

2019 Southwestern Regional Potato Variety Trial Report



Cover photo provided by Rob Wilson – Plots at Tulelake, CA

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Description of Clones - 2019 Southwestern Regional Trial

Entry #	Clone/Cultivar	Parents		Flower Color	Vine			Skin Type	Entered		Seed Source	2019 Year
		Female	Male		Size	Maturity	Shape		By	Use		
Russet Trial												
1	Russet Norkotah	ND9687-5RU	ND9526-4RU	White	Small	Early	Long	Russet	Check	Fresh	??	***
2	CO10085-1RU	CO03364-5RU	Silverton Russet		Medium	Med-Late		Russet	CO	Fry	CO	1.0
3	CO11009-3RU	Fortress Russet	AC96052-1RU		Large	Medium		Russet	CO	Fry	CO	1.0
4	COTX08322-10Ru	Blazer Russet	AC96052-1RU	White	Large	Medium	Oblong	Russet	TX	Fresh	CO	1.0
Yellow Flesh												
7	Yukon Gold	Norgleam	W5279-4	Pink	Medium	Early	Oval	White	Check	Spec	CO	***
8	CO11250-1W/Y	CO99045-1W/Y	POR02PG26-5		Large	Med-Late		White	CO	Spec	CO	1.0
9	CO11266-1W/Y	CO03060-2W/Y	A99433-5Y		Medium	Late		White	CO	Spec	CO	1.0
Chip Trial												
10	Atlantic	Wauseon	B5141-6	Red-purple	Med	Medium	Oval	Scaley-buff	Check	Chip	CO	***
11	Snowden	B5141-6	Wischip	White	Large	Late	Oblong	White	Check	Chip	CO	***
12	ATTX07042-3W	Western russet EM	A02086-10 EM 500	White	Large	Early-Med	Oblong	White	TX	Chip	CO	1.0
13	CO11023-2W	AC03433-1W	NY138		Medium	Medium		White	CO	Chip	CO	1.0
14	CO11023-9W	AC03433-1W	NY138		Med-Large	Late		White	CO	Chip	CO	1.0
15	CO11037-5W	BC0894-2W	W2133-1		Med-Large	Medium		White	CO	Chip	CO	1.0
16	TX09403-15W	NY138	Ivory Crisp		Medium	Medium	Round	White	TX	Chip	CO	1.0
17	TX09403-21W	NY138	Ivory Crisp		Medium	Medium	Round	White	TX	Chip	CO	1.0

Table 1. 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	Days to Vine Kill	Herbicides	Pesticides Applied Insecticides	Fungicides
1. Kern Co. California (KRN)	J. Sidhu J. Nunez J. DuBose											
2. Tulelake California (TUL)	R. Wilson D. Culp K. Nicholson	Solid-set sprinkler	Yellow Flesh Russet, Chip	210-0-150	Reglone / Roll	5/17/2019	9/10/2019 9/10/2019	10/1/2019 9/27/2019	116 116	Prowl H2O Eptam 7E Matrix SG	Admire Pro	Quadris
3. San Luis Valley Colorado (SLV)	D. Holm C. Gray K. Gaudreau	Pivot	All Trials	118-62-120-85	Reglone	5/15/2019	9/3/2019	9/26/2019	111	Tuscany Prowl H2O Dual Magnum	Platinum 75SG Movento HL Pure Spray Green	ChampION++ Quadris Top Luna Tranquility Agri Tin
4. Springlake Texas (SPR)	I. Vales C. Miller J. Koym D. Scheuring	Pivot	Yellow Flesh Russet	72-33-42.5	Mechanical	3/21/2019	6/28/2019 7/29/2019	7/11/2019 8/12/2019	99 130	Bronc Triple, Dual Magnum Matrix, Makaze Eptaam 7E	Movento Minecto Pro Sivanto Wrangler	Scala Luna Tranquility NUCOP Miravis Prime Headline
5. Dalhart Texas (Dal)	I. Vales C. Miller J. Koym D. Scheuring	Pivot	Yellow Flesh Russet Chip	119-122-258	Reglone	5/13/2019	8/29/2019 9/4/2019 8/29/2019	9/16/2019 9/20/2019 9/9/2019	108 114 108	Matrix SG Herbicide Tricor 4F, Reglone	Cruiser Maxx Vibrance Movento, Fulfill, Beleaf 50 SG Sivanto™ prime, Transform WG Reaper ClearForm	Luna Tranquility Penncozeb 75DF Echo Zn, Revus Top, Scala SC

Table 2. Percent Stand and Stems/Hill

Clone / Variety	Percent Stand					Stems per Hill			
	California	Colorado	Texas		Mean	Colorado	Texas	Mean	
	TUL	SLV	SPR	Dal		SLV	SPR		
Russet Trial									
1	Russet Norkotah	98	100	98	100	99	3.5	1.8	2.7
2	CO10085-1RU	98	100	95	77	92	3.1	2.6	2.8
3	CO11009-3RU	90	89	75	86	85	2.7	2.2	2.4
4	COTX08322-10Ru	99	100	98	100	99	2.8	1.8	2.3
Yellow Flesh									
7	Yukon Gold	91	89	80	89	87	2.2	1.8	2.0
8	CO11250-1W/Y	97	98	71	79	86	4.1	1.5	2.8
9	CO11266-1W/Y	90	92	87	72	85	2.7	1.8	2.2
Chip Trial									
10	Atlantic	95	100		100	98	2.6		2.6
11	Snowden	94	99		100	98	2.9		2.9
12	ATTX07042-3W	94	89		100	94	5.2		5.2
13	CO11023-2W	91	94		98	94	3.2		3.2
14	CO11023-9W	93	88		89	90	2.1		2.1
15	CO11037-5W	94	99		100	98	3.5		3.5
16	TX09403-15W	92	95		96	94	3.0		3.0
17	TX09403-21W	93	99		90	94	2.9		2.9
Mean		94	95	86	92	93	3.1	1.9	2.8

