

Cornell Potato Breeding Annual Report, December 2021



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Description of Advanced Selections from Cornell Breeding Program
Based on Cornell trials in 2020 and prior years
Last updated: 22 December 2021

NY163 (L7-2) = E50-8 x E48-2 (2009). Mid-late season chipstock, exceptionally light chip color out of cold storage.

- In 17 Tompkins County trials over the past eight years, marketable yields averaged 101% of Atlantic.
- In trials in Wyoming and Steuben counties, yield averaged 84% of Atlantic in 2016, 112% in 2017, 84% in 2018, 88% in 2019, 72% in 2020, and 127% of Atlantic in 2021.
- On Long Island yield was 123% of Reba in 2016.
- Yield in Pennsylvania was 113% of Atlantic in 2017 (1 trial), 97% in 2019 (3 trials), and 108% of Atlantic in 2020 (2 trials).
- Yield in eight northern SNAC trails averaged 94% of Snowden in 2020 and 98% of Snowden in 2021.

Tubers are round to oblong with lightly netted skin. Low levels of growth cracks and knobs have been observed. No hollow heart, brown center or internal necrosis has yet been seen in NY. Specific gravity has averaged 0.004 less than Atlantic (28 trials). Chip color from 44F storage in December, January and February (2014 crop season) averaged 3.7 compared to 4.3 for Snowden (lower is better). Chip color averaged 3.2 vs 3.8 for Snowden in 2015, and 2.3 vs 4.3 in 2016. Out of 43F storage color averaged 2.5 vs 4.4 for Snowden in 2017, 3.0 vs 4.8 in 2018, 2.3 vs 4.7 in 2019, and 3.0 vs 4.3 in 2020. Moderate resistance to common scab. Tuber dormancy is about one week longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: as an overall package, NY163 has a lot going for it: yield close to (but probably a few percent less than) Atlantic or Snowden, specific gravity high enough to ensure it is above 1.080 on most farms, the lightest fry color of any clone we've developed to date (yes, lighter than Lamoka and Waneta), incredibly low frequency of internal defects, a small (but not too small) size profile, and reasonable resistance to common scab. The primary downside to date is that, in 2020, blistering of chips was observed in a commercial plant. Blistering hasn't yet been reported for the 2021 crop, but is something to pay attention to, this could be NY163's Achilles' heel.

NY165 (M8-5) = NY148 x F48-4 (2010) Mid-season chipstock.

- In 15 Tompkins County trials over the past seven years, marketable yields averaged 112% of Atlantic.
- In trials in Wyoming and Steuben counties, yield averaged 110% of Atlantic in 2017, 120% in 2018, 101% in 2019, 102% in 2020, and 105% of Atlantic in 2021.
- Yield on Long Island was 119% of Reba in 2018 and 122% of Atlantic in 2019.
- Yield in Pennsylvania was 104% of Atlantic in 2019 (3 trials) and 98% of Atlantic in 2020 (4 trials).
- Yield in eight northern SNAC trails averaged 109% of Snowden in 2021.

Tubers are round to oblong, flattened, with lightly textured skin. Low levels of pickouts (misshapes and knobs) and internal defects (hollow heart and brown center) have been observed. Specific gravity has averaged 0.007 less than Atlantic (24 trials). Chip color from 44F storage in December, January and February (2015 crop season) averaged 3.2 compared to 4.2 for Snowden (lower is better). Chip color averaged 3.5 vs 4.3 for Snowden in 2016. Out of 43F storage chip color averaged 3.0 vs 4.4 for Snowden in 2017, 3.9 vs 4.8 in 2018, 4.0 vs 4.7 in 2019, and 3.3 vs 4.3 in 2020. Moderately resistant to common scab. Molecular markers suggest NY165 is resistant to potato virus Y Tuber dormancy is one to two weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: NY165 is a chipping clone ideal for environments, like the Northeast, where specific gravity (and attendant blackspot bruise) can get too high. It has excellent marketable yields (better than Snowden), and very good chip color out of cold storage (better than Snowden), as well as mid-season maturity. Scab resistance is better than Snowden. Possible downside: tubers are flatter than I prefer, but we haven't yet received feedback that they are too flat.

NY168 (N40-7) = NY148 x E48-2 (2011) High gravity mid-season chipstock.

- In ten Tompkins County trials over the past six years, marketable yields averaged 109% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 73% of Atlantic in 2019, 86% in 2020, and 104% of Atlantic in 2020.

Tubers are round/compressed with moderately textured skin and occasional purple blush. Low levels of pickouts (knobs and growth cracks) and internal defects (hollow heart) have been observed. Specific gravity has averaged 0.002 less than Atlantic (16 trials). Chip color from 44F storage in December, January and February (2016 crop season) averaged 3.7 compared to 4.0 for Snowden (lower is better). Chip color from 43F averaged 3.8 vs 4.2 for Snowden in 2017, 3.6 vs 4.8 in 2018, 3.3 vs 4.7 in 2019, and 3.3 vs 4.3 in 2020. Moderately susceptible to common scab. Molecular markers suggest NY168 is resistant to potato virus Y. Tuber dormancy is about three weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: we are currently evaluating four clones (NY168, NY174, NY176 and NY177) from a single cross (NY148 x E48-2). On average, about 1 in 6000 clones in our breeding program are good enough to earn an "NY number". For this cross, it has been about 1 in 500. All four of these clones have high specific gravity, very good or excellent chip color out of cold storage, and high marketable yield. We have been evaluating NY168 longer than the other three. NY168 will be in nationwide SNAC trials in 2021, when we'll finally get a much better look at it.

NY171 (Q126-1) = Blue Belle x NY115 (2013). Early maturing tablestock, long white tubers with purple color around the eyes.

- In five Tompkins County trials in 2018, 2019 and 2021, marketable yields averaged 94% of Atlantic. In one Tompkins County trial in 2020, yield was 91% of Eva.
- Yield in Wayne County was 92% of Eva in 2019, 95% in 2020, and 78% of Eva in 2021.

Tubers are long with bright white skin and striking purple color around the eyes. Low levels of pickouts (secondary growth and growth cracks) and internal defects (hollow heart) have been observed. Specific gravity has averaged 0.015 less than Atlantic (5 trials). Tubers exhibit some after cooking darkening and slight sloughing when boiled. Intermediate reaction to common scab (not highly resistant, not highly susceptible). Tuber dormancy is three weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: the NY171 tubers we harvested from the 2019 Wayne County muck trial were the prettiest I've ever seen from our breeding program. Bright white skin, shallow eyes, attractive purple color around the eyes; just gorgeous. The skin has not been as smooth in our mineral soil trials, however. NY171 is best suited for niche market growers. We will stop evaluating it in 2022 but will keep some seed on hand for anyone who would like to test it.

NY173 (Q38-4) = J110-12 x F31-3 (2013) Full season chipstock.

- In six Tompkins County trials over the past four years, marketable yields averaged 120% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 102% of Atlantic in 2020 and 134% of Atlantic in 2021.

Tubers are round/compressed with lightly textured skin. Low levels of pickouts (secondary growth and growth cracks) and internal defects (hollow heart) have been observed. Specific gravity has averaged 0.006 less than Atlantic (10 trials). Chip color from 43F storage in December, January and February (2018 crop season) averaged 5.3 compared to 4.8 for Snowden (lower is better), 3.0 vs 4.7 in 2019, and 3.7 vs 4.3 in 2020. Moderately resistant to common scab. Molecular markers suggest NY173 is resistant to potato virus Y. Tuber dormancy is about one week longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: a reasonable chipping clone, worth continued evaluation. Different pedigree than our other advanced chipping clones, so represents an egg from a different basket. Trials in 2021 suggest that NY173 may be more prone to tuber greening than other clones; we'll keep an eye on this in 2022.

