

# 2017 WESTERN REGIONAL CHIPPING POTATO TRIAL REPORT

State Agricultural Experiment Stations and the  
USDA-ARS

California  
Colorado  
Idaho  
Oregon  
Texas



## 2017 WESTERN REGIONAL CHIPPING POTATO VARIETY TRIAL REPORT

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Compiled by David Holm and Caroline Gray

TABLE 1: 2017 Western Regional Chipping Potato Variety Trial - LOCATIONS, COOPERATORS, AND CULTURAL INFORMATION

Locations	Cooperators	Trial	Irrigation	Fertilizer N-P-K-S(lb/A)	Spacing	Planting Date	Vine Kill Date	Harvest Date	Days to Vine Kill	Days to Harvest	Herbicides	Insecticides	Fungicides	
Tulelake California <b>(CA)</b>	R. Wilson D. Culp	Late	Sprink.	205-0-0	10" x 36"	24-May	12-Sep	6-Oct	111	135	Prowl H2O Outlook Roundup PM Matrix	Admire Pro Vydate	Quadris Omega Tanos	
San Luis Valley Colorado <b>(CO)</b>	D. Holm C. Gray	Late	Pivot	122-60-25-2.5 Zn	12" x 34"	15-May	23-Aug	25-Sep	100	133	Chateau Dual Magnum	Mineral Oil Leverage Fulfull	Bravo Ultrex Endura Quadris	
Aberdeen Idaho <b>(ID)</b>	J. Stark R. Novy J. Whitworth C. Lowder J. Hatch	Late	Sprink.	225-120-83-30S-5Zn-5Mn	10.6" x 36"	5-May	1-Sep	18-Sep	119	136	Mechanical	TriCor 4F Matrix Eptam	Admire	
Hermiston Oregon <b>(HRM)</b>	V. Sathuvalli	Early	Pivot	90N-0P-60K-133S-25Mg-3B, 50N-90P-0K-30S-2.25Zn Water run N as Solution 30 - 200 lbs/ac	9.25" x 34"	23-Mar	10-Aug	16-Aug	140	146	Reglone Chop and Roll	Vapam Dual magnum Matrix pre-emergence Outlook Prowl	Admire Coragen Agr-Mek Echo	Quadris Ridmil Omega Dithane
Klamath Falls Oregon <b>(KF)</b>	B. Charlton N. Baley	Late	Sprink.	180-125-250-265	9.25" x 36"	22-May	7-Sep	26-Sep	108	127	Mechanical	Prowl Matrix Outlook	Alias Vydate	Vertisan Luna
Dalhart Texas <b>(DTX)</b>	J. C. Miller, Jr. M. Vales J. Koym D. Schuering	Early	Pivot	206-190-10	9.4" x 28"	18-May	30-Aug	22-Sep	104	127	Reglone	K-Tone Para-Shot 3 Cornerstone 5 Plus Zidual StareDown Select Max Marix SG Reglone ETX	Cruiser Maxx Fulfill	Curzate 60DF
Springlake Texas <b>(STX)</b>	J. C. Miller, Jr. M. Vales J. Koym D. Schuering	Early	Pivot	108-25-25	9" x 36"	27-Mar	27-Jun	27-Jul	125	130	Mechanical	Roundup Dual Magnum Matrix Stealth Makaze Brawl Gly Star Original Metribuzin 75 CA	Movento Minecto Pro Transform WG Sivanto	Scala Luna Tranquility NUCOP

TABLE 2: 2017 Western Regional Chipping Potato Variety Trial - CLONE, PARENTS, FLOWER COLOR, ENTERED BY, YEARS IN TRIAL, SEED SOURCE, STAND, TUBER AND VINE CHARACTERISTICS, AND STEMS PER PLANT

No.	Clone	Parents	Flower Color	Entered by	Year in Trial	Seed Source	Mean Stand %	Tuber Shape	Skin	Vine Size	Maturity	Stems/Plant
1	ATLANTIC	WAUSEON B5141-6	Red-purple	Check	Ck	OR	99	1.9 Round	2.3 Buff	3.4 Med-large	2.7 Med Early	2.3
2	SNOWDEN	Lenape Wischip	White	Check	Ck	OR	99	1.6 Round	2.6 Buff	3.9 Med-large	3.1 Medium	3.5
3	AC01144-1W	COA96141-2 Willamette	White	CO	1	CO	99	1.5 Round	1.5 White	3.8 Med-large	3.3 Medium	2.4
4	AOR09034-3	Boulder A03449-2C	White	OR	2	OR	99	1.6 Round	1.4 White	4.0 Med-large	3.0 Med Early	2.6
5	NDA081453CAB-2C	Dakota Diamond ND 039173CAB-22	White	ID	2	ID	99	1.7 Round	1.4 White	3.5 Med-large	2.9 Med Early	2.6
6	NDTX081648CB-13W	ND 8456-1 ND7377CB-1	Red-purple	TX	2	TX	100	1.9 Round	1.5 White	4.2 Large	3.4 Medium	3.4
7	OR09256-2	Dakota Diamond Russet Norkotah	white	OR	3	OR	100	1.8 Round	2.7 Buff	3.8 Med-large	2.7 Med Early	2.5

1 Numerical values are means of all trial locations. Stand % for Klamath Falls was taken at 30 days.

2 1.0-2.0=Round, 2.1-2.5=Oval, 2.6-3.5=Oblong, 3.6-4.0=Oblong-Long, 4.1-5.0=Long

3 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

4 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

5 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: 2017 Western Regional Chipping Potato Variety Trial - TOTAL YIELD - YIELD OF U.S. #1'S (CWT/A &amp; %)

