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MP760: East Regional Potato Trials 2007: Summary of NE1014 Regional Project Field Testing of New Potato Clones

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INTRODUCTION

Seventeen trials were conducted in eight states and one Canadian province. Sixteen named varieties and 14 numbered clones were available to the cooperators (Table 1). Seed for all clones and varieties was grown by the University of Maine at Aroostook Research Farm. Seedpieces were prepared, cut, and suberized by the staff at the Maine Agricultural and Forest Experiment Station's Aroostook Farm in Presque Isle, Maine. Cultural practices were generally similar to those used by commercial growers near each location.

OBJECTIVES

The objectives of this regional project are (1) to develop pest-resistant, early-maturing, long-dormant varieties that will process from cold storage; (2) to evaluate new and specialty varieties developed in the Northeast; (3) to determine climatic effects on performance to develop predictive models for potato improvement; and (4) determine heritability/linkage relationships and improve the genetic base of tetraploid cultivated varieties. The results presented in this report reflect a portion of the activity directed toward objectives 1, 2 and 3.

RESULTS

Total yield, marketable yield, specific gravity, tuber size, tuber defects, chip color results, and boil and bake results are presented in East Region Trial Tables 2 to 7. For round whites, Dakota Diamond and NY140 had the highest total yields (Table 2). Atlantic, Beacon Chipper, Katahdin, Kennebec, Snowden, AF2376-5, NY137, and NY139 were also high-yielding clones. Dakota Diamond and NY140 had US#1 yields equaling to or exceeding that of Atlantic in side-by-side tests (Tables 3 and 6). Across sites these two clones had US#1 yields that averaged 130% and 114% those of Atlantic, respectively. Beacon Chipper, Snowden, AF2376-5, B1992-106, and NY139 also provided relatively high marketable yields (averaging 95% to 102% of Atlantic in side-by-side trials). Specific gravities of Snowden, AF2291-10, AF2376-5, B1992-106, and NY139 were close to Atlantic's specific gravity at comparable sites (Tables 4 and 6). Only NY137 had an average specific gravity below 1.070. Atlantic, Beacon Chipper, Dakota Diamond, Katahdin, Kennebec, Yukon Gold, NY140, and NY141 sized well in most trials (Tables 5 and 6). Snowden, AF2376-5, AF2916-1, B1992-106, and NY137 had small tuber size relative to Atlantic in side-by-side trials. Beacon Chipper, Yukon Gold, AF2376-5, AF2916-1, B1992-106, NY139, NY140, and NYB38-37 had particularly good external appearance ratings. Beacon Chipper, Snowden, NY139, NY140, and NYB38-37 chipped well in most 2007 tests (but note that specific gravity of NYB38-37 is too low for chipping use). Superior, AF2376-5, NY140, NY141, and NYB38-37 scored particularly well in boiling tests. All of the new clones except NY139 received fair to good baked quality scores (Table 6).

Many of the white cultivars and clones had relatively high incidences of external tuber defects during 2007 (Table 7). Thirteen of 17 had more than 10% external defects. Clones with a low incidence of external defects incidence (less than or equal to 9.8%) during 2007 were Snowden, B1992-106, NY140, and NYB38-37. Atlantic and Dakota Diamond had high incidences of hollow heart. Atlantic, Dakota Diamond, and AF2376-5 had the highest incidence of internal necrosis. Dakota Diamond, Katahdin, Snowden, NY139, NY140, and NYB38-37 had relatively high incidences of vascular discoloration.

In the trials of red- and purple-skinned potatoes, none of the test clones had higher US#1 yields than Chieftain (Table 6). Similarly, none was higher yielding than Dark Red Norland. Specific gravities of the test clones were generally similar to the standard clones. Peter Wilcox, AF2393-7, B2152-17, and B2327-2 had very small tuber size. Dakota Jewel, B2152-17, and B2327-2 had the best overall appearance ratings (Table 6). Chieftain, Peter Wilcox, B2327-2 had the best quality boiled scores. Peter Wilcox and B2152-17 had the best baked quality scores. All of the test clones had relatively low incidence of internal and external defects except for hollow heart in Dakota Jewel and vascular discoloration in AF2393-7 and B2327-2 (Table 7).

In the trials of russeted and long-tuber-type varieties, Russet Burbank and Blazer Russet had the highest total yields, while Blazer Russet had the highest average US#1 yields (Tables 2 and 3). Blazer Russet US#1 yields averaged 130% those of Russet Norkotah in side-by-side trials (Tables 3 and 6). Only Shepody had an average specific gravity that exceeded 1.080 (Table 4). Shepody and AF2199-6 had the largest tuber size (Tables 5 and 6). Russet Norkotah and AF2199-6 had the best tuber appearance scores (Table 6). All clones except Russet Norkotah had acceptable boiled quality

scores during 2007, while only AF2199-6 had an unacceptable baked quality score (Table 6).

Only Russet Norkotah had acceptable incidence of external defects incidence for fresh market (<10%) during 2007 (Table 7); however, Blazer Russet, AF2199-6, and AF2314-1 were close to the 10% standard, averaging less than or equal to 13% external defects. None of the clones had high hollow heart incidence during 2007. With the exception of vascular discoloration problems in Blazer Russet and NY140, none of the russeted/long-type clones had high levels of internal defects during 2007.

PROMISING 2007 CLONES

Beacon Chipper, NY139, and NY140 were promising chipping clones during 2007. Yield, specific gravity, tuber size, and chip color were acceptable although specific gravity of Beacon Chipper and NY140 are much lower than Atlantic. NY140 and NYB38-37 showed promise as round-white, fresh market clones during 2007. None of the red-skinned clones was particularly outstanding during 2007. Peter Wilcox (B1816-5) continued to show promise as a purple-skinned, yellow-fleshed specialty clone. Blazer Russet was the most promising russeted clone tested in 2007.

