

2003 WESTERN REGIONAL CHIPPING POTATO VARIETY TRIAL REPORT

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Compiled by Peggy Bain

TABLE 1: 2003 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
Kern Co. California (CA)	R. Voss H. Phillips	Early	Sprink.	150-50-25-0	18-Feb	1-Jun	19-Jun	103	121	Matrix		Bravo
San Luis Valley Colorado (CO)	D. Holm P. Naranjo	Late	Pivot	120-60-40-25	13-May	2-Sep	23-Sep	112	133	Dual Magnum	Actara Leverage 2.7	Quadris
Aberdeen Idaho (ID)	S. Love, R Novy, J. Whitworth T. Salaiz P. Bain	Late	Sprink.	190-80-250	28-Apr	4-Sep	18-Sep	129	143	Sencor Matrix Eptam	Admire	Bravo WS Curzate
Corvallis Oregon (CV)	A Mosley S. Yilma	Late	Sprink.	150-150-150-90	20-May	10-Sep	20-Sep	113	123	Matrix Prowl	Thimet Provado	Bravo Curzate Quadris
Hermiston Oregon (HRE)	D. Hane, L. Leroux	Early	Pivot		25-Mar		22-Jul	--	119			
Hermiston Oregon (HRL)	D. Hane, L. Leroux	Late	Pivot		10-Apr	30-Aug	9-Sep	142	152			
Klamath Falls Oregon (KF)	K. Rykbost, B. Charlton	Late	Sprink.	160-80-80-140	23-May	5-Sep	6-Oct	105	136	Dual Prowl Matrix	Admire Vydate CLV Monitor	Tops MZ Quadris Dithane Bravo Curzate
Dalhart Texas (TX)	J. C. Miller, Jr. J. Koym D. Schuering	Early	Pivot	265-158-160	7-May	5-Sep	22-Sep	121	138	Matrix Select Gramoxone	Admire Baythroid Monitor	Ridomil Gold Quadris Ultra Flourish Bravo Dithane Supertin

TABLE 2: 2003 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			Stems/Plant	
								Shape	Skin	Size	Maturity			
1	ATLANTIC	WAUSEON B5141-6	V Lt Red-purple	Check	Ck	OR	97	Round	Buff	3.0	Medium	2.76	Med-early	2.3
2	CHIPETA	WNC612-13 WISCHIP	Med Red-purple	Check	Ck	OR	98	Round	Buff	4.3	Large	3.4	Medium	2.4
3	A91814-5	NDA2031-2 Ivory Crisp	Red-purple	ID	1	OR	99	Oval	White	4.2	Large	3.58	Med-late	2.9
4	A94322-8C	Suncrisp A87109-10	White	ID	1	ID	96	Round	White	4.0	Med-large	3.78	Med-late	2.2
5*	B0766-3	B0243-18 Coastal Chip	White	MD	3	MD	96	Round	White	2.9	Medium	3.4	Medium	2.3
6*	NDA5507-3YF	Brodick Yukon Gold	Red-purple	ID	1	ID	96	Oval	White	3.6	Med-large	2.3	Early	2.4
7*	NY112	Atlantic Q155-3	White	NY	3	NY	96	Round	Buff	3.2	Med-large	3.18	Medium	1.7

* National Trial Entries

TABLE 3: 2003 Western Regional Chipping Potato Variety Trial - TOTAL YIELD (CWT/A) - EARLY AND LATE HARVEST

No.	Clone	Total Yield - Early Harvest (CWT/A)				Total Yield - Late Harvest (CWT/A)							
		CA	HRE	TX	Entry Mean	Rank	CO	CV	ID	HRL	KF	Entry Mean	Rank
1	ATLANTIC	511	751	239	500	6	476	627	417	650	505	535	5
2	CHIPETA	579	747	329	552	3	580	670	432	854	596	626	2
3	A91814-5	.	786	433	610	1	603	710	496	805	666	656	1
4	A94322-8C	554	557	322	477	7	.	591	381	532	526	507	6
5	B0766-3	.	669	421	545	4	441	575	291	596	422	465	7
6	NDA5507-3YF	472	699	349	507	5	547	571	344	715	658	567	4
7	NY112	.	789	346	567	2	574	653	427	773	598	605	3
Location Means		529	714	348	537		537	628	398	704	567	567	
LSD (.05)					NS							63	

