

2018 WESTERN REGIONAL CHIPPING POTATO TRIAL REPORT

State Agricultural Experiment Stations and the
USDA-ARS

California
Colorado
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Texas



2018 WESTERN REGIONAL CHIPPING POTATO VARIETY TRIAL REPORT

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Compiled by David Holm and Caroline Gray

TABLE 1: 2018 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 (CA)	R. Wilson D. Culp K. Nicholson	Late	Sprink.	205-0-0	10" x 36"	21-May	7-Sep	8-Oct	109	140	Prowl H2O Outlook Matrix SG Reglone and rolling	Admire Pro	Maxim 4FS Quadris Luna Tranquility
San Luis Valley Colorado (CO)	D. Holm C. Gray K. Gaudreau	Late	Pivot	143-35-20-17-1Zn	12" x 34"	10-May	1-Sep	27-Sep	114	140	Eptam Tuscany Dual Magnum Prowl H2O Reglone	Pure Spray Green Cruiser Maxx Vibrance (Thiamethoxam)	Quadris Endura Champ Ion++ Agri Tin Cruiser Maxx Vibrance (Mefenoxam, Fludioxonil, Sedaxane)
Aberdeen Idaho (ID)	J. Stark R. Novy J. Whitworth C. Lowder	Late	Sprink.	205-80-10Zn-5Mn	10.6" x 36"	3-May	30-Aug	20-Sep	119	140	Mechanical TriCor 4F Matrix Eptam 7-E	Admire Pro	
Hermiston Oregon (HRM)	V. Sathuvalli	Early	Pivot	Pre-plant: 50N-120P-225K-69S-15Mg-4Mn-1.5Zn-4B Starter: 50N-90P-0K-30S-2.25 Zn Water run: N as Solution 32: 275 lbs	9.25" x 34"	26-Mar	8-Aug	13-Aug	135	140	Dual Magnum Matrix Outlook Prowl Reglone Cut and Roll	Admire Coragen Agr-Mek Echo	Quadris Ridomil Omega Dithane
Klamath Falls Oregon (KF)	B. Charlton N. Baley	Late	Sprink.	162-0-200-255	9.25" x 36"	15-May	28-Aug	27-Sep	105	135	Mechanical Eptam Prowl	Alias	Vertisan Luna Ridomil Bravo
Dalhart Texas (DTX)	M. Vales J. Koym D. Schuering	Early	Pivot	224-74-282	10.2" x 28"	14-May	29-Aug	10-Sep	107	119	Herbicides Matrix SG Herbicide Echo Zn Chateau Herbicide SW Acumen K-Tone Select Max Reglone Tricor 4F Reglone	Insecticides Movento Fulfill Beleaf 50 SG Revus Top Scala SC Sivanto™ prime Torac	Fungicides Curzate 60DF Aframe Luna Tranquility Penncozeb 75DF

TABLE 2: 2018 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	2	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	3	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	3	ID	99	1.7 Round	1.4 White	3.5 Med-large	2.9 Med Early	2.6

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: 2018 Western Regional Chipping Potato Variety Trial - TOTAL YIELD - YIELD OF U.S. #1'S (CWT/A & %)

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	CA			CO	ID	HRM	KF	DTX			
1 ATLANTIC	438	447	472	747	552	428	514	4	362	395	411	638	340	346	415	3	
									83	89	86	85	62	81	81	1	
2 SNOWDEN		441	454	921	623	576	603	1		361	369	782	398	393	461	1	
									82	81	85	64	68	76	2		
3 AC01144-1W	348	479	531	753	526	471	518	3	180	395	384	556	273	286	346	5	
									52	83	72	74	52	61	65	5	
4 AOR09034-3	460	467	520	923	617	553	590	2	289	377	431	755	364	298	419	2	
									63	81	83	82	59	54	70	4	
5 NDA081453CAB-2C	387	394	450	571	462	500	461	5	300	315	361	419	303	384	347	4	
									78	80	80	73	66	77	76	3	
Location Mean	408	445	485	783	556	506	531		283	369	391	630	336	341	398		

TABLE 4: 2018 Western Regional Chipping Potato Variety Trial - YIELD OF U.S. #1'S >10 OZ. & YIELD <4OZ. (CWT/A & %)

