

2005 Potato Variety Evaluation Results

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In cooperation with the United States Department of Agriculture (USDA) and several universities in the Western United States, the Intermountain Research and Extension Center (IREC) in Tulelake conducted three potato variety evaluation trials in 2005 — a Late Russet Variety Trial, a Red Specialty Variety Trial and a Chip Variety Trial. Due to a cold wet spring and late season frosts, our potato trials were planted late and killed early so the yields suffered as an outcome.

The Late Russet Variety Trial consisted of 28 varieties this year. The yield and quality characteristics for each variety are shown in Tables 1 and 2 respectfully. The highest yields of the US #1 tubers were produced by TXDH-99-1RU, A96104-2, A93157-6LS, TXA549-1RU and MWTX2609-4RU. In addition, A93157-6LS also had high tuber quality merit scores in 2005, and was reported in 2004 as being a variety leader in both traits as well.

The Red Specialty Trial consisted of 27 varieties in total. Dark Red Norland, a standard variety, led the trial in US #1 tuber yields with VC1123-2W/Y following closely in production. The tuber yield results are listed on Table 3. Of the 27 varieties evaluated, the skin and flesh color characteristics are as follows: 6 with red skin and white flesh, 6 with red skin and yellow flesh, 4 with red skin and red flesh, 2 with purple skin and purple flesh, 6 with white skin and yellow flesh and 3 with russet skin and yellow flesh. These variety and quality characteristics are listed on Table 4.

The Chip Trial consisted of 12 varieties, 2 standard and 10 experimental. The yield results for this trial are presented on Table 5. The COA96141-2C and B0766-3T varieties were greater than or equal to, the two standard varieties, Atlantic and Chipeta in US #1 tuber production. The chipper cook tests are still in progress.

The results presented for these trials are for 2005 at the Tulelake location only. Full reports for variety performance over numerous years and locations for these trials are available for review at the IREC office.

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Table 1. Tuber yield, grade and specific gravity. Combined 2005 Western and 2005 Southwestern Regional Russet 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.					
A92030-5	269	135	69	66	18	38	325	83	1.072	
A92294-6	279	16	64	199	109	23	410	68	1.077	
A93157-6LS	384	184	117	83	21	25	430	89	1.067	
A95109-1	303	56	105	142	39	19	361	84	1.073	
A95409-1	314	101	105	108	45	11	369	85	1.083	
A96095-3	349	181	84	83	34	71	454	76	1.066	
A96104-2	394	122	147	126	51	14	459	86	1.067	
AC96052-1RU	231	65	75	92	42	5	278	83	1.067	
AO96160-3	331	46	121	165	43	5	379	87	1.072	
AO96164-1	370	85	121	164	54	19	442	84	1.075	
AOA95154-1	365	118	115	132	45	10	419	87	1.073	
AOA95155-7	372	75	145	151	35	17	423	88	1.063	
AOTX95265-2ARU	311	86	95	130	49	16	376	83	1.072	
AOTX95265-4RU	310	120	96	94	32	15	357	87	1.069	
AOTX98137-1RU	257	54	84	119	52	8	318	81	1.063	
ATX91137-1RU	235	78	81	76	23	18	277	64	1.060	
CO94035-15RU	224	84	75	65	16	26	265	84	1.072	
CO95086-8RU	219	64	82	73	31	6	256	64	1.074	
CO95172-3RU	323	84	105	135	59	25	407	79	1.072	
CO97137-1W	175	19	47	109	59	20	254	69	1.080	
MWTX2609-2RU	299	130	86	84	31	28	358	63	1.073	
MWTX2609-4RU	381	154	99	128	41	30	452	84	1.075	
PA97B3-2	347	83	112	152	45	20	411	84	1.077	
Ranger Russet	347	156	101	91	33	34	414	84	1.080	
Russet Burbank	225	51	84	91	42	80	347	65	1.079	
Russet Norkotah	258	98	71	89	33	16	307	84	1.064	
TXA549-1RU	384	93	132	159	66	14	463	83	1.074	
TXDH-99-1RU	406	142	133	131	59	16	480	84	1.073	
Mean	309	96	98	116	43	22	375	80	1.072	
CV%	21.0	33.4	25.2	19.1	22.4	50.1	20.0	17.5	0.34	
LSD(0.05)	92	45	35	31	14	16	106	NS	0.008	

Table 2. Tuber number and characteristics, plant stands and vigor. Combine 2005 Western and Southwestern Regional Russet Potato Trial. Tulelake.

