

2022

Western Regional



Red/Specialty Trial

Isabel Vales[†], Douglas Scheuring[†], Jeewan Pandey[†], Stephany Toinga-Villafuerte[†] & Jeff Koym^{*}

[†]College Station and ^{*}Lubbock

The cover: Red/Specialty potatoes from Texas Potato Breeding.

(Cover Design: Jeewan Pandey; Image: Isabel Vales)

2022 Western Regional Red/Specialty Trial

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Table 1. Western Regional Red/Specialty Potato Variety Trial - Locations, Cooperators, and Cultural Information

Locations	Cooperators	Irrigation	Fertilizer N-P-K-S (lb./A)	Vine Kill Method	Planting Date	Vine Kill Date	Harvest Date	Pesticides Applied		
								Herbicides	Insecticides	Fungicides
Tulelake California (TUL)*	R. Wilson D. Culp K. Nicholson	Solid-set sprinkler	150-50-200	Reglone, rolling	5/18/2022	9/7/2022	10/3/2022	Prowl H2O Outlook Matrix	Admire-Pro Vydate	Vellum Prime Quadris Manzate Max, Tranquility, Maxim 4FS (see
San Luis Valley Colorado (SLV)	J. Chitwood-Brown D. Holm C. Gray E. Niebaum	Pivot	160-60-40	Mechanical	5/12/2022	9/9/2022	9/22/2022	Prowl H2O Tuscany Clethodim 2E	Platinum 75 SG Leverage 360 Movento HL Sefina Inscalis	Quadris Top Elatus Revus Top Luna Tranquility Agri Tin
Aberdeen Idaho (AB)	R Spear R. Novy, J. Whitworth, C. Lowder	Sprinkler	250-80-0-25 Sulfate	Mechanical	4/21/2022	8/11/2022	8/23/2022	TriCor 4F Matrix Eptam 7-E	Admire Pro	
Springlake Texas (SPL)	I. Vales J. Koym, D. Scheuring J. Pandey S. Toinga-Villafuerte	Pivot	100-40-35	Mechanical	3/25/2022	7/2/2022	7/17/2022	Makaze Matrix Medal EC Metribuzin 75 CA Pin-Dee 3.3 EC	Minecto Pro Movento Oberon 4 SC Selina Inscalis Sivanto 200 SL	Headline Miravis Prime Nucop HB Scala SC Tanos
Dalhart Texas (DAL)	I. Vales J. Koym, D. Scheuring J. Pandey S. Toinga-Villafuerte	Pivot	266-0-0	Reglone	5/6/2022	8/8/2022	9/18/2022	Matrix SG Herbicide Glory 4 TriCor 4F Eptam 7E Parazone 3sl LI 700 Reglone	Reaper ClearForm Fulfill Movento Beleaf 50 SG	Minuet MetaStar 4S Aframe Echo 720 Manzate Max Scala Brand SC Penncozeb 75 DF

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Table 2. Description of Clones - 2022 Western Regional Red/Specialty Trial

Clone/Variety	Parents		Flower Color	Vine Size	Maturity	Tuber Shape	Skin Type	Flesh Color	Entered			DISPO
	Female	Male							By	Seed	Year	
Red/White Flesh												
1 Chieftain	LA1354	LA1027-18	Purple	Medium	Medium	Round	Dark Red	White	Check	OR	***	CHECK
2 Red LaSoda	Triumph	Katahdin	Red-purple	Medium	Medium	Oval	Lt. Red	White	Check	OR	***	CHECK
3 Modoc	ND1196-2R	ND2225-1R	Purple	Medium	Medium	Round	Dark Red	White	Check	OR	***	CHECK
4 A08122-9RY	A02267-5PY	COA01406-1R	Dk Red-Purple	Small	Early	Round	Red	Yellow	ID	OR	1	
5 A08122-12Rsto	A02267-5PY	COA01406-1R	Dk Red-Purple	Medium	Medium	Round	Red	White	ID	OR	2	
6 NDA8512C-1R	ND6694C-1R	ND5256-7R	M. Red-Purple	Small	Early	Round	Red	White	ID	OR	2	
Yellow Flesh												
7 Yukon Gold	Norgleam	W5279-4	Pink	Medium	Early	Oval	White	Yellow	Check	OR	***	CHECK
8 A08120-4Y	A02267-2PY	POR02PG26-5	Dk Red-Purple	Medium	Medium	Round	Yellow	Yellow	ID	OR	2	
9 AC10376-2012-1W/Y	Gala	Granola	White	Large	Medium	Oval	White	Yellow	CO	CO	1	
10 AORTX09037-1W/Y	Fasan	Ivory Crisp	White	Large	Late	Round	White	Yellow	TX	TX	2	
11 COTX10118-4Wpe/Y	07S019	AC03534-2R/Y	Lt Red-purple	Medium	Late	Round	White Purple Eye	Yellow	TX	TX	2	
12 POR16PG34-1	POR11PG62-6	Bulk	Pink	Med-Large	Early-Med	laby/Roun	Yellow	Yellow	OR	OR	1	

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Table 3. Percent Stand

Entry	Clone/Variety	Percent Stand					Mean
		CA TUL	CO SLV	ID AB	TX SPL	TX DAL	
Red/White Flesh							
1	Chieftain	99	97	98	100	100	99
2	Red LaSoda	100	98	99	100	100	99
3	Modoc	94	85	99	95	100	95
4	A08122-9RY		99	100	100	100	100
5	A08122-12Rsto	100		99	100	100	100
6	NDA8512C-1R		92	95	100	100	97
Yellow Flesh							
7	Yukon Gold	92	96	100	93	100	96
8	A08120-4Y		99	99	100	100	99
9	AC10376-2012-1W/Y	100	94	100	100	94	98
10	AORTX09037-1W/Y	100	100	100	100	100	100
11	COTX10118-4Wpe/Y	94	98	98	100	100	98
12	POR16PG34-1		99	99	100	100	99
Mean		97	96	99	99	100	98

