

# 2020 WESTERN REGIONAL CHIPPING POTATO TRIAL REPORT

State Agricultural Experiment Stations and the  
USDA-ARS

California  
Colorado  
Idaho  
Oregon  
Texas



## 2020 WESTERN REGIONAL CHIPPING POTATO VARIETY TRIAL REPORT

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TABLE 1: 2020 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 K. Nicholson	Late	Sprink.	17-80-260 blend, 180# UN32	10" x 36"	15-May	3-Sep Reglone	28-Sep	111	136	Prowl H20 Outlook Matrix	Admire Pro	Quadris Luna Tranquility
San Luis Valley Colorado <b>(CO)</b>	D. Holm C. Gray K. Gaudreau	Late	Pivot	106-76-180-11	12" x 34"	12-May	3-Sep Reglone	25-Sep	114	136	Rifle-D Metribuzin 75 Eptam 7-E	Pure Spray Green Sefina Inscalis Movento HL Leverage 360	Revus Top Quadris Top Bravo Weather Stik
Aberdeen Idaho <b>(ID)</b>	R. Spear R. Novy J. Whitworth C. Lowder	Late	Sprink.	310-100-5Zn-5Mn	10" x 36"	28-Apr	1-Sep Mechanical	22-Sep	126	147	TriCor 4F Matrix Eptam 7-E	Admire Pro	
Hermiston Oregon <b>(HRM)</b>	V. Sathuvalli M. Aguilar	Early	Pivot	130-140-200-80 5Mn-3.75Zn-2B-10C	9.25" x 34"	23-Mar	1-Aug Reglone	10-Aug	131	140	Herbicides Dual Magnum Eptam Matrix	Insecticides Admire Coragen Asana XL	Fungicides Quadris Ridomil Omega Dithane
Dalhart Texas <b>(DTX)</b>	I. Vales J. Koym D. Scheuring	Early	Pivot	119-122-258	10.2" x 28"	9-May	17-Aug Reglone	3-Sep	100	117	Eptam 7E Tricor 4F Mad Dog K6 Trifluralin 4 EC	Movento Beleaf 50 SG Reaper ClearForm Fulfill	Manzate Max Echo 720

TABLE 2: 2020 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	% Stand Mean	Tuber Shape	Tuber Skin	Vine Size	Vine Maturity	Stems/Plant Mean
1	Atlantic	Wauseon x B5141-6	Red-purple	Check	Ck	OR	97	Round	Buff	Medium	Med Early	2.3
2	Snowden	Lenape x Wischip	White	Check	Ck	OR	100	Round	Buff	Med-large	Medium	2.9
3	AOR12197-4	V-15-71 x CO02121-4W	White	OR	1	OR	97	Round	White	Med-large	Med-late	2.3
4	CO10073-7W	Winterset x CO02024-9W	White	CO	2	CO	97	Round	White	Small	Medium	3.1
5	CO10076-4W	CO03243-3W x CO02024-9W	White	CO	2	CO	92	Round	White	Medium	Medium	2.9
6	CO11023-2W	AC03433-1W x NY138	White	CO	1	CO	91	Round	White	Medium	Medium	2.3
7	CO11023-9W	AC03433-1W x NY138	Light Purple	CO	1	CO	99	Round	White	Med-large	Late	1.6
8	CO11037-5W	BC0894-2W x W2133-1	Light Purple	CO	1	CO	98	Round	White	Med-large	Medium	2.4
9	TX09403-15W	NY138 x Ivory Chip		TX	1	CO	94	Round	White	Medium	Early	1.8

1 Numerical values are means of all trial locations.

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: 2020 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	DTX			CA	CO	ID	HRM	DTX		
1 ATLANTIC	539	282	286	500	481	418	7	477	216	241	284	432	330	4
								89	77	84	57	90	79	1
2 SNOWDEN	449	384	316	602	586	467	2	373	207	230	396	502	341	3
								83	54	72	66	86	72	8
3 AOR12197-4	525	413	439	580	425	476	1	434	306	360	311	307	344	1
								83	74	82	54	72	73	7
4 CO10073-7W	522	309	411	443	449	427	6	405	198	361	292	263	304	7
								78	64	87	66	59	71	9
5 CO10076-4W	531	329	489	563	307	444	4	433	238	394	377	206	330	4
								82	72	80	67	67	74	5
6 CO11023-2W	516	307	410	566	159	392	8	432	223	323	353	119	290	9
								84	72	79	62	75	74	4
7 CO11023-9W	451	339	422	556	392	432	5	368	228	336	370	280	316	6
								82	67	79	67	72	73	6
8 CO11037-5W	505	387	439	590	320	448	3	406	285	362	410	245	342	2
								81	73	82	69	77	77	3
9 TX09403-15W	500	244	227	566	373	382	9	445	171	182	359	311	294	8
								89	70	79	63	83	77	2
Location Mean	504	333	382	552	388	447		419	230	310	350	296	321	
								83	69	81	63	76	74	

