

2019 WESTERN REGIONAL CHIPPING POTATO TRIAL REPORT

State Agricultural Experiment Stations and the
USDA-ARS

California
Colorado
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Texas



2019 WESTERN REGIONAL CHIPPING POTATO VARIETY TRIAL REPORT

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Compiled by David Holm, Caroline Gray and Katie Gaudreau

TABLE 1: 2019 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.	210-0-150	10" x 36"	17-May	10-Sep	27-Sep	116	133	Prowl H20 Eptam 7E Matrix SG Reglone and rolling	Admire Pro	Quadris
San Luis Valley Colorado (CO)	D. Holm C. Gray K. Gaudreau	Late	Pivot	118-62-120-85	12" x 34"	15-May	3-Sep	26-Sep	111	134	Tuscany Prowl H20 Dual Magnum Reglone	Platinum 75SG Movento HL Pure Spray Green	ChampION++ Quadris Top Luna Tranquility Agri Tin
Aberdeen Idaho (ID)	J. Stark R. Novy J. Whitworth C. Lowder	Late	Sprink.	205-80-10Zn-5Mn	10.6" x 36"	1-May	5-Sep	25-Sep	127	147	TriCor 4F Matrix Eptam 7-E Mechanical	Admire Pro	
Hermiston Oregon (HRM)	V. Sathuvalli M. Aguilar	Early	Pivot	152-170-200-83-4Zn-10Mg	9.25" x 34"	27-Mar	1-Aug	16-Aug	127	142	Dual Magnum Matrix Prowl Reglone Cut and Roll	Admire Coragen Asana XL	Quadris Ridomil Omega Dithane Bravo Echo
Klamath Falls Oregon (KF)	B. Charlton N. Baley	Late	Sprink.	146-0-182-233	9.25" x 36"	20-May	3-Sep	26-Sep	106	129	Matrix Prowl Outlook Reglone	Alias	Vertisan
Dalhart Texas (DTX)	I. Vales J. Koym D. Scheuring		Pivot	119-122-258	10.2" x 28"	13-May	29-Aug	9-Sep	108	119	Matrix SG Herbicide Reglone Tricor 4F Reglone	Movento Fulfill Beleaf 50 SG Transform WG Reaper ClearForm Sivanto™ prime	Echo Zn Revus Top Luna Tranquility Penncozeb 75DF Scala SC

TABLE 2: 2019 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						Tuber Shape						Tuber Skin						Vine Size						Vine Maturity						Stems/Plant							
						CA	CO	DTX	ID	KF	HRM	Mean	CA	CO	DTX	ID	KF	HRM	Mean	Shape	CA	DTX	ID	KF	HRM	Mean	Skin	CO	DTX	ID	HRM	Mean	Size	CO	DTX	ID	HRM	Mean	Maturity	CO	ID	Mean	
1	ATLANTIC	Wauseon x B5141-6	Red-purple	Check	Ck	OR	95	99	100	99	95	100	98	2.4	1.0	1.6	2.0	2.8	1.3	1.8	Round	3.1	3.0	2.1	2.6	3.1	2.8	Buff	2.8	4.1	2.0	4.8	3.4	Med-large	2.8	4.3	2.5	3.0	3.1	Medium	2.8	1.8	2.3
2	SNOWDEN	Lenape x Wischip	White	Check	Ck	OR	94	99	100	100	97	100	98	1.5	1.0	1.3	1.4	2.5	1.5	1.5	Round	2.9	2.8	2.6	3.1	3.0	2.9	Buff	3.5	4.0	2.3	4.8	3.6	Med-large	2.8	4.7	2.8	4.0	3.5	Med-Late	2.9	3.7	3.3
3	CO10073-7W	Winterset x CO02024-9W	White	CO	1	CO	95	92	93	99	82	80	90	1.9	1.0	1.1	1.1	2.1	1.6	1.5	Round	2.3	1.4	1.8	1.8	1.9	1.8	White	3.0	3.8	1.5	3.8	3.0	Medium	3.0	3.6	3.5	3.0	3.3	Medium	4.1	3.2	3.6
4	CO10076-4W	CO03243-3W x CO02024-9W	White	CO	1	CO	94	93	94	96	95	80	92	1.5	1.0	1.0	1.4	2.1	1.1	1.4	Round	2.9	1.0	1.9	1.9	1.8	1.9	White	3.0	3.6	2.0	2.4	2.8	Medium	3.0	4.9	3.1	3.0	3.5	Med-Late	3.3	2.9	3.1