Table 4. Vine Size and Vine Maturity

Entry Clone/Variety	Vine Size (1-5 large)					Vine Maturity (1-5 late)					
	CO	ID	TX	TX	Mean	CO	ID	TX	TX	Mean	
	SLV	AB	SPL	DAL		SLV	AB	SPL	DAL		
Red/White Flesh											
1	Chieftain	3.3	1.3	3.6	3.9	3.0	3.0	3.0	3.4	3.6	3.3
2	Red LaSoda	3.5	1.8	3.7	4.0	3.2	2.8	3.8	3.7	5.0	3.8
3	Modoc	3.3	1.0	3.4	3.8	2.9	2.3	1.5	3.2	3.4	2.6
4	A08122-9RY	4.0	1.0	3.8	4.0	3.2	2.5	2.1	3.6	2.7	2.7
5	A08122-12Rsto		1.3	3.6	4.3	3.0		2.6	3.4	4.3	3.4
6	NDA8512C-1R	3.3		3.4	3.8	3.5	2.0	-	3.2	3.1	2.8
Yellow Flesh											
7	Yukon Gold	3.3	2.5	3.5	4.2	3.4	2.0	4.3	3.2	3.9	3.3
8	A08120-4Y	4.0	1.5	3.6	4.0	3.3	4.3	3.3	5.0	5.0	4.4
9	AC10376-2012-1W/Y	3.8	1.5	3.4	4.0	3.2	3.0	3.0	4.3	4.2	3.6
10	AORTX09037-1W/Y	3.0	1.5	3.9	4.0	3.1	2.3	3.3	4.1	3.9	3.4
11	COTX10118-4Wpe/Y	4.0	1.3	3.5	4.3	3.3	3.0	3.5	3.7	4.0	3.6
12	POR16PG34-1	3.5	1.0	3.3	4.5	3.1	2.3	1.9	3.3	3.1	2.6
Mean		3.5	1.4	3.6	4.1	3.2	2.7	2.9	3.7	3.8	3.3

Table 5. Total Yield

Entry Clone/Variety	Total Yield (cwt/a)					Mean	Rank
	CA TUL	CO SLV	ID AB	TX SPL	TX DAL		
Red/White Flesh							
1 Chieftain	547	588	233	250	407	405	1
2 Red LaSoda	471	512	243	323	415	393	2
3 Modoc	411	371	183	248	391	321	5
4 A08122-9RY		452	216	264	453	346	4
5 A08122-12Rsto	534		219	221	450	356	3
6 NDA8512C-1R		372		172	301	282	6
Yellow Flesh							
7 Yukon Gold	352	379	237	186	329	296	4
8 A08120-4Y		538	110	211	301	290	5
9 AC10376-2012-1W/Y	541	460	260	264	378	381	3
10 AORTX09037-1W/Y	473	398	255	315	547	398	2
11 COTX10118-4Wpe/Y	601	592	263	216	421	419	1
12 POR16PG34-1		352	127	149	341	242	6
Mean	491	456	213	235	394	344	

Table 6. Yield and Percent < 4 oz

Entry	Clone/Variety	Yield < 4 oz (cwt/a)							Percent < 4 oz						
		CA	CO	ID	TX	TX			CA	CO	ID	TX	TX		
		TUL	SLV	AB	SPL	DAL	Mean	Rank	TUL	SLV	AB	SPL	DAL	Mean	Rank
Red/White Flesh															
1	Chieftain	62	86	83	152	133	103	5	11	15	36	61	33	31	5
2	Red LaSoda	53	76	37	172	126	93	6	11	15	15	53	30	25	6
3	Modoc	159	134	143	176	129	148	4	39	36	78	71	33	51	4
4	A08122-9RY		255	195	262	349	265	1		56	90	99	77	81	1
5	A08122-12Rsto	249		152	209	303	228	2	47		70	95	67	70	2
6	NDA8512C-1R		109		151	191	150	3		29		88	63	60	3
Yellow Flesh															
7	Yukon Gold	52	52	43	119	63	66	6	15	14	18	64	19	26	6
8	A08120-4Y		351	108	207	255	230	3		65	98	98	85	87	1
9	AC10376-2012-1W/Y	255	192	211	251	296	241	2	47	42	81	95	78	69	3
10	AORTX09037-1W/Y	254	189	213	278	354	258	1	54	48	83	88	65	67	4
11	COTX10118-4Wpe/Y	201	147	152	188	215	180	4	33	25	58	87	51	51	5
12	POR16PG34-1		196	114	139	265	179	5		56	90	94	77	79	2
Mean		161	163	132	192	223	178		32	34	63	82	55	56	

Table 7. Yield and Percent 4-6 oz.

Entry	Clone/Variety	Yield 4-6 oz (cwt/a)						Percent 4-6 oz (%)					
		CA		ID		TX		CA		ID		TX	
		TUL	AB	SPL	DAL	Mean	Rank	TUL	AB	SPL	DAL	Mean	Rank
Red/White Flesh													
1	Chieftain	79	86	71	147	96	1	14	37	29	36	29	1
2	Red LaSoda	64	64	96	118	85	2	14	26	30	28	24	3
3	Modoc	123	29	53	135	85	3	30	16	21	34	25	2
4	A08122-9RY		15	1	84	34	6		7	0	19	9	6
5	A08122-12Rsto	132	46	8	115	75	4	25	21	3	26	19	4
6	NDA8512C-1R			14	78	46	5			8	26	17	5
Yellow Flesh													
7	Yukon Gold	52	74	43	97	67	4	15	31	23	30	25	1
8	A08120-4Y		1	0	38	13	6		1	0	13	4	6
9	AC10376-2012-1W/Y	188	41	4	54	72	3	35	16	2	14	17	4
10	AORTX09037-1W/Y	128	33	32	151	86	2	27	13	10	28	19	3
11	COTX10118-4Wpe/Y	143	79	22	118	90	1	24	30	10	28	23	2
12	POR16PG34-1		6	2	55	21	5		5	1	16	7	5
Mean		114	43	29	99	64		23	18	11	25	18	

Table 8. Yield and Percent 6-10 oz.