No. Clone	U.S. No. 1's > 10 OZ (CWT/A) / %							Yield < 4 OZ (CWT/A) / %								
	CA	CO	ID	HRM	KF	DTX	Entry Mean	Rank	CA	CO	ID	HRM	KF	DTX	Entry Mean	Rank
1 ATLANTIC	63	156	185	226	79	143	142	1	51	40	34	74	99	63	60	5
	14	35	37	30	14	33	27	1	12	9	8	10	18	15	12	5
2 SNOWDEN		70	82	226	94	45	104	2		60	78	119	115	180	110	3
		16	18	25	15	8	16	3		14	17	13	18	31	19	3
3 AC01144-1W	5	112	44	91	6	22	47	5	161	63	140	167	227	184	157	1
	2	23	8	12	1	5	8	5	46	13	27	22	43	39	32	1
4 AOR09034-3	8	129	122	256	4	12	89	3	148	59	70	99	216	255	141	2
	2	28	23	28	1	2	14	4	32	13	13	11	35	46	25	2
5 NDA081453CAB-2C	30	87	140	78	23	156	86	4	75	61	74	135	121	55	87	4
	8	22	31	14	5	31	18	2	20	16	16	24	26	11	19	4
Location Mean	27	111	115	175	41	76	91		109	57	79	119	155	147	111	

TABLE 5: 2018 Western Regional Chipping Potato Variety Trial - SPECIFIC GRAVITY

No. Clone	Specific Gravity						Entry Mean	Rank
	CA	CO	ID	HRM	KF	DTX		
1 ATLANTIC	1.104	1.100	1.096	1.086	1.089	1.091	1.094	1
2 SNOWDEN		1.089	1.091	1.084	1.088	1.075	1.085	4
3 AC01144-1W	1.083	1.078	1.081	1.070	1.072	1.066	1.075	5
4 AOR09034-3	1.097	1.091	1.090	1.086	1.090	1.077	1.089	2
5 NDA081453CAB-2C	1.099	1.090	1.090	1.084	1.083	1.077	1.087	3
Location Mean	1.096	1.090	1.089	1.082	1.084	1.077	1.086	

TABLE 6: 2018 Western Regional Chipping Potato Variety Trial - AVERAGE TUBER SIZE, AND TUBER SHAPE

No. Clone	Average Tuber Size (oz)						Tuber Shape ¹																			
	CA	ID	HRM	KF	DTX	Entry Mean	Length/ Width	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	KF	DTX		CO	ID	HRM	KF	DTX		CA	CO	ID	HRM	KF	DTX	
1 ATLANTIC	5.9	7.5	6.0	5.1	6.4	6.2	1.01	1.07	1.02	1.01	1.06	1.10	1.04	1.21	1.29	1.30	1.21	1.19	1.24	1.3	1.0	2.0	2.0	2.5	2.3	1.8
2 SNOWDEN		5.7	5.4	5.1	4.8	5.2		0.97	1.03	0.91	1.00	1.03	0.99	1.24	1.35	1.44	1.36	1.21	1.32		1.0	1.5	1.5	2.5	2.0	1.7
3 AC01144-1W	3.7	4.6	4.2	3.5	4.2	4.0	1.01	0.89	0.94	0.92	0.99	1.13	0.98	1.24	1.19	1.28	1.20	1.12	1.21	1.5	1.0	1.5	1.0	2.0	1.5	1.4
4 AOR09034-3	4.2	6.1	5.9	3.5	3.6	4.6	0.96	0.96	0.94	0.92	1.01	1.04	0.97	1.15	1.13	1.34	1.17	1.09	1.17	1.0	1.0	1.5	1.1	2.5	1.0	1.4
5 NDA081453CAB-2C	5.1	6.0	4.4	5.9	6.7	5.6	0.98	0.97	0.97	0.96	1.03	1.01	0.99	1.30	1.27	1.31	1.21	1.28	1.28	1.4	1.0	1.8	1.4	2.5	2.9	1.8
Location Mean	4.7	6.0	5.2	4.6	5.1	5.2	0.99	0.97	0.98	0.94	1.02	1.06	0.99	1.23	1.25	1.33	1.23	1.18	1.24	1.3	1.0	1.7	1.4	2.4	1.9	1.6

