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INTRODUCTION

Twenty trials were conducted in seven states and two Canadian provinces. Fourteen named varieties and 16 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 Maine Agricultural and Forest Experiment Station staff 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) to determine heritability/linkage relationships and to 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 Tables 2 to 7. For round whites, Atlantic, Kennebec, Snowden, and NYY73-49 had the highest total yields (Table 2). NYY73-49 was the only clone in the 2006 regional trials that had a US#1 yield equaling or exceeding that of Atlantic in side-by-side tests (Tables 3 and 6). Across sites NYY73-49's US#1 yields averaged 105% those of Atlantic. Snowden and NY139 also provided relatively high marketable yields (averaging 96% and 94% of Atlantic, respectively). Specific gravities of Snowden, AF2291-10, AF2376-5, and NYY73-49 were close to or greater than Atlantic at comparable sites (Tables 4 and 6). AF2322-2, B1870-3, and NY137 had an average specific gravity below 1.070. Atlantic, Katahdin, Kennebec, Yukon Gold, AF2376-5, and NYY73-49 sized well in most trials (Tables 5 and 6). Snowden, AF2322-2, AF2916-1, B1806-8, B1870-3 NY137, and NY139 had small tuber size. Yukon Gold, AF2376-5, and NY139 had particularly good external appearance ratings. Snowden, AF2211-9, AF2291-10 and

NY139 chipped well in most 2006 tests. AF2916-1, B1806-8, B1870-3, and NY137 scored particularly well in boiling tests. All of the new clones scored well in baking tests (Table 6).

Many of the white cultivars and clones had relatively high incidences of external tuber defects during 2006 (Table 7). Eleven of 16 had more than 10% external defects. Clones with a low incidence of external defects incidence (less than or equal to 8%) during 2006 were Snowden, AF2291-10, AF2376-5 and NY139. Atlantic, Snowden, Yukon Gold, and AF2291-10 had high incidences of hollow heart. Atlantic, AF2211-9, and AF2376-5 had the highest incidence of internal necrosis. AF2322-2 had relatively high incidence of vascular discoloration.

In the trials of red-skinned potatoes, NDTX731-1R and NY129 had higher US#1 yields than Chieftain (Table 6). AF2393-7 and NDTX731-1R had the best overall appearance ratings and had relatively low incidence of internal and external defects (Tables 6 and 7). NDTX731-1R had very low specific gravity and fair cooking quality. NY129 had fair appearance and a low incidence of defects. It is slightly more susceptible to internal necrosis than is NDTX731-1R and has had fair to good boiled cooking quality. NDTX731-1R has had relatively high vascular discoloration incidence. Considering all attributes, NDTX731-1R was the best red clone in the trials.

Peter Wilcox (B1816-5) and B1952-2 are purple-skinned clones tested in the 2006 trials. Both clones produce US#1 yields that are similar to those of Dark Red Norland. Peter Wilcox produces small, oblong tubers with yellow-flesh. Skin problems detract from an otherwise attractive purple color. Boiled quality has been good, while baked quality is fair to good. B1952 has slightly better appearance and much larger, white-fleshed tubers. Boiled and baked quality of B1952-2 has been marginal at best. Internal defects have not caused problems in either clone to date.

In the trials of russeted and long-tuber-type varieties, Russet Burbank and GemStar Russet had the highest total yields, while GemStar Russet had the highest average US#1 yields (Tables 2 and 3). GemStar Russet US#1 yields exceeded those of Russet Norkotah (Tables 3 and 6). Across sites, this variety's US#1 yields averaged 124% those of Russet Norkotah. Specific gravities of Gemstar Russet, Russet Burbank, Shepody, and AF2199-6 were greater than or equal to 1.080 (Table 4). GemStar Russet and Shepody had large

tuber size (Tables 5 and 6). GemStar Russet and Russet Norkotah had very good tuber appearance (Table 6). Blazer Russet, GemStar Russet, and AF2199-6 had acceptable boiled and baked quality scores during 2006, while Russet Burbank, Russet Norkotah, and AF2314-1 had relatively poor boiled quality and good baked quality (Table 6).

Only GemStar Russet, Russet Norkotah, AF2199-6 and AF2314-1 had acceptable incidence of external defects incidence for fresh market (<10%) during 2006 (Table 7). Blazer Russet and GemStar Russet had relatively high hollow heart incidence. None of the russeted/long-type clones had high levels of internal necrosis during 2006. Vascular discoloration was a problem in AF2314-1.

