Pennsylvania Potato Research Report, 2013

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EXECUTIVE SUMMARY

Penn State's Department of Plant Pathology & Environmental Microbiology potato research program can be categorized into five areas: 1) variety breeding and evaluation, 2) breeding for disease resistance (focused on early and late blight, and common and powdery scab), 3) biology and genetic variability of potato pathogens (focused on early and late blight and powdery scab), 4) chemical control and 5) integrated pest management of potatoes. Many of these projects are long term and only yearly results are presented here.

1. Variety Breeding and Evaluation

At the Rock Springs location the trials included 101 round whites with a few yellow flesh, 23 red-skinned (a few purple skinned) and 50 russet or long white types. The Lehigh location had 35 lines and Erie location had 39 lines. Breeding lines were contributed by the USDA-ARS, New York, Maine, Michigan, Idaho and a few other sources. See **Progress report - Pennsylvania Regional Potato Germplasm Evaluation Program, 2013 on pages 1-2 and tables from different locations on pages 3-31, and supplemental progress report on pages 36-37 and tables from different locations on pages 38-53.**

2. Breeding for Disease Resistance

There are several projects focused around a cultivated diploid species hybrid population that can be easily intercrossed with common varieties. These are long term projects dealing with early and late blight resistance as well as powdery scab resistance. Results of these projects will not be presented here but results of small trials evaluating soon to be released lines for their reaction to early blight, late blight and powdery scab are presented. In three separate field trials, 58, 32 and 33 varieties and advanced breeding lines were evaluated for disease resistance to late blight, early blight, and powdery scab, respectively.

Kennebec was considered the moderately resistant check and B0718-3 was the resistant check to late blight. NY150 (NYF52-1), Rochdale Gold-Doree, NY148 (NYE106-4), AF3317-15, BNC182-5, Dakota Trailblazer, A010101-1, Russet Burbank, A02507-2LB, MSS487-2, AF4696-1, B0692-4, AF4573-2, AF4615-5, AF4692-1, and MSS934-4 were considered resistant to moderately resistant. See **Field evaluation of potato cultivars and breeding lines for resistance to late blight in Pennsylvania, 2013 page 32.**

Seven cultivars/lines were classified as resistant to moderately resistant to early blight, and they are: Dakota Trailblazer, AF3317-15, A010101-1, Russet Burbank, NY148 (NYE106-4), BNC182-5, and Katahdin. See **Field evaluation of potato cultivars and breeding lines for resistance to early blight in Pennsylvania, 2013 page 33.**

The powdery scab disease pressure was low thus making it difficult to separate cultivars/lines into groups (resistant, moderately resistant, moderately susceptible, and susceptible). Based on our past years' data, Shepody should be susceptible, and Russet Burbank should be moderately resistant. Cultivars and breeding lines with less powdery scab than Dark Red Norland indicate some level of resistance. See **Field evaluation of potato cultivars and breeding lines for resistance to powdery scab in Pennsylvania, 2013 page 34.**

3. Chemical Control of Potato Diseases

In the late blight fungicide trial 8 different treatments were compared to an untreated control. All of the treatments significantly suppressed season-long foliar late blight compared to the untreated control. All of the treatments, except for CX-10250 alternated with Bravo WS and Bravo WS applied at 14 day intervals, had significantly higher yields than the untreated control. See **Evaluation of foliar fungicides for control of potato late blight in Pennsylvania, 2013 page 35.**

Progress Report---December 18, 2013

Pennsylvania Regional Potato Germplasm Evaluation Program, 2013

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The objective of this project is to find new breeding lines that have adaptation to Pennsylvania potato growing regions, and have qualities that are suitable for either processing or tablestock use. We cooperate with the project leaders of several other potato breeding programs from the Northeast US and a few programs from the Midwest US and Canada by evaluating their potato germplasm. Data from this project helps breeders determine which lines to focus on for potential release as new varieties and also allows you to focus on very specific lines that may be released in the near future.

Replicated and non-replicated plots were established at the following locations: Lehigh Co. (Tables 1- 2), Erie Co. (Tables 3-4) and Rock Springs, Centre Co. (Tables 5-12). The Lehigh location had 35 non-replicated lines. The Erie location had 39 lines non-replicate lines. At the Rock Springs location the trials included 60 round whites with a few yellow flesh, 16 red-skinned (a few purple skinned) and 43 russet or long white types in replicated plots, and an additional 41 whites, 7 red-skinned and 7 russet or long white types planted in non-replicated observational plots. At Lehigh Co. and Erie Co. locations, the seed spacing was 8-inch within a 20-ft plot except for the russets that were at 10-inch. At Rock Springs location, the seed spacing was 8-inch within a 10-ft plot except for the russets that were at 10-inch. At the Rock Springs location, a green mustard manure crop 'Caliente 199' was grown after the wheat harvest. The mustard crop was flail chopped and plowed down to incorporate into the field the previous year. Commercial trials of four varieties (AF3001-6, Challenger, Nicolet, and AF0338-17) were conducted at three locations: Erie Co., Schuylkill Co. and Rock Springs, Centre Co (Table 13-14). All other pertinent information for individual trials is found within the data tables or in Table 15. We assessed yield, tuber size, internal defects and external defects, skin color, texture, tuber shape, specific gravity and overall appearance. Chip quality tests and culinary tests will be conducted over the next few months. Management information for each site is provided in Table 15.

To interpret this data, one needs to know the yields for the check cultivars such as Atlantic, Snowden, Katahdin, Chieftain, Dark Red Norland, Russet Norkotah or Superior on your farm. Then compare the typical yield for this year on your farm to the data presented here. The yields tend to be inflated from these small plots but the ranking of the yields over the cultivars/lines usually is fairly consistent. Also the same method can be used to compare specific gravity and some of the other parameters. There are a few lines that will be very specific to certain environments so make the comparison to the location that best matches your own or use the Rock Springs location as a fairly typical area for most of PA.

Results:

In the Lehigh location the following lines also had marketable yield higher than Atlantic: AF0338-17, MSS576-05SPL, and Soraya. In Erie Co. the following also had marketable yield higher than Atlantic: Snowden, Reba, Katahdin, Superior, Chieftain, Dark Red Chieftain, Carolina, HZC01-6087, W5015-12, Taurus, AF0338-17, B2728-2, A00286-3Y, Francisca, Sifra, Parella, Envol, Nadine, Lanorma, AF3001-6, Jelly, and A01010-1.

Based on data of replicated trials at Rock Springs, there were 9 round white clones with marketable yields significantly greater than Atlantic: BNC182-5, NY148 (E106-4), AF4442-4, AF4614-2, CO99045-1W/Y, W5015-12, A05182-7RY, Vivaldi, and Sifra. There were another 20 round white clones with marketable yields greater than Atlantic: Snowden, AF4013-3, AF4138-8, B2833-16, AF4376-3, AF4227-2, AF4430-1, B2728-2, B2738-3, B2833-8, MSQ086-3, MSS576-05SPL, Spartan Splash, MI Purple Sport I, CO02024-9W, ATC00293-1W/Y, W5955-1, Parella, HZC 06-6068, and Francisca.

Round White Chip-stock:
Based on data from replicated trials at Rock Springs, the following lines had higher yields than Atlantic and have specific gravities suitable for chipstock: Snowden, AF4013-3, B2833-16, BNC182-5, NY148 (E106-4), AF4227-2, AF4442-4, AF4614-2, AF4640-1, B2728-2, B2833-8, MSS576-05SPL, CO02024-9W, CO99045-1W/Y, W5955-1, and W5015-12.

Red-skinned:
Based on data of replicated trials at Rock Springs, there were 6 red-skinned or purple-skinned clones with marketable yields significantly greater than Chieftain: B2676-2, BNC244-10, BNC201-1, A05180-3PY, A00286-3Y, and Carolina. There were another 3 red-skinned or purple-skinned clones with marketable yields greater than Chieftain: AF4550-2, AF4566-4, and HZC 01-6087.

Russet-skinned or long white:
Based on data of replicated trials at Rock Springs, there were 9 russet-skinned clones with marketable yields significantly greater than Russet Burbank: Dakota Trailblazer, AF3001-6, AF3362-1, AF4702-2, AC99375-1RU, A08422-2VR, Challenger, Jelly, and Fontane. There were another 20 russet-skinned clones with marketable yields greater than Russet Burbank: AF4040-2, AF4124-4, AF4124-7, AF4320-17, AF4347-1, AF4283-1, AF4296-3, AF4532-8, AF4453-7, AF4692-1, AF4950-2, CO99053-3RU, AC00395-2RU, A01010-1, A03141-6, A03873-3NV, A06914-3CR, A07008-43, A010125-4, and A07103-1T.

The Pennsylvania Potato Research Program and a USDA grant funded this research in conjunction with donations. This research is the result of cooperation of growers, industry and PSU staff. The growers hosting the plots provided contributions (land, fertilizer, pesticides, time, etc.). Cornell University, USDA, University of Maine, Idaho, Colorado State University, University of Wisconsin, Michigan State University breeding programs and Real Potatoes, HZPC provided seed. Special thanks to Chad Moore, Bob Leiby, Andy Muza and Sara May who made sure this project was completed.

Table 1. Total yield, greater than 1 7/8" yield, percent of standard, size distribution, percent pick outs and specific gravity for potato evaluation trial in Lehigh County, Tim Geiger Farm, 2013

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5		Gravity
Atlantic	373	340	91	100	60	29	2	0	3	1.079
Snowden	385	335	87	99	57	30	0	0	3	1.074
Reba	328	286	87	84	46	37	4	0	3	1.064
Katahdin	315	259	82	76	36	36	11	0	10	1.064
Superior	297	234	79	69	38	38	3	0	12	1.061
Yukon Gold	232	203	88	60	37	46	4	0	6	1.061
Chieftain	355	309	87	91	61	26	0	0	1	1.061
BNC201-1	346	282	82	83	48	34	0	0	4	1.067
Carolina	502	252	50	74	31	16	3	0	40	1.051
Dark Red Chieftain	227	165	73	49	55	18	0	0	5	1.056
AF4566-4	343	254	74	75	51	23	0	0	6	1.066
BNC244-10	295	165	56	49	54	2	0	0	4	1.084
Nicolet	376	334	89	98	43	44	2	0	2	1.072
AF4157-6	326	247	76	73	66	9	0	0	2	1.072
W5955-1	326	276	85	81	48	33	3	0	8	1.073
Taurus	380	174	46	51	40	5	0	0	19	1.081
AF0338-17	459	428	93	126	30	51	12	0	3	1.077
AF4013-3	343	277	81	82	57	24	0	0	3	1.074
MSS576-05SPL	436	381	87	112	39	47	2	0	8	1.061
CO99045-1W/Y	398	213	54	63	44	7	3	0	11	1.079
Francisca	368	191	52	56	46	5	0	0	5	1.058
Sifra	378	174	46	51	38	8	0	0	20	1.059
Vilaldi	339	217	64	64	61	3	0	0	2	1.058
Russet Norkotah	243	187	77	55	48	14	15	0	6	1.059
Dakota Trialblazer	341	264	77	78	42	24	12	0	15	1.080
AF3001-6	366	295	81	87	38	31	12	0	13	1.067
Challenger	364	151	41	44	38	3	0	0	17	1.067
Fontane	385	244	63	72	48	13	2	0	4	1.066

Variety/Line	Yield (cwt/A)[1]		%	%	% by size class[3]				%PO[4]	Specific
	Total	>1 7/8"	US#1	of Standard[2]	2	3	4	5		Gravity
Jelly	390	305	78	90	50	23	5	0	13	1.067
Alegria	407	323	79	95	59	20	0	0	11	1.066
Teton Russet	282	127	45	38	34	12	0	0	30	1.063
Soraya	612	419	68	123	51	17	1	0	19	1.060
Envol	271	214	79	63	41	38	0	0	9	1.060
Lanorma	362	291	80	86	26	45	10	0	12	1.059
Nadine	131	60	46	18	36	11	0	0	21	1.049

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.

[2]Percentage of the standard, Atlantic, for >1 7/8" yield.

[3]Percentage of total yield according to size class. 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.

[4]Percentage of total that are pickouts.

Non-replicated trial.

Russets and long whites were planted 10-in. apart with 24 seed pieces per 20-ft plot, all other varieties were spaced 8-in. apart with 30 seed pieces per 20-ft plot.

Table 2. Tuber characteristics, internal and external defects for potato evaluation trial in Lehigh County, Tim Geiger Farm, 2013

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
Atlantic	6	5	5	2	5	6	4	0	
Snowden	5	5	5	2	5	5	4	0	
Reba	4	7	7	3	4	5	3	0	
Katahdin	5	7	7	3	5	5	4	0	Green
Superior	5	5	5	3	4	5	1	0	Misshape
Yukon Gold	5	6	7	2	5	5	4	0	
Chieftain	4	3	7	3	5	5	0	0	
BNC201-1	5	2	7	2	5	6	2	0	Green
Carolina	2	3	8	4	6	4	0	0	Misshape, knobs
Dark Red Chieftain	6	2	8	2	6	6	0	0	
AF4566-4	5	2	7	3	6	6	0	0	
BNC244-10	5	1	7	3	6	6	0	0	Misshape
Nicolet	6	6	5	2	6	6	2	0	Green
AF4157-6	6	6	5	2	6	6	0	0	
W5955-1	5	6	5	2	6	5	7	0	Misshape
Taurus	4	7	7	2	6	5	0	0	Growth Cracks
AF0338-17	5	6	5	2	5	5	4	0	
AF4013-3	6	6	7	3	6	5	2	0	Misshape
MSS576-05SPL	6	6	7	2	6	5	0	0	Growth Cracks
CO99045-1W/Y	5	6	6	4	6	4	3	0	Misshape
Francisca	5	6	7	3	6	5	0	0	Misshape
Sifra	5	7	7	3	6	5	0	0	Misshape, growth cracks
Vilaldi	5	7	7	3	6	5	0	0	
Russet Norkotah	5	5	3	4	7	5	1	0	
Dakota Trialblazer	6	5	3	5	6	5	5	0	Growth cracks
AF3001-6	4	6	6	4	6	4	1	0	Knobs
Challenger	4	6	6	3	7	5	2	0	Green
Fontane	4	6	7	3	7	5	1	0	

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
Jelly	4	6	7	3	6	5	4	0	Growth cracks, green
Alegria	5	6	7	3	6	5	5	0	Knobs
Teton Russet	4	5	4	4	7	5	4	0	Growth cracks
Soraya	4	6	7	3	7	5	4	0	Knobs, green
Envol	5	6	6	3	6	5	5	0	
Lanorma	5	7	8	3	7	6	5	0	Growth cracks
Nadine	5	7	8	2	7	5	5	0	Green

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.
C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream.
TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very
Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.
TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

[2]Internal Defects: HH = hollow heart, IB = internal browning. Total number observed out of 8 tubers. 0 = not observed.

