

# 2019 TRI-STATE RUSSET POTATO VARIETY TRIAL REPORT



State Experiment Stations and  
USDA-ARS Cooperating

Washington

Oregon

Idaho

## 2019 TRI-STATE POTATO VARIETY TRIAL REPORT

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Compiled by Chelsey Lowder

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TABLE 2: 2019 Tri-State Potato Variety Trial - CLONE, PARENTS, FLOWER COLOR, ENTERED BY, SEED SOURCE, STAND, TUBER AND VINE CHARACTERISTICS, STEMS PER PLANT

No	Clone	Parents	Flower Color	Entered by	Use	Trial Year	Seed Source	Mean Stand %	Stems/Plant	Tuber				Vine			
										Means	Shape	Means	Skin	Means	Size	Means	Maturity
1	Ranger Russet	Butte A6595-3	Red-purple	Check	Dual	Check	OR	99	2.1	4.4	Long	3.5	Med Russet	3.3	Med-large	3.0	Med Early
2	Russet Burbank	Early Rose ?	White	Check	Dual	Check	OR	99	2.3	3.9	Obl-Lng	3.3	Med Russet	3.4	Med-large	2.3	Early
3	Russet Norkotah	ND9687-5 Rus ND9526-4 Rus	White	Check	Fresh	Check	OR	100	2.6	3.8	Obl-Lng	4.2	Med Hvy Rus	2.2	Small	1.3	Early
4	Shepody	Bake-King F58050	White	Check	Proc	Check	OR	99	2.3	2.8	Oblong	1.7	White	2.5	Small	4.1	Late
5	A09022-4	Alturas Russet Premier Russet	White	ID	Dual	2	OR	99	2.5	2.9	Oblong	2.3	Light Russet	2.7	Medium	3.0	Med Early
6	A10007-3	A02060-3T A05013-5TE	White	ID	Dual	1	ID	97	1.7	3.9	Obl-Lng	2.8	Light Russet	2.8	Medium	3.2	Medium
7	A10595-13sto	A96953-13 A01025-4	White	ID	Dual	1	ID	98	1.9	3.3	Oblong	2.8	Light Russet	2.7	Medium	2.3	Early
8	A11194-1	A98345-1 A06021-11	White	ID	Dual	1	ID	99	3.5	2.9	Oblong	3.2	Med Russet	3.3	Med-large	2.3	Early
9	AOR08540-1	A02782-2 PA01N22-5	White	OR	Fresh	2	OR	99	2.4	3.8	Obl-Lng	4.1	Med Hvy Rus	3.1	Med-large	3.8	Med-late
10	AOR10204-3	COA05110-3 A05066-9	Lav-Purple	OR	Fresh	2	OR	98	2.4	3.7	Obl-Lng	3.9	Med Russet	3.1	Med-large	2.8	Med Early
11	AOR11217-3	A01010-3 NDA070929B-3	Pink-Purple	OR	Dual	1	OR	97	2.2	3.8	Obl-Lng	4.1	Med Hvy Rus	3.2	Med-large	3.0	Med Early
12	COA11013-2	AC99375-1RU CO03308-3RU	White	ID	Dual	1	ID	96	2.6	4.0	Obl-Lng	3.5	Med Russet	2.8	Medium	3.1	Medium
<b>Means</b>								<b>98</b>	<b>2.4</b>	<b>3.6</b>		<b>3.3</b>		<b>2.9</b>		<b>2.8</b>	

Numerical values are means of all trial locations.

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

1.0-2.0=White, 2.1-3.0=Light Russet, 3.1-4.0=Medium Russet, 4.1-4.5=Medium Heavy Russet, 4.6-5.0 Heavy Russet

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

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 3: 2019 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)						
		ID	WA	Ont	Entry Mean	Rank	ID	WA	OR Herm	KF	Entry Mean	Rank
1	Ranger Russet	345	702	738	<b>595</b>	<b>6</b>	505	863	828	589	<b>696</b>	<b>5</b>
2	Russet Burbank	360	742	741	<b>614</b>	<b>3</b>	478	870	475	542	<b>591</b>	<b>10</b>
3	Russet Norkotah	267	631	711	<b>536</b>	<b>10</b>	300	658	658	570	<b>547</b>	<b>11</b>
4	Shepody	272	751	766	<b>596</b>	<b>5</b>						
5	A09022-4	332	646	559	<b>512</b>	<b>12</b>	420	954	610	450	<b>608</b>	<b>9</b>
6	A10007-3	306	640	607	<b>518</b>	<b>11</b>	443	973	786	492	<b>674</b>	<b>6</b>
7	A10595-13sto	374	710	565	<b>550</b>	<b>9</b>	521	900	686	374	<b>620</b>	<b>8</b>
8	A11194-1	347	695	748	<b>597</b>	<b>4</b>	456	932	570	-	<b>652</b>	<b>7</b>
9	AOR08540-1	338	789	743	<b>623</b>	<b>2</b>	511	1044	864	485	<b>726</b>	<b>2</b>
10	AOR10204-3	386	749	745	<b>627</b>	<b>1</b>	561	1016	809	567	<b>739</b>	<b>1</b>
11	AOR11217-3	277	710	736	<b>574</b>	<b>8</b>	480	938	790	581	<b>697</b>	<b>4</b>
12	COA11013-2	363	662	715	<b>580</b>	<b>7</b>	529	945	811	548	<b>708</b>	<b>3</b>
<b>Location Means</b>		<b>331</b>	<b>702</b>	<b>698</b>	<b>577</b>		<b>473</b>	<b>917</b>	<b>717</b>	<b>520</b>	<b>660</b>	
<b>LSD (.05)</b>											<b>132</b>	

TABLE 4: 2019. Tri-State Potato Variety Trial - YIELD OF U.S. #1'S (CWT/A &amp; %) - EARLY AND LATE HARVEST

