2024

Potato Variety Development

In Tulelake, CA

Three variety trials were grown at the Intermountain Research and Extension Center during 2024.

Trials were categorized by their market type and included russet, specialty and chip.

Trial results are summarized in this report.

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Agriculture and Natural Resources
Intermountain Research & Extension Center
RESEARCH REPORT
Number 209, 2025

2024 Annual Progress Report
Potato Variety Development in Tulelake

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Prepared Report

Three potato variety trials were conducted at the Intermountain Research and Extension Center (IREC) in Tulelake, CA. Trials were categorized by market type and included a Russet trial, a Specialty trial and a Chipping trial. Entries included selections from the Western Regional (WR) variety development program, Southwest Regional (SWR) variety development program, and varieties of local interest. Funding for this project was received from the the USDA-NIFA grant # 2023-34141-40976.

Weather data can be found at: http://www.cimis.water.ca.gov Station # 91.

Late Russet Variety Trial

The Late Russet Variety Trial is a combination of seventeen entries from the Western Regional Variety Trial (WR), two entries from the Southwest Regional Trial (SWR) and two locally chosen varities of interest. Merit scoring and culls were evaluated considering fresh market standards, given most Russets grown in Tulelake, CA are sold for fresh market. Important characteristics for the local area include total yield, percent US No. 1 yield, fresh merit score, tuber shape uniformity, low internal and external defects, and resistance to early-dying. See Tables 1-4 for Russet results and Figure 1 for entry pictures and comments.

Trial Information

Location:	Intermountain Research and Extension Center, Tulelake, CA
Soil Type:	Tulebasin mucky silty clay loam
Planting Date:	May 17th
Vine Kill Date:	August 26th
Days to Vine Kill:	101
Harvest Date:	September 25th
Irrigation:	Solid-set sprinklers; applied water + precipitation = 26.5 inches
Plot Length:	18.3 Feet
In-Row Spacing:	10 Inches
Row Spacing:	36 Inches
Number of Reps:	4
# of Fertilizer/Acre:	162-100-100-32 (Sulphur)
Seed Treatment:	Maxim 4FS and Fir Bark Dust
Weed Control:	Prowl H20 , Outlook, Matrix
Insecticides:	Admire Pro in-furrow, Vydate
Fungicides:	Vellum Prime + Quadris in-furrow; Luna Tranquility
Vine Kill Method:	Rolling and Reglone at labeled rates

Table 1. Tuber Yield and Size of Russet Potato Entries.