PROMISING 2006 CLONES

NY139 and AF2291-10 were promising chipping clones during 2006. Yield, specific gravity, tuber size, and chip color were acceptable. None of the round-white or yellow-fleshed, fresh market clones tested in 2006 did well enough to be recommended. NDTX731-1R was the most promising red-skinned clone. Peter Wilcox (B1816-5) continued to show promise as a purple-skinned, yellow-fleshed specialty clone. GemStar Russet (A9014-2) was the most promising russeted clone tested in 2006. It performed well in most respects, but was very susceptible to hollow heart.

East Region Trial Table 1. General characteristics and known disease resistance for 14 named varieties and 16 numbered clones grown at 20 locations in the Eastern United States and Eastern Canada.

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
Round Whites								
Atlantic	Wauseon x Lenape	BuWh	N	OW	R	Chip	GN, NN, PVA, PVX	CS, VW, Bwlt
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	
AF2211-9	Atlantic x MaineChip	BuWh	SN	OW	R	Chip	NN	CS
AF2291-10	SA8211-6 x EB8109-1	BuWh	SN	OW	RO	Chip	NN	CS, EB
AF2322-2	AF1437-1 x Katahdin	BuWh	S	Wh	R	Table	NN	
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
B1806-8	B0925-4 x B0809-10	BuYl	S	YF1½	OR	Table/Chip ⁷		
B1870-3	B1065-51 x B1150-5	White	S	Wh	RO	Table		
NY137	Andover x MEBA bulk	BuWh	SN	OW	OR	Table	GN	
NY139	NY120 x NY115	BuWh	SN	OW	RO	Chip	GN, CS	
NY73-49	Q174-3 x NY115	White	S	OW	R	Table		leafhoppers
Red and Purple Clones								
Chieftain	La1027-18 x La1354	RD2	S	Wh	RO	Table		NN, CS, VW, RZ
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	PSc
AF2393-7	Rosegold x Redsen	RD4	S	YF1	RO	Table	NN	
B1952-2	B0813-7 x B0918-5	PUR4	SN	OW	RO	Table		
NDTX731-1R	ND169-10R x ND9476-5R	RD5	SN	Wh	R	Table	CS	PSc
NY129	N38-1 x ND2225-1R	RD4	N	Wh	R	Table	GN, 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	
GemStar Russet	Gem Russet x A8341-5	LtBr	Ru2	Wh	OL	Table/Proc.	CS	VW, PSc
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	L	Proc.	CS, GN, NN	
AF2314-1	CS79228-1 x AC83064-6	Brown	Ru2	OW	OL	Table	NN, CS	PSc

¹Origin of numbered clones: A = USDA-ARS Aberdeen, ID, and Univ. of ID; AF = Univ. of Maine, Aroostook Research Farm, Presque Isle, ME; 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.

²Skin 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: BuWh = buff to white; BuYI = 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.

³See cautions in footnote 2. This table summarizes subjective ratings from four representative locations (ME, NJ, NY, NC): S = smooth; SN = slight net; N = netted; Ru = russeted (1 = light; 2 = moderate; 3 = heavy).

⁴See cautions in footnote 2. This table summarizes subjective ratings from Maine: Wh = white; OW = off white; YF = yellow ($\frac{1}{2}$ = cream to very pale yellow; 1 = pale yellow; 2 = moderate yellow; 3 = bright yellow).

⁵See cautions in footnote 2. This table summarizes cumulative subjective ratings from all NE1014 locations: 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.

⁶Expected utilization is based on commercial experience and/or currently available research results, where processing = french fry processing.

⁷Chipping directly from the field has been acceptable, but chipping had not been acceptable or has been inconsistent from storage.

⁸Known disease resistance is based on commercial experience and/or currently available research results. In some cases, disease resistance screening is in very 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; Wart = wart.

East Region Trial Table 2. Total yields (cwt/acre) for 14 named varieties and 16 numbered clones grown at 20 locations in the Eastern United States and Eastern Canada.

