



Potato Show & Tell, 18 December 2019



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**Description of Advanced Selections from Cornell Breeding Program**  
**Based on Cornell trials in 2019 and prior years**  
**Last updated: 6 December 2019**

**NY149 (F11-1) = Yukon Gold x Keuka Gold (2004).** Mid-late season yellow-fleshed tablestock, with slightly-textured skin and pink eyes.

- In eighteen Tompkins County trials over eight years, marketable yields averaged 84% of Atlantic.
- Wayne County (muck soil) yield was 67% of Atlantic in 2011, 114% of Eva in 2015, 100% of Eva in 2016, and 131% of Eva in 2017.
- Yield on Long Island was 83% of Yukon Gold in 2011, 105% in 2017, and 170% of Yukon Gold in 2018.
- Yield in PA was 118% of Atlantic in 2011 (1 trial), 92% in 2015 (2 trials), 87% in 2016 (3 trials), 104% in 2017 (3 trials), and 112% of Atlantic in 2018 (2 trials).

Tuber flesh color and yield comparable to Yukon Gold, but tuber size is smaller. A low level of pickouts, mostly misshapes, have been observed. Generally free of internal defects (unlike Yukon Gold), although low levels of hollow heart have been observed. Specific gravity has averaged 0.011 less than Atlantic (18 trials). Moderately resistant to common scab. Tubers do not darken, and only exhibit slight sloughing, after boiling. Tuber dormancy is about 2 weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

**Lady Liberty = NY152 (H15-5) = B38-14 x Marcy (2006).** Late season chipstock, excellent chip color.

*The International Union for the Protection of New Varieties of Plants (UPOV) does not allow the same name to be used for different varieties of the same species. In 2019 we learned that there is already a Polish potato variety named 'Niagara', so we changed the name of NY152/Niagara to 'Lady Liberty'.*

- In 18 Tompkins County trials over the past nine years, marketable yields averaged 102% of Atlantic.
- Yield in PA was 106% of Atlantic in 2011 (1 trial), 107% in 2016 (1 trial), 108% in 2017 (3 trials), and 114% of Atlantic in 2018 (2 trials).
- In trials in Wyoming and Steuben Counties, yield averaged 97% of Atlantic in 2012, 133% in 2014, 98% in 2015, 105% in 2017, and 104% of Atlantic in 2018.
- Yield on Long Island was 164% of Reba in 2014 and 119% of Atlantic in 2018.

Low levels of pickouts (growth cracks) and varying levels of hollow heart, occasionally high, have been observed (see table below). Specific gravity has averaged 0.008 less than Atlantic (24 trials). Chip color from 44F storage in December, January and February (2011 crop season) averaged 3.0 compared to 4.0 for Snowden (lower is better). Chip color averaged 3.3 versus 3.7 for Snowden in 2012, 3.0 versus 4.7 in 2013, 3.7 versus 4.0 in 2014, 3.2 versus 4.2 in 2015, and 3.2 versus 4.3 for Snowden in 2016. Chip color from 43F storage averaged 3.4 vs 4.4 for Snowden in 2017 and 4.1 versus 4.8 in 2018. Moderate to good resistance to common scab. Tuber dormancy is about 4 weeks longer than Atlantic. May be resistant to potato virus Y. Susceptible to race Ro1 of the golden nematode.

**Percent of hollow heart in Niagara (vs Atlantic in same trial)**

	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Ellis Hollow	0 (0)	5 (3)	0 (10)	5 (33)	0 (0)	8 (20)	0 (23)
Freeville		10 (23)	33 (3)	60 (33)	0 (10)	8 (18)	13 (23)
Steuben County	0 (10)		10 (5)	0 (0)		30 (25)	
Wyoming County	0 (0)		0 (10)	20 (15)		25 (0)	35 (25)

**NY155 (H122-4) = NY136 x Nordonna (2006).** Early maturing, pink-skinned tablestock.

- In 14 Tompkins County trials over the past nine years, marketable yields averaged 105% of Chieftain.
- Yield in Wayne County was 84% of Atlantic in 2014, 104% of Chieftain in 2015, 103% of Chieftain in 2016, 46% of Chieftain in 2017, and 115% of Eva in 2019.
- Yield on Long Island was 76% of Chieftain in 2012 and 151% of Reba in 2014.
- Yield in PA was 115% of Chieftain in 2011 (2 trials).

Tubers are uniform, large (6.0 ounce average, 4 trials) and have an oblong, flattened shape with shallow eyes and – even though both its parents have deep red skin – **very light pink skin**. Generally low levels of pickouts (secondary growth) or internal defects (hollow heart, internal necrosis and brown center) have been observed, although a high frequency of secondary growth were noted in 2018. Moderate resistance to common scab. Tubers do not darken or slough appreciably after boiling. Tuber dormancy is two weeks longer than Atlantic. Susceptible to the golden nematode.

**NY157 (J105-10) = White Pearl x NY115 (2007).** Mid-late season chipstock.

- In 16 Tompkins County trials over the past eight years, marketable yields averaged 96% of Atlantic.
- In trials in Wyoming and Steuben Counties, yield averaged 100% of Atlantic in 2014, 87% in 2015, 112% in 2016, and 95% of Atlantic in 2017.
- On Long Island, yield was 114% of Reba in 2014, 88% of Reba in 2015, 105% of Atlantic in 2016, 79% of Atlantic in 2017 and 106% of Atlantic in 2018.
- Yield in Pennsylvania was 102% of Atlantic in 2015 (1 trial), 90% in 2016 (4 trials), 103% in 2017 (2 trials), and 112% of Atlantic in 2018 (2 trials).

Generally low levels of pickouts (knobs, growth cracks) or internal defects (hollow heart, internal necrosis, brown center) have been observed -- but much secondary growth was observed in 2018. Specific gravity has averaged 0.006 less than Atlantic (24 trials). Chip color from 44F storage in December, January and February (2012 crop season) averaged 4.0 compared to 4.0 for Snowden (lower is better). Chip color averaged 3.7 vs 5.7 for Snowden in 2013, 3.0 versus 4.0 in 2014, 3.2 vs 4.2 in 2015, and 3.3 vs 4.3 in 2016. Chip color out of 43F storage was 3.4 vs 4.4 for Snowden in 2017 and 3.9 vs 4.8 in 2018. Moderately resistant to common scab. Tuber dormancy is about one week longer than Atlantic. Resistant to race Ro1 of the golden nematode.

*Although we had been quietly optimistic about NY157's prospects, two seed growers (one in NY, one in ME) observed unacceptably high levels of internal necrosis in 2018. The necrosis appeared to develop in storage, i.e., was not present at harvest. Cause unknown.*

**NY160 (L27-2) = D32-4 x Upstate Abundance (2009).** Early-mid season, pink-skinned tablestock.

This clone had a lot of virus in 2015 and will resume testing in a few years, once we have clean seed available again.

- In four Tompkins County trials over the past two years, marketable yields averaged 83% of Chieftain.
- Yield in Wayne County was 84% of Chieftain in 2014 and 50% of Chieftain in 2015.

