

2004
WESTERN REGIONAL CHIPPING
POTATO VARIETY TRIAL REPORT

State Experiment Stations and
USDA-ARS

California
Colorado
Idaho

Oregon
Texas
Washington

2004 WESTERN REGIONAL CHIPPING POTATO VARIETY TRIAL REPORT

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Compiled by Peggy Bain

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TABLE 1: 2004 Western Regional Chipping Potato Variety Trial - LOCATIONS, COOPERATORS, AND CULTURAL INFORMATION

Locations	Cooperators	Trial	Irrigation	Fertilizer N-P-K-S(lb/A)	Planting Date	Vine Kill Date	Harvest Date	Days to Vine Kill	Days to Harvest	Herbicides	Insecticides	Fungicides
Tulelake California (CA)	H. Carlson D. Kirby	Late	Sprink.	306-234-279-9	8-May	21-Sep	5-Oct	136	150	Sencor Matrix		Maxim 4FS Blocker Curzate Bravo Dithane
San Luis Valley Colorado (CO)	D. Holm P. Naranjo	Late	Pivot	120-60-40-25	6-May	2-Sep	20-Sep	119	137	Dual Magnum	Permethrin 3.2 EC Endosulfan 3 EC	Polyram 80 DF
Aberdeen Idaho (ID)	S. Love R. Novy J. Whitworth T. Salaiz P. Bain	Late	Sprink.	200-50-40	26-Apr	3-Sep	20-Sep	130	147	Sencor DF Spartan	Admire 2F	Bravo Equus Dithane DF
Corvallis Oregon (CV)	A Mosley S. Yilma	Late	Sprink.	150-150-150-90	20-May	10-Sep	22-Sep	113	125	Matrix Prowl	Thimet Provado	Bravo Dithane Quadris
Hermiston Oregon (HRL)	D. Hane, L. Leroux	Late	Pivot	330-80-500-40	5-Apr	31-Aug	14-Sep	148	162	Eptam Matrix	MoCap Admire Asana Monitor Agrimek	Vapam Ridomil Gold Quadris Bravo Dithane Omega Maxim 4FS (seed)
Klamath Falls Oregon (KF)	K. Rykbost, B. Charlton	Late	Sprink.	160-80-80-140	25-May	9-Sep	29-Sep	107	127	Prowl	Monitor Telone Vapam	Quadris Ridomil Gold Bravo Dithane
Dalhart Texas (TX)	J. C. Miller, Jr. J. Koym D. Schuering	Late	Pivot	263-54-0	10-May	10-Sep	18-Oct	123	161	Prowl Sencor Spartan Select Matrix	Baythroid Monitor Actara Dinamic	Dithane Echo Endura

Early trial not available, all trials evaluated as late.

TABLE 2: 2004 Western Regional Chipping Potato Variety Trial - CLONE, PARENTS, ENTERED BY, 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		Vine		Maturity	Stems/Plant	
								Shape	Skin	Size				
1	ATLANTIC	WAUSEON B5141-6	V Lt Red-purple	Check	Ck	OR	95	Round	Buff	3.4	Med-large	3.1	Medium	2.0
2	CHIPETA	WNC612-13 WISCHIP	Med Red-purple	Check	Ck	OR	97	Oval	Buff	4.1	Large	4.1	Late	2.1
3	IVORY CRISP	ND292-1 A77268-4	White	Check	1	OR/ID	98	Round	White	3.3	Med-large	3.3	Medium	2.6
4	A91814-5	NDA2031-2 Ivory Crisp	Red-purple	ID	2	OR	97	Oblong	White	4.3	Large	3.8	Med--late	2.8
5*	B0766-3T	B0243-18 Coastal Chip	White	MD	1	MD	98	Oval	Buff	3.6	Med-large	3.6	Med--late	2.2
6*	B1240-1	B0172-22 B0186-3	White	MD	1	MD	97	Oval	Buff	3.5	Med-large	4.0	Med--late	2.0
7	CO95051-7W	AC88456-6W BC0894-2W	Purple	ID	1	ID	93	Oval	White	3.5	Med-large	3.9	Med--late	2.1
8	COA96141-2C	BC0894-2 AC73340-2	White	ID	1	ID	96	Oval	White	3.8	Med-large	3.9	Med--late	2.0
9	COA96142-3C	BC0894-2 Ivory Crisp	Red-purple	ID	1	ID	96	Round	White	3.6	Med-large	3.6	Med--late	2.0