Table 3. Vine Size and Maturity

Clone / Variety	Vine Size (1-5=largest)				Vine Maturity (1-5=latest)				
	Colorado	Texas		Mean	Colorado	Texas		Mean	
	SLV	SPR	Dal		SLV	SPR	Dal		
Russet Trial									
1	Russet Norkotah	3.5	3.4	3.8	3.6	3.0	2.8	3.4	3.1
2	CO10085-1RU	3.3	3.5	3.1	3.3	3.3	5.0	5.0	4.4
3	CO11009-3RU	4.0	3.4	3.4	3.6	4.3	4.9	4.8	4.6
4	COTX08322-10Ru	3.3	3.3	3.8	3.4	2.8	2.9	4.9	3.5
Yellow Flesh									
7	Yukon Gold	2.8	3.3	3.6	3.2	2.8	3.6	3.7	3.4
8	CO11250-1W/Y	4.0	3.2	3.7	3.6	3.3	5.0	4.9	4.4
9	CO11266-1W/Y	3.3	2.9	2.9	3.0	4.0	4.9	5.0	4.6
Chip Trial									
10	Atlantic	2.3		4.1	3.2	3.0		4.3	3.6
11	Snowden	3.5		4.0	3.8	3.0		4.7	3.8
12	ATTX07042-3W	3.0		4.0	3.5	3.0		4.3	3.6
13	CO11023-2W	3.0		3.6	3.3	4.0		4.8	4.4
14	CO11023-9W	3.0		3.3	3.1	3.0		5.0	4.0
15	CO11037-5W	4.0		3.9	4.0	3.0		5.0	4.0
16	TX09403-15W	3.0		3.7	3.3	2.8		3.4	3.1
17	TX09403-21W	2.8		3.8	3.3	3.0		3.6	3.3
Mean		3.2	3.3	3.6	3.4	3.2	4.2	4.4	3.9

Table 4. Total Yield, Yield Rank Within Type (Specialty, Russet, Red, and Chip), and Merit Score1 (MS)

Clone / Variety	California						Colorado			Texas						Mean		
	KRN		TUL			SLV			SPR			DAL			cwt/a	Rank	MS	
	cwt/a	Rank	cwt/a	Rank	MS	cwt/a	Rank	MS	cwt/a	Rank	MS	cwt/a	Rank	MS	cwt/a	Rank	MS	
Russet Trial																		
1	Russet Norkotah			332	2	3.9	372	1	5.0	114	4	3.7	637	1	4.2	364	1	4.2
2	CO10085-1RU	174	3	285	4	3.1	308	2	1.0	236	1	3.3	288	4	2.6	258	3	2.5
3	CO11009-3RU	177	2	331	3	3.8	298	4	1.0	153	2	3.7	318	3	3.6	256	4	3.0
4	COTX08322-10Ru	198	1	349	1	3.0	301	3	1.0	114	3	3.6	552	2	4.4	303	2	3.0
Yellow Flesh																		
7	Yukon Gold	176	2	441	3	3.4	235	3	1.0	90	2	3.8	489	1	4.3	286	2	3.1
8	CO11250-1W/Y	230	1	506	1	2.3	315	1	5.0	79	3	3.4	422	2	3.6	310	1	3.6
9	CO11266-1W/Y	111	3	464	2	2.0	265	2	2.0	92	1	3.4	364	3	3.5	259	3	2.7
Chip Trial																		
10	Atlantic	193	1	522	1	3.4	264	6	3.0				532	4	4.2	378	4	3.5
11	Snowden	192	2	484	3	3.6	282	4	2.0				454	6	3.7	353	5	3.1
12	ATTX07042-3W	164	4	484	2	3.1	291	2	1.0				622	2	4.1	390	2	2.8
13	CO11023-2W	135	7	401	8	3.1	254	8	2.0				494	5	4.1	321	7	3.1
14	CO11023-9W	128	8	425	7	3.5	256	7	1.0				405	7	3.8	304	8	2.8
15	CO11037-5W	162	5	441	6	3.5	340	1	5.0				377	8	3.5	330	6	4.0
16	TX09403-15W	167	3	447	5	3.5	274	5	2.0				687	1	4.8	394	1	3.4
17	TX09403-21W	156	6	457	4	3.4	286	3	3.0				621	3	4.7	380	3	3.7
Mean		169		425		3.2	289		2.3	125		3.5	484		3.9	326		3.2

Table 5. Yield and Percent of U.S. No. 1's (>4oz.) and Yield Rank Within Type (Specialty, Russet, Red, and Chip)

