

2017
TRI-STATE SPECIALTY
POTATO VARIETY TRIAL REPORT

STATE EXPERIMENT STATIONS AND USDA-ARS COOPERATING



Aberdeen, Idaho

Parma, Idaho

Othello, Washington

Klamath Falls, Oregon

2017 TRI-STATE SPECIALTY POTATO VARIETY TRIAL REPORT

TABLE

- 1 Locations, Cooperators, and Cultural Information
- 2 Clone, Parents, Seed Source, Stand, Stems per plant
- 3 Vine Characteristics
- 4 Total Yield (CWT/A) - Specific Gravity
- 5 Yield of Tubers Under 4 oz. (CWT/A & %)
- 6 Yield of U.S. No. 1's (CWT/A & %) - 4-6 oz. and 6-10 oz.
- 7 Yield of U.S. No. 1's Over 10 oz. and Culls (CWT/A & %)
- 8 Tuber Shape and Length/Width Ratio
- 9 Average Tuber Size and Tubers per Plant
- 10 Tuber Characteristics - Eye Depth, Skin Color, Flesh Color
- 11 Tuber Appearance - Appearance, Uniformity, Merit
- 12 External Defects - Skinning, Shatter Bruise, Greening, and Scab
- 13 Internal Defects - Hollow Heart/Brown Center, Internal Brown Spot, Vascular Discoloration
- 14 Solids, Dextrose, Sucrose, Protein, Vitamin C, and Glycoalkaloids - Aberdeen
- 15 Culinary Results
- 16 Other Data
- 17 Summary of Entries' Performance
- 18 Trial Comments and Information by Location

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TABLE 1: 2017 Tri-State Specialty Potato Variety Trial - LOCATIONS, COOPERATORS, AND CULTURAL INFORMATION

Locations	Cooperators	Irrigation	Fertilizer N-P-K-S(lb/A)	Spacing In-row	Between Row	Planting Date	Vine Kill Date	Harvest Date	Days to Vine Kill	Days to Harvest	Herbicides	Insecticides	Fungicides
Aberdeen Idaho (AB)	J. Stark J Hatch R. Novy J. Whitworth C. Lowder	Sprink.	225-120-83 30S-5Zn-5Mn	9.3	36	8-May	16-Aug	30-Aug	100	114	TriCor 4F Matrix Eptam	Admire	
Parma Idaho (PA)	M. Thornton R. Portenier O. Adams	Sprink.	222-160-100	10	36	12-Apr	24-Jul	16-Aug	103	126	Outlook Prowl H2O Matrix Eptam	Admire Pro Movento Lannate LV	Quadris Bravo Endura Luna T
Klamath Falls Oregon (OR)	B. Charlton N. Baley	Solid set	180-125-250-26S	9.25	36	22-May	7-Sep	26-Sep	108	127	Prowl Matrix Outlook	Mana/Alias Vydate	Luna Vertisan
Othello Washington (WA)	M. Pavek R. Knowles N. Fuller Z. Holden	Overhead	200 + 100 + 150 20S+2B	8	32	3-Apr	20-Jul	31-Jul	108	119	Outlook Prowl H2O Eptam	Platinum Onager	Luna T Chloronil Bravo Omega

TABLE 2: 2017 Tri-State Specialty Potato Variety Trial - CLONE, PARENTS, FLOWER COLOR, ENTERED BY, SEED SOURCE, STAND, AND STEM NO.