TABLE 7: 2018 Western Regional Chipping Potato Variety Trial - EXTERNAL DEFECTS - GROWTH CRACKS, SECOND GROWTH, SHATTER BRUISE, SCAB - MEANS OF LOCATIONS

No. Clone	Growth Cracks ¹							Second Growth ¹							Greening ¹					Shatter Bruise					Scab ¹			
	CA ²	CO	ID	HRM	KF	DTX	Entry Mean	CA ²	CO	ID	HRM	KF	DTX	Entry Mean	CA ²	CO	HRM	KF	Entry Mean	ID ³	HRM	KF	DTX	Entry Mean	ID	HRM	DTX	Entry Mean
1 ATLANTIC	0.3	4.0	4.9	4.9	4.8	5.0	4.7	0.6	5.0	5.0	4.9	4.8	4.8	4.9	4.9	4.0	4.0	3.0	3.7	2.1	4.1	3.8	5.0	4.3	4.5	4.8	5.0	4.8
2 SNOWDEN		4.0	5.0	4.6	4.9	5.0	4.7		5.0	5.0	5.0	4.8	5.0	5.0		3.0	4.5	4.0	3.8	2.3	4.8	4.4	5.0	4.7	4.4	5.0	5.0	4.8
3 AC01144-1W	0.3	5.0	5.0	4.9	5.0	5.0	5.0	0.4	5.0	5.0	4.4	5.0	5.0	4.9	1.8	3.0	4.4	4.6	4.0	2.5	4.1	4.1	5.0	4.4	4.3	4.5	5.0	4.6
4 AOR09034-3	1.2	4.0	4.8	4.3	4.3	5.0	4.5	1.0	5.0	5.0	5.0	4.4	5.0	4.9	3.9	3.0	4.4	3.8	3.7	1.6	2.1	1.9	5.0	3.0	4.3	4.4	5.0	4.5
5 NDA081453CAB-2C	0.7	4.0	4.8	4.6	4.5	5.0	4.6	0.4	5.0	5.0	4.9	4.8	4.0	4.7	1.3	4.0	4.6	4.3	4.3	1.9	3.6	3.3	5.0	4.0	4.6	4.8	5.0	4.8
Location Mean	0.6	4.2	4.9	4.7	4.7	5.0	4.7	5.0	5.0	4.8	4.7	4.8	4.9	3.0	3.4	4.4	3.9	3.9	2.1	3.8	3.5	5.0	4.1	4.4	4.7	5.0	4.7	

¹ Score 1-5, with 1=severe, 5=none.

²Tulelake, CA percent of total

TABLE 8: 2018 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 ¹			
		CA ²	CO	ID	HRM	KF	DTX	Entry Mean	HRM	KF	DTX	Entry Mean	CA	HRM	KF	DTX	Entry Mean	CA ²	CO	ID ³	HRM
1	ATLANTIC	0	2	8	15	3	15	8	18	0	48	22	5	0	0	0	0	0.0	3.2	3.4	3.0
2	SNOWDEN		0	5	5	3	13	5	8	0	3	3		5	0	23	9		2.8	2.6	3.5
3	AC01144-1W	0	0	3	0	0	0	1	8	0	0	3	23	3	0	18	7	3.0	3.7	3.7	4.0
4	AOR09034-3	0	0	3	3	0	0	1	63	0	0	21	18	0	0	8	3	0.0	3.3	3.4	3.3
5	NDA081453CAB-2C	0	0	0	0	3	3	1	30	0	60	30	8	0	0	3	1	0.0	4.3	3.2	4.0
Location Mean		0	1	4	5	2	6	3	25	0	22	16	14	2	0	10	4	0.8	3.4	3.3	3.6

¹ Score 1-5, with 1=severe, 5=none.