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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Round Whites/Yellows																					
Atlantic	401	255	497	385	361	366	497	394	471	315	367	442	509	422	448	539	447		344	410	414
Katahdin	367	292	477	318	313	353	591	335	341				480	448	327	474	504				401
Kennebec	460	289	561	375	401	360	750	395	458				563	523			549				474
Snowden	377	303	469	366	374	372		452			376	367	493	549	440	416	410		263	424	416
Superior	421	144	515	356	331	233	563	353	338				387	511			402		316	333	392
Yukon Gold	431	264	468	338	268	266	436	404					431	423	300	313	394		310	307	365
AF2211-9	385	246	395		328			264	377				352	363	300	313	313		326	398	320
AF2291-10	360	198	425	339	300	317			377				478	522	367	458	458		310	378	364
AF2322-2	346	180	387		359	282	479	359	268					522	316	171			296	349	349
AF2376-5	360	287	429		324	283	495												163	321	333
AF2916-1	405	283	435		323	225	406	403	386				357	498	252	404	373		341	448	369
B1806-8	380	185	489	405	465	323		405	307				492	589		409	409		264	336	388
B1870-3	317	247	476	426	401	281		429					476	387					289	335	369
NY137	281	163	457	424	398	473	638	415	342				299	492			477		283	344	392
NY139	326	290	454	326	349	328	430	298	446	405	378	415	359	422	369	317	374		367	402	371
NY73-49	428	224	535	340	465	415	659						529	605			500		329	396	452
Red and Purple Clones																					
Chieftain	451		528	359	495		487	439	275	275	451		477	533	263	384	456		381	436	428
Dk Rd Norland	361		390	275	319	206	436	323	182	182	377		234	403			347		325	293	319
Peter Wilcox	343		393	335	368	290	432	244	415	320			310	483	279	311	334		289	278	339
AF2393-7	409		387		319																372
B1952-2	382		460		275	247	385						364	397		233	247		322	261	325
NDTX731-1R	453		481	335	379	381	529	427	395	425			293	550		493	567		416	530	444
NY129	428		484	200	432	290	610	463	432	346	384		542	560	326	478	493		332	380	423

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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Russets/Long Whites																					
R Burbank	409		450	385	412	197			407					574			423	403	336	400	
Blazer Russet	329		451											502	232					379	
GemStar Rus.	388		450	267		198	497							493			498	309	444	394	
R Norkotah	310		416	281	326		430		258					336	290		309	286	386	328	
Shepody	371		462		346				339					417			446	267	398	348	
AF2199-6	342		375											385			320	267	398	348	
AF2314-1	254		341						223					349	221					278	

¹Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).

²The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).

³The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County (whites) or Orleans County (reds), muck soil (NY3), Steuben County (whites) or Wayne County, muck (reds) (NY4), Wyoming County (NY5).

⁴There were three trial locations in Pennsylvania [Centre (PA1), Northampton (PA2), and Erie County (PA3)].

⁵There were three trial locations in Quebec [St-Ubalde (QC1), Louisville (QC2), and Rawdon (QC3)].

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 14 named varieties and 16 numbered clones grown at 20 locations in the Eastern United States and Eastern Canada.

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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Round Whites/Yellows																					
Atlantic	332	173	429	348	327	335	443	348	374	262	315	391	327	373	425	435	437	162	301	373	345
Katahdin	314	157	357	264	281	325	518	302	291				241	416	301	387	491	99			316
Kennebec	349	140	187	332	322	302	525	282	229				199	436			513	150			305
Snowden	332	210	383	317	343	347			386		324	319	283	503	401	332	382		248	394	357
Superior	359	122	422	280	301	212	498	314	305				149	477			397	128	260	303	317
Yukon Gold	377	147	352	280	241	233	393		359				222	401			379	108	289	287	291
AF2211-9	303	163	255	158	302								123	291	284		300	109	300	346	238
AF2291-10	319	158	327	289	277	270		228	232				363	503	330		445	148	287	344	301
AF2322-2	261	84	298		318	216	400		301	205				473	279	136		102	243	329	260
AF2376-5	329	254	387		308	264	376												147	300	296
AF2916-1	334	202	370		265	178	323		332	225			213	411	216	329	343		269	393	294
B1806-8	341	150	206	322	445	277			352	259			202	539			390	82	216	300	292
B1870-3	286	199	414	325	357	239			375				282	310					246	316	304
NY137	238	135	279	161	373	387	547		297	263			205	421			454	150	244	277	295
NY139	266	228	393	281	310	273	380	267	363	340	347	379	263	389	336	214	362	186	324	363	313
NY73-49	373	137	357	225	421	345	555						366	555			481	181	291	355	357
Red and Purple Clones																					
Chieftain	417		445	295	448		414	378	363	175	349		303	492	244	325	430	144	347	402	355
Dk Rd Norland	306		325	212	249	172	379		273	123	306		158	350			321	126	289	258	257
Peter Wilcox	309		296	258	326	246	346		370	239			153	431	231	239	306		203	214	273
AF2393-7	348		309		268																308
B1952-2	341		403		247	205	345						262	363			230	88	286	246	270
NDTX731-1R	408		425	305	343	349	473		358	323	357		240	507			547	211	366	466	386
NY129	408		412	166	410	264	523	428	372	246	329		436	536	315	389	456	150	313	357	364

East Region Trial Table 3. 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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Russets/Long Whites																					
R Burbank	287		347	257	266	64			182					345			310		332	209	260
Blazer Russet	271		405											333	213						306
GemStar Rus.	336		385	198		160	380							431			401		269	395	328
R Norkotah	284		400	172	296		330		176					276	256		277				274
Shepody	204		233		276				210					363			330		251	330	275
AF2199-6	305		327											288			244		222	313	283
AF2314-1	230		310						145					295	175						231

¹Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).