No. Clone	Total Yield (CWT/A)							Entry Mean	Rank	U.S. No. 1's (CWT/A) / %							Entry Mean	Rank
	CA	CO	ID	HRM	KF	DTX	STX			CA	CO	ID	HRM	KF	DTX	STX		
1 ATLANTIC	484		455	399	571	493	287	<b>448</b>	<b>2</b>	363		395	224	298	377	194	<b>308</b>	<b>2</b>
										75		87	56	52	77	67	<b>69</b>	<b>2</b>
2 SNOWDEN	447	325	436	426	518	464	196	<b>402</b>	<b>6</b>	347	271	329	255	290	354	105	<b>279</b>	<b>5</b>
										77	83	75	60	56	76	54	<b>69</b>	<b>3</b>
3 AC01144-1W	469	422	491	387	685	365	165	<b>426</b>	<b>4</b>	295	343	361	110	430	230	66	<b>262</b>	<b>7</b>
										63	81	74	28	63	63	40	<b>59</b>	<b>7</b>
4 AOR09034-3	527	386	551	388	802	544	174	<b>482</b>	<b>1</b>	307	331	476	108	581	361	82	<b>321</b>	<b>1</b>
										58	86	86	28	72	66	47	<b>63</b>	<b>6</b>
5 NDA081453CAB-2C	421	300	457	345	546	479	256	<b>400</b>	<b>7</b>	344	244	370	136	359	403	137	<b>285</b>	<b>4</b>
										82	81	81	39	66	84	54	<b>70</b>	<b>1</b>
6 NDTX081648CB-13W	450	366	403	399	630	467	279	<b>428</b>	<b>3</b>	346	341	316	176	439	300	128	<b>292</b>	<b>3</b>
										77	93	79	44	70	64	46	<b>67</b>	<b>4</b>
7 OR09256-2	488	302	485	339	634	450	119	<b>402</b>	<b>5</b>	367	232	388	141	387	297	57	<b>267</b>	<b>6</b>
										75	76	80	42	61	66	48	<b>64</b>	<b>5</b>
<b>Location Mean</b>	<b>469</b>	<b>350</b>	<b>468</b>	<b>383</b>	<b>626</b>	<b>466</b>	<b>211</b>	<b>427</b>		<b>338</b>	<b>294</b>	<b>376</b>	<b>164</b>	<b>398</b>	<b>332</b>	<b>110</b>	<b>288</b>	
										<b>72</b>	<b>83</b>	<b>80</b>	<b>42</b>	<b>63</b>	<b>71</b>	<b>51</b>	<b>66</b>	

TABLE 4: 2017 Western Regional Chipping Potato Variety Trial - YIELD OF U.S. #1'S &gt;10 OZ. &amp; YIELD &lt;4OZ. (CWT/A &amp; %)

No. Clone	U.S. No. 1's > 10 OZ (CWT/A) / %								Yield < 4 OZ (CWT/A) / %									
	CA	CO	ID	HRM	KF	DTX	STX	Entry Mean	Rank	CA	CO	ID	HRM	KF	DTX	STX	Entry Mean	Rank
1 ATLANTIC	113		191	11	181	71	31	<b>100</b>	<b>1</b>	65		29	167	46	91	89	<b>81</b>	<b>7</b>
	23		42	3	32	14	11	<b>21</b>	<b>1</b>	13		6	42	8	19	31	<b>20</b>	<b>7</b>
2 SNOWDEN	63	23	36	11	145	13	1	<b>42</b>	<b>3</b>	57	53	103	161	62	95	91	<b>89</b>	<b>6</b>
	14	7	8	3	28	3	1	<b>9</b>	<b>3</b>	13	16	24	38	12	20	46	<b>24</b>	<b>6</b>
3 AC01144-1W	25	54	41	0	47	0	0	<b>24</b>	<b>6</b>	137	76	124	268	171	131	91	<b>142</b>	<b>1</b>
	5	13	8	0	7	0	0	<b>5</b>	<b>6</b>	29	18	25	69	25	36	46	<b>36</b>	<b>1</b>
4 AOR09034-3	13	63	153	0	40	0	0	<b>38</b>	<b>4</b>	155	44	58	270	143	183	86	<b>134</b>	<b>2</b>
	2	16	28	0	5	0	0	<b>7</b>	<b>5</b>	29	11	10	69	18	34	49	<b>32</b>	<b>3</b>
5 NDA081453CAB-2C	69	66	74	1	86	77	0	<b>53</b>	<b>2</b>	56	54	74	204	84	76	110	<b>94</b>	<b>5</b>
	16	22	16	0	16	16	0	<b>12</b>	<b>2</b>	13	18	16	59	15	16	43	<b>26</b>	<b>5</b>
6 NDTX081648CB-13W	80	83	33	1	29	0	1	<b>33</b>	<b>5</b>	76	24	77	209	151	167	134	<b>120</b>	<b>4</b>
	18	23	8	0	5	0	1	<b>8</b>	<b>4</b>	17	7	19	52	24	36	48	<b>29</b>	<b>4</b>
7 OR09256-2	41	5	63	1	16	0	2	<b>18</b>	<b>7</b>	100	70	92	195	215	153	62	<b>127</b>	<b>3</b>
	8	2	13	0	3	0	2	<b>4</b>	<b>7</b>	20	23	19	58	34	34	52	<b>34</b>	<b>2</b>
<b>Location Mean</b>	<b>58</b>	<b>49</b>	<b>85</b>	<b>4</b>	<b>78</b>	<b>23</b>	<b>5</b>	<b>44</b>		<b>92</b>	<b>54</b>	<b>80</b>	<b>210</b>	<b>125</b>	<b>128</b>	<b>95</b>	<b>112</b>	
	<b>13</b>	<b>14</b>	<b>18</b>	<b>1</b>	<b>13</b>	<b>5</b>	<b>2</b>	<b>9</b>		<b>19</b>	<b>16</b>	<b>17</b>	<b>55</b>	<b>19</b>	<b>28</b>	<b>45</b>	<b>29</b>	