Tubers are relatively small, with smooth, pink skin. Very few pickouts or internal defects have been observed. Moderate resistance to common scab. Tuber dormancy is two weeks shorter than Atlantic. Susceptible to the golden nematode.

**NY161 (L29-3) = Daisy Gold x C24-1 (2009).** Mid-late season yellow-fleshed tablestock with purple splashes on the skin.

- In ten Tompkins County trials over the past six years, marketable yields averaged 100% of Atlantic. In another Tompkins County trial, yield was 90% of Chieftain.
- Yield in Wayne County was 154% of Atlantic in 2014, 76% of Chieftain in 2015, 88% of Eva in 2016, and 170% of Eva in 2017.
- Yield on Long Island was 120% of Yukon Gold in 2016, 150% of Yukon Gold in 2017, 159% of Yukon Gold in 2018, and 133% of Reba in 2019.
- Yield in Pennsylvania was 142% of Atlantic in 2017 (1 trial).

Tubers have smooth skin with purple splashes around the eyes and pleasing yellow flesh (deeper yellow than Yukon Gold). Low levels of growth cracks and hollow heart are typically observed, but incidence of growth cracks was high in 2017 (5 to 10%). Tubers do not darken after boiling and only slough slightly. Moderate resistance to common scab. Tuber dormancy is two weeks longer than Atlantic. Susceptible to the golden nematode.

**NY162 (K31-4) = E106-2 x E48-2 (2008).** Late season chipstock.

- In 16 Tompkins County trials over the past seven years, marketable yields averaged 97% of Atlantic.
- In trials in Wyoming and Steuben Counties, yield averaged 121% of Atlantic in 2014, 97% in 2015, 104% in 2016, 116% of Atlantic in 2017, and 105% of Atlantic in 2018.
- Yield in Pennsylvania was 102% of Atlantic in 2018 (3 trials).

Tubers are round to oblong with moderately textured skin. Low levels of pickouts (misshapes, growth cracks, knobs) have been observed. Some hollow heart (average of 4% across 15 trials) has also been seen. Specific gravity has averaged 0.005 less than Atlantic (25 trials). Chip color from 44F storage in December, January and February (2013 crop season) averaged 3.3 compared to 4.3 for Snowden (lower is better). Chip color averaged 3.7 vs 4.7 for Snowden in 2014. 3.5 vs 4.2 in 2015, and 3.8 vs 4.3 in 2016. Out of 43F storage chip color averaged 3.8 vs 4.4 in 2017, and 4.2 vs 4.8 in 2018. As good as the chip color numbers have been, NY162 potatoes grown in on-farm trials in 2017 and chipped in commercial plants after several months of cold storage showed unacceptable color on chip edges. Intermediate reaction to common scab. Tuber dormancy is about two weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

*Because of the edge color defects, NY162 is currently being evaluated by Potatoes USA (SNAC trials) only as an out-of-the field chipping clone in Southern states.*

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

- In 14 Tompkins County trials over the past six years, marketable yields averaged 98% of Atlantic.
- In trials in Wyoming and Steuben counties, yield averaged 84% of Atlantic in 2016, 112% in 2017, 84% in 2018, and 88% of Atlantic in 2019.
- On Long Island yield was 123% of Reba in 2016.
- Yield in Pennsylvania was 113% of Atlantic in 2017 (1 trial).

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 0.005 less than Atlantic (21 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, and 3.0 vs 4.8 in 2018. Moderate resistance to common scab. Tuber dormancy is one to two weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

**NY164 (L26-6) = D32-4 x C100-2 (2009).** Red tablestock with smooth skin.

- In 11 Tompkins County trials over the past six years, marketable yields averaged 88% of Chieftain.
- Yield in Wayne County was 66% of Chieftain in 2014, 45% of Chieftain in the shortened season of 2015, 70% in 2016, 53% of Chieftain in the shortened season of 2017, and 108% of Eva in 2019.
- Yield on Long Island was 96% of Chieftain in 2016, 122% of Chieftain in 2017, and 95% of Chieftain in 2018.
- Yield in Pennsylvania was 70% of Chieftain in 2017 (1 trial) and 56% of Chieftain in 2018 (2 trials).

Tubers are round to oblong with bright red color and smooth skin. More susceptible to skinning than Red Norland. Low levels of growth cracks and knobs have been observed, along with infrequent brown center. Slight heat necrosis was observed on Long Island in 2016. Tubers do not darken after boiling and only slough slightly. Moderate resistance to common scab. Tuber dormancy is one week less than Atlantic. Susceptible to the golden nematode.

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

- In 12 Tompkins County trials over the past five years, marketable yields averaged 107% of Atlantic.
- In trials in Wyoming and Steuben counties, yield averaged 110% of Atlantic in 2017, 120% in 2018, and 101% of Atlantic in 2019.
- Yield on Long Island was 119% of Reba in 2018 and 122% of Atlantic in 2019.

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 (17 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 and 3.9 vs 4.8 in 2018. Very good resistance to common scab. Tuber dormancy is about two weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.



**NY166 (N16-11) = Brodie x E48-2 (2011)** Mid-season chipstock.

- In nine Tompkins County trials over the past four years, marketable yields averaged 108% of Atlantic.
- In trials in Wyoming and Steuben counties, yield averaged 105% of Atlantic in 2019.
- Yield on Long Island was 133% of Reba in 2019.

Tubers are round to oblong with moderately textured skin. Low levels of pickouts (secondary growth and growth cracks) and internal defects (hollow heart and brown center) have been observed. Slight internal necrosis on Long Island in 2019. Specific gravity has averaged 0.008 less than Atlantic (11 trials). Chip color from 44F storage in December, January and February (2016 crop season) averaged 3.5 compared to 5.0 for Snowden (lower is better). Chip color from 43F averaged 2.7 vs 4.2 for Snowden in 2017 and 3.6 vs 4.8 in 2018. Moderate resistance to common scab. Tuber dormancy is two weeks longer than Atlantic. Resistant to races Ro1 and Ro2 of the golden nematode.

**NY167 (N35-9) = E43-10 x MSN105-1 (2011)** Late maturing tablestock.

- In nine Tompkins County trials over the past four years, marketable yields averaged 105% of Atlantic.
- Yield in Wayne County was 91% of Eva in 2019.
- Yield on Long Island was 103% of Reba in 2017, 110% in 2018, and 138% of Reba in 2019.

Tubers are round to oblong – at times irregular – with smooth to lightly textured skin. Generally low levels of pickouts (growth cracks) and internal defects (hollow heart) have been observed. Specific gravity has averaged 0.013 less than Atlantic (9 trials). Tubers do not darken or slough appreciably after boiling. Very good resistance to common scab. Tuber dormancy is about three weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

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

- In seven Tompkins County trials over the past four years, marketable yields averaged 105% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 73% of Atlantic in 2019.

