

2000 TRI-STATE POTATO VARIETY TRIAL REPORT

State Experiment Stations and
USDA-ARS Cooperating

Washington

Oregon

Idaho

2000 TRI-STATE POTATO VARIETY TRIAL REPORT

TABLE

- 1 Locations, Cooperators, and Cultural Information
- 2 Clone, Seed Source, Stand, Tuber and Vine Characteristics, Metribuzin Reaction
- 3 Total Yield (CWT/A) - Early & Late Harvest
- 4 Yield of U.S. No. 1's (CWT/A & %) - Early & Late Harvest
- 5 Yield of U.S. No. 1's Over 10/12 oz. (CWT/A & %) - Early & Late Harvest
- 6 Yield of Tubers Under 4 oz. (CWT/A & %) - Early & Late Harvest
- 7 Specific Gravity - Early & Late Harvest
- 8 Average Tuber Size, and Tuber Shape
- 9 External Defects - Growth Cracks, 2nd Growth, Shatter Bruise, and Scab
- 10 Internal Defects - Hollow Heart/Brown Center, Internal Brown Spot, Vascular Discoloration, Blackspot Bruise
- 11 French Fry Color, and Percent Sugar Ends
- 12 Disease Evaluations - Aberdeen, Hermiston, and Corvallis
- 13 Merit Scores
- 14 Summary of Entries' Performances

Compiled by Peggy Bain

Revision - 2/14/2002

TABLE 1: 2000 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, R. Novy, D. Corsini T. Salaiz P. Bain	Late	Sprink.	240-150-50	27-Apr	8-Sep	19-Sep	134	145	Metribuzin, Matrix Eptam	Admire Fulfil	Bravo
Hermiston Oregon (OR)	D. Hane, A. Mosley F. Rhodes	Late	Pivot	282-178-278-132	13-Apr	11-Sep	25-Sep	151	165	Prowl Matrix	Comite Temik Phorate Lannate Assana	Botran Dithane Quadris Curzate Vapam
Eltopia (EWA)	R. Thornton, G. Newberry R. Knowles	Early	Pivot	268-120-200	16-Mar	NA	1-Aug	green	138	Sencor	Asana	Manzate Vapam
Warden (WWA) Washington	R. Thornton G. Newberry R. Knowles	Late	Pivot	393-355-370	17-Apr	14-Sep	25-Sep	150	161	Sencor Prowl	Temik Monitor Comite	Ridomil Roval Bravo Super Tin Vapam

TABLE 2: 2000 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	OR	96	Long	Med-russet	Med-large	Med-late	MR
2	RANGER RUSSET	Butte A6595-3	Med Red-purple	Check	Dual	Ck	OR	96	Long	Med-russet	Med-large	Med-late	-
3	RUSSET NORKOTAH	ND9687-5 Rus ND9526-4 Rus	White	Check	Dual	Ck	OR	-	Long	Med-heavy	Small	Early	MR
4	SHEPODY	Bake King F58050	Lt . Pink	Check	Proc	Ck	OR	-	Oblong	White	Med-large	Early	VS
5	A89384-10	A84281-5 A8469-5	White	ID	Dual	1	ID	97	Long	Med-russet	Med-large	Med-early	VR
6	A92303-7	A86332-7 Ranger Russet	White	ID	Dual	1	ID	97	Long	Lt-russet	Med-large	Early	MR
7	AO89128-4.1	A79141-3 A8341-5	White	OR	Dual	3	OR	95	Oblong	Med-russet	Small	Early	R
8	AO89128-4.2	A79141-3 A8341-5	White	OR	Dual	3	OR	96	Long	Med-russet	Med-large	Early	VR
9	AO92007-2	A8343-12 A86115-5	White	OR	Dual	1	OR	99	Long	Med-heavy	Small	Medium	VR
10	AO92017-6	A84180-8 A84420-5	White	OR	Dual	2	OR	96	Long	Med-russet	Med-large	Early	VR
11	COO93031-3	AO84275-3 Silverton	White	OR	Dual	1	OR	94	Long	Med-russet	Med-large	Med-early	VR