East Region Trial Table 1. General characteristics and known disease resistance for 16 named varieties and 14 numbered clones grown at 17 locations in the Eastern United States.

							Known Disease Tolerance or Resistance[8]	
Clone[1]	Pedigree	Skin Color[2]	Skin Text.[3]	Flesh Color[4]	Tuber Shape[5]	Utilization[6]	Resistant	Moderate Resistance
Round Whites/Yellows								
Atlantic	Wauseon x Lenape	BuWh	N	OW	R	Chip	GN, NN, PVA, PVX	CS, VW, Bwlt, PRot
Beacon Chipper	unknown parentage	BuWh	SN	Wh	RO	Chip		CS
Dakota Diamond	ND4103-2 x Dakota Pearl	White	S	OW	RO	Chip	CS	PRot
Katahdin	40658 x 24642	White	S	Wh	RO	Table	PVA	NN, VW, Bleg, PVS, PVX, PVY
Kennebec	B127 x X(95-96)	White	S	Wh	O	Table	NN, PVA, PVY	Bleg, PVS, PVX, LB, Wart
Snowden	B5141-6 x Wischip	BuTan	N	OW	R	Chip		CS
Superior	X(96-56) x N59.44	BuWh	SN	OW	RO	Table		CS, NN
Yukon Gold	W5279-4 x Norgleam	BuYl	S	YF2	RO	Table	PLRV, PVA	
AF2291-10	SA8211-6 x EB8109-1	BuWh	SN	OW	RO	Chip	NN	CS, EB
AF2376-5	MSG274-3Y x EB8109-1	BuYl	S	YF1	RO	Table	NN, VW	CS, EB, LB
AF2916-1	AF303-5 x CS78155-1	White	S	Wh	OR	Table	NN, VW	CS
B1992-106	B1255-5 x B0564-9	BuTan	N	Wh	RO	Chip		
NY137	Andover x MEBA bulk	BuWh	SN	OW	OR	Table	GN	
NY139	NY120 x NY115	BuWh	SN	OW	RO	Chip	GN, CS	
NY140	NY121 x NY115	BuWh	S	Wh	RO	Table	GN, Ro2	
NY141	R6-4 x NY115	BuWh	S	OW	RO	Table	GN	CS
NYB38-37	NY130 x NY115	White	S	OW	R	Table	GN	CS
Red and Purple Clones								
Chieftain	La1027-18 x La1354	RD2	S	Wh	RO	Table		NN, CS, VW, RZ
Dakota Jewel	ND2223-8R x ND649-4R	RD4	S	OW	R	Table		
Dk Rd Norland	Redkote x ND626	RD3	S	Wh	RO	Table	PVA	CS, RZ, Wart
Peter Wilcox	B0810-1 x B0918-5	PUR3	SN	YF2	OR	Table	GN	
AF2393-7	Rosegold x Redsen	RD3	S	YF1	RO	Table	NN	
B2152-17	B0811-2 x Redsen	RD3	SN	YF2	RO	Table	CS	
B2327-2	B1145-2 x Redsen	RD3	S	Wh	R	Table		CS

East Region Trial Table 1. Continued.

Clone[1]	Pedigree	Skin Color[2]	Skin Text.[3]	Flesh Color[4]	Tuber Shape[5]	Utilization[6]	Known Disease Tolerance or Resistance[8]	
							Resistant	Moderate Resistance
Russets/Long Whites								
R Burbank	Sport of Burbank	LtBr	Ru1	OW	L	Table/Proc.	CS, Bleg	
Blazer Russet	A7816-4 x NorKing Russet	Brown	Ru1	Wh	OL	Proc.	CS	
R Norkotah	ND9687-5 x ND9526-4	Brown	Ru2	OW	OL	Table	CS	PLRV, PSc
Shepody	Bakeking x F58050	White	S	Wh	L	Processing		EB, RZ
AF2199-6	A84118-3 x AF295-10	LtBr	Ru1	OW	OL	Proc.	CS, GN, NN	
AF2314-1	CS79228-1 x AC83064-6	Brown	Ru2	OW	OL	Table	NN, CS	PSc