No.	Clone	U.S. No. 1's - Early Harvest (CWT/A)/%					U.S. No. 1's - Late Harvest (CWT/A)/%					
		ID	WA	Ont	Entry Mean	Rank	ID	WA	OR		Entry Mean	Rank
								Herm	KF			
1	Ranger Russet	285	669	603	<b>519</b>	<b>2</b>	408	756	635	487	<b>572</b>	<b>3</b>
		83	95	82	<b>87</b>	<b>2</b>	81	88	77	83	<b>82</b>	<b>3</b>
2	Russet Burbank	262	660	513	<b>478</b>	<b>7</b>	386	698	369	428	<b>470</b>	<b>9</b>
		73	89	69	<b>77</b>	<b>12</b>	81	80	78	79	<b>79</b>	<b>7</b>
3	Russet Norkotah	210	605	538	<b>451</b>	<b>10</b>	238	606	494	487	<b>456</b>	<b>11</b>
		79	96	76	<b>83</b>	<b>5</b>	79	92	75	85	<b>83</b>	<b>1</b>
4	Shepody	214	665	652	<b>510</b>	<b>3</b>						
		79	89	85	<b>84</b>	<b>4</b>						
5	A09022-4	259	617	347	<b>408</b>	<b>12</b>	342	851	403	283	<b>470</b>	<b>10</b>
		77	96	62	<b>78</b>	<b>10</b>	82	89	66	63	<b>75</b>	<b>11</b>
6	A10007-3	283	587	550	<b>473</b>	<b>8</b>	395	811	444	391	<b>510</b>	<b>7</b>
		93	92	91	<b>92</b>	<b>1</b>	89	83	56	79	<b>77</b>	<b>10</b>
7	A10595-13sto	316	624	429	<b>456</b>	<b>9</b>	438	765	542	275	<b>505</b>	<b>8</b>
		84	88	76	<b>83</b>	<b>6</b>	84	85	79	74	<b>80</b>	<b>5</b>
8	A11194-1	260	676	551	<b>496</b>	<b>5</b>	338	854	423	-	<b>538</b>	<b>6</b>
		74	97	74	<b>82</b>	<b>8</b>	74	92	74	-	<b>80</b>	<b>6</b>
9	AOR08540-1	267	744	516	<b>509</b>	<b>4</b>	378	835	723	347	<b>571</b>	<b>4</b>
		79	94	69	<b>81</b>	<b>9</b>	74	80	84	76	<b>79</b>	<b>8</b>
10	AOR10204-3	327	673	624	<b>541</b>	<b>1</b>	470	854	668	433	<b>606</b>	<b>1</b>
		85	90	84	<b>86</b>	<b>3</b>	84	84	82	79	<b>82</b>	<b>2</b>
11	AOR11217-3	209	666	578	<b>484</b>	<b>6</b>	398	911	652	459	<b>605</b>	<b>2</b>
		75	94	79	<b>82</b>	<b>7</b>	83	97	82	63	<b>81</b>	<b>4</b>
12	COA11013-2	299	580	444	<b>441</b>	<b>11</b>	452	824	589	363	<b>557</b>	<b>5</b>
		82	88	62	<b>77</b>	<b>11</b>	85	87	73	66	<b>78</b>	<b>9</b>
<b>Location Means</b>		<b>266</b>	<b>647</b>	<b>529</b>	<b>481</b>		<b>386</b>	<b>797</b>	<b>540</b>	<b>395</b>	<b>533</b>	
<b>LSD (.05)</b>		<b>80</b>	<b>92</b>	<b>76</b>	<b>83</b>		<b>81</b>	<b>87</b>	<b>75</b>	<b>75</b>	<b>80</b>	

TABLE 5: 2019 Tri-State Potato Variety Trial - YIELD &gt; 10 OZ (CWT/A &amp; %) - EARLY AND LATE HARVEST

No.	Clone	U.S. No. 1's > 10 OZ - Early Harvest (CWT/A)/%				U.S. No. 1's >10 OZ - Late Harvest (CWT/A)/%					
		ID	WA	Ont	Entry Mean	Rank	ID	WA	OR Herm KF	Entry Mean	Rank
1	Ranger Russet	96	202	128	<b>142</b>	<b>6</b>	240	574	332 168	<b>328</b>	<b>3</b>
		28	29	17	<b>25</b>	<b>6</b>	47	67	40 28	<b>46</b>	<b>4</b>
2	Russet Burbank	62	257	62	<b>127</b>	<b>7</b>	137	445	115 96	<b>198</b>	<b>9</b>
		17	35	8	<b>20</b>	<b>8</b>	29	51	24 18	<b>30</b>	<b>8</b>
3	Russet Norkotah	46	111	110	<b>89</b>	<b>10</b>	66	329	73 105	<b>143</b>	<b>11</b>
		17	18	15	<b>17</b>	<b>10</b>	22	50	11 18	<b>25</b>	<b>10</b>
4	Shepody	97	423	269	<b>263</b>	<b>2</b>					
		36	56	35	<b>42</b>	<b>3</b>					
5	A09022-4	68	105	17	<b>64</b>	<b>12</b>	159	472	45 9	<b>171</b>	<b>10</b>
		21	16	3	<b>13</b>	<b>12</b>	38	49	7 2	<b>24</b>	<b>11</b>
6	A10007-3	184	485	279	<b>316</b>	<b>1</b>	307	701	522 225	<b>439</b>	<b>1</b>
		60	76	46	<b>61</b>	<b>1</b>	69	72	66 46	<b>63</b>	<b>1</b>
7	A10595-13sto	174	495	99	<b>256</b>	<b>3</b>	291	639	264 78	<b>318</b>	<b>4</b>
		47	70	18	<b>45</b>	<b>2</b>	56	71	38 21	<b>46</b>	<b>2</b>
8	A11194-1	50	256	52	<b>119</b>	<b>8</b>	132	548	113 -	<b>264</b>	<b>7</b>
		14	37	7	<b>19</b>	<b>9</b>	28	59	20 -	<b>36</b>	<b>7</b>
9	AOR08540-1	109	363	14	<b>162</b>	<b>5</b>	276	606	278 73	<b>308</b>	<b>5</b>
		33	46	2	<b>27</b>	<b>5</b>	54	58	32 15	<b>40</b>	<b>5</b>
10	AOR10204-3	151	277	109	<b>179</b>	<b>4</b>	305	718	292 129	<b>361</b>	<b>2</b>
		39	37	15	<b>30</b>	<b>4</b>	54	71	36 23	<b>46</b>	<b>3</b>
11	AOR11217-3	77	219	60	<b>119</b>	<b>9</b>	215	531	255 125	<b>281</b>	<b>6</b>
		27	31	8	<b>22</b>	<b>7</b>	45	57	32 22	<b>39</b>	<b>6</b>
12	COA11013-2	79	115	6	<b>67</b>	<b>11</b>	158	489	123 66	<b>209</b>	<b>8</b>
		23	17	1	<b>14</b>	<b>11</b>	30	52	15 12	<b>27</b>	<b>9</b>
<b>Location Means</b>		<b>99</b>	<b>276</b>	<b>100</b>	<b>158</b>		<b>208</b>	<b>550</b>	<b>219</b>	<b>107</b>	<b>275</b>
		<b>30</b>	<b>39</b>	<b>15</b>	<b>28</b>		<b>43</b>	<b>60</b>	<b>29</b>	<b>20</b>	<b>38</b>
<b>LSD (.05)</b>					<b>120</b>						<b>95</b>

