

2001 TRI-STATE POTATO VARIETY TRIAL REPORT

State Experiment Stations and
USDA-ARS Cooperating

Washington

Oregon

Idaho

2001 TRI-STATE POTATO VARIETY TRIAL REPORT

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Compiled by Peggy Bain

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TABLE 1: 2001 Tri-State Potato Variety Trial - LOCATIONS, COOPERATORS, AND CULTURAL INFORMATION

Locations	Cooperators	Trial	Irrigation	Fertilizer N-P-K-S(lb/A)	Planting Date	Vine Kill Date	Harvest Date	Days to Vine Kill	Days to Harvest	Herbicides	Insecticides	Fungicides
Aberdeen Idaho (ID)	S. Love D. Corsini R. Novy T. Salaiz P. Bain	Late	Sprink.	220-120-40	2-May	6-Sep	19-Sep	127	140	Sencor Matrix Eptam 7E	Admire	Dithane
					Heat stress symptoms.							
Hermiston Oregon (OR)	D. Hane, A. Mosley L. Leroux	Late	Pivot	335-80-250-40	16-Apr	24-Sep	8-Oct	161	175	Gramoxone Eptam Matrix	MoCap Admire Monitor Comite	Vapam Ridimil/Gold Bravo Dithane Quadris
Pasco (EWA) Washington	R. Thornton, R. Knowles G. Newberry	Early	Pivot	275-180-150	21-Mar	4-Jul	24-Jul	105	125	Dual II Sencor	Thimet Asana Fulfil	Quadris Bravo Vapam
Othello (OWA) Washington	R. Thornton R. Knowles G. Newberry	Late	Sprink.	351-389-241	3-Apr	21-Sep	3-Oct	171	183	Eptam Sencor Matrix	Success Fulfil Comite	Bravo Dithane Quadris
					Severe Columbia Root Knot Nematode damage. Incorrect calibration of sprayer resulted in higher than intended dose of herbicide application. Visual damage was apparent.							

TABLE 2: 2001 Tri-State Potato Variety Trial - CLONE, PARENTS, FLOWER COLOR, ENTERED BY, SEED SOURCE, STAND, TUBER AND VINE CHARACTERISTICS, METRIBUZIN REACTION

No	Clone	Parents	Flower Color	Entered by	Use	Trial Year	Seed Source	Mean Stand %	Tuber		Vine		Metr. Reaction AB ¹
									Shape	Skin	Size	Maturity	
1	RUSSET BURBANK	Early Rose ?	White	Check	Dual	Ck	ID	97	Long	Med-russet	Med-large	Med-late	R
2	RANGER RUSSET	Butte A6595-3	Med Red-purple	Check	Dual	Ck	ID	99	Long	Med-russet	Med-large	Med-late	R
3	RUSSET NORKOTAH	ND9687-5 Rus ND9526-4 Rus	White	Check	Dual	Ck	ID		Long	Med-heavy	Small	Early	R
	SHEPODY	Bake King F58050	Lt . Pink	Check	Proc	Ck	ID		Oblong	White	Med-large	Early	S
4	A91186-2	A83043-12 A85041-5	White	ID	Dual	1	ID	99	Long	Med-russet	Med-large	Med-early	R
5	A91814-5	NDA2031-2 Ivory Crisp	Med Red-purple	ID	Dehy/ Proc	1	ID	98	Oblong	White	Med-large	Late	MS
6	A92030-4	A8603-20 A83043-12	White	ID	Dual	1	ID	98	Long	Med-russet	Small	Early	R
7	A92030-5	A8603-20 A83043-12	White	ID	Dual	1	ID	95	Long	Med-heavy	Med-large	Early	R
8	A9304-3	A83043-12 A7961-1	White	ID	Dual	1	ID	96	Long	Med-heavy	Small	Med-early	R
9	A9305-10	A83043-12 A85103-3	Med Red-purple	ID	Dual	1	ID	97	Long	Med-russet	Med-large	Medium	R
10	A93116-3	A84069-5 A86102-6	White	ID	Dual	1	ID	95	Long	Med-russet	Med-large	Med-late	R
11	A93157-6LS	A87149-4 A88108-7	White	ID	Dual	1	ID	99	Long	Med-russet	Med-large	Med-late	R
12	PA95A11-14	A8259-5 A77715-6	White	WA	Dual	1	ID	95	Long	Med-russet	Med-large	Early	MS

¹ Metribuzin Reaction measured at Aberdeen,

VR=very resistant, R=Resistant, MR=Moderately resistant, MS=moderately susceptible, S=susceptible VS=very susceptible.