No Clone	Parents		Flower Color	Entered by	Trial Year	Seed Source	STAND (%)				Mean Stand %	STEM NO.			Stems/Plant
	Female	Male					AB	PA	OR	WA		AB	PA	WA	
1 Chieftain	***	***	Red-purple	Check	***	OR	99	97	97	88	95	2.4	2.5	2.1	2.3
2 Yukon Gold	ND028678-1RY	ND028770B-4R	Dk Red-purple	Check	***	OR	93	97	93	100	96	2.1	2.2	1.7	2.0
3 A06336-2Y	VC1009-1W/Y	US 147-96 R/Y	Lt Red-purple	ID	2	OR	100	95	100	95	97	4.0	2.9	2.1	3.0
4 A06336-5Y	VC1009-1W/Y	US 147-96 R/Y	Lt Red-purple	ID	3	OR	98	98	100	93	97	5.2	4.2	2.4	3.9
5 LaRatte	POR02PG26-5	POR03PG6-3	Purple	OR	1	OR	99	100	100	88	97	4.1	3.9	2.3	3.4
6 POR11PG62-3	Diverse	High Car	Purple	OR	2	OR	99	95	97	100	98	4.6	3.0	2.2	3.3

TABLE 3: 2017 Tri-State Specialty Potato Variety Trial - VINE CHARACTERISTICS

No	Clone	Vine Size ¹				Vine Maturity ²			
		AB	PA	Means	Size	AB	PA	Means	Maturity
1	Chieftain	2.8	3.0	2.9	Medium	3.8	3.1	3.4	Medium
2	Yukon Gold	2.8	2.1	2.4	Small	3.1	2.1	2.6	Med Early
3	AO6336-2Y	2.3	3.1	2.7	Medium	3.5	3.3	3.4	Medium
4	AO6336-5Y	1.8	3.5	2.6	Medium	3.1	3.0	3.1	Medium
5	LaRatte	2.8	4.3	3.5	Med-large	2.6	3.8	3.2	Medium
6	POR111PG62-3	2.0	3.1	2.6	Medium	3.0	3.6	3.3	Medium

¹ 1.0-2.5=Small, 2.6-3.0=Medium, 3.1-4.0=Medium-Large, 4.1-4.5=Large, 4.6-5.0=Very Large

² 1.0-2.5=Early, 2.6-3.0=Medium-Early, 3.1-3.5=Medium, 3.6-4.0= Medium-Late, 4.1-4.5=Late, 4.6-5.0=Very Late

TABLE 4: 2017Tri-State Specialty Potato Variety Trial - TOTAL YIELD AND SPECIFIC GRAVITY

No. Clone	TOTAL YIELD (CWT/A)					SPECIFIC GRAVITY			
	AB	PA	OR	WA	Entry Mean	AB	PA	OR	Entry Mean
1 Chieftain	403	616	701	665	596	1.071	1.067	1.076	1.071
2 Yukon Gold	328	499	563	506	474	1.084	1.077	1.082	1.081
3 AO6336-2Y	338	513	722	454	507	1.072	1.065	1.071	1.069
4 AO6336-5Y	341	456	575	486	465	1.072	1.059	1.067	1.066
5 LaRatte	143	278	376	120	229	1.074	1.073	1.081	1.076
6 POR111PG62-3	134	321	443	239	284	1.070	1.065	1.071	1.069
Location Means	241	383	483	353	426	1.074	1.068	1.075	1.072

TABLE 5: 2017 Tri-State Specialty Potato Variety Trial - YIELD < 4 OZ (CWT/A & %)

No. Clone	0-2 OZ or C's <1.34" (CWT/A)/%						2-4 OZ or B's <2.25" (CWT/A)/%					
	Entry						Entry					
	AB	PA	OR	WA	Mean	Rank	AB	PA	OR	WA	Mean	Rank
1 Chieftain	7	16	8	11	11	5	26	40	66	82	54	5
	2	3	1	2	2	5	7	7	9	12	9	5
2 Yukon Gold	6	14	5	8	8	6	29	36	43	44	38	6
	2	3	1	1	2	6	9	7	8	9	8	6
3 A06336-2Y	26	39	17	29	28	4	129	129	160	150	142	2
	8	8	2	6	6	4	38	25	22	33	30	4
4 A06336-5Y	87	79	27	68	65	3	186	189	262	283	230	1
	26	17	5	14	16	3	55	41	46	58	50	1
5 LaRatte	77	147	107	67	99	2	54	92	104	28	69	4
	55	53	28	55	48	1	36	33	28	23	30	3
6 POR111PG62-3	77	121	118	102	105	1	51	148	230	116	136	3
	58	38	27	43	42	2	37	46	52	49	46	2
Location Means	47	69	47	47	53		79	106	144	117	112	
	25	20	11	20	19		30	26	28	31	29	