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: 2019 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	522	299	349	745	522	532	495	2	456	258	307	671	288	323	384	1	
									87	86	88	90	55	61	78	1	
2 SNOWDEN	484	282	298	852	610	454	497	1	362	225	190	764	395	199	356	2	
									75	80	64	90	65	44	70	2	
3 CO10073-7W	431	247	301	624	411	457	412	4	261	126	193	415	255	103	226	4	
									61	51	64	67	62	23	55	4	
4 CO10076-4W	468	267	384	597	534	491	457	3	321	179	278	417	308	141	274	3	
									69	67	72	70	58	29	61	3	
Location Mean	476	274	333	705	519	484	465		350	197	242	567	311	192	310		
									73	71	72	79	60	39	66		

TABLE 4: 2019 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	120	49	146	246	134	31	121	1	55	39	29	60	89	200	79	4
	23	16	42	33	26	6	24	1	11	13	8	8	17	38	16	4
2 SNOWDEN	42	14	17	207	66	13	60	2	115	55	102	67	138	250	121	3
	9	5	6	24	11	3	10	2	24	19	34	8	23	55	27	3
3 CO10073-7W	19	0	17	54	23	3	19	4	145	119	105	199	108	351	171	1
	4	0	6	9	6	1	4	4	34	48	35	32	26	77	42	1
4 CO10076-4W	28	2	27	15	74	0	25	3	134	85	92	159	109	346	154	2
	6	1	7	3	14	0	5	3	29	32	24	27	20	70	34	2
Location Mean	52	16	52	131	74	12	56		112	75	82	121	111	287	131	
	11	6	15	17	14	3	11		24	28	25	19	22	60	30	

TABLE 5: 2019 Western Regional Chipping Potato Variety Trial - SPECIFIC GRAVITY

No. Clone	Specific Gravity						Entry Mean	Rank
	CA	CO	ID	HRM	KF	DTX		
1 ATLANTIC	1.100	1.095	1.095	1.086	1.091	1.067	1.089	1
2 SNOWDEN	1.100	1.097	1.092	1.083	1.084	1.066	1.087	2
3 CO10073-7W	1.090	1.086	1.088	1.075	1.081	1.067	1.081	3
4 CO10076-4W	1.088	1.084	1.082	1.074	1.071	1.068	1.078	4
Location Mean	1.094	1.091	1.089	1.079	1.082	1.067	1.084	

TABLE 6: 2019 Western Regional Chipping Potato Variety Trial - AVERAGE TUBER SIZE, AND TUBER SHAPE

No. Clone	Average Tuber Size (oz)						Tuber Shape ¹													Entry Mean								
	CA	ID	HRM	KF	DTX	Entry Mean	Length/	Length/	Length/	Length/	Length/	Length/	Entry Mean	Width/	Width/	Width/	Width/	Width/	Width/		Entry Mean	(1-5, 1 = round, 5 = long)						Entry Mean
							Width	Width	Width	Width	Width	Width		CA	CO	ID	HRM	KF	DTX			CA	CO	ID	HRM	KF	DTX	
1 ATLANTIC	6.4	7.3	6.5	7.2	4.3	6.3	1.12	0.99	1.05	0.94	1.10	1.05	1.04	1.36	1.23	1.22	1.21	1.20	1.19	1.21	2.4	1.0	2.0	1.3	2.8	1.6	1.8	
2 SNOWDEN	4.7	4.2	6.4	7.0	3.3	5.1	1.02	0.90	1.03	0.91	0.99	1.08	0.99	1.30	1.33	1.26	1.38	1.27	1.24	1.30	1.5	1.0	1.4	1.5	2.5	1.3	1.5	
3 CO10073-7W	4.1	4.1	3.9	5.5	2.7	4.1	1.11	1.02	1.10	0.97	1.08	1.07	1.06	1.39	1.22	1.26	1.31	1.26	1.18	1.25	1.9	1.0	1.1	1.6	2.1	1.1	1.5	
4 CO10076-4W	4.4	4.7	4.1	5.5	2.4	4.2	0.97	0.98	1.00	0.93	1.00	1.06	0.99	1.22	1.22	1.27	1.20	1.28	1.17	1.23	1.5	1.0	1.4	1.1	2.1	1.0	1.4	
Location Mean	4.9	5.1	5.3	6.3	3.2	4.9	1.06	0.97	1.04	0.94	1.04	1.06	1.02	1.32	1.25	1.25	1.27	1.25	1.19	1.24	1.8	1.0	1.5	1.4	2.4	1.3	1.5	