Clone / Variety	California						Colorado ¹			Texas ²						Mean			
	KRN			TUL			SLV			SPR			DAL						
	cwt/a	Rank	%	cwt/a	Rank	%	cwt/a	Rank	%	cwt/a	Rank	%	cwt/a	Rank	%	cwt/a	Rank	%	
Russet Trial																			
1	Russet Norkotah			258	1	78	318	1	85	43	3	38	367	1	58	246	1	65	
2	CO10085-1RU	68	3	39	205	4	72	239	3	78	13	4	5	43	4	15	114	4	42
3	CO11009-3RU	136	2	77	253	3	76	236	4	79	78	1	51	155	3	49	172	3	66
4	COTX08322-10Ru	141	1	71	254	2	73	243	2	81	52	2	45	349	2	63	208	2	67
		0																	
Yellow Flesh																			
7	Yukon Gold	150	1	85	365	1	83	190	2	81	44	1	49	304	1	62	211	1	72
8	CO11250-1W/Y	63	2	27	312	2	62	205	1	65	6	2	8	90	2	21	135	2	37
9	CO11266-1W/Y	39	3	35	280	3	60	156	3	59	4	3	4	84	3	23	113	3	36
		0																	
Chip Trial																			
10	Atlantic	157	1	82	456	1	87	223	3	84			323	3	61	290	1	79	
11	Snowden	157	2	82	362	2	75	225	2	80			199	6	44	236	4	70	
12	ATTX07042-3W	86	6	53	273	8	56	118	8	41			248	4	40	181	7	47	
13	CO11023-2W	60	8	44	288	7	72	174	6	68			219	5	44	185	6	57	
14	CO11023-9W	74	7	58	329	5	77	151	7	59			136	7	34	173	8	57	
15	CO11037-5W	123	4	76	319	6	72	248	1	73			88	8	23	195	5	61	
16	TX09403-15W	137	3	82	334	4	75	180	5	66			415	1	60	266	2	71	
17	TX09403-21W	121	5	78	349	3	76	202	4	71			373	2	60	261	3	71	
Mean		84		63	309		73	207		71	34		29	226		44	199		60

Table 6. Yield and Percent of U.S. No. 1's (>10oz.)

Clone / Variety	California				Colorado ³		Texas				Mean		
	KRN ¹		TUL ²		SLV		SPR ⁴		DAL		Mean		
	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	
Russet Trial													
1	Russet Norkotah			81	24	155	42	1	1	94	15	83	20
2	CO10085-1RU	0	0	37	13	26	8	0	0	0	0	13	4
3	CO11009-3RU	4	2	47	14	75	25	22	14	14	4	32	12
4	COTX08322-10Ru	0	0	39	11	29	10	6	5	77	14	30	8
Yellow Flesh													
7	Yukon Gold	0	0	152	34	34	15	5	5	30	6	44	12
8	CO11250-1W/Y	0	0	31	6	6	2	0	0	0	0	7	2
9	CO11266-1W/Y	0	0	18	4	2	1	0	0	0	0	4	1
Chip Trial													
10	Atlantic	0	0	120	23	35	13			31	6	47	11
11	Snowden	0	0	42	9	14	5			13	3	17	4
12	ATTX07042-3W	0	0	22	5	11	4			6	1	10	2
13	CO11023-2W	0	0	33	8	6	2			4	1	11	3
14	CO11023-9W	0	0	52	12	8	3			0	0	15	4
15	CO11037-5W	3	2	35	8	34	10			0	0	18	5
16	TX09403-15W	0	0	51	11	5	2			53	8	27	5
17	TX09403-21W	0	0	49	11	7	2			31	5	22	5
Mean		1	0	54	13	30	10	5	4	24	4	25	7

¹ > 11oz

² >14oz

Table 7. Yield and Percent of U.S. No. 1's (6 - 10oz.)

Clone / Variety	California				Texas				Mean		
	KRN		TUL		SPR		DAL		cwt/a	%	
	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%			
Russet Trial											
1	Russet Norkotah			111	34	17	15	160	25	96	24
2	CO10085-1RU	4	2	100	35	0	0	12	4	29	10
3	CO11009-3RU	21	12	117	35	25	16	64	20	57	21
4	COTX08322-10Ru	8	4	128	37	8	7	159	29	76	19
Yellow Flesh											
7	Yukon Gold	25	14	145	33	8	9	135	28	78	21
8	CO11250-1W/Y	0	0	138	27	0	0	0	0	35	7
9	CO11266-1W/Y	0	0	118	25	1	1	6	2	31	7
Chip Trial											
10	Atlantic	11	6	237	45			133	25	127	25
11	Snowden	17	9	162	34			60	13	80	18
12	ATTX07042-3W	0	0	117	24			63	10	60	11
13	CO11023-2W	0	0	143	36			52	10	65	15
14	CO11023-9W	0	0	162	38			26	6	63	15
15	CO11037-5W	17	11	155	35			19	5	64	17
16	TX09403-15W	16	10	173	39			134	19	108	23
17	TX09403-21W	9	6	181	40			102	17	97	21
Mean		9	5	146	34	8	7	75	14	71	17

¹ 4-10 oz

Table 8. Yield and Percent of U.S. No. 1's (4 - 6 oz.)

