85 DAP	65	162	113	82	422	41	17	48	40	567
Vertisan IF	105	232	91	31	459	45	5	20	10	538
Vertisan IF + 65 DAP	87	217	120	53	477	50	6	16	14	564
Vertisan IF + 85 DAP	110	203	132	53	497	50	11	38	20	617
Vertisan IF + 65 & 85 DAP	72	192	154	83	500	39	12	28	19	598
Vertisan (1.5 pt) 85 DAP	63	126	146	87	421	40	11	31	37	540
Quadris	67	191	143	74	474	41	10	34	20	579
Untreated Check	66	135	80	55	336	52	6	55	53	501
Mean	76	178	117	65	435	44		38	29	555
LSD (0.05)	NS	NS	NS	NS	Sig (0.02)	NS	NS	NS	NS (0.055)	NS

¹ B's - tubers less than 4 oz

Entry	Avg Tuber Wt	Tubers/Plant	30 Day Emergence	45 Day Emergence
Vertisan 65 DAP	9.5	4.8	90	100
Vertisan 85 DAP	9.2	4.8	84	100
Vertisan 65 & 85 DAP	9.6	5.2	90	98
Vertisan IF	8.2	5.7	89	100
Vertisan IF + 65 DAP	8.4	5.7	88	100
Vertisan IF + 85 DAP	8.3	6.4	89	100
Vertisan IF + 65 & 85 DAP	9.9	5.2	85	100
Vertisan (1.5 pt) 85 DAP	9.3	5.2	87	100
Quadris	9.8	5.2	92	100
Untreated Check	8.8	5.1	83	100
Mean	9.1	5.3	88	100
LSD (0.05)	NS	NS	NS	NS

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