²The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).

³The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County (whites) or Orleans County (reds), muck soil (NY3), Steuben County (whites) or Wayne County, muck (reds) (NY4), Wyoming County (NY5).

⁴There were three trial locations in Pennsylvania [Centre (PA1), Northampton (PA2), and Erie County (PA3)].

⁵There were three trial locations in Quebec [St-Ubalde (QC1), Louisville (QC2), and Rawdon (QC3)].

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 14 named varieties and 16 numbered clones grown at 20 locations in the Eastern United States and Eastern Canada.

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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Round Whites/Yellows																					
Atlantic	97	94	101	83	81	79	85	92	92	84	81	95		88	99	78	106	83			90
Katahdin	81	77	82	68	64	58	68	70	71					75	75	70	90	65			72
Kennebec	86	77	87	71	71	67	76	69	74					75			87	78			76
Snowden	106	93	104	77	78	83		94	94		73	95		86	95	80	97	68			88
Superior	87	77	90	80	69	70	67	77	78					75			87	76			77
Yukon Gold	91	84	98	72	75	71	75		88					81			92	76			82
AF2211-9	98	91	102	70	81									89	93		99	79			88
AF2291-10	101	92	101	84	82	85		79	89					84	95		102	89			90
AF2322-2	69	64	67		55	70	63		67	59				65	61	59		64			64
AF2376-5	90	97	95		88	88	87														91
AF2916-1	85	83	83		63	66	63		75	61				79	81	71	83	76			74
B1806-8	84	85	99	78	71	73			83	66				82			93				81
B1870-3	66	67	75	66	56	56			66					59							64
NY137	70	69	71	63	62	60	64		68	64				59			73	72			66
NY139	98	87	102	74	75	77	82	80	89	80	82	90		82	92	79	92	87			85
NY73-49	91	92	90	79	85	87	92							87			96	86			88
Red and Purple Clones																					
Chieftain	77		81	64	60		71	65	72	69	64			65	67	63	80	68			70
Dk Rd Norland	71		77	66	57	55	62		65	60	55			64			68	64			64
Peter Wilcox	85		96	72	66	67	70	70	79		64			76	78	71	85				75
AF2393-7	72		74		62																69
B1952-2	83		93		73	74	78							80		74	92	75			80
NDTX731-1R	68		74	64	57	54	62		65	58	55			63		57	84	60			64
NY129	75		78	54	63	60	68	63	70	67	57			67	68	59	79	75			67

East Region Trial Table 4. Continued.

Clone	ME1 ¹	ME2 ¹	ME3 ¹	FL	NC	NJ1 ²	NJ2	NJ1 ³	NY2 ³	NY3 ³	NY4 ³	NY5 ³	OH	PA1 ⁴	PA2 ⁴	PA3 ⁴	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Russets/Long Whites																					
R Burbank	88		92	72	73	69		79						79			92				81
Blazer Russet	87		93											74	73						82
GemStar Russet	81		86	63		71	82							78			86				78
R Norkotah	79		85	67	69	68	72		73					72	76		93				75
Shepody	90		90		76				86					83			87				86
AF2199-6	83		91											82			85				85
AF2314-1	78		80						69					68	67						72

¹Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).

²The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).

³The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County (whites) or Orleans County (reds), muck soil (NY3), Steuben County (whites) or Wayne County, muck (reds) (NY4), Wyoming County (NY5).

⁴There were three trial locations in Pennsylvania [Centre (PA1), Northampton (PA2), and Erie County (PA3)].

⁵There were three trial locations in Quebec [St-Ubalde (QC1), Louisville (QC2), and Rawdon (QC3)].

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-inch-size range for round whites and reds and russets (greater than 8 oz at most locations) for 14 named varieties and 16 numbered clones grown at 20 locations in the Eastern United States and Eastern Canada.

