



## **2004 Potato Variety Evaluation Results**

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In 2004, three regional potato variety trials were conducted on the Intermountain Research and Extension Center (IREC) in Tulelake, in cooperation with USDA and several universities in the Western United States. The trials included the Western Regional Late Russet Variety Trial, Western Regional Chip Variety Trial and Western Regional Red Specialty Variety Trial. It was also planned to conduct the Southwest Regional Variety Trial, but the trial was incomplete as seed for several of the new varieties was not received in time for planting.

The Western Regional Late Russet Variety Trial contained 26 entries. The yield and characteristics of the tested cultivars are presented in Tables 1 and 2, respectfully. The highest yields of US #1 tubers were produced by ATX91137-1RU and A93157-6LS with high tuber quality merit scores. Other high yielding producers of US #1 tubers included PA95A11-4, Ranger Russet, A9304-3, ATX92230-1RU and Silverton. After three years of testing, the A9304-3 variety graduated from the Western Regional Trial; but this variety will be evaluated further at IREC for potential production in the Klamath Basin.

The Regional Chip Trial contained seven experimental and two standard varieties. Chip trial results are presented on Tables 3 and 4. US #1 tuber production greater or equal to the check varieties was measured for COA96141-1C and B1240-1. Chip fry evaluations are in progress. Unfortunately, this trial did not include proprietary chip varieties commonly grown in the Klamath Basin. An effort will be made to include leading proprietary varieties in next year's chip trial.

The Regional Red/Specialty Trial contained a total of 19 varieties: eight with red skin and white flesh; two with red skin and yellow flesh; one with red skin and red flesh; two with purple skin and purple flesh; five with yellow skin and yellow flesh; and one with russet skin and yellow flesh. Variety characteristics are listed on Table 5. The tuber yield results are presented on Tables 6 and 7. Only NDTX4304-1R and VC1015-7R/Y exceeded the standard variety, Dark Red Norland, in the production of US #1 tubers.

The results presented here are for 2004 at the Tulelake location only. Full reports of variety performance in the Western Regional Trials over multiple locations and years are available for review at the Intermountain Research and Extension Center office.

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Table 1. Tuber yield, grade and specific gravity. 2004 Western Regional Late Potato Trial. Tulelake.

Variety Name	Tuber Yield (cwt)					Culls	Total	% 1's	Specific Gravity
	U.S. No. 1's (cwt)								
	Total 1's	>12 oz.	8-12 oz.	4-8 oz.	<4 oz.				
Ranger Russet	357	171	94	91	24	66	446	80	1.086
Russet Burbank #1	276	53	89	135	67	70	413	67	1.087
Russet Norkotah	257	86	81	90	29	61	346	74	1.069
Russet Burbank #2	289	56	83	151	84	43	417	69	1.085
A92030-5	227	112	66	48	16	83	326	69	1.078
A92294-6	345	9	79	257	111	50	506	68	1.099
A9304-3	283	116	84	83	21	61	364	78	1.083
A9305-10	355	122	117	116	39	70	465	77	1.086
A93157-6LS	414	130	143	141	34	36	485	85	1.094
AC92009-4RU	287	98	96	94	22	39	348	83	1.088
AC93026-9RU	321	112	90	120	42	44	407	79	1.082
ATX92230-1RU	352	98	122	132	34	36	421	83	1.083
CO93001-11RU	233	46	82	105	34	23	289	80	1.078
PA95A11-14	399	84	154	161	45	54	498	80	1.079
TC1675-1RU	286	102	87	98	55	31	372	77	1.084
A95074-6	281	67	102	112	37	71	390	72	1.094
A95109-1	302	32	98	173	48	26	375	80	1.085
ATX91137-1RU	428	144	157	128	27	28	483	89	1.074
CO94035-15RU	380	176	101	103	47	28	455	83	1.083
AO96160-3	324	27	101	196	65	12	401	81	1.083
A88338-1	340	114	102	125	39	38	417	81	1.090
AC89536-5RU	283	72	73	138	63	33	378	75	1.085
Norkotah #112	255	87	78	90	36	60	351	72	1.071
Norkotah #223	196	40	59	96	54	39	289	68	1.064
Gem Russet	240	18	73	150	84	15	339	71	1.088
Silverton	353	90	116	146	43	24	420	84	1.079
Mean	310	87	97	126	46	44	400	77	1.083
CV%	11.7	27.7	18.4	13.9	27.7	34.8	8.6	5.8	0.4
LSD(0.05)	51	34	25	25	18	21	48	6.3	0.007

Table 2. Tuber number and characteristics, plant stands and vigor. 2004 Western Regional Late Potato Trial. Tulalake.