TABLE 4: 2020 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) / %					Entry Mean Rank			
	CA	CO	ID	HRM	DTX	CA	CO	ID	HRM	DTX				
1 ATLANTIC	146	27	90	116	115	99	1	45	61	42	78	36	52	9
	27	10	31	23	24	23	1	8	22	15	16	7	14	9
2 SNOWDEN	50	21	23	65	84	49	6	64	156	81	132	85	104	2
	11	5	7	11	14	10	6	14	41	27	22	14	24	4
3 AOR12197-4	146	70	92	134	15	91	2	52	73	79	89	108	80	6
	28	17	21	23	4	19	2	10	24	18	15	25	18	8
4 CO10073-7W	36	5	57	9	0	21	9	108	101	49	136	185	116	1
	7	2	13	2	0	5	9	19	51	12	31	41	31	1
5 CO10076-4W	60	17	42	50	3	34	8	88	83	94	124	99	98	3
	11	5	9	9	1	7	8	7	35	19	22	32	23	5
6 CO11023-2W	179	38	31	60	5	63	4	70	77	86	143	38	83	5
	35	12	8	11	3	14	4	14	35	21	25	24	24	3
7 CO11023-9W	49	18	54	69	21	42	7	74	105	81	114	107	96	4
	11	5	12	12	5	9	7	16	46	19	21	27	26	2
8 CO11037-5W	90	36	69	90	11	59	5	82	85	73	85	60	77	7
	18	9	16	15	3	12	5	16	30	17	14	19	19	7
9 TX09403-15W	192	15	24	50	60	68	3	41	66	42	116	52	63	8
	38	6	10	9	16	16	3	8	39	20	20	14	20	6
Location Mean	105	27	54	71	35	59		69	90	69	113	86	85	
	21	8	14	12	8	13		13	36	19	21	23	22	

TABLE 5: 2020 Western Regional Chipping Potato Variety Trial - SPECIFIC GRAVITY

No. Clone	Specific Gravity					Entry Mean	Rank
	CA	CO	ID	HRM	DTX		
1 ATLANTIC	1.102	1.103	1.095	1.089	1.083	<b>1.094</b>	<b>1</b>
2 SNOWDEN	1.095	1.102	1.088	1.083	1.074	<b>1.088</b>	<b>2</b>
3 AOR12197-4	1.095	1.101	1.090	1.079	1.073	<b>1.088</b>	<b>3</b>
4 CO10073-7W	1.087	1.089	1.090	1.078	1.078	<b>1.084</b>	<b>6</b>
5 CO10076-4W	1.082	1.090	1.081	1.076	1.070	<b>1.080</b>	<b>8</b>
6 CO11023-2W	1.094	1.095	1.091	1.080	1.075	<b>1.087</b>	<b>4</b>
7 CO11023-9W	1.082	1.102	1.085	1.077	1.076	<b>1.084</b>	<b>7</b>
8 CO11037-5W	1.096	1.096	1.092	1.081	1.067	<b>1.086</b>	<b>5</b>
9 TX09403-15W	1.085	1.086	1.078	1.074	1.066	<b>1.078</b>	<b>9</b>
<b>Location Mean</b>	<b>1.091</b>	<b>1.096</b>	<b>1.088</b>	<b>1.080</b>	<b>1.074</b>	<b>1.086</b>	