NY174 (Q106-13) = NY148 x E48-2 (2013) Full season chipstock.

- In six Tompkins County trials over the past four years, marketable yields averaged 113% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 135% of Atlantic in 2020. Yield in Wyoming county in 2021 was 141% of Atlantic.

Tubers are round to oblong with lightly textured skin and a moderately recessed apical eye. Low levels of pickouts (secondary growth and growth cracks) and internal defects (hollow heart, internal necrosis and brown center) have been observed. Specific gravity has averaged 0.002 less than Atlantic (9 trials). Chip color from 43F storage in January and February (2018 crop season) averaged 4.0 compared to 4.2 for Snowden (lower is better). Chip color from 43F storage in December, January, and February averaged 3.0 vs 4.7 in 2019, and 3.7 vs 4.3 in 2020. Intermediate reaction to common scab. Molecular markers suggest NY174 is resistant to potato virus Y. Tuber dormancy is about two weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: a reasonable chipping clone, worth continued evaluation.

NY175 (Q29-2) = Lady Liberty x F31-3 (2013) Chipstock.

- In six Tompkins County trials over the past four years, marketable yields averaged 125% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 83% of Atlantic in 2019 and 132% of Atlantic in 2021.

Tubers are round to oblong with moderately textured skin. Low levels of pickouts (growth cracks) and internal defects (hollow heart, internal necrosis and brown center) have been observed. Specific gravity has averaged 0.001 less than Atlantic (10 trials). Chip color from 43F storage in December, January, and February (2019 crop season) averaged 3.7 compared to 4.0 for Snowden (lower is better), and 4.3 vs 4.3 in 2020. Moderately resistant to common scab. Molecular markers suggest NY175 is resistant to potato virus Y. Tuber dormancy is about one week longer than Atlantic. Susceptible to race Ro1 of the golden nematode.

Walter's assessment: This clone was OK, but not great, in 2020. We were thus quite surprised by its in-your-face high yields of 2021. Chip color is "only" comparable to Snowden. Typical of a lot of potato breeding decisions – mixed signals – but nevertheless worth continued evaluation.

NY176 (R107-4) = NY148 x E48-2 (2014) Mid-late season chipstock.

- In four Tompkins County trials over the past three years, marketable yields averaged 129% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 129% of Atlantic in 2021.

Tubers are round/compressed with moderately textured skin. Low levels of pickouts (growth cracks) and internal defects (hollow heart) have been observed. Specific gravity has averaged 0.005 higher than Atlantic (6 trials). Chip color from 43F storage in December, January, and February (2019 crop season) averaged 2.7 compared to 4.7 for Snowden (lower is better), and 3.0 vs 4.3 in 2020. Moderately susceptible to common scab. Molecular markers suggest NY176 is resistant to potato virus Y. Tuber dormancy is about one week less than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: see combined comment under NY177.

NY177 (R107-6) = NY148 x E48-2 (2014) Mid-late season chipstock.

- In four Tompkins County trials over the past three years, marketable yields averaged 116% of Atlantic.
- Yield in Wyoming county in 2021 was 124% of Atlantic.

Tubers are round to oblong with lightly textured skin. Low levels of pickouts (growth cracks) and internal defects (internal necrosis and brown center) have been observed. Specific gravity has averaged 0.007 more than Atlantic (5 trials). Chip color from 43F storage in December, January, and February (2019 crop season) averaged 2.3 compared to 4.7 for Snowden (lower is better), and 2.7 vs 4.3 in 2020. Intermediate reaction to common scab. Molecular markers suggest NY177 is resistant to potato virus Y. Tuber dormancy is about one week longer than Atlantic. Resistant to race Ro1 of the golden nematode.

Walter's assessment: for their current stage of evaluation – which is still relatively early – NY176 and NY177 are the most exciting chipping clones I've ever seen. Their combination of yields and specific gravity higher than Atlantic, and chip color much better than Snowden, is new to our program. The primary weakness in NY176 (so far) is moderate susceptibility to common scab. NY177 appears to be a little more scab resistant than NY176 but is still not highly resistant. In 2021 Tier II National Chip Processing Trials, which evaluate two 15 hill plots at nine locations across the country, NY176 and NY177 ranked #1 and #3 in 2021, suggesting both these clones are broadly adapted. Both will be evaluated again in the NCPT trial network in 2022. Because of their high gravity, both may be too susceptible to blackspot bruise for many growers in the Northeast; we have yet to evaluate bruise in either. We don't have a lot of seed of either to distribute in 2022 and are leaning towards multiplying most of what we have for larger scale trials in 2023.

NY178 (R201-3) = Blue Belle x Genesee (2014) White tablestock.

- In one Tompkins County trial in 2019, marketable yield averaged 92% of Atlantic. In three Tompkins County trials in 2020-2021, yield was 104% of Eva.
- Yield in Wayne County was 118% of Eva in 2019, 93% in 2020, and 80% of Eva in 2021.

Tubers are oblong to long with lightly textured skin. Low levels of pickouts (secondary growth) and internal defects (hollow heart and brown center) have been observed. Intermediate reaction to common scab (not highly resistant, not highly susceptible). Tuber dormancy is about one week longer than Atlantic. Susceptible to race Ro1 of the golden nematode.

Walter's assessment: NY178 is currently the best-looking traditional white tablestock clone we are evaluating, and is especially attractive when grown on muck soils. We have about 500 pounds of NY178 seed (in total) that we can provide to growers interested in testing NY178 for themselves.

Whatever happened to ...? Brief updates on clones with paragraph descriptions in our 2020 report, but not in 2021.

NY160. Pink skin, small tuber size. Didn't evaluate in 2021, but will again in 2022.

NY169. Chipping clone. Dropped because glycoalkaloid levels were too high.

NY172. Chipping clone. Dropped for high levels of pickouts and hollow heart in 2021 trials.

2021 Summary of Yield Trials

Marketable yield larger than 1 7/8" (including green tubers).

Performance given as % of check variety.

	Ellis Hollow		Freeville		County		
	Chip Trial	Tablestock Trial	Chip Trial	Tablestock Trial	Wayne Marion	Steuben Arkport	Wyoming Bliss
Atlantic	100	100	100	100		100	100
Snowden	139		121			106	113
Lamoka	104		82				
Eva		118		98	100		
NY163	144		119			98	156
NY164 (red)		103		80			
NY165	166		129			96	115
NY168	135		138			83	125
NY171		113		100	78		
NY172	142		133			126	151
NY173	177		126			128	140
NY174	144		135				141
NY175 (Q29-2)	175		151			103	160
NY176 (R107-4)	171		142			125	133
NY177 (R107-6)	152		124				124
NY178 (R203-1)		112		112	80		
R1-7	153		126			90	
R3-5	169		133			109	152
R15-4		132		115	100		
R101-2	102		61				
R107-11	133						
R213-2		125		120	74		

2021 Summary of Specific Gravities
 Entries show differences (in units of 0.001) from Atlantic

	Ellis Hollow	Freeville	County	
	Chip Trial	Chip Trial	Steuben Arkport	Wyoming Pike
Atlantic	1.076	1.088	1.084	1.084
Snowden	-4	0	+5	0
Lamoka	-6	-2		
NY163	-3	-2	+4	-3
NY165	-7	-5	-5	-5
NY168	-5	+2	+7	-1
NY172	-7	-5	+5	-6
NY173	-3	+2	-5	-1
NY174	-2	0		-2
NY175 (Q29-2)	-4	0	+7	+2
NY176 (R107-4)	+6	+6	+5	+6
NY177 (R107-6)	+7	+10		+7
R1-7	-6	-2	-2	
R3-5	-1	-2	-1	-5
R101-2	-7	-8		
R107-11	+2			