				Tuber Yield (cwt/A)															
								U.S. No. 1's											
	Trial	%1's		U.S. 1's		Total		>14oz		10-14oz		6-10oz		4-6oz		<4oz		Culls + 2's	
Clearwater Russet	WR	81	abcde[1]	248.0	def	308.3	fgh	13.9	c	41.6	efg	127.1	cdef	65.4	defg	51.7	cdef	8.5	b
Ranger Russet	WR	84	abcde	355.7	abcd	422.5	abcdef	38.5	bc	74.2	bcdef	159.2	bcdef	83.7	bcdef	59.7	cdef	7.1	b
Russet Burbank	WR	77	de	290.1	cde	376.9	bcdefg	19.1	c	33.0	fg	117.2	defg	120.9	ab	77.7	abcd	9.1	b
A09086-1LB	WR	82	abcde	383.6	abcd	470.4	abcd	28.8	c	44.8	cdefg	152.3	bcdef	157.7	a	84.0	abc	2.8	b
A12304-1sto	WR	79	bcde	376.6	abcd	481.4	abc	8.1	c	51.4	bcdefg	201.2	abc	115.9	abc	99.7	ab	5.1	b
A12305-2adg	WR	92	a	477.9	a	517.9	a	21.5	c	99.0	ab	275.2	a	82.2	bcdef	31.1	ef	8.9	b
A13072-7	WR	86	abcde	374.4	abcd	429.8	abcdef	174.6	a	77.6	abcdef	92.0	efg	30.2	g	22.9	f	32.6	a
A13091-5	WR	76	de	174.4	ef	223.8	h	5.6	c	26.9	fg	83.0	fg	58.9	efg	44.8	def	4.7	b
AFA5661-8	WR	91	ab	424.4	abc	466.1	abcde	17.4	c	93.8	abcde	222.3	ab	90.9	bcdef	33.2	ef	8.6	b
AOR11217-3	WR	88	abcd	346.2	abcd	390.9	abcdef	21.6	c	64.9	bcdef	175.7	bcd	84.0	bcdef	36.2	ef	8.5	b
AOR13064-2	WR	86	abcde	285.1	cde	330.3	efgh	57.7	bc	60.5	bcdef	104.3	defg	62.6	defg	35.6	ef	9.6	b
AOR15166-2	WR	87	abcde	259.0	def	298.5	fgh	6.3	c	34.8	fg	135.9	cdef	82.1	bcdef	36.0	ef	3.5	b
NWN 278	WR	91	ab	459.3	ab	503.3	ab	94.2	b	130.7	a	163.7	bcde	70.7	cdefg	34.1	ef	9.9	b
CO13003-1RU	WR	78	cde	258.0	def	329.5	efgh	0.0	c	25.2	fg	115.8	defg	117.1	ab	65.6	bcde	5.9	b
CO15016-1RUsto	WR	75	e	257.2	def	340.8	defgh	11.4	c	42.3	defg	101.8	defg	101.6	bcde	80.2	abcd	3.4	b
COTX08063-2Ru	WR	81	abcde	322.3	bcd	397.7	abcdef	4.7	c	50.5	bcdefg	160.6	bcdef	106.6	bcd	67.9	bcde	7.5	b
COTX10080-2Ru	WR	83	abcde	308.9	cde	372.7	bcdefg	24.6	c	54.9	bcdefg	141.4	cdef	88.0	bcdef	58.5	cdef	5.3	b
CO15070-4RU	SWR	81	abcde	334.2	bcd	413.4	abcdef	17.3	c	51.4	bcdefg	170.7	bcde	94.8	bcdef	74.4	bcd	4.8	b
CO16238-4RU	SWR	53	f	126.6	f	240.3	gh	0.0	c	4.2	g	41.6	g	80.8	bcdef	113.1	a	0.6	b
PSS11/357/21Ru	Local	90	abc	329.1	bcd	364.4	cdefg	44.5	bc	96.1	abc	133.4	cdef	55.2	fg	24.5	f	10.8	b
PSS11/339/3Ru	Local	87	abcd	335.1	bcd	384.4	abcdef	28.8	c	95.5	abcd	147.1	bcdef	63.8	defg	45.3	def	4.0	b
Mean		**82**		**320.3**		**384.0**		**30.4**		**59.7**		**143.9**		**86.3**		**56.0**		**7.7**	

[1]Mean comparisons were performed using Tukey's-Kramer HSD; means with the same letter within columns are not significantly different

Table 2. External Tuber Characteristics of Russet Potato Entries.

	Trial	Merit Score[1]	Russeting[2]	Eye Depth[3]	Shape Uniformity[4]	Length/Depth Ratio[5]	Length/Width Ratio[5]
Clearwater Russet	WR	4.0	4.0	4.0	4.0	2.36	2.00
Ranger Russet	WR	3.0	3.5	3.0	3.0	2.89	2.39
Russet Burbank	WR	3.0	4.0	3.0	3.0	2.51	2.07
A09086-1LB	WR	2.5	3.0	3.5	2.5	2.16	1.80
A12304-1sto	WR	3.0	3.0	4.0	3.0	1.96	1.69
A12305-2adg	WR	4.0	4.0	4.0	4.0	1.79	1.59
A13072-7	WR	3.0	4.0	3.5	2.5	2.12	1.83
A13091-5	WR	3.0	4.0	4.0	2.5	1.48	1.35
AFA5661-8	WR	3.5	3.5	3.5	4.0	1.94	1.70
AOR11217-3	WR	3.0	4.0	4.0	4.0	2.42	2.11
AOR13064-2	WR	2.5	4.0	4.0	3.0	2.60	2.20
AOR15166-2	WR	3.0	4.0	4.0	3.5	2.04	1.69
NWN 278	WR	3.5	4.0	3.5	4.0	2.05	1.79
CO13003-1RU	WR	3.5	4.5	4.0	3.0	2.04	1.75
CO15016-1RUsto	WR	3.5	4.0	4.0	3.0	2.17	1.89
COTX08063-2Ru	WR	2.5	3.5	4.0	2.5	1.98	1.73
COTX10080-2Ru	WR	3.5	4.0	4.0	4.0	2.09	1.80
CO15070-4RU	SWR	3.5	4.5	3.5	3.5	2.00	1.79
CO16238-4RU	SWR	3.0	4.0	4.0	3.0	1.80	1.60
PSS11/357/21Ru	Local	3.0	4.0	4.0	3.0	2.19	2.04
PSS11/339/3Ru	Local	3.5	3.5	3.5	4.0	2.19	1.94
Mean		**3.2**	**3.9**	**3.8**	**3.3**	**2.13**	**1.85**

[1] 1=Worst, 5=Best - Fresh Market Russet Merit Score takes into account multiple factors including tuber shape, eye depth, russeting, and shape uniformity
[2] 1=Light,5=Heavy
[3] 1=Deep, 5=Shallow
[4] 1= Non Uniform, 5=Very Uniform [5] Ratio of 10 tubers measured from each plot, 8-14 oz size class.