TABLE 4: 2003 Western Regional Chipping Potato Variety Trial - YIELD OF U.S. #1'S (CWT/A & %) - EARLY & LATE HARVEST

No. Clone	U.S. No. 1's - Early Harvest (CWT/A) / %					U.S. No. 1's - Late Harvest (CWT/A) / %					Entry Mean	Rank
	CA	HRE	TX	Entry Mean	Rank	CO	CV	ID	HRL	KF		
1 ATLANTIC	467	629	149	415	5	441	526	373	561	443	469	4
	91	84	62	79	3	93	84	89	86	88	88	3
2 CHIPETA	560	696	279	512	1	522	481	395	738	497	527	2
	97	93	85	91	1	90	72	91	86	83	85	4
3 A91814-5	.	647	245	446	3	482	533	319	578	510	484	3
	.	82	56	69	7	80	75	64	72	77	73	6
4 A94322-8C	528	387	161	359	7	.	410	285	283	460	360	7
	95	69	50	72	6	.	69	75	53	87	71	7
5 B0766-3	.	582	295	438	4	403	495	237	535	397	413	6
	.	87	70	79	4	91	86	81	90	94	88	2
6 NDA5507-3YF	457	478	223	386	6	483	467	223	509	577	452	5
	97	68	64	76	5	88	82	65	71	88	79	5
7 NY112	.	724	269	496	2	529	528	382	725	547	542	1
	.	92	78	85	2	92	81	89	94	91	89	1
Location Means	503	592	231	436		477	491	316	561	490	464	
	95	82	66	79		89	78	79	79	87	82	
LSD (.05)				NS							91	

TABLE 5: 2003 Western Regional Chipping Potato Variety Trial - YIELD > 10/12 OZ (CWT/A & %) - EARLY AND LATE HARVEST

No.	Clone	U.S. No. 1's > 10/12 OZ - Early Harvest (CWT/A) / %					U.S. No. 1's > 10/12 OZ - Late Harvest (CWT/A) / %					Entry Mean	Rank
		CA*	HRE	TX	Entry Mean	Rank	CO	CV*	ID*	HRL	KF		
1	ATLANTIC	46	144	11	67	4	243	261	106	197	203	202	3
		9	19	5	11	4	51	42	25	30	40	38	4
2	CHIPETA	13	295	66	125	2	270	334	45	494	340	297	1
		2	39	20	21	2	47	50	10	58	57	44	1
3	A91814-5	.	55	24	40	5	146	159	13	139	267	145	5
		.	7	6	6	5	24	22	3	17	40	21	6
4	A94322-8C	3	7	15	8	7	.	45	14	2	167	57	7
		1	1	5	2	7	.	8	4	0	32	11	7
5	B0766-3	.	98	58	78	3	209	241	40	257	240	197	4
		.	15	14	14	3	47	42	14	43	57	41	2
6	NDA5507-3YF	15	45	10	23	6	143	204	14	75	271	141	6
		3	6	3	4	6	26	36	4	10	41	24	5
7	NY112	.	311	36	173	1	265	250	89	406	251	252	2
		.	39	10	25	1	46	38	21	53	42	40	3
Location Means		19	136	31	62		213	214	46	224	248	189	
		4	18	9	10		40	34	12	30	44	32	
LSD (.05)					NS							94	

* >12 oz.