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 0.003 less than Atlantic (9 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 and 3.6 vs 4.8 in 2018. Moderately susceptible to common scab. Tuber dormancy is about three weeks longer than Atlantic. Resistant to race Ro1 of the golden nematode.

**NY169 (P14-1) = Snowden x E48-2 (2012)** High gravity chipstock, excellent chip color out of cold storage.

- In six Tompkins County trials over the past three years, marketable yields averaged 93% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 85% of Atlantic in 2019.

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 equal to Atlantic (8 trials). Chip color from 44F storage in December, January and February (2016 crop season) averaged 3.0 compared to 4.0 for Snowden (lower is better). Chip color from 43F averaged 3.3 vs 4.3 for Snowden in 2017 and 2.8 vs 4.8 in 2018. Moderately susceptible to common scab. Tuber dormancy is similar to Atlantic. Resistant to race Ro1 of the golden nematode.

**NY170 (P111-9) = NY148 x F48-4 (2012)** High gravity chipstock, very good chip color.

- In six Tompkins County trials over the past three years, marketable yields averaged 95% of Atlantic.
- Yield in Steuben and Wyoming counties averaged 106% of Atlantic in 2019.

Tubers are round/compressed with scurfy skin. Generally low levels of pickouts (knobs and growth cracks) and internal defects (hollow heart) have been observed. Specific gravity has averaged 0.003 higher than Atlantic (8 trials). Chip color from 43F storage in December, January and February (2017 crop season) averaged 3.5 compared to 4.3 for Snowden (lower is better) and 3.3 vs 4.8 in 2018. Moderately resistant to common scab. Tuber dormancy is similar to Atlantic. Susceptible to the golden nematode.

### 2019 Summary of Yield Trials

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

Performance given as % of check variety.

	Ellis Hollow			Freeville	County		
	Advanced Trial	Intermed. Trial	Red Trial	Advanced Trial	Wayne Marion	Steuben Arkport	Wyoming Gainesville
Atlantic	<b>100</b>	<b>100</b>		<b>100</b>		<b>100</b>	<b>100</b>
Snowden	101	96		104		66	103
Lamoka		101		94			106
Waneta		94					
Eva					<b>100</b>		
NY157	76						
NY162	85			116			
NY163	85			120		90	87
NY165	103			125		108	94
NY166	95			117		102	109
NY167	79			125	91		
NY168	91					62	84
P14-1	78			101		98	72
P111-9	87			107		82	131
Q23-4		71					
Q29-1		99				80	61
Q29-2		96				112	54
Q36-6		70				88	
Q37-1		85					
Q38-4		90					
Q106-13		101					
Q112-5		85			112		
Q126-1		81			92		
Chieftain			<b>100</b>				
Nordonna			84				
Norland			54		74		
NY155			108		115		
NY164			95		108		

### 2019 Summary of Specific Gravities

Entries show differences (in units of 0.001) from Atlantic or Snowden

	Ellis Hollow		Freeville	County	
	Advanced Trial	Intermed. Trial	Advanced Trial	Steuben Arkport	Wyoming Gainesville
Atlantic	<b>1.081</b>	<b>1.083</b>	<b>1.085</b>	<b>1.088</b>	<b>1.102</b>
Snowden	-5	-6	-4	+8	-6
Lamoka		-5	-6		-3
NY162	0		-3		
NY163	-4		+1	0	-7
NY165	-8		-5	-6	-4
NY166	-8		-4	-11	-14
NY167	-16		-11		
NY168	-1			-1	-9
P14-1	-2		+3	+3	-1
P111-9	0		+9	+5	-2
Q29-1		-5		+6	-7
Q29-2		-5		+1	0
Q36-6		-3		+1	

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**Results from Cornell Breeding Program Trials**

**Walter De Jong and Robert Plaisted**

**2019 Advanced Stage Yield Trial, Ellis Hollow**

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

4 Replicates

Planted May 7, harvested September 18. Vine kill applied September 3.

	cwt/acre			%	pickout		% internal defects			appear. score	specific gravity
	<1 7/8"	>1 7/8"	>2 1/2"	>2 1/2"	cwt/A	type	HHT	IN	BC		
Atlantic	47	362	190	52	1	k	0	0	3	3.5	1.081
Snowden	48	367	164	45	1	k	3	0	0	3.0	1.076
Lady Liberty (NY152)	94	294	99	34	0	-	0	0	0	3.5	1.072
NY157	84	274	60	22	1	k	0	0	0	3.5	1.074
NY162	52	309	138	45	5	k	0	0	0	3.5	1.081
NY163	71	308	99	32	1	mis	0	0	0	3.4	1.077
NY165	55	374	175	47	1	k	0	0	0	3.4	1.073
NY166	82	344	132	39	3	k	0	0	3	3.3	1.073
NY167	105	286	81	28	3	mis	0	0	0	3.3	1.065
NY168	31	331	172	52	1	gc	0	0	0	3.4	1.080
K27-3a	60	307	95	31	4	gc	3	0	0	3.3	1.080
K27-3b	45	407	213	52	1	gc	0	0	0	3.2	1.074
P14-1	52	283	116	41	2	k	0	0	0	3.1	1.079
P111-9	85	316	89	28	0	-	0	0	0	3.1	1.081

Because tuber size was unusually small in our 2019 Ellis Hollow trials, yield of tubers less than 1 7/8" is also shown. Percentage of tubers greater than 2 1/2" reported here is 100 \* (yield greater than 2 1/2") / (yield greater than 1 7/8").

### 2019 Intermediate Stage Yield Trial, Ellis Hollow

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

3 Replicates (unless indicated otherwise in parentheses)

Planted May 7, harvested September 18. Vine kill applied September 3.

	cwt/acre			%	pickout		% internal defects			appear. score	specific gravity
	<1 7/8"	>1 7/8"	>2 1/2"		>2 1/2"	cwt/A	type	HHT	IN		
Atlantic	45	357	172	48	2	k	0	0	3	3.5	1.083
Lamoka	26	360	210	58	1	k	0	0	0	3.3	1.078
Snowden	50	341	139	41	1	gc	0	0	0	3.0	1.077
Waneta	30	335	174	52	0	-	3	0	0	3.4	1.071
Reba (2)	47	393	207	53	1	gc	0	0	0	3.2	1.070
Brodie (1)	83	401	260	65	0	-	0	10	0	3.4	1.067
Q23-4	57	255	53	21	0	-	0	0	0	3.5	1.078
Q29-1	90	352	173	49	5	k	0	0	0	3.1	1.078
Q29-2	61	344	96	28	1	k	0	0	0	3.5	1.078
Q36-6	31	251	69	27	1	gc	0	0	0	3.3	1.080
Q37-1	112	304	181	59	7	k	0	0	0	3.0	1.076
Q38-4	36	320	66	21	1	k	0	0	0	3.3	1.076
Q106-13	96	361	194	54	2	k	0	0	0	3.3	1.080
Q112-5	57	304	90	30	3	mis	0	0	0	3.5	< 1.060
Q126-1	38	290	104	36	5	2g	0	0	0	3.5	1.066

Because tuber size was unusually small in our 2019 Ellis Hollow trials, yield of tubers less than 1 7/8" is also shown. Percentage of tubers greater than 2 1/2" reported here is  $100 * (\text{yield greater than } 2 \frac{1}{2}'' ) / (\text{yield greater than } 1 \frac{7}{8}'' )$ .