Table 3. Tuber Defects of Russet Potato Entries.

	Trial	Hollow Heart[1]	Stem-end Necrosis[1]	Vascular Discoloration[1]	Knobs	Growth Crack	Irregular Shaped
		%[2]	%[2]	%[2]	%[2]	%[2]	%[2]
Clearwater Russet	WR	3.3	0.0	3.3	0.0 a	0.0 a	0.0 a
Ranger Russet	WR	0.0	3.3	6.7	0.2 a	0.2 a	0.6 a
Russet Burbank	WR	0.0	0.0	3.3	0.9 a	0.2 a	0.0 a
A09086-1LB	WR	0.0	6.7	3.3	0.7 a	0.0 a	0.1 a
A12304-1sto	WR	0.0	0.0	0.0	2.1 a	0.0 a	0.0 a
A12305-2adg	WR	0.0	6.7	6.7	1.5 a	1.5 a	0.9 a
A13072-7	WR	16.7	3.3	0.0	0.9 a	0.0 a	0.2 a
A13091-5	WR	3.3	0.0	10.0	0.3 a	0.0 a	0.2 a
AFA5661-8	WR	0.0	3.3	10.0	0.7 a	0.5 a	0.0 a
AOR11217-3	WR	6.7	6.7	3.3	0.8 a	0.0 a	0.4 a
AOR13064-2	WR	30.0	6.7	0.0	1.0 a	0.2 a	1.0 a
AOR15166-2	WR	0.0	0.0	13.3	2.2 a	0.2 a	1.1 a
NWN 278	WR	10.0	0.0	3.3	1.5 a	0.0 a	0.0 a
CO13003-1RU	WR	6.7	0.0	6.7	0.4 a	0.2 a	1.0 a
CO15016-1RUsto	WR	3.3	0.0	3.3	2.7 a	0.0 a	0.2 a
COTX08063-2Ru	WR	3.3	0.0	6.7	0.3 a	0.2 a	0.5 a
COTX10080-2Ru	WR	0.0	3.3	0.0	1.4 a	0.2 a	0.8 a
CO15070-4RU	SWR	3.3	0.0	3.3	1.6 a	0.2 a	0.3 a
CO16238-4RU	SWR	0.0	0.0	0.0	0.8 a	0.0 a	0.4 a
PSS11/357/21Ru	Local	0.0	0.0	0.0	0.9 a	0.0 a	0.4 a
PSS11/339/3Ru	Local	0.0	0.0	0.0	1.5 a	0.0 a	0.7 a
Mean		**4.1**	**1.9**	**4.0**	**1.1**	**0.2**	**0.4**

[1] Thirty, 8 to 14 oz. tubers were evaluated from each plot.
[2] Percent of total tubers.

Table 4. Stand, Tuber Set, Average Tuber Size and Specific Gravity of Russet Potato Entries.

	Trial	% Stand	Tubers per Plant	Average Tuber Size	Specific Gravity	Early Dying (A.U.D.P.C.)
Clearwater Russet	WR	93 a[1]	5.4 defgh	5.7 defgh	1.096 bcdef	204
Ranger Russet	WR	100 a	6.1 cdef	6.2 cdefgh	1.100 bcd	398
Russet Burbank	WR	99 a	6.9 abcd	5.1 ghi	1.089 def	494
A09086-1LB	WR	100 a	8.2 ab	5.3 fgh	1.101 bc	1058
A12304-1sto	WR	94 a	8.5 a	5.5 efgh	1.097 bcde	764
A12305-2adg	WR	97 a	7.1 abcd	7.0 bcd	1.103 ab	459
A13072-7	WR	98 a	4.2 gh	9.6 a	1.093 bcdef	743
A13091-5	WR	98 a	4.0 h	5.2 gh	1.101 bc	1395
AFA5661-8	WR	94 a	6.7 bcd	6.8 bcde	1.102 b	457
AOR11217-3	WR	98 a	5.8 cdefgh	6.4 bcdefg	1.104 ab	1660
AOR13064-2	WR	99 a	4.5 fgh	6.8 bcde	1.099 bcd	1905
AOR15166-2	WR	100 a	4.7 efgh	5.8 defgh	1.104 ab	485
NWN 278	WR	98 a	6.2 cdef	7.6 b	1.086 ef	1345
CO13003-1RU	WR	100 a	6.1 cdef	5.0 hi	1.093 bcdef	720
CO15016-1RUsto	WR	98 a	6.4 bcde	5.0 hi	1.090 cdef	414
COTX08063-2Ru	WR	97 a	7.0 abcd	5.4 fgh	1.114 a	836
COTX10080-2Ru	WR	96 a	6.1 cdef	5.8 defgh	1.085 f	1388
CO15070-4RU	SWR	94 a	7.2 abc	5.6 efgh	1.091 cdef	291
CO16238-4RU	SWR	99 a	5.9 cdefg	3.8 i	1.091 cdef	1783
PSS11/357/21Ru	Local	98 a	4.6 efgh	7.4 bc	1.098 bcd	820
PSS11/339/3Ru	Local	99 a	5.4 cdefgh	6.6 bcdef	1.093 bcdef	198
Mean		**93**	**6.1**	**6.1**	**1.096**	**869**

