

2019

TRI-STATE SPECIALTY

POTATO VARIETY TRIAL REPORT

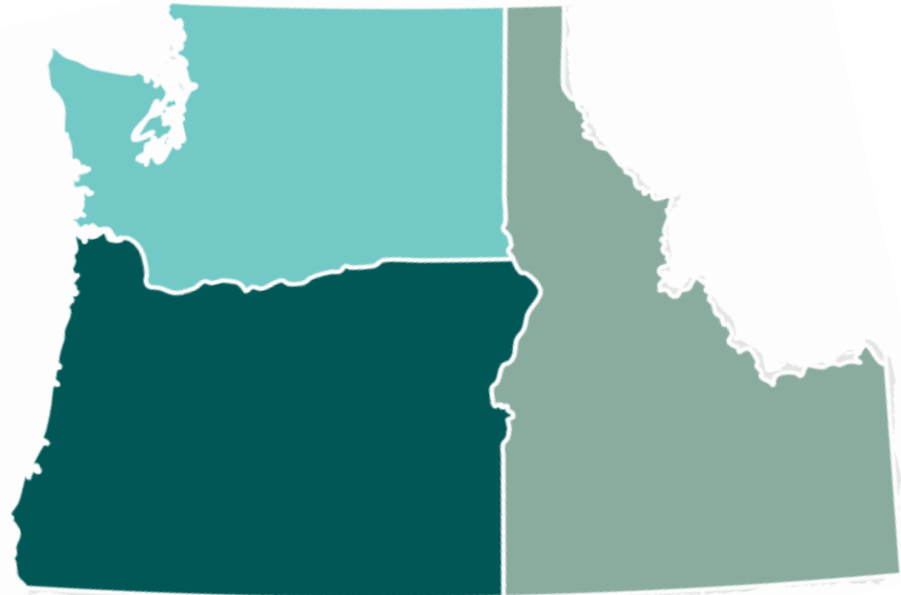
State Experiment Stations and USDA-ARS Cooperating

Aberdeen, Idaho

Parma, Idaho

Othello, Washington

Klamath Falls, Oregon



2019 TRI-STATE SPECIALTY POTATO VARIETY TRIAL REPORT

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Compiled by: Oksana Morgan

TABLE 1: 2019 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	Sprinkler	230-100-0-0 5Zn-5Mn	9.3	36	2-May	16-Aug	4-Sep	106	125	TriCor 4F Matrix Eptam 7-E	Admire Pro	
Parma Idaho (PA)	M. Thornton R. Portenier O. Morgan	Sprinkler	204-100-200-0 20Mg-11Mn-4B	10	36	24-Apr	31-Jul	13-Aug	98	111	Sonalan Boundry Eptam 7E	Movento	Bravo Endura Luna T Revus Top
Klamath Falls Oregon (OR)	B. Charlton N. Baley	Sprinkler	146-0-182-233	9.3	36	20-May	3-Sep	26-Sep	106	129	Prowl Matrix Outlook	Allias	Vertisan
Othello Washington (WA)	M. Pavek R. Knowles N. Fuller Z. Holden	Sprinkler	200-100-300-40 2B	8	32	4-Apr	22-Jul	5-Aug	109	123	Outlook Prowl H20 Eptam	Platinum	Luna Traquility Chloronil Bravo Zing!

TABLE 2: 2019 Tri-State Specialty Potato Variety Trial - CLONE, PARENTS, FLOWER COLOR, ENTERED BY, SEED SOURCE, STAND, AND STEM NO.

No Clone	Parents		Flower Color	Entered Trial by	Year	Seed Source	STAND (%)				Mean Stand %	STEM NO.			Stems/Plant
	Female	Male					AB	PA	OR	WA		AB	PA	WA	
1 Chieftain	LA1354	LA1027-18	Red-Purple	Check	***	OR	92	93	97	77	90	2.3	2.3	2.4	2.3
2 A08122-12R	A02267-5PY	COA01406-1R	Dk Red-Purple	ID	2	ID	84	100	94	93	93	4.6	4.8	3.4	4.3
3 NDA8512C-1R	ND6694C-1R	ND5256-7R	M Red-Purple	ID	1	ID	84	88	84	83	85	1.8	1.8	1.9	1.9
4 A081229-RY	A02267-5PY	COA01406-1R	Dk Red-Purple	ID	***	ID	93	97	94	87	93	4.2	4.5	3.3	4.0
5 Yukon Gold	Norgleam	W5279-4	Pink	Check	1	OR	84	95	84	85	87	1.6	1.7	2.6	2.0
6 COA13039-4Y	CO05030-5W/Y	PA99P35-1	No Flower	ID	1	ID	*	88	*	72	80	*	4.4	4.6	4.5