Variety Name	Tubers/Plot				Knobs <sup>1</sup>	Growth <sup>1</sup> Cracks	Shatter <sup>1</sup> Bruise	Eye <sup>2</sup> Depth	Shape <sup>3</sup>	Russet- <sup>4</sup> ing	Merit <sup>5</sup> Score	Plants/50 ft. of row	Vine <sup>6</sup> Vigor
	>12 oz.	8-12 oz.	4-8 oz.	<4 oz.									
Ranger Russet	59	46	95	45	4.8	4.8	5.0	2.3	5.0	3.8	4.0	54	7.8
Russet Burbank #1	21	42	137	124	3.3	4.8	5.0	3.0	4.0	4.3	4.0	56	7.0
Russet Norkotah	33	38	94	52	4.3	5.0	5.0	2.5	4.5	5.0	4.8	54	1.8
Russet Burbank #2	21	36	155	149	4.0	5.0	5.0	3.3	4.3	4.3	3.8	56	6.5
A92030-5	38	32	49	30	4.3	4.8	4.8	3.8	4.0	5.0	4.5	53	6.3
A92294-6	4	33	265	201	5.0	4.5	4.5	3.8	3.0	1.0	5.0	56	8.8
A9304-3	40	38	88	37	3.8	5.0	5.0	3.5	4.5	3.8	4.3	53	6.8
A9305-10	46	57	127	74	3.8	4.8	4.8	3.5	4.0	3.0	3.8	54	7.8
A93157-6LS	48	66	147	61	4.8	5.0	5.0	3.0	4.0	4.3	5.0	56	8.8
AC92009-4RU	37	46	98	41	5.0	5.0	5.0	4.3	4.3	4.0	4.8	56	6.3
AC93026-9RU	41	42	120	77	4.8	5.0	4.8	4.0	4.5	4.3	4.8	54	8.3
ATX92230-1RU	37	55	134	60	5.0	4.3	4.3	3.8	4.0	4.5	5.0	53	6.3
CO93001-11RU	18	38	106	59	5.0	5.0	5.0	3.3	4.3	3.0	4.5	53	3.8
PA95A11-14	31	72	166	81	4.8	4.8	4.5	3.8	4.0	3.3	3.3	55	5.8
TC1675-1RU	37	43	97	102	5.0	4.8	5.0	4.0	4.3	4.3	5.0	56	6.8
A95074-6	26	50	115	70	5.0	5.0	5.0	3.8	4.3	2.5	4.3	55	9.0
A95109-1	13	42	175	85	5.0	5.0	5.0	4.0	4.3	3.8	5.0	54	7.0
ATX91137-1RU	73	86	162	59	5.0	4.8	5.0	3.5	4.0	4.8	4.8	54	5.3
CO94035-15RU	81	70	134	62	5.0	5.0	4.3	3.8	4.5	4.3	5.0	56	6.8
AO96160-3	11	47	199	118	5.0	5.0	5.0	3.5	4.0	4.3	5.0	55	6.8
A88338-1	41	49	126	69	5.0	4.8	5.0	3.8	4.0	3.0	4.3	55	10.0
AC89536-5RU	27	35	126	118	4.8	5.0	4.8	4.0	4.0	4.3	5.0	55	6.8
Norkotah #112	31	36	92	68	4.0	5.0	5.0	3.3	4.3	4.8	4.5	53	2.3
Norkotah #223	15	26	102	101	4.8	5.0	5.0	3.5	4.0	5.0	4.8	55	1.3
Gem Russet	7	31	155	163	5.0	5.0	5.0	3.5	4.5	4.3	5.0	55	5.8
Silverton	35	55	152	78	5.0	5.0	5.0	3.5	4.0	3.5	5.0	55	6.5
Mean	33	46	131	84	4.6	4.9	4.9	3.6	4.2	3.9	4.6	55	6.4
CV%	43.2	30	18	22.7	9.8	5.7	5.9	14.7	8.6	12.5	8.5	2.9	9.7
LSD(0.05)	20	20	32	27	0.6	NS	0.4	0.7	0.5	0.7	0.5	NS	0.9

Rating Scales

- <sup>1</sup> 1 = Many; 5 = Few
- <sup>2</sup> 1 = Deep; 5 = Shallow
- <sup>3</sup> 1 = Round; 5 = Long
- <sup>4</sup> 1 = White; 5 = Heavy Russetting
- <sup>5</sup> 1 = Poor; 5 = Best
- <sup>6</sup> 1 = Dead; 10 = Most Vigorous 8/23/04

Table 3. Tuber yield, grade and specific gravity. 2004 Western Regional Chip Trial. Tulalake.