TABLE 5: 2017 Western Regional Chipping Potato Variety Trial - SPECIFIC GRAVITY

No. Clone	Specific Gravity							Entry Mean	Rank
	CA	CO	ID	HRM	KF	DTX	STX		
1 ATLANTIC	1.097	1.104	1.098	1.085	1.097	1.072	1.072	<b>1.089</b>	1
2 SNOWDEN	1.097	1.096	1.090	1.084	1.091	1.067	1.064	<b>1.084</b>	5
3 AC01144-1W	1.079	1.093	1.080	1.069	1.074	1.056	1.053	<b>1.072</b>	7
4 AOR09034-3	1.092	1.100	1.094	1.082	1.096	1.067	1.064	<b>1.085</b>	3
5 NDA081453CAB-2C	1.094	1.096	1.091	1.080	1.095	1.072	1.067	<b>1.085</b>	4
6 NDTX081648CB-13W	1.090	1.100	1.092	1.083	1.094	1.068	1.056	<b>1.083</b>	6
7 OR09256-2	1.098	1.099	1.094	1.082	1.093	1.073	1.063	<b>1.086</b>	2
<b>Location Mean</b>	<b>1.093</b>	<b>1.098</b>	<b>1.091</b>	<b>1.081</b>	<b>1.091</b>	<b>1.068</b>	<b>1.063</b>	<b>1.084</b>	

TABLE 6: 2017 Western Regional Chipping Potato Variety Trial - AVERAGE TUBER SIZE, AND TUBER SHAPE

No. Clone	Average Tuber Size (oz)							Tuber Shape <sup>1</sup>																				
	CA	ID	HRM	KF	DTX	STX	Entry Mean	Length/	Length/	Length/	Length/	Length/	Length/	Entry Mean	Width/	Width/	Width/	Width/	Width/	Entry Mean	(1-5, 1 = round, 5 = long)						Entry Mean	
								Width/	Width/	Width/	Width/	Width/	Width/		Width/	Width/	Width/	Width/	Width/		Width/	Width/	Width/	Width/	Width/			
1 ATLANTIC	6.0	8.0	3.0	6.6	4.6	4.5	<b>5.4</b>	1.08	1.10	1.06	1.07	1.01	1.10	<b>1.07</b>	1.23	1.30	1.47	1.22	1.21	<b>1.29</b>	2.1	1.0	2.3	1.5	2.8	1.0	2.5	<b>1.9</b>
2 SNOWDEN	5.6	4.9	3.1	6.3	4.3	3.7	<b>4.6</b>	1.00	1.00	0.97	1.01	0.94	1.04	<b>0.99</b>	1.26	1.21	1.42	1.28	1.21	<b>1.28</b>	2.0	1.0	1.5	1.0	2.4	1.0	2.2	<b>1.6</b>
3 AC01144-1W	4.6	4.8	2.2	4.5	3.2	2.9	<b>3.7</b>	1.04	0.94	0.92	0.93	0.97	1.01	<b>0.97</b>	1.20	1.11	1.14	1.21	1.18	<b>1.17</b>	2.0	1.0	1.5	1.3	2.3	1.0	1.8	<b>1.5</b>
4 AOR09034-3	4.4	6.4	2.2	4.8	3.4	3.0	<b>4.0</b>	0.96	0.99	0.91	0.98	0.92	1.07	<b>0.97</b>	1.19	1.05	1.25	1.18	1.10	<b>1.15</b>	2.0	1.0	1.5	1.3	2.3	1.0	2.0	<b>1.6</b>
5 NDA081453CAB-2C	5.8	5.5	2.6	5.3	5.2	3.6	<b>4.7</b>	1.07	1.00	0.98	0.89	1.00	0.97	<b>0.99</b>	1.23	1.22	1.10	1.20	1.41	<b>1.23</b>	2.4	1.0	1.8	1.0	2.5	1.0	2.2	<b>1.7</b>
6 NDTX081648CB-13W	5.5	5.9	2.7	4.2	3.5	3.1	<b>4.1</b>	1.06	1.02	1.07	0.99	1.05	1.15	<b>1.06</b>	1.29	1.44	1.42	1.30	1.23	<b>1.33</b>	2.1	1.0	2.0	1.0	2.9	2.0	2.4	<b>1.9</b>
7 OR09256-2	5.2	5.3	2.7	3.9	3.6	3.0	<b>3.9</b>	1.09	1.12	1.02	1.10	1.05	1.11	<b>1.08</b>	1.15	1.17	1.46	1.13	1.12	<b>1.20</b>	2.3	1.0	1.6	2.0	2.4	1.0	2.2	<b>1.8</b>
<b>Location Mean</b>	<b>5.3</b>	<b>5.8</b>	<b>2.6</b>	<b>5.1</b>	<b>4.0</b>	<b>3.4</b>	<b>4.4</b>	<b>1.04</b>	<b>1.02</b>	<b>0.99</b>	<b>1.00</b>	<b>0.99</b>	<b>1.06</b>	<b>1.02</b>	<b>1.22</b>	<b>1.22</b>	<b>1.32</b>	<b>1.22</b>	<b>1.21</b>	<b>1.24</b>	<b>2.1</b>	<b>1.0</b>	<b>1.7</b>	<b>1.3</b>	<b>2.5</b>	<b>1.1</b>	<b>2.2</b>	<b>1.7</b>