TABLE 3: 2019 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	2.0	3.3	2.6	Medium	3.8	3.3	3.5	Medium
2	A08122-12R	1.3	2.3	1.8	Small	3.3	2.3	2.8	Med Early
3	NDA8512C-1R	1.3	2.4	1.8	Small	2.6	2.8	2.7	Med Early
4	A081229-RY	2.3	3.7	3.0	Medium	3.5	4.0	3.8	Med-late
5	Yukon Gold	2.0	3.1	2.6	Medium	3.5	2.6	3.1	Medium
6	COA13039-4Y	*	2.0	2.0	Small	*	2.4	2.4	Early

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: 2019 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	398	502	665	770	583	1.075	1.072	1.073	1.069	1.072
2 A08122-12R	331	491	526	831	545	1.072	1.074	1.074	1.068	1.072
3 NDA8512C-1R	245	407	407	734	448	1.076	1.071	1.073	1.070	1.072
4 A081229-RY	325	528	533	544	482	1.077	1.076	1.079	1.068	1.075
5 Yukon Gold	266	434	430	591	430	1.086	1.086	1.087	1.083	1.085
6 COA13039-4Y	*	336	*	702	519	*	1.083	*	1.079	1.081
Location Means	313	450	512	695		1.077	1.077	1.077	1.073	

TABLE 5: 2019 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)/%					
	AB	PA	OR	WA	Entry		AB	PA	OR	WA	Entry	
					Mean	Rank					Mean	Rank
1 Chieftain	15	12	10	15	13	5	31	54	48	63	49	5
	4	2	2	2	3	5	8	11	7	8	8	6
2 A08122-12R	90	92	77	74	83	1	156	216	197	252	205	1
	27	19	15	9	18	1	48	44	37	30	40	2
3 NDA8512C-1R	10	22	13	18	16	4	50	69	65	80	66	4
	4	5	3	2	4	4	21	17	16	11	16	4
4 A081229-RY	79	90	35	65	67	2	181	208	179	184	188	2
	25	17	7	12	15	2	55	40	34	34	41	1
5 Yukon Gold	7	15	4	8	8	6	35	53	36	32	39	6
	2	3	1	1	2	6	13	12	8	5	10	5
6 COA13039-4Y	*	61	*	46	53	3	*	161	*	192	177	3
	*	18	*	7	13	3	*	49	*	27	38	3
Location Means	40	49	28	37			91	127	105	134		
	12	11	6	6			29	29	20	19		

TABLE 6: 2019 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	121	141	148	119	4	170	180	250	322	231
	16	24	21	19	20	5	42	36	38	42	40	1
2 A08122-12R	62	134	110	249	139	1	22	40	103	222	97	5
	19	27	21	30	24	2	6	8	20	27	15	5
3 NDA8512C-1R	57	112	92	160	105	5	86	154	153	323	179	2
	24	28	23	22	24	3	34	38	38	44	39	2
4 A081229-RY	54	178	151	163	137	2	10	44	142	123	80	6
	16	33	28	30	27	1	3	8	27	23	15	5
5 Yukon Gold	57	111	81	53	76	6	99	169	148	175	148	3
	21	26	19	9	19	6	37	39	34	30	35	3
6 COA13039-4Y	*	77	*	186	132	3	*	17	*	233	125	4
	*	22	*	26	24	4	*	5	*	33	19	4
Location Means	59	122	115	160			77	101	159	233		
	19	27	22	23			24	22	31	33		

TABLE 7: 2019 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	114 30	122 24	178 27	222 29	159 28	1 2	2 1	12 3	37 6	33 4	21 3
2 A08122-12R	0 0	5 1	9 2	34 4	12 2	5 5	1 0	5 1	30 6	39 5	19 3	4 4
3 NDA8512C-1R	12 4	43 11	46 11	153 21	64 12	3 3	32 14	8 2	39 9	55 7	33 8	1 1
4 A081229-RY	0 0	7 1	14 3	9 2	7 2	6 6	1 0	1 0	13 2	17 3	8 1	6 6
5 Yukon Gold	64 24	75 17	144 34	324 55	152 33	2 1	4 1	11 3	17 4	22 4	14 3	5 5
6 COA13039-4Y	* *	6 2	* *	46 7	26 4	4 4	* *	14 4	* *	24 3	19 4	3 2
Location Means	38 12	43 9	78 15	131 20			8 3	9 2	27 5	32 4		