TABLE 3: 2001 Tri-State Potato Variety Trial - TOTAL YIELD (CWT/A) - EARLY AND LATE HARVEST

No.	Clone	Total Yield - Early Harvest (CWT/A)			Total Yield - Late Harvest (CWT/A)			Entry Mean	Rank
		(EWA)	Entry Mean	Rank	(ID)	(OR)	(OWA)		
1	Russet Burbank	403	403	8	380	1000	678	686	7
2	Ranger Russet	341	341	10	466	993	802	754	3
3	Norkotah Russet	597	597	1	-	-	-	-	-
4	A91186-2	223	223	12	400	732	585	572	9
5	A91814-5	270	270	11	518	1281	761	853	1
6	A92030-4	444	444	6	352	547	595	498	11
7	A92030-5	486	486	3	419	677	617	571	10
8	A9304-3	453	453	4	454	903	756	704	6
9	A9305-10	433	433	7	554	1037	818	803	2
10	A93116-3	445	445	5	394	947	792	711	5
11	A93157-6LS	388	388	9	400	1071	763	745	4
12	PA95A11-14	587	587	2	285	770	670	575	8
Location Means		422	422		420	905	712	679	
LSD (.05)								NS	

TABLE 4: 2001 Tri-State Potato Variety Trial - YIELD OF U.S. #1'S (CWT/A & %) - EARLY AND LATE HARVEST

No.	Clone	U.S. No. 1's - Early Harvest (CWT/A)/%			U.S. No. 1's - Late Harvest (CWT/A)/%			Entry Mean	Rank
		(EWA)	Entry Mean	Rank	(ID)	(OR)	(OWA)		
1	Russet Burbank	219	219	10	169	728	384	427	9
		54	54	12	44	73	57	58	11
2	Ranger Russet	278	278	9	328	685	569	527	6
		82	82	5	70	69	71	70	8
3	Norkotah Russet	497	497	1	-	-	-	-	-
		83	83	4	-	-	-	-	-
4	A91186-2	167	167	12	328	630	492	483	7
		75	75	9	82	86	84	84	2
5	A91814-5	168	168	11	386	899	463	583	3
		62	62	11	75	70	61	69	9
6	A92030-4	392	392	3	225	431	493	383	11
		88	88	1	64	79	83	75	7
7	A92030-5	382	382	4	287	577	496	453	8
		79	79	6	68	85	80	78	5
8	A9304-3	346	346	7	359	777	605	580	4
		76	76	8	79	86	80	82	3
9	A9305-10	376	376	5	419	868	589	625	2
		87	87	2	76	84	72	77	6
10	A93116-3	350	350	6	271	795	673	580	5
		79	79	6	69	84	85	79	4
11	A93157-6LS	332	332	8	333	919	661	638	1
		85	85	3	83	86	87	85	1
12	PA95A11-14	439	439	2	178	537	483	399	10
		75	75	9	62	70	72	68	10
Location Means		329	329		298	713	537	516	
		77	77		70	79	76	75	
LSD (.05)								NS	

TABLE 5: 2001 Tri-State Potato Variety Trial - YIELD > 12 OZ (CWT/A & %) - EARLY AND LATE HARVEST