TABLE 6: 2019 Tri-State Potato Variety Trial - YIELD &lt; 4 OZ (CWT/A &amp; %) - EARLY AND LATE HARVEST

No.	Clone	Yield < 4 OZ - Early Harvest (CWT/A)/%					Yield < 4 OZ - Late Harvest (CWT/A)/%					
		ID	WA	Ont	Entry Mean	Rank	ID	WA	OR		Entry Mean	Rank
								Herm	KF			
1	Ranger Russet	25	63	119	<b>69</b>	<b>8</b>	21	30	66	66	<b>46</b>	<b>8</b>
		7	9	16	<b>11</b>	<b>8</b>	4	3	8	11	<b>7</b>	<b>9</b>
2	Russet Burbank	60	43	211	<b>105</b>	<b>3</b>	50	42	63	68	<b>56</b>	<b>6</b>
		17	6	29	<b>17</b>	<b>3</b>	10	5	13	12	<b>10</b>	<b>5</b>
3	Russet Norkotah	39	79	162	<b>93</b>	<b>6</b>	44	41	119	62	<b>67</b>	<b>3</b>
		15	12	23	<b>17</b>	<b>5</b>	15	6	18	11	<b>13</b>	<b>3</b>
4	Shepody	27	50	69	<b>48</b>	<b>11</b>						
		10	7	9	<b>9</b>	<b>10</b>						
5	A09022-4	45	67	203	<b>105</b>	<b>2</b>	32	43	158	112	<b>86</b>	<b>2</b>
		14	10	36	<b>20</b>	<b>2</b>	8	5	26	25	<b>16</b>	<b>1</b>
6	A10007-3	16	7	51	<b>25</b>	<b>12</b>	10	27	25	32	<b>24</b>	<b>11</b>
		5	1	8	<b>5</b>	<b>12</b>	2	3	3	6	<b>4</b>	<b>11</b>
7	A10595-13sto	18	17	121	<b>52</b>	<b>9</b>	21	20	46	53	<b>35</b>	<b>10</b>
		5	2	21	<b>10</b>	<b>9</b>	4	2	7	14	<b>7</b>	<b>8</b>
8	A11194-1	58	63	186	<b>102</b>	<b>4</b>	54	39	102	-	<b>65</b>	<b>4</b>
		17	9	25	<b>17</b>	<b>4</b>	12	4	18	-	<b>11</b>	<b>4</b>
9	AOR08540-1	31	26	222	<b>93</b>	<b>5</b>	24	33	63	75	<b>49</b>	<b>7</b>
		9	3	30	<b>14</b>	<b>7</b>	5	3	7	12	<b>7</b>	<b>7</b>
10	AOR10204-3	22	20	111	<b>51</b>	<b>10</b>	12	20	45	68	<b>36</b>	<b>9</b>
		6	3	15	<b>8</b>	<b>11</b>	2	2	6	16	<b>6</b>	<b>10</b>
11	AOR11217-3	50	31	153	<b>78</b>	<b>7</b>	29	53	82	90	<b>63</b>	<b>5</b>
		19	4	21	<b>15</b>	<b>6</b>	6	6	10	18	<b>10</b>	<b>6</b>
12	COA11013-2	45	84	262	<b>131</b>	<b>1</b>	45	60	154	106	<b>92</b>	<b>1</b>
		12	13	37	<b>21</b>	<b>1</b>	9	6	19	19	<b>13</b>	<b>2</b>
<b>Location Means</b>		<b>36</b>	<b>46</b>	<b>156</b>	<b>79</b>		<b>31</b>	<b>37</b>	<b>84</b>	<b>73</b>	<b>56</b>	
		<b>11</b>	<b>7</b>	<b>22</b>	<b>13</b>		<b>7</b>	<b>4</b>	<b>12</b>	<b>15</b>	<b>9</b>	
<b>LSD (.05)</b>					<b>56</b>						<b>33</b>	



TABLE 7: 2019 Tri-State Potato Variety Trial - SPECIFIC GRAVITY - EARLY AND LATE HARVEST