TABLE 6: 2003 Western Regional Chipping Potato Variety Trial - YIELD < 4 OZ (CWT/A & %) - EARLY AND LATE HARVEST

No. Clone	Yield < 4 OZ - Early Harvest (CWT/A) / %					Yield < 4 OZ - Late Harvest (CWT/A) / %					Entry Mean	Rank
	CA	HRE	TX	Entry Mean	Rank	CO	CV	ID	HRL	KF		
1 ATLANTIC	17	104	90	70	3	19	18	26	80	41	37	4
	3	14	38	18	3	4	3	6	12	8	7	3
2 CHIPETA	14	41	50	35	1	32	20	30	43	17	28	1
	2	5	15	8	1	6	3	7	5	3	5	1
3 A91814-5	.	118	189	153	7	76	34	152	106	46	83	6
	.	15	44	29	7	13	5	31	13	7	14	5
4 A94322-8C	22	154	160	112	6	.	35	86	233	43	99	7
	4	28	50	27	6	.	6	23	44	8	20	7
5 B0766-3	.	68	126	97	5	36	20	49	42	19	33	2
	.	10	30	20	5	8	4	17	7	5	8	4
6 NDA5507-3YF	13	142	126	94	4	57	19	120	137	36	74	5
	3	20	36	20	4	10	3	35	19	5	15	6
7 NY112	.	60	77	69	2	30	27	39	36	46	36	3
	.	8	22	15	2	5	4	9	5	8	6	2
Location Means	17	98	117	77		42	25	72	97	35	54	
	3	14	34	17		8	4	18	15	6	10	
LSD (.05)				59							44	

TABLE 7: 2003 Western Regional Chipping Potato Variety Trial - SPECIFIC GRAVITY - EARLY AND LATE HARVEST

No. Clone	Specific Gravity - Early Harvest					Specific Gravity - Late Harvest						
	CA	HRE	TX	Entry Means	Rank	CO	CV	ID	HRL	KF	Entry Mean	Rank
1 ATLANTIC	1.098	1.084	1.072	1.085	1	1.095	1.092	1.092	1.084	1.087	1.090	2
2 CHIPETA	1.090	1.077	1.061	1.076	3	1.091	1.091	1.086	1.073	1.081	1.084	4
3 A91814-5	.	1.084	1.063	1.074	4	1.088	1.098	1.094	1.079	1.088	1.089	3
4 A94322-8C	1.095	1.084	1.069	1.083	2	.	1.094	1.098	1.079	1.092	1.091	1
5 B0766-3	.	1.080	1.061	1.071	5	1.085	1.083	1.084	1.071	1.077	1.080	6
6 NDA5507-3YF	1.078	1.069	1.043	1.063	7	1.080	1.071	1.074	1.065	1.078	1.074	7
7 NY112	.	1.077	1.059	1.068	6	1.086	1.085	1.081	1.079	1.082	1.083	5
Location Means	1.090	1.079	1.061	1.077		1.088	1.088	1.087	1.076	1.084	1.083	
LSD (.05)				NS							0.005	

TABLE 9: 2003 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		Shatter Bruise ¹			Scab ¹	
	Early	Late	Early	Late	Early	Late	AB ²	Early	Late
1 ATLANTIC	4.6	4.9	5.0	4.9	4.3	4.9	3.3	5.0	4.6
2 CHIPETA	5.0	4.3	5.0	4.4	4.5	4.9	3.6	5.0	4.7
3 A91814-5	5.0	4.2	5.0	5.0	5.0	5.0	3.8	4.5	4.3
4 A94322-8C	5.0	5.0	5.0	5.0	4.8	5.0	3.9	5.0	4.6
5 B0766-3	5.0	4.9	5.0	5.0	4.4	4.3	2.6	5.0	4.6
6 NDA5507-3YF	5.0	4.8	5.0	4.7	5.0	5.0	3.6	5.0	4.9
7 NY112	5.0	5.0	5.0	5.0	5.0	5.0	3.9	5.0	4.6