TABLE 6: 2017 Tri-State Specialty Potato Variety Trial - YIELD US NO.1 4-6 OZ. AND 6-10 OZ. (CWT/A & %)

No. Clone	4-6 OZ (CWT/A)/%						6-10 OZ (CWT/A)/%					
	AB	PA	OR	WA	Entry Mean	Rank	AB	PA	OR	WA	Entry Mean	Rank
1 Chieftain	66	57	112	187	106	3	154	173	231	285	211	1
	16	9	16	28	17	3	39	28	33	43	36	1
2 Yukon Gold	67	54	88	71	70	4	122	145	139	173	145	2
	21	11	16	14	15	4	37	29	25	34	31	2
3 A06336-2Y	113	142	194	167	154	1	58	159	148	104	117	3
	33	28	27	37	31	1	17	31	20	23	23	3
4 A06336-5Y	44	129	150	119	110	2	14	58	67	14	38	4
	13	29	26	24	23	2	4	14	12	3	8	4
5 LaRatte	2	18	15	1	9	6	0	1	3	0	1	5
	1	6	4	1	3	6	0	0	1	0	0	5
6 POR111PG62-3	0	35	50	10	24	5	0	2	2	0	1	5
	0	11	11	4	7	5	0	1	0	0	0	6
Location Means	49	72	102	92	79		58	90	98	96	85	
	14	16	17	18	16		16	17	15	17	16	

TABLE 7: 2017 Tri-State Specialty Potato Variety Trial - YIELD US NO.1 >10 OZ. AND CULL (CWT/A & %)

No. Clone	>10 OZ (CWT/A)/%						CULLS (CWT/A)/%					
	AB	PA	OR	WA	Entry Mean	Rank	AB	PA	OR	WA	Entry Mean	Rank
1 Chieftain	144	286	165	100	174	1	6	43	39	16	26	4
	35	47	24	15	30	2	1	7	1	2	3	5
2 Yukon Gold	91	236	145	211	171	2	12	14	63	25	28	3
	28	48	26	42	36	1	4	3	7	5	5	3
3 A06336-2Y	5	29	27	5	17	3	8	16	170	17	53	1
	1	6	4	1	3	4	2	3	10	4	5	2
4 A06336-5Y	3	0	3	2	2	6	7	2	66	5	20	5
	1	0	0	0	0	6	2	0	7	1	3	6
5 LaRatte	0	0	0	25	6	4	11	21	147	2	45	2
	0	0	0	21	5	3	9	7	19	2	9	1
6 POR111PG62-3	0	0	0	10	2	5	6	15	43	1	16	6
	0	0	0	4	1	5	5	5	3	0	3	4
Location Means	41	92	57	59	62		8	18	88	11	31	
	11	17	9	14	13		4	4	8	2	5	

TABLE 8: 2017 Tri-State Specialty Potato Variety Trial - TUBER SHAPE AND**LENGTH/WIDTH RATIO**

No. Clone	Tuber Shape ¹					(Length/Width Ratio)			
	AB	OR	WA	Entry Means		AB	PA	OR	Entry Means
1 Chieftain	2.1	3.5	1.0	2.2	Oval	1.13	1.25	1.10	1.16
2 Yukon Gold	2.1	2.9	1.0	2.0	Round	1.07	1.23	1.07	1.12
3 AO6336-2Y	2.3	3.4	1.0	2.2	Oval	1.35	1.38	1.24	1.32
4 AO6336-5Y	1.4	2.0	1.0	1.5	Round	1.05	1.15	1.08	1.09
5 LaRatte	5.0	5.0	5.0	5.0	Long	4.54	4.34	3.24	4.04
6 POR111PG62-3	4.0	5.0	3.3	4.1	Long	2.36	2.09	2.57	2.34
Location Means	2.8	3.6	2.1	2.8		1.92	1.90	1.72	1.84