Variety Name	Tubers/Plot				Hollow ¹ Heart %	Appear- ² ance	Eye ³ Depth	Shape ⁴	Russet- ⁵ ing	Merit ⁶ Score	Plants Per Acre	Vine Vigor ⁷ (9/15/05)
	>12 oz.	8-12 oz.	4-8 oz.	<4 oz.								
A92030-5	38	37	61	29	0	4.3	4.5	4.0	4.5	3.1	13,400	3.1
A92294-6	6	38	197.3	200	0	5.0	4.5	3.3	1.0	3.5	14,900	4.0
A93157-6LS	60	63.5	74	37	5	4.5	3.5	4.0	3.8	4.8	14,700	4.3
A95109-1	20	58.8	129.8	68	0	4.8	3.8	4.0	3.3	3.6	12,700	3.6
A95409-1	33	57.3	97.8	89	0	3.8	3.3	4.3	2.5	3.4	14,600	3.3
A96095-3	46	45.5	74.8	67	0	2.5	3.0	3.8	3.3	3.0	14,300	3.5
A96104-2	44	80	116.3	99	0	4.3	3.3	4.3	3.8	4.4	15,300	3.9
AC96052-1RU	21	41	84	82	5	5.0	3.8	4.3	4.5	3.0	12,600	3.3
AO96160-3	17	67.5	149	79	3	5.0	4.3	4.0	3.5	4.1	14,400	3.8
AO96164-1	30	69	153.5	100	0	4.3	4.5	4.5	3.5	4.3	14,300	2.9
AOA95154-1	42	63.8	121	76	3	4.8	4.8	4.5	3.5	4.5	15,200	3.9
AOA95155-7	29	79.3	138	63	0	5.0	4.3	4.0	2.3	4.4	15,000	3.8
AOTX95265-2ARL	30	54	120.5	82	25	4.0	3.5	4.3	4.5	3.3	14,800	1.1
AOTX95265-4RU	41	51.8	93.8	61	28	3.5	3.5	4.8	4.0	3.1	14,100	1.5
AOTX98137-1RU	20	47.5	110	91	10	4.3	3.8	5.0	4.5	2.9	14,800	0.5
ATX91137-1RU	28	43.8	68.3	43	0	4.8	4.0	4.3	4.5	3.5	14,400	2.9
CO94035-15RU	29	40.3	56.5	29	8	4.5	4.3	4.3	3.8	2.9	13,600	3.5
CO95086-8RU	23	45.3	69	57	3	3.8	2.5	3.0	2.8	2.8	13,500	1.3
CO95172-3RU	30	59	126.5	113	0	4.0	3.3	4.3	3.3	3.6	14,600	3.9
CO97137-1W	7	26.3	106.3	104	0	2.3	4.8	5.0	1.0	1.6	13,700	0.0
MWTX2609-2RU	40	45.8	77.5	60	0	2.5	2.8	3.0	1.5	3.0	10,800	3.5
MWTX2609-4RU	49	54.5	118	78	0	3.0	3.5	4.0	2.0	3.8	14,700	3.5
PA97B3-2	30	61.3	141.8	84	0	3.8	4.3	4.3	3.0	3.8	14,400	2.5
Ranger Russet	50	55.8	82.3	62	0	2.8	2.5	5.0	3.0	3.3	14,900	3.5
Russet Burbank	17	47	84.8	71	0	2.8	4.0	4.3	3.5	1.9	14,700	2.8
Russet Norkotah	32	38.8	82	62	8	3.8	3.8	5.0	4.3	2.6	14,200	0.3
TXA549-1RU	32	72.8	147.8	102	0	4.0	3.5	3.5	2.8	4.1	14,100	3.6
TXDH-99-1RU	46	72.8	122.8	99	0	4.0	4.0	4.0	2.5	4.4	14,100	3.9
Mean	31.7	54.2	107.3	78	1	3.9	3.8	4.2	3.2	3.4	14,177	2.90
CV%	32.1	25.3	19.0	29	216	21.1	19.8	15.8	21.4	20.9	10.6	11.9
LSD(0.05)	14.3	19.3	28.7	32	10	1.2	1.0	0.9	1.0	1.01	NS	0.49