No.	Clone	Specific Gravity - Early Harvest				Specific Gravity - Late Harvest						
		ID	WA	Ont	Entry Mean	Rank	ID	WA	Herm	KF	Entry Mean	Rank
1	Ranger Russet	1.080	1.082	1.094	<b>1.085</b>	<b>2</b>	1.084	1.080	1.085	1.083	<b>1.083</b>	<b>3</b>
2	Russet Burbank	1.077	1.082	1.091	<b>1.083</b>	<b>4</b>	1.081	1.077	1.076	1.079	<b>1.078</b>	<b>5</b>
3	Russet Norkotah	1.072	1.074	1.083	<b>1.076</b>	<b>11</b>	1.073	1.063	1.075	1.071	<b>1.071</b>	<b>10</b>
4	Shepody	1.071	1.077	1.089	<b>1.079</b>	<b>9</b>						
5	A09022-4	1.081	1.084	1.085	<b>1.083</b>	<b>5</b>	1.084	1.078	1.076	1.081	<b>1.080</b>	<b>4</b>
6	A10007-3	1.068	1.069	1.075	<b>1.071</b>	<b>12</b>	1.073	1.059	1.066	1.067	<b>1.066</b>	<b>11</b>
7	A10595-13sto	1.080	1.079	1.085	<b>1.081</b>	<b>7</b>	1.081	1.071	1.082	1.074	<b>1.077</b>	<b>7</b>
8	A11194-1	1.077	1.079	1.082	<b>1.079</b>	<b>8</b>	1.085	1.071	1.075	-	<b>1.077</b>	<b>8</b>
9	AOR08540-1	1.077	1.076	1.097	<b>1.083</b>	<b>3</b>	1.085	1.080	1.094	1.085	<b>1.086</b>	<b>1</b>
10	AOR10204-3	1.070	1.076	1.087	<b>1.078</b>	<b>10</b>	1.077	1.072	1.077	1.072	<b>1.074</b>	<b>9</b>
11	AOR11217-3	1.077	1.085	1.102	<b>1.088</b>	<b>1</b>	1.087	1.082	1.090	1.084	<b>1.086</b>	<b>2</b>
12	COA11013-2	1.078	1.081	1.090	<b>1.083</b>	<b>6</b>	1.082	1.072	1.077	1.079	<b>1.077</b>	<b>6</b>
<b>Location Means</b>		<b>1.075</b>	<b>1.079</b>	<b>1.088</b>	<b>1.081</b>		<b>1.081</b>	<b>1.073</b>	<b>1.079</b>	<b>1.077</b>	<b>1.078</b>	
<b>LSD (0.5)</b>					<b>0.006</b>						<b>0.005</b>	





TABLE 10: 2019 Tri-State Potato Variety Trial - TUBER DISCRIPTORS

No. Clone		Tuber Uniformity <sup>1</sup>								Shatter <sup>1</sup>								Greening <sup>1</sup>							
		Early			Late				Entry Means	Early			Late			Entry Means	Early			Late				Entry Means	
		ID	WA	Ont	ID	WA	Herm	KF		ID	WA	Ont	ID	WA	KF		ID	WA	Herm	KF					
1	Ranger Russet	3.5	2.3	4.0	2.8	3.0	2.9	5.0	3.4	4.9	5.0	5.0	4.9	4.0	5.0	4.8	4.9	5.0	5.0	4.6	4.0	4.3	4.3	4.6	
2	Russet Burbank	2.8	2.3	3.0	3.0	2.3	3.0	4.6	3.0	5.0	5.0	5.0	5.0	3.0	4.5	4.6	5.0	5.0	5.0	4.6	4.0	4.4	4.9	4.7	
3	Russet Norkotah	3.6	3.7	3.0	4.0	3.7	3.8	4.3	3.7	5.0	5.0	5.0	5.0	4.0	4.8	4.8	5.0	4.0	5.0	4.9	4.0	4.4	4.4	4.5	
4	Shepody	2.4	1.0	2.0					1.8	5.0	5.0	5.0				5.0	4.5	4.0	5.0					4.5	
5	A09022-4	3.4	3.0	3.0	3.3	2.3	3.1	3.3	3.0	4.4	3.0	5.0	2.5	2.0	2.9	3.3	4.6	5.0	5.0	4.4	3.5	4.4	4.3	4.4	
6	A10007-3	4.0	3.0	4.0	3.6	3.3	3.6	4.8	3.8	5.0	4.0	5.0	3.6	3.0	2.9	3.9	5.0	5.0	5.0	4.3	3.3	4.3	4.1	4.4	
7	A10595-13sto	2.8	2.3	3.0	3.1	1.7	2.9	3.8	2.8	4.8	5.0	5.0	4.6	4.0	4.6	4.7	5.0	4.0	5.0	4.4	4.0	4.3	4.3	4.4	
8	A11194-1	3.5	2.7	3.0	3.4	2.8	3.1	-	3.1	4.8	4.0	5.0	4.5	3.0	-	4.3	5.0	5.0	5.0	4.8	4.0	4.5	-	4.7	
9	AOR08540-1	3.6	4.0	3.0	3.6	3.3	3.3	4.1	3.6	4.9	5.0	5.0	4.1	3.0	5.0	4.5	4.0	5.0	5.0	3.1	2.3	4.3	3.1	3.8	
10	AOR10204-3	3.0	2.7	3.0	3.0	3.0	3.0	4.6	3.2	4.9	5.0	5.0	5.0	3.0	5.0	4.6	4.9	4.0	5.0	4.1	4.0	4.1	3.9	4.3	
11	AOR11217-3	3.4	3.3	3.0	3.1	3.3	3.4	4.5	3.4	5.0	5.0	5.0	4.9	3.0	5.0	4.6	4.9	4.0	5.0	4.4	3.3	4.3	4.8	4.4	
12	COA11013-2	3.8	2.7	4.0	4.0	3.3	2.4	3.9	3.4	5.0	5.0	5.0	5.0	3.0	4.3	4.5	4.9	4.0	5.0	4.9	3.3	3.9	4.3	4.3	
<b>Location Means</b>		<b>3.3</b>	<b>2.8</b>	<b>3.2</b>	<b>3.4</b>	<b>2.9</b>	<b>3.1</b>	<b>4.3</b>	<b>3.2</b>	<b>4.9</b>	<b>4.7</b>	<b>5.0</b>	<b>4.5</b>	<b>3.2</b>	<b>4.4</b>	<b>4.5</b>	<b>4.8</b>	<b>4.5</b>	<b>5.0</b>	<b>4.4</b>	<b>3.6</b>	<b>4.3</b>	<b>4.2</b>	<b>4.4</b>	

<sup>1</sup> Score 1-5, with 5=Best.