2021 Advanced Chipping Clone Yield Trial, Ellis Hollow

Plots 2 rows x 20', hills spaced at 8.2"

4 replicates (unless indicated otherwise in parentheses)

Planted May 12, harvested October 6. Vine kill applied September 3.

	cwt/acre		%	pickout		% internal defects			appear. score	specific gravity
	>1 7/8"	>2 1/2"	>2 1/2"	cwt/A	type	HHT	IN	BC		
Andover	319	253	79	23	gc, 2g	10	0	0	3.6	1.076
Atlantic	332	267	81	63	gc, 2g	35	3	5	3.3	1.079
Lady Liberty (2)	465	338	73	15	2g, gc	5	2	1	3.4	1.075
Lamoka	344	304	88	34	gc	0	3	0	3.4	1.073
Pike (2)	380	288	76	13	gc	0	30	0	3.3	1.075
Snowden	462	366	79	8	2g, k	15	0	0	3.0	1.075
Waneta	295	239	81	20	gc	10	0	0	3.7	1.068
NY163	477	299	63	14	2g, gc	0	0	0	3.2	1.076
NY165	552	441	80	6	gc, 2g	0	0	0	3.3	1.072
NY168	447	288	64	6	gc, k	5	0	0	3.5	1.074
NY172	470	353	75	30	gc, 2g	10	0	8	3.1	1.072
NY173	587	419	71	14	gc	0	5	0	3.4	1.076
NY174	479	342	71	20	k, gc	0	10	0	3.3	1.077
K27-3a (3)	297	212	72	52	gc	3	0	0	3.1	1.078
K27-3b	449	337	75	13	gc	8	0	0	3.2	1.073
Q29-2	580	436	75	12	gc, 2g	3	8	0	3.5	1.075
R1-7	509	381	75	4	gc	8	0	0	3.5	1.073
R3-5	561	446	79	2	gc	10	3	3	3.6	1.078
R101-2	340	181	53	28	gc	5	0	3	3.2	1.072
R107-4	568	423	74	5	gc	5	0	0	3.5	1.085
R107-6	506	330	65	8	gc, 2g	0	0	0	3.6	1.086
R107-11	440	290	66	13	gc, 2g	5	0	0	3.4	1.081

2021 Intermediate Stage Chipping Clone Yield Trial, Ellis Hollow

Plots 2 rows x 20', hills spaced at 8.2"

3 Replicates

Planted May 13, harvested October 7. Vine kill applied September 3.

	cwt/acre		%	pickout		% internal defects			appear.	specific gravity
	>1 7/8"	>2 1/2"	>2 1/2"	cwt/A	type	HHT	IN	BC	score	
Atlantic	358	297	83	57	gc, 2g	40	0	3	3.4	1.074
Snowden	370	278	75	8	gc, 2g	40	0	0	3.0	1.075
Pike	356	249	70	12	gc, mis	7	27	0	3.2	1.069
S1-4	420	357	85	25	gc, 2g	10	0	0	3.1	1.071
S2-2	417	247	59	15	2g, gc	17	0	0	3.6	1.073
S4-3	417	285	68	7	gc	0	0	3	3.4	1.067
S5-3	413	245	59	15	gc	3	3	0	3.1	1.076
S7-2	303	209	69	2	gc	0	0	0	3.5	1.080
S9-8	371	247	67	17	gc, 2g	0	0	0	3.2	1.078
S17-5	504	409	81	48	gc	53	0	7	3.6	1.072
S18-4	461	237	51	1	2g	0	0	0	3.7	1.080
S27-3	468	377	81	24	gc	10	7	0	3.3	1.063
S28-8	469	398	85	1	2g, gc	0	0	0	3.1	1.068
S37-2	471	372	79	24	gc	3	13	0	3.3	1.072

2021 First Stage Chipping Clone Yield Trial, Ellis Hollow

Plots 2 rows x 15', hills spaced at 8.2"

3 Replicates (unless indicated otherwise in parentheses)

Planted May 12, harvested October 5. Vine kill applied September 3.

	cwt/acre		%	pickout		% internal defects			appear.	specific
	>1 7/8"	>2 1/2"	>2 1/2"	cwt/A	type	HHT	IN	BC	score	gravity
Atlantic	393	322	82	59	gc, 2g	67	0	0	3.3	1.077
Brodie	419	353	84	16	gc,k,2g	13	0	0	3.2	1.064
Lamoka	346	305	88	30	gc	0	23	0	3.2	1.072
Snowden	475	388	82	8	2g, mis	33	0	0	3.0	1.077
T1-2	378	258	68	11	gc	3	0	0	3.3	1.077
T1-3	310	208	67	67	gc	3	0	0	3.4	1.076
T1-6	395	238	60	8	gc	0	0	0	3.0	1.081
T2-1 (2)	375	231	62	15	k, gc	15	0	5	3.4	1.079
T2-8 (2)	417	219	52	1	gc	0	0	0	3.5	1.076
T3-3	406	295	73	15	gc, k	20	0	0	3.5	1.075
T4-1	276	167	61	25	gc	23	0	0	3.0	1.080
T4-3	388	197	51	5	gc, k	13	0	0	3.5	1.085
T5-1	306	169	55	40	gc	0	0	0	3.1	1.075
T6-10	398	220	55	4	gc	23	0	0	3.1	1.076
T7-5	445	233	52	13	gc	0	0	0	3.3	1.075
T7-7	463	314	68	8	gc, k	3	0	0	3.2	1.078
T11-2	519	400	77	11	gc, k	20	0	3	3.5	1.076
T11-3	484	307	63	2	2g, gc	3	0	0	3.5	1.082
T11-14	432	264	61	2	k, gc	23	0	0	3.6	1.079
T11-15	382	239	63	17	gc, k	43	0	0	3.0	1.080
T13-4	274	98	36	30	gc	0	3	0	3.5	1.078
T19-1	438	253	58	5	gc	0	0	0	3.2	1.073
T19-3	479	340	71	3	k	13	0	0	3.3	1.075
T22-1	441	297	67	2	k	10	0	3	3.1	1.075
T23-4	460	296	64	8	gc,2g,k	40	0	0	3.4	1.078
T27-2	345	240	70	11	gc, 2g	13	0	0	3.2	1.080
T29-1	489	351	72	0	-	0	0	0	3.2	1.068
T33-3	353	159	45	32	gc	0	0	0	3.6	1.078
T34-1	363	108	30	0	-	23	0	0	3.4	1.092
T36-1	600	491	82	17	k, gc	7	30	0	3.1	1.077
T103-3	488	351	72	0	-	0	0	0	3.6	1.072
T104-2	481	337	70	12	gc	0	0	0	3.3	1.071
T104-5	377	261	69	56	gc	0	3	3	3.7	1.077
T105-2	540	404	75	8	gc	0	0	0	3.4	1.072
T105-6	482	233	48	4	gc, k	0	3	3	3.6	1.076

2021 Tablestock Trial, Ellis Hollow

Plots 2 rows x 15', hills spaced at 8.2"

3 replicates (unless indicated otherwise in parentheses)

Planted May 13, harvested October 8. Vine kill applied September 3.