## 2019 First Stage Yield Trial, Ellis Hollow

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

3 Replicates

Planted May 8, harvested September 19. Vine kill applied September 3.

	cwt/acre			%	pickout		% internal defects			appear. score	specific gravity
	<1 7/8"	>1 7/8"	>2 1/2"		>2 1/2"	cwt/A	type	HHT	IN		
Atlantic	45	376	169	45	1	k	0	0	0	3.5	1.083
Lamoka	22	375	232	62	0	-	0	0	0	3.3	1.078
Snowden	52	373	156	42	1	mis	0	0	0	3.0	1.081
Yukon Gold	22	388	278	72	5	gc	0	0	0	3.4	1.070
NY149	91	283	57	20	2	k	0	0	0	3.5	1.075
NY161	92	296	75	25	2	gc	0	0	0	3.4	1.070
R1-7	64	350	107	31	1	k	0	0	0	3.4	1.077
R1-9	82	277	96	35	0	gc	3	0	0	3.5	1.074
R2-2	54	368	209	57	5	gc	0	0	0	3.4	1.077
R3-5	45	409	172	42	0	-	0	0	0	3.4	1.078
R3-10	81	340	139	41	2	k	0	0	0	2.9	1.082
R5-6	91	337	82	24	1	k	0	0	0	3.6	1.077
R5-9	136	182	11	6	2	gc	0	0	0	3.4	1.072
R7-16	55	361	148	41	0	-	0	0	0	3.4	1.068
R9-7	76	239	69	29	0	-	0	0	0	3.7	1.073
R9-11	66	253	75	29	1	k	0	0	0	3.5	1.076
R10-3	57	448	199	45	0	-	0	0	0	3.3	1.068
R10-4	130	259	40	16	1	k	0	0	0	3.5	1.078
R11-5	122	264	37	14	1	k	0	0	0	3.5	1.074
R15-4	50	365	155	43	6	k	3	0	3	3.2	1.081
R16-3	79	308	88	29	0	-	0	0	0	3.4	1.073
R17-1	43	379	217	57	5	k	0	0	0	3.4	1.075
R20-3	166	122	2	1	3	2g	0	0	0	3.5	1.077
R20-8	168	130	0	0	1	gc	0	0	0	3.3	1.070
R100-1	45	299	80	27	2	2g	0	0	0	3.0	1.087
R100-6	68	202	35	17	1	k	0	0	0	3.0	1.082
R101-2	117	224	22	10	2	mis	0	0	0	3.2	1.078
R101-7	75	351	128	37	1	2g	0	0	3	3.1	1.073
R101-9	78	378	91	24	1	gc	0	0	3	3.2	1.079
R101-14	93	241	37	15	2	gc	0	0	0	3.4	1.088
R102-3	37	456	259	57	1	k	0	0	0	3.2	1.076
R102-7	50	322	120	37	2	k	0	0	0	3.3	1.083
R102-8	32	420	271	65	6	gc	0	0	3	3.0	1.077
R105-11	38	467	283	61	1	gc	0	0	0	3.2	1.073
R106-4	44	384	211	55	3	gc	0	0	0	3.1	1.076
R107-4	67	373	126	34	0	-	0	0	0	3.4	1.088
R107-6	90	348	77	22	0	-	0	0	0	3.5	1.088
R107-10	49	401	176	44	2	k	0	0	0	3.4	1.076
R107-11	69	305	103	34	1	k	0	0	0	3.3	1.079
R107-19	43	321	130	40	0	-	0	0	0	3.3	1.083
R203-1	46	342	181	53	7	2g	3	0	0	3.6	1.061
R213-2	126	269	38	14	1	spr	0	0	0	3.5	1.072

Because tuber size was unusually small in our 2019 Ellis Hollow trials, yield of tubers less than 1 7/8" is also shown. Percentage of tubers greater than 2 1/2" reported here is 100 \* (yield greater than 2 1/2") / (yield greater than 1 7/8").

### 2019 Red Trial, Ellis Hollow

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

3 replicates (unless indicated otherwise in parentheses)

Planted May 8, harvested September 19. Vine kill applied September 3.

	cwt/acre			%	pickout		% internal defects			appear. score	specific gravity
	<1 7/8"	>1 7/8"	>2 1/2"		>2 1/2"	cwt/A	type	HHT	IN		
Chieftain	43	389	192	49	2	2g	0	0	3	3.5	1.062
Nordonna	82	328	112	34	2	2g	0	0	0	3.3	1.063
Norland	68	212	48	23	2	2g	0	0	0	3.5	< 1.060
NY155	36	421	222	53	15	2g	0	0	0	3.4	< 1.060
NY164	55	369	169	46	2	mis	0	0	0	3.4	1.063
R25-1	95	180	30	17	10	k	0	0	0	2.6	1.068
R219-1	201	81	9	10	8	k	0	0	0	2.8	1.072

Because tuber size was unusually small in our 2019 Ellis Hollow trials, yield of tubers less than 1 7/8" is also shown. Percentage of tubers greater than 2 1/2" reported here is 100 \* (yield greater than 2 1/2") / (yield greater than 1 7/8").



## 2018 Crop Season Chip Color Scores - University Trials

43F Storage

Average of two or three locations (Ellis Hollow, Varna and Freeville)

	VISUAL SCORES			
	DEC	JAN	FEB	Average 3 MONTHS
SNOWDEN	5.7	4.8	4.0	4.8
LAMOKA	4.5	4.0	3.0	3.8
LADY LIBERTY	4.8	4.0	3.5	4.1
NY157	5.0	3.3	3.3	3.9
NY162	4.3	4.3	4.0	4.2
NY163	3.3	2.7	3.0	3.0
NY165	4.7	3.7	3.3	3.9
NY166	3.7	3.7	3.3	3.6
NY168	4.7	3.0	3.0	3.6
NY169 (P14-1)	4.5	2.0	2.0	2.8
NY170 (P111-9)	3.5	3.0	3.5	3.3

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: 2017 - 2018 crop seasons.