Entry	Clone/Variety	Yield 6-10 oz (cwt/a)						Percent 6-10 oz (%)					
		CA	ID	TX	TX	Mean	Rank	CA	ID	TX	TX	Mean	Rank
		TUL	AB	SPL	DAL			TUL	AB	SPL	DAL		
Red/White Flesh													
1	Chieftain	176	48	23	92	85	2	32	21	9	23	21	2
2	Red LaSoda	114	103	50	115	96	1	24	43	15	28	27	1
3	Modoc	94	3	10	79	46	3	23	1	4	20	12	3
4	A08122-9RY		0	0	17	6	6		0	0	4	1	6
5	A08122-12Rsto	128	14	0	29	43	4	24	6	0	7	9	4
6	NDA8512C-1R			0	29	15	5			0	10	5	5
Yellow Flesh													
7	Yukon Gold	116	85	20	102	81	1	33	36	11	31	28	1
8	A08120-4Y		0	0	0	0	6		0	0	0	0	7
9	AC10376-2012-1W/Y	85	2	0	3	22	4	16	1	0	1	4	5
10	AORTX09037-1W/Y	75	7	1	33	29	3	16	3	0	6	6	4
11	COTX10118-4Wpe/Y	174	25	5	54	64	2	29	9	2	13	13	2
12	POR16PG34-1		0	0	15	5	5		0	0	5	2	6
Mean		120	26	9	47	41		25	11	3	12	11	3

Table 9. Yield and Percent >10 oz.

Entry	Clone/Variety	Yield >10 oz (cwt/a)							Percent >10 oz (%)						
		CA	CO	ID	TX	TX	Mean	Rank	CA	CO	ID	TX	TX	Mean	Rank
		TUL	SLV	AB	SPL	DAL			TUL	SLV	AB	SPL	DAL		
Red/White Flesh															
1	Chieftain	164	221	10	0	31	85	1	30	38	4	0	8	16	2
2	Red LaSoda	172	190	23	5	29	84	2	37	37	9	2	7	18	1
3	Modoc	20	29	0	0	23	14	3	5	8	0	0	6	4	3
4	A08122-9RY		28	2	0	0	7	5		6	1	0	0	2	5
5	A08122-12Rsto	16		2	0	0	4	6	3		1	0	0	1	6
6	NDA8512C-1R		35		0	0	12	4		9		0	0	3	4
Yellow Flesh															
7	Yukon Gold	96	126	22	2	49	59	1	27	33	9	1	15	17	1
8	A08120-4Y		2	0	0	0	1	5		0	0	0	0	0	6
9	AC10376-2012-1W/Y	4	21	0	0	0	5	4	1	5	0	0	0	1	5
10	AORTX09037-1W/Y	9	16	0	0	4	6	3	2	4	0	0	1	1	4
11	COTX10118-4Wpe/Y	73	134	0	0	13	44	2	12	23	0	0	3	8	2
12	POR16PG34-1		1	0	0	0	0	6		0	0	0	0	0	7
Mean		69	73	5	1	12	27		15	15	2	0	3	6	

Table 10. Yield and Percent 4 -10 oz.

Entry	Clone/Variety	Yield 4-10 oz (cwt/a)							Percent 4-10 oz (%)						
		CA	CO	ID	TX	TX	Mean	Rank	CA	CO	ID	TX	TX	Mean	Rank
		TUL	SLV	AB	SPL	DAL			TUL	SLV	AB	SPL	DAL		
Red/White Flesh															
1	Chieftain	255	271	134	94	239	199	1	47	46	57	38	59	49	2
2	Red LaSoda	178	239	168	145	233	193	2	38	47	69	45	56	51	1
3	Modoc	216	203	31	63	214	146	3	53	55	17	25	55	41	3
4	A08122-9RY		168	15	1	101	71	6		37	7	0	22	17	6
5	A08122-12Rsto	260		60	8	145	118	4	49		27	3	32	28	5
6	NDA8512C-1R		220		14	107	114	5		59		8	36	34	4
Yellow Flesh															
7	Yukon Gold	168	178	159	63	200	154	2	48	47	67	34	61	51	1
8	A08120-4Y		180	1	0	38	55	6		33	1	0	13	12	6
9	AC10376-2012-1W/Y	274	236	42	4	57	123	4	51	51	16	2	15	27	4
10	AORTX09037-1W/Y	203	168	41	33	184	126	3	43	42	16	11	34	29	3
11	COTX10118-4Wpe/Y	316	287	104	27	171	181	1	53	49	40	12	41	39	2
12	POR16PG34-1		149	6	2	70	57	5		42	5	1	21	17	5
Mean		234	209	69	38	146	128		47	46	29	15	37	33	

Table 11. Yield and Percent Culls

Entry	Clone/Variety	Yield Culls (cwt/a)							Percent Culls (%)						
		CA	CO	ID	TX	TX	Mean	Rank	CA	CO	ID	TX	TX	Mean	Rank
		TUL	SLV	AB	SPL	DAL			TUL	SLV	AB	SPL	DAL		
Red/White Flesh															
1	Chieftain	66	10	6	4	5	18	2	12	2	3	2	1	4	3
2	Red LaSoda	67	7	15	1	27	23	1	14	1	6	0	6	6	1
3	Modoc	15	4	9	10	26	13	3	4	1	5	4	7	4	2
4	A08122-9RY		1	4	0	4	2	6		0	2	0	1	1	6
5	A08122-12Rsto	8		5	4	2	5	5	2		2	2	0	2	5
6	NDA8512C-1R		8		8	3	6	4		2		4	1	3	4
Yellow Flesh															
7	Yukon Gold	35	22	13	2	7	16	1	10	6	5	1	2	5	1
8	A08120-4Y		5	1	4	7	4	6		1	1	2	2	2	6
9	AC10376-2012-1W/Y	9	11	7	9	25	12	3	2	2	3	3	7	3	3
10	AORTX09037-1W/Y	7	25	2	5	6	9	4	2	6	1	1	1	2	5
11	COTX10118-4W _{pe} /Y	11	24	6	2	22	13	2	2	4	2	1	5	3	4
12	POR16PG34-1		6	7	8	7	7	5		2	5	5	2	4	2
Mean		27	11	7	5	12	11		6	3	3	2	3	3	