No.	Clone	U.S. No. 1's > 12 OZ - Early Harvest (CWT/A)/%			U.S. No. 1's >12 OZ - Late Harvest (CWT/A)/%			Entry Mean	Rank
		(EWA)	Entry Mean	Rank	(ID)	(OR)	(OWA)		
1	Russet Burbank	26	26	10	47	428	126	200	7
		6	6	11	12	43	19	25	8
2	Ranger Russet	69	69	7	170	498	344	337	2
		20	20	4	36	50	43	43	2
3	Norkotah Russet	193	193	1	-	-	-	-	-
		32	32	2	-	-	-	-	-
4	A91186-2	19	19	11	127	134	147	136	9
		8	8	9	32	18	25	25	7
5	A91814-5	3	3	12	127	319	71	172	8
		1	1	12	25	25	9	20	10
6	A92030-4	29	29	9	123	59	110	97	10
		7	7	10	35	11	18	21	9
7	A92030-5	193	193	1	156	346	253	252	5
		40	40	1	37	51	41	43	2
8	A9304-3	129	129	3	252	438	251	314	3
		28	28	3	56	49	33	46	1
9	A9305-10	88	88	4	186	348	137	224	6
		20	20	4	34	34	17	28	6
10	A93116-3	82	82	6	93	605	324	341	1
		18	18	6	24	64	41	43	2
11	A93157-6LS	45	45	8	166	500	176	281	4
		12	12	8	42	47	23	37	5
12	PA95A11-14	86	86	5	8	104	143	85	11
		15	15	7	3	14	21	13	11
Location Means		80	80		132	344	189	222	
LSD (.05)		17	17		31	37	26	31	NS

TABLE 6: 2001 Tri-State Potato Variety Trial - YIELD < 4 OZ (CWT/A & %) - EARLY AND LATE HARVEST

No.	Clone	Yield < 4 OZ - Early Harvest (CWT/A)/%			U.S. No. 1's < 4 OZ - Late Harvest (CWT/A)/%			Entry Mean	Rank
		(EWA)	Entry Mean	Rank	(ID)	(OR)	(OWA)		
1	Russet Burbank	55	55	10	34	58	78	57	7
		14	14	11	9	6	11	9	7
2	Ranger Russet	31	31	7	13	42	41	32	1
		9	9	7	3	4	5	4	1
3	Norkotah Russet	52	52	9	-	-	-	-	
		9	9	7	-	-	-	-	
4	A91186-2	26	26	4	25	67	55	49	5
		12	12	9	6	9	9	8	6
5	A91814-5	86	86	12	53	158	123	111	10
		32	32	12	10	12	16	13	9
6	A92030-4	37	37	8	22	109	77	69	8
		8	8	6	6	20	13	13	10
7	A92030-5	20	20	2	30	45	52	42	3
		4	4	1	7	7	8	7	5
8	A9304-3	19	19	1	30	54	53	46	4
		4	4	1	7	6	7	7	3
9	A9305-10	30	30	6	68	80	80	76	9
		7	7	4	12	8	10	10	8
10	A93116-3	25	25	3	24	31	54	36	2
		6	6	3	6	3	7	5	2
11	A93157-6LS	27	27	5	24	62	65	50	6
		7	7	4	6	6	9	7	4
12	PA95A11-14	74	74	11	100	159	93	117	11
		13	13	10	35	21	14	23	11
Location Means		40	40		38	79	70	62	
LSD (.05)		10	10		10	9	10	10	32.8

TABLE 7: 2001 Tri-State Potato Variety Trial - SPECIFIC GRAVITY - EARLY AND LATE HARVEST

No. Clone	Specific Gravity - Early Harvest		Specific Gravity - Late Harvest				Rank
	EWA	Rank	ID	OR	OWA	Entry Mean	
1 Russet Burbank	1.078	9	1.075	1.075	1.079	1.076	11
2 Ranger	1.080	5	1.086	1.083	1.085	1.085	3
3 Norkotah	1.077	10	-	-	-	-	-
4 A91186-2	1.076	11	1.083	1.069	1.083	1.078	9
5 A91814-5	1.089	1	1.089	1.083	1.086	1.086	2
6 A92030-4	1.083	3	1.085	1.074	1.089	1.083	4
7 A92030-5	1.083	3	1.080	1.075	1.086	1.080	6
8 A9304-3	1.078	8	1.083	1.075	1.086	1.081	5
9 A9305-10	1.079	6	1.082	1.077	1.081	1.080	7
10 A93116-3	1.072	12	1.074	1.070	1.091	1.078	8
11 A93157-6LS	1.085	2	1.085	1.082	1.095	1.087	1
12 PA95A11-14	1.079	7	1.076	1.069	1.085	1.077	10
Location Means	1.080		1.082	1.076	1.086	1.081	
LSD (0.5)						NS	