Variety Name	Tuber Yield (cwt)						Culls	Total	% 1's	Specific Gravity
	U.S. No. 1's (cwt)									
	Total 1's	>10 oz.	6-10 oz.	4-6 oz.	<4 oz.					
Atlantic	445	178	181	87	37	23	506	88	1.092	
Chipeta	452	257	146	49	24	48	524	86	1.091	
A91814-5	385	139	149	98	81	69	535	72	1.092	
B0766-3	345	54	142	149	98	12	454	76	1.100	
Ivory Crisp	327	111	125	91	74	30	431	76	1.097	
COA96141-1C	482	205	194	84	40	41	563	86	1.079	
COA96142-3C	394	187	135	72	51	39	484	81	1.091	
B1240-1	446	278	130	37	19	29	493	90	1.090	
C095051-7W	421	118	193	109	42	23	485	87	1.099	
Mean	411	170	155	86	52	35	497	82	1.092	
CV%	12.8	21.3	16.2	14.5	16.3	29.4	11.7	2.6	0.4	
LSD(0.05)	77	53	37	18	12	15	85	3.1	0.007	

Table 4. Tuber number and characteristics, plant stands and vigor. 2004 Western Regional Chip Trial. Tulelake.

Variety Name	Tubers/Plot				Knobs <sup>1</sup>	Growth <sup>1</sup> Cracks	Shatter <sup>1</sup> Bruise	Eye <sup>2</sup> Depth	Shape <sup>3</sup>	Russet- <sup>4</sup> ing	Merit <sup>5</sup> Score	Plants/50 ft. of row	Vine <sup>6</sup> Vigor
	>12 oz.	8-12 oz.	4-8 oz.	<4 oz.									
Atlantic	44	81	170	66	5.0	5.0	4.5	2.5	1.0	4.5	4.3	53	5.8
Chipeta	69	75	115	42	5.0	5.0	4.0	3.5	1.8	4.0	3.8	54	9.0
A91814-5	37	62	174	152	4.8	4.8	4.8	4.3	2.5	3.5	3.5	54	7.5
B0766-3	11	44	238	178	5.0	5.0	4.5	3.5	1.0	4.8	4.3	55	7.0
Ivory Crisp	28	51	154	137	5.0	5.0	3.5	3.0	1.0	3.5	4.3	54	5.3
COA96141-1C	48	97	166	71	4.8	5.0	4.8	3.8	2.0	3.8	4.5	54	7.0
COA96142-3C	46	67	136	93	5.0	5.0	3.5	3.0	1.0	4.0	4.0	51	7.3
B1240-1	77	69	85	34	5.0	4.8	4.5	3.3	1.8	4.5	4.0	54	9.0
C095051-7W	25	69	214	73	4.7	5.0	3.9	3.4	1.7	3.7	4.1	49	7.3
Mean	43	68	161	94	4.9	4.9	4.2	3.3	1.5	4.0	4.1	53	7.3
CV%	25.2	15.3	14	16.8	5.9	5.0	11.4	13.5	23.3	12.6	16	3.6	8.1
LSD(0.05)	16	15	32	23	NS	NS	0.7	0.7	0.5	0.7	NS	2.8	0.9

Rating Scales

- <sup>1</sup> 1 = Many; 5 = Few
- <sup>2</sup> 1 = Deep; 5 = Shallow
- <sup>3</sup> 1 = Round; 5 = Long
- <sup>4</sup> 1 = Several; 5 = None
- <sup>5</sup> 1 = Poor; 5 = Best
- <sup>6</sup> 1 = Dead; 10 = Most Vigorous 8/23/04