[1]Origin of Numbered Clones: A = USDA-ARS Aberdeen, ID and Univ. of ID; AF = Univ. of Maine, Aroostook Research Farm, Presque Isle; B = USDA-ARS Beltsville, MD; NDTX =Cross by North Dakota potato breeding program, but selected by Texas A&M, College Station; NY = Cornell University, Ithaca, NY.
[2]Skin color varies with growing conditions. This information reflects general performance and should not be used to predict exact results for a specific location or growing season. This table summarizes subjective ratings where: BuWh = buff to white; BuYl = buff to yellow; BuTan =buff to tan; RD = red (number scale: 1 = pale red; 2 = light to medium red; 3 = medium red; 4 = medium to deep red; 5 = deep red; 6 = dark red, sometimes too dull); LtBr = light brown; PUR = purple (number scale: 1 = pale purple; 2 = light to medium purple; 3 = medium purple; 4 = medium to deep purple; 5 = deep purple; 6 = dark purple, sometimes too dull); LtBr = light brown.
[3]See cautions in footnote #2. This table summarizes subjective ratings from four representative locations (ME, NJ, NY, NC), where S = smooth; SN = slight net; N = netted; Ru = russeted (1 = light; 2 = moderate; 3 = heavy).
[4]See cautions in footnote #2. This table summarizes subjective ratings from Maine, where Wh = white; OW = off white; YF = yellow (½ = cream to very pale yellow; 1 = pale yellow; 2 = moderate yellow; 3 = bright yellow).
[5]See cautions in footnote #2. This table summarizes cumulative subjective ratings from all NE1014 locations, where R = mostly round; RO = round to oblong; OR = oblong to round; O = oblong; OL = oblong to long; L = long. See Table 6 for numerical summary.
[6]Expected utilization is based on commercial experience and/or currently available research results, where processing = french fry processing.
[7]Chipping directly from the field has been acceptable, but chipping had not been acceptable or has been inconsistent from storage.
[8]Known disease resistance is based on commercial experience and/or currently available research results. In some cases, disease resistance screening is in early stages. In many cases, disease incidence can vary dramatically depending on the strain of the plant pathogen that is present. Key to codes: NN = tuber net necrosis; GN = golden nematode, race Ro1; Ro2 = golden nematode, race Ro2; CS = common scab; VW = verticillium wilt; LB = late blight; EB = early blight; PSc = powdery scab; RZ = Rhizoctonia; Fdr = Fusarium dry rot; PVA = potato virus A; PVX = potato virus X; PVS = potato virus S; PLRV = potato leafroll virus; CRS = corky ringspot virus; Bwlt = southern bacterial wilt; Bleg = blackleg; PRot = pink rot; Wart = wart.

East Region Trial Table 2. Total yields (cwt/acre) for 16 named varieties and 14 numbered clones grown at 17 locations in the Eastern United States.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ2[2]	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Round Whites/Yellows																		
Atlantic	339	305	390	327	249	321	576	401	305	336	337	404	225	536	307	553	412	372
Beacon Chipper	358	343	361		177	308	586	299			403	446	253	610	191	522		374
Dakota Diamond	370	416		371	247	349	699	540	472	557	402	462	327	568	520	751	580	498
Katahdin	388	353	358	293	193	277	570	404	351				232	564	350	561	348	374
Kennebec	380	370	379	332	221	307			283				226	693			494	369
Snowden	307	311	329	332	262	311			359		357	387	275	534	368	521	360	358
Superior	231	254	318	287	184	281	550	360	148				141	548			300	300
Yukon Gold	281	248	266	328	171	279	431		286				223	549		483	278	319
AF2291-10	330	294	291	287	187	270		344	260				229	529		553	207	315
AF2376-5	355	276	328			164		458	356	353				591		589	418	389
AF2916-1	248	292	255		223								264	683				328
B1992-106	309	251		367		247			305					483		557		360
NY137	374		380						350				240	500				369
NY139	304	291	366	305	213	284	549	412	334	384	366	403	263	572	338	550	344	369
NY140	411		318		218	282	589	443	358	475	359	529		606	466	615		436
NY141	281		244		185	322	536	411	250	417				569	288	552		359
NYB38-37	262		271	293	220	278		425	272	324			200	502	319			303
Red and Purple Clones																		
Chieftain	341		381	340	246	323	588	485	361	523			275	684	331	581	479	424
Dakota Jewel	216		294	317	173	251	411	317	174	311			109	534		406		293
Dk Rd Norland	314		307	293	237	290	516		255				230	539			311	323
Peter Wilcox	278			333	176	274	439	297	243				182	481	258	435	243	303
AF2393-7	233		171	283	169				141	285			140	426	183	408		244
B2152-17	272		310	257	214		440	213	187	366			210	585		440	263	313
B2327-2	245		239	171	170		417		120	357			199	496	265	448		284

East Region Trial Table 2. Continued.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ2[2]	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Russets/Long Whites																		
R Burbank	300		232	302		463	587		348					686				433
Blazer Russet	278		350	318		460	577		266					711	557			440
R Norkotah	185		232	278	183	411	449		160					466	478			316
Shepody	334		349		212				370					643				352
AF2199-6	256		256			345	331											297
AF2314-1				257	126									269				217

[1]Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).
[2]The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).
[3]The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County, muck soil (NY3), Steuben County (NY4), Wyoming County (NY5).
[4]There were three trial locations in Pennsylvania (Centre [PA1], Erie [PA2], and Lehigh County [PA3]).
[5]The Virginia trial was in Blacksburg during 2007.
Additional note: ME and NY had several clones tested in two or more trials per location. For these states, means are presented by location rather than by trial.

East Region Trial Table 3. Marketable yields (cwt/acre) for 16 named varieties and 14 numbered clones grown at 17 locations in the Eastern United States

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ22	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Round Whites/Yellows																		
Atlantic	322	192	337	301	227	305	513	362	259	199	305	359	191	463	288	509	303	320
Beacon Chipper	323	219	282		159	292	509	274			357	345	195	560	185	465		320
Dakota Diamond	276	325		318	218	334	614	505	374	419	360	380	238	458	487	664	379	418
Katahdin	369	100	295	248	165	261	508	355	309				192	466	336	501	264	312
Kennebec	319	184	116	299	192	275			221				150	463			376	260
Snowden	287	250	294	291	234	292			311		326	335	220	470	346	471	249	313
Superior	209	208	284	245	166	263	495	319	130				104	449			207	257
Yukon Gold	264	134	231	289	157	265	409		211				188	422		418	193	265
AF2291-10	303	196	206	229	142	217		316	219				142	409		480	144	250
AF2376-5	329	214	256			136		424	306	248				447		496	355	321
AF2916-1	213	214	179		179								205	631				270
B1992-106	290	224		337		227			271					418		467		319
NY137	324		262						312				180	394				294
NY139	278	180	317	273	192	260	481	365	296	289	335	367	230	467	322	491	253	317
NY140	367		265		194	262	518	385	310	345	317	486		517	449	560		383
NY141	232		200		151	297	434	342	228	282				441	268	438		295
NYB38-37	245		220	269	182	269		375	245	221			160	438	295			264
Red and Purple Clones																		
Chieftain	307		341	301	222	282	528	449	292	374			231	614	315	520	290	362
Dakota Jewel	182		255	280	155	219	376	283	134	248			84	487		363		256
Dk Rd Norland	291		221	244	208	263	460		198				192	466			197	271
Peter Wilcox	233			263	157	244	397	272	220				149	428	237	398	87	257
AF2393-7	198		111	188	136				104	196			88	351	127	298		180
B2152-17	230		255	164	154		386	178	160	273			170	517		338	125	246
B2327-2	213		205	93	104		366		83	214			127	394	217	364		216