* National Trial Entries

TABLE 3: 2004 Western Regional Chipping Potato Variety Trial - TOTAL YIELD (CWT/A) - LATE HARVEST

No. Clone	Total Yield - Late Harvest (CWT/A)							Entry Mean	Rank
	CA	CO	ID	CV	KF	HRL	TX		
1 ATLANTIC	506	518	534	559	635	847	599	600	4
2 CHIPETA	524	579	567	614	602	1114	536	648	3
3 IVORY CRISP	431	-	391	586	555	757	375	516	8
4 A91814-5	536	672	584	672	683	1161	600	701	1
5 B0766-3T	455	-	466	547	520	963	547	583	6
6 B1240-1	493	-	509	582	598	1156	562	650	2
7 CO95051-7W	485	402	391	461	454	809	435	491	9
8 COA96141-2C	564	-	426	534	587	1002	483	599	5
9 COA96142-3C	484	-	433	572	514	711	381	516	7
Location Means	498	543	478	570	572	947	502	587	
LSD (.05)								74	

TABLE 4: 2004 Western Regional Chipping Potato Variety Trial - YIELD OF U.S. #1'S (CWT/A & %) - LATE HARVEST

No. Clone	U.S. No. 1's - Late Harvest (CWT/A) / %							Entry Mean	Rank
	CA	CO	ID	CV	KF	HRL	TX		
1 ATLANTIC	446	469	476	466	486	563	563	496	1
	88	91	89	83	77	94	94	88	1
2 CHIPETA	452	515	421	455	507	494	494	477	3
	86	89	74	74	84	92	92	85	3
3 IVORY CRISP	327	-	296	450	443	280	280	346	9
	76	-	76	77	80	75	75	76	9
4 A91814-5	386	446	452	497	487	542	542	479	2
	72	66	77	74	71	90	90	77	8
5 B0766-3T	345	-	339	466	423	468	468	418	6
	76	-	73	85	81	86	86	81	7
6 B1240-1	445	-	465	501	401	512	512	473	4
	90	-	91	86	67	91	91	86	2
7 CO95051-7W	420	352	329	406	402	295	295	357	8
	87	88	84	88	89	68	68	81	6
8 COA96141-2C	483	-	362	415	515	390	390	426	5
	86	-	85	78	88	81	81	83	4
9 COA96142-3C	394	-	382	422	419	328	328	379	7
	81	-	88	74	82	86	86	83	5
Location Means	411	446	391	453	454	430	430	431	
	82	83	82	80	80	85	85	82	
LSD (.05)								78	

TABLE 5: 2004 Western Regional Chipping Potato Variety Trial - YIELD > 10/12 OZ (CWT/A & %) - LATE HARVEST

No. Clone	U.S. No. 1's > 10/12 OZ - Late Harvest (CWT/A) / %							Entry Mean	Rank
	CA	CO	ID*	CV*	KF	HRL	TX		
1 ATLANTIC	178	234	105	219	239	474	179	233	3
	35	45	20	39	38	56	30	38	3
2 CHIPETA	257	187	260	260	230	768	294	322	1
	49	32	46	42	38	69	55	47	1
3 IVORY CRISP	111	-	17	199	117	210	85	123	8
	26	-	4	34	21	28	23	23	7
4 A91814-5	139	89	70	182	113	303	163	151	6
	26	13	12	27	17	26	27	21	8
5 B0766-3T	54	-	37	163	126	446	159	164	5
	12	-	8	30	24	46	29	25	6
6 B1240-1	278	-	96	287	224	847	133	311	2
	56	-	19	49	37	73	24	43	2
7 CO95051-7W	118	105	30	89	76	262	0	97	9
	24	26	8	19	17	32	0	18	9
8 COA96141-2C	205	-	52	168	187	424	116	192	4
	36	-	12	32	32	42	24	30	4
9 COA96142-3C	187	-	77	189	126	183	95	143	7
	39	-	18	33	25	26	25	27	5
Location Means	170	154	83	195	160	435	136	190	
	33	28	18	34	28	43	29	31	
LSD (.05)								95	

* >12 oz.