TABLE 11: 2019 Tri-State Potato Variety Trial - EXTERNAL DEFECTS - GROWTH CRACKS, SECOND GROWTH,  
SHATTER BRUISE, SCAB - MEANS OF LOCATIONS

No.	Clone	Growth Cracks <sup>1</sup>		Second Growth <sup>1</sup>		Shatter Bruise <sup>1</sup>			Scab <sup>1</sup>	
		Early	Late	Early	Late	Early	Late	AB <sup>2</sup>	Early	Late
1	Ranger Russet	4.9	4.5	5.0	4.8	5.0	4.4	2.9	4.9	4.6
2	Russet Burbank	4.6	4.7	4.2	4.2	5.0	3.8	2.9	5.0	4.8
3	Russet Norkotah	5.0	5.0	5.0	4.8	5.0	4.5	3.3	4.9	4.5
4	Shepody	4.8		4.5		5.0			4.5	
5	A09022-4	5.0	4.9	5.0	4.4	4.0	2.5	2.7	4.7	4.9
6	A10007-3	5.0	4.8	4.8	4.8	4.5	3.6	2.9	4.8	4.6
7	A10595-13sto	5.0	4.9	5.0	4.8	5.0	4.1	3.2	4.7	4.5
8	A11194-1	4.7	4.7	5.0	5.0	4.5	3.6	3.0	5.0	4.8
9	AOR08540-1	4.9	5.0	4.9	4.7	5.0	3.7	2.6	5.0	4.8
10	AOR10204-3	4.8	4.4	4.7	4.5	5.0	3.7	3.5	5.0	4.7
11	AOR11217-3	5.0	4.9	4.8	4.8	5.0	3.8	2.4	4.9	4.8
12	COA11013-2	5.0	4.4	4.8	4.7	5.0	3.8	3.5	5.0	4.8
<b>Means</b>		<b>4.9</b>	<b>4.7</b>	<b>4.8</b>	<b>4.7</b>	<b>4.8</b>	<b>3.8</b>	<b>3.0</b>	<b>4.9</b>	<b>4.7</b>

<sup>1</sup> Score 1-5, with 1=severe, 5=none.

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

TABLE 12: 2019 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 Vascular Discoloration		Blackspot Bruise				Means Late only
		Early	Late	Early	Late	Early	Late	Washington <sup>2</sup>		Herm	AB <sup>3</sup>	
								Early	Late			
1	Ranger Russet	0.0	0.0	0.0	0.6	0.0	0.6	5.0	4.0	2.9	1.6	2.8
2	Russet Burbank	1.1	0.7	0.0	1.9	0.0	0.0	5.0	5.0	3.6	1.3	3.3
3	Russet Norkotah	0.0	0.6	0.0	0.0	0.0	0.0	5.0	5.0	4.5	2.2	3.9
4	Shepody	0.0		0.0		0.0		5.0				
5	A09022-4	0.8	0.6	0.8	0.0	0.0	0.0	5.0	5.0	4.5	3.7	4.4
6	A10007-3	0.0	0.0	0.0	3.8	0.0	0.0	5.0	5.0	4.1	1.6	3.6
7	A10595-13sto	0.0	0.0	0.0	0.0	0.0	0.0	4.0	5.0	2.4	1.3	2.9
8	A11194-1	0.0	2.5	0.0	0.0	0.0		5.0				
9	AOR08540-1	5.8	0.6	0.0	0.0	0.0	0.0	5.0	5.0	3.1	3.1	3.7
10	AOR10204-3	0.0	0.0	0.0	1.3	0.0	0.0	5.0	5.0	4.5	3.2	4.2
11	AOR11217-3	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	2.9	3.8	3.9
12	COA11013-2	5.0	0.6	1.1	11.3	0.0	0.6	5.0	5.0	4.4	3.6	4.3
<b>Means</b>		<b>1.1</b>	<b>0.5</b>	<b>0.2</b>	<b>1.7</b>	<b>0.0</b>	<b>0.1</b>	<b>4.9</b>	<b>4.9</b>	<b>3.7</b>	<b>2.5</b>	<b>3.7</b>

<sup>1</sup> Rating of Stem-end Browning + VD

<sup>2</sup> Score 1-5, with 1=severe, 5=none.

<sup>3</sup> Aberdeen blackspot scores from an abrasive peel test [1-5(none)].

TABLE 13: 2019 Tri-State Potato Variety Trial - FRENCH FRY COLOR (00-4.0(darkest)), AND PERCENT SUGAR ENDS

No.	Clone	Fry 44 or 45°							Fry 40°					Sugar Ends			
		ID <sup>1</sup>	WA	Ont <sup>2</sup>	Herm <sup>4</sup>	All Entries		Postharvest 3 state mean. <sup>3</sup>	ID <sup>1</sup>	WA	All Entries		Postharvest 3 state mean. <sup>3</sup>	ID <sup>1</sup>	Ont <sup>2</sup>	Herm	Entry Mean
						Mean	Rank				Mean	Rank					
1	Ranger Russet	1.2	1.0	2.6	1.0	1.8	5	0.3	2.9	2.0	2.5	5	2.7	33.3	0.0	4.2	12.5
2	Russet Burbank	1.9	3.0	3.1	1.0	2.1	9	2.0	4.0	4.0	4.0	9	3.7	4.2	15.0	4.2	7.8
3	Russet Norkotah	2.7		3.1	2.0	2.6	10		4.0		4.0	9		4.2	22.5	4.2	10.3
4	Shepody																
5	A09022-4	0.4	0.0	1.7	1.0	1.4	2	0.0	0.6	0.0	0.3	1	0.0	0.0	0.0	4.2	1.4
6	A10007-3	2.1	4.0	3.2	2.0	2.6	10	3.0	3.8	4.0	3.9	8	4.0	0.0	22.5	0.0	7.5
7	A10595-13sto	0.7	0.0	2.3	1.0	1.7	3	0.0	2.3	1.0	1.7	2	1.0	0.0	0.0	8.3	2.8
8	A11194-1	1.9	2.0	2.9	1.0	2.0	8	1.3	3.3	3.0	3.1	6	3.0	25.0	7.5	8.3	13.6
9	AOR08540-1	3.2		2.7	1.0	1.8	5		4.0		4.0	9		0.0	7.5	0.0	2.5
10	AOR10204-3	2.1		2.6	1.0	1.8	5		3.8		3.8	7		8.3	12.5	0.0	6.9
11	AOR11217-3	0.9	0.0	1.6	1.0	1.3	1	0.0	2.3	2.0	2.2	4	2.0	12.5	0.0	8.3	6.9
12	COA11013-2	0.6	0.0	2.4	1.0	1.7	3	0.0	1.5	2.0	1.8	3	2.0	0.0	0.0	0.0	0.0
<b>Location Means</b>		<b>1.6</b>	<b>1.3</b>	<b>2.6</b>	<b>1.2</b>	<b>1.9</b>		<b>0.8</b>	<b>3.0</b>	<b>2.3</b>	<b>2.8</b>		<b>2.3</b>	<b>8.0</b>	<b>8.0</b>	<b>3.8</b>	<b>6.6</b>