TABLE 6: 2020 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	DTX	Entry Mean	Length/ Width	Length/ Width	Length/ Width	Length/ Width	Length/ Width	Entry Mean	Width/ Thick	Width/ Thick	Width/ Thick	Width/ Thick	Width/ Thick	Entry Mean	(1-5, 1 = round, 5 = long)					Entry Mean
						CA	CO	ID	HRM	DTX		CA	CO	ID	HRM	DTX		CA	CO	ID	HRM	DTX	
1 ATLANTIC	6.7	6.1	5.6	6.4	<b>6.2</b>	1.01	1.01	1.06	1.06	1.10	<b>1.05</b>	1.27	1.26	1.22	1.30	1.16	<b>1.23</b>	1.0	1.0	1.8	1.8	1.0	<b>1.3</b>
2 SNOWDEN	5.5	4.7	4.7	5.5	<b>5.1</b>	0.94	0.91	1.00	1.00	0.98	<b>0.97</b>	1.26	1.34	1.27	1.32	1.28	<b>1.30</b>	1.0	1.0	1.5	2.0	1.0	<b>1.3</b>
3 AOR12197-4	6.5	5.5	5.1	4.2	<b>5.3</b>	0.98	0.95	0.91	0.96	0.99	<b>0.96</b>	1.20	1.29	1.17	1.20	1.11	<b>1.19</b>	1.0	1.0	1.5	1.3	1.0	<b>1.2</b>
4 CO10073-7W	5.0	5.8	3.9	3.6	<b>4.6</b>	1.00	1.02	1.01	1.02	1.00	<b>1.01</b>	1.28	1.24	1.29	1.33	1.16	<b>1.25</b>	1.0	1.0	1.4	1.8	1.0	<b>1.2</b>
5 CO10076-4W	5.5	5.0	4.6	3.6	<b>4.7</b>	0.96	0.88	1.02	0.95	1.06	<b>0.98</b>	1.25	1.32	1.27	1.31	1.16	<b>1.26</b>	1.0	1.0	1.5	1.8	1.0	<b>1.3</b>
6 CO11023-2W	6.1	4.6	4.2	4.0	<b>4.7</b>	0.92	1.00	0.96	0.87	1.11	<b>0.97</b>	1.26	1.24	1.24	1.35	1.19	<b>1.26</b>	1.0	1.0	1.4	2.0	1.0	<b>1.3</b>
7 CO11023-9W	5.5	5.1	4.6	4.0	<b>4.8</b>	0.97	0.98	1.08	0.97	1.02	<b>1.00</b>	1.18	1.27	1.22	1.24	1.10	<b>1.21</b>	1.0	1.0	1.4	1.5	1.0	<b>1.2</b>
8 CO11037-5W	5.6	5.6	5.5	4.9	<b>5.4</b>	0.94	1.03	1.12	1.04	1.31	<b>1.09</b>	1.20	1.29	1.21	1.30	1.17	<b>1.24</b>	1.0	1.0	1.6	2.0	2.0	<b>1.5</b>
9 TX09403-15W	7.5	5.1	4.6	5.5	<b>5.7</b>	0.99	1.06	0.99	0.96	1.05	<b>1.01</b>	1.24	1.22	1.19	1.21	1.14	<b>1.19</b>	1.0	1.0	1.3	1.5	1.0	<b>1.2</b>
<b>Location Mean</b>	<b>6.0</b>	<b>5.3</b>	<b>4.8</b>	<b>4.6</b>	<b>5.2</b>	<b>0.97</b>	<b>0.98</b>	<b>1.02</b>	<b>0.98</b>	<b>1.07</b>	<b>1.00</b>	<b>1.24</b>	<b>1.27</b>	<b>1.23</b>	<b>1.28</b>	<b>1.16</b>	<b>1.24</b>	<b>1.0</b>	<b>1.0</b>	<b>1.5</b>	<b>1.7</b>	<b>1.1</b>	<b>1.3</b>

<sup>1</sup>L=length, W=width, T=thickness. For L:W <1.00=compressed; 1.00-1.15=round; 1.16-1.55=oval; 1.56-1.95=oblong; 1.96-2.35=long; >2.35=very long. For W:T, the larger the value, the flatter the tuber.



