



2018 Tri-State Specialty Potato Variety Trial Report

STATE EXPERIMENT STATIONS AND USDA-ARS COOPERATING



Aberdeen, Idaho

Parma, Idaho

Othello, Washington

Klamath Falls, Oregon

2018 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
- 15 Other Data
- 16 Summary of Entries' Performance
- 17 Trial Comments and Information by Location

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TABLE 1: 2018 Tri-State Specialty Potato Variety Trial - LOCATIONS, COOPERATORS, AND CULTURAL INFORMATION

Locations	Cooperators	Irrigation	Fertilizer N-P-K-S(lb/A)	In-row	Spacing Between Row	Planting Date	Vine Kill Date	Harvest Date	Days to Vine Kill	Days to Harvest	Herbicides	Insecticides	Fungicides
Aberdeen Idaho (AB)	J. Stark R. Novy J. Whitworth C. Lowder	Sprink.	205-80-10Zn-5Mn	9.3	36	4-May	10-Aug	27-Aug	98	115	TriCor 4F Matrix Eptam 7-E	Admire Pro	
						Mechanical							
Parma Idaho (PA)	M. Thornton R. Portenier O. Morgan	Sprink.	191-100-100	10	36	11-Apr	20-Jul	6-Aug	100	117	Outlook Prowl H2O Matrix Eptam Metribuzin Intensity	Movento	Bravo Endura Luna T Revus Top
						Chemical/ Reglone							
Klamath Falls Oregon (OR)	B. Charlton N. Baley	Solid set	162-0-200-255	9.3	36	15-May	28-Aug	27-Sep	105	135	Prowl Matrix Outlook	Mana/Alias Vydate	Luna Vertisan
						Mechanical							
Othello Washington (WA)	M. Pavek R. Knowles N. Fuller Z. Holden	Overhead	200 N + 100 P + 300 K20 + 40 S + 2B	8	32	5-Apr	20-Jul	31-Jul	106	117	Eptam Prowl	Alias	Vertisan Luna Ridomil Bravo
						Mechanical/ chemical							

TABLE 2: 2018 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	100	97	100	98	99	2.2	2.5	2.4	2.4
2 A08112-7R	A99331-2RY	COA01406-1R	Dk Red-Purple	ID	1	ID	98	97	99	98	98	5.2	4.0	2.9	4.0
3 A08122-12R	A02267-5PY	COA01406-1R	Dk Red-Purple	ID	1	ID	96	95	*	*	95	4.0	4.4	*	4.2
4 Yukon Gold	Norgleam	W5279-4	Pink	Check	***	OR	97	98	97	98	98	1.7	1.9	1.4	1.7
5 POR14PG22-3	***	***	***	OR	1	OR	96	100	97	97	97	3.8	3.8	3.0	3.5

TABLE 3: 2018 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	2.3	3.5	2.9	Medium	3.4	4.0	3.7	Med-late
2	A08112-7R	2.8	2.3	2.5	Small	3.3	2.0	2.6	Med Early
3	A08122-12R	2.0	3.0	2.5	Small	2.8	2.3	2.5	Early
4	Yukon Gold	2.3	4.0	3.1	Med-large	2.3	3.0	2.6	Med Early
5	POR14PG22-3	2.0	4.0	3.0	Medium	3.3	3.0	3.1	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: 2018 Tri-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	WA	Entry Mean
1 Chieftain	379	577	609	857	606	1.074	1.074	1.074	1.063	1.071
2 A08112-7R	336	449	461	434	420	1.078	1.075	1.073	1.064	1.072
3 A08122-12R	338	589	*	*	463	1.071	1.076	*	*	1.074
4 Yukon Gold	325	466	507	579	469	1.088	1.087	1.083	1.076	1.083
5 POR14PG22-3	415	608	699	594	579	1.073	1.075	1.076	1.060	1.071
Location Means	359	448	569	616	507	1.077	1.077	1.077	1.066	1.074

TABLE 5: 2018 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	10	9	12	10	10	4	38	26	78	56	50	4
	3	2	2	1	2	4	10	5	13	7	9	4
2 A08112-7R	126	84	67	82	90	2	176	196	177	235	196	2
	37	19	14	19	22	1	52	44	38	54	47	1
3 A08122-12R	51	38	*	*	45	3	105	144	*	*	125	3
	15	7	*	*	11	3	31	25	*	*	28	3
4 Yukon Gold	11	5	5	11	8	5	41	20	52	32	36	5
	3	1	1	2	2	5	12	4	10	5	8	5
5 POR14PG22-3	84	58	114	114	93	1	161	214	367	276	254	1
	20	10	16	19	16	2	39	35	52	46	43	2
Location Means	56	39	50	54	49		104	120	169	150	132	
	16	8	8	10	11		29	22	28	28	27	