<sup>1</sup> Samples held for 1 (45°) and 2 (40°) week cool down period 6 (45°) and 8 (40°) weeks at storage temperature

<sup>2</sup> Samples held for 2 week cool down period - 7 weeks at 45° storage temperature.

<sup>3</sup> Three state average processed at Washington - For complete postharvest results see <http://www.potatoes.wsu.edu/>

<sup>4</sup> Samples held for 2 week cool down period - 8 weeks at 47° storage temperature.

TABLE 14: 2019 Tri-State Potato Variety Trial - DISEASE EVALUATIONS, METRIBUZIN REACTION

No. Clone	Vert. Wilt/ Early Dying				Early Blight		Common Scab		Rhizoc. KLAM <sup>2</sup>	Corky Ringspot			Metr. Reaction	
	AB <sup>1</sup>		HERM		Foliar		AB <sup>1</sup>			Rhizoc. KLAM <sup>2</sup>	PROS <sup>3</sup>			PVY % HERM <sup>4</sup>
	(0-9)*	AUDPC	(0-9)*	AUDPC	(0-9)	AUDPC	Incidence (%)	% Serious Defects	(1-5=none) <sup>2</sup>		Incidence (%)	% Serious Defects	reaction	
													AB <sup>5</sup>	
1 Ranger Russet	6.0	336	7.7	1443	4.0	74	12.0	6.0	4.1	63.3	41.9	S	95	VR
2 Russet Burbank	6.0	374	9.0	1519	3.7	57	0.0	0.0	4.5	37.5	26.2	S	90	R
3 Russet Norkotah	9.0	1043	9.0	2493	3.3	100	5.0	2.0	5.0	9.5	5.4	MS	90	VR
4 Shepody	4.7	187	--	--	2.7	37	10.0	5.0	--	19.2	10.7	S	--	MR
5 A09022-4	6.0	299	8.0	1670	4.7	131	5.0	5.0	3.4	--	--	--	75	VR
6 A10007-3	4.3	99	8.7	1477	6.3	241	15.0	9.0	3.9	36.4	26.7	S	75	R
7 A10595-13sto	6.7	329	9.0	1706	6.0	263	38.0	24.0	4.4	23.1	9.8	MS	0	MR
8 A11194-1	5.7	298	8.7	1755	5.7	290	15.0	0.0	--	21.0	12.6	S	85	S
9 AOR08540-1	3.7	76	6.3	881	4.0	85	36.0	0.0	3.3	26.7	11.7	S	95	MR
10 AOR10204-3	4.0	110	7.3	1143	5.7	200	8.0	0.0	4.1	17.5	8.0	MS	20	R
11 AOR11217-3	6.0	366	8.7	1662	3.7	61	4.0	0.0	3.5	29.2	19.2	S	65	VS
12 COA11013-2	5.7	253	8.3	1471	6.0	328	27.0	0.0	2.4	31.7	19.7	S	75	MR
<b>MEANS</b>	<b>5.7</b>	<b>314.2</b>	<b>8.2</b>	<b>1565.5</b>	<b>4.7</b>	<b>155.6</b>	<b>14.6</b>	<b>4.3</b>	<b>3.9</b>	<b>28.6</b>	<b>17.4</b>		<b>69.5</b>	
<b>LSD @ .05</b>	<b>1.2</b>				<b>1.3</b>		<b>22.0</b>	<b>9.0</b>						
<b>Castle Russet</b>										<b>0.0</b>	<b>0.0</b>	<b>R</b>		

1 Evaluations made at Aberdeen, Idaho by Jonathan Whitworth; scale as indicated with highest number being most severe. For 0 to 9: 0=no symptoms; 1= 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.

Early Blight and Vert. Wilt AUDPC: Area Under the Disease Progress Curve based on foliar readings taken on 3 separate readings after planting.

Common Scab and Net Necrosis serious defects are the number of tubers with a 3 rating (0-5 scale) or higher, divided by the total number of tubers examined.

For 0 to 5: 0=none, 5=severe as a combination of tuber area and degree impacted by Pectobacterium inoculations.

2 *Rhizoctonia solani* readings made by Brian Charlton, Klamath Falls, Oregon; scale as indicated with lowest number being most severe

3 Corky ringspot readings Prosser, WA by Rich Quick and Launa Hamlin

4 PVY readings Hermiston, OR Elisa test of tuber bud end by Sagar Suthavalli

5 Metribuzin Reaction measured at Aberdeen, ID by Chelsey Lowder. VR=very resistant, R=Resistant, MR=Moderately resistant, MS=moderately susceptible, S=susceptible



TABLE 15: 2019 Solids, Dextrose and Sucrose, Protein, Vitamin C and Glycoalkaloids  
- Tubers Grown at Aberdeen, Idaho