Clone / Variety	California				Texas				Mean		
	KRN		TUL		SPR		DAL		cwt/a	%	
	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%			
Russet Trial											
1	Russet Norkotah			65	20	25	22	112	18	67	20
2	CO10085-1RU	64	37	68	24	13	5	31	11	44	19
3	CO11009-3RU	111	63	89	27	31	20	77	24	77	33
4	COTX08322-10Ru	133	67	87	25	38	33	113	21	93	36
Yellow Flesh											
7	Yukon Gold	125	71	69	16	31	35	139	28	91	37
8	CO11250-1W/Y	63	27	143	28	6	8	90	21	75	21
9	CO11266-1W/Y	39	35	145	31	3	3	78	21	66	23
Chip Trial											
10	Atlantic	147	76	99	19			159	30	135	42
11	Snowden	140	73	157	33			126	28	141	44
12	ATTX07042-3W	86	53	133	28			178	29	133	36
13	CO11023-2W	60	44	111	28			163	33	111	35
14	CO11023-9W	74	58	114	27			111	27	100	37
15	CO11037-5W	103	63	130	29			69	18	101	37
16	TX09403-15W	121	72	109	24			227	33	153	43
17	TX09403-21W	112	72	120	26			240	39	157	46
Mean		98	58	109	26	21	18	128	25	103	34

Table 9. Yield and Percent B (<4 oz.) Tubers

Clone / Variety	California				Colorado		Texas				Mean		
	KRN		TUL		SLV		SPR		DAL		Mean		
	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	
Russet Trial													
1	Russet Norkotah			53	16	36	10	46	41	180	28	79	24
2	CO10085-1RU	102	59	67	24	64	21	92	39	185	64	102	41
3	CO11009-3RU	39	22	61	18	43	14	25	17	108	34	55	21
4	COTX08322-10Ru	55	28	75	21	55	18	46	40	179	32	82	28
Yellow Flesh													
7	Yukon Gold	26	15	53	12	42	18	45	50	162	33	66	26
8	CO11250-1W/Y	167	73	180	36	107	34	72	91	288	68	163	60
9	CO11266-1W/Y	67	60	169	36	108	41	83	90	248	68	135	59
Chip Trial													
10	Atlantic	30	16	55	11	36	14			200	38	80	19
11	Snowden	35	18	115	24	55	19			250	55	114	29
12	ATTX07042-3W	75	46	148	31	163	56			355	57	185	47
13	CO11023-2W	72	54	99	25	73	29			266	54	128	40
14	CO11023-9W	49	38	84	20	98	38			257	63	122	40
15	CO11037-5W	39	24	101	23	77	23			169	45	97	29
16	TX09403-15W	29	18	95	21	89	32			273	40	121	28
17	TX09403-21W	35	22	90	20	80	28			245	39	113	27
Mean		59	35	96	22		26	58	53	224	48	109	35

Table 10. Yield and Percent Culls/No. 2s

Clone / Variety	California				Colorado		Texas				Mean		
	KRN		TUL ¹		SLV		SPR		DAL		Mean		
	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	cwt/a	%	
Russet Trial													
1	Russet Norkotah		22	6	18	5	24	21	90	14	38	12	
2	4	3	13	4	4	1	132	56	60	21	43	17	
3	2	1	18	5	17	6	50	33	55	17	28	12	
4	2	1	20	6	3	1	17	15	24	4	13	5	
Yellow Flesh													
7	Yukon Gold		23	5	2	1	0	0	23	5	10	2	
8	0	0	15	3	2	1	1	2	44	10	12	3	
9	6	5	15	3	1	0	5	5	32	9	12	5	
Chip Trial													
10	Atlantic		11	2	5	2			9	2	8	2	
11	Snowden		7	1	1	0			6	1	3	1	
12	ATTX07042-3W		63	13	10	4			20	3	24	5	
13	CO11023-2W		14	4	8	3			9	2	8	3	
14	CO11023-9W		12	3	6	2			12	3	9	3	
15	CO11037-5W		20	5	15	4			120	32	39	10	
16	TX09403-15W		19	4	6	2			0	0	6	2	
17	TX09403-21W		17	4	4	1			2	0	6	1	
Mean		2	1	19	5	7	2	33	19	34	8	17	6

¹ includes over 16 oz tubers

Table 11. Specific Gravity

Clone / Variety	California	Colorado	Texas		Mean	
	TUL	SLV	SPR	DAL		
Russet Trial						
1	Russet Norkotah	1.078	1.081	1.060	1.058	1.069
2	CO10085-1RU	1.099	1.087	1.066	1.076	1.082
3	CO11009-3RU	1.102	1.094	1.066	1.077	1.085
4	COTX08322-10Ru	1.084	1.083	1.056	1.061	1.071
Yellow Flesh						
7	Yukon Gold	1.087	1.092	1.074	1.066	1.080
8	CO11250-1W/Y	1.097	1.097	1.062	1.074	1.082
9	CO11266-1W/Y	1.091	1.081	1.060	1.063	1.074
Chip Trial						
10	Atlantic	1.100	1.093		1.067	1.087
11	Snowden	1.100	1.097		1.066	1.088
12	ATTX07042-3W	1.090	1.086		1.065	1.080
13	CO11023-2W	1.100	1.087		1.072	1.086
14	CO11023-9W	1.080	1.084		1.067	1.077
15	CO11037-5W	1.098	1.091		1.065	1.085
16	TX09403-15W	1.085	1.083		1.060	1.076
17	TX09403-21W	1.085	1.078		1.066	1.076
Mean		1.092	1.087	1.063	1.067	1.080