	cwt/acre		%	pickout		% internal defects			appear.	specific
	>1 7/8"	>2 1/2"	>2 1/2"	cwt/A	type	HHT	IN	BC	score	gravity
Atlantic	341	262	77	68	gc, 2g	37	0	3	3.2	1.074
Chieftain	275	222	81	131	gc, 2g	0	7	0	3.2	1.065
Eva	404	360	89	34	gc, k	10	0	0	3.6	1.068
Norland	262	161	62	61	gc, 2g	10	0	3	3.3	1.061
NY164	352	200	57	18	gc, 2g	0	0	0	3.3	1.062
NY171	384	257	67	12	2g, gc	3	0	0	3.5	1.066
R15-4	450	325	72	34	gc, k	13	3	0	3.0	1.079
R203-1	383	243	63	13	gc, 2g	0	0	7	3.5	1.062
R213-2	426	221	52	6	gc, k	0	0	0	3.6	1.066
S40-1	332	242	73	56	gc	40	0	0	3.2	1.065
S74-2	277	137	50	17	gc	0	0	0	3.3	1.063
T47-1	321	221	69	24	2g, gc	0	27	0	3.5	1.063
T47-2	390	287	74	32	gc	0	0	0	3.4	1.064
T52-1	337	213	63	21	gc, 2g	0	0	0	3.6	1.062
T59-1 (2)	424	296	70	29	gc, k	0	0	0	3.6	1.063
T61-2	265	92	35	35	gc	0	0	0	3.6	1.070
T61-3	294	161	55	14	gc	0	0	0	3.8	1.067
T61-4	227	47	21	3	mis, gc	0	3	0	3.5	1.071
T108-1	263	155	59	6	gc, 2g	0	0	0	3.5	1.063
T109-2	429	317	74	3	k, gc	3	0	0	3.5	1.071

Advanced Chip Clone Yield Trial, Freeville NY, 2021. Page 1 of 2.

Plots 2 rows x 20', hills spaced at 8.2"

4 replicates

Planted May 14, harvested October 11. Vine kill applied August 30.

Genotype Variety or Clone	Total Yield Cwt/A	Mkt. Yield		Size Distribution (% of total yield)					Size Distrib. (%)		Spec. Grav.
		Cwt/A	% of Std.	1	2	3	4	5	1-7/8" to 4"	2-1/2" to 4 "	
Atlantic	398	319	100	2	22	70	5	0	98	75	1.088
Lamoka	310	256	80	3	30	66	1	0	97	67	1.086
Pike	359	327	103	4	40	57	0	0	96	57	1.086
Snowden	424	398	125	4	34	61	1	0	96	62	1.088
NY163	432	390	122	6	57	37	0	0	94	37	1.086
NY165	459	423	133	4	35	61	0	0	96	61	1.083
NY168	493	452	142	4	42	55	0	0	96	55	1.090
NY172	475	425	133	4	24	68	5	0	96	73	1.083
NY173 (Q38-4)	468	383	120	5	45	50	1	0	95	50	1.090
NY174 (Q106-13)	485	444	139	2	23	72	3	0	98	74	1.088
K27-3a	306	194	61	3	35	61	2	0	97	62	1.087
K27-3b	460	414	130	3	38	59	0	0	97	59	1.089
Q29-2	542	488	153	2	41	57	0	0	98	57	1.088
R1-7	442	407	128	3	43	53	1	0	97	53	1.086
R3-5	471	427	134	2	27	67	4	0	98	71	1.086
R101-2	266	202	63	14	61	24	0	0	86	24	1.080
R107-4	500	461	145	3	37	59	2	0	97	61	1.094
R107-6	444	406	127	4	43	53	0	0	96	54	1.098

Tuber size classes:

1 = under 1.875 inches diameter, 2 = 1.875 to 2.5, 3 = 2.5 to 3.25, 4 = 3.25 to 4, 5 = over 4 inches diameter

Advanced Chip Clone Yield Trial, Freeville NY, 2021. Page 2 of 2.

Genotype Variety or Clone	Tuber Attributes			External Tuber Defects (%)					Int. Tuber Defects (%)			
	Tuber Shape	Skin Text.	Tuber Appear.	Total Defects	Green	Mis- shapen	Growth Cracks	Rot	Holl. Heart	Brn. Center	Vasc. Disc.	Int. Nec.
Atlantic	3.0	5.0	6.0	17.6	4.4	1.9	8.4	2.8	40	0	0	0
Lamoka	3.5	6.0	6.0	14.5	6.2	2.3	6.0	0.0	0	0	0	0
Pike	3.0	6.0	6.0	5.3	3.7	0.0	1.0	0.6	8	0	0	0
Snowden	3.0	5.0	5.0	2.5	1.2	0.9	0.2	0.1	50	0	0	0
NY163	3.0	6.0	6.0	3.9	1.3	1.3	1.0	0.4	0	0	0	0
NY165	3.0	5.0	6.3	4.2	1.4	0.5	1.8	0.4	5	0	0	0
NY168	2.0	6.0	7.0	4.7	2.0	1.2	0.5	1.0	8	0	0	0
NY172	3.0	5.3	5.8	7.0	4.2	1.5	1.0	0.3	35	0	0	0
NY173 (Q38-4)	2.7	5.0	6.0	13.4	9.6	1.1	1.7	0.9	0	3	0	0
NY174 (Q106-13)	3.3	6.0	5.5	6.4	1.2	2.0	0.9	2.3	8	0	0	0
K27-3a	3.0	6.8	5.0	33.5	3.8	2.9	26.1	0.7	13	0	0	0
K27-3b	4.0	6.0	5.8	7.0	2.7	1.5	2.8	0.0	13	0	0	0
Q29-2	2.3	6.0	6.0	7.8	2.9	0.8	0.9	3.2	0	0	0	0
R1-7	3.0	5.0	7.0	4.6	3.0	0.1	0.8	0.7	30	0	0	0
R3-5	3.0	5.0	7.0	7.3	4.0	1.1	0.2	2.0	68	0	0	0
R101-2	3.0	6.0	5.5	9.9	1.1	1.7	6.6	0.5	3	0	0	0
R107-4	2.8	6.0	6.0	5.0	2.3	0.7	1.1	1.0	13	3	0	0
R107-6	3.0	6.0	6.3	4.7	1.5	1.0	0.4	1.9	0	0	0	0

Tuber shape 1 = round, 2 = mostly round, 3 = round to oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong to long, 7 = long

Skin texture 5 = netted, 6 = slight net, 7 = medium smooth, 8 = smooth, 9 = very smooth

Tuber appearance 5 = fair, 6 = OK, 7 = good, 8 = nice

Intermediate Chip Clone Yield Trial, Freeville NY, 2021. Page 1 of 2.

Plots 2 rows x 20', hills spaced at 8.2"

3 Replicates

Planted May 17, harvested October 13. Vine kill applied August 30.

Genotype Variety or Clone	Total Yield Cwt/A	Mkt. Yield		Size Distribution ¹ (% of total yield)					Size Distrib. (%)		Spec. Grav.
		Cwt/A	% of Std.	1	2	3	4	5	1-7/8" to 4"	2-1/2" to 4 "	
Atlantic	410	346	75	3	31	62	5	0	97	66	1.096
S1-4	516	427	93	0	18	70	12	0	100	81	1.090
S2-2	401	354	77	8	61	31	0	0	92	31	1.087
S4-3	434	380	83	4	36	60	0	0	96	61	1.083
S5-3	381	333	72	6	59	35	0	0	94	35	1.084
S7-2	319	280	61	7	48	45	0	0	93	45	1.097
S9-8	390	331	72	9	60	31	0	0	91	31	1.100
S17-5	383	338	73	3	35	62	0	0	97	62	1.086
S18-4	437	396	86	4	49	47	0	0	96	48	1.098
S27-3	552	446	97	1	28	65	6	0	99	71	1.085
S28-8	473	440	95	3	29	64	4	0	97	69	1.085
S37-2	506	453	98	2	25	67	5	0	98	73	1.091

Tuber size classes:

1 = under 1.875 inches diameter, 2 = 1.875 to 2.5, 3 = 2.5 to 3.25, 4 = 3.25 to 4, 5 = over 4 inches diameter

Intermediate Chip Clone Yield Trial, Freeville NY, 2021. Page 2 of 2.