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: 2003 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		
		Early	Late	Early	Late	Early	Late	Early	Late	AB ²
1	ATLANTIC	3.0	17.5	4.0	15.0	5.0	1.3	5.0	4.0	3.1
2	CHIPETA	5.5	4.0	0.0	2.3	0.0	4.0	5.0	4.2	2.6
3	A91814-5	0.0	0.0	0.0	0.3	5.0	5.8	5.0	4.6	2.7
4	A94322-8C	2.5	5.6	3.0	0.0	10.0	6.1	5.0	5.0	3.0
5	B0766-3	1.0	6.2	0.0	0.0	5.0	1.0	5.0	4.1	2.0
6	NDA5507-3YF	19.3	2.9	0.0	1.0	0.5	0.3	5.0	4.7	2.5
7	NY112	0.0	17.9	1.0	6.0	7.5	5.1	5.0	4.4	2.6
LSD (.05)		NS	12.0							

¹ Score 1-5, with 1=severe, 5=none.

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

TABLE 11: 2003 Western Regional Chipping Potato Variety Trial - CHIP COLOR, AND PERCENT SUGAR ENDS

Clone	Early Harvest			Late Harvest											50 Late Means	Sugar Ends ID %
	TX ¹	HRE ¹	Early Means	CO ¹				ID ¹			CV ²		KF ² 50	HRL ¹ 45		
				Chip 40		Chip 50		Chip 40		Chip 50	40	50				
				a	Recon ^b	c	Recon ^d	a	Recon ^b	c						
1 ATLANTIC		1.1	1.1	4.0	4.0	4.0	3.5	3.5	1.9	1.5	2.5	0.5	1.5	1.8	1.9	25
2 CHIPETA		1.0	1.0	4.0	4.0	3.0	2.5	3.7	2.3	1.3	3.0	1.0	1.5	2.3	1.8	17
3 A91814-5		1.5	1.5	4.5	4.0	3.5	2.5	3.1	1.3	1.3	2.0	1.0	1.0	1.8	1.7	11
4 A94322-8C		1.0	1.0	.	.	.	.	3.0	1.0	1.2	1.5	0.5	1.3	1.9	1.2	0
5 B0766-3		1.1	1.1	4.5	4.0	3.0	3.0	3.5	2.1	1.3	2.0	0.5	1.0	2.1	1.6	8
6 NDA5507-3YF		1.6	1.6	3.5	3.0	3.5	2.0	3.5	2.3	1.6	1.5	0.5	1.8	2.0	1.9	31
7 NY112		1.1	1.1	4.0	3.5	3.0	3.5	3.3	1.5	1.3	2.0	0.5	1.3	1.1	1.4	22
Location Means		1.2	1.2	4.1	3.8	3.3	2.8	3.4	1.8	1.4	2.1	0.6	1.3	1.9		16

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

² Agrtron 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: 2003 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	Net Necrosis			Erwinia Soft Rot	Metr. Reaction
	AB	HERM		AB	Foliar				Tuber	AB	AB		
	0-9 ¹	0-9 ¹	0-9 ¹	0-9 ¹	% by Wt.	CORVALLIS	PROSSER	AB (%) ³	AB (%) ³	HERM (%) ³	AB 0-5 ²	AB ⁴	
1 ATLANTIC	7.0	8.1	7.2	9.0	20	--	--	21.0	2.0	0.0	1.0	S	
2 CHIPETA	2.5	4.3	4.7	9.0	21	--	--	18.0	18.0	15.0	--	--	
3 A91814-5	3.5	5.3	6.2	9.0	48	27	S	19.0	6.0	0.0	1.6	S	
4 A94322-8C	4.0	5.8	5.7	9.0	15	--	--	19.0	--	0.0	2.0	S	
5 B0766-3	5.2	7.8	5.3	9.0	21	--	--	10.0	2.0	7.5	0.6	R	
6 NDA5507-3YF	7.7	8.3	7.2	9.0	0	27	S	1.0	--	12.5	2.3	MR	
7 NY112	4.8	8.1	5.7	9.0	8	--	--	7.0	2.0	0.0	0.2	--	
MEANS	5.0	6.8	6.0	9.0	19.0			13.6	6.0	5.0	1.3		
LSD @ .05	1.0		1.4					11.0			2.0		