TABLE 8: 2001 Tri-State Potato Variety Trial - AVERAGE TUBER SIZE, AND TUBER SHAPE

No. Clone	Average Tuber Size (oz)					Tuber Shape (1-5, 1 = round, 5 = long)				
	WA Pasco E	ID L	OR L	WA Othello L	Entry Mean Late only	WA Pasco E	ID L	OR L	WA Othello L	Entry Mean
1 Russet Burbank	6.4	8.1	10.0	7.4	8.5	3.7	4.0	4.7	4.0	4.1
2 Ranger	7.3	9.9	12.3	10.3	10.8	4.0	5.0	5.0	3.5	4.4
3 Norkotah	7.8	-	-	-	-	4.0	-	-	-	-
4 A91186-2	13.2	8.2	8.5	7.3	8.0	4.0	4.8	5.0	4.0	4.5
5 A91814-5	4.4	7.6	7.6	6.1	7.1	2.0	3.0	2.9	2.3	2.6
6 A92030-4	6.6	8.2	5.6	6.3	6.7	4.0	4.0	3.5	3.5	3.8
7 A92030-5	9.5	8.9	10.2	8.8	9.3	3.0	3.8	4.0	4.0	3.7
8 A9304-3	9.0	10.2	10.0	8.6	9.6	3.0	5.0	5.0	4.3	4.3
9 A9305-10	7.5	7.0	8.3	7.1	7.5	3.3	3.5	3.8	4.0	3.7
10 A93116-3	8.2	8.5	13.2	8.6	10.1	3.8	3.8	4.7	4.3	4.2
11 A93157-6LS	7.2	8.2	9.8	7.2	8.4	3.5	4.3	4.9	3.0	3.9
12 PA95A11-14	6.5	4.1	5.7	6.4	5.4	3.3	4.0	3.3	3.5	3.5
Location Means	7.8	8.1	9.2	7.6	8.3	3.5	4.1	4.3	3.7	3.9
LSD (0.5)					2.0					NS

TABLE 9: 2001 Tri-State Potato Variety Trial - EXTERNAL DEFECTS - GROWTH CRACKS, SECOND GROWTH, SHATTER BRUISE, SCAB - MEANS OF LOCATIONS

No. Clone	Growth Cracks ¹		Second Growth ¹		Shatter Bruise ¹			Scab ¹	
	Early	Late	Early	Late	Early	Late	AB ²	Early	Late
1 Russet Burbank	3.7	4.4	3.7	1.8	5.0	5.0	3.0	5.0	5.0
2 Ranger	4.8	4.0	4.3	3.5	5.0	5.0	3.6	5.0	4.9
3 Norkotah	4.7	-	4.3	-	5.0	-	-	5.0	5.0
4 A91186-2	5.0	4.7	5.0	4.8	4.8	4.5	3.6	5.0	4.9
5 A91814-5	5.0	4.3	5.0	4.0	5.0	5.0	3.9	5.0	3.8
6 A92030-4	4.8	4.5	5.0	4.3	5.0	4.3	3.5	5.0	5.0
7 A92030-5	4.8	4.4	4.3	4.2	5.0	4.3	3.4	5.0	4.7
8 A9304-3	4.5	4.5	4.3	4.8	5.0	5.0	3.4	5.0	5.0
9 A9305-10	5.0	4.5	4.8	3.9	5.0	4.7	3.3	5.0	4.7
10 A93116-3	4.5	4.7	4.7	4.2	5.0	4.9	3.3	5.0	4.7
11 A93157-6LS	5.0	4.4	4.8	4.8	5.0	4.5	3.8	5.0	5.0
12 PA95A11-14	5.0	4.7	4.0	4.5	5.0	3.3	3.8	5.0	4.6
LSD (.05)	NS		NS					NS	

¹ Score 1-5, with 1=severe, 5=none.