TABLE 6: 2004 Western Regional Chipping Potato Variety Trial - YIELD < 4 OZ (CWT/A & %) - LATE HARVEST

No. Clone	Yield < 4 OZ - Late Harvest (CWT/A) / %							Entry Mean	Rank
	CA	CO	ID	CV	KF	HRL	TX		
1 ATLANTIC	37	35	44	11	20	37	35	31	3
	7	7	8	2	3	4	6	5	3
2 CHIPETA	24	55	17	12	15	29	42	28	2
	5	9	3	2	2	3	8	5	2
3 IVORY CRISP	74	-	93	12	65	89	95	71	8
	17	-	24	2	12	12	25	15	9
4 A91814-5	81	188	75	25	69	106	58	86	9
	15	28	13	4	10	9	10	13	8
5 B0766-3T	98	-	104	9	50	55	79	66	7
	22	-	22	2	10	6	14	12	7
6 B1240-1	19	-	30	6	16	31	50	25	1
	4	-	6	1	3	3	9	4	1
7 CO95051-7W	42	45	52	9	44	68	140	57	6
	9	11	13	2	10	8	32	12	6
8 COA96141-2C	40	-	53	12	45	48	93	49	5
	7	-	12	2	8	5	19	9	4
9 COA96142-3C	51	-	39	9	47	70	54	45	4
	11	-	9	2	9	10	14	9	5
Location Means	52	81	56	12	41	59	72	51	
	11	14	12	2	7	7	15	9	
LSD (.05)								25	

TABLE 7: 2004 Western Regional Chipping Potato Variety Trial - SPECIFIC GRAVITY - LATE HARVEST

Specific Gravity - Late Harvest									
No. Clone	CA	CO	ID	CV	KF	HRL	TX	Entry Mean	Rank
1 ATLANTIC	1.092	1.101	1.089	1.090	1.094	1.072	1.085	1.089	4
2 CHIPETA	1.091	1.102	1.083	1.084	1.092	1.072	1.075	1.086	6
3 IVORY CRISP	1.097	-	1.092	1.092	1.090	1.074	1.082	1.088	5
4 A91814-5	1.092	1.096	1.092	1.093	1.096	1.077	1.084	1.090	3
5 B0766-3T	1.100	-	1.096	1.085	1.101	1.078	1.086	1.091	2
6 B1240-1	1.090	-	1.086	1.087	1.097	1.076	1.072	1.085	7
7 CO95051-7W	1.099	1.110	1.097	1.086	1.097	1.079	1.083	1.093	1
8 COA96141-2C	1.079	-	1.079	1.078	1.077	1.059	1.070	1.074	9
9 COA96142-3C	1.091	-	1.089	1.083	1.084	1.067	1.082	1.083	8
Location Means	1.092	1.102	1.089	1.087	1.092	1.073	1.080	1.083	
LSD (.05)								0.004	

TABLE 9: 2004 Western Regional Chipping Potato Variety Trial - EXTERNAL DEFECTS - GROWTH CRACKS, SECOND GROWTH, SHATTER BRUISE, SCAB - MEANS OF LOCATIONS

No. Clone	<u>Growth Cracks¹</u>	<u>Second Growth¹</u>	<u>Shatter Bruise¹</u>		<u>Scab¹</u>
	Means	Means	Means	AB ²	Means
1 ATLANTIC	4.6	4.8	4.5	3.1	4.8
2 CHIPETA	4.4	4.7	4.6	2.9	4.8
3 IVORY CRISP	4.7	5.0	4.1	2.5	4.3
4 A91814-5	4.6	4.6	5.0	3.6	4.4
5 B0766-3T	4.7	5.0	4.9	2.8	4.8
6 B1240-1	4.4	5.0	4.9	2.6	4.8
7 CO95051-7W	4.8	4.7	4.7	2.9	4.8
8 COA96141-2C	5.0	5.0	4.8	2.8	4.9
9 COA96142-3C	4.4	5.0	3.8	2.2	4.7

¹ Score 1-5, with 1=severe, 5=none.