Table 3. Total yield, greater than 1 7/8" yield, percent of standard, size distribution, percent pickouts and specific gravity for potato evaluation trial in Erie County, Mark Troyer Farm, 2013

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5		Gravity
Atlantic	492	271	55	100	8	20	26	0	43	1.063
Snowden	551	484	88	179	21	48	18	0	10	1.073
Reba	375	294	79	109	14	35	30	0	19	1.059
Katahdin	449	373	83	138	14	43	17	9	14	1.059
Superior	455	352	77	130	18	45	14	0	18	1.064
Yukon Gold	367	244	67	90	6	8	44	9	33	1.067
Chieftain	512	414	81	153	15	34	29	3	15	1.061
Dark Red Chieftain	461	393	85	145	12	37	31	4	11	1.056
Carolina	715	328	46	121	7	19	19	0	50	1.053
Smiley	352	263	75	97	28	39	8	0	16	1.073
CO0405-1RF	449	167	37	62	25	11	2	0	33	1.073
HZC01-6087	717	527	74	195	47	23	3	0	14	1.068
Nicolet	377	221	59	82	20	28	11	0	35	1.072
AF4157-6	397	206	52	76	18	30	4	0	42	1.066
W6609-3	377	270	72	100	20	39	13	0	22	1.071
W5015-12	625	391	63	145	14	28	18	3	33	1.072
Taurus	501	380	76	140	42	32	2	0	16	1.081
Opera	244	132	54	49	36	18	0	0	28	1.069
AF0338-17	466	373	80	138	13	49	18	0	17	1.075
AF4013-3	325	178	55	66	13	32	10	0	39	1.078
B2728-2	437	276	63	102	33	26	4	0	27	1.070
A00286-3Y	541	436	81	161	22	42	17	0	15	1.072
Francisca	840	683	81	252	44	33	5	0	7	1.063
Sifra	817	557	68	206	22	34	13	0	25	1.058
Parella	611	432	71	160	44	24	3	0	18	1.060
Vilaldi	427	271	63	100	30	24	9	0	28	1.055
Envol	537	359	67	133	11	30	26	0	29	1.071
Nadine	452	309	68	114	42	27	0	0	17	1.052
Lanorma	644	392	61	145	10	30	19	2	33	1.056
Russet Norkotah	249	154	62	57	27	20	14	0	23	1.055
Dakota Trialblazer	442	200	45	74	8	20	17	0	50	1.078

Variety/Line	Yield (cwt/A)[1]		%	%	% by size class[3]				%PO[4]	Specific Gravity
	Total	>1 7/8"	US#1	of Standard[2]	2	3	4	5		
AF3001-6	496	362	73	134	19	27	27	0	20	1.064
AF4320-17	306	164	54	60	17	25	11	0	34	1.063
Challenger	319	153	48	56	30	18	0	0	39	1.063
Fontane	319	229	72	85	43	25	4	0	11	1.065
Jelly	447	298	67	110	15	43	6	2	29	1.054
Alegria	290	137	47	51	21	23	4	0	47	1.058
Teton Russet	278	175	63	65	20	33	11	0	29	1.055
A01010-1	508	310	61	114	28	22	11	0	34	1.065

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.

[2]Percentage of the standard, Atlantic, for >1 7/8" yield.

[3]Percentage of total yield according to size class. 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.

[4]Percentage of total that are pickouts.

Non-replicated trial.

Russets and long whites planted 10-in. apart with 24 seed pieces per 20-ft plot, all other varieties were spaced 8-in. apart with 30 seed pieces per 20-ft plot.

Table 4. Tuber characteristics, internal and external defects for potato evaluation trial in Erie County, Mark Troyer Farm, 2013

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
Atlantic	4	6	5	2	4	5	8	0	Green
Snowden	6	6	5	2	5	6	7	0	Green
Reba	5	7	7	3	5	6	2	0	Green
Katahdin	5	7	7	3	6	5	5	0	Green
Superior	5	6	6	3	5	4	1	0	Green
Yukon Gold	4	6	7	3	6	5	4	0	Green
Chieftain	5	2	7	3	6	5	0	0	Growth cracks, green
Dark Red Chieftain	5	2	8	2	6	6	1	0	Growth cracks, green
Carolina	2	2	7	3	6	5	0	1	Misshape, green
Smiley	4	*	8	3	7	5	0	0	Green
CO0405-1RF	3	2	7	4	7	5	0	0	Misshape, green
HZC01-6087	5	2	6	4	7	5	0	0	Green, misshape
Nicolet	5	6	5	2	4	5	1	2	Green
AF4157-6	5	7	7	2	5	5	1	0	Green, growth cracks
W6609-3	6	7	6	2	6	5	2	0	Green
W5015-12	5	6	6	2	5	4	4	0	Green, Scab
Taurus	5	7	7	2	6	6	1	0	Green, growth cracks
Opera	3	7	7	3	6	5	1	1	Green, scab
AF0338-17	5	6	7	3	6	5	5	0	Green, scab
AF4013-3	4	7	7	3	7	5	1	0	Green, misshape
B2728-2	5	7	7	3	6	5	0	0	Green
A00286-3Y	5	7	8	3	6	5	0	0	Green, growth cracks
Francisca	6	7	8	3	7	5	0	0	Green
Sifra	4	7	7	3	6	4	0	0	Green, growth cracks
Parella	4	7	7	3	6	5	0	0	Green, growth cracks
Vilaldi	3	7	7	3	6	5	0	0	Green, misshape
Envol	5	6	6	3	5	4	1	0	Green
Nadine	5	7	7	3	7	5	1	0	Green, knobs
Lanorma	4	8	8	3	6	5	0	0	Green, scab
Russet Norkotah	5	5	3	5	7	5	1	0	Green, misshape
Dakota Trialblazer	4	6	3	5	7	5	0	0	Green, knobs

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
AF3001-6	5	6	6	5	6	5	1	0	Green, knobs
AF4320-17	4	6	4	4	7	4	0	0	Green, knobs
Challenger	4	7	6	3	7	5	8	0	Green, growth cracks
Fontane	5	6	6	3	6	5	2	0	Green
Jelly	4	7	7	4	6	5	1	0	Green, knobs
Alegria	4	7	7	3	7	5	3	0	Knobs, green
Teton Russet	5	6	3	4	7	5	5	0	Growth cracks, green
A01010-1	4	5	3	5	7	5	0	0	Knobs, green

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.

C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream. * = pink with white around eyes.

TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very smooth.

Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.

TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

[2]Internal Defects: HH = hollow heart, IB = internal browning. Total number observed out of 8 tubers. 0 = not observed.

Table 5. Total yield, greater than 1 7/8" yield, percent of standard, size distribution, percent pickouts, and specific gravity for round white potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]					Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5	%PO[4]	Gravity	Maturity
Atlantic	411	369	90	100	10	42	38	0	8	1.095	ML
Katahdin	340	309	91	84	19	46	26	0	7	1.083	ML
Kennebec	460	341	74	92	8	23	37	6	24	1.083	ML
Rochdale Gold-Doree	315	291	93	79	32	48	13	0	2	1.082	ML
Snowden	412	378	92	102	28	48	16	0	4	1.097	ML
Superior	382	361	95	98	27	47	21	0	2	1.080	ME
Yukon Gold	374	329	88	89	9	28	42	9	10	1.091	M
AF0338-17	394	358	92	97	6	32	44	9	6	1.093	L
AF4013-3	463	415	90	112	35	48	6	0	4	1.096	ML
AF4138-8	468	408	87	110	18	48	21	0	9	1.075	M
AF4157-6	429	296	69	80	33	25	11	0	24	1.092	M
AF4172-2	429	313	73	85	29	28	14	1	17	1.092	M
B2833-16	443	376	85	102	15	38	29	3	12	1.094	ML
BNC182-5	551	503	91	136	20	40	27	4	5	1.090	L
NY148 (E106-4)	483	450	93	122	22	44	26	2	4	1.101	L
NY150 (F52-1)	357	230	64	62	52	12	1	0	3	1.083	E
AF4376-3	414	380	92	103	13	54	18	7	6	1.083	ML
AF4386-16	384	323	84	87	26	39	18	0	10	1.098	ML
AF4227-2	498	440	88	119	17	43	24	3	9	1.086	ML
AF4430-1	462	431	93	117	19	43	31	0	4	1.075	ML
AF4442-4	480	444	92	120	22	39	31	0	6	1.089	ML
AF4614-2	484	457	94	124	14	45	34	2	4	1.081	ML
AF4615-5	452	346	77	94	16	32	29	0	22	1.096	VL
AF4640-1	457	407	89	110	16	37	33	3	8	1.091	ML
B2728-2	430	398	93	108	28	49	14	2	5	1.093	ML
B2738-3	506	441	88	119	15	29	40	4	9	1.081	ML
B2833-8	468	411	88	111	33	43	12	0	6	1.097	ME
B2834-8	376	327	87	88	30	38	17	2	7	1.089	E
MSL211-3	435	369	85	100	16	37	27	5	10	1.083	M
MSL292-A	440	360	82	98	21	46	14	1	14	1.095	ME

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]					Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5	%PO[4]	Gravity	Maturity
MSL007-B	371	336	91	91	27	48	16	0	6	1.086	L
MSR061-1	381	328	86	89	22	44	20	0	10	1.085	ML
MSQ086-3	469	410	87	111	38	37	12	0	5	1.081	ML
MSS576-05SPL	533	441	83	119	19	31	25	7	15	1.087	ML
Spartan Splash	442	394	89	107	42	36	12	0	1	1.083	ME
MI Purple Sport I	487	424	87	115	13	37	37	0	11	1.081	M
CO02024-9W	459	404	88	109	34	44	10	0	6	1.094	ML
CO02321-4W	413	323	78	87	20	32	24	2	19	1.097	M
CO02033-1W	334	283	85	77	15	45	24	0	13	1.094	ML
CO99045-1W/Y	592	485	82	131	32	35	15	0	11	1.093	ML
AC01151-5W	427	327	76	88	28	37	12	0	13	1.084	ML
ATC00293-1W/Y	535	395	74	107	22	36	16	0	21	1.081	L
Nicolet	415	346	83	94	15	36	32	0	15	1.096	ML
W5955-1	501	427	85	116	14	36	31	4	12	1.090	ML
W6609-3	364	213	59	58	22	32	4	0	36	1.087	M
W5015-12	566	509	90	138	29	43	16	2	4	1.092	L
Accumulator	502	298	60	81	13	35	12	0	37	1.106	ML
A05182-7RY	622	561	90	152	38	42	10	0	2	1.083	L
Opera	426	351	83	95	36	37	10	0	8	1.095	ML
Parella	555	443	80	120	39	33	9	0	12	1.083	M
Vivaldi	536	479	89	130	32	44	14	0	5	1.078	M
Taurus	429	318	74	86	32	38	4	0	18	1.093	ME
Sifra	585	472	81	128	22	39	20	0	12	1.083	L
HZC 06-6068	483	437	90	118	20	48	21	1	6	1.072	M
Soraya	523	354	68	96	28	31	9	0	28	1.070	ML
Francisca	521	432	83	117	44	35	4	0	9	1.079	M
Nadine	362	249	68	68	23	23	22	0	25	1.066	M
Lanorma	385	355	91	96	7	33	40	11	8	1.079	L
Reba	369	336	91	91	22	51	18	0	6	1.079	ME
Envol	361	319	88	86	14	54	14	6	8	1.074	E
AF4463-7*	412	326	79	88	17	39	23	0	17	1.087	M
AF4736-10*	376	369	98	100	12	42	39	5	1	1.091	ML

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]					Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5	%PO[4]	Gravity	Maturity
AF4838-1*	376	276	74	75	27	31	16	0	23	1.076	ML
AF4914-4*	576	526	91	142	33	49	9	0	2	1.089	ML
AF5033-11*	404	348	86	94	26	48	12	0	6	1.094	ME
AF5040-4*	426	279	66	76	6	16	18	26	33	1.097	ML
AF5042-8*	384	361	94	98	16	57	22	0	4	1.088	ML
AF5068-3*	328	207	63	56	24	26	13	0	30	1.086	M
AF5138-2*	356	271	76	73	17	36	24	0	20	1.090	M
AF5140-1*	404	362	90	98	15	55	14	5	6	1.084	ME
AF5142-1*	381	348	91	94	29	36	26	0	4	1.087	ML
AF5144-7*	376	340	91	92	27	50	13	0	6	1.088	M
AF5243-2*	507	370	73	100	38	32	3	0	20	1.080	ME
AF5150-1*	457	395	86	107	31	43	13	0	7	1.078	ME
B2869-28*	541	482	89	131	17	37	36	0	8	1.091	M
B2876-7*	440	326	74	88	23	36	15	0	21	1.086	M
B2890-11*	343	312	91	84	27	48	16	0	5	1.071	E
BNC266-6*	559	494	88	134	19	47	23	0	9	1.102	ML
B2930-5*	456	393	86	106	32	48	6	0	6	1.087	ME
BNC326-14*	396	371	94	100	17	61	16	0	4	1.080	E
Challenger*	482	388	80	105	48	32	0	0	2	1.097	L
B2993-1*	378	248	66	67	32	30	3	0	25	1.087	ME
B2993-2*	458	374	82	101	10	26	35	12	17	1.086	M
B2994-1*	448	399	89	108	22	45	22	0	8	1.090	ML
B2996-2*	522	398	76	108	25	33	14	4	17	1.075	M
B2999-1*	517	459	89	124	18	41	30	0	8	1.086	ML
B2999-6*	374	305	82	83	51	20	10	0	3	1.088	M
B3000-1*	526	494	94	134	30	57	7	0	3	1.096	ML
B3000-2*	503	409	81	111	39	34	8	0	7	1.088	L
B3002-1*	459	248	54	67	9	32	13	0	43	1.092	L
B3002-3*	588	499	85	135	27	39	19	0	9	1.087	L
B3005-6*	535	400	75	108	8	41	21	4	24	1.081	ML
B3005-7*	362	287	79	78	34	43	2	0	11	1.090	E

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]					Specific Gravity	Vine Maturity
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5	%PO[4]		
B3005-9*	404	345	86	94	27	40	18	0	7	1.080	ME
B3010-2*	459	367	80	99	24	36	20	0	18	1.082	E
B3012-3*	379	340	90	92	37	35	18	0	4	1.090	E
B3021-1*	415	373	90	101	44	46	0	0	4	1.089	ML
B3042-1*	668	442	66	120	35	28	4	0	29	1.107	E
BNC363-6*	507	434	86	118	40	37	9	0	3	1.092	L
BNC364-1*	455	401	88	109	29	41	18	0	5	1.085	ME
BNC369-4*	551	520	94	141	17	62	15	0	2	1.092	ML
LSD	79	75	8		9	12	12	5	8		

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.