Table 5. Description of Clones - 2004 Western Regional Red/Specialty Trial

Clone/Variety	Flower Color	Vine Size	Maturity	Tuber Shape	Skin Type	
<b>Red/White Flesh</b>						
1	Dk. Red Norland	Red-purple	Sm	Early	Oval	Dk. Red
2	Red LaSoda	Red-purple	Med	Med	Oval	Lt. Red
3	A96741-1R	Red-purple	Med/Small	Med	Round	Dk. Red
4	A96741-2R	Red-purple			Round	Red
5	AO93487-2R	Red-purple	Med	Med-early	Round	Lt. Red
6	CO93037-6R	Red-purple	Large	Med	Round	Red
7	NDTX4304-1R	Red-purple	Small/Med	Early/late	Round	Red
8	VC1075-1R	Purple	Med	Early	Round	Red
<b>Red/Yellow Flesh</b>						
9	VCO967-2R/Y	Red-purple	Med	Med/Early	Oval	Red
10	VC1015-7R/Y	Purple	Med	Early	Oval	Red
<b>Red/Red Flesh</b>						
11	CO94183-1R/R	Red-purple	Med/Small	Med	Oval	Red
<b>Purple/Purple Flesh</b>						
12	All Blue	Blue	Med/Lg	Med/Late	Long	Dk. Blue
13	CO94165-3P/P	Lt. Blue	Med/Small	Early	Oblong	Purple
<b>Yellow/Yellow Flesh</b>						
14	Yukon Gold	Pink	Med	Early	Oval	White
15	BTX1544-2W/Y	White	Med	Med	Oval	White
16	NDA5507-3YF	Red-purple	Med	Med/Early	Round	White
17	VC1002-3W/Y	White	Large	Med	Oval	White
18	VC1009-1W/Y	White	Large	Med	Oblong	White
<b>Russet/Yellow Flesh</b>						
19	A95074-6	White	Large	Med/Late	Oblong	Lt. Russet

Table 6. Tuber yield, grade and specific gravity. 2004 Western Regional Red Specialty Potato Trial. Tulelake.

Variety Name	Tuber Yield (cwt)					Culls	Total	% 1's	Specific Gravity
	U.S. No. 1's (cwt)								
	Total 1's	>10 oz.	6-10 oz.	4-6 oz.	<4 oz.				
Dark Red Norland	442	153	186	103	63	22	527	84	1.066
Red LaSoda	416	207	141	68	38	79	532	78	1.067
A093487-2R	314	45	142	127	114	7	435	72	1.072
C093037-06	249	52	105	92	123	32	404	62	1.076
NDTX4304-1R	477	276	136	65	47	68	592	81	1.067
VC0967-2R/Y	353	89	145	120	87	20	460	77	1.074
C094183-1R/R	262	27	125	111	97	44	403	65	1.080
All Blue	253	16	90	147	195	22	470	54	1.078
C094165-3P/P	293	28	121	143	150	22	464	63	1.073
Yukon Gold	378	241	90	47	30	22	430	88	1.084
NDA5507-3YF	365	51	155	159	123	20	508	71	1.079
VC1002-3W/Y	102	2	25	77	229	14	345	30	1.088
BTX1544-2W/Y	354	118	154	82	54	35	443	80	1.076
A96741-1R	259	16	92	152	133	50	442	59	1.075
A96741-2R	430	160	168	101	115	22	566	76	1.067
A95074-6	372	156	140	76	61	42	475	79	1.086
VC1009-1W/Y	356	45	141	170	189	48	592	60	1.081
VC1015-7R/Y	473	151	218	105	55	18	546	87	1.077
VC1075-1R	360	56	154	149	127	24	510	70	1.079
Mean	342	99	133	110	107	32	481	70	1.076
CV%	11.2	25.6	15.3	16.0	20.7	63	9.8	4.8	0.3
LSD(0.05)	54	36	29	25	31	29	67	4.8	0.004

Table 7. Tuber number and characteristics, plant stands and vigor. 2004 Western Regional Red Specialty Potato Trial. Tulelake.