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

TABLE 10: 2004 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	
		Means	Means	Means	Means	AB ²
1	ATLANTIC	6.4	7.9	0.0	4.7	3.8
2	CHIPETA	1.6	6.4	1.2	4.6	3.1
3	IVORY CRISP	3.1	2.0	1.7	4.8	3.7
4	A91814-5	0.0	1.8	0.7	4.6	3.1
5	B0766-3T	8.4	0.8	0.6	5.0	2.8
6	B1240-1	3.1	1.8	0.9	4.8	2.9
7	CO95051-7W	5.5	1.3	2.2	4.8	3.7
8	COA96141-2C	3.3	0.4	0.3	5.0	4.4
9	COA96142-3C	3.1	0.4	0.3	4.8	3.9
MEANS		3.8	2.5	0.9	4.8	3.5
LSD (.05)		NS	NS			

¹ Score 1-5, with 1=severe, 5=none.

² Aberdeen blackspot scores from an abrasive peel test [1-5(none)].

TABLE 11: 2004 Western Regional Chipping Potato Variety Trial - CHIP COLOR, AND PERCENT SUGAR ENDS

Clone	CO ¹				ID ¹			CV ²		KF ²	HRL ¹	50	Sugar
	Chip 40		Chip 50		Chip 40		Chip 50	40	50	50	45	Means	Ends
	a	Recon ^b	c	Recon ^d	a	Recon ^b	c						ID
1 ATLANTIC	4.0	2.5	3.5	2.5	3.7	2.9	1.6	2.1	1.9	1.5	2.5	2.2	29
2 CHIPETA	4.0	2.5	3.0	2.0	4.1	2.1	1.3	2.7	2.0	1.8	3.0	2.2	14
3 IVORY CRISP	-	-	-	-	3.2	1.1	1.0	1.8	0.9	1.3	1.3	1.1	3
4 A91814-5	4.0	3.5	3.5	4.0	3.4	1.5	1.2	2.2	1.8	1.4	1.8	1.9	3
5 B0766-3T	-	-	-	-	3.7	1.2	1.4	1.8	1.6	1.4	2.3	1.7	31
6 B1240-1	-	-	-	-	4.0	2.4	2.0	2.0	1.7	2.3	3.0	2.3	8
7 CO95051-7W	3.5	2.0	4.0	3.0	2.9	1.5	1.5	1.8	1.7	1.0	1.0	1.8	0
8 COA96141-2C	-	-	-	-	2.3	1.5	1.1	1.6	1.7	1.0	1.1	1.2	8
9 COA96142-3C	-	-	-	-	4.4	2.6	1.0	1.8	1.8	1.1	2.3	1.5	14
Location Means	3.9	2.6	3.5	2.9	3.5	1.9	1.3	2.0	1.7	1.4	2.0		12

¹ Color using Snack Food Association Frycolor Standards (1-5(darkest)).

² Agron readings converted to Snack Food Association Frycolor Standards (1-5(darkest)).

^a Stored 6-8 weeks at 40°F.

^b Stored 6-8 weeks at 40°F plus 3 weeks at 60°F.

^c Stored 6-8 weeks at 50°F.

^d Stored 6-8 weeks at 50°F plus 3 weeks at 60°F.

TABLE 12: 2004 Western Regional Chipping Potato Variety Trial - DISEASE EVALUATIONS, METRIBUZIN REACTION

No. Clone	Vert. Wilt/ Early Dying		Early Blight	Late Blight		Corky Ringspot	Root- knot	Common Scab	let Necrosis			Erwinia Soft Rot	Metr. Reaction
	AB 0-9 ¹	HERM 0-9 ¹	AB 0-9 ¹	Foliar IS 0-9 ¹	Tuber % by Wt.	PROSSER		AB (%) ³	AB (%) ³	HERM (%) ³	AB 0-5 ²	AB ⁴	
1 ATLANTIC	5.3	7.3	2.7	9.0	45	43	S	n/a	n/a	0	n/a		
2 CHIPETA	4.5	2.8	1.8	8.0	56	63	S	n/a	n/a	5	n/a		
3 IVORY CRISP	6.5	5.0	5.3	-	-	48	S	n/a	n/a	0	n/a		
4 A91814-5	2.5	3.3	2.0	8.0	98	23	S	n/a	n/a	0	n/a	R	
5 B0766-3T	3.3	5.3	2.3	9.0	80	-	S	n/a	n/a	0	n/a	MS	
6 B1240-1	-	3.0	-	9.0	48	-	S	n/a	n/a	5	n/a	VR	
7 CO95051-7W	-	3.8	-	9.0	40	38	S	n/a	n/a	0	n/a	R	
8 COA96141-2C	3.0	5.3	1.5	9.0	35	15	S	n/a	n/a	0	n/a	MS	
9 COA96142-3C	4.5	5.8	4.3	9.0	58	33	S	n/a	n/a	0	n/a	VR	
MEANS	4.2	4.6	2.8	8.8	57.5	37.1				1.1			
LSD @ .05													