Genotype Variety or Clone	Tuber Attributes			External Tuber Defects (%)					Int. Tuber Defects (%)			
	Tuber Shape	Skin Text.	Tuber Appear.	Total Defects	Green	Mis- shapen	Growth Cracks	Rot	Holl. Heart	Brn. Center	Vasc. Disc.	Int. Nec.
Atlantic	3.7	5.0	6.0	13.3	2.3	3.1	6.1	1.7	47	0	0	3
S1-4	4.0	6.0	5.0	17.0	2.8	2.9	8.2	3.1	53	0	0	0
S2-2	3.0	5.0	7.0	4.2	1.0	2.6	0.1	0.5	20	0	0	0
S4-3	3.0	7.0	6.0	8.9	5.1	3.5	0.3	0.0	7	0	0	0
S5-3	3.0	7.0	5.3	7.0	1.9	1.1	3.6	0.4	3	0	0	0
S7-2	2.0	6.0	6.0	5.7	3.3	2.4	0.0	0.0	13	0	0	0
S9-8	2.3	5.0	5.7	7.0	3.8	0.1	0.8	2.2	27	0	0	0
S17-5	4.0	5.3	7.0	9.5	5.1	1.2	2.1	1.1	87	0	0	0
S18-4	2.7	5.0	6.7	5.8	2.8	0.7	1.3	1.1	23	0	0	0
S27-3	3.0	6.0	5.0	17.9	4.2	2.9	10.1	0.7	47	0	0	0
S28-8	3.0	5.0	6.0	4.4	2.6	1.0	0.7	0.0	80	0	0	0
S37-2	2.0	5.0	5.3	9.0	1.5	1.8	3.6	2.0	27	0	0	7

Tuber shape 1 = round, 2 = mostly round, 3 = round to oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong to long, 7 = long

Skin texture 5 = netted, 6 = slight net, 7 = medium smooth, 8 = smooth, 9 = very smooth

Tuber appearance 5 = fair, 6 = OK, 7 = good, 8 = nice

First Year Chip Clone Yield Trial, Freeville NY, 2016. Page 1 of 2.

Plots 2 rows x 15', hills spaced at 8.2"

3 Replicates

Planted May 14, harvested October 12. Vine kill applied August 30.

Genotype Variety or Clone	Total Yield Cwt/A	Mkt. Yield		Size Distribution ¹ (% of total yield)					Size Distrib. (%)		Spec. Grav.
		Cwt/A	% of Std.	1	2	3	4	5	1-7/8" to 4"	2-1/2" to 4"	
Atlantic	448	395	100	3	25	62	10	0	97	72	1.090
Snowden	393	362	92	4	43	54	0	0	96	54	1.087
T1-2	352	306	78	6	42	52	0	0	94	52	1.086
T1-6	426	355	90	5	43	50	2	0	95	52	1.091
T2-1	421	353	89	5	47	44	4	0	95	48	1.090
T2-8	324	273	69	6	50	41	2	0	94	43	1.087
T3-3	389	347	88	7	44	38	11	0	93	49	1.086
T4-3	346	273	69	17	73	10	0	0	83	10	1.095
T5-1	334	206	52	9	48	43	0	0	91	43	1.085
T6-10	446	407	103	5	43	45	7	0	95	53	1.087
T7-5	452	406	103	7	61	31	0	0	93	31	1.078
T7-7	486	443	112	4	50	46	0	0	96	46	1.088
T11-2	458	394	100	2	27	56	15	0	98	72	1.085
T11-3	487	397	100	11	60	29	0	0	89	29	1.091
T11-14	374	304	77	12	61	27	0	0	88	27	1.090
T11-15	427	360	91	9	50	39	1	0	91	41	1.094
T13-4	356	264	67	20	63	17	0	0	80	17	1.090
T19-3	505	475	120	4	39	47	10	0	96	57	1.087
T22-1	434	376	95	7	63	29	0	0	93	30	1.085
T23-4	473	393	100	7	55	35	3	0	93	38	1.089
T27-2	379	340	86	5	45	47	3	0	95	50	1.094
T29-1	450	418	106	6	56	36	3	0	94	39	1.078
T33-3	398	311	79	16	63	21	0	0	84	21	1.094
T34-1	434	319	81	25	68	6	0	0	75	7	1.103
T36-1	589	504	128	2	20	69	10	0	98	79	1.090
T103-3	451	418	106	5	55	40	0	0	95	40	1.083
T104-2	480	433	110	3	49	46	2	0	97	48	1.083
T104-5	460	374	95	3	29	68	0	0	97	68	1.095
T105-2	526	442	112	3	35	53	9	0	97	62	1.083
T105-6	455	376	95	10	61	29	0	0	90	29	1.086

Tuber size classes:

1 = under 1.875 inches diameter, 2 = 1.875 to 2.5, 3 = 2.5 to 3.25, 4 = 3.25 to 4, 5 = over 4 inches diameter

First Year Chip Clone Yield Trial, Freeville NY, 2016. Page 2 of 2.

Genotype Variety or Clone	Tuber Attributes			External Tuber Defects (%)					Int. Tuber Defects (%)			
	Tuber Shape	Skin Text.	Tuber Appear.	Total Defects	Green	Mis- shapen	Growth Cracks	Rot	Holl. Heart	Brn. Center	Vasc. Disc.	Int. Nec.
Atlantic	4.0	5.0	6.0	9.4	1.9	1.0	5.9	0.6	37	0	0	0
Snowden	3.0	5.0	5.0	4.0	2.0	1.4	0.4	0.2	67	0	0	0
T1-2	4.0	6.0	5.7	7.9	3.5	0.0	4.1	0.3	13	0	3	0
T1-6	3.0	5.7	5.0	12.6	4.5	0.0	8.1	0.0	3	0	0	0
T2-1	4.3	6.0	5.3	11.6	7.7	3.0	1.0	0.0	27	0	0	0
T2-8	3.7	5.7	6.3	9.5	1.8	2.3	4.1	1.4	10	0	0	0
T3-3	2.7	6.0	5.7	4.4	1.7	1.1	1.4	0.2	30	0	0	0
T4-3	2.0	6.0	7.0	4.7	2.7	1.1	0.7	0.3	20	0	0	0
T5-1	3.0	6.0	5.3	32.1	11.1	1.4	18.3	1.4	0	0	0	0
T6-10	2.7	5.0	5.3	4.6	3.8	0.1	0.3	0.4	40	0	0	0
T7-5	3.0	5.0	5.3	3.5	1.2	0.7	1.5	0.1	0	0	0	0
T7-7	3.7	6.0	6.0	5.0	2.1	2.1	0.7	0.1	17	0	0	0
T11-2	3.3	6.0	6.7	12.3	5.2	0.7	6.2	0.2	43	0	0	0
T11-3	3.0	6.0	6.0	8.8	7.9	0.4	0.5	0.0	20	0	0	0
T11-14	3.0	6.0	7.0	7.3	5.2	2.0	0.0	0.1	37	3	0	0
T11-15	3.0	6.0	5.3	7.3	5.4	1.4	0.1	0.5	60	0	0	0
T13-4	2.0	5.0	6.7	6.7	2.8	0.7	2.4	0.8	0	0	0	0
T19-3	2.0	5.0	5.3	1.6	0.8	0.2	0.5	0.1	20	0	0	0
T22-1	3.0	6.0	5.7	6.5	3.7	1.6	0.4	0.8	3	0	0	0
T23-4	4.0	5.0	6.0	10.4	1.5	8.4	0.1	0.4	10	0	0	0
T27-2	3.0	6.0	5.3	6.2	1.0	2.5	2.6	0.0	37	0	0	0
T29-1	4.0	6.0	6.0	1.7	0.8	0.2	0.6	0.1	3	0	0	0
T33-3	3.0	6.0	6.7	6.9	2.8	1.3	1.6	1.3	10	0	0	0
T34-1	2.0	5.0	6.0	2.1	1.0	0.4	0.4	0.3	10	0	0	0
T36-1	3.0	5.7	4.7	13.3	3.5	8.3	1.4	0.1	13	0	0	0
T103-3	2.0	5.7	6.3	2.3	1.1	0.0	0.4	0.8	0	3	0	0
T104-2	3.0	5.3	5.3	6.5	2.6	1.7	1.4	0.8	0	0	0	0
T104-5	4.0	5.0	7.0	16.3	2.6	0.1	11.5	2.1	3	0	0	0
T105-2	2.3	6.0	5.0	13.5	5.0	0.2	5.6	2.7	0	0	0	0
T105-6	3.0	5.0	6.3	8.3	2.0	4.6	0.5	1.3	0	0	0	0