[2]Percentage of the standard, Atlantic, for >1 7/8" yield.

[3]Percentage of total yield according to size class. 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.

[4]Percentage of total that are pickouts.

Planted 8-in. apart with 15 seed pieces per 10-ft plot.

Replicated trials are the average of 3 replicates except for those lines with * which were non-replicated.

LSD indicates least significant difference ($P = 0.05$), calculated for replicated varieties.

Table 6. Tuber characteristics, internal and external defects for round white potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts[3]
	TA	C	TX	Sh	TED	TCS	HH	IB	
Atlantic	5	6	5	2	5	5	2	0	Green, growth cracks
Katahdin	4	8	8	3	5	5	0	0	Green
Kennebec	4	7	7	3	5	5	0	0	Growth cracks, green, knobs
Rochdale Gold-Dore	6	7	7	2	6	6	1	0	Green
Snowden	5	6	5	2	4	6	5	0	Green
Superior	4	7	6	3	5	5	3	0	Green
Yukon Gold	4	7	8	2	6	5	3	0	Green, growth cracks
AF0338-17	5	7	6	3	5	5	5	0	Green, growth cracks
AF4013-3	4	7	7	3	5	6	0	0	Green
AF4138-8	4	7	7	3	4	6	0	0	Green
AF4157-6	4	7	7	3	5	5	0	0	Growth cracks, green
AF4172-2	5	6	4	5	7	5	7	0	Misshape, green, knobs
B2833-16	4	7	6	3	6	5	0	0	Green, growth cracks
BNC182-5	5	7	6	2	6	5	0	0	Green, misshape
NY148 (E106-4)	5	7	6	2	4	6	2	0	Green
NY150 (F52-1)	6	8	8	2	6	6	0	0	Green
AF4376-3	5	7	7	3	5	5	2	0	Green
AF4386-16	5	6	6	2	6	5	0	0	Green, growth cracks
AF4227-2	5	7	6	2	5	6	1	0	Green
AF4430-1	5	6	6	2	5	5	1	0	Green
AF4442-4	5	6	6	2	6	5	2	0	Green
AF4614-2	5	7	7	2	6	5	0	0	Green
AF4615-5	4	5	4	5	5	4	1	0	Green
AF4640-1	5	7	7	2	5	5	0	0	Green
B2728-2	5	6	6	2	5	6	2	2	Green
B2738-3	4	6	6	2	5	5	1	0	Green, misshape
B2833-8	5	6	6	2	5	6	3	0	Green
B2834-8	5	6	6	2	5	6	0	0	Green
MSL211-3	5	7	7	2	6	4	0	0	Green
MSL292-A	5	5	5	2	4	5	3	0	Green

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
MSL007-B	5	5	5	2	6	5	6	0	Green
MSR061-1	5	6	6	2	5	5	4	0	Green, scab
MSQ086-3	5	6	7	2	5	5	0	0	Green
MSS576-05SPL	5	*	7	2	5	5	0	0	Green, misshape
Spartan Splash	4	**	7	2	4	5	0	0	Green
MI Purple Sport I	4	***	7	3	4	4	1	0	Green
CO02024-9W	5	6	7	2	5	5	0	0	Green
CO02321-4W	5	6	7	2	5	5	0	0	Green, growth cracks
CO02033-1W	4	6	7	3	6	5	2	0	Growth cracks, green
CO99045-1W/Y	5	6	6	4	5	5	1	0	Green, misshape
AC01151-5W	5	7	7	2	5	5	1	0	Green, growth cracks
ATC00293-1W/Y	4	6	6	2	5	5	1	0	Green, growth cracks
Nicolet	4	6	6	2	5	5	1	0	Green
W5955-1	5	6	6	3	5	5	0	0	Green, knobs
W6609-3	4	7	7	2	5	6	0	0	Growth cracks, green
W5015-12	4	6	5	2	4	4	6	0	Green, growth cracks
Accumulator	3	6	6	2	5	6	4	0	Knobs, green
A05182-7RY	5	6	7	3	6	5	1	0	Green
Opera	5	7	8	3	6	5	0	0	Green, growth cracks, misshape
Parella	4	7	7	3	5	5	0	0	Green, growth cracks, misshape
Vivaldi	5	7	7	3	6	5	0	0	Green, knobs
Taurus	4	7	7	2	6	5	0	0	Green, growth cracks, knobs
Sifra	4	7	7	3	6	5	0	0	Green, growth cracks
HZC 06-6068	4	7	8	2	5	5	0	0	Green, growth cracks, misshape
Soraya	4	7	7	3	6	4	0	0	Knobs, misshape
Francisca	5	7	7	3	5	5	0	0	Green, growth cracks, misshape
Nadine	5	7	7	3	6	6	2	0	Green, growth cracks, knobs
Lanorma	5	7	8	3	6	4	0	0	Green, knobs
Reba	5	8	7	3	4	5	0	0	Green
Envol	5	7	7	3	5	5	0	0	Pink eye, green
AF4463-7*	5	8	8	2	6	5	0	0	Growth cracks
AF4736-10*	5	7	7	2	5	6	2	0	Growth cracks

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
AF4838-1*	4	7	8	2	5	4	0	0	Growth cracks, green
AF4914-4*	4	6	6	2	5	5	0	0	Green
AF5033-11*	3	7	6	2	3	5	0	0	Green
AF5040-4*	5	7	7	2	5	5	0	0	Growth cracks, green
AF5042-8*	5	8	8	3	5	5	1	0	Growth cracks
AF5068-3*	4	7	7	2	6	5	0	0	Growth cracks
AF5138-2*	4	6	7	3	3	5	0	0	Green, growth cracks
AF5140-1*	4	7	7	2	4	6	0	0	Green
AF5142-1*	5	7	6	2	5	5	0	0	Green
AF5144-7*	5	7	7	2	5	5	1	0	Green
AF5243-2*	5	7	7	2	5	5	0	0	Growth cracks
AF5150-1*	5	6	6	3	5	5	0	0	Green, misshape
B2869-28*	5	7	7	2	5	6	2	0	Growth cracks
B2876-7*	5	7	7	3	6	5	0	0	Growth cracks, green
B2890-11*	6	7	7	2	6	6	0	0	Green
BNC266-6*	4	7	7	2	4	5	3	0	Green
B2930-5*	5	7	7	3	6	6	0	0	Green
BNC326-14*	4	6	6	3	6	5	0	0	Growth cracks
Challenger*	4	7	6	3	6	5	0	0	Growth cracks
B2993-1*	4	7	7	3	6	5	0	0	Green
B2993-2*	3	6	6	2	3	6	2	0	Green, growth cracks
B2994-1*	5	7	7	3	5	6	1	0	Green
B2996-2*	4	7	7	2	5	4	0	0	Green, growth cracks
B2999-1*	5	7	7	3	6	5	0	0	Green
B2999-6*	6	6	6	2	6	5	2	0	Green
B3000-1*	5	6	6	3	6	5	1	1	Green
B3000-2*	5	6	6	2	6	4	1	0	Green
B3002-1*	3	6	6	3	5	6	0	0	Growth cracks, knobs
B3002-3*	5	7	7	2	5	5	1	0	Green, growth cracks
B3005-6*	5	6	5	3	4	6	0	0	Green, growth cracks
B3005-7*	4	7	6	3	5	5	2	0	Green

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
B3005-9*	5	8	6	3	6	5	2	0	Green
B3010-2*	4	6	6	3	5	5	3	0	Misshape, green
B3012-3*	4	7	7	2	4	4	3	2	Green
B3021-1*	5	7	6	2	5	5	0	0	Green
B3042-1*	3	7	7	3	7	5	2	0	Growth cracks, knobs
BNC363-6*	4	7	6	2	6	6	2	0	Green
BNC364-1*	4	7	6	3	6	6	1	0	Green
BNC369-4*	5	7	6	3	5	5	0	0	Green

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.

C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream.

* = tan with red splotches, ** = tan with purple splotches, *** = have pruple streaks

TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very smooth.

Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.

TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

[2]Internal Defects: HH = hollow heart, IB = internal browning. Total number observed out of 12 tubers for replicated trials and total number out of 4 for non replicated trials (marked with *). 0 = not observed.

[3]Most of the green was cause by the dry soil conditions after vine kill. The soil had large cracks in it that let the tubers get green from the sun. Most of the growth cracks and misshapes came from the dry conditions and uneven rain fall this year.

Table 7. Total yield, greater than 1 7/8" yield, percent of standard, size distribution, percent pickouts, and specific gravity for red or purple skinned potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5		Gravity	Maturity
Chieftain	429	318	74	100	23	36	10	4	21	1.078	ML
Dark Red Norland	383	309	81	97	22	41	17	0	15	1.068	E
B2676-2	436	399	92	126	27	43	17	4	4	1.092	E
BNC244-10	496	405	82	128	49	26	7	0	1	1.092	ME
AF4550-2	405	345	85	109	40	42	3	0	7	1.074	E
AF4565-1	383	270	70	85	37	26	7	0	20	1.072	E
AF4566-4	460	329	72	103	36	28	8	0	18	1.086	E
BNC201-1	459	424	92	133	26	52	14	0	4	1.087	ML
MSR226-ARR	276	217	78	68	37	36	5	0	10	1.085	M
CO00405-1RF	313	139	44	44	30	14	0	0	13	1.081	E
A05180-3PY	542	418	77	132	39	30	9	0	13	1.079	M
A00286-3Y	557	504	91	159	20	44	25	1	5	1.087	L
HZC 01-6087	524	385	73	121	45	24	5	0	6	1.088	ML
Smiley	374	293	78	92	29	36	14	0	12	1.087	ML
Carolina	607	533	88	168	10	40	35	2	9	1.067	M
DarK Red Chieftain	292	252	87	79	23	49	15	0	7	1.073	ML
AF4593-1*	380	345	91	109	15	57	19	0	3	1.069	E
AF5160-7*	451	403	89	127	30	49	10	0	5	1.086	ML
AF5245-1*	398	337	85	106	48	34	3	0	0	1.084	M
B2863-7*	363	309	85	97	36	37	13	0	8	1.078	ME
BNC306-3*	505	454	90	143	31	42	9	8	1	1.079	M
BNC320-2*	404	377	93	119	46	44	3	0	0	1.071	E
BNC322-2*	297	260	88	82	20	43	25	0	5	1.070	ML
LSD	75	72	8		11	10	10	4	7		

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.

[2]Percentage of the standard, Chieftain, for >1 7/8" yield.

[3]Percentage of total yield according to size class. 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.

[4]Percentage of total that are pickouts.

Replicated trials are the average of 3 replicates except for those lines with * which were non-replicated.

LSD indicates least significant difference ($P = 0.05$), calculated for replicated varieties.

Plots consisted of 10-ft rows with 15 seed pieces spaced 8-in. apart.

Table 8. Tuber characteristics, internal and external defects for red skinned potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts[3]
	TA	C	TX	Sh	TED	TCS	HH	IB	
Chieftain	5	2	7	3	6	5	0	0	Growth cracks,green
Dark Red Norland	4	2	7	3	6	5	5	0	Growth cracks, knobs
B2676-2	6	2	7	3	6	5	0	0	Green
BNC244-10	5	1	7	2	5	5	0	0	Misshape
AF4550-2	5	1	7	3	5	5	0	0	Growth cracks
AF4565-1	4	2	7	3	6	5	0	0	Growth cracks, misshape, green
AF4566-4	4	2	7	2	6	6	0	0	Growth cracks, knobs, misshape
BNC201-1	4	2	7	2	3	7	0	0	Green, misshape
MSR226-ARR	4	2	7	3	6	5	0	0	Green, growth cracks
CO00405-1RF	4	2	7	5	6	5	0	0	Misshape
A05180-3PY	5	1	7	2	5	5	0	0	Growth cracks, misshape
A00286-3Y	5	7	7	3	6	5	1	0	Green
HZC 01-6087	4	2	6	4	7	5	0	0	Misshape, green
Smiley	5	2	8	3	7	4	0	0	Green, growth cracks
Carolina	4	2	7	3	4	5	0	0	Misshape, green
DarK Red Chieftain	5	2	7	2	6	6	0	0	Misshape, growth cracks
AF4593-1*	4	2	8	2	3	5	0	0	Growth cracks
AF5160-7*	5	2	8	3	5	5	0	0	Knobs
AF5245-1*	5	1	7	2	6	4	0	0	
B2863-7*	4	2	7	3	5	5	0	0	Misshape
BNC306-3*	4	1	7	3	5	5	0	0	Growth cracks
BNC320-2*	5	1	8	3	5	5	0	0	
BNC322-2*	5	2	7	2	5	5	0	0	Growth cracks

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.

C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream.

TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very smooth.

Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.

TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

[2]Internal Defects: HH = hollow heart, IB = internal browning. Total number observed out of 12 tubers for replicated trials and total number out of 4 for non replicated trials (marked with *). 0 = not observed.

[3]Most of the green was cause by the dry soil conditions after vine kill. The soil had large cracks in it that let the tubers get green from the sun. Most of the growth cracks and misshapes came from the dry conditions and uneven rain fall this year.