[1]Area Under Disease Progress Curve based on foliar early-dying ratings taken 60, 67, 76, 82 and 91 days after planting. Higher value is more susceptible

Figure 1. 2024 Late Russet Trial Entries.

Clearwater Russet	Ranger Russet	Russet Burbank
		
• Check	• Check	• Check
A09086-1LB	**A12304-1sto**	**A12305-2adg**
		
• Inconsistent russeting • Pink eye • Not suitable for fresh market	• Light russeting • Nice shape	• Good fresh market appeal • Nice russet
A13072-7	**A13091-5**	**AFA5661-8**
		
• Lumpy • Non-uniform • Red hue to skin	• Round • Non-uniform shape	• Lumpy shape • Light russeting

AOR11217-3	AOR13064-2	AOR15166-2
 • Looks like Ranger	 • Red hue on skin	
NWN 278	**CO13003-1RU**	**CO15016-1RUsto**
 • Susceptible to rhizoc	 • Small size • Nice russet appearance	 • Heavy russeting
COTX08063-2Ru	**COTX100080-2Ru**	**CO15070-4RU**
 • Red hue on skin • Lumpy shape	 • Long and narrow shape	 • Long and narrow shape • Heavy russeting

CO16238-4RU	PSS11/357/21Ru	PSS11/339/3Ru
		
• Round shape	• Lumpy shape	• Nice shape • Light russeting • Large # of eyes

Red/Specialty Variety Trial

The Red/Specialty Trial included ten entries from the Western Regional Variety Trial (WR) and four entries from the South West Region Variety Trial (SWR). Important vine and tuber characteristics for fresh market red/specialty types include: skin and flesh color, fresh merit score, tuber shape, tuber uniformity, tubers per plant, and average tuber size. See Tables 5-9 for Red/Specialty trial results and Figure 2 for entry pictures and comments.

Trial Information

Location:	Intermountain Research and Extension Center, Tulelake, CA
Soil Type:	Tulebasin mucky silty clay loam
Planting Date:	May 17th
Vine Kill Date:	August 26th
Days to Vine Kill:	101
Harvest Date:	September 27th
Irrigation:	Solid-set sprinklers; applied water + precipitation = 26.5 inches
Plot Length:	18.3 Feet
In-Row Spacing:	10 Inches
Row Spacing:	36 Inches
Number of Reps:	4
# of Fertilizer/Acre:	162-100-100-32 (Sulphur)
Seed Treatment:	Maxim 4FS and Fir Bark Dust
Weed Control:	Prowl H20 , Outlook, Matrix
Insecticides:	Admire Pro in-furrow, Vydate
Fungicides:	Vellum Prime + Quadris in-furrow; Luna Tranquility
Vine Kill Method:	Rolling and Reglone at labeled rates

Table 5. Skin and Flesh Characteristics of Specialty Potato Entries.

Clone / Variety	Trial	Skin Color	Skin Color Rating[1]	Flesh Color	Flesh Color Rating[1]
Chieftain	**WR**	Red	2.0	White	2.0
Modoc	**WR**	Red	4.0	White	2.0
A11582-1R	**WR**	Red	4.0	White	2.0
COOR15108-1	**WR**	Red	4.0	White	2.0
A11573-5RYsto	**WR**	Red	2.0	Yellow	4.0
Yukon Gold	**WR**	Yellow	1.5	Yellow	4.0
A11576-1Ysto	**WR**	Yellow	2.0	Yellow	4.5
AORTX09037-5W/Ychc	**WR**	Yellow	2.0	Yellow	2.0
Purple Majesty	**WR**	Purple	5.0	Purple	5.0
POR16PG25-2	**WR**	Purple	5.0	Purple	5.0
TC17742-1PW/PW	**SWR**	Purple/White	4.5/1	Purple/White	4.0
ATX13134-3W/Y	**SWR**	White	1.5	Yellow	1.5
CO16154-2Y	**SWR**	White	3.0	Yellow	5.0
CO16279-5Y	**SWR**	White	2.5	Yellow	4.5

[1]1=Light, 5=Dark; Reds and purples were rated using red/purple color scale. Yellows were rated using a white/yellow color scale. All varieties were rated using the same internal flesh darkness scale.