² Aberdeen shatter scores obtained from bruise evaluation conducted using a shatter chamber [1-5(none)].

TABLE 10: 2001 Tri-State Potato Variety Trial - INTERNAL DEFECTS - HOLLOW HEART PLUS BROWN CENTER, INTERNAL BROWN SPOT, VASCULAR DISCOLORATION/NET NECROSIS, BLACKSPOT - MEANS OF LOCATIONS

No.	Clone	Percent Hollow Heart plus Brown Center		Percent Internal Brown Spot		Percent Net Necrosis/ Vascular Discoloration		Blackspot Bruise ¹		
		Early	Late	Early	Late	Early	Late	Early	Late	AB ²
1	Russet Burbank	24.0	17.8	0.0	0.0	n/a	2.0	5.0	2.6	2.9
2	Ranger	9.4	0.0	0.0	0.0	n/a	6.5	5.0	3.6	2.0
3	Norkotah	0.0	-	0.0	-	n/a	-	5.0	-	-
4	A91186-2	0.0	0.3	0.0	0.0	n/a	0.0	4.9	4.0	2.2
5	A91814-5	0.0	2.0	0.0	0.0	n/a	0.0	5.0	3.5	3.3
6	A92030-4	0.0	0.0	0.0	0.0	n/a	0.0	5.0	3.8	2.4
7	A92030-5	0.0	12.6	0.0	1.0	n/a	2.0	5.0	3.8	2.2
8	A9304-3	0.0	3.0	0.0	0.0	n/a	0.0	5.0	3.4	2.6
9	A9305-10	0.0	0.0	0.0	0.3	n/a	1.5	5.0	4.0	2.4
10	A93116-3	0.0	1.3	0.0	0.0	n/a	0.0	5.0	4.5	4.0
11	A93157-6LS	0.0	3.0	0.0	0.0	n/a	0.0	5.0	3.7	1.7
12	PA95A11-14	0.0	1.0	0.0	0.0	n/a	0.0	5.0	4.6	3.1
Means		2.8	3.7	0.0	0.1		1.1	5.0	3.8	2.6
LSD (.05)			NS		NS		NS			

¹ Score 1-5, with 1=severe, 5=none.

² Aberdeen blackspot scores from an abrasive peel test [1-5(none)].

TABLE 11: 2001 Tri-State Potato Variety Trial - FRENCH FRY COLOR (00-4.0(darkest)), AND PERCENT SUGAR ENDS

No. Clone	Fry 45				Fry 40	% Sugar Ends		
	ID	HRM	Mean	Rank	ID	ID	HRM	Entry Mean
1 Russet Burbank	1.4	1.2	1.3	10	3.5	19	3	11
2 Ranger	1.0	0.6	0.8	6	2.9	50	0	25
3 Norkotah	-	-	-	-	-	-	-	-
4 A91186-2	0.4	0.0	0.2	2	1.8	9	0	5
5 A91814-5	0.1	0.0	0.1	1	0.9	0	0	0
6 A92030-4	1.2	0.0	0.6	5	2.4	13	0	7
7 A92030-5	1.8	0.1	1.0	8	3.4	17	0	9
8 A9304-3	1.0	0.7	0.8	7	3.3	8	3	5
9 A9305-10	0.6	0.1	0.3	3	2.1	13	0	7
10 A93116-3	1.2	1.1	1.2	9	3.1	37	0	19
11 A93157-6LS	0.4	0.4	0.4	4	1.0	0	0	0
12 PA95A11-14	1.8	1.4	1.6	11	3.3	63	0	32
Location Means	1.0	0.5	0.8		2.5	21	0	11