TABLE 9: 2017 Tri-State Specialty Potato Variety Trial - TUBER SIZE**and TUBERS PER PLANT**

No. Clone	Average Tuber Size (oz)					Tubers per Plant				
	AB	PA	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means
1 Chieftain	7.1	7.4	6.6	6.1	6.8	4.9	7.9	9.3	8.5	7.7
2 Yukon Gold	6.7	7.2	6.9	7.6	7.1	4.5	6.9	7.5	5.2	6.0
3 AO6336-2Y	3.6	4.2	4.3	4.1	4.1	8.1	12.1	14.6	8.6	10.8
4 AO6336-5Y	2.4	2.9	3.2	3.0	2.9	12.6	15.2	15.4	12.6	13.9
5 LaRatte	1.3	1.3	1.5	1.8	1.5	9.3	20.1	20.8	5.0	13.8
6 POR111PG62-3	1.7	1.9	2.1	2.1	2.0	6.8	16.8	18.4	8.9	12.7
Location Means	3.8	4.1	4.1	4.1	4.0	7.7	13.2	14.3	8.1	10.8

¹ 1.0-2.0=Round, 2.1-2.5=Oval, 2.6-3.5=Blocky, 3.6-4.0=Oblong, 4.1-5.0=Long

TABLE 10: 2017 Tri-State Specialty Potato Variety Trial - EYE DEPTH, TUBER SKIN AND FLESH COLOR

No. Clone	Eye Depth ¹					Skin Color ²					Flesh Color ²					
	AB	PA	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means		AB	PA	OR	Entry Means	
1 Chieftain	2.6	2.0	3.4	3.0	2.8	3.0	2.0	2.1	4.0	2.8	Red	1.0	1.0	1.0	1.0	White
2 Yukon Gold	3.6	4.0	4.1	4.0	3.9	3.0	2.0	2.3	2.0	2.3	Yellow	3.0	3.0	2.8	2.9	Yellow
3 AO6336-2Y	4.0	3.0	3.6	5.0	3.9	3.0	3.0	3.3	2.3	2.9	Champ	3.0	2.6	1.8	2.5	Yellow
4 AO6336-5Y	3.5	4.0	4.0	4.0	3.9	3.0	3.0	3.1	2.0	2.8	Champ	3.0	3.0	1.8	2.6	Yellow
5 LaRatte	3.9	2.0	4.6	4.0	3.6	3.0	2.0	1.9	1*	2.3	Yellow	3.0	2.0	2.0	2.3	Yellow
6 POR111PG62-3	3.5	2.0	4.3	3.0	3.2	3/3	4.0	2.1	1.0	2.4	Yellow/Red	2.0	3.0	2.3	2.4	Yellow
Location Means	3.5	2.8	4.0	3.8	3.5	3.0	2.7	2.5	2.3	2.6		2.5	2.4	1.9	2.3	

¹ Scale of 1-5; 1=deep, 5=shallow

* some 1's some 5's

² Scale of 1-5 with higher number more intense color.

TABLE 11: 2017 Tri-State Specialty Potato Variety Trial - TUBER APPEARANCE, UNIFORMITY, MERIT

No. Clone	Appearance ¹			Uniformity ¹				Merit Score ¹			
	AB	PA	Entry Means	AB	OR	WA	Entry Means	AB	PA	WA	Entry Means
1 Chieftain	3.4	2.0	2.7	3.3	2.8	4.0	3.3	2.9	2.4	4.0	3.1
2 Yukon Gold	3.5	3.0	3.3	3.3	3.3	3.7	3.4	3.3	3.5	3.0	3.2
3 AO6336-2Y	4.0	4.0	4.0	4.0	1.6	3.0	2.9	4.0	4.2	3.3	3.9
4 AO6336-5Y	4.0	3.0	3.5	4.1	4.0	4.0	4.0	4.4	3.5	4.0	4.0
5 LaRatte	3.6	2.0	2.8	3.3	3.0	2.0	2.8	3.1	1.8	3.0	2.6
6 POR111PG62-3	3.0	4.0	3.5	3.5	4.3	2.0	3.3	3.3	3.9	3.0	3.4
Location Means	3.6	3.0	3.3	3.6	3.1	3.1	3.3	3.5	3.2	3.4	3.4