Table 6. Tuber Yield and Size of Specialty Potato Entries.

		Tuber Yield (cwt/A)													
Clone / Variety	**Trial**	**Total Yield**		**10-14 oz**		**6-10 oz**		**4-6 oz**		**< 4oz**		**> 14 oz**		**Undersize**		**Culls**	
Chieftain	**WR**	590.2	a[1]	103.7	a	235.9	a	119.3	ab	85.9	fg	30.4	ab	2.2	cd	12.9	abc
Modoc	**WR**	433.8	cd	5.5	cd	84.2	cde	138.0	a	179.0	d	0.0	c	6.5	bcd	20.6	a
A11582-1R	**WR**	483.0	abc	1.5	d	28.5	fgh	115.3	ab	316.6	ab	0.0	c	14.2	b	7.0	bcd
COOR15108-1	**WR**	362.2	de	0.0	d	5.9	h	61.1	c	264.9	bc	0.0	c	26.6	a	3.9	bcd
A11573-5RYsto	**WR**	412.1	cd	0.0	d	11.4	gh	66.6	c	294.2	ab	0.0	c	33.3	a	6.7	bcd
Yukon Gold	**WR**	405.2	cd	87.5	a	134.2	bc	67.1	c	57.6	g	44.3	a	0.0	d	14.6	ab
A11576-1Ysto	**WR**	466.6	bcd	0.0	d	5.4	h	63.6	c	358.3	a	0.0	c	31.8	a	7.5	bcd
AORTX09037-5W/Ychc	**WR**	421.8	cd	6.6	cd	69.9	def	123.2	a	198.0	cd	3.5	c	15.2	b	5.5	bcd
Purple Majesty	**WR**	500.9	abc	37.6	bc	112.4	bcd	124.5	a	193.9	d	9.3	bc	14.7	b	8.7	abcd
POR16PG25-2	**WR**	465.6	bcd	5.8	cd	87.1	cde	160.0	a	194.2	d	1.7	c	12.4	b	4.3	bcd
TC17742-1PW/PW	**SWR**	241.8	f	5.3	cd	60.7	defg	62.7	c	109.8	efg	0.0	c	2.9	cd	0.4	d
ATX13134-3W/Y	**SWR**	278.1	ef	4.4	d	46.7	efgh	75.4	bc	136.8	def	0.0	c	12.9	b	2.0	cd
CO16154-2Y	**SWR**	488.6	abc	11.6	bcd	141.9	b	136.1	a	176.2	de	0.0	c	10.2	bc	12.6	abc
CO16279-5Y	**SWR**	570.4	ab	43.5	b	163.2	b	160.6	a	170.8	de	13.8	bc	7.1	bcd	11.4	abcd
Mean		**425.4**		**16.1**		**73.2**		**104.2**		**203.9**		**5.6**		**14.4**		**8.1**	

[1]Mean comparisons were performed using Tukey's-Kramer HSD; means with the same letter within columns are not significantly different

Table 7. External Tuber Characteristics of Specialty Potato Entries.

Clone / Variety	Trial	Merit[1]	Eye Depth[2]	Tuber Shape[3]	Shape Uniformity[4]	Length/ Depth Ratio[5]	Length/ Width Ratio[5]
Chieftain	**WR**	3.0	3.0	2.5	3.0	1.32	1.05
Modoc	**WR**	3.5	4.5	2.5	3.0	1.36	1.20
A11582-1R	**WR**	4.0	4.0	2.0	3.5	1.40	1.20
COOR15108-1	**WR**	4.0	4.0	1.5	4.5	1.12	1.02
A11573-5RYsto	**WR**	3.5	2.5	1.5	3.5	1.06	0.92
Yukon Gold	**WR**	3.0	3.5	2.0	3.0	1.38	1.10
A11576-1Ysto	**WR**	3.5	3.5	1.0	3.5	1.15	0.97
AORTX09037-5W/Ychc	**WR**	2.0	3.5	2.0	3.0	1.10	0.93
Purple Majesty	**WR**	2.5	3.5	4.0	2.5	1.92	1.58
POR16PG25-2	**WR**	3.0	3.5	3.0	3.5	1.56	1.37
TC17742-1PW/PW	**SWR**	1.0	3.0	2.0	3.0	1.13	0.91
ATX13134-3W/Y	**SWR**	2.0	3.5	2.0	3.5	1.26	1.00
CO16154-2Y	**SWR**	1.5	4.0	2.5	2.0	1.39	1.13
CO16279-5Y	**SWR**	2.5	3.5	2.0	3.5	1.32	1.05
Mean		**2.8**	**3.5**	**2.2**	**3.2**	**1.32**	**1.10**