Table 12. Average Tuber Weight (Size) and Shape

Clone / Variety	Weight (oz.)				Shape ¹					Length	Length	Length	Length	Length	Width	Width	Width	Width	Width	
	California		Texas		California	Colorado	Texas		California	Colorado	Texas	California	Colorado	Texas	California	Colorado	Texas	California	Colorado	Texas
	TUL	SPR	DAL	Mean			TUL	SLV												
Russet Trial																				
1	Russet Norkotah	5.9	3.3	5.6	4.9	4.1	5.0	3.5	5.0	4.4	1.79	2.09	1.54	2.07	1.87	1.19	1.24	1.14	1.07	1.16
2	CO10085-1RU	5.0	1.9	2.1	3.0	4.3	4.0	2.0	2.0	3.1	1.90	1.98	1.37	1.65	1.73	1.20	1.21	1.15	1.12	1.17
3	CO11009-3RU	5.4	4.2	3.7	4.4	3.8	4.0	4.5	5.0	4.3	1.75	1.82	1.92	2.23	1.93	1.13	1.16	1.16	1.04	1.12
4	COTX08322-10Ru	5.1	3.2	5.5	4.6	3.8	3.0	3.6	5.0	3.8	1.66	1.65	1.37	1.73	1.60	1.19	1.29	1.15	1.16	1.20
Yellow Flesh																				
7	Yukon Gold	6.4	3.1	4.3	4.6	2.6	1.0	1.1	1.5	1.6	1.30	1.04	1.09	1.15	1.14	1.23	1.25	1.18	1.18	1.21
8	CO11250-1W/Y	3.9	1.5	2.0	2.5	2.9	2.0	1.5	1.8	2.0	1.40	1.17	1.18	1.40	1.29	1.27	1.27	1.22	1.15	1.23
9	CO11266-1W/Y	3.8	1.4	2.0	2.4	2.8	2.0	1.0	1.3	1.8	1.30	1.28	1.16	1.39	1.28	1.16	1.18	1.17	1.13	1.16
Chip Trial																				
10	Atlantic	6.4		4.3	5.4	2.4	1.0		1.6	1.7	1.12	0.99		1.05	1.05	1.22	1.29		1.19	1.23
11	Snowden	4.7		3.3	4.0	1.5	1.0		1.3	1.3	1.02	0.90		1.08	1.00	1.27	1.33		1.24	1.28
12	ATTX07042-3W	4.1		3.0	3.6	2.3	1.0		1.1	1.5	1.17	1.11		1.17	1.15	1.15	1.13		1.10	1.12
13	CO11023-2W	4.7		3.2	4.0	1.6	1.0		1.0	1.2	1.02	0.87		1.07	0.99	1.24	1.21		1.16	1.20
14	CO11023-9W	5.1		2.8	4.0	1.1	1.0		1.1	1.1	1.00	1.01		1.06	1.02	1.16	1.16		1.13	1.15
15	CO11037-5W	4.7		3.1	3.9	1.5	1.0		2.6	1.7	0.99	1.02		1.37	1.13	1.21	1.18		1.13	1.17
16	TX09403-15W	5.0		4.3	4.7	1.9	1.0		1.0	1.3	1.08	0.98		1.07	1.04	1.22	1.22		1.10	1.18
17	TX09403-21W	5.0		4.1	4.6	1.9	1.0		1.1	1.3	1.05	0.91		1.08	1.01	1.22	1.19		1.09	1.16
Mean		5.0	2.7	3.6	4.0	2.6	1.9	2.5	2.2	2.1	1.30		1.38	1.37	1.28		1.22	1.17	1.13	1.18

¹ 1=round to 5 =long

Table 13. Eye Depth and Growth Cracks

Clone / Variety	Eye Depth ¹				Growth Cracks ²					
	California	Texas		Mean	California	Colorado	Texas		Mean	
	TUL	SPR	DAL		TUL ³	SLV	SPR	DAL		
Russet Trial										
1	Russet Norkotah	3.8	4.0	3.8	3.9	0.4	5.0	5.0	5.0	5.0
2	CO10085-1RU	3.6	4.0	4.0	3.9	0.7	5.0	5.0	5.0	5.0
3	CO11009-3RU	3.6	4.0	3.9	3.8	1.1	5.0	5.0	4.8	4.9
4	COTX08322-10Ru	3.9	4.0	4.1	4.0	0.0	5.0	5.0	5.0	5.0
Yellow Flesh										
7	Yukon Gold	4.0	3.8	4.0	3.9	0.3	5.0	5.0	4.8	4.9
8	CO11250-1W/Y	3.9	3.8	4.0	3.9	0.2	5.0	5.0	5.0	5.0
9	CO11266-1W/Y	3.8	4.0	4.0	3.9	0.0	5.0	5.0	5.0	5.0
Chip Trial										
10	Atlantic	3.3		3.8	3.5	0.0	4.0		5.0	4.5
11	Snowden	3.1		3.5	3.3	0.1	5.0		4.3	4.6
12	ATTX07042-3W	3.9		4.0	3.9	9.7	4.0		5.0	4.5
13	CO11023-2W	3.4		3.7	3.5	0.8	4.0		4.9	4.4
14	CO11023-9W	3.9		3.9	3.9	0.0	5.0		5.0	5.0
15	CO11037-5W	3.5		4.1	3.8	0.5	5.0		5.0	5.0
16	TX09403-15W	3.4		4.0	3.7	2.1	4.0		4.9	4.4
17	TX09403-21W	3.4		4.0	3.7	1.5	4.0		4.8	4.4
Mean		3.6	3.9	3.9	3.8	1.2	4.7	5.0	4.9	4.8