TABLE 7: 2020 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	DTX	Entry Mean	CA <sup>2</sup>	CO	ID	HRM	DTX	Entry Mean	CA <sup>2</sup>	CO	HRM	Entry Mean	ID <sup>3</sup>	CA	HRM	DTX	Entry Mean	ID	HRM	DTX	Entry Mean
1 ATLANTIC	0.4	5.0	4.8	4.9	4.7	<b>4.8</b>	0.3	5.0	5.0	4.9	4.7	<b>4.9</b>	3.0	4.0	4.5	<b>4.3</b>	3.9	3.0	4.4	5.0	<b>4.7</b>	4.4	4.9	5.0	<b>4.8</b>
2 SNOWDEN	0.0	5.0	5.0	5.0	5.0	<b>5.0</b>	0.5	5.0	5.0	4.9	5.0	<b>5.0</b>	2.6	3.0	4.9	<b>3.9</b>	4.0	3.5	4.8	5.0	<b>4.9</b>	4.8	4.9	5.0	<b>4.9</b>
3 AOR12197-4	0.9	4.0	4.8	3.9	4.7	<b>4.3</b>	0.0	5.0	5.0	5.0	4.9	<b>5.0</b>	7.0	2.0	4.4	<b>3.2</b>	4.5	3.3	4.8	5.0	<b>4.9</b>	4.1	4.9	5.0	<b>4.7</b>
4 CO10073-7W	0.2	4.0	4.8	4.5	5.0	<b>4.6</b>	0.5	5.0	5.0	5.0	5.0	<b>5.0</b>	2.3	3.0	4.9	<b>3.9</b>	4.6	3.4	4.5	5.0	<b>4.8</b>	4.6	4.8	5.0	<b>4.8</b>
5 CO10076-4W	0.1	5.0	5.0	4.5	5.0	<b>4.9</b>	0.7	5.0	5.0	5.0	4.9	<b>5.0</b>	0.9	4.0	4.9	<b>4.4</b>	3.8	2.5	4.0	5.0	<b>4.5</b>	4.5	4.8	5.0	<b>4.8</b>
6 CO11023-2W	0.9	5.0	4.9	4.9	4.8	<b>4.9</b>	0.1	5.0	5.0	5.0	4.8	<b>5.0</b>	0.8	4.0	4.3	<b>4.1</b>	4.2	3.0	4.3	5.0	<b>4.6</b>	5.0	4.9	5.0	<b>5.0</b>
7 CO11023-9W	0.0	5.0	4.9	5.0	5.0	<b>5.0</b>	0.5	5.0	5.0	5.0	4.8	<b>5.0</b>	2.0	4.0	4.8	<b>4.4</b>	4.7	3.1	4.8	5.0	<b>4.9</b>	4.6	4.9	5.0	<b>4.8</b>
8 CO11037-5W	0.1	5.0	5.0	4.9	5.0	<b>5.0</b>	0.9	5.0	4.9	4.8	4.7	<b>4.8</b>	1.9	3.0	4.6	<b>3.8</b>	3.8	3.5	4.8	5.0	<b>4.9</b>	4.6	4.9	5.0	<b>4.8</b>
9 TX09403-15W	1.0	4.0	4.9	2.4	4.3	<b>3.9</b>	0.2	5.0	5.0	4.9	5.0	<b>5.0</b>	0.8	4.0	4.6	<b>4.3</b>	3.3	2.6	4.5	5.0	<b>4.8</b>	4.9	4.6	5.0	<b>4.8</b>
<b>Location Mean</b>	<b>0.4</b>	<b>4.7</b>	<b>4.9</b>	<b>4.4</b>	<b>4.8</b>	<b>4.7</b>	<b>0.4</b>	<b>5.0</b>	<b>5.0</b>	<b>4.9</b>	<b>4.9</b>	<b>4.9</b>	<b>2.4</b>	<b>3.4</b>	<b>4.6</b>	<b>4.0</b>	<b>4.1</b>	<b>3.1</b>	<b>4.5</b>	<b>5.0</b>	<b>4.8</b>	<b>4.6</b>	<b>4.8</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: 2020 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	CO	ID	HRM	DTX	Entry Mean	HRM	DTX	Entry Mean	CA	HRM	DTX	Entry Mean	CO	ID <sup>2</sup>	HRM	DTX
1	ATLANTIC	3	0	5	10	53	14	3	70	36	8	0	0	3	3.2	3.9	1.5	5.0
2	SNOWDEN	3	0	0	5	37	9	0	30	15	15	0	0	5	3.8	2.4	3.5	5.0
3	AOR12197-4	0	0	30	0	10	8	0	7	4	15	0	7	7	3.8	4.0	4.4	5.0
4	CO10073-7W	20	0	0	0	3	5	0	30	15	5	0	0	2	4.3	4.0	3.9	5.0
5	CO10076-4W	0	0	0	0	27	5	5	20	13	5	5	0	3	3.9	3.8	3.0	4.5
6	CO11023-2W	5	0	0	0	27	6	0	7	4	15	0	0	5	4.5	4.1	4.0	5.0
7	CO11023-9W	3	0	0	0	3	1	0	23	12	15	0	0	5	3.5	4.2	4.0	5.0
8	CO11037-5W	0	0	0	0	0	0	0	0	0	15	3	0	6	4.9	3.9	3.8	5.0
9	TX09403-15W	0	1	0	0	17	4	0	47	24	10	0	0	3	4.0	3.8	2.0	5.0
<b>Location Mean</b>		<b>4</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>20</b>	<b>6</b>	<b>1</b>	<b>26</b>	<b>13</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>4.0</b>	<b>3.8</b>	<b>3.3</b>	<b>4.9</b>