Table 9. Total yield, greater than 1 7/8" yield, percent of standard, size distribution, percent pickouts, and specific gravity for russet skinned or long white potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5		Gravity	Maturity
Dakota Trailblazer	384	301	78	142	36	30	13	0	18	1.112	ML
Russet Burbank	331	212	64	100	22	30	12	0	28	1.089	M
Teton Russet	440	170	38	80	23	11	3	0	49	1.079	E
A010101-1	333	208	62	98	28	33	1	0	32	1.085	ML
AF3001-6	430	319	74	151	26	31	17	0	20	1.099	ML
AF3317-15	305	204	66	96	20	29	18	0	25	1.100	L
AF3362-1	465	348	75	164	17	33	20	5	21	1.092	M
AF4040-2	463	265	57	125	17	28	12	0	38	1.092	E
AF4124-4	361	244	67	115	31	29	7	0	25	1.095	ME
AF4124-7	313	246	78	116	23	37	17	0	17	1.100	ML
AF4320-17	337	267	79	126	45	23	11	0	11	1.089	ME
AF4347-1	378	246	65	116	25	25	14	0	32	1.093	ML
AF4283-1	364	257	70	122	29	32	9	0	24	1.081	M
AF4296-3	375	249	66	118	24	30	11	0	26	1.099	ML
AF4342-3	315	207	67	98	24	32	11	0	30	1.106	ML
AF4445-3	286	199	69	94	27	32	8	2	23	1.081	M
AF4532-8	378	245	65	116	25	27	13	0	26	1.072	ME
AF4532-9	287	177	62	84	38	17	7	0	28	1.087	E
AF4453-7	347	253	72	120	19	35	18	0	23	1.098	L
AF4692-1	404	226	56	107	16	18	23	0	38	1.092	L
AF4702-2	392	307	78	145	14	29	31	4	20	1.095	ML
AF4950-1	304	200	65	95	35	23	8	0	17	1.097	ME
AF4950-2	342	266	79	126	38	35	6	0	11	1.090	ML
AF4953-6	322	201	62	95	23	29	6	4	27	1.096	ML
AF4989-1	307	196	63	92	29	29	4	0	22	1.085	ME
AC99375-1RU	459	320	70	151	33	31	6	0	22	1.103	ML
CO99053-3RU	325	229	70	108	36	21	13	0	22	1.095	ML

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5		Gravity	Maturity
AC00395-2RU	374	255	67	120	37	21	10	0	26	1.099	ML
A01010-1	307	214	70	101	45	21	3	0	21	1.084	ML
A03141-6	367	253	69	120	30	27	12	0	23	1.091	ME
A08014-9TE	331	166	50	78	16	18	17	0	44	1.085	E
A03873-3NV	367	213	59	101	30	24	4	0	31	1.080	M
A06020-8	268	149	55	70	34	18	3	0	26	1.100	M
A06914-3CR	392	247	64	117	35	26	3	0	28	1.091	ME
A08422-2VR	417	294	70	139	13	33	24	0	27	1.089	ME
A07431-6LB	260	195	75	92	27	39	9	0	16	1.088	ML
A03158-2TE	341	212	62	100	24	25	13	0	30	1.091	M
A07008-43	322	238	74	113	36	29	9	0	16	1.090	ME
A010125-4	384	260	68	123	23	33	12	0	28	1.091	ME
A07103-1T	380	276	72	130	29	22	21	0	24	1.096	ML
Challenger	461	324	71	153	49	18	4	0	15	1.091	L
Jelly	430	366	85	173	25	42	18	0	11	1.085	ML
Fontane	449	298	67	141	34	26	6	0	24	1.098	ML
AF4957-5*	382	339	89	160	38	36	15	0	6	1.075	E
AF5050-5*	293	215	74	102	33	24	17	0	20	1.090	M
AF5072-1*	234	135	58	64	32	26	0	0	32	1.074	M
AF5164-19*	302	257	85	121	25	36	24	0	5	1.080	ML
AF5205-1*	284	217	76	102	52	25	0	0	10	1.103	L
AF5312-1*	402	261	65	123	25	29	11	0	32	1.083	E
Alegria*	371	268	72	126	29	34	9	0	22	1.080	ME
LSD	71	68	13		13	13	10	3	12		

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.

[2]Percentage of the standard, Russet Burbank for >1 7/8" yield.

[3]Percentage of total yield according to size class: 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.

[4]Percentage of total that are pickouts.

Replicated trials are the average of 3 replicates except for those lines with * which were non-replicated.

LSD indicates least significant difference ($P = 0.05$), calculated for replicated varieties.

Plots consisted of 10-ft rows with 12 seed pieces spaced 10-in. apart.

Table 10. Tuber characteristics, internal and external defects for russet skinned or long white potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts[3]
	TA	C	TX	Sh	TED	TCS	HH	IB	
Dakota Trailblazer	5	6	4	4	7	5	3	0	Growth cracks, misshape
Russet Burbank	4	6	4	4	7	5	5	0	Knobs, growth cracks, misshape
Teton Russet	5	6	4	4	7	5	2	0	Growth cracks
A010101-1	4	5	3	5	7	4	0	0	Knobs, misshape
AF3001-6	4	7	6	4	6	5	3	0	Growth cracks, knobs, green
AF3317-15	5	6	4	5	7	4	0	0	Green, misshape
AF3362-1	4	6	3	5	6	4	0	0	Misshape, green, growth cracks
AF4040-2	3	6	6	4	6	5	0	0	Misshape, green, knobs, growth cracks
AF4124-4	3	6	6	3	6	4	0	0	Misshape, knobs, growth cracks
AF4124-7	4	6	4	3	6	5	0	0	Misshape, green
AF4320-17	4	6	4	4	6	5	1	0	Misshape
AF4347-1	3	5	4	4	6	5	2	0	Misshape, growth cracks
AF4283-1	4	6	6	4	7	5	1	0	Misshape, green, knobs
AF4296-3	4	6	4	4	7	5	1	0	Knobs, green, misshape
AF4342-3	3	6	1	3	7	4	2	0	Knobs, green
AF4445-3	5	5	3	4	7	5	1	0	Growth cracks, misshape, green
AF4532-8	4	5	3	4	7	5	10	0	Growth cracks, green, misshape, knobs
AF4532-9	4	5	3	4	7	4	4	0	Misshape, green
AF4453-7	4	6	6	4	7	5	2	0	Misshape, green
AF4692-1	4	7	6	4	7	5	0	0	Misshape, knobs, green
AF4702-2	5	6	7	4	6	5	1	0	Green, growth cracks, knobs
AF4950-1	4	6	5	4	6	5	0	0	Green, misshape, knobs
AF4950-2	4	6	6	4	6	4	2	0	Misshape, green
AF4953-6	3	6	4	3	6	4	3	0	Knobs, green
AF4989-1	4	5	4	4	6	4	1	0	Growth cracks, green
AC99375-1RU	4	6	4	4	7	4	3	0	Misshape, green
CO99053-3RU	4	5	4	4	7	5	1	0	Misshape, green, growth cracks

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
AC00395-2RU	4	5	3	4	7	5	3	0	Growth cracks, misshape
A01010-1	3	5	3	4	7	5	0	0	Knobs
A03141-6	3	5	3	4	7	5	8	0	Growth cracks, misshape
A08014-9TE	3	5	4	4	7	5	2	0	Growth cracks, misshape
A03873-3NV	3	6	6	4	6	5	2	0	Misshape, green
A06020-8	3	6	6	4	7	4	0	0	Misshape, knobs, green
A06914-3CR	4	6	7	3	7	5	0	0	Knobs, green
A08422-2VR	5	5	4	4	6	4	2	0	Green, knobs, misshape
A07431-6LB	4	6	6	4	7	4	0	0	Misshape
A03158-2TE	3	5	4	4	7	4	3	0	Growth cracks, green
A07008-43	4	5	3	4	7	5	3	0	Misshape, green
A010125-4	3	6	6	4	6	5	1	0	Misshape, green
A07103-1T	4	6	4	4	7	4	4	0	Growth cracks, misshape
Challenger	5	6	6	3	6	5	3	0	Green, Misshape, growth cracks
Jelly	5	7	7	3	5	5	0	0	Green, misshape
Fontane	4	7	7	3	7	4	0	0	Knobs, misshape, green
AF4957-5*	3	7	6	4	5	5	0	0	Growth cracks
AF5050-5*	4	6	6	4	6	5	1	0	Green, growth cracks
AF5072-1*	3	5	3	4	7	5	0	0	Growth cracks, knobs
AF5164-19*	3	6	6	4	5	5	1	0	Green
AF5205-1*	4	7	7	4	6	4	0	0	Misshape
AF5312-1*	4	5	3	4	6	5	0	0	Knobs, misshape
Alegria*	5	7	8	3	6	5	0	0	Knobs, green

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.
C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream.
TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very smooth.
Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.
TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

[2]Internal Defects: HH = hollow heart, IB = internal browning. Total number observed out of 12 tubers for replicated trials and total number out of 4 for non replicated trials (marked with *). 0 = not observed.

[3]Most of the green was cause by the dry soil conditions after vine kill. The soil had large cracks in it that let the tubers get green from the sun. Most of the growth cracks and misshapes came from the dry conditions and uneven rain fall this year.

Table 11. Total yield, greater than 1 7/8" percent of standard, size distribution, percent pickouts, and specific gravity for NE1231 potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific Gravity	Vine Maturity
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5			
Atlantic	404	365	90	100	11	42	38	0	8	1.095	ML
Chieftain	421	328	78	90	24	39	13	3	17	1.078	ML
Dakota Trailblazer	364	288	79	79	38	29	12	0	15	1.112	ML
Dark Red Norland	375	299	79	82	21	39	19	0	16	1.068	E
Katahdin	345	316	91	87	17	45	30	0	6	1.083	ML
Kennebec	460	342	74	94	9	24	34	7	23	1.083	ML
Rochdale Gold-Doree	325	301	93	83	31	47	15	0	2	1.082	ML
Russet Burbank	337	214	64	59	26	29	9	0	29	1.089	M
Snowden	424	388	92	106	29	48	14	0	5	1.097	ML
Superior	392	372	95	102	24	48	24	0	2	1.080	ME
Teton Russet	439	184	42	50	27	12	3	0	46	1.079	E
Yukon Gold	390	343	88	94	9	32	39	8	11	1.091	M
A010101-1	330	215	65	59	35	30	1	0	28	1.085	ML
AF0338-17	397	361	91	99	7	31	44	10	7	1.093	L
AF3001-6	427	329	77	90	26	32	19	0	18	1.099	ML
AF3317-15	301	198	65	54	19	29	17	0	27	1.100	L
AF3362-1	435	325	75	89	17	34	20	3	21	1.092	M
AF4013-3	471	422	89	116	33	47	9	0	4	1.096	ML
AF4040-2	452	254	56	70	18	25	13	0	39	1.092	E
AF4124-4	361	249	69	68	29	31	9	0	24	1.095	ME
AF4124-7	299	241	80	66	28	40	13	0	14	1.100	ML
AF4138-8	470	414	88	114	18	46	23	2	8	1.075	M
AF4157-6	456	325	71	89	33	28	10	0	23	1.092	M
AF4172-2	415	307	74	84	28	28	17	1	17	1.092	M
AF4320-17	328	258	78	71	48	22	8	0	9	1.089	ME
AF4347-1	384	267	69	73	24	29	16	0	28	1.093	ML

Variety/Line	Yield (cwt/A)[1]		%	% of	% by size class[3]				%PO[4]	Specific	Vine
	Total	>1 7/8"	US#1	Standard[2]	2	3	4	5		Gravity	Maturity
B2676-2	440	407	93	112	28	44	18	3	3	1.092	E
B2833-16	443	370	84	102	13	40	27	3	13	1.094	ML
BNC182-5	544	490	90	134	18	40	27	5	6	1.090	L
BNC244-10	487	399	82	109	48	27	7	0	1	1.092	ME
NY148 (E106-4)	494	457	93	125	21	40	30	1	5	1.101	L
NY150 (F52-1)	361	221	61	61	51	10	1	0	3	1.083	E
LSD	61	61	8		9	9	11	4	8		

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.

[2]Percentage of the standard, Atlantic, for >1 7/8" yield.

[3]Percentage of total yield according to size class. 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.

[4]Percentage of total that are pickouts.

Replicated trials are the average of 4 replicates. LSD indicates least significant difference ($P= 0.05$).

Russets were planted 10-in. apart with 12 seed pieces per 10-ft plot, all other varieties were spaced 8-in. apart with 15 seed pieces per 10-ft plot.

Table 12. Tuber characteristics, internal and external defects for NE1231 potato evaluation trial in Rock Springs, Plant Pathology Farm, 2013

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts[3]
	TA	C	TX	Sh	TED	TCS	HH	IB	
Atlantic	5	6	5	2	5	5	2	0	Green, growth cracks
Chieftain	5	2	7	3	6	5	0	0	Growth cracks, green
Dakota Trailblazer	5	6	4	4	7	5	3	0	Growth cracks, misshape
Dark Red Norland	4	2	7	3	6	5	5	0	Growth cracks, knobs
Katahdin	4	8	8	3	5	5	0	0	Green
Kennebec	4	7	7	3	5	5	0	0	Growth cracks, green, knobs
Rochdale Gold-Doree	6	7	7	2	6	6	1	0	Green
Russet Burbank	4	6	4	4	7	5	5	0	Knobs, growth cracks, misshape
Snowden	5	6	5	2	4	6	6	0	Green
Superior	4	7	6	3	5	5	3	0	Green
Teton Russet	5	6	4	4	7	5	2	0	Growth cracks
Yukon Gold	4	7	8	2	6	5	5	0	Green, growth cracks
A010101-1	4	5	3	5	7	4	0	0	Knobs, misshape
AF0338-17	5	7	6	3	5	5	6	0	Green, growth cracks
AF3001-6	4	7	6	4	6	5	3	0	Growth cracks, knobs, green
AF3317-15	5	6	4	5	7	4	0	0	Green, misshape
AF3362-1	4	6	3	5	6	4	0	0	Misshape, green, growth cracks
AF4013-3	4	7	7	3	5	6	0	0	Green
AF4040-2	3	6	6	4	6	5	2	0	Misshape, green, knobs, growth cracks
AF4124-4	3	6	6	3	6	4	0	0	Misshape, knobs, growth cracks
AF4124-7	4	6	4	3	6	5	0	0	Misshape, green
AF4138-8	4	7	7	3	4	6	0	0	Green
AF4157-6	4	7	7	3	5	5	0	0	Growth cracks, green
AF4172-2	5	6	4	5	7	5	9	0	Misshape, green, knobs
AF4320-17	4	6	4	4	6	5	1	0	Misshape
AF4347-1	3	5	4	4	6	5	2	0	Misshape, growth cracks

Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
	TA	C	TX	Sh	TED	TCS	HH	IB	
B2676-2	6	2	7	3	6	5	0	0	Green
B2833-16	4	7	6	3	6	5	0	0	Green, growth cracks
BNC182-5	5	7	6	2	6	5	0	0	Green, misshape
BNC244-10	5	1	7	2	5	5	0	0	Misshape
NY148 (E106-4)	5	7	6	2	4	6	2	0	Green
NY150 (F52-1)	6	8	8	2	6	6	0	0	Green

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.
C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream.
TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very smooth.
Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.
TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

[2]Internal Defects: HH = hollow heart, IB = internal browning. Total number observed out of 16 tubers. 0 = not observed.