Rating Scales

¹ Percentage of 8-12 oz tubers with Hollow Heart

² 1 = Worst; 5 = Best

³ 1 = Deep; 5 = Shallow

⁴ 1 = Round; 5 = Long

⁵ 1 = White; 5 = Heavy Russetting

⁶ Average of combined yield ranks (1 = Lowest 20%; 5 = Highest 20%) and appearance ratings

⁷ 1 = Deep; 5 = Most Vigorous

Table 3. Tuber yield, grade and specific gravity. Combined 2005 Western and Southwestern Regional Red Specialty Potato 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.				
A95074-6	281	110	109	62	51	26	357	79	1.078
A96741-1R	354	66	165	123	113	23	490	72	1.069
A96741-2R	331	142	122	67	75	16	422	78	1.066
AC97521-1R/Y	211	16	95	100	118	17	345	61	1.075
All Blue	218	10	91	117	164	14	396	55	1.068
BTX 1544-2W/Y	331	69	171	92	76	23	430	77	1.075
CO94157-2W/Y	219	22	95	101	135	21	374	58	1.086
CO94165-3P/P	272	37	117	118	150	24	445	61	1.078
CO94183-1R/R	234	36	115	83	70	73	377	62	1.072
CO97078-5R	240	77	105	58	49	11	300	80	1.072
CO97226-2R/R	169	2	55	114	179	10	358	47	1.075
CO97232-1R/Y	191	21	74	96	132	21	344	55	1.076
CO97232-2R/Y	290	59	126	105	94	19	403	72	1.070
CO97233-3R/Y	291	74	134	84	56	79	426	69	1.071
Dark Red Norland	387	157	155	76	62	52	501	77	1.068
NDA5507-3YF	254	23	114	118	109	13	375	67	1.083
NY 126	351	115	166	70	34	15	399	88	1.088
PA99P20-2	285	44	141	101	95	13	393	73	1.079
POR01PG20-12	266	40	121	105	104	10	380	70	1.075
Red Lasoda	293	133	117	43	32	73	398	74	1.076
VC0967-2R/Y	318	57	147	113	75	8	401	79	1.076
VC1002-3W/Y	206	9	86	112	156	17	379	54	1.083
VC1009-1W/Y	219	52	100	67	81	37	337	65	1.064
VC1015-7R/Y	170	23	79	67	75	8	252	67	1.072
VC1075-1R	250	24	98	127	139	30	419	60	1.075
VC1123-2W/Y	361	154	139	68	44	24	429	84	1.072
Yukon Gold	346	179	115	53	35	23	404	86	1.086
Mean	272	65	117	90	93	26	390	69	
CV%	11.4	28.6	15.1	14.4	13.7	31.4	9.0	4.8	
LSD(0.05)	44	26	25	18	18	11	50	5	

Table 4. Tuber number and characteristics, plant stands and vigor. Combined 2005 Western and Southwestern Regional Red Specialty Potato Trial. Tulelake.