TABLE 12: 2001 Tri-State Potato Variety Trial - DISEASE EVALUATIONS

No. Clone	Vert. Wilt/ Early Dying		Early Blight AB ¹	Late Blight				Common Scab AB ¹ (%)	Leafroll Net Necrosis		Corky Ringspot PROSSOR ⁵	Root- knot	Erwinia Soft Rot AB ¹ 0-5
	AB ¹	HERM ²		Foliar		Tuber			AB ¹	HERM ²			
	0-9	0-9	0-9	MTVER AUDPC ⁴	CORV ³ 0-9	MTVER % by Wt.	CORV ³ % by Wt.	(%)	(%)	(%)			
1 R. Burbank	8.8	6.7	6.5	578	8.0	0.0	10.0	0.0	6.0	97.5	S	S	3.7
2 Ranger	3.5	3.5	7.0	-	8.0	-	80.0	0.0	0.0	60.0	S	S	2.7
3 R. Norkotah	9.0	9.0	9.0	-	8.8	-	50.0	0.0	2.0	-	S	S	4.1
Shepody	5.3	7.2	8.8	-	-	-	-	2.7	0.0	-	S	S	4.1
4 A91186-2	5.3	7.5	8.3	536	9.0	0.7	20.0	0.0	2.0	47.5	S	S	1.7
5 A91814-5	2.8	3.2	7.8	403	8.3	10.3	92.5	6.0	8.0	47.5	S	S	4.7
6 A92030-4	4.8	7.7	8.5	586	8.3	5.8	40.0	0.0	5.0	47.5	S	S	3.6
7 A92030-5	8.5	9.0	8.0	453	9.0	0.6	25.0	0.0	-	90.0	S	S	1.9
8 A9304-3	1.8	6.5	7.8	560	8.5	6.0	37.5	0.0	-	55.0	S	S	3.5
9 A9305-10	3.8	3.5	7.3	472	8.0	4.7	37.5	0.0	20.0	67.0	S	S	4.2
10 A93116-3	2.0	4.7	6.8	511	7.8	2.4	10.0	0.0	-	10.0	S	S	2.5
11 A93157-6LS	2.0	2.5	7.0	511	8.8	7.6	40.0	0.0	3.0	42.5	S	S	2.5
12 PA95A11-14	8.5	7.2	8.0	429	9.0	3.2	27.5	3.7	-	2.5	VR	MR	3.2
MEANS	5.1	6.0	7.8	504	8.5	4.1	39.2	1.0	5.1	51.5			3.3
LSD (.05)	2.5		1.3	217									1.7

¹ Evaluations made at Aberdeen, Idaho by Dennis Corsini; scale as indicated with highest number being most severe.

² Evaluations made at Hermiston, Oregon by Dan Hane; scale as indicated with highest number being most severe.

³ Evaluations made at Corvallis, Oregon by Al Mosley; scale as indicated with highest number being most severe.

⁴ Evaluations made at Mount Vernon, Washington by Debbie Inglis; AUDPC = area under disease progress curve.

⁵ Evaluations made at Prosser, Washington by Chuck Brown: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=suceptible.

⁶ Evaluations made at Aberdeen, Idaho by Steve Love: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=suceptible.

TABLE 13: 2001 Tri-State Potato Variety Trial - MERIT SCORES (1-5(best))

No.	Clone	Process				Fresh			
		ID	OR	MEANS	RANK	ID	OR	MEANS	RANK
1	Russet Burbank	2.5	4.0	3.3	6	1.8	2.0	1.9	9
2	Ranger	3.5	4.0	3.8	4	2.5	1.0	1.8	11
4	A91186-2	4.0	4.0	4.0	3	3.8	4.0	3.9	3
5	A91814-5	4.0	1.0	2.5	9	2.8	1.0	1.9	9
6	A92030-4	3.5	2.0	2.8	8	3.0	1.0	2.0	6
7	A92030-5	2.0	2.0	2.0	10	3.3	2.0	2.7	5
8	A9304-3	3.5	5.0	4.3	1	3.3	5.0	4.2	2
9	A9305-10	4.2	3.0	3.6	5	3.0	1.0	2.0	6
10	A93116-3	2.5	4.0	3.3	6	3.3	4.0	3.7	4
11	A93157-6LS	3.5	5.0	4.3	1	4.3	5.0	4.7	1
12	PA95A11-14	2.0	1.0	1.5	11	3.0	1.0	2.0	6
Location Means		3.2	3.2	3.2		3.1	2.5	2.8	