[3]Most of the green was cause by the dry soil conditions after vine kill. The soil had large cracks in it that let the tubers get green from the sun. Most of the growth cracks and misshapes came from the dry conditions and uneven rain fall this year.

Table 13. Total yield, greater than 1 7/8" yield, size distribution, percent pick outs and specific gravity for potato commercial trials of four varieties in 2013 in: A) Erie County, Kevin Troyer Farm; B) Schuylkill County, Nolan Masser Farm; C) Rock Springs, Plant Pathology Farm. About 200 lbs of each variety were planted in each location.

Location	Variety/Line	Yield (cwt/A)[1]		%	% by size class[2]				%PO[3]	Specific
		Total	>1 7/8"	US#1	2	3	4	5		Gravity
Kevin Troyer Farm	AF3001-6	491	443	90	48	35	7	0	3	1.089
	Challenger	349	189	54	48	6	0	0	25	1.085
	Nicolet	265	226	85	42	38	5	0	4	1.084
	AF0338-17	449	392	87	48	35	5	0	7	1.092
	Dark Red Chieftain	331	294	89	38	47	4	0	0	1.075
Nolan Masser Farm	AF3001-6	339	318	94	42	32	20	0	0	1.077
	Challenger	372	241	65	40	21	4	0	23	1.077
	Nicolet	413	367	89	28	54	7	0	5	1.080
	AF0338-17	378	224	59	13	33	14	0	37	1.077
Rock Springs	AF3001-6	348	253	73	34	26	13	0	22	1.095
	Challenger	333	293	88	49	32	7	0	4	1.085
	Nicolet	241	196	82	21	48	12	0	10	1.103
	AF0338-17	350	298	85	12	44	29	0	13	1.089

[1]Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.
[2]Percentage of total yield according to size class. 2=1.875-2.5 in., 3=2.5-3.25 in., 4=3.25-4.0 in., 5=>4.0 in.
[3]Percentage of total that are pickouts.

Table 14. Tuber characteristics, internal and external defects for potato commercial trials of four varieties in 2013 in: A) Erie County, Kevin Troyer Farm; B) Schuylkill County, Nolan Masser Farm; C) Rock Springs, Plant Pathology Farm. About 200 lbs of each variety were planted in each location.

Location	Variety/Line	Tuber Characteristics[1]						Internal Defects[2]		Reasons for Pickouts
		TA	C	TX	Sh	TED	TCS	HH	IB	
Kevin Troyer Farm	AF3001-6	6	6	6	5	7	5	4	0	Green
	Challenger	4	6	6	3	7	6	3	0	Green, knobs
	Nicolet	5	6	5	2	5	5	0	0	Green
	AF0338-17	6	6	6	3	5	5	2	0	Scab
	Dark Red Chieftain	5	2	8	2	5	6	0	0	
Nolan Masser Farm	AF3001-6	4	6	6	4	7	5	1	0	Misshape, green
	Challenger	5	6	6	3	6	5	0	0	Misshape, 2nd tubers
	Nicolet	6	6	5	2	5	5	0	0	Green, misshape
	AF0338-17	5	6	6	3	5	5	0	0	Green
Rock Springs	AF3001-6	5	6	6	4	6	4	1	0	Green, knobs
	Challenger	6	6	6	3	6	5	2	0	Misshape
	Nicolet	5	6	5	2	5	6	0	0	Green
	AF0338-17	6	7	6	3	5	5	1	0	Green

[1]Tuber Characteristics: TA = tuber appearance: 1 = very poor, 5= fair, 9 = excellent.

C = skin color: 1 = purple, 2 = red, 3 = pink, 4 = dark brown, 5 = brown, 6 = tan, 7 = buff, 8 = white, 9 = cream.

TX = skin texture: 1 = partial russet, 2 = heavy russet, 3 = mod. russet, 4 = light russet, 5 = netted, 6 = slight net, 7 = mod. smooth, 8 = smooth, 9 = very smooth.

Sh = tuber shape: 1 = round, 2 = mostly round, 3 = round-oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong-long, 7 = mostly long, 8 = long, 9 = cylindrical.

TED = tuber eye depth: 1 = very deep, 5 = medium, 9 = very shallow. TCS = tuber cross section: 1 = very flat, 5 = intermediate, 9 = very round.

Table 15: Management of Evaluation Trials, 2013

Lehigh Co.

Planting Date:	17 May
Harvest Date:	3 Oct
Previous Crop:	Barley followed by soybeans
Fertilizer Rate/A:	16 May: 800 lb/A 14-14-14 (N-P-K)
Herbicide:	Glory, Dual Magnum II
Fungicide:	Ridomil Gold Bravo SC, Manzate ProStik
Insecticide:	Admire Pro, Radiant SC, Dimethoate
Vine Kill:	Died on their own
Rainfall (inches):	May (1.2). June (8.20), July (10.85), August (9.10), September (1.90)
Irrigation (inches):	N/A

Erie Co.

Planting Date:	23 May
Harvest Date:	10 Oct
Previous Crop:	Corn
Fertilizer Rate/A:	At planting: 30 gal 32-0-0 (N-P-K) and 10 gal 10-34-0 (N-P-K); 1 Jul: 20 gal 32-0-0 (N-P-K)
Herbicide:	Dual, Prowl, Sencor
Fungicide:	Curzate, Bravo
Insecticide:	Admire, Assana, Dimethoate
Vine Kill:	15 Sep
Rainfall (inches):	May (1.2). June (8.20), July (10.85), August (9.10), September (1.90)
Irrigation (inches):	N/A

Rock Springs

Planting Date:	30 and 31 May
Harvest Date:	15, 16, 17 and 22 Oct
Previous Crop:	Wheat followed by mustard green manure
Fertilizer Rate/A:	At planting: 1199 lb/A 10-5-5 (N-P-K)
Herbicide:	Eptam 7E, Dual Magnum II, Sencor 75DF, Matrix
Fungicide:	Gavel 75DF, Manzate ProStik, Tanos, Bravo WS, Curzate 60 DF, Endura
Insecticide:	Admire Pro, Radiant, Baythroid XL, Fufill
Vine Kill:	13 and 19 Sep
Rainfall (inches):	May (2.34). June (6.54), July (5.16), August (1.97), September (2.20)
Irrigation (inches):	24 July (0.55)

POTATO (*Solanum tuberosum*)
Late blight; *Phytophthora infestans*

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Field evaluation of potato cultivars and breeding lines for resistance to late blight in Pennsylvania, 2013.

In two experiments, fifty-eight potato cultivars and advanced breeding lines were evaluated at the Russell E. Larson Agricultural Research Center at Rock Springs, PA. The soil type was a Hagerstown silty clay loam. The previous crop was wheat. Potatoes were planted on 20 Jun. The experimental design was a randomized complete block with three replicates in both experiments. The plots were 4 ft long with five seed pieces planted in each plot and 5 ft breaks between plots within a row. At planting, 1199 lb/A of 10-5-5 (N-P-K) was banded in the row. Liquid N fertilizer was applied at 30 lb/A on 15 Jul at hilling. Precipitation was 6.54, 5.16, 1.97, and 2.20 in. for Jun, Jul, Aug, and Sep, respectively. On 8 Aug, spreader rows were spray-inoculated with a mixture of four isolates of *P. infestans* clonal lineage US-23, at a concentration of 9.3×10^4 sporangia/ml, to promote a uniform spread of the pathogen to all treatment plots. Overhead irrigation was applied at 0.50 in. on 26 Jul. Overhead sprinklers were used for approximately one hour daily when the weather was dry and hot to increase humidity in the plant canopy after inoculation. Disease ratings were determined by visually assessing each 4 ft plot and estimating the percentage of diseased foliage caused by late blight. Assessments were made on 25, 30 Aug and 3, 6 Sep. Disease data were expressed as area under the disease progress curve (AUDPC), subjected to analysis of variance, and means separated using Fisher's protected least significant difference test (SAS v. 9.3, SAS Institute, Cary, NC).

Cultivar Kennebec was the moderately resistant check for experiment #1; NY150 (NYF52-1), Rochdale Gold-Doree, NY148 (NYE106-4), AF3317-15, BNC182-5, Dakota Trailblazer, A010101-1, and Russet Burbank were resistant to moderately resistant. In experiment #2, Line B0718-3 was the resistant check; Lines A02507-2LB, MSS487-2, AF4696-1, B0692-4, AF4573-2, AF4615-5, AF4692-1, and MSS934-4 were resistant to moderately resistant.

Cultivar/Line	AUDPC[z]	Cultivar/Line	AUDPC	Cultivar/Line	AUDPC
Experiment #1		Experiment #1 (continued)		Experiment #2 (continued)	
NY150 (NYF52-1)	2 p[y]	AF4347-1	463 d-h	AF4615-5	65 h-k
Rochdale Gold-Doree	10 op	AF4320-17	483 d-g	AF4692-1	73 g-j
NY148 (NYE106-4)	19 op	Superior	487 d-g	MSS934-4	78 f-j
AF3317-15	32 n-p	AF4040-2	489 d-g	A02424-83LB	87 f-i
BNC182-5	93 m-p	Yukon Gold	513 c-f	BNC182-5	120 f-h
Dakota Trailblazer	100 l-o	AF4124-4	518 b-f	MSS165-2Y	125 fg
Kennebec	112 l-n	AF4124-7	522 b-f	AF4677-1	128 fg
A010101-1	183 k-m	AF4172-2	549 b-e	MSR058-1	135 f
Russet Burbank	188 kl	AF4157-6	555 b-d	A07426-8LB	261 e
BNC244-10	224 k	AF4013-3	588 bc	MSQ086-3	273 e
Snowden	265 jk	B2676-2	607 b	ATX91137-1RU	287 de
AF3362-1	357 ij	Dark Red Norland	761 a	AC03433-1W	287 de
AF3001-6	360 i			A03158-2TE	313 de
AF0338-17	381 hi	Experiment #2		CO04067-8R/Y	343 cd
Chieftain	382 hi	A02507-2LB	2 l	B2827-13	383 bc
Atlantic	403 g-i	MSS487-2	5 l	AC01151-5W	409 b
AF4138-8	412 g-i	AF4696-1	5 l	CO03276-5RU	433 b
B2833-16	417 g-i	B0692-4	10 kl	A02138-2	561 a
Teton Russet	438 f-i	B0718-3	23 j-l	B2834-8	563 a
Katahdin	461 e-h	AF4573-2	48 i-l	Sierra Rose	570 a

[z] AUDPC = Area under the disease progress curve was calculated from 25 Aug to 6 Sep according to the formula: $\sum^{n}_{i=1}[(R_{i+1} + R_i)/2]\,[t_{i+1} - t_i]$, where R = disease severity rating (% of leaf surface affected) at the ith observation, t_i = time (days) since the previous rating at the ith observation, and n = total number of observations.

[y] Means followed by the same letter within each experiment are not significantly different at $P = 0.05$ as determined by Fisher's protected least significant difference test (LSD = 93 for experiment 1, LSD = 60 for experiment 2).

POTATO (*Solanum tuberosum*)
Early blight; *Alternaria solani*

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Field evaluation of potato cultivars and breeding lines for resistance to early blight in Pennsylvania, 2013.

Thirty-two potato cultivars and advanced breeding lines were evaluated at the Russell E. Larson Agricultural Research Center at Rock Springs, PA. The soil type was a Hagerstown silty clay loam. The previous crop was wheat. Entries were planted on 14 May in a randomized complete block design with three replicates. Plots consisted of a single row 4 ft long with five seed pieces planted in each plot with a 4 ft break between plots. Each entry had an adjacent row of the susceptible cv. Dark Red Norland. Fertilization was 1015 lb/A of 10-10-10 (N-P-K) banded in row at planting. Precipitation was 6.54, 5.16, 1.97, and 2.20 in. for Jun, Jul, Aug, and Sep, respectively. On 23 Jul, overhead irrigation was applied at 1.25 in. and spreader rows were spray-inoculated with a conidial mixture of two isolates of *Alternaria solani*, at a concentration of 8.68×10^4 conidia/ml, to promote uniform spread of the pathogen to all treatment plots. For each plot, the percentage of diseased foliage was visually assessed on 4, 11, 18, 24 and 29 Aug. Disease data were expressed as the area under the disease progress curve (AUDPC), subjected to an analysis of variance and means separated using Fisher's protected least significant difference test (SAS v. 9.3, SAS Institute, Cary, NC).

Seven cultivars/lines were characterized as resistant to moderately resistant: Dakota Trailblazer, AF3317-15, A010101-1, Russet Burbank, NY148 (NYE106-4), BNC182-5, and Katahdin.

Cultivar/Line	AUDPC[z]	Cultivar/Line	AUDPC
Dakota Trailblazer	157 q[y]	AF3362-1	609 g-k
AF3317-15	163 q	Superior	638 f-j
A010101-1	167 q	AF4172-2	644 f-i
Russet Burbank	168 q	AF4320-17	646 f-i
NY148 (NYE106-4)	190 q	Teton Russet	680 e-i
BNC182-5	216 pq	B2833-16	699 e-h
Katahdin	284 o-q	AF0338-17	716 e-g
AF3001-6	358 n-p	AF4040-2	791 d-f
Chieftain	385 m-o	Yukon Gold	817 c-d
Snowden	430 l-o	AF4013-3	827 c-d
Kennebec	448 k-n	AF4138-8	830 b-e
Rochdale Gold-Doree	476 j-n	NY150 (NYF52-1)	832 b-e
AF4347-1	477 j-n	BNC244-10	939 b-d
Atlantic	536 i-m	AF4157-6	964 bc
AF4124-7	543 h-m	Dark Red Norland	992 b
AF4124-4	549 h-l	B2676-2	1228 a

[z] AUDPC = area under the disease progress curve was calculated from 4 Aug to 29 Aug according to the formula: $\sum^{n}{}_{i=1}[(R_{i+1} + R_i)/2]\,[t_{i+1} - t_i]$, where R = disease severity rating (% of leaf surface affected) at the ith observation, t_i = time (days) since the previous rating at the ith observation, and n = total number of observations.

[y] Means followed by the same letter are not significantly different at $P = 0.05$ as determined by Fisher's protected least significant difference test (LSD = 163).

POTATO (*Solanum tuberosum*)
Powdery scab; *Spongospora subterranea*

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Field evaluation of potato cultivars and breeding lines for resistance to powdery scab in Pennsylvania, 2013.