TABLE 7: 2017 Western Regional Chipping 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>								Greening <sup>1</sup>						Shatter Bruise					Scab <sup>1</sup>						
	CA <sup>2</sup>	CO	ID	HRM	KF	DTX	STX	Entry Mean	CA <sup>2</sup>	CO	ID	HRM	KF	DTX	STX	Entry Mean	CA <sup>2</sup>	CO	HRM	KF	DTX	STX	Entry Mean	ID <sup>3</sup>	HRM	KF	DTX	STX	Entry Mean	ID	HRM	DTX	STX	Entry Mean
1 ATLANTIC	0.4	4.0	4.5	4.9	4.5	4.6	5.0	<b>4.6</b>	2.8	5.0	4.4	4.4	4.8	4.7	5.0	<b>4.7</b>	8.5	5.0	4.5	2.9	5.0	5.0	<b>4.5</b>	2.8	4.4	3.9	5.0	5.0	<b>4.2</b>	4.8	5.0	5.0	5.0	<b>4.9</b>
2 SNOWDEN	0.0	5.0	5.0	5.0	4.6	5.0	5.0	<b>4.9</b>	3.8	5.0	5.0	4.8	5.0	4.8	5.0	<b>4.9</b>	8.0	5.0	4.3	4.0	5.0	5.0	<b>4.7</b>	3.5	4.8	4.3	5.0	5.0	<b>4.5</b>	4.8	4.6	5.0	5.0	<b>4.8</b>
3 AC01144-1W	0.1	5.0	5.0	5.0	4.6	5.0	5.0	<b>4.9</b>	2.0	5.0	5.0	4.4	4.5	4.8	5.0	<b>4.8</b>	4.7	5.0	5.0	3.4	5.0	5.0	<b>4.7</b>	3.0	4.9	4.5	5.0	5.0	<b>4.5</b>	3.9	4.8	5.0	5.0	<b>4.7</b>
4 AOR09034-3	4.8	4.0	4.9	4.6	3.6	5.0	5.0	<b>4.5</b>	1.1	5.0	5.0	4.8	5.0	5.0	<b>5.0</b>	4.7	5.0	4.5	3.9	5.0	5.0	<b>4.7</b>	2.5	4.5	1.9	5.0	5.0	<b>3.8</b>	4.8	4.8	5.0	5.0	<b>4.9</b>	
5 NDA081453CAB-2C	0.3	4.0	5.0	4.9	4.4	5.0	5.0	<b>4.7</b>	1.8	5.0	5.0	4.4	4.6	5.0	5.0	<b>4.8</b>	3.3	5.0	4.5	4.1	5.0	5.0	<b>4.7</b>	3.3	4.3	3.5	5.0	5.0	<b>4.2</b>	4.8	4.6	5.0	5.0	<b>4.8</b>
6 NDTX081648CB-13W	0.0	5.0	5.0	4.9	4.9	5.0	5.0	<b>5.0</b>	1.5	5.0	5.0	3.3	4.9	5.0	5.0	<b>4.7</b>	5.7	5.0	4.6	4.0	5.0	5.0	<b>4.7</b>	3.8	4.8	4.5	5.0	5.0	<b>4.6</b>	4.5	4.9	5.0	5.0	<b>4.8</b>
7 OR09256-2	1.0	5.0	5.0	4.9	4.9	5.0	5.0	<b>5.0</b>	1.0	5.0	5.0	4.6	4.5	5.0	5.0	<b>4.9</b>	1.7	5.0	4.8	4.0	5.0	5.0	<b>4.8</b>	4.0	4.6	4.4	5.0	5.0	<b>4.6</b>	4.8	4.8	5.0	5.0	<b>4.9</b>
<b>Location Mean</b>	<b>0.9</b>	<b>4.6</b>	<b>4.9</b>	<b>4.9</b>	<b>4.5</b>	<b>4.9</b>	<b>5.0</b>	<b>4.8</b>	<b>2.0</b>	<b>5.0</b>	<b>4.9</b>	<b>4.4</b>	<b>4.8</b>	<b>4.9</b>	<b>5.0</b>	<b>4.8</b>	<b>5.2</b>	<b>5.0</b>	<b>4.6</b>	<b>3.8</b>	<b>5.0</b>	<b>5.0</b>	<b>4.7</b>	<b>3.3</b>	<b>3.8</b>	<b>5.0</b>	<b>5.0</b>	<b>4.3</b>	<b>4.6</b>	<b>4.8</b>	<b>5.0</b>	<b>5.0</b>	<b>4.8</b>	