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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Round Whites/Yellows																					
Atlantic	55	50	57	26	77	76	66	65	56	90	93	96		74	43	67	76	45	62	74	65
Katahdin	57	47	56	10	63	71	69	51	70					78	47	70	80	38			58
Kennebec	64	33	70	23	64	72	67	45	76					74			80	13			57
Snowden	29	42	46	15	62	53	52	51	51		91	93		71	28	53	56	28	41	69	60
Superior	47	17	34	0	73	57	54	40	49					78			67	28	54	74	55
Yukon Gold	69	66	55	38	63	78	68		67					86			66	34	74	84	65
AF2211-9	34	37	19	30	72									68	46		50	26	72	75	48
AF2291-10	45	12	35	10	60	64		45	57					83	20		69	60	76	71	51
AF2322-2	42	15	33		49	34	63		35	89				66	38	18		11	36	70	43
AF2376-5	39	44	43		66	66	68												67	80	59
AF2916-1	20	8	22		32	13	42		32	75				36	17	24	35		30	45	31
B1806-8	31	19	17	4	63	61			28	89				68			51	5	49	65	42
B1870-3	28	36	35	12	71	57			46					63					56	80	48
NY137	39	15	35	5	52	69	68		32	79				60			65	23	39	35	44
NY139	45	50	28	12	47	49	48	34	45	89	94	93		68	24	52	61	40	60	71	53
NY173-49	62	9	49	23	75	74	59							74			73	37	60	69	55
Red and Purple Clones																					
Chieftain	56		47	7	67		56	39	63	67				69	54	72	70	23	77	73	58
Dk Rd Norland	37		14	0	53	40	46		54	76	85			58			33	4	47	43	42
Peter Wilcox	14		9	0	58	33	19	5	41	78				43	10	23	22		32	33	28
AF2393-7	16		11		32																20
B1952-2	29		33		64	60	47							75		60	26	18	52	72	49
NDTX731-1R	57		33	31	68	69	54		74	88	94			73		81	70	48	66	70	65
NY129	61		61	21	68	65	65	48	63	95	92			80	45	67	80	27	78	68	64

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	PEI	QC1 ⁵	QC2 ⁵	QC3 ⁵	Mean
Russets/Long Whites																					
R Burbank	39		29	0	7	0			38					34			48		32	8	24
Blazer Russet	31	6												40	55						33
GemStar Russet	50		52	1		25	50							74			62		51	55	47
R Norkotah	28		14	1	44	0	42		35					63			32				30
Shepody	52		28		50				52					74			53		72	54	54
AF2199-6	37		51											44			29		41	43	41
AF2314-1	17		13						30					42	25						25

¹Trials were conducted in three Maine locations, Presque Isle (ME1), Exeter (ME2), and St. Agatha (ME3).

²The two trial locations for New Jersey were Upper Deerfield main-season trial (NJ1) and Pittstown late-season trial (NJ2).

³The five trial locations in New York were Riverhead, Long Island (NY1), Freeville (NY2), Wayne County (whites) or Orleans County (reds), muck soil (NY3), Steuben County (whites) or Wayne County, muck (reds) (NY4), Wyoming County (NY5).

⁴There were three trial locations in Pennsylvania [Centre (PA1), Northampton (PA2), and Erie County (PA3)].

⁵There were three trial locations in Quebec [St-Ubalde (QC1), Louisville (QC2), and Rawdon (QC3)].

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 14 named and 16 numbered round-white clones. Number of comparisons (sites x years) are in parentheses.