[1] 1=Worst, 5=Best - Specialty Merit Score takes into account important appearance factors of the Specialty market including tuber shape, eye depth, and shape uniformity

[2] 1=Deep, 5=Shallow

[3] 1=Round, 5=Oblong

[4] 1= Poor uniformity, 5=Very Uniform

[5] Ratio of 10 tubers measured from the 10-14 oz category in each plot

Table 8. Tuber Defects of Specialty Potato Entries.

Clone / Variety	Trial	Stem End Necrosis[1]	Vascular Dicoloration[1]	Knobs		Growth Crack		Undersize	
		%[2]	%[2]	%[2]		%[2]		%[3]	
Chieftain	**WR**	0.0	0.0	0.8	b	0.0	a	0.4	fg
Modoc	**WR**	0.0	3.3	3.0	a	0.3	a	1.5	defg
A11582-1R	**WR**	0.0	6.7	0.5	b	0.0	a	2.9	cde
COOR15108-1	**WR**	0.0	0.0	0.3	b	0.3	a	7.4	a
A11573-5RYsto	**WR**	0.0	3.3	0.8	b	0.0	a	8.1	a
Yukon Gold	**WR**	0.0	3.3	0.3	b	0.8	a	0.0	g
A11576-1Ysto	**WR**	1.0	3.3	0.8	b	0.0	a	6.9	ab
AORTX09037-5W/Ychc	**WR**	0.0	0.0	0.5	b	0.0	a	3.6	cd
Purple Majesty	**WR**	0.0	0.0	1.0	b	0.3	a	2.9	cde
POR16PG25-2	**WR**	3.0	3.3	0.3	b	0.0	a	2.6	cdef
TC17742-1PW/PW	**SWR**	2.0	10.0	0.3	b	0.0	a	1.1	efg
ATX13134-3W/Y	**SWR**	2.0	0.0	0.3	b	0.5	a	4.7	bc
CO16154-2Y	**SWR**	0.0	0.0	0.8	b	0.0	a	2.1	defg
CO16279-5Y	**SWR**	0.0	6.7	0.3	b	0.0	a	1.2	defg
Mean		**0.6**	**2.9**	**0.7**		**0.2**		**3.5**	

[1] Thirty, 6-10oz. tubers were evaluated from each entry.
[2] Percent of total tubers.
[3] Percent of total CWT.

Table 9. Stand, Tuber Set, Average Tuber Size and Specific Gravity of Specialty Potato Entries.

Clone / Variety	Trial	% Stand	Tubers/Plant	Average Size (oz)	Specific Gravity	Early Dying[1] (A.U.D.P.C.)
Chieftain	**WR**	100 a[2]	9.5 efg	5.7 b	1.080 ef	914
Modoc	**WR**	99 a	11.0 def	3.7 cd	1.076 fg	1180
A11582-1R	**WR**	99 a	16.0 abc	2.8 fg	1.070 g	1075
COOR15108-1	**WR**	98 ab	14.2 bcd	2.4 g	1.100 a	824
A11573-5RYsto	**WR**	100 a	16.2 ab	2.4 g	1.096 abc	894
Yukon Gold	**WR**	97 ab	6.0 h	6.5 a	1.091 bcd	1020
A11576-1Ysto	**WR**	98 ab	19.0 a	2.3 g	1.094 abc	1385
AORTX09037-5W/Ychc	**WR**	99 a	12.1 de	3.3 def	1.090 cd	848
Purple Majesty	**WR**	98 ab	13.1 bcd	3.6 de	1.085 de	1081
POR16PG25-2	**WR**	97 ab	12.8 cde	3.5 de	1.094 abc	908
TC17742-1PW/PW	**SWR**	98 ab	6.3 gh	3.6 cde	1.079 ef	1185
ATX13134-3W/Y	**SWR**	100 a	8.3 fgh	3.1 ef	1.075 fg	2653
CO16154-2Y	**SWR**	96 ab	12.3 de	3.8 cd	1.095 abc	1014
CO16279-5Y	**SWR**	91 b	13.8 bcd	4.2 c	1.097 ab	654
Mean		**97**	**12.4**	**3.5**	**1.087**	**711**