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

<sup>2</sup>Aberdeen, ID blackspot scores from an abrasive peel test [1-5(none)].

TABLE 9: 2020 Western Regional Chipping Potato Variety Trial - CHIP COLOR

No. Clone	DTX <sup>1</sup>		HRM <sup>2</sup>			CO <sup>1</sup>				ID <sup>2</sup>			50 <sup>3</sup> Mean
	Chip 42		Recon <sup>b</sup>	Chip 50		Chip 40		Chip 50		Chip 40		Chip 50	
	a	Recon <sup>b</sup>		c	Recon <sup>d</sup>	a	Recon <sup>b</sup>	c	Recon <sup>d</sup>	a	Recon <sup>b</sup>	c	
1 ATLANTIC	1.3	1.0	4.6	2.0	1.9	4.0	3.5	2.5	2.5	5.6	5.5	2.3	2.2
2 SNOWDEN	1.3	1.0	4.1	1.6	1.4	4.0	3.5	2.5	3.0	5.8	5.3	2.7	1.9
3 AOR12197-4	3.0	3.0	4.4	1.4	1.5	4.0	3.0	3.5	3.5	4.7	3.9	2.8	2.5
4 CO10073-7W	1.0	1.0	3.8	1.4	1.6	3.0	3.0	3.5	2.5	3.8	3.5	2.0	2.6
5 CO10076-4W	1.3	1.0	3.6	2.1	1.5	3.5	3.0	3.5	3.0	5.1	5.0	2.2	2.5
6 CO11023-2W	1.3	1.0	3.5	1.5	1.1	3.0	3.0	2.0	3.0	3.9	4.0	2.0	1.6
7 CO11023-9W	1.0	1.0	3.0	1.5	1.3	3.5	3.0	3.5	3.5	3.3	3.4	2.6	2.4
8 CO11037-5W	1.3	1.0	3.9	1.8	1.5	3.5	2.5	2.5	2.0	4.1	3.8	2.3	2.0
9 TX09403-15W	1.0	1.0	4.4	1.5	1.8	4.0	3.5	1.5	2.0	5.3	5.1	2.2	1.6
<b>Location Means</b>	<b>1.4</b>	<b>1.2</b>	<b>3.9</b>	<b>1.6</b>	<b>1.5</b>	<b>3.6</b>	<b>3.1</b>	<b>2.8</b>	<b>2.8</b>	<b>4.6</b>	<b>4.4</b>	<b>2.3</b>	<b>2.2</b>

<sup>1</sup> Color using Snack Food Association Color Standards for Potato Chips (1-5 (darkest)).

<sup>a</sup> Stored 6 weeks at 42F (TX); 7 weeks at 40F (CO) and 9 weeks (ID).

<sup>b</sup> Stored 6 weeks (TX) at 42F plus 4 weeks at 47F; stored 7 weeks (CO) at 40F plus 3 weeks at 60F; stored 9 weeks (ID) at 40F plus 3 weeks at 60F.

<sup>c</sup> Stored 12 weeks at 47F (HRM); stored 7 weeks (CO) and 6 weeks (ID) at 50F.