Thirty-three potato cultivars and advanced breeding lines were planted in a naturally infested field in Potter Co., PA on 21 May. The soil type was a Mardin silt loam. The previous crop was corn. Plots consisted of 6 ft rows, which were arranged in a randomized complete block design with three replications. Within each plot, 8 seed pieces were spaced 8 in. apart. Fertilizer was banded in-furrow at a rate of 1400 lb/A 8.5-8.5-11.4-19.0 (N-P-K-S) at planting. Precipitation was 4.60, 2.62, 3.15, and 2.53 in. for Jun, Jul, Aug, and Sep, respectively. Standard crop management practices and a recommended fungicide program for the management of early and late blight were followed. Reglone (1.0 pt/A) was applied to vine kill on 8 Aug and 6 Sep. Tubers were harvested on 24 Sep. The tubers were visually assessed, and the number of tubers with powdery scab was determined from the total number of tubers per plot. Disease incidence was calculated as the percentage of tubers with powdery scab. Data was subjected to an analysis of variance test, and means were separated using Fisher's protected least significant difference test (SAS v. 9.3, SAS Institute, Cary, NC).

The powdery scab disease pressure was low thus making it difficult to separate cultivars/lines into groups (resistant, moderately resistant, moderately susceptible, and susceptible). Based on our past years' data, Shepody should be susceptible, and Russet Burbank should be moderately resistant. Cultivars and breeding lines with less powdery scab than Dark Red Norland indicate some level of resistance.

Cultivar/Line	Powdery Scab Incidence (%)	Cultivar/Line	Powdery Scab Incidence (%)
Russet Burbank	0.0 g[z]	AF4040-2	7.0 e-g
Russet Norkotah	0.0 g	Kennebec	8.4 d-g
A010101-1	0.7 fg	NY148 (NYE106-4)	8.6 d-g
AF3317-15	0.8 fg	Dark Red Norland	8.6 d-g
Teton Russet	1.6 fg	Atlantic	8.9 d-g
BNC244-10	2.7 fg	BNC182-5	9.4 d-g
AF4124-4	2.8 fg	Chieftain	9.6 d-g
AF3362-1	3.3 fg	AF4157-6	9.8 d-g
AF0338-17	3.3 fg	NY150 (NYF52-1)	9.8 d-g
AF4124-7	3.6 fg	AF3001-6	10.2 c-g
AF4172-2	4.0 fg	AF4320-17	10.8 b-f
Rochdale Gold-Doree	4.1 fg	Shepody	14.5 b-e
Superior	5.1 e-g	B2833-16	18.6 b-d
Dakota Trailblazer	5.9 e-g	Yukon Gold	20.3 bc
AF4138-8	6.6 e-g	Katahdin	20.7 b
Snowden	6.7 e-g	AF4013-3	31.2 a
AF4347-1	6.9 e-g		

[z] Means followed by the same letter are not significantly different at $P = 0.05$ as determined by Fisher's protected least significant difference test (LSD = 10.25).

POTATO (*Solanum tuberosum* 'Atlantic')
Late blight; *Phytophthora infestans*

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Evaluation of foliar fungicides for control of potato late blight in Pennsylvania, 2013.

Fungicides were evaluated on potato cv. Atlantic at the Penn State Russell E. Larson Agricultural Research Center at Rock Springs, PA. The soil type was a Hagerstown silty clay loam. The previous crop was corn. Potatoes were planted on 12 Jun. The experimental design was a randomized complete block with four replicates. Plots were three rows wide (36 in. spacing between rows) and 10 ft long with 8 in. seed piece spacing. Fertilization was 1199 lb/A of 10-5-5 (N-P-K) banded in row at planting. Liquid N fertilizer was applied at 30 lb/A on 12 Jul and 15 lb/A on 15 Jul during hilling. Precipitation was 6.54, 5.16, 1.97, and 2.20 in. for Jun, Jul, Aug, and Sep, respectively. On 8 Aug, spreader rows were spray-inoculated with a mixture of four isolates of *Phytophthora infestans* clonal lineage US-23, at a concentration of 9.3×10^4 sporangia/ml, to promote a uniform spread of the pathogen to all treatment plots. Overhead sprinklers were used for approximately one hour daily when the weather was dry and hot to increase humidity in the plant canopy after inoculation. Fungicides were applied with a tractor-mounted, N_2-pressurized side boom sprayer at 30 psi and 45 gal/A. The spray boom was equipped with drop nozzles and boom nozzles so that both sides and the top of each plant were uniformly sprayed. Disease ratings were determined by visually assessing each plot for the percentage of diseased foliage caused by late blight. The plots were rated on 25, 30 Aug and 3, 6, 10, 13, 19 Sep and the assessments were used to calculate the area under the disease progress curve (AUDPC). Plants were vine killed on 20 and 26 Sep with Reglone (2.0 pt/A). The middle row of each plot was harvested on 15 Oct. Tubers were sorted and yield data were collected. Disease data were subjected to analysis of variance and Fisher's protected least significant difference test (SAS v. 9.3, SAS Institute, Cary, NC).

All of the treatments significantly suppressed season-long foliar late blight compared to the untreated control. All of the treatments, except for CX-10250 alternated with Bravo WS and Bravo WS applied at 14 day intervals, had significantly higher yields than the untreated control.

Treatment and rate of product per acre (application timing[z])	AUDPC[y]	Yield (cwt/A)[x]
Untreated Control	1588 a[w]	438 b
Bravo Weather Stik 6SC 1.5 pt (A, B, C, D, E, F, G)	45 c	555 a
GWN-10126 36 fl oz (A, B, C, D, E, F, G)	14 c	531 a
CX-10250 4.5 oz/100 gal (A, C, E, G) *alt.* Bravo Weather Stik 6SC 1.5 pt (B, D, F)	199 b	469 ab
Bravo Weather Stik 6SC 1.5 pt (A, C, E, G)	193 b	498 ab
Revus 5.5 fl oz (A, C, E, G) *alt.* Bravo Weather Stik 6SC 1.5 pt (B, D, F)	31 c	544 a
Zorvec OD (QGU42) 2.4 fl oz (A, C, E, G) *alt.* Bravo Weather Stik 6SC 1.5 pt (B, D, F)	5 c	549 a
Zorvec SC (QGU42) 1.0 fl oz (A, C, E, G) *alt.* Bravo Weather Stik 6SC 1.5 pt (B, D, F)	2 c	546 a
Zorvec SC (QGU42) 0.8 fl oz + Revus 5.5 fl oz (A, C, E, G) *alt.* Bravo Weather Stik 6SC 1.5 pt (B, D, F)	3 c	551 a
LSD (0.05)	57	91

[z] Dates of fungicide applications were as follows: A = Aug 6; B = Aug 13; C= Aug 20; D = Aug 27; E = Sep 3; F = Sep 10; G = Sep 17.

[y] AUDPC = Area under disease progress curve was calculated from 25 Aug to 19 Sep according to the formula: $\sum^{n}{}_{i=1}[(R_{i+1} + R_i)/2]\,[t_{i+1} - t_i]$, where R = disease severity rating (% of leaf surface affected) at the ith observation, t_i = time (days) since the previous rating at the ith observation, and n = total number of observations.

[x] cwt/A = hundred weight per acre of tubers with a diameter greater than 1.875 inches.

[w] Means followed by the same letter are not significantly different at $P = 0.05$ as determined by Fisher's protected least significant difference test.

Supplemental Progress Report, 2013----------March 30, 2014

Pennsylvania Regional Potato Germplasm Evaluation Program, 2013

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The objective of this project is to find new breeding lines that are well adapted to Pennsylvania potato growing conditions, and have qualities that are suitable for either processing or tablestock use. We cooperate with the directors of several other potato breeding programs from the Northeast US and a few programs from outside the Northeast by evaluating their potato germplasm. Data from this project helps breeders determine which lines to consider for potential release as new varieties, thereby bringing about new potato varieties for you.

Regional trials were established in three counties across Pennsylvania: Lehigh, Erie and the Russell E. Larson Agricultural Research Center at Rock Springs, Centre Co. Please see the Progress Report from December 2013 for details. During the winter months, tests were performed to evaluate germplasm for chip, French fry processing and culinary qualities. Storage ability, sprouting, and other traits were also noted as the tests were conducted. Presented in this report are the chip processing results (Tables 1-4), French fry results (Tables 5-9), and the culinary quality results (Table 10). The data are collected from small samples, which may not reflect all possible variations one may see within a commercial harvest.

Materials and Methods

From harvest until November, tuber samples were placed in a pole barn where they were subjected to fluctuating temperatures. We did not perform out of the field chip testing this year. Storage temperatures are listed at the bottom of each table. The chipping procedure at the PSU Lab was as follows. Four tubers from each breeding line/variety were peeled, cut in half, and sliced. Eight slices from the center of each half were used for chipping. Slices were fried at 365°F. The chip samples were rated on a scale of 1-10, which is in accordance with the Snack Food Color Chart. The oil used for chipping was soy-based oil (Bakers Chef heavy-duty oil). French fry tests were conducted as follows. Four tubers were peeled and sliced. Center slices (36 over the 4 tubers) were blanched in water for 3 minutes at 185°F then fried for 3 minutes at 365°F. The samples were rated using the USDA scale.

Results

Yield results and listings of noteworthy varieties/lines were provided in the December 2013 progress report.

Chipping (Tables 1-4)
There was no chipping directly out of the field (within two-three days of harvesting). Atlantic and Snowden are the standard varieties to use for comparing the chip color of the other lines.

There were a few noteworthy lines from the short term storage chipping in December: At Rock Springs, AF4157-6, MSQ086-3, CO02033-1W, and W5955-1 had the best color; Snowden, NY148, AF4386-16, AF4640-1, MSL292-A, MSL007-B, MSS576-05SPL, Spartan Splash, CO02024-9W, CO02321-4W, AC01151-5W, Nicolet, W6609-3, W5015-12, Accumulator, Parella, Taurus, Reba, AF4463-7, AF4736-10, AF5068-3, AF5142-1, AF5144-7, BNC266-6, BNC326-14, Challenger, B2993-2, B2994-1, B3005-7, B3005-9, B3012-3, B3021-1, BNC363-6, had BNC364-1 and acceptable color. At Lehigh, AF4157-6 had the best color; Atlantic, Snowden, Reba, Nicolet, W5955-1, Taurus, AF4013-3, and MSS576-05SPL had

acceptable color. At Erie, AF4157-6, W6609-3, and W5015-12 had the best color; Snowden, Reba, Nicolet, Taurus, AF0338-17, AF4013-3, and Parella had acceptable color.

From the results of the 3 week reconditioning the noteworthy lines are: At Rock Springs, Snowden, AF4157-6, MSQ086-3, CO02024-9W, CO02033-1W, AC01151-5W, Nicolet, W6609-3, BNC326-14, B2994-1, and B3012-3 had the best color; Atlantic, AF0338-17, AF4013-3, NY148, AF4376-3, AF4386-16, AF4227-2, AF4442-4, AF4640-1, B2728-2, B2833-8, B2834-8, MSL292-A, MSL007-B, MSR061-1, Spartan Splash, CO02321-4W, W5955-1, W5015-12, Accumulator, Opera, Taurus, Reba, AF5033-11, AF5040-4, AF5068-3, AF5142-1, BNC266-6, B3005-7, B3005-9, BNC363-6, and BNC364-1 had acceptable color. At Lehigh, AF4157-6 had the best color; Snowden, Reba, Nicolet, W5955-1, Taurus, and MSS576-05SPL had acceptable color. At Erie, Snowden and AF4157-6 had the best color; Atlantic, Nicolet, W6609-3, W5015-12, and Taurus had acceptable color.

From the results of the 6 week reconditioning the noteworthy lines are: At Rock Springs, AF4157-6, B2833-8, MSL292-A, MSQ086-3, CO02033-1W, AC01151-5W, Nicolet, W6609-3, B2999-1, B3021-1, and BNC363-6 had the best color; Atlantic, Snowden, NY148, AF4376-3, AF4386-16, AF4227-2, AF4442-4, AF4640-1, B2728-2, B2834-8, MSL007-B, CO02024-9W, W5955-1, W5015-12, Accumulator, Parella, Taurus, Reba, AF4463-7, AF4736-10, AF5033-11, AF5040-4, AF5068-3, AF5142-1, AF5144-7, B2869-28, BNC266-6, BNC326-14, Challenger, B2999-6, B3002-1, B3005-7, B3005-9, B3010-2, B3012-3, B3042-1, and BNC364-1 had acceptable color. At Lehigh, Atlantic, Snowden, Reba, Nicolet, AF4157-6, W5955-1, and Taurus had acceptable color. At Erie, Snowden, Nicolet, and W6609-3 had the best color; Atlantic, AF4157-6, W5015-12, Taurus, B2728-2, and Parella had acceptable color.

From the results of the chipping directly from 45°F the noteworthy lines are: At Rock Springs, Snowden, AF4157-6, MSQ086-3, Nicolet, W6609-3, W5015-12, and BNC326-14 had the best color; Atlantic, AF0338-17, AF4138-8, NY148, AF4386-16, AF4640-1, B2833-8, MSL292-A, MSL007-B, MSR061-1, CO02024-9W, CO02321-4W, CO02033-1W, AC01151-5W, W5955-1, Accumulator, Taurus, Reba, AF5033-11, AF5040-4, AF5142-1, B2994-1, B2999-1, B2999-6, B3002-3, B3005-7, B3005-9, B3012-3, B3021-1, BNC363-6, and BNC364-1 had acceptable color. At Lehigh, AF4157-6 the best color, Atlantic, Snowden, Nicolet, W5955-1, and Taurus had acceptable color. At Erie, AF4157-6 and W5015-12 had the best color; Snowden, Nicolet, W6609-3, Taurus, and Opera had acceptable color.

French fry Tests (Tables 5-9)
At Rock Springs, Dakota Trailblazer, AF3001-6, AF3317-15, AF4320-17, AF4296-3, AF4692-1, AF4702-2, AF4950-1, AF4950-2, AF4953-6, A03873-3NV, A07008-43, A07103-1T, AF5164-19, and AF5205-1 had the best French fry color. At Erie, AF3001-6 and AF4320-17 had the best color. At Lehigh, Dakota Trialblazer and AF3001-6 had the best color.

Tablestock Tests (Table 10)
Of the 120 lines tested for culinary characteristics, only 11 were unacceptable for sloughing.

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Table 1. Chip color results of potato evaluation at Rock Springs, Centre County, 2013 - 2014.