[1]Area Under Disease Progress Curve based on foliar early-dying ratings taken 60, 67, 76, 82 and 91 days after planting. Higher value is more susceptible

[2]Mean comparisons were performed using Tukey's-Kramer HSD; means with the same letter within columns are not significantly different

Figure 2. 2024 Specialty Trial Entries

Cheiftain	Modoc	A11582-1R
		
• Check	• Check	• Desireable fresh market appearance
COOR15108-1	**A11573-5RYsto**	**Yukon Gold**
		
• Nice color and shape	• Powdery scab • Nice color	• Check
A11576-1Ysto	**AORTX09037-5W/Ychc**	**Purple Majesty**
		
• Small size • Nice shape	• Chip appearance • Heavy russeting • Pink discoloration on skin	• Check

POR16PG25-2	TC17742-1PW/PW	ATX13134-3W/Y
		
• Similar to Purple Majesty but more round	• Niche market only	• Chip like • Susceptible to pink eye disease
CO16154-2Y	**CO16279-5Y**	
		
• Pink splotches on skin • Internal brown spot	• Dull skin appearance • Susceptible to black dot	

Chipping Potato Variety Trial

The 2020 Chipping Trial included nine entries from the Western Regional Variety Trial (WR). Important characteristics for processing chippers include: total yield, tubers per plant, tuber shape, tuber uniformity, average tuber size, and specific gravity. See Tables 10-13 for Chipping Trial results and Figure 3 for entry pictures and comments.

Trial Information

Location:	Intermountain Research and Extension Center, Tulelake, CA
Soil Type:	Tulebasin mucky silty clay loam
Planting Date:	May 17th
Vine Kill Date:	August 26th
Days to Vine Kill:	101
Harvest Date:	September 25th
Irrigation:	Solid-set sprinklers; applied water + precipitation = 26.5 inches
Plot Length:	18.3 Feet
In-Row Spacing:	10 Inches
Row Spacing:	36 Inches
Number of Reps:	4
# of Fertilizer/Acre:	162-100-100-32 (Sulphur)
Seed Treatment:	Maxim 4FS and Fir Bark Dust
Weed Control:	Prowl H20 , Outlook, Matrix
Insecticides:	Admire Pro in-furrow, Vydate
Fungicides:	Vellum Prime + Quadris in-furrow; Luna Tranquility
Vine Kill Method:	Rolling and Reglone at labeled rates

Table 10. Tuber Yield and Size of Chipping Potato Entries.

			Tuber Yield (cwt/A)[1]											
Clone / Variety	Trial	Total	>14 oz		10-14 oz		6-10oz		4-6 oz		<4 oz		Culls	
Atlantic	**WR**	456.1	ab[1]	29.7	ab	60.3	ab	214.5	a	86.1	bcd	55.6	c	9.9	ab
Lamoka	**WR**	445.0	ab	20.5	ab	64.0	ab	190.7	ab	101.7	abcd	52.3	c	15.7	ab
Snowden	**WR**	364.0	b	23.8	ab	47.3	abc	141.3	bc	85.5	cd	54.7	c	11.4	ab
A13125-3C	**WR**	508.6	a	17.0	ab	40.9	abc	205.9	ab	129.7	abc	105.8	b	9.4	b
A16150-1C	**WR**	433.1	ab	5.9	ab	24.2	bc	124.1	cd	139.9	a	130.3	b	8.7	b
A16153-2C	**WR**	447.2	ab	0.0	b	3.1	c	74.0	d	133.1	ab	225.9	a	11.2	ab
A16154-2C	**WR**	401.1	ab	40.6	a	59.3	ab	151.2	abc	77.9	d	43.8	c	28.4	a
AC13125-5W	**WR**	368.1	b	0.0	b	25.4	bc	124.5	cd	102.1	abcd	107.2	b	9.0	b
AC13126-1Wadg	**WR**	435.8	ab	13.5	ab	85.8	a	187.9	abc	79.0	d	55.9	c	13.7	ab
Mean		**428.8**		**16.8**		**45.6**		**157.1**		**103.9**		**92.4**		**13.0**	

[1]Mean comparisons were performed using Tukey's-Kramer HSD; means with the same letter within columns are not significantly different