¹ Metribuzin Reaction measured at Aberdeen,

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

TABLE 3: 2000 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)	(WWA)		
1	Russet Burbank	612	612	2	428	582	582	531	8
2	Ranger Russet	673	673	1	404	526	879	603	6
3	Norkotah Russet	442	442	9	-	-	-	-	-
4	Shepody	588	588	5	-	-	-	-	-
5	A89384-10	589	589	4	453	823	-	638	3
6	A92303-7	-	-	-	459	887	959	768	1
7	AO89128-4.1	487	487	8	431	514	741	562	7
8	AO89128-4.2	516	516	7	504	505	821	610	4
9	AO92007-2	577	577	6	513	574	731	606	5
10	AO92017-6	-	-	10	535	844	732	704	2
11	COO93031-3	603	603	3	370	487	694	517	9
Location Means		565	565		455	638	767	620	
LSD (.05)								NS	

TABLE 4: 2000 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)	(WWA)		
1	Russet Burbank	372	372	6	239	381	316	312	9
		61	61	9	56	66	54	59	9
2	Ranger Russet	550	550	1	295	426	643	455	5
		82	82	2	73	81	73	76	6
3	Norkotah Russet	365	365	7	-	-	-	-	-
		82	82	2	-	-	-	-	-
4	Shepody	469	469	3	-	-	-	-	-
		80	80	4	-	-	-	-	-
5	A89384-10	415	415	5	316	731	-	524	3
		70	70	6	70	89	-	80	5
6	A92303-7	-	-		403	804	803	670	1
		-	-		88	91	84	88	1
7	AO89128-4.1	336	336	8	332	359	590	427	7
		69	69	7	77	70	80	76	6
8	AO89128-4.2	331	331	9	404	317	597	439	6
		64	64	8	80	63	73	72	8
9	AO92007-2	443	443	4	434	446	555	478	4
		77	77	5	85	78	76	80	4
10	AO92017-6	-	-		396	771	593	587	2
		-	-		74	91	81	82	2
11	COO93031-3	518	518	2	303	390	584	426	8
		86	86	1	82	80	84	82	2
Location Means		422	422		347	514	585	482	
LSD (.05)		75	75		76	79	76	77	NS

TABLE 5: 2000 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)	(WWA)		
1	Russet Burbank	25	25	7	60	118	125	101	9
		4	4	7	14	20	21	18	9
2	Ranger Russet	128	128	3	178	236	386	267	4
		19	19	3	44	45	44	44	3
3	Norkotah Russet	66	66	5	-	-	-	-	-
		15	15	4	-	-	-	-	-
4	Shepody	193	193	1	-	-	-	-	-
		33	33	1	-	-	-	-	-
5	A89384-10	76	76	4	148	429	-	289	3
		13	13	5	33	52	-	43	4
6	A92303-7	-	-		143	406	333	294	2
		-	-		31	46	35	37	5
7	AO89128-4.1	16	16	9	67	108	192	122	8
		3	3	8	16	21	26	21	7
8	AO89128-4.2	17	17	8	128	60	191	126	7
		3	3	8	25	12	23	20	8
9	AO92007-2	41	41	6	174	186	199	186	6
		7	7	6	34	32	27	31	6
10	AO92017-6	-	-		204	521	339	355	1
		-	-		38	62	46	49	1
11	COO93031-3	150	150	2	174	206	349	243	5
		25	25	2	47	42	50	46	2
Location Means		79	79		142	252	264	219	
		14	14		31	37	34	34	
LSD (.05)								145	