No reconditioning

	VISUAL SCORES			
	(2 YEARS, 2 to 3 LOCATIONS)			
	DEC	JAN	FEB	AVG
Snowden	5.0	4.6	4.4	4.6
Lamoka	4.3	3.5	3.2	3.6
Lady Liberty	4.1	3.5	3.8	3.8
NY157	4.2	3.3	3.5	3.7
NY162	3.8	3.8	4.4	4.0
NY163	2.8	2.5	3.0	2.8
NY165	3.9	3.2	3.3	3.5
NY166	3.4	2.9	3.2	3.1
NY168	4.4	3.5	3.3	3.7
NY169 (P14-1)	3.8	2.8	2.8	3.1
NY170 (P111-9)	3.3	3.5	3.5	3.4

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:	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	07 V	07 EH
Brodie					4.7	4.5			4.7	2.7	3.3	3.0	3.7	3.7	4.3
Chieftain		2.7	3.3	3.0	3.5	4.0		3.3	5.0	1.0	3.0		3.5	1.3	3.7
Chippewa			5.0	5.0	4.7	4.5	3.0		5.0	4.3	5.0	4.7	5.0	4.3	5.0
Katahdin	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	4.0	4.3
Lamoka	1.3		2.7		2.8				2.3	1.3	2.7	2.3	2.3	2.7	3.3
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	1.7	1.0
Pike	1.2	2.0	3.3	2.7	2.4		2.7		1.7	1.3	1.7	1.5	2.0	2.7	2.7
Reba									4.0	2.0	3.0			2.7	3.3
Snowden									5.0	1.7	4.0		3.0	4.0	3.7
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	3.0	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	3.0	3.3
NY149 (yellow)			3.2	2.7			2.3	2.7	3.0						
NY155 (pale pink)	2.0	2.0	3.0	2.7	3.0	3.0		2.7							
NY157 (chip)	1.0	2.3	2.8	2.0	2.8	2.5									
NY160 (pink)				2.3	2.7										
NY161 (yellow)	1.0		2.3	2.3	2.8										
NY162 (chip)	2.0	2.3	3.7	2.0	3.3	2.5									
NY163 (chip)	2.0	2.0	3.0	2.0	2.8										
NY164 (red)	1.3	2.7	3.7	3.0	2.2										
NY165 (chip)	1.0	2.0	2.3	2.0											
NY166 (chip)	2.0	2.0	3.0												
NY167 (white)	2.0	2.0	2.3												
NY168 (chip)	2.7	3.2	3.8												
NY169 (chip)	1.0	2.0	3.5												
NY170 (chip)	2.0	2.3	3.0												

Scab pressure was poor in our 2019 trial.

## 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.

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Round whites:</b>											
Andover			0		1		3	3	3	3	
Algonquin				4	0	4	3	2	2	2	2
Atlantic		0	0	0	0	0	0	0	0	0	0
Brodie					4	5	7	6	6	7	5
Eva	8		5		6		7	8			
Lady Liberty	3		4	5	2	4	3	5			
Lamoka	3	1	1		0		3	0	1	1	1
Lehigh											3
Reba		3	2		2		4		5	5	4
Snowden	2	2	2	0	0		2	2	2	2	1
Superior			1								2
Upstate Abundance			0	3	3	3	2	2	2	2	
Waneta	8		7	9	6		10	7	8	8	6
Yukon Gold	2	1	1	2				0	1		
NY149	2	2	2	2				0	2	1	
NY157	4	2	2	-2	-1	0	2				
NY161	2	2	2	3	1						
NY162	2	1	1	5	0	1					
NY163	2	1	2	1							
NY165	3	2	1								
NY166	4	2	1								
NY167	3	4	2								
NY168	6	4	0								
NY169 (P14-1)	0										
NY170 (P111-9)	0										
<b>Reds and purples:</b>											
Chieftain	2		0		0	0	2	1	2	1	1
Norland DR	-2		-2		-4		-1				-3
Nordonna	0		-2		-2	0	2	0	1	2	0
Red Maria					1	3	3	4	5	3	3
NY155	2		0		1	2	3	2			
NY160					-2						
NY164	1		-2		-1						
Ad. Blue					0	0	-2				
Ad. Red					2						

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**Data from Freeville and Upstate County Farm Trials  
Walter De Jong and Don Halseth**

**Advanced Clone Yield Trial, Freeville NY, 2019. Page 1 of 2.**

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

4 replicates (unless indicated otherwise in parentheses)

Planted May 9, harvested September 24. Vine kill applied August 22.

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	230	185	100	13	62	25	0	0	87	25	1.085
Lamoka	198	173	94	10	59	31	0	0	90	31	1.079
Snowden (2)	218	190	103	12	52	36	1	0	88	37	1.081
NY162	256	214	116	6	50	43	1	0	94	44	1.088
NY163	263	222	120	13	67	20	0	0	87	20	1.086
NY165	265	231	125	12	59	29	1	0	88	30	1.080
NY166	266	217	117	15	64	22	0	0	85	22	1.081
NY167	289	231	125	15	60	26	0	0	85	26	1.074
K27-3a	248	199	107	17	66	17	0	0	83	17	1.086
K27-3b	288	255	138	11	60	29	0	0	89	29	1.085
P14-1	229	186	101	14	62	24	1	0	86	24	1.088
P111-9	257	197	106	21	69	11	0	0	79	11	1.094

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 Clone Yield Trial, Freeville NY, 2019. 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	2.3	5.0	7.0	6.6	0.2	0.7	0.8	5.0	0	0	0	0
Lamoka	3.0	6.0	6.8	2.6	0.2	1.1	0.0	1.2	0	0	10	0
Snowden	2.0	5.0	5.5	0.9	0.8	0.0	0.1	0.0	0	0	15	0
NY162	3.0	6.0	6.3	11.2	0.1	1.8	0.0	9.2	0	0	0	0
NY163	2.0	6.0	6.3	3.8	0.1	0.3	0.0	3.4	0	0	0	0
NY165	3.0	5.0	6.5	1.5	0.1	0.4	0.0	1.1	0	0	0	0
NY166	3.0	5.0	5.8	4.2	0.2	0.3	0.0	3.7	0	0	0	0
NY167	3.0	6.0	6.0	6.1	0.1	0.5	0.0	5.5	0	0	28	0
K27-3a	2.5	7.0	6.3	3.1	0.1	0.0	0.6	2.4	0	0	0	0
K27-3b	3.0	5.0	5.0	0.5	0.1	0.2	0.2	0.0	0	0	0	0
P14-1	3.0	5.0	5.5	4.9	0.0	0.7	0.8	3.5	0	0	0	0
P111-9	2.0	5.0	5.5	3.0	0.7	0.3	0.0	2.0	0	0	5	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

**Upstate New York Grower 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 muck soil white and red-skinned variety trial grown near Marion, New York - 2019.**