TABLE 6: 2018 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	85	64	98	119	91	4	168	159	223	412	240
	22	11	16	14	16	4	44	28	37	48	39	1
2 A08112-7R	31	114	127	101	93	3	2	53	57	15	32	5
	9	26	28	23	21	3	1	12	12	3	7	5
3 A08122-12R	92	209	*	*	150	2	59	147	*	*	103	3
	27	36	*	*	31	1	17	25	*	*	21	3
4 Yukon Gold	71	47	85	45	62	5	124	146	212	141	156	2
	22	10	17	8	14	5	38	31	42	24	34	2
5 POR14PG22-3	127	210	134	160	158	1	29	110	39	41	55	4
	31	35	19	27	28	2	7	18	6	7	10	4
Location Means	81	129	111	106	111		76	123	133	152	117	
	22	23	20	18	22		21	23	24	21	22	

TABLE 7: 2018 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	63 16	317 55	179 29	261 30	205 33	1 2	15 4	2 0	20 3	13 2	13 2
2 A08112-7R	0 0	3 1	0 0	0 0	1 0	5 5	1 0	0 0	33 7	11 3	11 3	4 2
3 A08122-12R	15 4	44 7	* *	* *	29 6	3 3	16 5	7 1	* *	* *	12 3	3 1
4 Yukon Gold	68 21	249 53	133 26	350 61	200 40	2 1	10 3	0 0	20 4	13 2	11 2	5 5
5 POR14PG22-3	3 1	15 3	0 0	3 1	5 1	4 4	11 2	2 0	45 6	5 1	16 2	1 4
Location Means	30 8	105 24	62 14	154 23	88 16		11 3	2 0	30 5	11 2	12 3	

TABLE 8: 2018 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	WA	Entry Means
1 Chieftain	2.0	2.8	1.0	1.9	Round	1.12	1.11	1.16	1.16	1.13
2 A08112-7R	1.5	2.0	1.0	1.5	Round	1.19	1.18	1.18	1.13	1.18
3 A08122-12R	1.6	*	*	1.6	Round	1.06	1.05	*	*	1.05
4 Yukon Gold	2.1	2.6	1.0	1.9	Round	1.12	1.09	1.32	1.15	1.17
5 POR14PG22-3	2.8	2.3	1.0	2.0	Round	1.29	1.20	1.11	1.12	1.20
Location Means	2.0	2.4	1.0	1.8		1.16	1.12	1.19	1.14	1.16

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 9: 2018 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	6.0	7.9	5.6	7.5	6.7	5.4	7.1	9.2	8.0	7.4
2 A08112-7R	2.3	2.7	2.2	2.8	2.5	13.0	16.2	18.2	10.6	14.5
3 A08122-12R	3.4	4.0	*	*	3.7	9.0	13.7	*	*	11.4
4 Yukon Gold	5.8	8.1	6.2	9.1	7.3	5.1	5.4	7.3	4.5	5.6
5 POR14PG22-3	2.9	3.3	2.4	3.0	2.9	13.0	17.0	26.1	14.0	17.5
Location Means	4.1	5.2	4.1	5.6	4.6	9.1	11.9	15.2	9.3	11.3

TABLE 10: 2018 Tri-State Specialty Potato Variety Trial - EYE DEPTH, TUBER SKIN AND FLESH COLOR

No. Clone	Eye Depth ¹				Skin Color ²					Flesh Color			
	AB	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means	AB	PA	OR	
1 Chieftain	3.1	3.5	3.0	3.2	2.0	1.5	2.0	3.0	2.1	Red	White	White	White
2 A08112-7R	4.0	4.0	4.0	4.0	3.0	3.0	3.8	4.0	3.4	Red	White	Off-White	White
3 A08122-12R	3.6	*	*	3.6	3.0	2.0	*	*	2.5	Red	White	White	*
4 Yukon Gold	3.9	3.9	4.0	3.9	2.5	3.0	1.3	2.0	2.2	Yellow	Yellow	Yellow	Yellow
5 POR14PG22-3	3.0	3.8	4.0	3.6	2.0	2.0	1.6	1.0	1.7	Yellow	Yellow	Yellow	Yellow
Location Means	3.5	3.8	3.8	3.7	2.5	2.3	2.2	2.5	2.4				

¹ Scale of 1-5; 1=deep, 5=shallow

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

TABLE 11: 2018 Tri-State Specialty Potato Variety Trial - TUBER APPEARANCE, UNIFORMITY, MERIT

No. Clone	Appearance ¹				Uniformity ¹				Merit Score ¹				
	AB	PA	OR	Entry Means	AB	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means
1 Chieftain	3.5	3.0	2.8	3.1	3.4	2.8	3.3	3.2	2.9	2.0	3.0	3.3	2.8
2 A08112-7R	3.8	4.0	4.6	4.1	4.3	2.0	4.0	3.4	4.1	3.4	4.0	4.0	3.9
3 A08122-12R	3.3	3.0	*	3.1	3.5	*	*	3.5	3.0	3.6	*	*	3.3
4 Yukon Gold	3.8	3.0	4.1	3.6	3.1	2.6	3.0	2.9	3.0	2.0	3.5	3.3	3.0
5 POR14PG22-3	4.0	2.0	2.4	2.8	2.6	2.3	2.7	2.5	2.1	3.4	3.0	3.3	3.0
Location Means	3.7	3.0	3.5	3.4	3.4	2.4	3.3	3.1	3.0	2.9	3.4	3.5	3.2