TABLE 6: 2000 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)	(WWA)		
1	Russet Burbank	88	88	7	38	99	82	73	8
		14	14	6	9	17	14	13	9
2	Ranger Russet	54	54	3	9	37	27	24	1
		8	8	2	2	7	3	4	1
3	Norkotah Russet	65	65	5	-	-	-	-	
		15	15	7	-	-	-	-	
4	Shepody	38	38	1	-	-	-	-	
		7	7	1	-	-	-	-	
5	A89384-10	72	72	6	34	51	-	43	5
		12	12	5	8	6	-	7	4
6	A92303-7	-	-		32	47	45	41	3
		-	-		7	5	5	6	3
7	AO89128-4.1	106	106	8	37	62	44	48	6
		22	22	8	9	12	6	9	6
8	AO89128-4.2	132	132	9	37	118	69	75	9
		26	26	9	7	23	8	13	8
9	AO92007-2	63	63	4	32	84	67	61	7
		11	11	4	6	15	9	10	7
10	AO92017-6	-	-		18	50	36	35	2
		-	-		3	6	5	5	2
11	COO93031-3	51	51	2	27	62	37	42	4
		9	9	3	7	13	5	8	5
Location Means		74	74		29	68	51	49	
		14	14		6	12	7	8	
LSD (.05)								21.8	

TABLE 7: 2000 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	WWA	Entry Mean	
1 Russet Burbank	1.078	4	1.079	1.075	1.075	1.076	8
2 Ranger	1.076	8	1.089	1.069	1.084	1.081	6
3 Norkotah	1.073	9	-	-	-	-	-
4 Shepody	1.080	3	-	-	-	-	-
5 A89384-10	1.078	4	1.088	1.082	-	1.085	2
6 A92303-7	-	-	1.086	1.077	1.081	1.081	5
7 AO89128-4.1	1.083	2	1.090	1.075	1.080	1.082	4
8 AO89128-4.2	1.088	1	1.096	1.078	1.084	1.086	1
9 AO92007-2	1.077	6	1.081	1.073	1.080	1.078	7
10 AO92017-6	-	-	1.087	1.079	1.080	1.082	3
11 COO93031-3	1.077	6	1.078	1.069	1.074	1.074	9
Location Means	1.079		1.086	1.075	1.080	1.080	
LSD (0.5)						0.006	

TABLE 8: 2000 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 Eltopia E	ID L	OR L	WA Warden L	Entry Mean Late only	WA Eltopia E	ID L	OR L	WA Warden L	Entry Mean
1 Russet Burbank	6.0	7.1	6.2	7.0	6.8	3.0	3.5	5.0	5.0	4.1
2 Ranger	7.2	10.7	8.8	11.3	10.3	4.5	4.8	5.0	5.0	4.8
3 Norkotah	6.1	-	-	-	-	4.0	-	-	-	4.0
4 Shepody	8.5	-	-	-	-	2.8	-	-	-	2.8
5 A89384-10	6.5	8.1	10.2	-	9.2	3.5	4.0	4.2	-	3.9
6 A92303-7	-	6.7	9.3	8.8	8.3	-	4.0	4.8	4.3	4.4
7 AO89128-4.1	5.1	7.0	7.1	8.2	7.4	4.0	3.8	4.8	4.7	4.3
8 AO89128-4.2	4.9	7.5	5.5	7.5	6.8	3.0	4.0	5.0	4.0	4.0
9 AO92007-2	6.3	8.0	7.0	7.5	7.5	4.0	4.3	4.8	4.7	4.5
10 AO92017-6	-	9.2	10.7	10.0	10.0	-	5.0	4.6	4.0	4.5
11 COO93031-3	7.6	8.9	7.9	9.8	8.9	4.3	4.5	5.0	4.3	4.5
Location Means	6.5	8.1	8.1	8.8	8.3	3.7	4.2	4.8	4.5	4.3
LSD (0.5)					1.7					NS