Table 12. Specific Gravity

Entry	Clone/Variety	Specific Gravity					Mean	Rank
		CA TUL	CO SLV	ID AB	TX SPL	TX DAL		
Red/White Flesh								
1	Chieftain	1.072	1.075	1.068	1.064	1.060	1.068	3
2	Red LaSoda	1.071	1.075	1.066	1.062	1.056	1.066	5
3	Modoc	1.067	1.074	1.066	1.062	1.060	1.066	6
4	A08122-9RY		1.084	1.068	1.064	1.061	1.069	1
5	A08122-12Rsto	1.072		1.066	1.065	1.065	1.067	4
6	NDA8512C-1R		1.079		1.067	1.062	1.069	2
Yellow Flesh								
7	Yukon Gold	1.077	1.086	1.066	1.072	1.070	1.074	2
8	A08120-4Y		1.080	1.065	1.051	1.054	1.062	5
9	AC10376-2012-1W/Y	1.074	1.081	1.067	1.063	1.053	1.068	4
10	AORTX09037-1W/Y	1.085	1.085	1.079	1.072	1.067	1.078	1
11	COTX10118-4Wpe/Y	1.068	1.071	1.060	1.060	1.053	1.062	6
12	POR16PG34-1		1.078	1.070	1.064	1.060	1.068	3
Mean		1.073	1.079	1.067	1.064	1.060	1.068	

Table 13. Average Tuber Size and Tubers Per Plant

Entry	Clone/Variety	Average Tuber Size oz.					Tubers/plant				
		CA TUL	ID AB	TX SPL	TX DAL	Mean	CA TUL	ID AB	TX SPL	TX DAL	Mean
Red/White Flesh											
1	Chieftain	6.5	4.3	2.5	4.0	4.3	8	5	8	7	7
2	Red LaSoda	7.0	5.5	3.5	4.3	5.1	6	4	8	7	6
3	Modoc	3.9	2.6	2.4	4.1	3.3	10	6	9	7	8
4	A08122-9RY		2.3	1.3	2.6	2.1		8	17	12	12
5	A08122-12Rsto	3.3	2.9	1.5	2.8	2.6	15	6	13	11	11
6	NDA8512C-1R			1.8	2.9	2.4			8		8
Yellow Flesh											
7	Yukon Gold	6.3	5.2	2.8	5.1	4.8	6	4	6	5	5
8	A08120-4Y		1.8	1.0	2.6	1.8		5	18	9	11
9	AC10376-2012-1W/Y	3.2	2.6	1.6	2.4	2.5	15	8	14	12	12
10	AORTX09037-1W/Y	3.2	2.5	1.8	3.0	2.6	13	9	14	13	12
11	COTX10118-4Wpe/Y	4.0	3.2	1.9	3.1	3.0	15	7	9	10	10
12	POR16PG34-1		2.0	1.3	2.2	2		5	10	11	9
Mean		4.7	3.2	2.0	3.3	3	11	6	11	9	9

Table 14. Tuber Uniformity, Fresh Merit Score, Process Merit Score and Process Color

Entry	Clone/Variety	Tuber Uniformity (1-5 excellent)			Fresh Merit Score (1-5 best)						
		CA	ID	Mean	CA	CO	ID	TX	TX	Mean	Rank
		TUL	AB		TUL	SLV	AB	SPL	DAL		
Red/White Flesh											
1	Chieftain	3.5	2.8	3.1	3.5	3.0	2.5	4.2	3.7	3.4	4
2	Red LaSoda	2.5	1.9	2.2	2.5	3.0	1.8	4.1	3.5	3.0	6
3	Modoc	3.5	3.9	3.7	3.5	2.0	3.9	4.6	3.6	3.5	3
4	A08122-9RY		3.8	3.8		3.0	3.3	4.2	3.9	3.6	1
5	A08122-12Rsto	4.0	3.5	3.8	3.0		3.3	3.9	4.1	3.6	2
6	NDA8512C-1R					2.0		3.8	3.6	3.1	5
Yellow Flesh											
7	Yukon Gold	2.5	2.3	2.4	3.0	3.0	2.4	4.0	3.9	3.2	6
8	A08120-4Y		4.3	4.3		4.0	4.0	3.7	4.2	4.0	1
9	AC10376-2012-1W/Y	2.5	3.5	3.0	2.0	4.0	3.3	3.7	3.8	3.4	4
10	AORTX09037-1W/Y	3.5	4.1	3.8	3.0	3.0	3.8	3.8	4.5	3.6	2
11	COTX10118-4Wpe/Y	3.0	3.3	3.1	2.0	4.0	2.8	4.3	4.1	3.4	3
12	POR16PG34-1		3.9	3.9		3.0	2.5	3.7	4.2	3.4	5
Mean		3.1	3.4	3.4	2.8	3.1	3.0	4.0	3.9	3.4	4