¹ Scale of 1-5; 5=best

TABLE 12: 2018 Tri-State Specialty Potato Variety Trial - EXTERNAL DEFECTS

No. Clone	Skinning ¹					Shatter ¹					Greening ¹					Scab ¹			
	AB	PA	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means	AB	PA	WA	Entry Means
1 Chieftain	3.6	4.0	3.6	3.0	3.8	4.8	5.0	4.3	4.3	4.6	4.5	5.0	4.8	5.0	4.8	4.1	5.0	5.0	4.7
2 A08112-7R	3.6	4.0	4.4	3.7	4.0	4.3	5.0	5.0	5.0	4.8	4.9	3.8	4.6	4.0	4.3	4.5	4.8	5.0	4.8
3 A08122-12R	3.6	5.0	*	*	4.3	4.4	5.0	*	*	4.7	4.6	3.8	*	*	4.2	4.8	5.0	*	4.9
4 Yukon Gold	4.4	4.0	4.1	3.7	4.2	4.8	5.0	4.0	5.0	4.7	4.4	4.0	4.6	4.7	4.4	2.4	2.5	5.0	3.3
5 POR14PG22-3	4.3	5.0	3.0	3.0	4.1	4.9	4.5	4.1	5.0	4.6	4.8	4.0	4.1	4.7	4.4	4.6	5.0	5.0	4.9
Location Means	3.9	4.4	3.8	3.3	4.1	4.6	4.9	4.3	4.8	4.7	4.6	4.1	4.5	4.6	4.4	4.1	4.5	5.0	4.5

¹ Scale of 1-5; 5=none

TABLE 13: 2018 Tri-State Specialty Potato Variety Trial - INTERNAL DEFECTS

No. Clone	Hollow Heart plus Brown Center (%)					Internal Brown Spot (%)					Net Necrosis/ Vascular Discoloration (%)		
	AB	PA	OR	WA	Entry Means	AB	PA	OR	WA	Entry Means	AB	OR	Entry Means
1 Chieftain	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.0	0.0	1.9	0.0	0.0	0.0
2 A08112-7R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 A08122-12R	0.0	0.0	*	*	0.0	0.0	0.0	*	*	0.0	0.0	0.0	0.0
4 Yukon Gold	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	1.9	0.0	0.0	0.0
5 POR14PG22-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Location Means	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.3	0.0	0.8	0.0	0.0	0.0

**TABLE 14: 2018 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	18.92	190.04	25.52	4.75
2	A08112-7R	19.84	143.31	27.02	1.53
3	A08122-12R	19.01	129.30	32.89	2.08
4	Yukon Gold	21.70	146.81	42.30	4.68
5	POR14PG22-3	17.87	176.63	32.49	5.64
Means		19.47	157.22	32.04	3.74

FWB = fresh weight basis DWB = dry weight basis

TABLE 15: 2018 Tri-State Specialty Potato Variety Trial - OTHER

No.	Clone	Metr.Reaction	Early Blight	Verticillium Wilt	Rhizoc	Days until sprouts
		AB	AB	AB	OR	PA
1	Chieftain	MR	4.9	4.9	4.1	94
2	A08112-7R	MS	3.9	4.9	4.4	122
3	A08122-12R	S	3.8	4.0	*	80
4	Yukon Gold	MR	3.5	3.5	4.1	94
5	POR14PG22-3	MS	4.4	4.4	2.3	80

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

4.1

Scale of 1-5; 5=none

4.3

Scale of 1-5; 5 = none

3.7

94

TABLE 16: 2018 Tri-State Specialty Potato Variety Trial - SUMMARY

Clone	Total Yield	Yield 2-6 oz (premium)	Specific Gravity	Fresh Merit	Appearance
1 Chieftain	606	128	1.071	2.8	3.1
2 A08112-7R	420	267	1.072	3.9	4.1
3 A08122-12R	463	188	1.074	3.3	3.1
4 Yukon Gold	469	89	1.083	3.0	3.6
5 POR14PG22-3	579	368	1.071	3.0	2.8

TABLE 17: 2018 Tri-State Specialty Potato Variety Trial - LOCATION COMMENTS

Clone	ABERDEEN	PARMA	KLAMATH FALLS	OTHELLO
1 Chieftain	Few attached stolons (3); fairly uniform, flat (2)	skinning	Skinning x4, bronzed x2, shatter,	Skin not set, nice color, range of sizes.
2 A08112-7R	Uniform (4); small, round (3); few attached stolons	pretty, uniform	nice skin, bright red, uniform size, some mechanical damage	Smooth shape, small uniform size, good skin set, bright red.
3 A08122-12R	Few misshapen (3); few bumps (2)	deeper eyes	*	*
4 Yukon Gold	Flat (4); big, oblong (2)	brown center	erratic size, no yield, shatter bruise, impact bruise	Large, variety of sizes with smooth skin
5 POR14PG22-3	Bumps (4); not uniform, ugly (3);	irregular size	rhizoc, sprouting, impact bruise x3 erratic size x3	Lumpy, bumpy, small

2018 Tri-State Specialty Potato Variety Photos

Taken at Parma, Idaho