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

<sup>2</sup>Tulelake, CA percent of total

TABLE 8: 2017 Western Regional Chipping 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 <sup>1</sup>							
		CA <sup>2</sup>	CO	ID	HRM	KF	DTX	STX	Entry Mean	ID	HRM	KF	DTX	STX	Entry Mean	CA <sup>2</sup>	ID	HRM	KF	DTX	STX	Entry Mean	CA <sup>2</sup>	CO	ID <sup>3</sup>	HRM	DTX	STX <sup>4</sup>
1	ATLANTIC	3	6	33	0	20	30	5	14	0	0	0	15	20	7	0	0	5	0	5	10	3	2.5	3.4	2.7	4.6	5.0	0.0
2	SNOWDEN	0	0	10	0	21	0	0	4	0	0	0	0	0	0	15	0	3	3	0	15	6	0.0	3.4	1.4	4.6	5.0	0.0
3	AC01144-1W	0	0	3	0	3	0	0	1	0	0	0	0	0	0	15	0	3	0	0	28	8	0.0	4.3	2.9	4.9	5.0	2.5
4	AOR09034-3	0	0	8	0	0	8	0	2	0	0	0	0	3	1	10	0	0	0	0	3	2	15.0	3.6	3.1	4.6	5.0	0.0
5	NDA081453CAB-2C	0	0	8	0	5	3	0	2	0	0	0	10	0	2	10	0	0	0	0	5	3	5.0	4.8	3.1	5.0	5.0	0.0
6	NDTX081648CB-13W	0	0	3	0	8	3	0	2	0	0	0	0	3	1	8	0	0	0	0	5	2	2.5	3.4	3.1	5.0	5.0	0.0
7	OR09256-2	5	0	5	0	8	5	0	3	0	0	0	0	0	0	10	0	5	0	0	5	3	10.0	3.7	1.4	5.0	5.0	0.0
<b>Location Mean</b>		<b>1</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>9</b>	<b>7</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>10</b>	<b>4</b>	<b>5.0</b>	<b>3.8</b>	<b>2.5</b>	<b>4.8</b>	<b>5.0</b>	<b>0.4</b>

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

<sup>2</sup>Tulelake, CA percent of 10

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

<sup>4</sup>Spring Lake, TX percent of total

TABLE 9: 2017 Western Regional Chipping Potato Variety Trial - CHIP COLOR

No. Clone	TX <sup>1</sup>		HRM <sup>1</sup>		CO <sup>1</sup>				ID <sup>1</sup>			50 <sup>2</sup> Mean
	Chip 40		Chip 40	Chip 50	Chip 40		Chip 50		Chip 40		Chip 50	
	a	Recon <sup>b</sup>	Recon <sup>b</sup>	c	a	Recon <sup>b</sup>	c	Recon <sup>d</sup>	a	Recon <sup>b</sup>	c	
1 ATLANTIC	4.5	3.9	2.4	2.6	5.0	5.0	4.0	3.5	4.1	2.8	3.7	3.4
2 SNOWDEN	4.8	3.5	2.1	1.5	5.0	3.0	3.0	3.0	3.0	2.0	3.0	2.5
3 AC01144-1W	3.4	3.3	1.1	1.3	5.0	3.5	3.5	3.0	2.2	2.3	2.3	2.3
4 AOR09034-3	4.5	3.4	2.4	2.0	5.5	5.0	3.0	3.0	3.1	2.1	2.2	2.4
5 NDA081453CAB-2C	3.5	3.5	2.8	1.8	5.0	5.0	3.0	3.5	3.4	3.3	2.6	2.4
6 NDTX081648CB-13W	4.8	3.9	1.9	2.0	5.5	5.0	3.5	3.5	3.8	3.0	3.3	2.9
7 OR09256-2	4.4	3.3	1.8	2.3	5.5	5.0	3.0	3.5	4.1	2.8	4.2	3.1
<b>Location Means</b>	<b>4.3</b>	<b>3.5</b>	<b>2.1</b>	<b>1.9</b>	<b>5.2</b>	<b>4.5</b>	<b>3.3</b>	<b>3.3</b>	<b>3.4</b>	<b>2.6</b>	<b>3.0</b>	<b>2.7</b>

<sup>1</sup> Color using Snack Food Association Color Standards for Potato Chips 2008 (1-6(darkest)).

<sup>a</sup> Stored 6 weeks at 42°F (TX); 7 weeks (CO) and 6 weeks (ID) at 40°F.

<sup>b</sup> Stored 6 weeks (TX) at 42°F plus 2 weeks at 65°F; stored 12 weeks at 38°F plus 3 weeks at 48°F (HRM); stored 7 weeks (CO) at 40°F plus 2 weeks at 60°F; stored 6 weeks (ID) at 40°F plus 3 weeks at 60°F.

<sup>c</sup> Stored 4 weeks at 48°F (HRM); stored 7 weeks (CO) and 6 weeks (ID) at 50°F.

<sup>d</sup> Stored 7 weeks (CO) at 50°F plus 2 weeks at 60°F.

<sup>2</sup> Mean for HRM, CO, and ID

Table 10. 2017 Aberdeen Regional Chip Trial - SOLIDS, DEXTROSE, SUCROSE, PROTEIN, VITAMIN C, AND GLYCOALKALOIDS - ABERDEEN, IDAHO

No.	Clone	Solids Oven Dry (%)	Sugars		Protein (%DWB)	Vitamin C (mg/100g FWB)	Glycoalkaloids <sup>3</sup> (mg/100gFWB)	Antioxidant Equivalents <sup>4</sup> ug Trolox (equivalents/gfw) <sup>5</sup>
			Dextrose <sup>1</sup> (%FWB)	Sucrose <sup>2</sup> (%FWB)				
1	ATLANTIC	23.2	0.026	0.197	6.00	24.8	3.2	102.20
2	SNOWDEN	22.7	0.030	0.136	5.46	22.4	2.7	87.60
3	AC01144-1W	19.8	0.005	0.164	6.22	24.5	3.8	159.70
4	AOR09034-3	23.6	0.017	0.132	6.00	20.3	4.7	149.30
5	NDA081453CAB-2C	21.4	0.014	0.215	7.72	27.6	3.0	152.40
6	NDTX081648CB-13W	21.9	0.039	0.190	6.01	20.0	2.9	120.20
7	OR09256-2	24.0	0.050	0.215	5.88	27.3	7.3	164.70
<b>Means</b>		<b>22.4</b>	<b>0.026</b>	<b>0.179</b>	<b>6.19</b>	<b>23.8</b>	<b>3.9</b>	<b>133.7</b>