Table 15. Tuber Shape and Length Width Ratio

Entry	Clone/Variety	Tuber Shape						L/W					W/T ¹				
		CA	CO	ID	TX	TX		CA	CO	TX	TX		CA	CO	TX	TX	
		TUL	SLV	AB	SPL	DAL	Mean	TUL	SLV	SPL	DAL	Mean	TUL	SLV	SPL	DAL	Mean
Red/White Flesh																	
1	Chieftain	3.5	2.0	1.9	2.0	2.0	2.3	1.17	1.20	1.25	1.15	1.19	1.28	1.28	1.20	1.24	1.25
2	Red LaSoda	3.0	2.0	2.5	2.0	3.0	2.5	1.17	1.16	1.14	1.20	1.17	1.23	1.23	1.27	1.20	1.23
3	Modoc	2.5	2.0	1.4	1.5	2.0	1.9	1.20	1.23	1.17	1.13	1.18	1.10	1.11	1.13	1.14	1.12
4	A08122-9RY		2.0	1.5	1.1	1.0	1.4		1.22	1.10	1.08	1.13		1.14	1.21	1.19	1.18
5	A08122-12Rsto	2.0		1.4	1.0	1.0	1.3	1.00		1.04	0.99	1.01	1.16		1.08	1.15	1.13
6	NDA8512C-1R		2.0		1.2	1.2	1.5		1.26	1.19	1.15	1.20		1.16	1.11	1.12	1.13
Yellow Flesh																	
7	Yukon Gold	4.0	2.0	3.1	1.9	2.4	2.7	1.22	1.19	1.15	1.17	1.18	1.19	1.16	1.27	1.20	1.21
8	A08120-4Y		1.0	1.1	1.0	1.2	1.1		1.06	1.10	1.17	1.11		1.20	1.12	1.13	1.15
9	AC10376-2012-1W/Y	2.5	2.0	1.5	1.2	1.1	1.7	1.23	1.18	1.10	1.09	1.15	1.14	1.18	1.21	1.15	1.17
10	AORTX09037-1W/Y	2.0	2.0	1.0	1.2	1.0	1.4	1.11	1.25	1.17	1.12	1.16	1.16	1.12	1.12	1.15	1.14
11	COTX10118-4Wpe/Y	2.5	2.0	1.9	2.7	2.2	2.2	1.09	1.31	1.32	1.12	1.21	1.33	1.24	1.24	1.34	1.29
12	POR16PG34-1		2.0	1.4	1.0	1.0	1.3		1.17	1.05	1.09	1.10		1.15	1.12	1.14	1.14
Mean		2.8	1.9	1.7	1.5	1.6	1.8	1.15	1.20	1.15	1.12	1.15	1.20	1.18	1.17	1.18	1.18

¹Width/thickness ratio or width/depth ratio. This info might be good to tell us how round or flat a potato is looking at it from the end.

Table 16. Skin and Flesh Color

Entry	Clone/Variety	Skin Color (1 - 5 dark)						Flesh Color (1 - 5 dark)				
		CA	CO	ID	TX	TX	Mean	CA	CO	TX	TX	Mean
		TUL	SLV	AB	SPL	DAL		TUL	SLV	SPL	DAL	
Red/White Flesh												
1	Chieftain	2.0	1.0	2.8	2.6	3.0	2.3	1.5	1.0	1.2	1.0	1.2
2	Red LaSoda	2.0	2.0	2.5	3.1	2.8	2.5	2.5	1.0	1.0	1.0	1.4
3	Modoc	2.0	3.0	4.0	4.2	3.5	3.3	2.5	1.0	1.3	1.0	1.5
4	A08122-9RY		1.0	2.3	3.8	2.7	2.4		3.0	2.2	2.8	2.7
5	A08122-12Rsto	3.0		3.3	4.3	2.9	3.3	1.5		1.0	1.0	1.2
6	NDA8512C-1R		2.0		4.5	3.0	3.2		1.0	1.3	1.2	1.2
Yellow Flesh												
7	Yukon Gold	1.0	1.0	2.8	1.4	1.0	1.4	3.0	3.0	3.2	3.0	3.0
8	A08120-4Y		1.0	2.0	1.2	1.0	1.3		3.0	2.3	3.3	2.9
9	AC10376-2012-1W/Y	1.0	1.0	2.8	1.2	1.0	1.4	4.0	4.0	3.5	3.3	3.7
10	AORTX09037-1W/Y	1.0	1.0	3.0	1.0	1.0	1.4	3.5	3.0	2.5	2.5	2.9
11	COTX10118-4Wpe/Y	1.0	3.0	4.0	1.5	1.0	2.1	3.5	4.0	2.8	3.0	3.3
12	POR16PG34-1			3.3	1.0	1.0	1.8		3.0	3.5	3.2	3.2
Mean		1.6	1.6	3.0	2.5	2.0	2.2	2.8	2.5	2.2	2.2	2.3

Table 17. Eye Depth and External Defects

Entry	Clone/Variety	Eye Depth					Growth Cracks						Knobs					Shatter Bruise			Scab				
		CA	ID	TX	TX		CA	CO	ID	TX	TX		CA	CO	ID	TX	TX		TX	TX		ID	TX	TX	
		TUL	AB	SPL	DAL	Mean	TUL ¹	SLV	AB	SPL	DAL	Mean	TUL ¹	SLV	AB	SPL	DAI	Mean	SPL	DAL	Mean	AB	SPL	DAI	Mean
Red/White Flesh																									
1	Chieftain	4.0	2.4	3.8	3.9	3.5	7.4	5.0	4.8	4.7	5.0	4.9	0.1	5.0	5.0	5.0	4.9	5.0	5.0	5.0	5.0	4.9	5.0	5.0	5.0
2	Red LaSoda	3.0	1.8	3.6	3.0	2.8	4.8	5.0	4.8	4.8	5.0	4.9	1.4	5.0	5.0	5.0	4.3	4.8	5.0	5.0	5.0	4.4	5.0	5.0	4.8
3	Modoc	4.0	3.9	4.6	4.5	4.3	0.8	5.0	5.0	4.5	3.8	4.6	1.6	4.0	5.0	4.8	5.0	4.7	5.0	5.0	5.0	3.6	5.0	5.0	4.5
4	A08122-9RY		3.5	3.8	3.9	3.7		5.0	5.0	5.0	5.0	5.0		5.0	5.0	4.7	5.0	4.9	5.0	5.0	5.0	3.9	5.0	5.0	4.6
5	A08122-12Rsto	3.5	3.3	4.0	3.9	3.7	0.5		4.6	5.0	5.0	4.9	0.6		5.0	4.8	5.0	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0
6	NDA8512C-1R			4.2	4.3	4.3		4.0		4.5	4.9	4.4		5.0	5.0	4.7	5.0	4.9	5.0	5.0	5.0		5.0	5.0	5.0
Yellow Flesh																									
7	Yukon Gold	4.0	3.5	4.7	4.5	4.2	4.3	3.0	5.0	5.0	5.0	4.5	2.0	5.0	5.0	4.9	4.9	5.0	5.0	5.0	5.0	3.4	5.0	5.0	4.5
8	A08120-4Y		3.8	4.5	4.0	4.1		5.0	5.0	5.0	5.0	5.0		5.0	5.0	4.5	5.0	4.9	5.0	5.0	5.0	4.8	5.0	5.0	4.9
9	AC10376-2012-1W/Y	5.0	4.0	4.8	4.2	4.5	0.1	5.0	5.0	5.0	5.0	5.0	0.1	5.0	5.0	4.4	4.3	4.7	5.0	5.0	5.0	4.8	5.0	5.0	4.9
10	AORTX09037-1W/Y	4.0	3.9	4.7	4.5	4.3	0.4	3.0	4.9	5.0	5.0	4.5	0.2	5.0	5.0	4.9	5.0	5.0	5.0	5.0	5.0	2.6	5.0	5.0	4.2
11	COTX10118-4Wpe/Y	4.0	4.0	4.4	4.6	4.2	0.2	4.0	4.9	5.0	5.0	4.7	0.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.8	5.0	5.0	4.9
12	POR16PG34-1		3.3	4.3	4.3	4.0		4.0	4.1	5.0	5.0	4.5		4.0	5.0	4.1	4.9	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Mean		3.9	3.4	4.3	4.1	4.0	2.3	4.4	4.8	4.9	4.9	4.7	0.8	4.8	5.0	4.7	4.9	4.9	5.0	5.0	5.0	4.3	5.0	5.0	4.8