<sup>d</sup> Stored 7 weeks (CO) at 50F plus 3 weeks at 60F; stored 12 weeks (HRM) at 47F plus 4 weeks at 47F; stored 6 weeks (ID) at 50F plus 3 weeks at 60F.

<sup>2</sup> ID used Snack Food Association Color Standards for Potato Chips 2008 (1-6(darkest)).

<sup>3</sup> Mean for HRM and CO.

Table 10. 2020 Aberdeen Regional Chip Trial - SOLIDS, DEXTROSE, SUCROSE, PROTEIN, VITAMIN C, AND GLYCOALKALOIDS - ABERDEEN, IDAHO; ANTIOXIDANTS - TEXAS

Clone	Solids Oven Dry (%)	Sugars		Protein (%DWB) <sup>2</sup>	Vitamin C (mg/100g FWB)	Glycoalkaloids <sup>3</sup> (mg/100gFWB)	Texas		
		Dextrose (%FWB) <sup>1</sup>	Sucrose (%FWB) <sup>1</sup>				Antioxidant Equivalents <sup>4</sup> µg Trolox equivalents/gfw <sup>5</sup>	AOA <sup>6</sup>	
1	Atlantic	25.13	0.013	0.122	6.68	19.38	10.11	155.6	M
2	Snowden	23.64	0.007	0.121	6.28	18.75	15.77	122.8	L
3	AOR12197-4	24.61	0.004	0.155	5.77	23.56	8.42	153.7	M
4	CO10073-7W	22.81	0.002	0.138	6.62	19.78	9.31	171.0	M
5	CO10076-4W	22.82	0.002	0.112	5.53	19.13	5.30	173.2	M
6	CO11023-2W	24.45	0.002	0.098	7.27	21.35	10.37	130.9	L
7	CO11023-9W	24.40	0.000	0.106	7.73	22.42	4.38	164.4	M
8	CO11037-5W	25.05	0.001	0.109	7.05	21.71	3.44	112.2	L
9	TX09403-15W	21.97	0.008	0.130	6.00	17.10	9.88	88.4	VL
<b>Means</b>		<b>23.88</b>	<b>0.004</b>	<b>0.121</b>	<b>6.55</b>	<b>20.35</b>	<b>8.55</b>	<b>141.4</b>	

<sup>1</sup> FWB = fresh weight basis

<sup>2</sup> DWB = dry weight basis

<sup>3</sup> Lenape Check = 34.49

<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 methanol 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.

<sup>5</sup> µg Trolox equivalents/gfw - Absorbance was converted to trolox equivalents based on a standard curve using the following equation:  $y = -0.0033x + 1.1965$

<sup>6</sup> VH=very high (>422), H=high (269-298), M=medium (255-138), L=low (135-90), VL=very low (<89). n=57 including nine check varieties

TABLE 11: 2020 Western Regional Chipping Potato Variety Trial - DISEASE EVALUATIONS, METRIBUZIN REACTION

No. Clone	Vert. Wilt/Early Dying		Early Blight		Common Scab		Corky Ringspot			Pecto-	Metr. Reaction <sup>5</sup>
	AB <sup>1</sup>		AB <sup>1</sup>		AB <sup>1</sup>		PROS <sup>4</sup>			Soft Rot <sup>2</sup>	
	(0-9)	AUDPC	(0-9)*	AUDPC	Incidence	Defect	Incidence (%)	Defects	reaction	AB <sup>2</sup>	
1 ATLANTIC	6.7	458	3.7	87	10.5	2.3	50.8	38.6	S	3.1	S
2 SNOWDEN	5.3	277	2.7	31	4.8	4.9	69.1	49.4	S	2.1	VR
3 AOR12197-4	4.0	76	4.3	114	47.2	28.9	1.7	0.3	R	1.5	MS
4 CO10073-7W	6.7	438	4.7	128	12.9	4.3	0.0	0.0	R	1.9	VR
5 CO10076-4W	3.7	93	4.7	119	26.4	58.3	0.8	0.2	R	2.0	R
6 CO11023-2W	--	--	--	--	--	--	68.3	53.6	S	--	VR
7 CO11023-9W	--	--	--	--	--	--	61.0	45.0	S	--	MS
8 CO11037-5W	--	--	--	--	--	--	0.8	0.8	R	--	MS
9 TX09403-15W	8.0	713	4.0	112	9.7	7.9	--	--	--	3.5	MR
<b>MEANS</b>	<b>5.7</b>	<b>343</b>	<b>4.0</b>	<b>98.5</b>	<b>18.6</b>	<b>17.8</b>	<b>31.6</b>	<b>23.5</b>		<b>2.4</b>	
<b>LSD @ .05</b>	<b>2.0</b>		<b>1.6</b>		<b>22.0</b>	<b>21.0</b>				<b>0.9</b>	
<b>Castle Russet</b>							<b>0.0</b>	<b>0.0</b>	<b>R</b>		