East Region Trial Table 3. Continued.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ22	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Russets/Long Whites																		
R Burbank	265		307	169		238	242		182					219				232
Blazer Russet	264		330	255		364	434		179					467	464			345
R Norkotah	177		222	225	161	339	361		108					397	383			264
Shepody	308		207		152				179					344				261
AF2199-6	245		192			290	261											247
AF2314-1				79	77									215				124

[1]Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).
[2]The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).
[3]The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County, muck soil (NY3), Steuben County (NY4), Wyoming County (NY5).
[4]There were three trial locations in Pennsylvania [Centre (PA1), Erie (PA2), and Lehigh County (PA3)].
[5]The Virginia trial was in Blacksburg during 2007.
Additional note: ME and NY had several clones tested in two or more trials per location. For these states, means are presented by location rather than by trial.

East Region Trial Table 4. Specific gravities (1.0 excluded) for 16 named varieties and 14 numbered clones grown at 17 locations in the Eastern United States.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ2[2]	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Round Whites/Yellows																		
Atlantic	93	91	92	76	88	91	84	81	94	85	95	97	82	94	88	88	70	88
Beacon Chipper	83	85	80		82	79	71	65			87	85	72	84	76	75		79
Dakota Diamond	91	95		71	85	87	83	83	87	80	86	88	76	93	85	73	66	82
Katahdin	86	78	74	69	69	69	65	67	75				60	80	69	74	46	70
Kennebec	77	77	75	63	72	73			77				63	88			61	73
Snowden	92	93	90	77	85	88			90		94	95	76	89	79	81	66	85
Superior	84	74	82	74	77	76	74	68	77				77	80			56	75
Yukon Gold	90	83	82	71	80	80	78		89				74	84		77	56	79
AF2291-10	88	94	87	77	89	90		79	87				73	98		83	71	85
AF2376-5	91	91	80			87		85	94	84				99		92	72	88
AF2916-1	86	81	72		77								71	75				77
B1992-106	84	93		76		87			86					90		81		85
NY137	69		62						67				60	66				65
NY139	87	91	88	72	81	85	80	76	88	86	95	96	73	95	85	86	55	84
NY140	88		78		77	80	73	66	82	79	87	96		86	75	73		80
NY141	86		77		77	80	72	65	81	81				82	73	78		78
NYB38-37	77		73	66	73	70		61	71	74			66	79	59			70
Red and Purple Clones																		
Chieftain	73		66	60	73	70	64	61	70	75			61	76	65	68	47	66
Dakota Jewel	74		72	63	72	69	71	58	70	73			62	79		75		70
Dk Rd Norland	70		67	67	67	66	60		67				67	67			43	65
Peter Wilcox	82			71	76	73	67	67	74				69	74	70	73	62	72
AF2393-7	72		64	65	69				65	70			66	68	65	64		67
B2152-17	76		68	71	75		74	63	71	76			72	71		73	49	70
B2327-2	78		77	68	66		63		63	70			60	73	65	74		69

East Region Trial Table 4. Continued.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ2[2]	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Russets/Long Whites																		
R Burbank	86		79	62		69	71		79					84				76
Blazer Russet	83		83	69		65	71		76					79	70			75
R Norkotah	78		75	62	76	68	74		77					72	69			72
Shepody	90		82		81				84					88				82
AF2199-6	81		73			77	77											77
AF2314-1				68	71									68				69

[1]Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).
[2]The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).
[3]The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County, muck soil (NY3), Steuben County (NY4), Wyoming County (NY5).
[4]There were three trial locations in Pennsylvania (Centre [PA1], Erie [PA2], and Lehigh County [PA3]).
[5]The Virginia trial was in Blacksburg during 2007.
Additional note: ME and NY had several clones tested in two or more trials per location. For these states, means are presented by location rather than by trial.