TABLE 7: 2019 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	CA	HRM	KF	DTX	Entry Mean	ID	HRM	DTX	Entry Mean
1 ATLANTIC	0.0	4.0	5.0	4.9	5.0	5.0	4.8	0.5	5.0	5.0	4.6	5.0	4.5	4.8	1.9	5.0	4.3	3.4	4.2	2.5	3.3	4.0	3.9	5.0	4.3	4.4	5.0	5.0	4.8
2 SNOWDEN	0.1	5.0	5.0	5.0	4.9	4.3	4.8	0.2	2.0	5.0	4.5	5.0	5.0	4.3	1.6	4.0	4.3	3.5	3.9	2.3	3.8	4.5	4.3	5.0	4.6	5.0	5.0	5.0	5.0
3 CO10073-7W	1.9	4.0	4.9	4.8	3.6	5.0	4.5	0.3	5.0	4.9	4.6	4.3	5.0	4.8	4.3	2.0	4.4	2.9	3.1	3.6	3.8	4.5	3.9	5.0	4.5	4.3	5.0	5.0	4.8
4 CO10076-4W	0.5	5.0	5.0	5.0	4.6	5.0	4.9	0.8	5.0	5.0	4.4	5.0	4.4	4.8	1.7	5.0	4.6	4.9	4.8	2.3	3.0	3.4	3.3	5.0	3.9	4.4	5.0	5.0	4.8
Location Mean	0.6	4.5	5.0	4.9	4.5	4.8	4.7	0.4	4.3	5.0	4.5	4.8	4.7	4.7	2.4	4.0	4.4	3.7	4.0	2.7	3.4	4.1	3.8	5.0	4.3	4.5	5.0	5.0	4.8

¹ Score 1-5, with 1=severe, 5=none.

²Tulelake, CA percent of total

TABLE 8: 2019 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	CO	ID	HRM	KF	DTX	Entry Mean	HRM	KF	DTX	Entry Mean	CA	HRM	KF	DTX	Entry Mean	CA ²	CO	ID ³	HRM	DTX
1	ATLANTIC	0	1	35	13	0	3	8	10	0	53	21	5	0	0	5	2	0.0	3.9	3.9	2.8	0.0
2	SNOWDEN	0	0	3	5	3	3	2	5	0	3	3	23	3	0	13	5	0.0	3.6	3.3	3.9	5.0
3	CO10073-7W	8	0	0	8	0	0	3	8	0	3	3	13	0	0	0	0	0.0	5.0	3.9	4.1	0.0
4	CO10076-4W	0	0	0	0	0	0	0	3	0	10	4	10	0	0	0	0	0.0	3.3	3.8	3.5	0.0
Location Mean		2	0	9	6	1	1	3	6	0	17	8	13	1	0	4	2	0.0	3.9	3.7	3.6	1.3

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: 2019 Western Regional Chipping Potato Variety Trial - CHIP COLOR

No. Clone	DTX ¹		HRM ¹		Chip 50		CO ¹		Chip 50		ID ¹		50 ² Mean	
	Chip 42		Chip 40		c	Chip 40		Chip 50		Chip 40		c		
	a	Recon ^b	a	Recon ^b		a	Recon ^b	c	Recon ^d	a	Recon ^b			
1 ATLANTIC	2.5	1.5	1.6	2.4	1.6	1.4	4.0	4.0	1.5	3.5	6.0	4.7	1.9	1.7
2 SNOWDEN	1.8	1.0	1.4	2.3	1.4	1.3	4.5	2.0	1.5	2.0	5.8	3.3	2.3	1.9
3 CO10073-7W	1.0	1.1	1.5	2.4	1.5	1.5	3.5	3.5	2.0	2.5	4.8	3.8	2.2	2.1
4 CO10076-4W	1.5	1.0	1.4	2.1	1.4	1.3	3.5	3.5	2.0	1.0	4.8	3.5	2.2	2.1
Location Means	1.7	1.2	1.5	2.3	1.5	1.3	3.9	3.3	1.8	2.3	5.3	3.8	2.1	1.9

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); 7 weeks at 40F (CO) and 10 weeks (ID).

^b Stored 6 weeks (TX) at 42F plus 4 weeks at 47F; stored 7 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 7 weeks (CO) and 5 weeks (ID) at 50F.

^d Stored 7 weeks (CO) at 50F plus 3 weeks at 60F; stored 8 weeks (HRM) at 47F.

² Mean for HRM, CO, and ID.

Table 10. 2019 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 ³ (mg/100gFWB)	Texas ⁴ mg Trolox equivalents/gfw ⁵
			Dextrose ¹ (%FWB)	Sucrose ² (%FWB)				
1	Atlantic	24.7	0.116	0.433	7.54	28.2	5.2	
2	Snowden	23.9	0.118	0.247	7.61	24.0	14.5	
3	CO10073-7W	23.1	0.015	0.279	7.96	22.4	2.3	
4	CO10076-4W	22.4	0.048	0.345	7.09	20.4	4.3	
Means		23.5	0.1	0.3	7.6	23.7	6.6	162.0

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

⁴ 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. 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.