No.	Clone	Solids Oven Dry (%)	Sugars		Protein (%DWB)	Vitamin C (mg/100g FWB)	Glycoalkaloids (mg/100gFWB)
			Dextrose (%FWB)	Sucrose (%FWB)			
1	Ranger Russet	23.51	0.086	0.248	5.92	39.55	2.67
2	Russet Burbank	20.22	0.077	0.150	5.13	26.00	3.18
3	Russet Norkotah	19.92	0.086	0.162	5.12	26.02	1.91
5	A09022-4	21.14	0.025	0.182	6.80	25.35	4.41
6	A10007-3	19.21	0.103	0.156	6.54	31.87	3.51
7	A10595-13sto	23.22	0.073	0.203	5.72	25.19	3.50
8	A11194-1	21.09	0.118	0.171	6.69	28.98	4.65
9	AOR08540-1	21.98	0.152	0.235	5.57	24.92	5.22
10	AOR10204-3	20.70	0.182	0.245	6.36	22.55	0.87
11	AOR11217-3	22.25	0.069	0.166	6.38	26.61	6.65
12	COA11013-2	22.24	0.044	0.134	5.97	33.47	4.89
<b>Means</b>		<b>21.41</b>	<b>0.092</b>	<b>0.186</b>	<b>6.02</b>	<b>28.23</b>	<b>3.77</b>

FWB = fresh weight basis DWB = dry weight basis

Glycoalkaloids: The 2019 Lenape check from Aberdeen was 34.3 mg/100g

TABLE 16: 2019 Tri-State Potato Variety Trial - MERIT SCORES (1-5(best))

No.	Clone	Field Performance Fresh Merit								Field Performance Process Merit						Post-Harvest	Post-Harvest Process* 3 State Mean
		Early		Late			LATE MEANS	RANK	Early WA	ID	Late WA	Herm	LATE MEANS	RANK	Late WA		
		ID	WA	ID	WA	Herm										KF	
1	Ranger Russet	2.9	1.8	2.5	2.1	2.0	3.5	2.5	4	3.8	2.5	3.5	4.0	3.3	1	3.0	3.4
2	Russet Burbank	2.5	1.7	2.9	1.2	2.0	3.2	2.3	9	3.6	2.5	2.1	2.0	2.2	8	2.0	2.4
3	Russet Norkotah	3.4	2.1	3.6	2.6	3.0	4.5	3.4	1	1.6	2.0	-	2.0	2.0	10	1.6	
4	Shepody	2.1								3.4							
5	A09022-4	3.3	0.7	3.4	2.0	3.0	1.0	2.3	8	2.2	5.0	2.9	2.0	3.3	2	2.4	4.2
6	A10007-3	3.5	0.8	3.5	0.9	3.0	1.0	2.1	10	1.3	1.5	2.7	3.0	2.4	7	2.7	1.8
7	A10595-13sto	2.8	1.1	2.9	1.2	3.0	1.3	2.1	11	3.4	3.5	2.6	2.0	2.7	6	2.6	3.6
8	A11194-1	3.3	1.3	3.3	2.3	2.0	-	2.5	6	2.9	2.0	2.5	2.0	2.2	9	2.5	2.9
9	AOR08540-1	3.4	3.0	3.8	2.3	3.0	2.9	3.0	3	4.0	1.0	1.9	2.0	1.6	11	2.2	
10	AOR10204-3	2.8	2.5	2.5	1.9	3.0	2.6	2.5	7	4.0	2.5	3.1	4.0	3.2	3	2.5	
11	AOR11217-3	2.9	2.7	3.0	3.9	2.0	3.6	3.1	2	4.9	3.0	4.5	2.0	3.2	4	4.5	4.1
12	COA11013-2	3.6	0.7	4.0	1.7	2.0	2.4	2.5	5	2.3	4.0	2.3	3.0	3.1	5	2.3	3.6
<b>Location Means</b>		<b>3.0</b>	<b>1.7</b>	<b>3.2</b>	<b>2.0</b>	<b>2.5</b>	<b>2.6</b>	<b>2.6</b>		<b>3.1</b>	<b>2.7</b>	<b>2.8</b>	<b>2.5</b>	<b>2.7</b>		<b>2.6</b>	

\* For Complete information and procedures see Washington at [www.potatoes.wsu.edu/](http://www.potatoes.wsu.edu/)

TABLE 18: 2019 Tri-State Potato Variety Trial - SUMMARY

Clone	Year in Trial	Use	Yield Late	% US#1's	Tuber Size	Specific Gravity	45 Fry Color	P F	Merit Score	Comments
1 Ranger Russet	Check	Dual	696	572 82	9.3	1.083	<b>1.8</b>	3.3 2.5		
2 Russet Burbank	Check	Dual	591	470 79	7.5	1.078	<b>2.1</b>	2.2 2.3		
3 Russet Norkotah	Check	Fresh	547	Low 456 83	6.8	1.071	<b>2.6</b>	2.0 3.4	High	
4 Shepody	Check	Proc	596	* 510 84 * High	7.4 *	1.079 *		3.4 * 2.1 *		1.8 uniformity*
5 A09022-4	2	Dual	608	470 75	Low 6.7	Small 1.080	<b>1.4</b>	Good 3.3	High	
6 A10007-3	1	Dual	674	510 77	Low	11.8 Large	1.066	Low <b>2.6</b>	2.4 2.1	Low
7 A10595-13sto	1	Dual	620	505 80	9.7	1.077	<b>1.7</b>	2.7 2.1	Low	
8 A11194-1	1	Dual	652	538 80	7.3	1.077	<b>2.0</b>	2.2 2.5		13.6% SE
9 AOR08540-1	2	Fresh	726	571 79	8.7	1.086	<b>1.8</b>	1.6 3.0	Low High	
10 AOR10204-3	2	Fresh	739	High 606 82	High 9.7	1.074	<b>1.8</b>	3.2 2.5		
11 AOR11217-3	1	Dual	697	605 81	8.0	1.086	<b>1.3</b>	3.2 3.1		
12 COA11013-2	1	Dual	708	557 78	6.9	1.077	<b>1.7</b>	3.1 2.5		11.3% IBS
<b>Late Means</b>			<b>660</b>	<b>533</b> <b>80</b>	<b>8.3</b>	<b>1.078</b>	<b>1.9</b>	<b>2.7</b> <b>2.6</b>		