Variety Name	Tubers/Plot				Knobs <sup>1</sup>	Growth <sup>1</sup> Cracks	Shatter <sup>1</sup> Bruise	Eye <sup>2</sup> Depth	Shape <sup>3</sup>	Skin <sup>4</sup> Color	Skinning <sup>5</sup>	Russet- <sup>6</sup> ing	Flesh <sup>4</sup> Color	Merit <sup>7</sup> Score	Plants/50 ft. of row	Vine <sup>8</sup> Vigor
	>10 oz.	6-10 oz.	4-6 oz.	<4 oz.												
Dark Red Norland	54	88	116	166	4.5	4.5	4.3	2.8	2.0	1.8	4.3	1.0	1.0	3.0	63	5.0
Red LaSoda	83	85	111	171	3.0	3.3	4.8	1.0	1.8	1.8	3.8	1.0	1.0	1.0	66	5.3
A093487-2R	55	91	127	191	4.8	4.8	4.8	3.8	1.5	2.8	3.3	1.0	1.0	4.0	64	3.8
C093037-06	47	84	118	251	4.8	5.0	4.3	2.5	1.5	4.8	4.0	1.5	1.0	3.5	64	7.0
NDTX4304-1R	130	78	71	90	4.8	3.3	2.8	2.8	1.5	3.5	2.8	1.0	1.0	3.0	61	6.0
VC0967-2R/Y	67	96	122	156	5.0	5.0	4.5	4.0	2.5	1.3	4.5	1.0	3.0	4.5	56	4.8
C094183-1R/R	24	81	120	178	4.5	3.3	4.5	3.3	2.5	4.3	4.8	1.3	2.0	3.3	65	5.5
All Blue	19	64	157	353	4.3	5.0	5.0	3.3	4.0	5.0	5.0	1.0	4.3	3.0	65	7.3
C094165-3P/P	35	95	154	240	4.5	5.0	5.0	3.5	3.8	5.0	4.8	1.0	5.0	3.8	65	5.0
Yukon Gold	106	48	51	55	4.8	4.8	4.8	3.7	3.3	1.8	4.8	1.0	2.8	4.0	58	5.5
NDA5507-3YF	31	87	155	282	4.3	5.0	4.8	3.5	2.8	1.0	5.0	1.8	2.0	4.0	62	6.0
VC1002-3W/Y	25	39	98	378	4.5	4.8	4.3	3.0	2.3	1.0	4.8	1.0	3.0	4.5	59	6.8
BTX1544-2W/Y	77	104	91	101	3.8	5.0	4.5	2.5	2.5	1.0	4.8	2.0	2.5	3.0	65	4.5
A96741-1R	17	58	155	303	5.0	5.0	4.3	2.8	1.5	2.3	4.0	1.0	1.0	4.8	62	7.0
A96741-2R	91	103	101	162	4.8	4.8	4.0	2.5	1.0	3.3	4.3	1.0	1.0	3.5	63	5.3
A95074-6	73	75	82	141	4.3	4.8	4.3	2.5	4.3	1.0	3.5	2.0	2.5	2.5	63	8.5
VC1009-1W/Y	43	82	158	299	4.0	5.0	4.0	3.8	2.8	1.0	3.8	1.0	2.8	3.0	60	8.5
VC1015-7R/Y	68	98	129	178	4.8	5.0	5.0	2.5	2.3	1.0	4.3	1.0	3.0	3.5	63	3.3
VC1075-1R	40	98	164	237	4.3	5.0	4.0	2.5	1.3	3.5	3.8	1.0	1.0	3.5	64	5.0
Mean	57	82	120	207	4.4	4.6	4.4	2.9	2.4	2.5	4.2	1.2	2.1	3.4	62	5.8
CV%	47.0	28.7	26.5	46.4	12.4	8.3	15.2	24.1	19.0	21.8	15.8	45.1	12.9	18.0	4.6	18
LSD(0.05)	38	33	45	136	0.8	0.5	0.9	1.0	0.6	0.8	0.9	NS	0.4	0.9	4.1	1.5

Rating Scales

- <sup>1</sup> 1 = Many; 5 = Few
- <sup>2</sup> 1 = Deep; 5 = Shallow
- <sup>3</sup> 1 = Round; 5 = Long
- <sup>4</sup> 1 = White; 5 = Darkest
- <sup>5</sup> 1 = None; 5 = Much
- <sup>6</sup> 1 = White; 5 = Heavy Russetting
- <sup>7</sup> 1 = Poor; 5 = Best
- <sup>8</sup> 1 = Dead; 10 = Most Vigorous 8/23/04

Evaluated forty 6-10 oz. tubers for internal defects: brown center, hollow heart, black spot bruise, internal black spot, and net necrosis. All were negligible for each variety.