Variety Name	Tubers/Plot				Eye ¹ Depth	Shape ²	Skin ³ Color	Flesh ³		Merit ⁴ Score	Plants/ Acre	Vine ⁵ Vigor
	>10 oz.	6-10 oz.	4-6 oz.	<4 oz.				Color	Color			
A95074-6	46	74	64	93	4.8	4.0	Ru 3.0	Y 2.0	3.4	17,500	4.3	
A96741-1R	29	116	131	220	3.0	2.0	R 3.0	W 1.0	4.0	17,600	4.5	
A96741-2R	55	81	70	151	2.3	2.0	R 3.3	W 1.0	3.6	17,100	3.5	
AC97521-1R/Y	8	68	108	233	3.3	2.5	R 2.3	Y 3.0	2.6	14,500	4.6	
All Blue	5	67	126	325	3.0	3.8	P 4.8	P 5.0	2.3	17,700	4.8	
BTX 1544-2W/Y	29	117	98	138	3.0	2.5	W 3.0	Y 2.0	3.8	15,800	3.0	
CO94157-2W/Y	10	69	109	267	4.3	4.0	Ru 3.0	Y 3.3	2.8	15,000	4.0	
CO94165-3P/P	17	83	126	295	3.8	3.8	P 5.0	P 5.0	3.4	17,600	3.8	
CO94183-1R/R	16	79	87	134	3.3	3.0	R 3.5	R 2.3	2.8	16,600	3.8	
CO97078-5R	32	70	60	91	4.0	2.0	R 5.0	R 1.0	3.3	14,100	3.4	
CO97226-2R/R	1	42	123	356	2.3	1.8	R 5.0	Y 5.0	2.1	17,000	3.6	
CO97232-1R/Y	9	53	104	260	3.8	3.0	R 2.3	Y 3.8	2.5	16,000	2.5	
CO97232-2R/Y	26	87	112	175	2.8	2.3	R 2.3	Y 4.0	3.4	12,400	2.9	
CO97233-3R/Y	31	91	88	102	4.0	3.3	R 3.5	Y 3.3	2.8	13,100	4.3	
Dark Red Norlanc	62	104	79	115	3.0	2.3	R 2.0	W 1.0	4.0	15,300	3.4	
NDA5507-3YF	11	80	127	195	3.3	3.0	W 3.0	Y 2.0	3.3	16,200	4.0	
NY 126	46	109	72	61	3.0	2.0	W 3.0	Y 2.3	3.9	15,300	4.1	
PA99P20-2	20	97	108	175	4.5	4.0	R 4.5	R 3.5	3.9	15,800	4.0	
POR01PG20-12	18	85	113	196	3.5	4.0	R 4.3	R 3.3	3.5	18,200	3.9	
Red Lasoda	53	77	45	60	2.8	2.3	R 3.0	W 1.0	3.3	16,500	3.3	
VC0967-2R/Y	25	103	120	134	4.3	3.0	R 1.8	Y 2.8	4.5	15,400	4.1	
VC1002-3W/Y	4	63	120	295	3.5	2.3	W 3.3	Y 2.8	2.8	17,400	4.5	
VC1009-1W/Y	22	68	72	161	4.0	3.0	W 3.0	Y 4.0	2.8	16,500	4.8	
VC1015-7R/Y	10	56	72	142	3.3	2.8	R 1.3	Y 3.0	2.4	15,800	3.3	
VC1075-1R	14	71	137	273	2.5	2.0	R 3.3	W 1.0	2.8	17,100	4.3	
VC1123-2W/Y	57	93	72	79	3.3	2.8	Ru 3.0	Y 2.8	4.6	16,300	4.8	
Yukon Gold	65	77	54	64	3.3	3.5	W 3.0	Y 2.8	4.3	15,400	3.0	
Mean	27	81	96	177	3.4	2.8	3.2	2.7	3.3	16,000	3.9	
CV%	28	15.1	14.4	14	20	13.6	16	16.0	14.6	8.1	20.2	
LSD(0.05)	10	17.1	19.5	34.9	0.9	0.5	0.7	0.6	0.67	1,820	1.1	

Rating Scales

¹ 1 = Deep; 5 = Shallow

² 1 = Round; 5 = Long

³ 1 = Light; 5 = Darkest; Red (R), White (W), Yellow (Y), Purple (P)

⁴ Average of Yield Rank (1 = Lowest 20%; 5 = Hightest 20%)

⁵ 1 = Dead 5 = Vigorous

Table 5. Tuber yield, grade and specific gravity. 2005 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.					
A91814-5	362	104	163	96	89	28	480	76	1.090	
AC97097-14W	342	92	156	94	66	21	429	80	1.100	
Atlantic	467	196	185	86	41	16	524	89	1.097	
B0766-3T	462	281	145	35	17	16	495	93	1.082	
Chipeta	395	235	115	45	27	29	451	88	1.077	
CO95051-7W	322	35	155	132	78	5	405	80	1.095	
CO96141-4W	442	180	178	83	50	11	502	88	1.081	
CO97043-14W	348	180	118	51	34	22	404	86	1.086	
CO97065-7W	360	88	175	97	51	11	422	85	1.098	
COA96141-2C	484	250	184	49	23	18	524	92	1.076	
COA96142-3C	354	184	131	40	28	45	428	83	1.088	
Ivory Crisp	353	123	155	75	58	12	423	83	1.095	
Mean	391	162	155	74	47	20	457	85	1.089	
CV%	7.5	12.8	13.3	16.1	18.8	37.4	6.6	2.9	0.31	
LSD(0.05)	42.3	29.9	29.6	17	12.7	10.5	43.8	3.6	0.008	