<sup>1</sup> Evaluations made at Aberdeen, Idaho by Jonathan Whitworth, Hermiston, Oregon by Laurie LaRoux; 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> Corky ringspot readings Prosser, WA by Rich Quick and Launa Cimrhakl

<sup>5</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: 2020 Western Regional Chipping Potato Variety Trial - MERIT SCORES (1-5(best))

No.	Clone	Fresh Merit					Entry Mean	Process Merit				Entry Mean
		CA	CO	HRM	ID	DTX		CO	DTX	ID	HRM	
1	ATLANTIC	3.3	2.0	1.5	2.0	2.7	<b>2.3</b>	3.0	2.3	2.0	3.0	<b>2.6</b>
2	SNOWDEN	3.6	2.0	2.0	1.6	3.1	<b>2.5</b>	2.0	2.7	2.0	3.0	<b>2.4</b>
3	AOR12197-4	3.3	5.0	2.5	2.8	3.7	<b>3.4</b>	2.0	3.3	2.0	3.0	<b>2.6</b>
4	CO10073-7W	3.0	2.0	3.0	3.3	3.8	<b>3.0</b>	1.0	3.8	3.5	3.0	<b>2.8</b>
5	CO10076-4W	3.1	3.0	2.0	2.8	3.5	<b>2.9</b>	1.0	3.1	3.0	2.5	<b>2.4</b>
6	CO11023-2W	3.5	2.0	2.5	3.4	3.6	<b>3.0</b>	2.0	2.8	3.5	3.0	<b>2.8</b>
7	CO11023-9W	4.0	3.0	2.0	3.3	3.8	<b>3.2</b>	2.0	3.8	3.0	2.5	<b>2.8</b>
8	CO11037-5W	3.3	5.0	2.5	3.0	3.9	<b>3.5</b>	5.0	3.3	2.5	3.0	<b>3.5</b>
9	TX09403-15W	3.1	1.0	2.0	2.9	3.6	<b>2.5</b>	3.0	3.2	3.0	2.0	<b>2.8</b>
<b>Location Mean</b>		<b>3.3</b>	<b>2.8</b>	<b>2.2</b>	<b>2.8</b>	<b>3.5</b>	<b>2.9</b>	<b>2.3</b>	<b>3.1</b>	<b>2.7</b>	<b>2.8</b>	<b>2.7</b>

TABLE 13: 2020 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	418 7	330 79	6.2	1.094	2.2	2.6
2	SNOWDEN	CK	467 2	341 72	5.1	1.088	1.9	2.4
3	AOR12197-4	1	476 1	344 73	5.3	1.088	2.5	2.6
4	CO10073-7W	2	427 6	304 71	4.6	1.084	2.6	2.8
5	CO10076-4W	2	444 4	330 74	4.7	1.080	2.5	2.4
6	CO11023-2W	1	392 8	290 74	4.7	1.087	1.6	2.8
7	CO11023-9W	1	432 5	316 73	4.8	1.084	2.4	2.8
8	CO11037-5W	1	448 3	342 77	5.4	1.088	2.0	3.5
9	TX09403-15W	1	382 9	294 77	5.7	1.084	1.6	2.8