¹ 1=deep to 5=shallow

² 1 to 5=none

³ % of total count

Table 14. Percent Hollow Heart/Brown Center, Blackspot Bruising, Fry Data

Clone / Variety	Hollow Heart/Brown Center (%)					Vert Wilt Rating ¹	AUDPC ²	Blackspot Bruising		Fry Data ⁵			Antioxidant Equivalents ⁹		AOA Levels ¹¹
	California	Colorado	Texas		Mean			California	Colorado	Fry Data ⁵		μg Trolox equivalents/gfw ¹⁰	AOA Levels ¹¹		
	TUL	SLV	SPR	DAL	TUL			TUL ³	SLV ⁴	SLV ⁶	SLV ⁷			MS ⁸	
Russet Trial															
1	Russet Norkotah	0	0	0	15	4	9	1951	0.0	4.7	3.0	3.0	1.0	120.483	M
2	CO10085-1RU	0	0	0	0	0	5	179	0.0	4.8	1.0	3.0	2.0	221.850	H
3	CO11009-3RU	18	1	0	3	5	4	48	3.0	4.6	0.0	1.0	3.0	151.373	M
4	COTX08322-10Ru	0	0	0	0	0	8	1683	3.0	4.7	0.0	1.0	3.0	225.428	H
Yellow Flesh															
7	Yukon Gold	13	0	3	3	5	7	678	0.0	5.0	2.0	3.0	1.0	33.019	L
8	CO11250-1W/Y	0	0	0	0	0	5	199	0.0	3.6	1.0	1.0	5.0	-45.079	VL
9	CO11266-1W/Y	3	0	0	0	1	5	81	0.0	4.8	1.0	1.0	3.0	57.801	L
Chip Trial															
10	Atlantic	0	0		3	1	6	462	0.0	2.5			1.0	117.342	M
11	Snowden	0	0		3	1	7	597	0.0	3.6			4.0	93.752	M
12	ATX07042-3W	0	0		0	0	5	160	0.0	4.4			2.0	32.583	L
13	CO11023-2W	10	0		0	3	4	84	0.0	4.8			3.0	80.750	M
14	CO11023-9W	0	0		0	0	4	53	0.0	4.8			2.0	137.819	M
15	CO11037-5W	0	1		0	0	5	124	0.0	5.0			5.0	110.332	M
16	TX09403-15W	3	0		8	3	7	689	0.0	4.9			2.0	75.602	L
17	TX09403-21W	3	0		0	1	7	609	0.0	4.7			3.0	49.599	L
Mean		3	0	0	2	2	6	506	0.4	4.5	1.1	1.9	2.7	97.5	

¹ 0 to 9=dead

² Area Under Disease Progress Curve based on foliar early-dying rating taken 77, 83, 89, 96, 104 and 110 days after planting. Higher value is more susceptible

³ Percent

⁴ 1 to 5=none

⁵ 0=light, 5= dark

⁶ at harvest

⁷ 0=light, 5=dark, stored at 45F for 11 weeks

⁸ Process Merit Score, 1-5=excellent

⁹ 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, Lebensm. 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. Sample extraction was performed at TAMU and the DPPH assay was performed in Dr. Anna Hale's lab - USDA Sugar Cane Breeding, Houma, LA by Dr. Himaya Mula-Michel.

¹⁰ μg Trolox equivalents/gfw - Absorbance was converted to trolox equivalents based on a standard curve using the following equation: $y = -0.0382x + 0.0341$

¹¹ VH=very high (>310), H=high (174-309), M=medium (79-173), L=low (18-78), VL=very low (<17). n=50 including nine check varieties

Table 15. Vigor and Flesh Color

Clone / Variety	Vigor ¹			Flesh Color ²					
	Texas		Mean	California	Colorado	Texas		Mean	
	SPR	DAL		TUL	SLV	SPR	DAL		
Russet Trial									
1	Russet Norkotah	3.5	3.8		1.0	1.0	1.0	1.0	
2	CO10085-1RU	3.7	2.6		1.0	1.0	1.0	1.0	
3	CO11009-3RU	2.8	3.0		1.0	1.0	1.0	1.0	
4	COTX08322-10Ru	3.4	3.7		1.0	1.0	1.0	1.0	
Yellow Flesh									
7	Yukon Gold	3.6		3.6	2.9	3.0	2.8	3.3	3.0
8	CO11250-1W/Y	4.0		4.0	3.1	3.0	3.1	3.0	3.1
9	CO11266-1W/Y	3.1		3.1	4.0	4.0	3.5	2.1	3.4
Chip Trial									
10	Atlantic		4.0	4.0		1.0		1.0	1.0
11	Snowden		4.1	4.1		1.0		1.0	1.0
12	ATX07042-3W		4.0	4.0		1.0		2.0	1.5
13	CO11023-2W		3.7	3.7		1.0		1.0	1.0
14	CO11023-9W		2.9	2.9		1.0		1.0	1.0
15	CO11037-5W		3.8	3.8		1.0		1.0	1.0
16	TX09403-15W		3.6	3.6		1.0		1.0	1.0
17	TX09403-21W		3.7	3.7		1.0		1.0	1.0
Mean		3.4	3.6	3.6	3.3	1.5	1.9	1.4	1.5