Variety	Comparison to Std ¹				Chip Color ⁴							
	US#1 % of std	Spec. Grav.	Size Distrib.	Appearance Rating ²	Shape Rating ³	Out of Field ⁵	50-55°F Storage	45°F Storage	Reconditioned ⁶	Boil Score ⁷	Bake Score ⁷	
Round Whites/Yellows												
Atlantic	206	100(21)	0(18)	5.8(18)	2.3(15)	1	4	3	2	1	0	1
Atlantic	17	100(328)	0(319)	6.3(293)	2.0(209)	36	83	27	45	27	19	26
Katahdin	206	88(15)	-18(14)	5.7(15)	3.1(14)	0	4	0	0	0	3	2
Katahdin	17	93(226)	-15(212)	6.1(225)	2.7(159)	10	5	20	2	33	37	24
Kennebec	206	89(13)	-14(12)	4.6(13)	4.9(12)	0	0	2	0	0	3	2
Kennebec	17	93(202)	-12(198)	5.3(197)	4.5(121)	10	5	16	7	2	36	28
Snowden	206	96(16)	-2(13)	5.6(14)	1.8(12)	2	6	1	2	1	1	0
Snowden	15	98(190)	-1(178)	5.6(184)	2.0(133)	35	71	17	49	8	3	9
Superior	206	89(15)	-13(12)	5.7(15)	3.4(12)	1	0	2	0	0	2	1
Superior	17	87(211)	-11(198)	5.9(210)	3.1(157)	26	14	19	2	6	22	32
Yukon Gold	206	85(14)	-8(11)	6.4(13)	3.0(11)	0	0	1	0	0	2	1
Yukon Gold	17	84(163)	-7(148)	6.6(168)	3.0(119)	5	6	13	0	2	20	21
AF2211-9	206	76(11)	-3(8)	5.6(11)	2.4(8)	1	6	1	2	2	0	1
AF2211-9	2	80(25)	-2(22)	5.8(25)	2.3(21)	1	0	0	1	2	2	0
AF2291-10	206	89(15)	-1(12)	5.7(15)	2.8(12)	1	6	1	3	1	0	2
AF2291-10	2	90(27)	0(24)	5.4(27)	2.6(23)	1	0	13	6	1	2	2
AF2322-2	206	76(14)	-24(12)	5.4(3)	2.5(10)	0	1	0	0	3	0	1
AF2376-5	206	90(8)	0(6)	6.3(8)	3.0(6)	1	0	1	0	0	0	0
AF2916-1	206	84(15)	-16(12)	5.9(14)	3.6(12)	1	0	1	0	2	2	2
B1806-8	206	88(14)	-9(11)	5.9(13)	3.0(10)	0	1	0	1	0	1	2
B1806-8	4	88(50)	-10(43)	6.0(49)	3.2(41)	4	3	9	2	3	7	5
B1870-3	206	91(11)	-26(8)	6.0(11)	2.9(9)	1	0	1	0	0	2	2
NY137	206	88(15)	-24(12)	5.4(14)	3.8(11)	1	0	2	1	0	1	3
NY139	206	94(20)	-4(17)	6.2(16)	3.1(14)	2	0	7	4	0	0	4
NY73-49	206	105(13)	-2(10)	6.0(13)	2.2(10)	1	0	1	0	1	2	0
Red and Purple Clones												
Chieftain	206	100(18)	0(15)	5.6(16)	3.0(12)	0	0	0	0	0	0	4
Chieftain	17	100(158)	0(144)	5.9(142)	2.8(93)	1	0	2	0	1	2	25
Norland, Dk Red	206	74(14)	-5(11)	6.1(13)	3.3(10)	0	0	0	0	0	0	4
Norland, Dk Red	14	77(116)	-5(103)	6.1(133)	3.0(97)	2	1	4	1	1	1	16
Peter Wilcox (B1816-5)	206	73(15)	7(12)	5.6(14)	3.4(12)	0	0	1	0	0	0	3

East Region Trial Table 6. Continued.

Variety	Comparison to Std. ¹				Chip Color ⁴				Recondi- tioned ⁶	Boil Score ⁷	Bake Score ⁷				
	US#1 % of std	Spec. Grav.	Size Distrib.	Appear- ance Rating ²	Shape Rating ³	Out of Field ⁵	50-55°F Storage	45°F Storage							
Peter Wilcox (B1816-5)	2	73(26)	8(23)	-31(23)	5.4(27)	3.6(24)	0	0	0	0	0	2	2	0	
AF2393-7	2006	72(3)	-2(3)	-36(3)	6.7(3)	3.0(3)	0	0	0	0	0	0	0	0	0
B1952-2	2006	73(11)	11(8)	-13(10)	5.8(11)	2.8(8)	0	0	0	0	0	1	0	1	1
B1952-2	2	78(21)	11(18)	-8(20)	5.6(22)	2.9(18)	0	0	0	0	0	2	2	2	2
NDTX731-1R	2006	112(16)	-6(13)	4(15)	6.6(15)	1.8(13)	0	0	0	0	0	3	1	0	1
NDTX731-1R	4	109(52)	-6(45)	0(49)	6.5(52)	1.9(46)	0	0	0	0	0	6	4	1	2
NY129	2006	106(18)	-2(14)	5(17)	6.3(16)	1.9(13)	0	0	0	0	0	3	0	0	1
NY129	4	107(59)	0(51)	4(55)	6.2(61)	2.1(54)	0	0	0	0	0	13	0	0	2
Russets/Long Whites															
Blazer Russet	2006	100(4)	4(4)	-3(4)	4.5(4)	5.2(4)	0	0	0	0	1	0	0	1	0
GemStar R. (A9014-2)	2006	124(6)	2(7)	19(7)	6.4(9)	6.1(7)	0	0	0	0	0	2	0	0	1
GemStar R. (A9014-2)	5	124(35)	8(33)	8(36)	6.0(41)	6.6(37)	0	0	0	0	4	7	0	4	0
Russet Burbank	2006	110(7)	5(8)	-3(8)	4.2(10)	6.8(8)	0	0	0	0	1	3	1	0	1
Russet Burbank	17	96(65)	7(57)	-6(54)	4.1(69)	7.2(74)	0	1	0	0	2	9	37	0	22
Russet Norkotah	2006	100(9)	0(10)	0(10)	6.5(10)	5.8(10)	0	0	0	0	3	2	4	0	1
Russet Norkotah	10	100(94)	0(88)	0(78)	6.5(88)	6.4(76)	0	0	0	0	3	5	35	0	15
Shepody	2006	99(6)	7(6)	16(6)	5.0(8)	6.5(6)	0	0	0	0	1	3	1	0	1
Shepody	10	99(51)	7(43)	16(40)	5.0(54)	6.8(37)	0	0	0	0	2	7	17	0	10
AF2199-6	2006	95(4)	3(4)	6(4)	5.6(6)	6.0(4)	0	0	0	0	2	2	1	0	1
AF2199-6	2	87(12)	6(11)	-1(12)	5.4(15)	6.3(12)	0	0	0	0	2	4	2	0	1
AF2314-1	2006	83(5)	-5(5)	-11(5)	5.5(5)	5.4(5)	0	0	0	0	3	1	1	0	1