²Tulelake, CA percent of 10

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

TABLE 9: 2018 Western Regional Chipping Potato Variety Trial - CHIP COLOR

No. Clone	DTX ¹		HRM ¹		CO ¹				ID ¹			50 ² Mean
	Chip 42		Chip 40	Chip 50	Chip 40		Chip 50		Chip 40		Chip 50	
	a	Recon ^b	a	c	a	Recon ^b	c	Recon ^d	a	Recon ^b	c	
1 ATLANTIC	2.9	1.5	4.5	2.3	4.5	3.5	3.0	3.5	4.3	3.9	3.2	3.1
2 SNOWDEN	1.9	1.4	3.9	1.4	4.5	1.5	1.5	1.5	4.6	3.1	3.1	2.3
3 AC01144-1W	1.3	1.3	3.1	1.4	4.0	3.0	2.5	2.0	3.2	3.1	3.0	2.8
4 AOR09034-3	2.3	1.0	4.0	1.6	4.5	3.5	3.0	3.0	3.9	4.7	2.8	2.9
5 NDA081453CAB-2C	1.9	1.6	4.1	1.8	4.5	3.5	2.5	2.5	3.8	3.6	3.2	2.8
Location Means	2.1	1.4	3.9	1.7	4.4	3.0	2.5	2.5	4.0	3.7	3.1	2.8

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

^a Stored 6 weeks at 42F (TX);6 weeks at 38F (HRM); 6 weeks (CO) and 5 weeks (ID).

^b Stored 6 weeks (TX) at 42F plus 2 weeks at 65F; stored 6 weeks (CO) at 40F plus 3 weeks at 60F; stored 5 weeks (ID) at 40F plus 3 weeks at 60F.

^c Stored 8 weeks at 47F (HRM); stored 6 weeks (CO) and 5 weeks (ID) at 50F.

^d Stored 6 weeks (CO) at 50F plus 3 weeks at 60F.

² Mean for HRM, CO, and ID

Table 10. 2018 Aberdeen Regional Chip Trial - SOLIDS, DEXTROSE, SUCROSE, PROTEIN, VITAMIN C, AND GLYCOALKALOIDS - ABERDEEN, IDAHO

No.	Clone	Solids	Sugars		Protein (%DWB)	Vitamin C (mg/100g FWB)	Glycoalkaloids ³ (mg/100gFWB)
		Oven Dry (%)	Dextrose ¹ (%FWB)	Sucrose ² (%FWB)			
1	ATLANTIC	23.9	0.014	0.165	6.24	29.9	4.5
2	SNOWDEN	22.2	0.018	0.143	6.16	30.0	4.7
3	AC01144-1W	20.0	0.010	0.125	6.29	25.8	2.3
4	AOR09034-3	22.1	0.017	0.126	6.70	29.7	5.9
5	NDA081453CAB-2C	21.9	0.009	0.202	7.84	28.9	5.2
Means		22.0	0.0	0.2	6.6	28.9	4.5

FWB = fresh weight basis DWB = dry weight basis

¹Desirable levels of Dextrose are $\leq 0.05\%$

²Sucrose levels of $\leq 0.15\%$ are excellent, 0.16-2.0% are good, and $\geq 2.1\%$ are fair to poor

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

TABLE 11: 2018 Western Regional Chipping Potato Variety Trial - DISEASE EVALUATIONS, METRIBUZIN REACTION

No. Clone	Vert. Wilt/Early Dying		Vert. Wilt/Early Dying		Early Blight		Common Scab		Rhizoc. KLAM ³	Corky Ringspot		Pecto- bacterium Soft Rot ²	Root Knot		Metri- Reaction ⁵
	AB ¹		HRM		AB ¹		AB ¹			PROS ⁴			Nematode ⁴		
	(0-9)	AUDPC	(0-9)	AUDPC	Foliar		% Serious			% Serious			HERM		
				(0-9)*	AUDPC	Incidence	Defect	(1-5=none) ³	Incidence (%)	Defects	(0-5)	Avg #/tuber	reaction	AB	
1 ATLANTIC	6.3	376	7.7	1600	3.3	51	68.5	51.6	4.1	10.8	6.9	4.5	33.3	S	MS
2 SNOWDEN	7.0	483	6.7	959	2.3	24	20.3	16.3	3.3	18.5	11.8	3.3	51.1	S	MR
3 AC01144-1W	5.7	262	7.7	1526	5.7	185	85.6	59.7	4.5	0.0	0.0	4.9	49.0	S	MR
4 AOR09034-3	3.3	51	5.7	763	3.7	52	58.1	38.0	2.0	13.3	5.0	4.1	39.8	S	MR
5 NDA081453CAB-2C	6.0	324	7.7	1613	3.7	75	42.8	13.5	4.6	34.4	23.0	5.0	60.7	S	MR
MEANS	5.7	299	7.1	1292	3.7	77.4	55.1	35.8	3.7	15.4	9.4	4.4	46.8		
LSD @ .05	1.5				1.4		18.0	31.0				1.5			

¹ 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.