\* Early only

TABLE 18: 2019 Early Tri-State Potato Variety Trial - COMMENTS BY STATE

Entry	Clone	Early Idaho	Early Washington	Early Ontario
1	Ranger Russet	MHR: few curves/points/misshapen (2)	Irregular shapes, large tubers, mostly typy.	irregular shape, bottleneck, 3 curved, pointed
2	Russet Burbank	MHR: points (4); few bumps (3); misshapen (2)	Mostly typy, good length, irregular shapes.	2 bottleneck, dumbbell, pointed, curved, 3 small
3	Russet Norkotah	HR: small, few brows, little flat, nice shape (2); slight checking	Smaller, typy, good skin.	2 small, 2 irregular shape
4	Shepody	LR: few bulging eyes (3); patchy skin, low yield, flat (2)	Smaller ones, round, mix of shapes.	
5	A09022-4	MR: nice blocky shape (2); few bumps/misshapen	Very short, round, small and plump.	Small, 3 small, 2 pointed, irregular shape
6	A10007-3	MR: uniform (3); blocky, nice shape, big	Uniformly large, too large for fresh, bad skin.	swollen lenticels, pointed
7	A10595-13sto	MR: not uniform, little flat, few points (2)	Uniformly large, spotty skin.	2 small, 3 irregular shape, knobs, heart
8	A11194-1	MR: curves, blocky (2); some patchy skin, nice size	Plump, oval, lots of small ones.	irregular shape, 4 small
9	AOR08540-1	MHR: curves (3); nice shape (2); few bumps, somewhat flat	Typy, plump, skin somewhat spotty, some short.	curved, 2 irregular shape, 4 small
10	AOR10204-3	HR: few points (3); few ats, few bumps, some curves (2)	Lots of points, poor skin set, ok length, large tubers.	heart shape, 2 irregular shape, 2 pointed
11	AOR11217-3	HR: few bulging eyes, few points (2); somewhat flat	Typy, skin ok, some lenticils, some short.	4 small
12	COA11013-2	HR: nice shape (2); good shape, little brow,	Mostly typy, spotty skin, some irregular shapes, light skin.	1 Small, 3 small

TABLE 19: 2019 Late Tri-State Potato Variety Trial - COMMENTS BY STATE

Entry	Clone	Late Idaho	Late Washington	Late Hermiston	Klamath Falls
1	Ranger Russet	MR: not uniform, points curves	Good skin, long and skinny, mostly typy.	4 curvy, 2 snakey, 3 sticky	long, typy, nice shape and skin apperance
2	Russet Burbank	MR: flat, points (3); few bumps (2)	Somewhat typy, but a lot of ugly tubers.	4 bottle, 4 pty, 4 rot, 3 curvy, 2 db, 2 pointy-tip, 2 irregular	lots of rot x3, few MS looks nice
3	Russet Norkotah	HR: small (4); uniform (3); low yield (2)	Nice skin, good shape and size.	4 typy, 3 pixel, 2 pr eyes, 4 tuberworm, 2 sticky	typy, small x 3, skinning, bright eyes
5	A09022-4	MLR: nice shape (2); shatter, few points/ "v" shapped	Light skin, round and long.	2 chain, 3 pointy-tip, 2 pty, 4 SB, 3 round, 3 bottle, 4 short, 3 lenticels, 3 spr	short x 3, proc only, turning pink, pears
6	A10007-3	MR: uniform, big (2); some skinning/checking	Large deep eyes, lumpy with light skin, spotty.	2 dotty-pixel, 4 blocky, 3 XL, 2 SB, 2 nice, 2 tip GC, 2 tip curve	proc only, big, long, blocky, typy
7	A10595-13sto	MLR: bumps, misshapen (3)	Bad skin, spotty russeting. Large, lumpy, non uniform shapes.	4 deep eyes, 3 sticky, 2 short	no yield, poor skin, MS, drop
9	AOR08540-1	MR: curves (2); flat, green, not uniform	Typy, could be a fresh pack, greening issue a concern.	4 pixel, 4 pty	heavy russeting, fresh pot. Typy, small
10	AOR10204-3	HR: points (4); bumps, few bulging eyes, few curves	Large and long, somewhat typy, some nice skin, some bad.	4 pty, 3 pointy-tip 2 bottle, 2 tuberworm, 2 pr eyes, 2 sticky	skinned x 3, mice and mech. Dmg. Looks decent
11	AOR11217-3	MHR: few bulging eyes/curves (2)	Typy, ok skin, some rhizoc.	3 curvy, 4 sticky, 3 pixel, 2 typy, 2 flakey, 2 rot	heavy russeting x 4, blocky, keeper, skinning x 3
12	COA11013-2	MHR: uniform (4); curves, points (2)	Very long and skinny, some skin issues.	4 flakey, 4 thin, 4 pty, 2 curvy, 4 spr, 4 bottle, 3 db	pears x 2, rhizoc x 2, MS x 2

TABLE 20: 2019 Tri-State Harvest Potato Variety Trials  
WASHINGTON STATE POSTHARVEST EVALUATIONS

Entry	Late Clone	Carton Yield		Process Yield	
		100-50 count (US 1's 7-18 oz)		US 1's and 2's > 6 oz	
		% of Total Yield	Tons/A	% of Total Yield	Tons/A
1	Ranger Russet	49.4	21.3	88.8	38.4
2	Russet Burbank	46.4	20.2	78.8	34.6
3	Russet Norkotah	57.2	18.8	77.7	26.2
4	Shepody	0.0	0.0	0.0	0.0
5	A09022-4	60.9	29.0	77.6	37.0
6	A10007-3	21.3	10.4	85.0	41.4
7	A10595-13sto	37.7	17.0	87.0	39.2
8	A11194-1	57.6	26.8	84.0	39.2
9	AOR08540-1	44.4	23.2	81.7	42.5
10	AOR10204-3	43.3	22.0	83.8	42.7
11	AOR11217-3	62.8	29.5	83.9	39.6
12	COA11013-2	53.1	25.1	76.4	36.4
		<b>44.5</b>	<b>20.3</b>	<b>75.4</b>	<b>34.8</b>