Variety/ Line	Specific Gravity	Chip Color			
		Dec.[1]	Feb.[2]	Feb.[3]	Mar.[4]
Atlantic	1.095	7	5	4	4
Katahdin	1.083	8	7	7	7
Kennebec	1.083	6	7	7	6
Rochdale Gold-Doree [YF]	1.082	6	7	7	6
Snowden	1.097	5	3	4	3
Superior	1.080	7	8	7	7
Yukon Gold [YF]	1.091	7	7	8	8
AF0338-17	1.093	6	4	6	5
AF4013-3[YF]	1.096	6	5	6	6
AF4138-8	1.075	7	6	6	4
AF4157-6	1.092	3	3	3	3
B2833-16	1.094	6	6	7	6
BNC182-5	1.090	7	6	6	7
NY148 (E106-4)	1.101	4	4	4	4
AF4376-3	1.083	6	5	4	7
AF4386-16	1.098	5	4	5	4
AF4227-2	1.086	6	5	4	6
AF4430-1	1.075	7	6	6	7
AF4442-4	1.089	6	4	4	6
AF4614-2	1.081	9	7	7	8
AF4615-5	1.096	8	8	7	7
AF4640-1	1.091	5	5	5	5
B2728-2	1.093	6	5	5	6
B2738-3	1.081	7	7	6	6
B2833-8	1.097	6	4	3	4
B2834-8	1.089	7	5	4	6
MSL211-3	1.083	8	8	7	8
MSL292-A	1.095	5	5	3	5
MSL007-B	1.086	5	4	4	4
MSR061-1	1.085	6	4	6	5
MSQ086-3	1.081	3	3	3	3
MSS576-05SPL	1.087	5	6	6	6
Spartan Splash [YF]	1.083	5	5	6	6
MI Purple Sport I	1.081	8	8	8	8
CO02024-9W	1.094	4	3	4	4
CO02321-4W	1.097	5	4	6	5
CO02033-1W	1.094	3	3	3	4
CO99045-1W/Y [YF]	1.093	8	8	8	8
AC01151-5W	1.084	4	3	3	4
ATC00293-1W/Y [YF]	1.081	6	6	7	7
Nicolet	1.096	4	3	3	3
W5955-1	1.090	3	4	4	5
W6609-3	1.087	4	3	3	3
W5015-12	1.092	4	4	4	3
Accumulator	1.106	5	4	4	5
A05182-7RY [YF]	1.083	8	10	10	8
Opera [YF]	1.095	6	5	6	6
Parella	1.083	5	6	5	7
Vivaldi [YF]	1.078	7	8	7	8
Taurus [YF]	1.093	4	4	5	5

Variety/ Line	Specific Gravity	Chip Color			
		Dec.[1]	Feb.[2]	Feb.[3]	Mar.[4]
Sifra	1.083	8	9	10	9
HZC 06-6068 YF	1.072	7	7	7	7
Soraya YF	1.070	8	8	8	10
Francisca YF	1.079	9	10	8	10
Nadine	1.066	10	10	10	10
Lanorma YF	1.079	7	8	7	8
Reba	1.079	4	4	5	4
Envol	1.074	7	8	8	9
AF4463-7	1.087	5	7	5	6
AF4736-10	1.091	4	6	5	6
AF4838-1	1.076	6	6	7	7
AF4914-4	1.089	8	8	6	9
AF5033-11	1.094	6	5	5	4
AF5040-4 YF	1.097	6	5	5	5
AF5042-8	1.088	7	7	7	6
AF5068-3 YF	1.086	5	5	5	6
AF5138-2	1.090	7	8	7	7
AF5140-1	1.084	6	6	6	7
AF5142-1 YF	1.087	5	5	5	5
AF5144-7 YF	1.088	5	6	5	6
AF5243-2	1.080	8	7	7	7
AF5150-1 YF	1.078	8	9	8	8
B2869-28	1.091	6	6	5	6
B2876-7	1.086	7	8	7	7
B2890-11 YF	1.071	9	9	8	10
BNC266-6	1.102	5	4	4	6
B2930-5 YF	1.087	6	7	7	7
BNC326-14	1.080	4	3	4	3
Challenger YF	1.097	5	6	5	6
B2993-1	1.087	7	7	7	6
B2993-2	1.086	5	6	6	6
B2994-1	1.090	4	3	6	4
B2996-2 YF	1.075	9	10	8	8
B2999-1	1.086	6	6	3	5
B2999-6	1.088	6	6	5	5
B3000-1	1.096	7	7	6	6
B3000-2	1.088	7	7	6	7
B3002-1	1.092	7	6	5	6
B3002-3	1.087	6	6	6	5
B3005-6	1.081	7	6	6	6
B3005-7	1.090	4	5	5	5
B3005-9	1.080	5	4	4	4
B3010-2	1.082	6	6	5	6
B3012-3	1.090	4	3	5	4
B3021-1	1.089	5	6	3	5
B3042-1 YF	1.107	6	7	5	6
BNC363-6	1.092	5	5	3	5
BNC364-1	1.085	5	4	4	4
BNC369-4	1.092	6	6	6	7

[1] Dec. = Stored at 55^0F from November 21, 2013 and chipped on December 11 & 12, 2013
[2] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to chipping on February 4 & February 5, 2014.
[3] Feb. = Stored at 45^0F from December2, 2013 than transferred to 55^0F six weeks prior to chipping on February 26 & 27, 2014.
[4] Mar. = Stored at 45^0F from December 2, 2013 and chipped on March 3 & 4, 2014.

Chip color is based on a 1 – 10 scale with 1 = lightest, 10 = darkest, 1 – 5 = acceptable chip color.

YF = Yellow Flesh

Table 2. Chip color results of potato evaluation in Lehigh County, Tim Geigers Farm, 2013 - 2014.

Variety/ Line	Specific Gravity	Chip Color			
		Dec.[1]	Feb.[2]	Feb.[3]	Mar.[4]
Atlantic	1.079	4	6	4	5
Snowden	1.074	4	4	5	4
Reba	1.064	4	5	5	6
Superior	1.061	7	8	8	8
Yukon Gold YF	1.061	8	8	7	7
Nicolet	1.072	4	4	4	4
AF4157-6	1.072	3	3	4	3
W5955-1	1.073	4	4	4	4
Taurus YF	1.081	5	4	4	5
AF0338-17	1.077	6	6	6	6
AF4013-3 YF	1.074	5	6	6	6
MSS576-05SPL	1.061	5	5	7	6
CO99045-1W/Y YF	1.079	6	7	7	7
Francisca YF	1.058	8	10	9	8
Sifra	1.059	9	10	9	9
Vilaldi YF	1.058	8	8	10	8
Soraya YF	1.060	8	9	9	8
Envol	1.060	8	7	8	8
Lanorma YF	1.059	7	7	7	8

[1] Dec. = Stored at 55^0F from November 21, 2013 and chipped on December 9, 2013
[2] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to chipping on February 3, 2014.
[3] Feb. = Stored at 45^0F from December2, 2013 than transferred to 55^0F six weeks prior to chipping on February 24, 2014.
[4] Mar. = Stored at 45^0F from December 2, 2013 and chipped on March 5, 2014.

Chip color is based on a 1 – 10 scale with 1 = lightest, 10 = darkest, 1 – 5 = acceptable chip color.

YF = Yellow Flesh

Table 3. Chip color results of potato evaluation in Erie County, Mark Troyers Farm, 2013 - 2014.

Variety/ Line	Specific Gravity	Chip Color			
		Dec.[1]	Feb.[2]	Feb.[3]	Mar.[4]
Atlantic	1.063	6	5	5	6
Snowden	1.073	4	3	3	4
Reba	1.059	4	6	6	6
Superior	1.064	6	7	7	7
Yukon Gold YF	1.067	7	8	7	7
Nicolet	1.072	4	4	3	5
AF4157-6	1.066	3	3	4	3
W6609-3	1.071	3	4	3	4
W5015-12	1.072	3	4	5	3
Taurus YF	1.081	4	5	4	4
Opera YF	1.069	6	6	6	5
AF0338-17	1.075	5	6	6	7
AF4013-3 YF	1.078	5	6	6	6
B2728-2	1.070	6	7	5	6
A00286-3Y YF	1.072	6	6	7	7
Francisca YF	1.063	8	10	9	10
Sifra	1.058	9	8	10	10
Parella	1.060	5	7	5	6
Vilaldi YF	1.055	7	8	8	8
Envol	1.071	7	7	6	8
Nadine	1.052	10	10	10	10
Lanorma YF	1.056	7	8	8	8

[1] Dec. = Stored at 55^0F from November 21, 2013 and chipped on December 9, 2013
[2] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to chipping on February 3, 2014.
[3] Feb. = Stored at 45^0F from December2, 2013 than transferred to 55^0F six weeks prior to chipping on February 24, 2014.
[4] Mar. = Stored at 45^0F from December 2, 2013 and chipped on March 6, 2014.

Chip color is based on a 1 – 10 scale with 1 = lightest, 10 = darkest, 1 – 5 = acceptable chip color.

YF = Yellow Flesh

Table 4. Chip color for potato commercial trials of two varieties in 2013 at: A) Erie County, Kevin Troyer Farm; B) Schuylkill County, Nolan Masser Farm; C) Rock Springs, Plant Pathology Farm. 200 lbs of each variety were planted in each location.

Variety/ Line	Specific Gravity	Chip Color			
		Dec.[1]	Feb.[2]	Feb.[3]	Mar.[4]
A					
Nicolet	1.084	4	3	4	4
AF0338-17	1.092	7	7	7	7
B					
Nicolet	1.080	3	3	4	3
AF0338-17	1.077	6	7	6	7
C					
Nicolet	1.103	3	3	4	3
AF0338-17	1.089	6	6	6	6

[1] Dec. = Stored at 55^0F from November 21, 2013 and chipped on December 10, 2013
[2] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to chipping on February 2, 2014.
[3] Feb. = Stored at 45^0F from December2, 2013 than transferred to 55^0F six weeks prior to chipping on February 24, 2014.
[4] Mar. = Stored at 45^0F from December 2, 2013 and chipped on March 5, 2014.

Chip color is based on a 1 – 10 scale with 1 = lightest, 10 = darkest, 1 – 5 = acceptable chip color.

Table 5. Total yield, greater than 1 7/8" yield, specific gravity, and French fry color for russet skinned or long white potato evaluation trial in Lehigh County, Tim Geiger Farm, 2013.

Variety/ Line	Yield (cwt/A)[1] Total	>1 7/8"	% of Standard[2]	Percent[3] Pickouts	Specific Gravity	French Fry Color[4] Dec.[5]	Jan.[6]	Feb.[7]
Atlantic	373	340	100	3	1.079			
Russet Norkotah	243	187	55	6	1.059	1	1	1
Dakota Trialblazer	341	264	78	15	1.080	0	0	0
AF3001-6	366	295	87	13	1.067	00	00	00
Challenger [YF]	364	151	44	17	1.067	1	0	0
Fontane [YF]	385	244	72	4	1.066	1	1	1
Jelly [YF]	390	305	90	13	1.067	1	1	1
Alegria	407	323	95	11	1.066	1	1	1
Teton Russet	282	127	38	30	1.063	1	1	1

[1] Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.
[2] Percentage of the standard, Atlantic for >1 7/8" yield.
[3] Percentage of total that are pickouts.
[4] French Fry Color: USDA Scale Color Standers for Frozen Fried Potatoes with 000 = lightest, 4 = darkest.
[5] Dec. = Stored at 55^0F from November 21, 2013 and fried on December 18, 2013.
[6] Jan. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to frying on January 27, 2014.
[7] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F six weeks prior to frying on February 18, 2014.

Non – replicated trial.
[YF] = Yellow flesh
Russets and long whites were planted 10-in. apart with 24 seed pieces per 20-ft plot, Atlantic were spaced 8-in. apart with 30 seed pieces per 20-ft plot.

Table 6. Total yield, greater than 1 7/8" yield, specific gravity, and French fry color for russet skinned or long white potato evaluation trial in Erie County, Mark Troyers Farm, 2013.

Variety/ Line	Yield (cwt/A)[1] Total	>1 7/8"	% of Standard[2]	Percent[3] Pickouts	Specific Gravity	French Fry Color[4] Dec.[5]	Jan.[6]	Feb.[7]
Atlantic	492	271	100	43	1.063			
Russet Norkotah	249	154	57	23	1.055	1	1	1
Dakota Trialblazer	442	200	74	50	1.078	0	1	1
AF3001-6	496	362	134	20	1.064	00	00	00
AF4320-17	306	164	60	34	1.063	0	0	00
Challenger YF	319	153	56	39	1.063	1	1	1
Fontane YF	319	229	85	11	1.065	1	1	1
Jelly YF	447	298	110	29	1.054	1	1	2
Alegria	290	137	47	51	1.058	1	1	2
Teton Russet	278	175	65	29	1.055	1	1	2
A01010-1	508	310	114	34	1.065	1	0	0

[1] Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.
[2] Percentage of the standard, Atlantic for >1 7/8" yield.
[3] Percentage of total that are pickouts.
[4] French Fry Color: USDA Scale Color Standers for Frozen Fried Potatoes with 000 = lightest, 4 = darkest.
[5] Dec. = Stored at 55^0F from November 21, 2013 and fried on December 18, 2013.
[6] Jan. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to frying on January 27, 2014.
[7] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F six weeks prior to frying on February 19, 2014.

Non – replicated trial.
YF = Yellow flesh
Russets and long whites were planted 10-in. apart with 24 seed pieces per 20-ft plot, Atlantic were spaced 8-in. apart with 30 seed pieces per 20-ft plot.

Table 7. Total yield, greater than 1 7/8" yield, specific gravity, and French fry color for russet skinned or long white potato evaluation trial at Rock Springs Plant Pathology Farm, 2013.