Variety or Clone	Total Yield	Mkt. Yield		Size Distribution <sup>1</sup> ( % of total yield )				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Specific Gravity
	Cwt/A	Cwt/A	% of Std.	1	2	3	4	#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
	EVA	422	355	100	7	64	30	0	8.9	4.9	7	2	0	0	5	0	0	
NY167	435	297	84	13	68	19	0	12.0	3.8	17	1	0	0	25	0	0	0	1.062
Q112-5	488	399	112	9	65	26	0	12.2	4.2	7	2	0	0	0	0	0	0	<1.060
Q126-1	441	317	89	15	74	8	3	10.4	4.4	10	0	0	0	0	0	0	0	1.066
Q126-5	440	344	97	7	61	32	1	10.2	4.5	13	1	1	0	20	0	0	0	1.065
R15-4	446	385	108	5	60	35	0	10.4	4.5	7	2	0	0	25	0	0	0	1.080
R20-8	378	208	59	42	56	1	0	18.8	2.1	2	0	0	0	5	0	0	0	1.069
R203-1	558	384	108	9	63	25	4	11.1	5.3	17	1	1	0	10	0	0	0	1.061
R213-2	487	398	112	11	81	8	0	14.0	3.6	6	0	0	0	5	0	0	0	1.067
NY155 *	513	415	117	2	45	48	4	7.0	7.6	5	7	1	0	0	0	0	0	<1.060
NY164 *	475	393	111	10	71	19	0	12.7	3.9	4	3	0	0	0	0	0	0	<1.060
NORLAND *	352	273	77	15	71	14	0	10.2	3.6	3	2	1	1	30	0	0	0	1.064
Average:	453	347	98	12	65	22	1	12	4	8	2	0	0	10	0	0	0	NA
Maximum:	558	415	117	42	81	48	4	19	7.6	17	7	1	1	30	0	0	0	1.080
Minimum:	352	208	59	2	45	1	0	7	2.1	2	0	0	0	0	0	0	0	<1.060

Tuber size classes:

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

Plant Date: June 14

Harvest Date: October 21

Red skinned entries denoted by \*

**Upstate New York Grower 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 Steuben County chipping variety trial grown near Arkport, New York - 2019.**

Variety or Clone	Total Yield	Mkt. Yield		Size Distribution <sup>1</sup> ( % of total yield )				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Spec. Grav.
	Cwt/A	Cwt/A	% of Std.	1	2	3	4	#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
	ATLANTIC	333	294	100	6	59	35	0	7.1	5.1	2	0	1	1	10	0	0	
MACKINAW	313	267	91	12	81	7	0	10.0	3.5	2	0	0	0	0	0	15	0	1.094
NY163	301	268	91	9	83	8	0	8.3	4.0	1	0	0	0	0	0	0	0	1.088
NY165	369	320	109	10	72	18	0	10.2	4.0	1	1	0	1	0	0	0	0	1.082
NY166	352	300	102	11	69	20	0	9.5	4.1	2	1	0	0	0	0	0	0	1.077
NY168	220	185	63	15	81	4	0	7.5	3.2	0	0	0	0	0	0	0	0	1.087
P14-1	336	291	99	12	75	13	0	10.0	3.7	1	0	0	0	0	0	0	0	1.091
P111-9	283	240	82	12	77	11	0	8.2	3.8	3	0	0	0	0	0	0	0	1.093
Q29-1	272	232	79	8	64	27	1	5.9	5.0	3	1	2	1	5	0	0	0	1.086
Q29-2	378	318	108	8	68	24	0	9.3	4.5	6	0	1	0	0	0	0	0	1.089
Q36-6	311	255	87	14	76	9	0	10.4	3.3	3	0	0	0	0	0	0	0	1.089
SNOWDEN	235	198	67	15	77	8	0	7.2	3.5	0	0	0	1	0	0	15	0	1.096
Average:	308	264	90	11	73	15	0	8.6	4.0	2	0	0	0	1	0	3	0	1.088
Maximum:	378	320	109	15	83	35	1	10.4	5.1	6	1	2	1	10	0	15	5	1.096
Minimum:	220	185	63	6	59	4	0	5.9	3.2	0	0	0	0	0	0	0	0	1.077

<sup>1</sup>Tuber size classes: 1 = under 2" dia., 2 = 2" to 3" dia., 3 = 3" to 4" dia., and 4 = over 4" dia.

Plant Date: June 27

Vinekill Date: September 21

Harvest Date: October 10

Fertilizer: 128N - 256P- 128K - 5S - 5Zn - 0.24B lbs. per acre

Vinekill: 1 pt./a Diquat

Irrigation: none

6 oz. Quadris/acre and 2.67 oz. Platinum/acre

36" bed width by 8 inch within row spacing



**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 Wyoming County chipping variety trial grown near Gainesville, New York - 2019.**

Variety or Clone	Total Yield	Mkt. Yield		Size Distribution <sup>1</sup> (% of total yield)				Mean Tuber		Percent External Tuber Defects				Percent Internal Tuber Defects				Spec. Grav.
	Cwt/A	Cwt/A	% of Std.	1	2	3	4	#/ft	wt(oz)	SUN	KNB	GC	ROT	HH	BC	VD	NEC	
	ATLANTIC	395	306	100	8	63	28	1	7.8	5.3	3	5	6	0	50	0	0	
LAMOKA	372	314	103	8	70	21	1	7.5	5.2	6	0	1	0	20	0	0	0	1.099
MACKINAW	401	354	116	8	79	12	0	9.4	4.4	2	1	0	0	0	0	0	0	1.101
NY163	340	270	88	19	80	1	0	10.3	3.4	1	1	0	0	0	0	0	0	1.095
NY165	367	294	96	17	75	7	2	10.9	3.5	1	0	0	0	0	0	0	0	1.098
NY166	416	331	108	12	72	16	0	10.2	4.2	4	2	0	3	40	0	0	0	1.088
NY168	307	261	85	14	72	14	0	9.6	3.3	2	0	0	0	15	0	0	0	1.093
P14-1	269	223	73	14	80	7	0	7.9	3.6	2	1	0	1	15	0	0	0	1.101
P111-9	477	406	133	12	77	10	1	11.9	4.2	2	0	0	0	40	0	0	0	1.100
Q29-1	247	182	59	17	73	10	0	8.0	3.2	6	2	1	0	50	0	0	0	1.095
Q29-2	235	167	55	28	71	2	0	8.5	2.9	1	1	0	0	0	0	0	0	1.102
SNOWDEN	373	318	104	12	77	12	0	9.6	4.0	2	1	0	0	80	0	0	0	1.096
Average:	350	286	93	14	74	12	0	9.3	3.9	3	1	1	0	26	0	0	0	1.096
Maximum:	477	406	133	28	80	28	2	11.9	5.3	6	5	6	3	80	0	0	0	1.102
Minimum:	235	167	55	8	63	1	0	7.5	2.9	1	0	0	0	0	0	0	0	1.088

<sup>1</sup>Tuber size classes:

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

Plant Date: June 7

Vinekill Dates: September 25 & October 1

Harvest Date: October 25

Fertilizer: 209N - 60P - 116K - 11Mg - 39Ca lbs./a

Vinekill: 2 pt./a Reglone and Surfactant (2x)

Irrigation: 5.25 inches Rainfall: 16.75 inches

Other: 12.8 oz/ac Ultra Flourish in furrow

34" bed width by 8" within row spacing

**Data from Riverhead, Long Island Trials**  
**Sandra Menasha**

Long Island Table 2 . Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of Advanced white-skinned clones grown at Riverhead, N.Y. - 2019.											
Clone	Total	Marketable Yield		Size Distribution (%)					Size Distribution		Specific <sup>1</sup> Gravity
	Yield		percentage	2 to	2.5 to	3.25 to			2 to	2.5 to	
	cwt/A	cwt/A	of standard	< 2"	2.5"	3.25"	4"	> 4"	4 in.	4 in.	
<b>Season-107 days</b>											
Reba	391	359	100	4	44	47	5	0	96	52	67
Norwis	325	298	83	4	33	61	2	0	96	63	60
Salem	600	554	154	4	39	52	5	0	96	57	62
Upstate Abundance	288	206	57	25	60	13	2	0	75	15	69
Waneta	523	484	135	3	35	61	1	0	97	62	67
AF5819-2	622	579	161	3	35	56	5	0	97	61	66
AF5931-1	702	635	177	3	36	58	3	0	97	60	66
NY161	551	495	138	7	55	38	0	0	93	38	72
NY166	523	476	133	5	38	55	2	0	95	57	69
NY167	572	497	138	7	52	41	0	0	93	41	66
<i>Fisher's Protected</i>											
LSD (0.05)	(115)	(149)									(4)

Planted on 5/8, fertilizer rate was 176-176-240 lbs/A , vine killed on 8/23 and harvested on 9/19.