Tuber shape 1 = round, 2 = mostly round, 3 = round to oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong to long, 7 = long
Skin texture 5 = netted, 6 = slight net, 7 = medium smooth, 8 = smooth, 9 = very smooth
Tuber appearance 5 = fair, 6 = OK, 7 = good, 8 = nice

Table Clone Yield Trial, Freeville NY, 2021. Page 1 of 2.

Plots 2 rows x 15', hills spaced at 8.2"

3 Replicates (unless indicated otherwise in parentheses)

Planted May 17, harvested October 13. Vine kill applied August 30.

Genotype Variety or Clone	Total Yield Cwt/A	Mkt. Yield		Size Distribution ¹ (% of total yield)					Size Distrib. (%)		Spec. Grav.
		Cwt/A	% of Std.	1	2	3	4	5	1-7/8" to 4"	2-1/2" to 4 "	
Atlantic (2)	492	434	100	2	20	61	17	0	98	78	1.093
Chieftain	483	386	89	2	22	72	4	0	98	76	1.069
Eva	457	427	98	1	14	76	8	0	99	85	1.079
Lehigh	419	371	86	2	21	70	6	1	97	76	1.084
Norland	465	406	94	5	42	50	3	0	95	53	1.068
Salem	408	373	86	1	14	56	29	0	99	85	1.067
Yukon Gold (2)	283	246	57	1	13	76	10	0	99	86	1.081
NY164	429	353	81	4	25	55	16	0	96	72	1.065
NY171	470	442	102	2	31	58	8	1	97	66	1.077
R15-4	574	503	116	1	22	67	10	0	99	77	1.091
R203-1	530	479	110	3	29	57	10	0	97	67	1.064
R213-2	579	528	122	6	55	39	0	0	94	39	1.073
S40-1	483	405	93	4	28	66	2	1	95	68	1.077
S74-2	465	418	96	8	58	34	0	0	92	34	1.072
T47-1	433	415	96	3	32	62	4	0	97	66	1.062
T47-2	512	468	108	2	22	65	11	0	98	76	1.067
T52-1	401	352	81	5	48	46	2	0	95	47	1.067
T59-1	385	341	78	8	52	39	0	0	92	40	1.066
T61-2	335	263	61	19	71	10	0	0	81	10	1.083
T61-3	306	270	62	9	51	40	0	0	91	40	1.076
T61-4	306	214	49	27	73	0	0	0	73	0	1.086
T108-1	388	376	87	2	30	58	10	0	98	68	1.073
T109-2	418	381	88	2	32	63	3	0	98	66	1.078

Tuber size classes:

1 = under 1.875 inches diameter, 2 = 1.875 to 2.5, 3 = 2.5 to 3.25, 4 = 3.25 to 4, 5 = over 4 inches diameter

Table Clone Yield Trial, Freeville NY, 2021. Page 2 of 2.

Genotype Variety or Clone	Tuber Attributes			External Tuber Defects (%)					Int. Tuber Defects (%)			
	Tuber Shape	Skin Text.	Tuber Appear.	Total Defects	Green	Mis- shapen	Growth Cracks	Rot	Holl. Heart	Brn. Center	Vasc. Disc.	Int. Nec.
Atlantic	3.0	5.0	6.0	10.2	2.7	0.6	5.7	1.1	47	0	0	0
Chieftain	3.7	7.0	6.0	18.3	1.2	2.1	14.7	0.3	7	0	0	0
Eva	4.0	6.0	8.0	5.1	2.8	0.9	1.3	0.1	7	0	0	0
Lehigh	4.0	5.0	6.0	8.6	0.7	0.1	7.1	0.7	20	0	0	0
Norland	3.0	6.0	6.0	8.3	0.7	2.2	5.3	0.1	0	0	0	0
Salem	5.0	6.0	6.0	7.5	1.5	1.0	4.7	0.3	0	0	0	0
Yukon Gold	3.0	6.0	5.0	12.2	0.8	5.0	5.0	1.4	37	0	0	0
NY164	2.3	7.0	5.7	14.6	0.5	4.4	7.9	1.8	0	0	0	0
NY171	6.7	6.3	6.3	3.1	1.4	0.5	0.4	0.8	3	0	0	0
R15-4	3.0	6.0	5.0	11.1	2.3	5.6	2.6	0.7	10	0	0	0
R203-1	6.0	6.3	6.3	6.3	4.3	0.6	0.7	0.7	7	0	0	0
R213-2	5.0	6.7	7.0	3.0	1.5	0.9	0.3	0.2	0	0	0	0
S40-1	3.0	6.0	6.3	11.7	1.1	0.5	9.7	0.4	57	0	0	0
S74-2	2.0	6.0	7.0	2.3	0.0	0.4	0.7	1.1	0	0	0	0
T47-1	6.0	7.0	7.0	1.4	0.0	0.9	0.0	0.5	0	0	0	10
T47-2	3.0	7.0	6.0	6.2	1.0	1.2	2.3	1.8	0	0	0	0
T52-1	3.0	8.0	7.0	8.1	0.2	2.8	3.9	1.1	0	0	0	0
T59-1	4.0	7.0	6.7	3.7	0.0	0.8	1.8	1.1	0	0	0	3
T61-2	4.0	6.0	7.7	3.3	0.2	0.3	2.7	0.1	3	0	0	0
T61-3	2.3	7.3	7.0	2.7	0.4	0.3	1.8	0.2	0	0	0	0
T61-4	8.0	5.7	7.0	3.3	1.4	0.5	0.3	1.2	3	0	0	0
T108-1	5.0	7.0	7.0	1.2	0.4	0.8	0.0	0.0	0	0	0	0
T109-2	2.7	6.3	6.7	6.5	3.7	0.5	0.6	1.7	13	0	0	0

Tuber shape 1 = round, 2 = mostly round, 3 = round to oblong, 4 = mostly oblong, 5 = oblong, 6 = oblong to long, 7 = long
Skin texture 5 = netted, 6 = slight net, 7 = medium smooth, 8 = smooth, 9 = very smooth
Tuber appearance 5 = fair, 6 = OK, 7 = good, 8 = nice

2020 Crop Season Chip Color Scores - University Trials

43F Storage

One location (Ellis Hollow)

	VISUAL SCORES			
	DEC	JAN	FEB	Average 3 MONTHS
SNOWDEN	5	4	4	4.3
LAMOKA	3	3	3	3.0
NY163	3	3	3	3.0
NY165	4	3	3	3.3
NY168	4	3	3	3.3
NY172	4	3	3	3.3
NY173	4	3	4	3.7
NY174	4	4	3	3.7
NY175 (Q29-2)	5	4	4	4.3
NY176 (R107-4)	3	3	3	3.0
NY177 (R107-6)	3	2	3	2.7

VISUAL CHIP SCALE: 1 - 10

1 = best

4 = marginal

5 and over = not acceptable

Samples were not reconditioned before chipping

Average Chip Color over Two Years - University Trials

Out of 43F storage: 2019 - 2020 crop seasons.