¹ 0 to 9, Where 0 or 1=No symptoms to a 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

² 0 to 5, Where 0=None; 1=mild symptoms, sample would not be out of grade to disease defect; 2= moderate symptoms, culls due to disease; 3= moderately severe symptoms, sample would be out of grade due to disease defect; 4=severe symptoms, sample out of grade; 5= maximum severity, all tubers in sample showing severe symptoms.

³ Percent serious defect = more than 10% of tuber involved.

⁴ Metribuzin Reaction measured at Aberdeen, ID

VR=very resistant, R=Resistant, MR=Moderately resistant, MS=moderately susceptible, S=susceptible VS=very susceptible.

TABLE 13: 2004 Western Regional Chipping Potato Variety Trial - SOLIDS, DEXTROSE, SUCROSE, PROTEIN, VITAMIN C, AND GLYCOALKALOIDS - ABERDEEN

Clone	Solids Oven Dry (%)	Sugars		Protein (%DWB)	Vitamin C (mg/100g FWB)	Glycoalkaloids (mg/100gFWB)
		Dextrose (%FWB)	Sucrose (%FWB)			
1 ATLANTIC	22.7	0.04	0.23	5.8	24.9	4.2
2 CHIPETA	20.8	0.02	0.27	6.5	24.1	4.0
3 IVORY CRISP	22.0	0.01	0.15	6.8	24.6	2.2
4 A91814-5	22.5	0.04	0.17	5.6	20.9	6.0
5 B0766-3T	24.4	0.04	0.21	5.3	22.3	5.5
6 B1240-1	21.5	0.05	0.25	5.3	17.9	1.8
7 CO95051-7W	23.7	0.01	0.23	7.5	23.7	4.1
8 COA96141-2C	19.9	0.02	0.12	7.5	24.5	2.2
9 COA96142-3C	21.7	0.02	0.19	7.2	23.1	0.8
Means	22.1	0.03	0.20	6.4	22.9	3.4

FWB = fresh weight basis DWB = dry weight basis

Glycoalkaloids: The 2004 Lenape check from Aberdeen was 20.48 mg/100g

TABLE 14: 2004 Western Regional Chipping Potato Variety Trial - MERIT SCORES (1-5(best))

No.	Clone	Fresh Merit							Processing Merit					
		CA	CO	ID	HRL	KF	TX	Means	CO	ID	CV	HRL	KF	Means
1	ATLANTIC	4.3	2.0	3.0	1.0	3.0	4.1	2.9	2.0	2.5	3.0	2.0	3.0	2.5
2	CHIPETA	3.8	5.0	2.3	1.0	2.0	3.7	3.0	4.0	3.5	2.0	1.0	4.0	2.9
3	IVORY CRISP	4.3	-	2.8	3.0	5.0	3.3	3.7	-	4.0	5.0	4.0	3.5	4.1
4	A91814-5	3.5	3.0	3.3	2.0	3.0	3.2	3.0	1.0	4.0	3.0	3.0	4.0	3.0
5	B0766-3T	4.3	-	3.0	4.0	4.0	4.1	3.9	-	2.5	4.0	4.0	2.5	3.3
6	B1240-1	4.0	-	4.3	3.0	4.0	3.6	3.8	-	3.0	4.0	4.0	2.0	3.3
7	CO95051-7W	4.1	3.0	3.0	4.0	4.0	3.6	3.6	3.0	4.2	4.0	5.0	4.0	4.0
8	COA96141-2C	4.5	-	3.8	4.0	4.0	3.1	3.9	-	4.2	4.0	4.0	4.0	4.1
9	COA96142-3C	4.0	-	3.5	2.0	3.0	3.5	3.2	-	3.0	3.0	3.0	3.0	3.0
Location Means		4.1	3.3	3.2	2.7	3.6	3.6	3.4	2.5	3.4	3.6	3.3	3.3	3.3