TABLE 9: 2000 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	2.0	4.0	1.8	2.9	5.0	4.9	3.0	n/a	4.8
2 Ranger	4.8	4.5	4.8	4.3	5.0	4.9	3.6	n/a	4.4
3 Norkotah	4.8	-	4.8	-	5.0	-	-	n/a	-
4 Shepody	5.0	-	4.3	-	4.8	-	-	n/a	-
5 A89384-10	2.3	4.0	2.3	4.3	4.8	3.8	3.6	n/a	5.0
6 A92303-7	-	5.0	-	5.0	-	4.8	3.7	n/a	3.6 (ID)
7 AO89128-4.1	3.0	3.4	5.0	5.0	5.0	2.4	2.7	n/a	5.0
8 AO89128-4.2	4.5	4.5	3.3	4.4	5.0	4.4	3.4	n/a	4.4
9 AO92007-2	2.5	4.6	5.0	5.0	5.0	3.9	3.6	n/a	4.9
10 AO92017-6	-	4.9	-	4.8	-	4.6	3.9	n/a	4.2 (ID)
11 COO93031-3	4.3	4.7	5.0	5.0	5.0	4.4	3.0	n/a	4.8
LSD (.05)	0.9		0.8		1.4			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: 2000 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	53.0	6.5	0.0	3.4	n/a	1.0	3.5	2.8	2.6
2	Ranger	0.0	0.0	0.0	0.3	n/a	8.0	4.7	3.6	2.1
3	Norkotah	0.0	-	0.0	-	n/a	-	4.9	-	-
4	Shepody	6.0	-	3.0	-	n/a	-	5.0	-	-
5	A89384-10	0.0	14.0	0.0	0.0	n/a	1.5	5.0	4.0	3.5
6	A92303-7	-	1.0	-	0.0	n/a	5.5	-	4.2	2.1
7	AO89128-4.1	0.0	4.4	0.0	0.0	n/a	0.5	5.0	4.8	2.5
8	AO89128-4.2	0.0	0.0	0.0	0.0	n/a	0.5	3.9	4.3	3.1
9	AO92007-2	0.0	3.1	0.0	2.5	n/a	0.5	4.9	3.7	2.6
10	AO92017-6	-	0.0	-	1.9	n/a	1.0	-	4.2	2.7
11	COO93031-3	0.0	2.7	0.0	0.0	n/a	2.0	4.1	2.4	2.1
LSD (.05)		NS		NS		NS		1.1		

¹ Score 1-5, with 1=severe, 5=none.

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

TABLE 11: 2000 Tri-State Potato Variety Trial - FRENCH FRY COLOR (00-4.0(darkest)), AND PERCENT SUGAR ENDS

No. Clone	Fry 45				Fry 40	% Sugar Ends		Entry Mean
	ID	HRM ¹	Mean	Rank	ID	ID	HRM	
1 Russet Burbank	0.9	1.7	1.3	5	3.7	54	5	30
2 Ranger	1.4	2.0	1.7	8	3.5	40	10	25
3 Norkotah	-	-	-	-	-	-	-	-
4 Shepody	-	-	-	-	-	-	-	-
5 A89384-10	1.8	0.7	1.3	4	3.5	38	3	20
6 A92303-7	1.5	1.7	1.6	7	2.9	38	8	23
7 AO89128-4.1	0.2	0.4	0.3	2	2.8	19	0	10
8 AO89128-4.2	0.5	0.0	0.3	1	2.2	9	0	5
9 AO92007-2	1.3	1.4	1.3	6	3.5	25	3	14
10 AO92017-6	0.4	1.3	0.8	3	2.6	17	0	9
11 COO93031-3	1.5	2.0	1.8	9	3.6	13	3	8
Location Means	1.1	1.2	1.1		3.1	28	3	16

¹ Storage temperture inadvertantly dropped to 37 F for an undetermed amout of time