Variety/ Line	Yield (cwt/A)[1] Total	>1 7/8"	% of Standard[2]	Percent[3] Pickouts	Specific Gravity	French Fry Color[4] Dec.[5]	Jan.[6]	Feb.[7]
Dakota Trailblazer	384	301	142	18	1.112	0	0	0
Russet Burbank	331	212	100	28	1.089	1	1	1
Teton Russet	440	170	80	49	1.079	1	1	1
A010101-1	333	208	98	32	1.085	1	1	1
AF3001-6	430	319	151	20	1.099	0	00	00
AF3317-15	305	204	96	25	1.100	0	0	0
AF3362-1	465	348	164	21	1.092	1	1	0
AF4040-2	463	265	125	38	1.092	1	1	1
AF4124-4	361	244	115	25	1.095	1	1	0
AF4124-7	313	246	116	17	1.100	0	0	1
AF4320-17	337	267	126	11	1.089	0	0	0
AF4347-1	378	246	116	32	1.093	2	1	1
AF4283-1	364	257	122	24	1.081	1	1	1
AF4296-3	375	249	118	26	1.099	0	00	0
AF4342-3	315	207	98	30	1.106	1	0	0
AF4445-3	286	199	94	23	1.081	1	1	1
AF4532-8	378	245	116	26	1.072	1	1	1
AF4532-9	287	177	84	28	1.087	1	0	0
AF4453-7	347	253	120	23	1.098	1	1	1
AF4692-1	404	226	107	38	1.092	0	0	0
AF4702-2	392	307	145	20	1.095	0	00	00
AF4950-1	304	200	95	17	1.097	0	0	00
AF4950-2	342	266	126	11	1.090	0	00	00
AF4953-6	322	201	95	27	1.096	2	1	1
AF4989-1	307	196	92	22	1.085	1	0	1
AC99375-1RU	459	320	151	22	1.103	1	0	00
CO99053-3RU	325	229	108	22	1.095	1	0	00
AC00395-2RU	374	255	120	26	1.099	2	1	2
A01010-1	307	214	101	21	1.084	1	1	1
A03141-6	367	253	120	23	1.091	1	0	0
A08014-9TE	331	166	78	44	1.085	1	1	1
A03873-3NV	367	213	101	31	1.080	0	0	0
A06020-8	268	149	70	26	1.100	1	0	0
A06914-3CR	392	247	117	28	1.091	1	1	0
A08422-2VR	417	294	139	27	1.089	2	1	1
A07431-6LB	260	195	92	16	1.088	2	2	2
A03158-2TE	341	212	100	30	1.091	1	0	0
A07008-43	322	238	113	16	1.090	0	0	00
A010125-4	384	260	123	28	1.091	1	0	00
A07103-1T	380	276	130	24	1.096	0	0	0
Challenger [YF]	461	324	153	15	1.091	1	0	0
Jelly [YF]	430	366	173	11	1.085	1	0	0
Fontane [YF]	449	298	141	24	1.098	1	1	1
AF4957-5*	382	339	160	6	1.075	0	1	0
AF5050-5*	293	215	102	20	1.090	2	0	0
AF5072-1*	234	135	64	32	1.074	0	1	0
AF5164-19*	302	257	121	5	1.080	0	00	00

Variety/ Line	Yield (cwt/A)[1] Total	>1 7/8"	% of Standard[2]	Percent[3] Pickouts	Specific Gravity	French Fry Color[4] Dec.[5]	Jan.[6]	Feb.[7]
AF5205-1*	284	217	102	10	1.103	0	00	00
AF5312-1*	402	261	123	32	1.083	1	0	0
Alegria*	371	268	126	22	1.080	1	1	1

[1] Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.
[2] Percentage of the standard, Atlantic for >1 7/8" yield.
[3] Percentage of total that are pickouts.
[4] French Fry Color: USDA Scale Color Standers for Frozen Fried Potatoes with 000 = lightest, 4 = darkest.
[5] Dec. = Stored at 55^0F from November 21, 2013 and fried on December 16 & 17, 2013.
[6] Jan. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to frying on January 29 & 30 , 2014.
[7] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F six weeks prior to frying on February 17 & 18, 2014.

Replicated trials are the average of 3 replicates except for those lines with * which were non-replicated.
YF = Yellow flesh

Table 8. Total yield, greater than 1 7/8" yield, specific gravity, and French fry color for russet skinned or long white NE1231 potato evaluation trial at Rock Springs Plant Pathology Farm, 2013.

Variety/ Line	Yield (cwt/A)[1] Total	>1 7/8"	% of Standard[2]	Percent[3] Pickouts	Specific Gravity	French Fry Color[4] Dec.[5]	Jan.[6]	Feb.[7]
Atlantic	404	365	100	8	1.095			
Dakota Trailblazer	364	288	79	15	1.112	0	0	0
Russet Burbank	337	214	59	29	1.089	1	1	1
Teton Russet	439	184	50	46	1.079	1	1	1
A010101-1	330	215	59	28	1.085	1	1	1
AF3001-6	427	329	90	18	1.099	0	00	00
AF3317-15	301	198	54	27	1.100	0	0	0
AF3362-1	435	325	89	21	1.092	1	1	0
AF4040-2	452	254	70	39	1.092	1	1	1
AF4124-4	361	249	68	24	1.095	1	1	0
AF4124-7	299	241	66	14	1.100	0	0	1
AF4320-17	328	258	71	9	1.089	0	0	0
AF4347-1	384	267	73	28	1.093	2	1	1

[1] Yield Total = all yield including pickouts. Yield >1 7/8" = categories 2, 3, 4 and 5 excluding pickouts.
[2] Percentage of the standard, Atlantic for >1 7/8" yield.
[3] Percentage of total that are pickouts.
[4] French Fry Color: USDA Scale Color Standers for Frozen Fried Potatoes with 000 = lightest, 4 = darkest.
[5] Dec. = Stored at 55^0F from November 21, 2013 and fried on December 16 & 17, 2013.
[6] Jan. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to frying on January 29 & 30 , 2014.
[7] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F six weeks prior to frying on February 17 & 18, 2014.

Replicated trials are the average of 4 replicates.

Table 9. Total yield, greater than 1 7/8" yield, specific gravity, and French fry color for potato commercial trials of three varieties in 2012 at: A) Erie County, Kevin Troyer Farm; B) Schuylkill County, Nolan Masser Farm; C) Rock Springs, Plant Pathology Farm. 200 lbs of each variety were planted in each location.

	Variety/ Line	Yield (cwt/A)[1] Total	>1 7/8"	Percent[2] Pickouts	Specific Gravity	French Fry Color[3] Dec.[4]	Jan.[5]	Feb.[6]
A	AF3001-6	491	443	3	1.089	0	0	00
	Challenger YF	349	189	25	1.085	1	1	1
B	AF3001-6	339	318	0	1.077	00	00	00
	Challenger YF	372	241	23	1.077	0	1	1
C	AF3001-6	348	253	22	1.095	00	00	00
	Challenger YF	333	293	4	1.085	1	1	1

[1] Yield Total = all yield including pickouts. Yield >1 7/8"
[2] Percentage of total that are pickouts.
[3] French Fry Color: USDA Scale Color Standers for Frozen Fried Potatoes with 000 = lightest, 4 = darkest.
[4] Dec. = Stored at 55^0F from November 21, 2013 and fried on December 18, 2013.
[5] Jan. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F three weeks prior to frying on January 27, 2014.
[6] Feb. = Stored at 45^0F from December 2, 2013 than transferred to 55^0F six weeks prior to frying on February 19, 2014.

Table 10. Baking, boiling, microwaving results of tablestock test for Germplasm evaluation trial in Rock Springs, Plant Pathology Farm, 2013.

Variety/	Boil[1]			Bake[2]		Microwave[3]	
Line	Color[4]	Texture[5]	Sloughing[6]	Color	Texture	Color	Texture
Atlantic	1	2		1	3	1	2
Katahdin	1	3		1	2	1	3
Kennebec	1	3		1	2	1	3
Rochdale Gold-Doree YF	3	2		3	2	3	2
Snowden	1	2		1	1	1	2
Superior	1	3		1	2	1	3
Yukon Gold YF	3	2		3	2	3	2
AF0338-17	1	3		1	3	1	1
AF4013-3 YF	3	1	1	3	1	3	1
AF4138-8	1	3		1	3	1	2
AF4157-6	1	2		1	2	1	2
AF4172-2	1	3		1	1	1	2
B2833-16	1	3		1	2	1	2
BNC182-5	1	2		1	3	1	3
NY148 (E106-4)	1	3	1	1	3	1	2
NY150 (F52-1)	1	3		1	2	1	2
AF4376-3	1	2		1	1	1	1
AF4386-16	1	2		1	1	1	1
AF4227-2	1	3		1	1	1	1
AF4430-1	1	3		1	3	1	3
AF4442-4	1	2	1	1	1	1	1
AF4614-2	1	3		1	3	1	1
AF4615-5	1	2		1	1	1	1
AF4640-1	1	3		1	3	1	1
B2728-2	1	3		1	1	1	1
B2738-3	1	2		1	2	1	2
B2833-8	1	2	1	1	3	1	1
B2834-8	1	1		1	2	1	1
MSL211-3	1	2		1	1	1	1
MSL292-A	1	2		1	3	1	2
MSL007-B	1	2		1	2	1	2
MSR061-1	1	2		1	2	1	3
MSQ086-3	1	2		1	2	1	3
MSS576-05SPL	2	2		2	1	2	2
Spartan Splash YF	3	2		2	2	3	2
MI Purple Sport I	1	3		1	3	1	3
CO02024-9W	1	2		1	2	1	1
CO02321-4W	1	2		1	3	1	2
CO02033-1W	1	2		1	1	1	2
CO99045-1W/Y YF	3	2		3	1	3	1
AC01151-5W	1	2		1	2	1	2
ATC00293-1W/Y YF	3	2		3	3	3	1
Nicolet	1	2	1	1	1	1	2
W5955-1	1	2		1	1	1	1
W6609-3	1	2		1	1	1	1
W5015-12	1	2		1	1	1	2
Accumulator	1	2		1	1	1	1
A05182-7RY YF	3	2		3	2	3	1
Opera YF	3	2		3	2	3	2
Parella	1	3		1	1	1	2

Variety/	Boil[1]			Bake[2]		Microwave[3]	
Line	Color[4]	Texture[5]	Sloughing[6]	Color	Texture	Color	Texture
Vivaldi YF	3	3		3	3	3	2
Taurus YF	3	2		2	3	3	1
Sifra	1	3		1	2	1	2
HZC 06-6068 YF	3	3		3	1	3	1
Soraya YF	3	3		3	3	3	2
Francisca YF	3	3		3	3	3	2
Nadine	1	3		1	3	1	3
Lanorma YF	2	3		1	3	1	3
Reba	1	3		1	2	1	2
Envol	1	2		1	2	1	2
Reds							
Chieftain	1	3		1	2	1	2
Dark Red Norland	1	3		1	3	1	2
B2676-2	1	3		1	3	1	3
BNC244-10	*	3		*	2	*	3
AF4550-2	1	3		1	3	1	2
AF4565-1	1	3		1	3	1	1
AF4566-4	1	3		1	3	1	1
BNC201-1 YF	3	2		3	3	3	2
MSR226-ARR	Red	2		Red	2	Red	1
CO00405-1RF	1	2		1	3	1	2
A05180-3PY YF	3	3		3	2	3	2
A00286-3Y YF	3	2		3	2	3	1
HZC 01-6087 YF	3	2		3	1	3	1
Smiley YF	3	2		3	2	3	1
Carolina	1	3		1	2	1	3
Dark Red Chieftain	1	3		1	2	1	3
Russets							
Dakota Trailblazer	1	2		1	2	1	1
Russet Burbank	1	2		1	1	1	2
Teton Russet	1	3		1	3	1	2
A010101-1	1	3		1	2	1	2
AF3001-6	1	2		1	1	1	1
AF3317-15	1	3		1	2	1	1
AF3362-1	2	3		1	2	1	2
AF4040-2	1	2		1	2	1	2
AF4124-4	1	3		1	3	1	2
AF4124-7	1	3		1	2	1	2
AF4320-17	1	2		1	3	1	2
AF4347-1	1	3		1	1	1	2
AF4283-1	1	2	1	1	3	1	2
AF4296-3	1	3		1	2	1	2
AF4342-3	1	2		1	2	1	2
AF4445-3	2	2		2	1	2	3
AF4532-8	2	2		1	2	1	2
AF4532-9	2	2		2	3	2	3
AF4453-7	1	3	1	1	2	1	2
AF4692-1	1	2		1	2	1	1
AF4702-2	2	2	1	1	3	1	2
AF4950-1	1	1	1	1	1	1	2
AF4950-2	1	2		1	3	1	1

Variety/	Boil[1]			Bake[2]		Microwave[3]	
Line	Color[4]	Texture[5]	Sloughing[6]	Color	Texture	Color	Texture
AF4953-6	1	2		1	1	1	1
AF4989-1	1	2		1	2	1	2
AC99375-1RU	1	2		1	2	1	2
CO99053-3RU	1	2		1	3	1	3
AC00395-2RU	1	2	1	1	1	1	2
A01010-1	1	3		1	2	1	2
A03141-6	1	2		1	2	1`	2
A08014-9TE	1	3		1	2	1	2
A03873-3NV	1	3		1	3	1	2
A06020-8	1	2	1	1	2	1	2
A06914-3CR	1	3		1	3	1	3
A08422-2VR	1	3		1	2	1	1
A07431-6LB	1	3		1	3	1	3
A03158-2TE	1	3		1	2	1	2
A07008-43	1	3		1	1	1	3
A010125-4	1	3		1	1	1	2
A07103-1T	1	3		1	1	1	2
Challenger [YF]	3	2		3	2	3	2
Jelly [YF]	3	2		3	2	3	2
Fontane [YF]	3	2		3	1	3	2
Alegria	3	3		3	3	3	3

Tested: January 20 - 24, 2014 and February 10 – 14, 2014

[1] Boil 20 minutes.

[2] Bake 45 min. – 1 hr.

[3] Microwave 4 – 8 minutes.

[4] Color scored as follows: 1=white, 2=slightly yellow, 3=yellow, 4=white with gray edges, 5=gray with dark edges.

[5]Texture scored as follows: 1=dry (mealy, 3= medium, 5=soggy.

[6]Sloughing scored as follows: 1=some sloughing, 2= severe sloughing.

YF = Yellow Flesh

* = Purple and white flesh

Yellow Flesh Notes

We rated the yellow flesh in December.
We used Yukon Gold that was grown at Rock Springs

Scale:
YF1 - lighter than Yukon Gold
YF2 – equal to Yukon Gold
YF3 - darker than Yukon Gold

Rock Springs:	YF1	YF2	YF3
	B2996-2	Yukon Gold	Jelly
		Rochdale Gold – Doree	Smiley (Red skin)
		Fontane	Francisca
		Lanorma	Soraya
		A05180-3PY (Purple skin)	CO99045-1w/y
		A05182-7RY	ATCO293-1w/y
		Challenger	A00286-3Y
		Opera	
		Vivaldi	
		Taurus	
		HZC 06-6068	
		HZC 01-6087 (Red skin)	
		AF4013-3	
		AF5040-4	
		AF5068-3	
		AF5142-1	
		AF5144-7	
		AF5150-1	
		BNC201-1(Red skin)	
		B2890-11	
		B2930-5	
		B2996-2	
		B3042-1	
		Spartan Splash (white skin with purple splashes)	

Red Flesh Varieties
MSR226-ARR (Red skin)

Purple skin variety with a unique purple and white color flesh.
BNC244-10