FWB = fresh weight basis DWB = dry weight basis

<sup>1</sup>Desirable levels of Dextrose are 0.05%

<sup>2</sup>Sucrose levels of 0.15% are excellent, 0.16-2.0% are good, and 2.1% are fair to poor

<sup>3</sup>Glycoalkaloids: The 2016 Lenape check from Aberdeen was 21.34 mg/100g

<sup>4</sup>The assay used at Texas A&M University was based on "Use of a Free Radical Method to Evaluate Antioxidant Activity" by Brand-Williams, et al. 1995, Levensm. Wiss. Technol. 28:25-30.

Antioxidants soluble in methonal were extracted and allowed to react with the stable radical, 2,2,-Diphenyl-1-picrylhydrazyl (DPPH). This provided a rapid evaluation of the antioxidant properties of the potato extracts based on absorbance. Sample extraction was performed at TAMU and the DPPH assay was performed in Dr. Anna Hale's lab - USDA Sugar Cane Breeding, Houma, LA by Dr. Himaya Mula-Michel.

<sup>5</sup>ug Trolox equivalents/gfw - Absorbance was converted to trolox equivalents based on a standard curve using the following equation:  $y=284.86x - 4.9907$

TABLE 11: 2017 Western Regional Chipping Potato Variety Trial - DISEASE EVALUATIONS, METRIBUZIN REACTION

No. Clone	Vert. Wilt/Early Dying		Vert. Wilt/Early Dying		Foliar		Early Blight Tuber AB <sup>1</sup>		Common Scab AB <sup>1</sup>		Rhizoc. KLAM <sup>3</sup>	Pecto- bacterium Soft Rot <sup>2</sup> AB <sup>2</sup>	Metr. Reaction <sup>4</sup> AB
	AB <sup>1</sup>		HRM <sup>#</sup>				Incidence	% Serious	Incidence	Defect	(1-5=none) <sup>3</sup>	(0-5)	
	(0-9)*	AUDPC	(0-9)*	AUDPC	(0-9)*	AUDPC	(%)	Defect					
1 ATLANTIC	6.0	228	7	1058	3.7	105	0	0	18.9	16.2	2.6	4.7	MS
2 SNOWDEN	6.0	282	7	1058	4.7	140	0	0	4.7	2.3	3.8	4.9	R
3 AC01144-1W	2.7	25	7	683	2.0	23	7	0	29.6	19.4	4.1	4.6	R
4 AOR09034-3	3.7	74	6	540	4.7	106	3	0	33.8	16.0	1.6	4.9	R
5 NDA081453CAB-2C	5.3	168	7	1065	4.3	130	11	0	33.7	3.5	2.4	4.3	MR
6 NDTX081648CB-13W	6.0	204	6	690	3.0	40	0	0	16.1	8.5	3.5	3.5	R
7 OR09256-2	4.0	92	7	833	5.3	216	2	0	15.8	7.0	4.1	1.4	MR
<b>MEANS</b>	<b>4.8</b>	<b>153.3</b>	<b>6.7</b>	<b>846.7</b>	<b>4.0</b>	<b>108.6</b>	<b>3.3</b>	<b>0.0</b>	<b>21.8</b>	<b>10.4</b>	<b>3.2</b>	<b>4.0</b>	
<b>LSD @ .05</b>	<b>1.8</b>				<b>1.9</b>		<b>10</b>	<b>n.s.</b>	<b>21.0</b>	<b>10.0</b>		<b>1.5</b>	

\* 117 days after planting

# 121 days after planting

<sup>1</sup> Evaluations made at Aberdeen, Idaho by Jonathan Whitworth, Hermiston, Oregon by Laurie LaRoux, Tulelake by Darrin Culp; 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 3 separate days 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. Net necrosis data from PLRV-infected plots.

<sup>2</sup> For 0 to 5: 0=none, 5=severe as a combination of tuber area and degree impacted by Fusarium and Pectobacterium inoculations.

<sup>3</sup> *Rhizoctonia solani* readings made by Brian Charlton, Klamath Falls, Oregon; scale as indicated with lowest number being most severe

<sup>4</sup> Metribuzin Reaction measured at Aberdeen, ID. VR=very resistant, R=Resistant, MR=Moderately resistant, MS=moderately susceptible, S=susceptible VS=very susceptible

TABLE 12: 2017 Western Regional Chipping Potato Variety Trial - MERIT SCORES (1-5(best))