¹ 1= poor, 2= fair, 3= medium, 4= vigorous, 5= very vigorous

² 1=light to 5=dark

Table 16. Notes

Clone / Variety		Texas	
		SPR	DAL
Russet Trial			
1	Russet Norkotah		good skin and shape+, some misshapen+, many eyes, impressive high tuber number
2	CO10085-1RU	high tuber number++, knobs, good skin, late+, many chain tubers+, heat sprouts++, round shape and non-uniform size, lots of culls, drops++	many smalls+, oval, heat sprouts, chained tubers, knobs, bad shape
3	CO11009-3RU	issues, good number skinny tubers, some very long tubers, pointy, soft stolon ends ++, good shape and size	dark skin, misshapen+, pointed+
4	COTX08322-10Ru	and size, low tuber number, knobs+, small size and shape, irregular skin, blocky, nice shape, nice russet skin+, drop	nice, bulky+, advance, prepare PVP, very high tuber number, snow white, nice shape, ZC 10%, BOT+++
Yellow Flesh			
7	Yukon Gold	good size, medium size+, nice	large tubers+, nice, high tuber number+
8	CO11250-1W/Y	late++, pink splash, red eye splash, heat sprouts, linked tubers, pink eyes++	pink eyes+++, high tuber number, small+++, knobs, oval, pears
9	CO11266-1W/Y	late, oval, heat sprouts++, pink eyes+++	pink splashed skin, knobs, chained tubers, small, non-uniform shape, pears, pink eyes+, attached stolons, very intense yellow flesh, DROP
Chip Trial			
10	Atlantic		attached stolons, buff skin, uniform, large tubers++
11	Snowden		
12	ATTX07042-3W		attached stolons, non-uniform size+, large tubers, high tuber number+, angular tubers
13	CO11023-2W		non-uniform size, nice BOT
14	CO11023-9W		
15	CO11037-5W		small, knobs, shape issues, bad shape, drop
16	TX09403-15W		large tubers++, uniform, high tuber number+, parent, nice shape and skin BOT+++
17	TX09403-21W		large tubers, tissue culture, parent, uniform, BOT+++
16	CO10076-4W		

Table 17. Notes

Clone / Variety		Colorado SLV	California TUL
Russet Trial			
1	Russet Norkotah		Check
2	CO10085-1RU		More ruptured lenticils than most
3	CO11009-3RU		Resistant to early dying
4	COTX08322-10Ru		susceptible to early dying, irregular shape
Yellow Flesh			
7	Yukon Gold	Light yellow	check
8	CO11250-1W/Y	Flat, red eyes, light yellow	pink eyes and pink splotches on skin
9	CO11266-1W/Y	Red splash, good yellow, textured skin	pink eyes and pink splotches on skin
Chip Trial			
10	Atlantic	Flat	check
11	Snowden		check
12	ATTX07042-3W	Nice, small tuber size	10% growth cracks, high cull yield
13	CO11023-2W	Flat, small tuber size	10% hollow heart
14	CO11023-9W	Skinned, rough	resistant to early dying, 1.08 specific gravity
15	CO11037-5W	Compressed	
16	TX09403-15W	Small tuber size	susceptible to early dying
17	TX09403-21W		susceptible to early dying

Table 18. Colorado and Texas Chipping Results

Clone / Variety	Chip Color ¹ Colorado				Chip Color ¹ Texas		
	40F ²	R40F ²	50F ³	R50F ³	Field ⁴	42F ²	R42F ²
10 Atlantic	4.5	4.0	3.0	3.5	1.0	2.5	1.5
11 Snowden	4.5	2.0	1.5	2.0	1.0	2.9	1.0
12 ATTX07042-3W	5.0	4.5	3.5	2.5	2.7	3.0	3.0
13 CO11023-2W	3.5	3.5	2.0	2.5	1.0	1.4	1.1
14 CO11023-9W	3.5	3.5	2.0	3.5	1.1	1.0	1.0
15 CO11037-5W	4.5	3.0	2.0	2.5	1.1	1.0	1.1
16 TX09403-15W	3.5	4.0	2.0	3.0	1.1	1.6	2.0
17 TX09403-21W	4.0	4.5	1.5	3.0	1.0	2.2	1.5