¹ Scale of 1-5; 5=best

TABLE 12: 2017 Tri-State Specialty Potato Variety Trial - EXTERNAL DEFECTS

No. Clone	Skinning ¹			Shatter ¹				Greening ¹				Scab ¹				
	AB	PA	Entry Means	AB	PA	OR	Entry Means	AB	PA	OR	WA	Entry Means	AB	PA	WA	Entry Means
1 Chieftain	3.0	3.0	3.0	2.1	5.0	5.0	4.0	5.0	5.0	3.9	5.0	4.7	5.0	5.0	5.0	5.0
2 Yukon Gold	3.5	4.0	3.8	2.1	5.0	4.6	3.9	4.5	4.3	3.1	4.3	4.1	3.3	4.8	5.0	4.3
3 AO6336-2Y	4.3	5.0	4.6	2.3	5.0	4.9	4.0	4.8	4.8	3.0	3.7	4.0	4.6	5.0	5.0	4.9
4 AO6336-5Y	4.3	5.0	4.6	1.4	5.0	4.8	3.7	5.0	5.0	3.9	5.0	4.7	4.8	5.0	5.0	4.9
5 LaRatte	4.3	3.0	3.6	5.0	5.0	5.0	5.0	3.1	3.8	2.5	5.0	3.6	4.8	5.0	5.0	4.9
6 POR111PG62-3	3.5	4.0	3.8	4.0	5.0	5.0	4.7	4.8	4.5	4.1	5.0	4.6	4.9	5.0	5.0	5.0
Location Means	3.8	4.0	3.9	2.8	5.0	4.9	4.2	4.5	4.5	3.4	4.7	4.3	4.5	5.0	5.0	4.8

¹ Scale of 1-5; 5=best

TABLE 13: 2017 Tri-State Specialty Potato Variety Trial - INTERNAL DEFECTS

No. Clone	Percent Hollow Heart plus Brown Center				Percent Internal Brown Spot				Percent Net Necrosis/ Vascular Discoloration		
	AB	PA	OR	Entry Means	AB	PA	OR	Entry Means	AB	OR	Entry Means
1 Chieftain	2.5	2.5	7.5	4.2	0.0	22.5	0.0	7.5	0.0	0.0	0.0
2 Yukon Gold	15.0	7.5	0.0	7.5	0.0	5.0	0.0	1.7	0.0	0.0	0.0
3 AO6336-2Y	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.8	0.0	0.0	0.0
4 AO6336-5Y	2.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 LaRatte	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 POR111PG62-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Location Means	3.3	1.7	1.3	2.1	0.0	5.0	0.0	1.7	0.0	0.0	0.0

**TABLE 14: 2017 Tri-State Specialty Potato Variety Trial - SOLIDS, ANTIOXIDANTS, VITAMIN C,
AND GLYCOALKALOIDS - ABERDEEN**

No.	Clone	Solids Oven Dry (%)	AntiOxidants	Vitamin C (mg/100g FWB)	Glycoalkaloids (mg/100gFWB)
			ug/g (%FWB)		
1	Chieftain	19.21	232.6	30.32	2.71
2	Yukon Gold	21.18	195.4	37.52	4.28
3	A06336-2Y	18.08	213.2	36.62	2.83
4	A06336-5Y	18.17	198.4	28.16	2.80
5	LaRatte	19.75	258.2	27.14	4.75
6	POR11PG62-3	18.62	351.9	39.46	10.60
Means		19.17	241.61	33.20	4.66