No.	Clone	Fresh Merit						Process Merit				
		CA	CO	HRM	ID	DTX	STX	Entry Mean	CO	ID	HRM	Entry Mean
1	ATLANTIC	2.6		2.5	2.3	3.5	3.5	<b>2.9</b>		2.0	3.0	<b>2.5</b>
2	SNOWDEN	3.0	2.0	2.0	2.6	3.6	3.3	<b>2.8</b>	3.0	2.5	3.0	<b>2.8</b>
3	AC01144-1W	3.1	5.0	2.0	3.9	3.5	3.1	<b>3.4</b>	4.0	4.0	2.0	<b>3.3</b>
4	AOR09034-3	2.9	4.0	2.0	3.6	4.6	3.1	<b>3.4</b>	3.0	3.5	3.0	<b>3.2</b>
5	NDA081453CAB-2C	3.0	1.0	2.5	3.0	3.8	3.6	<b>2.8</b>	1.0	3.0	2.5	<b>2.2</b>
6	NDTX081648CB-13W	3.0	4.0	2.0	3.1	4.0	3.3	<b>3.2</b>	2.0	2.5	2.0	<b>2.2</b>
7	OR09256-2	3.3	1.0	2.0	3.9	3.7	2.5	<b>2.7</b>	1.0	1.5	3.0	<b>1.8</b>
<b>Location Mean</b>		<b>3.0</b>	<b>2.8</b>	<b>2.1</b>	<b>3.2</b>	<b>3.8</b>	<b>3.2</b>	<b>3.0</b>	<b>2.3</b>	<b>2.7</b>	<b>2.6</b>	<b>2.6</b>

TABLE 13: 2017 Western Regional Chipping Potato Variety Trial - SUMMARY

No.	Clone	Year in Trial	Total Yield <sup>1</sup> Rank	US#1's Yield <sup>1</sup> %	Tuber Size (oz)	Specific Gravity	Chip Color <sup>2</sup>	Process Merit Score
1	ATLANTIC	CK	448 2	308 69	5.4	1.089	3.4	2.5
2	SNOWDEN	CK	402 6	279 69	4.6	1.084	2.5	2.8
3	AC01144-1W	3	426 4	262 59	3.7	1.072	2.3	3.3
4	AOR09034-3	1	482 1	321 63	4.0	1.085	2.4	3.2
5	NDA081453CAB-2C	1	400 7	285 70	4.7	1.085	2.4	2.2
6	NDTX081648CB-13W	1	428 3	292 67	4.1	1.083	2.9	2.2
7	OR09256-2	1	402 5	267 64	3.9	1.086	3.1	1.8

<sup>1</sup>(CWT/A)<sup>2</sup>Mean for CO, HRM and ID stored at 50°F

TABLE 14: 2017 Western Regional Chipping Potato Variety Trial - 3 Year Summary of Graduating Entries

Clone	2015					2016					2017				
	Total Yield <sup>1</sup>	US#1's Yield <sup>1</sup>	Specific Gravity	Chip Color <sup>2</sup>	Merit Score	Total Yield <sup>1</sup>	US#1's Yield <sup>1</sup>	Specific Gravity	Chip Color <sup>2</sup>	Merit Score	Total Yield <sup>1</sup>	US#1's Yield <sup>1</sup>	Specific Gravity	Chip Color <sup>2</sup>	Merit Score
	Rank	%				Rank	%				Rank	%			
ATLANTIC	425 3	338 77	1.089	3.5	2.7	466 4	369 75	1.093	3.0	2.5	448 2	308 69	1.089	3.4	2.5
SNOWDEN	450 2	350 73	1.081	3.5	2.7	444 8	328 70	1.086	3.0	3.0	402 6	279 69	1.084	2.5	2.8
OR09256-2	416 4	303 68	1.083	4.8	2.5	456 7	303 64	1.087	3.7	2.3	402 5	267 64	1.086	3.1	1.8
Trial Mean	407	309 73	1.080	3.1	3.0	454	344 72	1.087	2.7	3.0	427	288 66	1.084	2.7	2.7

3 Year Average (2015-2017)

Clone	Total Yield <sup>1</sup>	US#1's		Chip Color <sup>2</sup>	Merit Score	Noted Weaknesses	Noted Strengths
		Yield <sup>1</sup>	%				
ATLANTIC	446	338 74	1.090	3.3	2.6		
SNOWDEN	432	319 71	1.084	3.0	2.8		
OR09256-2	425	291 65	1.085	3.9	2.2		High solids (3/3), low incidence of external defects (3/3), high Vit C (2/3), low vert wilt (2/2), high antioxidant equivalents (2/2)
Mean <sup>3</sup>	434	314 70	1.086	3.4	2.5		

<sup>1</sup>(CWT/A)

<sup>2</sup>Mean for CO and ID stored at 50°F

<sup>3</sup>Mean includes all trial entries 2015-2017



## Comments and Information from States

Hermiston, Oregon <sup>1</sup>			Sugar Ends (%)	Sprouting (1-9)	Skin Set (1-9)	Shape Uniform
1	ATLANTIC	FBE x4, sprouts x3, skinning x2, flakey x2, flat x2	18.8	5.9	7.0	3.6
2	SNOWDEN	flakey x4, FBE x3, flat x3, sticky x4, rot	13.9	8.0	7.4	3.3
3	AC01144-1W	sticky x4, short x3, pear x3	9.7	7.5	6.8	3.8
4	AOR09034-3	sticky x3, rot x2, skinning x3, short x2, rhizoc	12.8	6.5	6.1	3.8
5	NDA081453CAB-2C	sprouts x2, short x3, rhizoc x2, rot x2	12.5	6.1	6.9	4.1
6	NDTX081648CB-13W	chain x4, sprouts x4, knobs x3, sticky x3, virus, rhizoc	14.2	5.5	7.5	2.9
7	OR09256-2	dotty x3, lenticels x2, sticky x3, rot	10.4	7.4	6.8	3.5
Tulelake, California						AUDPC <sup>2</sup>
1	ATLANTIC					354.5
2	SNOWDEN					213.8
3	AC01144-1W	High merit score				317.1
4	AOR09034-3	High yield, wider tuber shape				216.0
5	NDA081453CAB-2C					163.3
6	NDTX081648CB-13W	Resistant to early dying				65.6
7	OR09256-2	Heavy russeting				172.3
Aberdeen, Idaho Comments <sup>3</sup>				Metribuzin	Early Blight	Vert Wilt
1	ATLANTIC	Not uniform (4); green, ugly (3)		MS	3.8	4.1
2	SNOWDEN	Deep eyes/ends (4); round, uniform (3)		R	3.6	4.1
3	AC01144-1W	Round, few ats (4); uniform (3)		R	3.8	4.8
4	AOR09034-3	Shatter (4); round, uniform (3)		R	2.3	3.6
5	NDA081453CAB-2C	Few ats, flattening (3); some shatter, few bumps (2)		MR	3.8	4.1
6	NDTX081648CB-13W	Flat, some ats (4)		R	4.0	4.6
7	OR09256-2	Round (4); uniform, (3); few ats (2)		MR	2.6	4.0