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

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

⁴ Root knot nematode reactions at Hermiston, OR. Readings based on a tuber peel and visual count of nematodes

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

TABLE 12: 2018 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	3.4	4.0	1.5	2.4	3.6	3.0	2.0	3.7	2.5	3.0	2.8
2	SNOWDEN		3.0	2.0	2.1	4.0	2.8	5.0	3.5	2.5	3.5	3.6
3	AC01144-1W	4.0	5.0	2.0	3.9	4.0	3.8	4.0	3.3	3.5	3.0	3.5
4	AOR09034-3	3.3	5.0	1.5	2.8	4.3	3.4	2.0	4.0	2.5	3.0	2.9
5	NDA081453CAB-2C	3.6	1.0	2.0	2.8	3.5	2.6	3.0	3.7	3.0	2.8	3.1
Location Mean		3.6	3.6	1.8	2.8	3.9	3.1	3.2	3.6	2.8	3.1	3.2

TABLE 13: 2018 Western Regional Chipping Potato Variety Trial - SUMMARY

No.	Clone	Year in Trial	Total Yield ¹ Rank	US#1's Yield ¹ %	Tuber Size (oz)	Specific Gravity	Chip Color ²	Process Merit Score
1	ATLANTIC	CK	514 4	415 81	6.2	1.094	3.1	2.8
2	SNOWDEN	CK	603 1	461 76	5.2	1.085	2.3	3.6
3	AC01144-1W	3	518 3	346 65	4.0	1.075	2.8	3.5
4	AOR09034-3	1	590 2	419 70	4.6	1.089	2.9	2.9
5	NDA081453CAB-2C	1	461 5	347 76	5.6	1.087	2.8	3.1

¹(CWT/A)

²Mean for CO, HRM and ID stored at 50°F

TABLE 14: 2018 Western Regional Chipping Potato Variety Trial - 3 Year Summary of Graduating Entries

Clone	2016					2017					2018				
	Total Yield ¹ Rank	US#1's Yield ¹ %	Specific Gravity	Chip Color ²	Merit Score	Total Yield ¹ Rank	US#1's Yield ¹ %	Specific Gravity	Chip Color ²	Merit Score	Total Yield ¹ Rank	US#1's Yield ¹ %	Specific Gravity	Chip Color ²	Merit Score
ATLANTIC	466 4	369 75	1.093	3.0	2.5	448 2	308 69	1.089	3.4	2.5	514 4	415 81	1.094	3.1	2.8
SNOWDEN	444 8	328 70	1.086	3.0	3.0	402 6	279 69	1.084	2.5	2.8	603 1	461 76	1.085	2.3	3.6
AOR09034-3	457 6	327 65	1.087	2.4	3.0	482 1	321 63	1.085	2.4	3.2	518 3	346 65	1.075	2.8	3.5
NDA081453CAB-2C	385 12	321 81	1.069	2.6	3.5	400 7	285 70	1.085	2.4	2.2	590 2	419 70	1.089	2.9	2.9
Trial Mean	454	344 72	1.087	2.7	3.0	427	288 66	1.084	2.7	2.7	531	398 74	1.086	2.8	3.2

3 Year Average (2016-2018)

Clone	Total Yield ¹	US#1's Yield ¹ %	Specific Gravity	Chip Color ²	Merit Score	Noted Weaknesses	Noted Strengths
SNOWDEN	483	356	1.085	2.6	3.1		
AOR09034-3	486	331	1.082	2.5	3.2	Some SB (2/3), High % IBS (1/3)	High total yield (2/3), High % US#1s (1/3), High fresh merit score (2/3)
NDA081453CAB-2C	420	342	1.081	2.7	2.9	Low total yield (2/3), Low % US#1s (1/3), High % IBS (2/3), Low process merit score (1/3)	High protein (3/3)
Mean ³	471	343	1.086	2.7	3.0		

¹(CWT/A)²Mean for CO and ID stored at 50°F³Mean includes all trial entries 2016-2018