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Table 18. Internal Defects

Entry	Clone/Variety	Hollow Heart						Internal Brownspot				Vacular Discoloration					Blackspot Bruise				
		CA	CO	ID	TX	TX		ID	TX	TX		CA	ID	TX	TX		CO ¹	TX	TX		
		TUL	SLV	AB	SPL	DAL	Mean	AB	SPL	DAL	Mean	TUL	AB	SPL	DAL	Mean	SLV	SPL%	DAL%	Mean ¹	
Red/White Flesh																					
1	Chieftain	0	12	0	0	0	2	0	10	47	19	0	0	0	0	0	4.6	0	0	0	
2	Red LaSoda	0	17	0	0	0	3	0	3	3	2	7	0	0	3	3	4.8	0	3	2	
3	Modoc	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	3.6	0	0	0	
4	A08122-9RY		0	0	0	0	0	0	0	0	0		0	0	7	2	5.0	0	0	0	
5	A08122-12Rsto	0		0	0	0	0	0	0	0	0	3	0	5	0	2		0	0	0	
6	NDA8512C-1R		0	0	3	0	1	0	0	3	1		0	0	0	0	5.0	0	0	0	
Yellow Flesh																					
7	Yukon Gold	0	0	0	0	6	1	0	63	30	31	7	0	0	0	2	5.0	0	0	0	
8	A08120-4Y		0	0	0	0	0	0	0	0	0		0	0	13	4	4.7	0	0	0	
9	AC10376-2012-1W/Y	0	0	0	0	0	0	0	0	3	1	0	0	0	3	1	4.5	0	0	0	
10	AORTX09037-1W/Y	0	0	0	0	0	0	0	0	7	2	3	0	0	3	2	4.9	0	0	0	
11	COTX10118-4Wpe/Y	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	5.0	0	0	0	
12	POR16PG34-1		0	0	0	0	0	0	0	0	0		0	0	0	0	4.9	0	0	0	
Mean		0	3	0	0	1	1	0	6	8	5	3	0	0	3	1	4.7	0	0	0	

¹ 1 to 5=none

Table 19. Disease Evaluations, Metribuzin Reaction

Entry Clone/Variety	Aberdeen			Prosser ⁵			Evaluations made at Aberdeen, Idaho by Jonathan Whitworth								
	Vert. Wilt/ Early Dying ¹	Early Blight ¹	Metribuzin Reaction ²	Corky Ringspot Evaluations			Vert. Wilt ⁶	AUDPC	Early Blight ⁷	AUDPC	Common Scab ⁸		Soft rot ⁹	Dry rot ⁹	
	Foliar	Foliar		Avg % w/int	Avg % DSI	Designation					incidence(%)	% serious defects			
Red/White Flesh															
1	Chieftain	4.5	5.0	MR	35.4	25.2	S	8	855	7	567	14	20	4.1	3.4
2	Red LaSoda	5.0	4.8	MS				7	456	7	491	37	17	4.3	2.4
3	Modoc	1.8	3.5	MS				9	1225	8	826	11	7	5.0	2.4
4	A08122-9RY	3.0	4.8	VR	20.8	12.5	S	8	1008	7	368	16	15	3.6	4.3
5	A08122-12Rsto	3.5	4.9	MR	32.5	17.9	S	8	893	7	420	38	27	4.6	3.9
6	NDA8512C-1R							8	743	6	441	20	12	3.3	2.1
Yellow Flesh															
7	Yukon Gold	5.0	5.0	VR	47.4	32.8	S	8	756	6	313	32	19	2.7	1.8
8	A08120-4Y	4.8	5.0	R	29.0	29.7	S	7	654	5	160	11	0	3.7	1.9
9	AC10376-2012-1W/Y	4.8	5.0	MS	20.0	11.0	S	--	--	--	--	--	--	--	--
10	AORTX09037-1W/Y	4.0	5.0	MR	0.0	0.0	R	8	873	7	340	42	19	4.5	2.5
11	COTX10118-4Wpe/Y	5.0	5.0	R	39.2	26.6	S	--	--	--	--	--	--	--	--
12	POR16PG34-1	2	5	MR	5	2	MR	9	1133	4	126	3	3	3.3	2.0
Mean		4	5		26	18		8	860	6	405	22	14	3.9	2.7

¹ Evaluations made at Aberdeen, ID by Potato Variety Team; scale as indicated with lowest number being most severe. For 1 to 5=no symptoms; 1=90-100% dead or dying with typical disease symptoms.

² Metribuzin reaction measured at Aberdeen, ID. VR=very resistant, R=Resistant, MR=Moderately resistant, MS=moderately susceptible, S=susceptible VS=very susceptible

⁵ Avg % w/int= Visual readings taken for 'internals' - tubers cut lengthwise, quartered and scored (0-8) based on the number of sides of the wedges that were affected
 Avg % DSI= Disease Severity Index (DSI) was calculated for each replication by summing the scores (S) of each tuber evaluated (T) and dividing that number by the number of tubers evaluated times the worst possible score (8) and multiplying by 100

$$S/(T*8)*100$$

TRV Disease Rating Based on % DSI:

R = Extreme Resistance (0-1%); MR = Moderate Resistance (1.1-5%);

MS = Moderately Susceptible (5.1-10%); S = Susceptible (10.1+%)

⁶ being most severe.