East Region Trial Table 5. Percentage yield of tubers in the 2.5- to 4-in.-size range for round whites and reds and russets (>8 oz at most locations) for 16 named varieties and 14 numbered clones grown at 17 locations in the Eastern United States.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ2[2]	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Round Whites/Yellows																		
Atlantic	58	67	36	25	67	73	89	73	74	75	74	65		74	50	73	63	65
Beacon Chipper	55	56	50		54	87	89				81	73		80	75	69		70
Dakota Diamond	37	59		7	40	83	86		68	77	71	71		74	49	78	65	69
Katahdin	57	65	61	5	44	77	86	60	73					72	53	73	61	61
Kennebec	57	66	61	27	56	74			67					57			64	59
Snowden	27	46	26	7	47	43			59		65	52		71	53	48	56	46
Superior	30	56	43	9	56	64	89	50	38					67			63	51
Yukon Gold	59	64	48	28	59	84	91		71					71		75	63	65
AF2291-10	57	53	33	3	33	55		58	66					66		62	58	49
AF2376-5	33	31	16			54		69	72	66				56		58	65	52
AF2916-1	11	23	18		29									59				28
B1992-106	31	41		31		63			64					58		49		48
NY137	27		18						57					62				41
NY139	43	62	35	6	53	61	86	61	64	62	64	58		65	49	67	60	56
NY140	67		53		60	75	73	78	68	71	56	70		77	62	75		68
NY141	73		68		59	70	80	64	73	60				63	53	66		67
NYB38-37	47		36	11	43	76		62	51	66				74	48			51
Red and Purple Clones																		
Chieftain	50		43	8	47	56	83	61	62	76				78	49	73	64	58
Dakota Jewel	22		35	6	58	62	79		23	72				76		63		50
Dk Rd Norland	19		24	4	56	59	77		68					67			52	46
Peter Wilcox	8			2	52	33	56	31	36					57	44	35	44	36
AF2393-7	12		3	2	26				14	56				34	13	18		20
B2152-17	14		10	1	18		55	29	13	66				53		38	39	31
B2327-2	18		11	0	5		53		31	64				37	33	45		30

East Region Trial Table 5. Continued.

Clone	ME1[1]	ME2[1]	ME3[1]	FL	NC	NJ1[2]	NJ2[2]	NY1[3]	NY2[3]	NY3[3]	NY4[3]	NY5[3]	OH	PA1[4]	PA2[4]	PA3[4]	VA[5]	Mean
Russets/Long Whites																		
R Burbank	20		11	0		17	41		41					20				21
Blazer Russet	9		11	6		49	68		41					49				33
R Norkotah	8		10	3	40	42	69		32					58				33
Shepody	36		48		17				50					45				31
AF2199-6	25		28			57	64											44
AF2314-1				0	6									35				14

[1]Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).
[2]The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).
[3]The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County, muck soil (NY3), Steuben County (NY4), Wyoming County (NY5).
4There were three trial locations in Pennsylvania [Centre (PA1), Erie (PA2), and Lehigh County (PA3)].
[5]The Virginia trial was in Blacksburg during 2007.
Additional note: ME and NY had several clones tested in two or more trials per location. For these states, means are presented by location rather than by trial.

East Region Trial Table 6. Average (sites x years) US#1 yield, specific gravity, and tuber size distribution relative to standard varieties, tuber appearance and shape ratings, chip color, and bake and boil scores for 16 named and 14 numbered potato clones. Number of comparisons (sites x years) are in parentheses.

		Comparison to Std[1]					Chip Color4																	
Variety	Year(s)	US#1 % of std	Spec. Grav.	Size Distrib.	Appearance Rating2	Shape Rating3	Out of Field5			50-55oF Storage			45oF Storage			Recon-ditioned6			Boil Score7			Bake Score7		
Round Whites/Yellows																								
Atlantic	2007	100(17)	0(17)	0(16)	5.6(14)	2.4(14)	3	0	0	9	1	3	5	0	0	4	2	2	1	0	3	1	0	0
Atlantic	18	100(345)	0(336)	0(288)	6.3(307)	2.0(223)	39	22	6	92	28	37	32	15	26	49	29	21	27	17	42	25	10	3
Beacon Chipper	2007	95(13)	-11(13)	4(11)	6.2(11)	2.6(11)	2	0	0	7	1	1	4	1	0	4	0	1	0	0	2	2	0	0
Dakota Diamond	2007	130(16)	-5(16)	-1(14)	6.1(13)	2.4(13)	3	0	0	7	3	0	1	3	3	0	2	5	2	0	1	1	0	0
Katahdin	2007	94(14)	-17(14)	-3(13)	5.8(14)	3.1(14)	1	1	0	1	0	5	0	0	3	0	0	3	2	1	0	2	0	0
Katahdin	18	93(240)	-15(226)	-2(197)	6.1(239)	2.7(173)	11	10	18	6	20	60	0	1	41	2	2	36	39	25	2	27	13	3
Kennebec	2007	89(10)	-15(10)	-1(9)	5.0(10)	4.8(10)	1	1	0	3	2	2	0	0	3	1	1	1	1	0	1	1	0	0
Kennebec	18	93(212)	-12(208)	0(173)	5.3(207)	4.5(131)	11	6	16	30	26	56	4	2	39	8	3	37	29	20	7	20	14	4
Snowden	2007	102(14)	-3(14)	-15(13)	5.2(12)	2.1(12)	3	0	0	8	2	1	3	1	1	5	3	0	1	0	3	1	0	0
Snowden	16	98(202)	-1(192)	-15(163)	5.6(196)	2.0(145)	38	4	1	79	19	12	35	12	6	54	11	3	10	14	23	10	2	5
Superior	2007	79(12)	-11(12)	-12(11)	5.8(12)	3.6(12)	2	0	0	2	2	3	0	0	3	0	0	3	3	0	0	2	0	0
Superior	18	87(223)	-11(210)	-8(179)	5.9(222)	3.1(169)	28	14	19	23	28	46	1	5	31	2	6	25	35	23	7	24	14	4
Yukon Gold	2007	81(11)	-8(11)	1(10)	6.5(11)	3.1(11)	0	0	0	0	2	4	0	0	3	0	0	3	1	2	0	2	0	0
Yukon Gold	18	84(174)	-7(159)	1(138)	6.6(179)	3.0(130)	5	1	4	6	15	53	0	1	23	0	2	23	22	18	4	18	5	0
AF2291-10	2007	79(12)	-2(12)	-13(11)	5.6(12)	2.5(12)	2	0	0	3	4	1	1	2	1	2	1	1	1	0	2	2	0	0
AF2291-10	3	87(39)	-1(36)	-8(35)	5.5(39)	2.6(35)	3	0	0	16	7	2	4	4	5	8	2	3	3	1	3	5	0	0
AF2376-5	2007	101(10)	0(10)	-15(10)	6.6(9)	2.7(9)	0	0	1	0	5	4	0	2	2	1	0	3	2	0	0	1	1	0
AF2376-5	2	96(18)	0(16)	-10(18)	6.5(17)	2.8(15)	1	0	1	1	6	6	0	2	2	1	0	3	2	0	0	1	1	0
AF2916-1	2007	92(6)	-13(6)	-32(5)	6.2(6)	4.3(6)	1	0	0	4	1	1	0	1	1	0	1	1	0	1	0	1	0	0
AF2916-1	2	87(21)	-15(18)	-34(19)	6.0(20)	3.8(18)	2	0	0	5	5	3	0	1	6	0	3	3	2	1	0	2	0	0
B1992-106	2007	97(7)	-4(7)	-15(7)	6.0(7)	2.8(7)	1	0	0	3	3	0	3	1	0	2	2	1	0	0	2	1	0	0
NY137	2007	96(5)	-26(5)	-20(4)	5.5(5)	3.0(5)	0	0	0	3	0	1	0	1	0	1	1	0	1	2	0	1	0	1
NY137	2	90(20)	-25(17)	-18(18)	5.4(19)	3.6(16)	1	0	0	5	1	4	0	2	2	2	1	1	4	2	0	2	0	1
NY139	2007	101(17)	-4(17)	-9(16)	6.0(14)	3.4(14)	3	0	0	6	2	1	5	0	0	5	1	0	2	1	3	1	0	1
NY139	2	97(37)	-4(34)	-11(35)	6.1(30)	3.3(28)	5	0	0	13	2	2	11	1	0	9	1	0	6	3	3	3	0	1
NY140	2007	114(13)	-10(13)	0(13)	6.0(10)	3.3(10)	1	0	0	5	0	1	3	0	1	2	1	1	4	0	0	0	1	0
NY141	2007	101(11)	-12(11)	-1(11)	5.6(10)	3.3(10)	2	0	0	3	2	1	0	0	4	0	0	4	2	0	0	0	1	0
NYB38-37	2007	90(12)	-18(12)	-10(11)	6.5(11)	2.0(11)	2	0	0	4	0	1	2	0	1	1	2	1	3	0	0	0	1	0