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: 2003 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	23.9	0.03	0.22	6.7	18.7	13.0
2 CHIPETA	21.9	0.03	0.28	7.0	25.4	4.9
3 A91814-5	23.1	0.03	0.13	5.7	18.8	11.9
4 A94322-8C	25.5	0.03	0.13	6.7	14.8	20.0
5 B0766-3	21.8	0.01	0.18	5.7	20.8	9.1
6 NDA5507-3YF	18.5	0.06	0.07	6.4	26.1	6.2
7 NY112	21.3	0.03	0.14	5.5	23.7	23.5
Means	22.3	0.03	0.16	6.2	21.2	12.7

FWB = fresh weight basis DWB = dry weight basis

Glycoalkaloids: The 2003 Lenape check from Aberdeen was 18.7 mg/100g

TABLE 14: 2003 Western Regional Chipping Potato Variety Trial - MERIT SCORES (1-5(best))

No.	Clone	Fresh Merit					Process Merit					
		CA	CO	KF	TX	Means	Early HRE	CO	Late ID	HRL	KF	Means
1	ATLANTIC	2.8	1.0	3.0	3.6	2.6	2.0	1.0	3.0	1.0	3.5	2.1
2	CHIPETA	3.8	5.0	2.0	2.7	3.4	5.0	5.0	4.0	3.0	3.0	4.0
3	A91814-5	.	5.0	3.0	3.3	3.8	4.0	5.0	3.5	3.0	4.5	4.0
4	A94322-8C	3.5	.	4.0	2.6	3.4	2.0	.	4.0	1.0	4.0	2.8
5	B0766-3	.	1.0	2.0	3.3	2.1	2.0	1.0	2.5	3.0	2.5	2.2
6	NDA5507-3YF	2.8	4.0	3.5	2.8	3.3	1.0	4.0	2.0	2.0	2.5	2.3
7	NY112	.	3.0	3.5	3.4	3.3	5.0	3.0	3.2	2.0	3.0	3.2
Location Means		3.2	3.2	3.0	3.1	3.1	3.0	3.2	3.2	2.1	3.3	2.9

TABLE 15: 2003 Western Regional Chipping Potato Variety Trial - SUMMARY

No.	Clone	Year in Trial	Yield		% US#1's		Tuber Size (oz)		Specific Gravity		Chip Color		Merit Score		Problems
1	ATLANTIC	CK	535	medium	469 88	high	7.5	medium	90	high	1.9	fair	2.1	fair	HH/BC, IBS, susc. to E dying, scab
2	CHIPETA	Ck	626	very high	527 85	med-high	8.8	large	84	medium	1.8	fair	4.0	good	large tubers
3	A91814-5	1	656	very high	484 73	medium	5.5	med-small	89	med-high	1.7	fair	4.0	excellent	scab, small tubers, VD in chips
4	A94322-8C	1	507	med-low	360 71	medium	4.3	small	91	high	1.2	good	2.8	good	low yield, low Vit C, high glycoalkaloids
5	B0766-3	3	465	low	413 88	high	7.3	medium	80	med-low	1.6	good	2.2	fair	low yield, med SG, susc to BS, shatter
6	NDA5507-3YF	1	567	med-high	452 79	medium	5.8	med-small	74	low	1.9	fair	2.3	fair	low SG, HH, susc to E dying, sugar ends
7	NY112	3	567	low	542 89	high	7.8	medium	83	medium	1.4	good	3.2	good	HH (late) high glycoalkaloids