⁷ For 0 to 9: 0=no symptoms; 1= trace; 2=1-5%; 3=5-10%; 4=10-20%; 5=25-40%; 6=40-60%; 7=60-70%; 8=75-90%; 9=90-100% dead or dying with typical disease symptoms.

Early Blight and Vert. Wilt AUDPC: Area Under the Disease Progress Curve based on foliar readings taken on 3 separate readings after planting.

⁸ Common Scab serious defects are the number of tubers with a 3 rating (0-5 scale) or higher, divided by the total number of tubers examined.

⁹ For 0 to 5: 0=none, 5=severe as a combination of tuber area and degree impacted by Pectobacterium inoculations done at Aberdeen

Table 20. Tuber Composition

Entry	Clone/Variety	Aberdeen						Texas ⁵	
		Solids Oven Dry (%)	Sugars		Protein ¹ (%DWB)	Vitamin C ³ (mg/100g FWB)	Glycoalkaloids ⁴ g Trolox equivalents/g FWB	µg Trolox equivalents/gfw ⁶	AOA Levels ⁷
			Dextrose ² (%FWB)	Sucrose ² (%FWB)					
Red/White Flesh									
1	Chieftain	17.7	0.03	0.14	7.5	27.1	6.0	232.8	M
2	Red LaSoda	17.7	0.12	0.18	8.1	31.5	3.5	176.5	M
3	Modoc	17.3	0.03	0.10	6.2	32.9	3.6	145.0	M
4	A08122-9RY	18.6	0.01	0.13	7.4	31.3	3.1	153.9	M
5	A08122-12Rsto	17.6	0.01	0.12	6.0	40.5	2.7	116.2	L
6	NDA8512C-1R							154.2	M
Yellow Flesh									
7	Yukon Gold	17.3	0.14	0.17	6.0	29.4	2.5	109.9	L
8	A08120-4Y	16.9	0.04	0.17	5.0	30.5	3.4	216.1	M
9	AC10376-2012-1W/Y	17.1	0.06	0.24	5.0	34.2	3.7	164.4	M
10	AORTX09037-1W/Y	21.0	0.00	0.13	6.3	32.3	5.0	109.6	L
11	COTX10118-4Wpe/Y	16.6	0.04	0.22	5.0	29.8	2.3	126.3	L
12	POR16PG34-1	18.8	0.01	0.15	5.7	37.4	2.7	160.2	M
Mean		17.9	0.04	0.16	6.2	32.4	3.5	155.4	

¹ % Dry Weight Basis

² % Fresh Weight Basis (FWB)

³ % Fresh Weight Basis (mg/100g FWB)

⁴ % Fresh Weight Basis (mg/100g), Lenape Check 59.0 µg Trolox equivalents/g FWB

The assay used at Texas A&M University was based on "Use of a Free Radical Method to Evaluate Antioxidant Activity" by Brand-Williams, et al. 1995, Levensm. Wiss. Technol. 28:25-30. Antioxidants soluble in methanol were extracted and allowed to react with the stable radical, 2,2,-Diphenyl-1-picrylhydrazyl (DPPH). This provided a rapid evaluation of the antioxidant properties of the potato extracts based on absorbance.

⁶ µg Trolox equivalents/gfw - Absorbance was converted to trolox equivalents based on a standard curve using the following equation: $y = -225.36x + 242.65$

⁷ VH=very high (>424), H=high (271-389), M=medium (141-242), L=low (86-137), VL=very low (<86). n=64 including nine check varieties

Entry	Clone/Variety	Tulelake, CA	Center, CO	Aberdeen, ID
Red/White Flesh				
1	Chieftain	Nice tuber shape	big	Deeper ends, ats (3); some oblong, nice color (2)
2	Red LaSoda	lumpy tuber shape	poor shape, powery scab GC, some skin texture, pear shaped, shatter	Deep ends (4); misshapen, bumps (3); ugly, round, some longer (2)
3	Modoc	desirable deep red color	bruise	Nice shape (4); small, round, uniform few oblong (2)
4	A08122-9RY		good yellow, rough skin, powdery scab	Ats (4); some round some oblong (2)
5	A08122-12Rsto	nice tuber shape		Deeper ends, few oval, ats (2); some squarish
6	NDA8512C-1R		GC, poor shape, skin texture	
Yellow Flesh				
7	Yukon Gold	A lot of Black dot on tuber skin, non uniform shape	light yellow	Long (4); some round (3); flat, misshapen, few bumps (2)
8	A08120-4Y		good yellow, skin texture	Nice, small (4); uniform (2); few misshapen, few points
9	AC10376-2012-1W/Y	Ugly red splotches on tuber skin	v. nice yellow, red tone on skin	Round, few oval, ats (3)
10	AORTX09037-1W/Y	uniform tuber shape	ok yellow, shatter bruise	Small, round, uniform, scab (3); few dumbbells
11	COTX10118-4Wpe/Y	pancake tuber shape, inconsistent skin coloring	flat, ok yellow	Flat, some longer, some round (2); some checking, some patchy sking few misshapen
12	POR16PG34-1		small, good yellow, rough	Split ends, patchy (3); few ats (2)

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Table 22. Entry Location Comments Continued