TABLE 8: 2019 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	2.4	3.1	1.0	2.2	Oval	1.10	1.10	1.12	1.04	1.09
2 A08122-12R	1.7	1.8	1.0	1.5	Round	1.06	1.00	1.01	1.01	1.02
3 NDA8512C-1R	1.9	2.5	1.0	1.8	Round	1.10	1.08	1.14	1.06	1.09
4 A081229-RY	1.5	2.3	1.0	1.6	Round	1.08	1.00	1.10	1.17	1.09
5 Yukon Gold	2.1	3.0	1.0	2.0	Round	1.07	1.10	1.11	1.05	1.08
6 COA13039-4Y	*	*	1.0	1.0	Round	*	1.03	*	1.10	1.06
Location Means	1.9	2.5	1.0			1.08	1.05	1.10	1.07	

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: 2019 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	6.2	5.9	7.7	6.9	6.7	6.0	8.5	7.6	7.8	7.5
2 A08122-12R	2.4	2.6	3.3	4.0	3.0	14.7	17.6	13.9	14.5	15.1
3 NDA8512C-1R	4.9	4.7	5.8	6.3	5.4	5.1	9.3	6.7	8.2	7.3
4 A081229-RY	2.5	2.7	5.3	3.7	3.5	12.0	18.7	10.1	10.3	12.8
5 Yukon Gold	6.0	5.2	6.8	8.8	6.7	4.6	8.2	5.9	4.7	5.9
6 COA13039-4Y	*	2.7	*	4.4	3.5	*	13.4	*	11.1	12.2
Location Means	4.4	3.9	5.8	5.7		8.5	12.6	8.8	9.4	

TABLE 10: 2019 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	2.5	2.4	3.0	2.6	3.0	2.0	3.0	3.3	2.8	Red	White	White	White
2 A08122-12R	3.8	3.9	3.0	3.6	3.0	3.0	3.3	4.0	3.3	Red	White	White	White
3 NDA8512C-1R	4.0	3.6	2.7	3.4	4.0	4.0	3.9	4.7	4.1	Red	White	White	White
4 A081229-RY	3.5	3.6	3.3	3.5	3.5	1.5	2.3	4.3	2.9	Red	Yellow	Yellow	Yellow
5 Yukon Gold	3.9	4.8	3.0	3.9	2.0	3.0	1.3	1.0	1.8	Yellow	Yellow	Yellow	Yellow
6 COA13039-4Y	*	*	3.0	3.0	*	2.0	*	2.0	2.0	Yellow	*	Yellow	*
Location Means	3.5	3.7	3.0		3.1	2.6	2.7	3.2					

¹ Scale of 1-5; 1=deep, 5=shallow

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

TABLE 11: 2019 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	WA	Entry Means
1 Chieftain	3.4	2.0	2.0	2.5	2.9	2.3	3.3	2.8	3.0	2.5	3.3	2.9
2 A08122-12R	3.7	4.0	3.5	3.7	3.8	3.8	4.0	3.9	3.8	4.0	4.0	3.9
3 NDA8512C-1R	4.4	3.0	2.4	3.3	2.0	2.9	*	2.4	1.9	3.0	2.7	2.5
4 A081229-RY	3.8	2.0	2.0	2.6	3.9	3.0	3.0	3.3	4.0	3.5	3.7	3.7
5 Yukon Gold	3.6	3.0	2.8	3.1	3.0	2.5	2.7	2.7	3.1	3.0	3.7	3.3
6 COA13039-4Y	*	4.0	*	4.0	*	*	*	*	*	2.0	3.3	2.7
Location Means	3.8	3.0	2.5		3.1	2.9	3.3		3.2	3.0	3.4	

¹ Scale of 1-5; 5=best

TABLE 12: 2019 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	3.0	3.5	3.3	3.4	4.9	5.0	4.5	3.0	4.3	5.0	5.0	4.6	5.0	4.9	4.9	4.3	5.0	4.7
2	A08122-12R	3.8	5.0	4.6	3.0	4.1	4.8	5.0	3.1	4.0	4.2	5.0	4.8	4.8	5.0	4.9	4.8	4.3	5.0	4.7
3	NDA8512C-1R	3.6	4.0	3.5	2.3	3.4	4.4	4.8	2.3	3.0	3.6	5.0	4.5	4.8	5.0	4.8	4.9	4.5	*	4.7
4	A081229-RY	4.5	5.0	5.0	3.3	4.5	5.0	5.0	4.3	4.0	4.6	5.0	4.7	4.0	5.0	4.7	4.5	4.7	5.0	4.7
5	Yukon Gold	4.3	4.0	5.0	4.0	4.3	4.9	5.0	3.6	4.0	4.4	4.9	5.0	4.6	5.0	4.9	3.4	3.0	5.0	3.8
6	COA13039-4Y	*	5.0	*	4.0	4.5	*	5.0	*	5.0	5.0	*	4.0	*	5.0	4.5	*	4.5	*	3.8
Location Means		4.0	4.3	4.3	3.3		4.8	5.0	3.6	3.8		5.0	4.7	4.6	5.0		4.5	4.2	5.0	