No reconditioning

	VISUAL SCORES			
	DEC	JAN	FEB	AVG
Snowden	5.0	4.0	4.5	4.5
Lamoka	3.0	3.0	3.0	3.0
NY163	2.5	2.5	3.0	2.7
NY165	4.0	3.5	3.5	3.7
NY168	3.5	3.0	3.0	3.2
NY172	4.0	3.5	3.5	3.7
NY173	3.5	3.0	3.5	3.3
NY174	3.5	3.5	3.0	3.3
NY175 (Q29-2)	4.0	4.0	4.0	4.0
NY176 (R107-4)	2.5	3.0	3.0	2.8
NY177 (R107-6)	2.5	2.5	2.5	2.5

VISUAL CHIP SCALE: 1 - 10

1 = best

4 = marginal

5 and over = not acceptable

Scab Score Summary

Tubers evaluated at harvest from scab-infested plots in Ellis Hollow (EH) and Varna (V)

0 = free of scab, 5 = very susceptible

LOCATION:	2021 EH	2019 EH	2018 EH	2017 EH	2015 EH	2014 EH	2013 EH	2012 V	2011 EH	2010 EH	2009 V	2009 EH	08 V	08 EH
Brodie						4.7	4.5			4.7	2.7	3.3	3.0	3.7
Chieftain			2.7	3.3	3.0	3.5	4.0		3.3	5.0	1.0	3.0		3.5
Chippewa	3.7			5.0	5.0	4.7	4.5	3.0		5.0	4.3	5.0	4.7	5.0
Katahdin	3.0	2.3	3.7	4.4	4.7	4.7	4.0	2.3	4.0	4.8	3.7	4.3	4.3	4.0
Lamoka	2.3	1.3		2.7		2.8				2.3	1.3	2.7	2.3	2.3
Lady Liberty			2.0		2.3	2.2	2.0	2.0	2.8					
Nordonna				3.3	2.3	3.7							1.0	1.5
Pike		1.2	2.0	3.3	2.7	2.4		2.7		1.7	1.3	1.7	1.5	2.0
Reba										4.0	2.0	3.0		
Snowden										5.0	1.7	4.0		3.0
Superior			2.3	3.0	3.0	3.5	2.5	2.3	2.8	2.3	2.0	2.7	1.7	2.0
Upstate Abundance					2.7	3.0	3.0	2.5	3.7	2.3				
Waneta										2.3	2.0	1.0	1.3	2.3
NY163 (chip)	1.7	2.0	2.0	3.0	2.0	2.8								
NY165 (chip)	1.7	1.0	2.0	2.3	2.0									
NY168 (chip)	2.7	2.7	3.2	3.8										
NY171 (white/purp)	2.7	1.3	2.3											
NY172 (chip)	2.0	1.3	2.0											
NY173 (chip)	1.3	1.0	2.7											
NY174 (chip)	2.0	2.3	2.7											
NY175 (chip)	1.7	1.7	2.0											
NY176 (chip)	3.3	1.7												
NY177 (chip)	2.7	1.6												
NY178 (white)	2.3	1.7												

Scab pressure was low in our 2019 and 2021 trials. No scab trial in 2020.

Tuber Dormancy Relative to Atlantic

Replicate 10 tuber samples from each clone were stored in the dark at room temperature.
 The number of weeks that each clone sprouted earlier (-) or later (+) than Atlantic is shown.
 Atlantic typically breaks dormancy in late October to mid November

Dormancy is considered broken when half or more of the sample has 1/4" long sprouts.

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Round whites:											
Andover					0		1		3	3	3
Algonquin						4	0	4	3	2	2
Atlantic	0	0	0	0	0	0	0	0	0	0	0
Brodie		0					4	5	7	6	6
Eva			8		5		6		7	8	
Lady Liberty		0	3		4	5	2	4	3	5	
Lamoka		0	3	1	1		0		3	0	1
Reba		2		3	2		2		4		5
Snowden		0	2	2	2	0	0		2	2	2
Upstate Abundance					0	3	3	3	2	2	2
Waneta		4	8		7	9	6		10	7	8
Yukon Gold			2	1	1	2				0	1
NY163	0	0	2	1	2	1					
NY165	2	0	3	2	1						
NY168	2	3	6	4	0						
NY171	3	2	4								
NY172	1	0	2								
NY173	1	0	2								
NY174		2	2								
NY175 (Q29-2)	2	0	0								
NY176 (R107-4)	-1										
NY177 (R107-6)	1										
NY178 (R203-1)	1										
R15-4	1										
Reds and purples:											
Chieftain	1	0	2		0		0	0	2	1	2
Norland DR		-2	-2		-2		-4		-1		
Nordonna		0	0		-2		-2	0	2	0	1
Red Maria							1	3	3	4	5
NY160	0						-2				
Ad. Blue							0	0	-2		
Ad. Red							2				

Upstate New York Table 1. Yield, marketable yield, percentage of yield by grade size distribution, mean tuber number per foot and weight, percentage of defects, and specific gravity for Wayne County white-skinned variety trial grown near Wolcott, New York - 2021.

Variety or Clone	Total Yield Cwt/A	Mkt. Yield		Size Distribution ¹ (% of total yield)				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Spec. Grav.
		Cwt/A	% of Std.	1	2	3	4	#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
Eva	368	315	100	6	72	22	0	9.8	4.1	7	1	1	0	0	0	0	0	1.072
Yukon Gold	340	203	65	8	54	38	0	7.3	5.1	21	3	8	0	25	0	0	0	1.073
NY171	368	234	74	27	70	3	0	12.2	3.3	9	1	0	0	0	0	0	0	1.068
R15-4	409	270	86	16	72	12	0	15.7	2.9	17	0	0	0	0	5	0	0	1.084
R203-1	343	221	70	21	69	11	0	12.3	3.1	15	0	0	0	5	0	0	0	1.060
R213-2	373	236	75	33	67	0	0	18.1	2.3	4	0	0	0	0	0	0	0	1.067
S40-1	374	206	65	21	68	11	0	14.1	2.9	23	0	0	0	5	5	0	5	1.070
T61-2	241	87	28	56	43	1	0	15.5	1.7	7	0	1	0	0	0	0	0	1.068
T108-1	241	145	46	34	63	3	0	11.3	2.3	5	0	0	1	0	0	0	0	1.065
T61-4 (1 replicate)	201	30	10	80	20	0	0	12.8	1.7	14	0	0	0	0	0	0	0	1.073
Average:	326	195	62	30	60	10	0	12.9	3.0	12	1	1	0	4	1	0	1	1.070
Maximum:	409	315	100	80	72	38	0	18.1	5.1	23	3	8	1	25	5	0	5	1.084
Minimum:	201	30	10	6	20	0	0	7.3	1.7	4	0	0	0	0	0	0	0	1.060

¹Tuber size classes:
Plant Date: June 9

1 = under 2" dia., 2 = 2" to 3" dia., 3 = 3" to 4" dia., and 4 = over 4" dia.