Entry	Clone/Variety	Springlake, TX	Dalhart, TX
Red/White Flesh			
1	Chieftain	medium red skin, medium/large size, BOT, cracks, herbicide damage	some rotten++, nice shape, good uniform size and shape+, attached stolons, some sprouts, very high tuber number, nice
2	Red LaSoda	a little flat, deep eyes+++ , medium size, nice, BOT, high yield, silver scurf, large, high tuber number	very high tuber number, deep eyes++ , several rotten tubers, deep bud end, KNOBS
3	Modoc	silver scurf, herbicide damage, growth cracks in small tubers, silver scurf, beautiful, BOT+, intense red skin+	smooth skin, shallow eyes+, oval, many growth cracks+++ (herbicide damage?), nice skin color+, nice size and shape, some rotten tubers
4	A08122-9RY	very small, uniform size and shape+, yellow flesh, high tuber number++, nice, some rotten, nice color, some zipper eyes	all small, uniform size and shape++, smalls, silver scurf+, nice, red eyes, light skin, deep eyes
5	A08122-12Rsto	small, uniform size and shape, very round, intense skin color+, some netting, attached stolons+, nice color, good shape,	very high tuber number+, silver scurf, some rotten, nice, deep eyes, very round, most are smalls, nice
6	NDA8512C-1R	medium size, very bright intense skin color+++ , herbicide damage++, growth cracks+, some soft, silver scurf	silver scurf++, it is hard to assess skin color, non-uniform size and shape, Virus, soft
Yellow Flesh			
7	Yukon Gold	medium size+, nice, nice, intense skin color	BOT, smooth skin++, shiny+, medium size, nice, a little flat, large tubers
8	A08120-4Y	all small+++ , uniform size and shape+, netted skin++, shriveled, pink/purple eyes+	BOT, all small, uniform size and shape, sprouting, pink eyes+, nice+, smooth skin+, shiny
9	AC10376-2012-1W/Y	netted skin, pointed, pear shapes, gemmations, some soft tubers, attached stolons, uniform size and shape	very high tuber number+, buff skin, uniform size and shape, high yield, skin is not smooth and shiny+, many knobs
10	AORTX09037-1W/Y	netted skins+, lenticels, high tuber number++, uniform size and shape, scab, buff skin	BOT+, Rychc, very high tuber number+, very high yield+, uniform size and shape
11	COTX10118-4Wpe/Y	purple eye shadows+++ , very nice and unique pattern+	BOT, very nice, purple eye shadow+
12	POR16PG34-1	attached stolons, lenticels, some pointed, shoulders, pear shapes, all small+, round+	very nice+, all smalls+, very round+, uniform size and shape+, BOT, smooth skin

Table 23. Summary Means

Entry	Clone/Variety	Year	Yield Summary ¹							Quality		
			<4 oz.	4-6 oz.	6-10 oz.	4-10 oz.	>10 oz.	Culls	Total	Tuber Size oz./tuber	Spec. grav.	Fresh Merit ²
Red/White Flesh												
1	Chieftain	***	103	96	85	199	85	18	405	4.3	1.068	3.4
2	Red LaSoda	***	93	85	96	193	84	23	393	5.1	1.066	3.0
3	Modoc	***	148	85	46	146	14	13	321	3.3	1.066	3.5
4	A08122-9RY	1	265	34	6	71	7	2	346	2.1	1.069	3.6
5	A08122-12Rsto	2	228	75	43	118	4	5	356	2.6	1.067	3.6
6	NDA8512C-1R	2	150	46	15	114	12	6	282	2.4	1.069	3.1
Yellow Flesh												
7	Yukon Gold	***	66	67	81	154	59	16	296	4.8	1.074	3.2
8	A08120-4Y	2	230	13	0	55	1	4	290	1.8	1.062	4.0
9	AC10376-2012-1W/Y	1	241	72	22	123	5	12	381	2.5	1.068	3.4
10	AORTX09037-1W/Y	2	258	86	29	126	6	9	398	2.6	1.078	3.6
11	COTX10118-4Wpe/Y	2	180	90	64	181	44	13	419	3.0	1.062	3.4
12	POR16PG34-1	1	179	21	5	57	0	7	242	1.9	1.068	3.4
Mean			178	64	41	128	27	11	344	3.0	1.068	3.4

^{1/}Mean weight fractions do not equal total average because some locations do not take measurements for all criteria.

^{2/} Scale = 1-5 best

Table 24. 2 Year Summary Means

Entry	Clone/Variety	Year	Yield Summary ¹							Quality		
			<4 oz.	4-6 oz.	6-10 oz.	4-10 oz.	>10 oz.	Culls	Total	Tuber Size oz./tuber	Spec. grav.	Fresh Merit ²
Red/White Flesh												
1	Chieftain	***	99	95	109	205	81	20	412	4.6	1.066	3.3
2	Red LaSoda	***	88	78	105	193	109	82	472	5.6	1.065	3.0
3	Modoc	***	157	98	68	165	20	14	354	3.3	1.064	3.8
5	A08122-12Rsto	2	241	89	51	142	7	9	397	2.7	1.068	3.6
6	NDA8512C-1R	2	136	70	57	127	16	12	286	3.3	1.066	3.6
Yellow Flesh												
7	Yukon Gold	***	57	62	97	158	88	17	321	5.7	1.073	3.0
8	A08120-4Y	2	217	16	2	18	0	6	240	1.7	1.058	3.4
10	AORTX09037-1W/Y	2	239	96	47	145	10	14	408	2.8	1.077	3.4
11	COTX10118-4Wpe/Y	2	189	96	75	177	31	18	414	3.0	1.061	3.4
Mean			158	78	68	148	40	21	367	3.6	1.066	3.4

¹/Mean weight fractions do not equal total average because some locations do not take measurements for all criteria.

²/ Scale = 1-5 best

Entry	Clone/Variety	Strengths	Weakness
Red/White Flesh			
1	Chieftain	Nice tuber shape, nice color, uniform size and shape	deep ends/eyes
2	Red LaSoda	high yield	deep eyes, rough
3	Modoc	deep red color, nice shape, high tuber number	growth cracks
5	A08122-12Rsto	nice tuber shape, high tuber number, intense skin color	deep eyes, sprouting, growth cracks
6	NDA8512C-1R	very bright shin color	growth cracks
Yellow Flesh			
7	Yukon Gold	nice skin color	non uniform shape
8	A08120-4Y	Nice, small uniform, good yellow and skin texture	netted skin, pink eyes
10	AORTX09037-1W/Y	uniform tuber shape, small, round, high tuber number	buff skin
11	COTX10118-4Wpe/Y	purple eye shadow, smooth skin	inconsistent skin coloring, flat

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