¹Standard 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 vs 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.

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

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

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

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

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

⁷From 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 14 named and 16 numbered round-white clones. Number of comparisons (sites x years) are in parentheses.

Variety	Year(s)	Total ¹	% External Tuber Defects			% Internal Tuber Defects ²		
			Sun-burn	Mis-shapen	Growth cracks	Hollow Heart	Internal Necrosis	Vascular Discolor.
Round Whites/Yellows								
Atlantic	2006	9.6(20)	5.0(11)	1.5(11)	1.0(11)	16.5(18)	17.4(13)	2.1(6)
Atlantic	17	8.5(206)	4.1(153)	2.0(156)	1.2(159)	9.9(235)	21.3(159)	3.8(56)
Katahdin	2006	13.7(14)	5.8(7)	2.0(7)	0.3(7)	7.8(14)	0.8(10)	6.7(3)
Katahdin	17	11.6(154)	6.9(109)	1.4(104)	0.6(111)	4.9(193)	5.6(117)	3.4(29)
Kennebec	2006	27.0(12)	9.6(7)	5.9(7)	3.7(7)	7.3(12)	2.3(8)	5.0(3)
Kennebec	17	21.5(124)	9.3(92)	5.2(92)	3.1(87)	3.4(147)	3.8(89)	4.6(23)
Snowden	2006	7.6(16)	3.6(8)	2.1(8)	0.9(8)	8.5(11)	3.1(10)	6.0(5)
Snowden	15	5.8(116)	2.8(85)	1.7(85)	0.4(85)	4.3(143)	2.7(103)	10.3(39)
Superior	2006	10.7(14)	1.8(7)	4.6(7)	0.2(7)	1.8(12)	4.4(8)	5.8(3)
Superior	17	7.8(147)	1.6(103)	3.2(103)	0.9(105)	1.5(173)	2.2(123)	4.4(31)
Yukon Gold	2006	12.4(13)	3.5(6)	2.2(6)	1.3(6)	13.8(11)	0.7(7)	0.8(3)
Yukon Gold	17	11.2(114)	4.0(76)	2.5(76)	0.9(77)	6.6(122)	5.4(90)	2.0(27)
AF2211-9	2006	18.9(10)	7.02(4)	3.4(4)	1.7(4)	9.4(8)	14.0(4)	1.5(2)
AF2211-9	2	15.5(23)	6.8(10)	2.0(10)	1.5(10)	10.1(21)	17.0(13)	5.6(5)
AF2291-10	2006	7.6(14)	2.9(7)	5.4(7)	0.2(7)	8.9(12)	1.2(7)	5.8(3)
AF2291-10	2	9.7(25)	2.9(11)	5.6(11)	0.2(11)	10.6(23)	3.4(15)	5.5(5)
AF2322-2	2006	11.6(13)	5.8(5)	3.2(5)	0.6(5)	0.8(11)	0.0(8)	10.0(3)
AF2376-5	2006	5.7(8)	1.3(3)	3.3(3)	0.6(3)	1.2(6)	57.5(3)	5.0(1)
AF2916-1	2006	12.1(15)	5.4(6)	1.8(6)	2.4(6)	0.2(13)	0.6(9)	5.6(4)
B1806-8	2006	12.3(13)	1.6(7)	1.6(7)	0.4(7)	2.3(11)	0.0(7)	5.0(4)
B1806-8	4	9.4(46)	2.2(24)	0.8(24)	0.3(24)	4.9(43)	0.2(30)	2.7(12)
B1870-3	2006	10.4(11)	2.0(5)	1.7(5)	1.4(5)	0.0(9)	3.0(6)	1.7(3)
NY137	2006	13.6(14)	3.5(7)	1.8(7)	0.8(7)	0.6(12)	5.1(8)	0.0(4)
NY139	2006	7.7(19)	4.4(10)	1.3(10)	0.5(10)	0.0(17)	2.5(13)	6.2(6)
NYY73-49	2006	13.4(12)	5.5(5)	1.9(5)	1.9(5)	1.4(10)	6.7(6)	0.0(2)
Red and Purple Clones								
Chieftain	2006	7.4(17)	2.5(9)	1.7(9)	1.1(9)	0.2(15)	9.5(11)	10.0(5)
Chieftain	17	7.1(109)	1.6(72)	1.4(74)	1.3(73)	0.9(123)	12.9(84)	5.2(28)
Norland, Dk Red	2006	8.0(14)	2.0(7)	2.7(7)	0.8(7)	4.4(12)	1.4(9)	7.0(5)
Norland, Dk Red	14	5.9(93)	1.2(57)	1.7(56)	1.2(48)	1.2(106)	0.9(85)	4.4(29)
Peter Wilcox(B1816-5)	2006	6.5(16)	0.4(7)	3.0(7)	0.5(7)	1.3(14)	0.3(11)	2.5(4)
Peter Wilcox (B1816-5)	2	7.2(29)	0.7(14)	3.2(14)	0.4(14)	0.8(27)	0.9(21)	3.2(8)
AF2393-7	2006	4.4(3)	0.1(2)	3.0(2)	0.8(2)	0.0(3)	0.0(1)	0.0(1)
B1952-2	2006	7.1(11)	0.1(3)	2.7(3)	1.6(3)	1.9(9)	0.8(6)	5.0(2)
B1952-2	2	7.2(22)	0.8(9)	3.0(9)	2.7(9)	1.4(20)	0.3(14)	12.6(5)
NDTX731-1R	2006	5.1(16)	1.1(8)	1.8(8)	2.1(8)	0.2(14)	1.5(10)	11.0(5)
NDTX731-1R	4	5.6(52)	1.1(28)	2.0(28)	2.2(28)	0.6(49)	1.4(36)	12.0(16)
NY129	2006	5.6(18)	2.6(9)	0.4(9)	1.1(9)	0.8(16)	0.9(12)	1.0(5)
NY129	4	4.9(62)	1.5(31)	0.6(31)	0.9(31)	0.8(58)	3.2(44)	6.0(16)