<sup>1</sup>FBE=folded bud end.<sup>2</sup>Area Under Disease Progress Curve based on foliar early-dying rating taken 77, 83, 89, 96, 104 and 110 days after planting<sup>3</sup>ATS=attached stolons

\*Hermiston, Oregon reported that they reduced the rate of P from the traditional 190 to only 90.  
K was reduced to 60 as per CPS recommendation.

## Comments and Information from States

Klamath Falls, Oregon Comments <sup>1</sup>			Rhizoc 1-5(none)		
1	ATLANTIC	erratic shape, erratic size (x2), 8 rotten, big (x2), impact bruise, green, 10 rotten, misshaped	2.63		
2	SNOWDEN	erratic size (x2), FBE (x2), lenticel scarring, chicken tracks, dark, lumpy	3.75		
3	AC01144-1W	impact bruise (x2), sticky stolon (x2), nice, bulgy eyes, small, uniform, nice skin	4.13		
4	AOR09034-3	uniform (x2), nice, rhizoc (x3), 6 rot, growth cracks, shatter bruise, impact bruise, growth cracks	1.63		
5	NDA081453CAB-2C	nice skin (x2), keep, someoblong some round, erratic size, 5 rotten, lenticel scarring,	2.38		
6	NDTX081648CB-13W	nice skin, not bad, flat (x2), dented, small, CRS (x2), rhizoc, NTN?	3.50		
7	OR09256-2	small (x4), uniform (x3), 4 rotten, pointy stem end, russetting	4.13		
Dalhart, Texas Comments <sup>2</sup>			Chip Color <sup>3</sup>	Chip Notes <sup>3</sup>	Chip Quality <sup>4</sup>
1	ATLANTIC	enlarged lenticels, knobs, growth cracks, large tubers, rough	2	1 ROT	3.7
2	SNOWDEN	knobs, enlarged lenticels, chunky, some attached stolons	2		3.0
3	AC01144-1W	nice smooth skin, uniform shape, light skin, nice, compressed, knobs,	3		2.8
4	AOR09034-3	smooth skin++, medium-large tubers, high tuber set, uniform size and shape+, nice, snaps cut, very nice+, BOT, light skin, small, shiny, excellent chip size, a little compressed	2		3.5
5	NDA081453CAB-2C	smooth skin, snap cut, large tubers+,	2	1IBS	3.1
6	NDTX081648CB-13W	nice, attached stolons, smooth skin+, nice shiny, small, snap cut, high tuber set+, very uniform size and shape, enlarged lenticels	2	1IBS	3.5
7	OR09256-2	dirty skin, soil attached to skin++, russet skin, rough skin	2	1 dark	3.7
Springlake, Texas Comments <sup>2</sup>			Chip Color <sup>3</sup>	Chip Notes <sup>3</sup>	Chip Quality <sup>4</sup>
1	ATLANTIC	buff skin, larger tubers, ZC 10%, poor internals	1.5	1mech	3.7
2	SNOWDEN	buff skin, rough shape	1.8		3.6
3	AC01144-1W	fewer tubers, deer damage, very small tubers, nice shape and size, sticky stolons++, mixed	1.3		3.4
4	AOR09034-3	smaller, uniform shape and size, nice shape, small, nice skin finish	1.5		3.0
5	NDA081453CAB-2C	deer damage, nice skin and shape, BOT, nice flesh	2.3		3.5
6	NDTX081648CB-13W	lighter skin, looks clean, a little flat, heat sprouts+, sticky stolon+, flat	1.8	3 immature	4.6
7	OR09256-2	very small, uneven shape, sticky stolon+, nice flesh	2	1bc	3.5

<sup>1</sup>FBE=folded bud end, CRS=Corky ring spot

<sup>2</sup>BOT=Best Of Trial, ZC=zebra chip, IBS=internal brown spot, mech=mechanical damage, bc=brown center

<sup>3</sup>Fresh Chip (at harvest) Color rating: 1=light, 3+=very dark

<sup>4</sup>Chip Quality: 1=excellent to 5= very poor

**\*Klamath Falls, Oregon reported a warmer growing season. It also consisted of several weeks of heavy smoke due to surrounding wildfires. Water ET use was good, and yields were on average higher than previous years' yields.**

**\*\*Dalhart, Texas reported higher than normal precipitation during the growing season.**

**\*\*\*Springlake, Texas reported above average precipitation in the last week of June, first and last week of July, and second week of August.. They were also subjected to a psyllid infestation in the first and second weeks of June.**