<sup>1</sup> -1.0 is excluded from specific gravity readings.

Long Island Table 3. Maturity, tuber shape, and internal and external defects of Advanced white-skinned clones grown at Riverhead, N.Y. - 2019.													
Clone	Maturity <sup>1</sup>	Tuber Data <sup>1</sup>		Tuber Defects (%)					Percentage				
	on	Shape	Appearance	Total	Sun-burn	Mis-shapen	Growth cracks	Other <sup>2</sup>	Hollow heart	Brown center	Internal Necrosis		
	8/8/2019										Sl.	Mod.	Sev.
<b>Season-107 days</b>													
Reba	5	R-O	7	5	0	1	0	4	0	0	3	0	0
Norwis	4	R-O	7	5	1	1	0	3	3	5	3	0	0
Salem	5	R-O	7	4	1	1	0	3	0	0	0	0	0
Upstate Abundance	5	R	7	4	0	1	0	2	0	0	0	0	0
Waneta	5	R-O	7	4	0	1	0	3	0	0	0	0	0
AF5819-2	5	R-O	7	4	1	0	0	3	3	0	0	0	0
AF5931-1	5	R-O	8	6	1	1	0	4	8	0	0	0	0
NY161	5	R	7	3	0	1	2	0	0	0	3	0	0
NY166	5	R-O	6	4	0	3	0	1	0	0	10	0	0
NY167	5	R-O	7	7	1	3	0	2	0	0	0	0	0

<sup>1</sup> -See rating system outlined in the text.

<sup>2</sup> -Other includes defects such as rhizoctonia, prominent lenticels, pink eye, decay and other defects scorable against a U.S.

No. 1 grade. Mechanical defects, however, were not scored.

Long Island Table 6. Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of NE1731 white and yellow-skinned clones grown at Riverhead, N.Y. - 2019.

Clone	Total	Marketable Yield		Size Distribution (%)					Size Distribution		Specific <sup>1</sup> Gravity
	Yield cwt/A	cwt/A	percentage of standard	< 2"	2 to 2.5"	2.5 to 3.25"	3.25 to 4"	> 4"	2 to 4 in.	2.5 to 4 in.	
<b>Season-107 days</b>											
Atlantic	411	343	100	8	29	55	9	0	92	64	77
Katahdin	381	323	94	5	43	52	0	0	95	52	<60
Niagara	606	528	154	7	41	51	1	0	93	52	69
Superior	136	125	36	4	37	60	0	0	96	60	62
Yukon Gold	404	265	77	4	27	63	6	0	96	69	67
AF5040-8	487	353	103	7	36	55	2	0	93	57	76
AF5225-1	599	485	141	11	49	39	0	0	89	40	66
AF5280-5	496	412	120	8	33	53	6	0	92	59	<60
NDAF102629C-4	290	230	67	11	43	45	1	0	89	46	60
NY165	465	417	122	7	42	49	2	0	93	51	70
<i>Fisher's Protected</i>											
LSD (0.05)	(82)	(78)									(3)

Planted on 5/8, fertilizer rate was 176-176-240 lbs/A, vine killed on 8/23, and harvested on 9/25.

<sup>1</sup> -1.0 is excluded from specific gravity readings.

Long Island Table 7. Maturity, tuber shape, and internal and external defects of NE1731 white and yellow-skinned clones grown at Riverhead, N.Y. - 2019.

Clone	Maturity <sup>1</sup>	Tuber Data <sup>1</sup>		Tuber Defects (%)					Percentage				
	on 8/8/2019	Shape	Appear- ance	Total	Sun- burn	Mis- shapen	Growth cracks	Other <sup>2</sup>	Hollow heart	Brown center	Internal Necrosis		
											Sl.	Mod.	Sev.
<b>Season-107 days</b>													
Atlantic	7	R-O	5	<b>10</b>	5	1	1	4	0	10	53	13	0
Katahdin	6	O-R	6	<b>11</b>	3	1	1	6	0	0	25	3	0
Niagara	7	R-O	7	<b>6</b>	1	1	0	3	0	0	8	3	0
Superior	3	R-O	7	<b>5</b>	1	2	0	2	3	0	5	5	0
Yukon Gold	5	R-O	5	<b>32</b>	0	1	0	31	0	8	8	0	0
AF5040-8	6	R-O	5	<b>22</b>	2	0	2	17	0	0	8	0	0
AF5225-1	7	R-O	6	<b>9</b>	1	1	0	7	0	0	5	3	0
AF5280-5	6	R-O	6	<b>10</b>	2	2	0	6	0	0	5	3	0
NDAF102629C-4	4	R	6	<b>11</b>	1	1	0	9	0	0	0	0	0
NY165	7	R-O	7	<b>4</b>	1	1	0	1	0	3	3	0	0

<sup>1</sup> -See rating system outlined in the text.

<sup>2</sup> -Other includes defects such as rhizoctonia, prominent lenticels, pink eye, decay and other defects scorable against a U.S.

No. 1 grade. Mechanical defects, however, were not scored.

Long Island Table 10. Yield and quality of early selection white, yellow and red-skinned clones in a non-replicated observation trial grown at Riverhead, NY - 2019.