FWB = fresh weight basis DWB = dry weight basis

TABLE 15: 2017 Tri-State Specialty Potato Variety Trial - CULINARY RESULTS

No.	Clone	Chip score SFA (1-5)	Othello, WA				Final Ranking
			Boiled (25 max)	Baked (25 max)	Microwaved (25 max)	Total (75 max)	
1	Chieftain	*	*	*	*	*	*
2	Yukon Gold	4.8	17.4	20.8	19.8	57.9	1
3	A06336-2Y	3.4	17.4	19.6	18.9	55.8	4
4	A06336-5Y	3.9	17.1	18.8	18.8	54.7	5
5	LaRatte	3.6	19.5	17.2	19.9	56.5	3
6	POR11PG62-3	3.8	18.0	17.5	21.5	57.0	2

TABLE 16: 2017 Tri-State Specialty Potato Variety Trial - OTHER

No.	Clone	Metr.Reaction	Early Blight	Verticillium Wilt	>14oz	Rhizoc	Days until sprouts
		AB	AB	AB	OR	OR	PA
1	Chieftain	MR	5.0	5.0	81.5	4.3	151
2	Yukon Gold	R	5.0	4.6	79.7	3.3	140
3	AO6336-2Y	S	4.5	4.8	5.7	2.1	140
4	AO6336-5Y	R	4.4	4.6	0.0	4.5	151
5	LaRatte	S	5.0	4.3	0.0	4.5	133
6	POR111PG62-3	R	5.0	4.8	0.0	5.0	151

Metribuzin Reaction measured at Aberdeen, ID.
 VR=very resistant,
 R=Resistant,
 MR=Moderately resistant,
 MS=moderately susceptible,

4.8

Scale of 1-5; 5=none

4.7

27.8

3.9

Scale of 1-5; 5 = Best

144.3

TABLE 17: 2017 Tri-State Specialty Potato Variety Trial - SUMMARY

Clone	Total Yield	Yield 2-6 oz (premium)	Specific Gravity	Fresh Merit	Appearance
1 Chieftain	596	159	1.071	3.1	2.7
2 Yukon Gold	474	108	1.081	3.2	3.3
3 AO6336-2Y	507	296	1.069	3.9	4.0
4 AO6336-5Y	465	340	1.066	4.0	3.5
5 LaRatte	229	78	1.076	2.6	2.8
6 POR111PG62-3	284	160	1.069	3.4	3.5

TABLE 18: 2017 Tri-State Specialty Potato Variety Trial - LOCATION COMMENTS

Clone	ABERDEEN	PARMA	KLAMATH FALLS	OTHELLO
1 Chieftain	Deep eyes (3); big, flat, rot, few ats (2)	Skinning, large, folded ends	skinning, big, erratic size, misshaped, growth cracks	Typy, uniform size. Deep red color.
2 Yukon Gold	Round, Scab (2)	Big	dingy, impact bruise, misshaped, green, FBE, erratic size, big	Lots of rhizoc, large tubers.
3 AO6336-2Y	Points (3); few misshapen (2)	Pear shape	pears, pointy stem end, knobs, rhizoc, drop	Small, a bit flat, some rhizoc.
4 AO6336-5Y	Round, uniform (4); few oval/doubles, few ats	Small	4 rotten, uniform, pretty, nice, keep, nice skin, orangish knoby, culls are green's,	Nice, uniform shape and size.
5 LaRatte	Green, folding back (2); few knobs, few misshapen	Knobs, chain tubers	lenticel scarring, erratic size, misshaped and 2's, popeyes and knobs	Light skin, long and pointy.
6 POR111PG62-3	Not consistent in color or shape (3)	Uniform, knobs	turning purple, uniform, nice skin, keep, CRS, erratic purple and pink, blemish free	Lots of irregular shapes, small.

2017 Tri-State Specialty Potato Variety Photos

Taken at Parma, Idaho