East Region Trial Table 6. Continued.

Variety	Year(s)	Comparison to Std[1]					Chip Color4																
		US#1 % of std	Spec. Grav.	Size Distrib.	Appearance Rating2	Shape Rating3	Out of Field5			50-55oF Storage			45oF Storage			Recon-ditioned6			Boil Score7			Bake Score7		
Red and Purple Clones																							
Chieftain	2007	100(14)	0(14)	0(13)	5.5(13)	3.3(13)	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	1	0
Chieftain	18	100(172)	0(158)	0(140)	5.9(155)	2.9(106)	1	0	2	0	3	37	0	0	3	0	1	2	29	5	1	7	3	1
Dakota Jewel	2007	67(12)	-1(12)	-7(10)	6.6(11)	2.2(11)	0	0	0	0	0	3	0	0	0	0	0	0	1	1	0	1	1	0
Norland, Dk Red	2007	79(10)	-1(10)	-7(9)	6.2(10)	3.5(10)	0	0	0	1	0	1	0	0	0	0	0	0	2	0	1	1	1	0
Norland, Dk Red	15	77(126)	-5(113)	-15(114)	6.1(143)	3.0(107)	2	1	4	7	9	17	0	0	2	1	1	1	18	10	4	10	5	2
Peter Wilcox (B1816-5)	2007	71(12)	6(12)	-21(11)	5.7(12)	3.8(12)	0	0	0	2	1	0	0	0	0	0	0	0	2	0	0	1	0	0
Peter Wilcox (B1816-5)	3	72(38)	7(35)	-28(34)	5.5(39)	3.7(36)	0	0	0	5	3	0	0	0	0	0	0	0	8	1	0	3	2	0
AF2393-7	2007	50(10)	-2(10)	-34(9)	6.0(9)	2.5(9)	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	1	1	0
AF2393-7	2	55(13)	-2(13)	-34(12)	6.2(12)	2.6(12)	0	0	0	1	2	1	0	0	0	0	0	0	1	1	0	1	1	0
B2152-17	2007	65(12)	4(12)	-28(11)	6.2(11)	2.3(11)	0	0	0	0	1	2	0	0	0	0	0	0	1	1	0	2	0	0
B2327-2	2007	56(11)	1(11)	-27(10)	6.2(10)	1.9(10)	0	0	0	1	1	1	0	0	0	0	0	0	2	0	0	0	1	0
Russets/Long Whites																							
Blazer Russet	2007	130(8)	3(8)	2(7)	5.7(7)	6.3(8)	0	0	0	0	1	2	0	1	0	0	0	1	1	1	0	2	0	0
Blazer Russet	2	120(12)	3(12)	0(11)	5.3(11)	5.9(12)	0	0	0	0	4	4	0	2	0	0	1	1	2	1	0	3	0	0
Russet Burbank	2007	103(7)	3(7)	-10(7)	4.1(7)	7.0(7)	0	0	0	0	0	3	0	0	1	0	0	1	3	0	0	1	1	0
Russet Burbank	18	97(72)	7(64)	-6(61)	4.1(76)	7.2(81)	0	1	0	2	9	40	0	0	23	0	2	20	25	12	10	18	17	1
Russet Norkotah	2007	100(9)	0(9)	0(8)	6.4(9)	5.8(10)	0	1	0	0	0	3	0	0	1	0	0	1	1	1	1	1	1	0
Russet Norkotah	11	100(103)	0(97)	0(86)	6.5(97)	6.4(86)	0	1	0	3	5	38	0	0	16	0	0	14	12	5	9	10	6	2
Shepody	2007	130(5)	6(5)	8(5)	4.7(5)	6.6(5)	1	0	0	0	0	3	0	0	1	0	0	1	1	1	0	1	0	0
Shepody	11	102(56)	7(48)	15(45)	5.0(59)	6.8(42)	1	0	0	2	7	20	0	0	11	0	1	10	4	8	0	4	0	0
AF2199-6	2007	96(4)	3(4)	11(4)	6.0(4)	6.8(4)	0	0	0	1	1	1	0	0	1	0	0	1	1	0	0	0	0	1
AF2199-6	3	89(16)	5(15)	2(16)	5.5(19)	6.4(16)	0	0	0	3	5	3	0	1	2	0	0	3	4	0	1	3	1	1
AF2314-1	2007	46(3)	-1(3)	-2(3)	4.3(3)	4.8(3)	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
AF2314-1	2	69(8)	-4(8)	-8(8)	5.1(8)	5.2(8)	0	0	1	3	1	1	0	1	0	0	1	0	1	1	1	3	0	0