TABLE 12: 2000 Tri-State Potato Variety Trial - DISEASE EVALUATION

No. Clone	Vert. Wilt/ Early Dying		Early Blight	Late Blight		Common Scab	Leafroll Net Necrosis	Erwinia Soft Rot
	AB	HERM		Foliar	Tuber			
	0-9 ¹	0-9 ¹	AB 0-9 ¹	CORVALLIS		AB (%) ²	HERM (%) ²	AB 0-5 ³
			1-9 ¹	% by Wt.				
1 R. Burbank	7.7	7.0	5.7	9.0	18	0	35	4.3
2 Ranger	3.0	6.0	4.7	9.0	30	57	43	2.9
3 R. Norkotah	8.7	8.0	7.5	9.0	13	8	5	3.3
4 Shepody	5.7	-	5.3	9.0	15	49	-	3.7
5 A89384-10	3.3	5.0	4.7	9.0	0	0	43	2.9
6 A92303-7	4.5	4.0	5.2	9.0	3	77	50	4.1
7 AO89128-4.1	7.7	8.0	6.8	9.0	10	0	5	3.2
8 AO89128-4.2	1.5	8.0	4.2	9.0	28	7	25	3.4
9 AO92007-2	5.8	7.0	6.0	9.0	3	0	38	3.9
10 AO92017-6	4.8	4.0	4.7	9.0	15	0	20	2.9
11 COO93031-3	6.3	7.0	5.8	9.0	10	0	8	3.7
MEANS	5.4	6.4	5.5	9.0	13.2	18.0	27.2	3.5
LSD (.05)	1.5		1.7			16.0		1.6

1 0 to 9 or 1-9, 0 or 1=No symptoms to a 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

2 Percent serious defect = more than 10% of tuber involved.

3 0 to 5, 0=None; 1=mild symptoms, sample would not be out of grade to disease defect; 2= moderate symptoms, some culls due to disease; 3= moderately severe symptoms, sample would be out of grade due to disease defect; 4=severe symptoms, sample out of grade; 5= maximum severity, all tubers in sample showing severe symptoms.

TABLE 13: 2000 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	3.0	3.5	3.3	4	2.5	3.0	2.8	5
2	Ranger	3.5	2.5	3.0	7	2.5	3.0	2.8	5
5	A89384-10	2.5	4.5	3.5	2	2.5	3.5	3.0	4
6	A92303-7	3.3	3.0	3.2	5	2.8	2.0	2.4	7
7	AO89128-4.1	4.0	3.0	3.5	2	3.8	1.0	2.4	7
8	AO89128-4.2	4.2	2.0	3.1	6	3.0	1.0	2.0	9
9	AO92007-2	3.0	3.0	3.0	7	4.3	3.0	3.7	2
10	AO92017-6	4.4	5.0	4.7	1	3.5	3.0	3.3	3
11	COO93031-3	2.5	2.0	2.3	9	4.0	4.0	4.0	1
Location Means		3.4	3.2	3.3		3.2	2.6	2.9	

TABLE 14: 2000 Tri-State Potato Variety Trial - SUMMARY

Clone	Year in		Yield		% US#1's		Tuber Size		Specific Gravity		Fry Color		Merit Score	Problems	E/ L
	Trial	Use													
R. Burbank	CK	Dual	531	med-high	312 59	low	6.8	medium	76	medium	1.3	good	fair		
Ranger	Ck	Dual	603	high	455 76	medium	10.3	very large	81	med-high	1.7	fair	fair		
Norkotah	Ck	Fresh	442	medium	82	high	6.1	med-small	70	low	-		fair		
Shepody	Ck	Proc	588	med-high	82	high	8.5	large	80	med-high	-		fair		
A89384-10	1	Dual	638	high	524 80	high	9.2	large	85	high	1.3	good	good	HH	
A92303-7	1	Proc	768	very high	670 88	very high	8.3	large	81	med-high	1.6	fair	fair	susc. to scab	
AO89128-4.1	3	Dual	562	med-high	427 76	medium	7.4	medium	82	med-high	0.3	excellent	good		
AO89128-4.2	3	Dual	610	high	439 72	medium	6.8	medium	86	high	0.3	excellent	fair	points	
AO92007-2	1	Dual	606	high	312 80	high	7.5	medium	78	medium	1.3	good	fair		
AO92017-6	2	Dual	704	very high	587 82	high	10.0	very large	82	med-high	0.8	excellent	excellent		
COO93031-3	1	Dual	517	med-high	426 82	high	8.9	large	74	low	1.8	fair	fair	low yields OR	