¹ 1=light, 5=dark

²40°F Storage protocol prior to frying

Initial storage temperature 55°F

Holding temperature 40°F

Weeks to holding temperature 4

Weeks at holding temperature 6

Reconditioning temp. (if applicable) 60°F

Number of weeks reconditioning 3

³50°F Storage protocol prior to frying

Initial storage temperature 55°F

Holding temperature 50°F

Weeks to holding temperature 4

Weeks at holding temperature 6

Reconditioning temp. (if applicable) 60°F

Number of weeks reconditioning 3

⁴ Chipped immediately following harvest

⁵ Chip notes

Table 19. Summary

Clone / Variety	Field Data				Yield Qualities					Tuber Description					
	% Stand	Stems/hill	Vine Size	Vine Mat.	Total Yield	% #1s	% >10 ¹	% <4	% Culls	Merit Score	Specific Gravity	Tuber Shape	Tuber Weight	Skin Color	
Russet Trial															
1	Russet Norkotah	99	2.7	3.6	3.1	364	65	20	24	12	4.2	1.069	Long	4.9	Russet
2	CO10085-1RU	92	2.8	3.3	4.4	258	42	4	41	17	2.5	1.082	0	3.0	Russet
3	CO11009-3RU	85	2.4	3.6	4.6	256	66	12	21	12	3.0	1.085	0	4.4	Russet
4	COTX08322-10RU	99	2.3	3.4	3.5	303	67	8	28	5	3.0	1.071	Oblong	4.6	Russet
Yellow Flesh															
7	Yukon Gold	87	2.0	3.2	3.4	286	72	12	26	2	3.1	1.080	Oval	4.6	White
8	CO11250-1W/Y	86	2.8	3.6	4.4	310	37	2	60	3	3.6	1.082	0	2.5	White
9	CO11266-1W/Y	85	2.2	3.0	4.6	259	36	1	59	5	2.7	1.074	0	2.4	White
Chip Trial															
10	Atlantic	98	2.6	3.2	3.6	378	79	11	19	2	3.5	1.087	Oval	5.4	Scaley-buff
11	Snowden	98	2.9	3.8	3.8	353	70	4	29	1	3.1	1.088	Oblong	4.0	White
12	ATTX07042-3W	94	5.2	3.5	3.6	390	47	2	47	5	2.8	1.080	Oblong	3.6	White
13	CO11023-2W	94	3.2	3.3	4.4	321	57	3	40	3	3.1	1.086	0	4.0	White
14	CO11023-9W	90	2.1	3.1	4.0	304	57	4	40	3	2.8	1.077	0	4.0	White
15	CO11037-5W	98	3.5	4.0	4.0	330	61	5	29	10	4.0	1.085	0	3.9	White
16	TX09403-15W	94	3.0	3.3	3.1	394	71	5	28	2	3.4	1.076	Round	4.7	White
17	TX09403-21W	94	2.9	3.3	3.3	380	71	5	27	1	3.7	1.076	Round	4.6	White

2020 Southwestern Regional Trial Entries

Entry #	Clone/Cultivar	Parents		Flower Color	Vine Size	Maturity	Tuber Shape	Skin Type	Entered By	Use	Seed Source	2020 Year	2021 Status	Notes
		Female	Male											
Russet Trial														
1	Russet Norkotah	ND9687-5RU	ND9526-4RU	White	Small	Early	Long	Russet	Check	Fresh	???	***	***	
2	AFC5726-1RU	AF2850-9	Dakota Trailblazer	White	Large-Very Large	Late	Oblong	Russet	CO	Dual	CO	1		
3	CO12152-1RU	Dakota Russet	CO06035-3RU	Light Purple	Small	Medium	Long	Russet	CO	Dual	CO	1		
4	CO12246-1RU	AC03300-1RU	CO06097-14RU	Purple	Small-Med	Early-Med	Oblong	Russet	CO	Dual	CO	1		
5	CO12378-1RU	CO06035-3RU	AO02183-2	White	Medium	Medium	Oblong	Russet	CO	Dual	CO	1		
6	COTX08063-2Ru	A93157-6LS	A99073-1	White	Medium	Late	Oblong	Russet	TX	Fresh	CO	1		
Chip Trial														
7	Atlantic	Wauseon	B5141-6	Red-Purple	Med	Medium	Oval	Scaley-buff	Check	Chip	CO	***	***	
8	Snowden	B5141-6	Wischip	White	Large	Late	Oval	White	Check	Chip	CO	???	***	
9	AC11453-7W	A00188-3C	A03449-2C	Light Purple	Large	Late	Round	White	CO	Chip	CO	1		
10	AC11467-4W	A03440-2C	00-3115-11	White	Medium	Medium	Oval	White	CO	Chip	CO	1		
11	AC11494-6W	A05158-3C	00-3115-11	White	Large	Med-Late	Oval	White	CO	Chip	CO	1		
12	AORTX09037-1W/Y	Fasan	Ivory Crisp		Large	Late	Round	White	TX	Chip	CO	1		
13	ATTX07042-3W	Western russet EM	A02086-10 EM 500	White	Large	Early-Med	Oblong	White	TX	Chip	CO	2		
14	CO12235-3W	AC00206-2W	AC03433-1W	White	Medium	Medium	Round	White	CO	Chip	CO	1		
15	CO12293-1W	CO02024-9W	ND7519-1	White	Large	Med-Late	Oval	White	CO	Chip	CO	1		
16	CO12428-2W	MSQ070-1	CO02024-9W	White	Small-Med	Medium	Oval	White	CO	Chip	CO	1		
17	TX09403-21W	NY138	Ivory Crisp		Medium	Medium	Round	White	TX	Chip	CO	2		

Compiled by Jeff Koym*, Douglas Scheuring, Isabel Vales, and Creighton Miller
Cover by Doug Scheuring
Department of Horticultural Sciences Texas A&M University College Station and Lubbock*

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