[1]Standard varieties were as follows: Atlantic was used as the standard for all whites; Chieftain was used for all reds; and Russet Norkotah was used for all russets and long-tuber-type clones. All relative comparisons are calculated by location and then averaged over locations for presentation. US#1 data are the relative yield as a percentage of the standard. Specific gravity data (1.0 excluded) are the difference versus the standard (minus sign indicates lower specific gravity than the standard). Size distribution for whites and reds is the percentage of yield from 2½ to 4 inches in diameter and is expressed as the difference relative to the standard (minus sign indicates smaller tubers than standard). Size distribution for the russet and long varieties is calculated the same way, but is based on the percentage of yield consisting of tubers greater than 8 ounces in weight.

[2]Average value from visual ratings using standard NE1014 rating codes where 1 = very poor appearance and 9=excellent appearance.

[3]Average value from visual ratings using standard NE1014 rating codes where 1 = round, 5 = oblong, and 8 = long.

[4]From left-to right, the number of trials with good, borderline, and poor chipping scores, respectively.

[5]Out of field samples were fried three to twelve days after harvest in New Jersey, North Carolina, Virginia, and the New York early maturity trial.

[6]Chips were reconditioned in Maine, Upstate New York, New Brunswick, and Ohio trials. Initial storage temperature ranged from 38 to 45oF

[7]From left-to-right, the number of trials with good, borderline, and poor boil and bake scores, respectively. Data are from Maine, New Brunswick, New York, Pennsylvania, and Ohio.

East Region Trial Table 7. Average (sites x years) percent tuber defects for 16 named and 14 numbered potato clones. Number of comparisons (sites x years) are in parentheses.