<sup>1</sup>(CWT/A)<sup>2</sup>Mean for CO andHRM stored at 50°F

## Comments and Information from States

Tulelake, California			Vert Wilt Rating	Tubers/Plant	AUDPC <sup>1</sup>	
1	ATLANTIC		6.5	7.4	701.4	
2	SNOWDEN	Lumpy tubers	7.0	7.6	1033.8	
3	AOR12197-4		4.8	7.9	197.7	
4	CO10073-7W	Bad skinning, pancake shape tubers	6.5	9.9	787.8	
5	CO10076-4W	pink eyes	6.0	9.1	546.8	
6	CO11023-2W	pancake shaped tubers	5.0	7.8	263.4	
7	CO11023-9W		4.8	7.5	262.0	
8	CO11037-5W	pancake shaped tubers	6.3	8.5	578.8	
9	TX09403-15W		7.8	6.5	1266.6	
Aberdeen, Idaho Comments <sup>2</sup>			Sugar Ends (%)	Metribuzin	Early Blight	Vert Wilt
1	ATLANTIC	Not uniform (3); bumps flat (2); rot, 5 green @3.5	6	S	1.4	2.3
2	SNOWDEN	Deep eyes/ends, lumpy (3); not uniform, ugly	0	VR	2.4	3.9
3	AOR12197-4	Skinning, few ats (3); 16 green @ 5.9	0	MS	4.0	4.4
4	CO10073-7W	Skinning, flat (3); some oval (2); good eye	25	VR	2.3	3.1
5	CO10076-4W	Deep ends, flat, lumpy (2); few ats, small	0	R	2.1	4.6
6	CO11023-2W	Uniform (4); few flat, slight shatter	0	VR	2.6	2.8
7	CO11023-9W	Uniform (3); flat, skinning (2)	0	MR	3.4	4.3
8	CO11037-5W	Fairly uniform, few oval, good eye, flat (2); few ats 3 green @ 0.9	3	MS	2.3	3.6
9	TX09403-15W	Low yield, skinning (3); round (2) rot	0	MR	1.0	4.8

<sup>1</sup>Area Under Disease Progress Curve based on foliar early-dying rating taken 77, 83, 89, 96, 104 and 110 days after planting

<sup>2</sup>ats=attached stolons

**\*Aberdeen, Idaho reported light frost early in the season and heavy rain the end of June.**



## Comments and Information from States

Hermiston, Oregon <sup>1</sup>			Sugar Ends (%)	Eye Depth	Tubers/Plant
1	ATLANTIC	flakey x4, FBE x4, Sticky x3, Dotty x3, db x2	18.8	3.0	7.3
2	SNOWDEN	flakey x4, dotty x3, FBE x4, sticky x4, irregular x4, deep eyes x2	12.5	2.6	10.3
3	AOR12197-4	skinning x4, greening x2, sticky x4, lenticels x2, GC x2, FSE x2, dotty x2, bruised x2	12.5	3.5	9.1
4	CO10073-7W	dotty x4, skinning x2, sticky x4, lenticels x2, neat x2	10.4	3.6	9.1
5	CO10076-4W	sticky x3, lenticels x4, medium x2, SB x3	14.6	3.6	9.7
6	CO11023-2W	FSE x4, sticky x3, dotty x4, skinning x2, FBE x2	15.6	3.1	10.8
7	CO11023-9W	sticky x3, skinning x4, lenticels x4, bruised x2, FBE x2	13.5	3.9	9.7
8	CO11037-5W	skinning x4, sticky x3, lenticels x4, flat x2, nipple x2	11.5	3.8	8.6
9	TX09403-15W	GC x4, dotty x4, FBE x2, sticky x2	13.5	3.4	9.9
Dalhart, Texas				Chip Rating <sup>2</sup>	Chip Color <sup>3</sup>
1	ATLANTIC	buff skin, larger tubers are oval to oblong		3.3	1.0
2	SNOWDEN	deep bud end, high tuber number, internals		3.2	1.7
3	AOR12197-4			3.8	3.0
4	CO10073-7W	very nice, high tuber number, uniform size and shape		1.9	1.3
5	CO10076-4W	internals		3.6	1.3
6	CO11023-2W			4.1	2.3
7	CO11023-9W	mixed yellow and white, IBS, creamy		1.7	1.0
8	CO11037-5W	mixed shapes from round to oblong, not round, not a chipper		3.7	1.3
9	TX09403-15W	large+		2.4	1.0

<sup>1</sup>FBE=folded bud end, GC=growth crack.

<sup>2</sup>Chipping from field 1=excellent, 5=poor

<sup>3</sup>Chipping from field 1=light, 5=dark

**\*Hermiston, Oregon reported Very decent weather during early part of the growing season. Heat stress during tuber maturity.**

**\*\*Dalhart, Texas reported higher than normal precipitation during June and July.**