⁵ μg 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: 2019 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	Metr. Reaction ⁵
	AB ¹		HRM		AB ¹		AB ¹			PROS ⁴				
	(0-9)	AUDPC	(0-9)	AUDPC	(0-9)*	AUDPC	Foliar	% Serious	(1-5=none) ³	Incidence (%)	Defects	reaction	AB ²	AB
1 ATLANTIC	5.7	243	9.0	1770	3.0	46	6.0	4.0	4.1	22.5	12.2	S	1.3	S
2 SNOWDEN	7.3	543	8.3	1564	2.7	37	7.0	3.0	3.1	22.5	13.5	S	2.2	VR
3 CO10073-7W	5.3	185	8.7	1728	5.3	228	6.0	5.0	4.1	2.5	0.7	R	1.9	VR
4 CO10076-4W	5.0	145	8.0	1428	4.0	110	42.0	19.0	3.8	0.8	0.1	R	1.8	VR
MEANS	5.8	279	8.5	1623	3.8	105.3	15.3	7.8	3.8	12.1	6.6		1.8	
LSD @ .05	1.2				1.3		22.0	9.0					1.3	

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

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: 2019 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	2.0	2.4	3.5	3.1	2.0	3.5	2.0	3.0	2.6
2	SNOWDEN	3.6	2.0	2.0	2.8	3.5	2.8	3.0	3.6	2.5	3.0	3.0
3	CO10073-7W	3.1	1.0	2.5	3.5	3.7	2.8	2.0	3.9	2.5	2.0	2.6
4	CO10076-4W	3.0	2.0	2.5	3.3	3.8	2.9	4.0	4.0	2.5	2.0	3.1
Location Mean		3.3	2.3	2.3	3.0	3.6	2.9	2.8	3.7	2.4	2.5	2.8

TABLE 13: 2019 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	495 2	384 78	6.3	1.089	1.7	2.6
2	SNOWDEN	CK	497 1	356 70	5.1	1.087	1.9	3.0
3	CO10073-7W	1	412 4	226 55	4.1	1.081	2.1	2.6
4	CO10076-4W	1	457 3	274 61	4.2	1.078	2.1	3.1

¹(CWT/A)

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

Hermiston, Oregon ¹			Sugar Ends (%)	Eye Depth	Skin Set (1-9)	Shape Uniform	Skin Color
1	ATLANTIC	Flakey x4, rot x 4, SB x1, FBE x 4, Sticky x 4	36.1	3.0	7.6	3.5	3.5
2	SNOWDEN	Flakey x3, irregular, deep eyes x 3, flat, rot	37.5	2.5	7.4	3.0	3.4
3	CO10073-7W	skinning, rhizoc, small, FBE, compressed	44.4	3.5	7.1	3.4	2.6
4	CO10076-4W	Ugly, dumbel, lenticels, Skinning, sticky, squishy x 3, FBE	31.9	3.4	6.0	3.3	2.9
Tulelake, California					Vert Wilt Rating	Tubers/Plant	AUDPC ²
1	ATLANTIC				6.3	7.8	462.0
2	SNOWDEN				6.5	10.1	597.0
3	CO10073-7W	small average tuber size			5.0	10.1	222.4
4	CO10076-4W				4.5	10.3	139.6
Aberdeen, Idaho Comments ³					Metribuzin	Early Blight	Vert Wilt
1	ATLANTIC	Bumps (4); deep ends, big, vascular at recon (3); not uniform (2)			S	4.5	4.0
2	SNOWDEN	Deep eyes/ends, vascular at recon (3); not real uniform, bumps (2)			VR	4.8	4.1
3	CO10073-7W	Vascular at recon (4); round, (3); flat, uniform (2)			VR	4.0	4.9
4	CO10076-4W	Shatter, few ats (4); vascular at 40 (3); round, few bumps, uniform (2)			VR	5.0	5.0

¹FBE=folded bud end, SB=shatter bruise.

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 growing conditions, very mild weather that resulted in increased yields**

****Aberdeen, Idaho reported two frost damage days in spring**

Comments and Information from States

Klamath Falls, Oregon Comments ¹					Rhizoc 1-5(none)	
1	ATLANTIC	rot, russeting, uniform shape			4.13	
2	SNOWDEN	Rhizoc, flat x 2, deep eyes FBE			3.13	
3	CO10073-7W	green x 2, growth cracks			4.13	
4	CO10076-4W	impact bruise x 3, misshapes, shatter bruise			3.75	
Dalhart, Texas Comments				Chip Rating ²	Chip Color ³	Chip Notes
1	ATLANTIC	attached stolons, buff skin, uniform, large tubers+	1.6	1.0		
2	SNOWDEN	attached stolons, angular tubers	1.4	1.0	nice	
3	CO10073-7W	uniform, nice shape, nice size, nice skin	1.2	1.0		
4	CO10076-4W	attached stolons, small	1.6	1.1		

¹FBE=folded bud end.

²Chipping from field 1=poor, 6=excellent

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

****Dalhart, Texas reported higher than normal precipitation during the growing season, 22.97" of irrigation and 12" of rain.**