Hermiston, Oregon ¹			Sugar Ends (%)	Eye Depth	Skin Set (1-9)	Shape Uniform	Growth Habit
1	ATLANTIC	Rot x3, Compressed, FBE x 4, Sticky x 2, Flakey skin	70.8	3.3	7.5	3.5	1.6
2	SNOWDEN	Sticky x 4, FBE x 4, Compressed x 2, deep eyes x 2, flat x1, mix x1	76.7	2.9	7.0	3.4	1.8
3	AC01144-1W	Skinning x 4, knobs x 1, cracked skin x2, short x2, rot x1, scab x1	58.9	3.9	6.0	3.6	1.0
4	AOR09034-3	rot x 2, SB x 4, compressed x 2, GC x 1, sticky x2, nice x 1	53.3	3.8	7.0	3.3	1.1
5	NDA081453CAB-2C	Sticky x 3, chain x 1, short x 2, lenticels x 1, SB x 3	60.6	4.0	7.4	3.5	1.9
Tulelake, California				Vert Wilt Rating	Tubers/Plant	AUDPC ²	
1	ATLANTIC			7.8	7.4	860.5	
2	SNOWDEN						
3	AC01144-1W	Pink discoloration on skin		8.0	8.8	1398.1	
4	AOR09034-3	Pink discoloration on skin, susceptible to shatter bruise		7.0	10.6	691.1	
5	NDA081453CAB-2C	Pink discoloration on skin, susceptible to shatter bruise		7.8	7.2	1031.0	
Aberdeen, Idaho Comments ³				Metribuzin	Early Blight	Vert Wilt	
1	ATLANTIC	Shatter, flat (3); blocky, not uniform, deep ends big (2)	16.7	MS	4.6	3.6	
2	SNOWDEN	Deep eyes (4); some shatter/bumps, few ats (3);	8.3	MR	4.6	4.4	
3	AC01144-1W	Uniform, slight shatter (4); slight brow, few ats (2)	6.5	MR	4.1	4.9	
4	AOR09034-3	Some shatter (3); somewhat flat, deep ends (2);	16.7	MR	3.4	5.0	
5	NDA081453CAB-2C	Flat, shatter (4)	2.8	MR	4.1	5.0	

¹FBE=folded bud end, SB=shatter bruise, GC=growth crack.

²Area Under Disease Progress Curve based on foliar early-dying rating taken 77, 83, 89, 96, 104 and 110 days after planting

³ATS=attached stolons

***Hermiston, Oregon reported good yields and gravities for this season though we had very hot summer**

Comments and Information from States

Klamath Falls, Oregon Comments ¹					Rhizoc 1-5(none)
1	ATLANTIC	Erratic size x 2, uniform shape, nice skin appearance, some shatter bruise and impact bruise			4.13
2	SNOWDEN	Deep eyes x 2 , TNC, erratic size x2, Folded bud ends			3.25
3	AC01144-1W	Small, nice skin, uniform x3, TNC, sticky stolon			4.50
4	AOR09034-3	Rhizoc, shatter bruise x3, chicken tracks, lenticel scaring			2.00
5	NDA081453CAB-2C	Shatter x2, impact bruise, TNC, uniform shape			4.63
Dalhart, Texas Comments					
			Chip Rating ²	Chip Color ³	Chip Notes ⁴
1	ATLANTIC	Very large+, Not uniform size and shape, ugly, rough,	2.5	1.3	1 HH
2	SNOWDEN	Nice, buff skin+, russet skin, medium-large tubers+, some attached stolons+, rough looks, high yield	1.6	1.3	
3	AC01144-1W	Most tubers are small and medium, some large tubers+, Buff skin+, attached stolons+, very light skin, smooth	1.6	1.0	
4	AOR09034-3	Smaller, Medium size, Shoulders, Smooth skin, some attached stolon, nice, snap+, very uniform size and shape+, high tuber number	2.0	1.3	2 IBD
5	NDA081453CAB-2C	smooth skin, shiny, not uniform shape, Few tubers, Too large, VERY large++, ugly	2.5	1.6	2 IBS, 1 Mech, 1 SE

¹TNC=thumb nail cracks.

²Chipping from field 1=poor, 6=excellent

³Chipping from field 1=light, 3+=very dark

⁴HH=hollow heart, IBS=internal brown spot, mech=mechanical damage, SE=sugar ends

***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, 22.97" of irrigation and 12" of rain.**