Harvest Date: October 13

Upstate New York Table 2. Yield, marketable yield, percentage of yield by grade size distribution, mean tuber number per foot and weight, percentage of defects, and specific gravity for Wayne County red and purple-skinned variety trial grown near Wolcott, New York - 2021.

Variety or Clone	Total Yield	Mkt. Yield		Size Distribution ¹				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Spec. Grav.
	Cwt/A	Cwt/A	% of Std.	(% of total yield)				#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
Norland	271	188	100	23	76	1	0	12.4	2.4	6	2	0	0	0	0	0	0	<1.060
T47-1	385	304	162	17	81	2	0	11.9	3.6	3	1	0	0	0	0	0	0	<1.060
T47-2	335	242	128	20	76	4	0	15.2	2.4	7	1	0	0	0	0	0	0	<1.060
T52-1	292	136	72	49	51	0	0	17.3	1.9	5	0	0	0	0	0	0	0	1.061
T59-1	200	74	40	58	42	0	0	16.0	1.4	2	3	0	0	0	0	0	0	<1.060
S74-2	194	110	58	42	58	0	0	16.7	1.3	0	1	0	0	0	0	0	0	1.060
Average:	279	175	93	35	64	1	0	14.9	2.2	4	1	0	0	0	0	0	0	
Maximum:	385	304	162	58	81	4	0	17.3	3.6	7	3	0	0	0	0	0	0	1.061
Minimum:	194	74	40	17	42	0	0	11.9	1.3	0	0	0	0	0	0	0	0	<1.060

¹Tuber size classes:
Plant Date: June 9

1 = under 2" dia., 2 = 2" to 3" dia., 3 = 3" to 4" dia., and 4 = over 4" dia.

Harvest Date: October 13

Upstate New York Grower Table 3. Yield, marketable yield, percentage of yield by grade size distribution, mean tuber number per foot and weight, percentage of defects, and specific gravity for Steuben County chipping variety trial grown near Arkport, New York - 2021.

Variety or Clone	Total Yield	Mkt. Yield		Size Distribution ¹				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Spec. Grav.
	Cwt/A	Cwt/A	% of Std.	(% of total yield)				#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
Atlantic	357	320	100	6	51	41	2	7.9	5.0	1	0	2	0	25	5	0	0	1.084
Snowden	368	345	108	6	62	32	0	9.1	4.4	0	0	0	0	35	5	0	0	1.089
NY163	344	319	100	7	72	22	0	9.5	4.0	0	0	0	0	0	0	0	0	1.088
NY165	330	310	97	6	58	35	0	8.3	4.4	0	0	0	0	15	0	0	5	1.079
NY168	295	269	84	9	83	8	0	9.8	3.3	0	0	0	0	10	0	0	5	1.091
NY172	428	402	126	4	45	51	1	8.3	5.7	1	0	0	0	5	0	0	0	1.089
NY173	444	402	126	7	66	28	0	11.8	4.2	3	0	0	0	0	0	0	0	1.079
K27-3b	367	340	106	7	66	26	0	9.9	4.1	0	0	0	0	10	5	0	0	1.089
Q29-2	360	331	103	7	68	25	0	9.5	4.1	1	1	0	0	0	5	0	0	1.091
R1-7	310	287	90	7	84	9	0	9.3	3.6	1	0	0	0	0	5	0	0	1.082
R3-5	378	350	109	7	66	28	0	9.7	4.3	1	0	0	0	5	0	0	0	1.083
R107-4	430	400	125	5	59	36	0	8.8	5.5	1	2	0	0	5	5	0	5	1.089
Average:	368	339	106	6	65	28	0	9.3	4.4	1	0	0	0	9	3	0	1	1.086
Maximum:	444	402	126	9	84	51	2	11.8	5.7	3	2	2	0	35	5	0	5	1.091
Minimum:	295	269	84	4	45	8	0	7.9	3.3	0	0	0	0	0	0	0	0	1.079

¹Tuber size classes:

1 = under 2" dia., 2 = 2" to 3" dia., 3 = 3" to 4" dia., and 4 = over 4" dia.

Plant Date: June 4

Vinekill Dates: August 25 and September 2

Harvest Date: October 12

Fertilizer: 128N-256P-128K-5S-5Zn-0.24B lbs/acre at planting

Vinekill: 1 pt/acre Reglone

Other: 7 oz Quadris/acre and 2.67 oz Platinum/acre

Spacing: 36 inch bed width by 8 inch within row spacing.

Upstate New York Grower Table 4. Yield, marketable yield, percentage of yield by grade size distribution, mean tuber number per foot and weight, percentage of defects, and specific gravity for Wyoming County chipping variety trial grown near Bliss, New York - 2021.

Variety or Clone	Total Yield Cwt/A	Mkt. Yield		Size Distribution ¹ (% of total yield)				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Spec. Grav.
		Cwt/A	% of Std.	1	2	3	4	#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
Atlantic	366	335	100	5	64	29	1	8.2	4.7	2	0	0	0	30	5	0	0	1.084
Snowden	413	375	112	6	63	31	0	8.7	4.9	3	0	0	0	10	0	0	10	1.084
NY163	562	516	154	5	65	30	0	12.7	4.6	3	0	0	0	0	0	0	0	1.081
NY165	408	390	116	4	53	43	0	9.0	4.7	1	0	0	0	5	0	0	5	1.079
NY168	456	429	128	5	71	24	0	12.0	4.0	0	0	0	0	10	0	0	0	1.083
NY172	541	499	149	3	45	51	1	10.1	5.6	3	1	0	0	35	0	0	0	1.078
NY173	534	453	135	10	74	17	0	16.1	3.5	5	0	0	0	0	0	0	0	1.083
NY174	507	476	142	4	48	48	1	10.0	5.3	1	1	1	0	0	0	0	0	1.082
Q29-2	583	530	158	6	73	21	0	15.2	4.0	3	0	0	0	0	0	0	0	1.086
R3-5	548	511	152	5	65	30	0	11.5	4.9	2	0	0	0	0	0	0	0	1.079
R107-4	478	440	131	5	55	40	0	11.1	4.5	3	0	0	0	0	0	0	0	1.090
R107-6	455	416	124	7	68	26	0	11.1	4.2	2	0	0	0	0	5	0	0	1.091
Average:	488	448	134	5	62	33	0	11.3	4.6	2	0	0	0	8	1	0	1	1.083
Maximum:	583	530	158	10	74	51	1	16.1	5.6	5	1	1	0	35	5	0	10	1.091
Minimum:	366	335	100	3	45	17	0	8.2	3.5	0	0	0	0	0	0	0	0	1.078

¹Tuber size classes:

1 = under 2" dia., 2 = 2" to 3" dia., 3 = 3" to 4" dia., and 4 = over 4" dia.

Plant Date: May 27

Vinekill Dates: September 8 and 15

Harvest Date: October 14

Fertilizer: 180N-102P-115K-6.7Mg-37.5 Ca lbs/acre at planting

Vinekill: 1 pt/acre Reglone and surfactant (2x)

15.35" rainfall plus 4.05" irrigation

Other: 9 oz/acre Aframe in furrow

Spacing: 34 inch bed width by 8.0 inch within row spacing.

Planting potato plots on Mount Pleasant