East Region Trial Table 7. Continued.

Variety	Year(s)	Total ¹	% External Tuber Defects			% Internal Tuber Defects ²		
			Sun-burn	Mis-shapen	Growth cracks	Hollow Heart	Internal Necrosis	Vascular Discolor.
Russets/Long Whites								
Blazer Russet	2006	22.2(4)	0.6(2)	12.0(2)	0.9(2)	11.1(4)	4.0(2)	(0)
GemStar R. (A9014-2)	2006	7.8(9)	1.8(4)	4.8(4)	0.6(4)	29.7(7)	0.0(4)	(0)
GemStar R. (A9014-2)	5	11.3(40)	1.4(23)	6.9(23)	0.6(23)	14.6(34)	0.7(26)	2.1(6)
Russet Burbank	2006	20.2(10)	2.1(5)	12.8(5)	1.3(5)	8.1(8)	5.6(5)	6.2(2)
Russet Burbank	17	21.4(90)	1.4(75)	15.6(75)	1.3(71)	7.8(95)	6.7(48)	3.5(12)
Russet Norkotah	2006	8.1(10)	0.6(5)	2.4(5)	0.7(5)	2.2(10)	1.1(7)	0.0(2)
Russet Norkotah	10	8.9(64)	1.4(42)	4.5(42)	0.6(42)	5.3(73)	1.3(46)	1.0(11)
Shepody	2006	18.9(8)	8.6(4)	9.2(4)	1.0(4)	2.5(6)	0.0(3)	1.2(2)
Shepody	10	28.9(38)	7.3(30)	11.7(30)	0.7(30)	5.1(40)	1.6(17)	4.1(11)
AF2199-6	2006	9.3(6)	2.4(3)	2.5(3)	2.7(3)	3.8(4)	0.0(1)	(0)
AF2199-6	2	11.8(14)	1.7(7)	7.6(7)	2.9(7)	3.9(12)	3.3(6)	10.0(1)
AF2314-1	2006	8.3(5)	0.5(3)	7.1(3)	1.9(3)	0.0(5)	0.0(3)	20.0(1)

¹Total defects may contain defects (common scab, rot, etc.) other than the three categories listed in this table.

²Typically 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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