		% External Tuber Defects				% Internal Tuber Defects[2]		
Variety	Year(s)	Total[1]	Sun-burn	Mis-shapen	Growth cracks	Hollow Heart	Internal Necrosis	Vascular Discolor.
Round Whites/Yellows								
Atlantic	2007	11.7(17)	6.1(10)	1.6(9)	2.4(10)	8.3(16)	17.2(14)	5.7(6)
Atlantic	18	8.7(223)	4.2(163)	2.0(165)	1.3(169)	9.8(251)	21.0(173)	4.0(62)
Beacon Chipper	2007	11.4(12)	6.5(5)	2.8(5)	1.1(5)	2.5(12)	1.8(10)	2.5(4)
Dakota Diamond	2007	13.8(15)	7.8(8)	0.8(7)	3.1(8)	21.0(15)	12.2(14)	9.7(7)
Katahdin	2007	14.6(14)	8.9(7)	1.7(6)	0.4(7)	1.9(13)	1.3(11)	21.5(4)
Katahdin	18	11.9(168)	7.0(116)	1.4(110)	0.6(118)	4.7(206)	5.2(128)	5.6(33)
Kennebec	2007	23.6(10)	10.2(6)	6.6(5)	2.3(6)	0.8(9)	2.2(7)	0.8(4)
Kennebec	18	21.7(134)	9.4(98)	5.3(97)	3.0(93)	3.3(156)	3.7(96)	4.0(27)
Snowden	2007	7.6(14)	2.7(8)	2.0(7)	1.4(8)	3.8(13)	2.1(11)	22.1(6)
Snowden	16	6.0(130)	2.8(93)	1.7(92)	0.5(93)	4.3(156)	2.6(114)	11.9(45)
Superior	2007	10.5(12)	1.8(7)	3.2(6)	2.1(7)	0.8(11)	2.0(8)	3.9(4)
Superior	18	8.0(159)	1.6(110)	3.2(109)	1.0(112)	1.5(184)	2.2(131)	4.3(35)
Yukon Gold	2007	12.6(12)	4.5(6)	2.0(5)	1.9(6)	1.4(10)	5.0(9)	8.1(4)
Yukon Gold	18	11.3(126)	4.0(82)	2.5(81)	1.0(83)	6.2(132)	5.4(99)	2.8(31)
AF2291-10	2007	14.8(12)	3.4(7)	4.0(6)	1.0(7)	3.0(11)	3.9(9)	8.8(3)
AF2291-10	3	11.4(37)	3.1(18)	5.0(17)	0.5(18)	8.1(34)	3.6(24)	6.7(8)
AF2376-5	2007	12.7(10)	7.6(7)	3.9(6)	0.8(7)	1.9(12)	38.8(7)	8.3(3)
AF2376-5	2	9.6(18)	5.7(10)	3.7(9)	0.7(10)	1.7(18)	44.4(10)	7.5(4)
AF2916-1	2007	11.7(6)	5.5(3)	3.2(3)	1.4(3)	0.0(4)	0.0(3)	0.0(2)
AF2916-1	2	12.0(21)	5.4(9)	2.3(9)	2.1(9)	0.2(17)	0.5(12)	3.7(6)
B1992-106	2007	4.8(7)	1.6(4)	0.7(4)	0.4(4)	0.0(7)	0.0(5)	6.7(1)
NY137	2007	12.7(5)	1.9(3)	2.0(3)	0.1(3)	0.0(4)	0.0(3)	0.0(2)
NY137	2	13.4(19)	3.0(10)	1.9(10)	0.6(10)	0.5(16)	3.7(11)	0.0(6)
NY139	2007	11.1(17)	7.7(10)	1.7(7)	0.7(10)	0.2(16)	2.1(14)	9.6(7)
NY139	2	9.3(36)	6.1(20)	1.5(17)	0.6(20)	0.1(33)	2.3(27)	8.0(13)
NY140	2007	9.5(13)	5.4(7)	2.1(7)	0.2(7)	2.2(13)	0.2(11)	15.0(5)
NY141	2007	14.6(12)	5.8(6)	6.0(6)	0.8(6)	1.6(12)	1.2(10)	7.5(4)
NYB38-37	2007	9.8(12)	4.6(7)	1.1(7)	0.3(7)	1.1(11)	1.2(10)	10.0(5)
Red and Purple Clones								
Chieftain	2007	10.9(14)	4.4(7)	1.3(6)	5.9(7)	0.0(14)	20.9(12)	17.5(4)
Chieftain	18	7.5(123)	1.8(79)	1.4(80)	1.7(80)	0.8(137)	13.9(96)	6.7(32)
Dakota Jewel	2007	8.8(12)	2.0(5)	3.0(5)	1.9(5)	6.0(12)	0.8(10)	3.3(3)
Norland, Dk Red	2007	9.9(10)	3.2(5)	2.0(4)	4.3(5)	0.5(10)	2.0(8)	11.6(3)
Norland, Dk Red	15	6.3(103)	1.4(62)	1.7(60)	1.5(53)	1.1(116)	1.0(93)	5.1(32)
Peter Wilcox(B1816-5)	2007	7.2(12)	0.6(5)	2.4(4)	1.8(5)	0.4(12)	0.3(11)	3.3(3)
Peter Wilcox (B1816-5)	3	7.2(41)	0.7(19)	3.0(18)	0.8(19)	0.7(39)	0.7(32)	3.2(11
AF2393-7	2007	4.1(10)	1.4(5)	1.8(5)	0.3(5)	0.0(9)	0.0(8)	23.3(3)
AF2393-7	2	4.2(13)	1.0(7)	2.1(7)	0.4(7)	0.0(12)	0.0(9)	17.5(4)
B2152-17	2007	6.5(12)	1.5(7)	1.5(6)	0.4(7)	0.0(12)	1.3(10)	5.5(4)
B2327-2	2007	7.4(11)	3.7(5)	1.4(5)	2.4(5)	0.0(11)	0.0(9)	13.3(3)
Russets/Long Whites								
Blazer Russet	2007	12.8(8)	0.6(4)	5.8(4)	0.7(4)	3.8(8)	0.4(6)	25.0(1)
Blazer Russet	2	15.9(12)	0.6(6)	7.9(6)	0.8(6)	6.2(12)	1.3(8)	25.0(1)
Russet Burbank	2007	27.1(7)	1.0(4)	9.6(4)	1.3(4)	0.7(7)	2.0(5)	32.5(1)
Russet Burbank	18	21.8(97)	1.4(79)	15.3(79)	1.3(75)	7.3(102)	6.3(53)	5.7(13)
Russet Norkotah	2007	8.7(9)	0.5(4)	3.8(4)	0.1(4)	3.3(9)	0.0(7)	0.0(2)
Russet Norkotah	11	8.9(73)	1.3(46)	4.4(46)	0.6(46)	5.1(82)	1.1(53)	0.8(13)
Shepody	2007	17.4(5)	2.6(3)	7.5(3)	0.9(3)	0.4(5)	0.0(3)	11.2(2)
Shepody	11	27.6(43)	6.9(33)	11.3(33)	0.7(33)	4.6(45)	1.4(20)	5.2(13)
AF2199-6	2007	13.0(4)	0.4(2)	8.1(2)	6.0(2)	2.5(4)	1.2(2)	(0)
AF2199-6	3	12.1(18)	1.4(9)	7.7(9)	3.6(9)	3.6(16)	2.8(8)	10.0(1)
AF2314-1	2007	13.0(3)	0.0(1)	0.0(1)	0.0(1)	0.0(3)	0.0(3)	0.0(1)
AF2314-1	2	10.1(8)	0.4(6)	5.3(4)	1.4(4)	0.0(8)	0.0(6)	10.0(2)

[1]Total defects may contain defects (common scab, rot, etc.) other than the three categories listed in this table.
[2]Typically 30 to 40 tubers per clone are cut and examined for internal defects at each location. For most eastern test locations where internal necrosis is reported the specific internal defect being rated is internal heat necrosis (IHN).

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