Table 11. Merit Score and Tuber Characteristics of Chipping Potato Entries

Clone / Variety	Trial	Merit[1]	Eye depth[2]	Tuber Shape[3]	Shape Uniformity[4]	Length/Depth Ratio[5]	Length/Width Ratio[5]
Atlantic	**WR**	3.5	3.0	2.0	3.0	1.26	1.00
Lamoka	**WR**	3.5	4.0	2.0	3.5	1.37	1.10
Snowden	**WR**	3.0	3.0	1.5	3.5	1.11	0.88
A13125-3C	**WR**	4.0	4.0	1.0	4.0	1.17	1.01
A16150-1C	**WR**	3.5	4.5	2.0	3.0	1.11	0.92
A16153-2C	**WR**	3.0	3.0	2.0	3.0	1.03	0.89
A16154-2C	**WR**	3.0	4.0	1.5	2.5	1.21	1.00
AC13125-5W	**WR**	4.0	4.0	1.0	4.0	1.20	1.00
AC13126-1Wadg	**WR**	3.0	3.5	1.5	3.0	1.15	0.96
Mean		**3.4**	**3.7**	**1.6**	**3.3**	**1.18**	**0.97**

[1] 1=Worst, 5=Best - Chipper Merit Score takes into account multiple factors including tuber shape, eye depth, and shape uniformity
[2] 1=Deep, 5=Shallow
[3] 1=Round, 5=Oblong
[4] 1= No Uniformity, 5=Very Uniform
[5] Ratio of 10 tubers measured from 10-14 oz size category.

Table 12. Tuber Defects of Chipping Potato Entries.

Clone / Variety	Trial	Hollow Heart[1]	Vascular Discoloration[1]	Stem End Necrosis[1]	Knobs	Growth Crack	Greening
		%[2]	%[2]	%[2]	%[2]	%[2]	%[2]
Atlantic	**WR**	0.0	0.0	0.0	1.0 a	0.2 c	2.8 ab
Lamoka	**WR**	0.0	6.7	0.0	0.2 a	0.0 c	4.0 ab
Snowden	**WR**	0.0	3.3	0.0	0.8 a	0.0 c	2.3 b
A13125-3C	**WR**	0.0	0.0	6.7	0.1 a	0.3 bc	1.9 b
A16150-1C	**WR**	0.0	0.0	3.3	0.6 a	0.0 c	1.4 b
A16153-2C	**WR**	3.3	0.0	3.3	0.0 a	0.3 bc	2.6 ab
A16154-2C	**WR**	0.0	0.0	3.3	0.0 a	1.3 ab	5.9 a
AC13125-5W	**WR**	0.0	3.3	3.3	0.0 a	0.0 c	3.3 ab
AC13126-1Wadg	**WR**	0.0	3.3	0.0	0.0 a	2.2 a	1.6 b
Mean		**0.4**	**1.9**	**2.2**	**0.3**	**0.5**	**2.9**

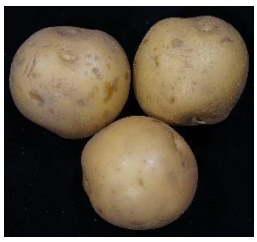
[1]Thirty, 6-10oz tubers were evaluated from each entry.
[2] Percent of total tubers.

Table 13. Stand, Tuber Set, Average Tuber Size and Specific Gravity of Chipping Potato Entries.

Clone / Variety	Trial	% Stand	Tubers per Plant	Average Tuber Size (oz)	Specific Gravity	Early Dying[1] (A.U.D.P.C.)
Atlantic	**WR**	93 ab	7.2 def	6.3 a	1.100 ab	414
Lamoka	**WR**	93 ab	7.4 def	6.0 ab	1.101 ab	803
Snowden	**WR**	98 ab	5.8 f	5.9 ab	1.099 ab	353
A13125-3C	**WR**	97 ab	9.3 bc	5.2 bc	1.101 ab	226
A16150-1C	**WR**	90 ab	10.0 ab	4.4 cd	1.104 a	559
A16153-2C	**WR**	99 a	11.7 a	3.5 d	1.097 bc	404
A16154-2C	**WR**	96 ab	6.1 ef	6.3 a	1.079 d	668
AC13125-5W	**WR**	91 ab	8.3 bcd	4.5 cd	1.079 d	498
AC13126-1Wadg	**WR**	84 b	7.9 cde	6.0 ab	1.093 c	619
Mean		**93**	**8.2**	**5.3**	**1.095**	**206**

[1]Area Under Disease Progress Curve based on foliar early-dying ratings taken 60, 67, 76, 82 and 91 days after planting. Higher value is more susceptible

Figure 3. 2024 Chipping Trial Entries

Atlantic	Lamoka	Snowden
		
• Check	• Check	• Check
A13125-3C	**A16150-1C**	**A16153-2C**
		
• Nice shape	• Prone to shatter	• Pink eyes
A16154-2C	**AC13125-5W**	**AC13126-1Wadg**
		
• Poor shape uniformity	• Nice uniform shape	• Large sunken eyes on butt end

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