¹ Scale of 1-5; 5=none

TABLE 13: 2019 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	0.0	0.0	4.2	1.0	0.0	0.0	0.0
2 A08122-12R	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 NDA8512C-1R	0.0	0.0	*	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 A081229-RY	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.8	0.0	0.0	0.0
5 Yukon Gold	0.0	0.0	0.0	0.0	0.0	2.5	2.5	0.0	0.0	1.3	2.5	0.0	1.3
6 COA13039-4Y	*	0.0	*	0.0	0.0	*	0.0	*	0.0	0.0	*	*	*
Location Means	0.0	0.0	0.0	0.0		0.5	1.0	0.0	0.7		0.5	0.0	

**TABLE 14: 2019 Tri-State Specialty Potato Variety Trial - SOLIDS, ANTIOXIDANTS, VITAMIN C,
AND GLYCOALKALOIDS - ABERDEEN**

No.	Clone	Solids Oven Dry (%)	Antioxidants (ug/g FWB)	Vitamin C (mg/100g FWB)	Glycoalkaloids (mg/100g FWB)
1	Chieftain	19.29	472.35	28.25	4.75
2	A08122-12R	21.19	427.45	33.84	1.53
3	NDA8512C-1R	19.19	518.97	26.54	2.08
4	A081229-RY	19.71	428.46	29.22	4.68
5	Yukon Gold	21.04	492.95	29.77	5.64
6	COA13039-4Y	*	*	*	*
Means		20.08	468.04	29.52	3.74

FWB = fresh weight basis DWB = dry weight basis

TABLE 15: 2019 Tri-State Specialty Potato Variety Trial - OTHER

No.	Clone	Early Blight	Verticillium Wilt	Rhizoc	Days until sprouts
		AB	AB	OR	PA
1	Chieftain	5	4.9	3.4	126
2	A08122-12R	4	3.9	4.1	84
3	NDA8512C-1R	3	3.8	4.5	126
4	A081229-RY	5	3.5	4.1	97
5	Yukon Gold	5	4.4	4.0	119
6	COA13039-4Y	*	*	*	19
		4.3	4.1	4.0	95

Scale of 1-5; 5=none Scale of 1-5; 5 = none Scale of 1-5; 5 = none

TABLE 16: 2019 Tri-State Specialty Potato Variety Trial - SUMMARY

Clone	Total Yield	Yield 2-6 oz (premium)	Specific Gravity	Fresh Merit	Appearance
1 Chieftain	583	168	1.072	2.9	2.7
2 A08122-12R	545	344	1.072	3.9	3.8
3 NDA8512C-1R	448	171	1.072	2.5	3.1
4 A081229-RY	482	324	1.075	3.7	2.9
5 Yukon Gold	430	114	1.085	3.3	3.3
6 COA13039-4Y	519	308	1.081	2.7	3.7

TABLE 17: 2019 Tri-State Specialty Potato Variety Trial - COMMENTS

Clone	ABERDEEN	PARMA	KLAMATH FALLS	OTHELLO
1 Chieftain	Ats (4); oval (3); big, flat, deep eyes (2)	skinning, large,lt red	skinning x 3, misshapes x2, bronzing, TNC	Flat, eyes a bit deep, with poor skin set.
2 A08122-12R	Deep ends (3); small, round, few ats (2); smooth eye, few bumps	small	small, big set, uniform looks nice,	Mostly nice, good color, medium size.
3 NDA8512C-1R	Not uniform (4); points (3); misshapen, nice color, some oval, ugly (2)	dark red, GC	bronzing x 3, shatter and skinning x 3	Nice dark red skin, skin set not good, some irregular shapes.
4 A081229-RY	Small round (4); fairly uniform (3); few ats (2);	russeted	inconsistent red color, bronzed x 3, dingy skin	Nice dark red, uniform size, low yields.
5 Yukon Gold	Flat (4); few ats, oblong (2); few deep ends/brows	nice	CRS, rhizoc x1 , mechanical damage, rot	Large, nice yellow skin, mix of sizes.
6 COA13039-4Y	*	sprouted, irregular	*	Some russeting, sprouts starting, range of sizes.

2019 Tri-State Specialty Potato Variety Photos

Taken at Parma, Idaho



Chieftain



A08122-12R



NDA8512C-1R



A08122-9RY



COA13039-4Y



Yukon Gold