Clone	Yield (cwt/A)		% of	Spec. <sup>1</sup>	% Internal Defects					Color	Texture	Shape	Depth	Eye Depth		Appearance	Comments <sup>2</sup>	
	Total	2-4	standard		%	HH	BC	Sl.	M					S	Lateral			Apical
	2 to 4	Defects	Grav.	Internal Necrosis														
<b>Season-107 days</b>																		
<b>White-skinned clones</b>																		
Reba	197	168	100	10	60	30	0	0	0	0	C-Bu	SN	R-O	MT-SF	MS-MD	MD-D	6	lumpy, Irr, PVY
R203-1	209	198	118	2	<60	0	0	10	0	0	C	RS	O-R	MT-SF	S-MS	S-MD	8	nice, uniform, sl pears, Br
R15-4	341	250	148	24	77	0	0	20	0	0	C-Bu	RS-SN	R-O	SF	S-MS	MD-D	6	kn, big
Q126-1	281	216	129	13	61	0	0	0	0	0	Bu	SN	O-R	MT-SF	S-MS	S-MS	7	Pu splashes! Sl kn, big, nice
AF6225-5	244	201	119	11	62	0	0	10	0	0	C-Bu	SN	R	R-SF	MD-D	MD-D	6	deep eyes, fairly uniform
AF6203-3	294	267	159	5	70	0	0	10	0	0	C-Bu	SN-N	R	R-SF	MD	MD-D	7	fairly uniform, big, nice
AF6194-4	252	233	139	4	65	0	0	0	0	0	C-Bu	SN	R-O	R-MT	MS	MS	7	big, ok yield, uniform
<b>Yellow-skinned clones</b>																		
Yukon Gold	215	166	99	22	68	0	0	0	0	0	Y-C	RS-S	R-O	R-SF	MS	MD-D	7	PVY, IL, YF12
AF6199-5	243	208	124	3	73	0	0	20	0	0	Y	RS	R	R	MS	MS-MD	8	Sm, rd, sl sp, sl SG
AF6182-6	335	304	181	6	72	0	0	0	0	0	Y-Bu	SN-N	R	R-MT	MS	MD	8	Rd, uniform, nice, C-YF1
AF6181-9	293	220	131	18	72	10	0	10	10	0	Y-Bu	SN	R	R-MT	S-MS	MS	6	Sc, YF11, lumpy, L, SG
WAF15147-2	268	218	130	8	68	0	0	0	0	0	Y	S-RS	R-O	MT-SF	S	MS	6	sl pears, kn, IL, YF11
R213-2	380	293	174	10	64	0	0	0	0	0	Y-Bu	SN	O-R	R-SF	S-MS	MS	7	pts, pears, peanuts, pi eyes, YF11
R20-8	310	246	146	10	<60	0	0	10	0	0	Y-Bu	N	R	R-SF	MS	MS	7	YF12, pu splashes, sl kn, N sk
Q126-5	330	286	170	6	<60	0	0	0	0	0	C	RS-SN	R-O	MT-SF	MS-MD	MD	8	pu splashes, c-y Fl, nice, uniform
AF6225-1	301	267	159	2	69	10	10	30	0	0	Y-C	RS-SN	R	R-SF	MD	D	7	Rd, GC, YF1 1, ok, st
<b>Red-skinned clones</b>																		
Chieftain	377	284	100	22	<60	0	0	0	10	0	LtPi	RS	R-O	SF-MT	MS	MS	5	kn! SG, sp
AF6262-3	254	213	75	13	74	0	0	10	0	0	Dpu-B	RS-SN	R-O	R-SF	S-MS	S-MS	6	kn, st, ss, yld, uniform
Peter Wilcox	190	155	55	6	65	0	0	0	0	0	Dpu	RS	R-O	R-SF	S	MS-MD	6	SS, YF11
Dk. Red Norland	156	130	46	7	<60	0	0	0	0	0	Pi	RS	R-O	MT-SF	MS-MD	MD-D	6	IL, rot
R219-1	110	47	17	7	69	0	0	50	10	0	Dpi	RS-SN	O-L	R-MT	S-MS	S	6	kn, pears, pts
NDAF13296Y-3	227	210	74	3	<60	0	0	0	0	0	Pi	RS	R	SF-R	S-MS	MS	6	ok, fairly uniform
AF6289-2	149	139	49	3	61	0	0	0	0	0	Pi	S-RS	R-O	MT-SF	S-MS	MS-MD	7	CF1
AF6287-6	102	88	31	0	60	0	0	10	0	0	Dpu	RS	R	R-MT	MS-MD	MS	8	nice, low yld, pu-wFL
AF6286-1	163	125	44	4	61	0	0	30	0	0	Dpu	RS-SN	R	R-MT	MS-MD	MS-MD	8	mottled lt Pu Fl, dark, nice, kn

<sup>1</sup> -1.0 is excluded from specific gravity readings.

<sup>2</sup> -See footnotes in Table 1.

Long Island Table 11. Early Selection clones that were dropped due to poor yield and/or appearance in a non-replicated observational trial at Riverhead, NY, 2016.

Clone	Yield (cwt/A)		% of	%	Spec. <sup>1</sup>	% Internal Defects					Color	Texture	Shape	Depth	Eye Depth		Appear- ance	Comments <sup>1</sup>
	Total	2-4	standard	Defects	Grav.	HH	BC	Sl.	M	S					Lateral	Apical		
			2 to 4															
<b>Season-107 days</b>																		
<b>White-skinned Clones</b>																		
Q112-5	0	0	0	0	0	0	0	0	0	0	W-C	S	O	MT-R	S	S	6	Sp, bright, low yld
AF6259-1	0	0	0	0	0	0	0	0	0	0	C-Bu	SN-N	R-O	R-MT	MS	MD	5	Big, rot, low yld
AF6236-7	0	0	0	0	0	0	0	0	0	0	C-Bu	RS-SN	R-O	R-SF	S	MS-MD	5	Rot, lumpy
AF6221-3	0	0	0	0	0	0	0	0	0	0	Bu	N	R	R-SF	S-MS	S-MS	5	LOW YLD
NDAF1393Y-4	0	0	0	0	0	0	0	0	0	0	Bu	SN	R	SF-R	S-MS	MS	4	Pi splashes, rot, st, sc!
COAF14207-3	0	0	0	0	0	0	0	0	0	0	Y	RS-SN	R	R-SF	MS	MS-MD	4	yld! Plants, sp, kn, SG, IL
COAF14206-3	0	0	0	0	0	0	0	0	0	0	Y-Bu	RS-SN	R	R-SF	MS-MD	MD	4	low yld, Kn, small!
AF6226-6	0	0	0	0	0	0	0	0	0	0	Y-Bu	SN-N	R-O	R	MS-MD	MS-MD	4	kn, st, SG, yld, sc, SED
<b>Red Skinned Clones</b>																		
AF6280-1	0	0	0	0	0	0	0	0	0	0	Dpi-R	N	R-O	MT-SF	S-MS	MS	5	low yld, small
AF6271-5	0	0	0	0	0	0	0	0	0	0	Pi-Dpi	SN	R	R	S	S-MS	6	low yld, small
AF6183-12	0	0	0	0	0	0	0	0	0	0	LtPi-Pi	RS	R-O	SF-MT	MS	MS-MD	4	st! yld, sc, L, rot
R25-1	0	0	0	0	0	0	0	0	0	0	LtPi	RS	O-L	R-MT	S-MS	S	5	Lt PiFl, fingerling, rot, Big
R20-3	0	0	0	0	0	0	0	0	0	0	VLtPi	SN-N	O-R	R-MT	MS	S	5	YFl2, Sp, low yld
NDAF13296Y-4	0	0	0	0	0	0	0	0	0	0	Pi	S-RS	R-O	MT-SF	MS	MD	5	kn, SG, sc
NDAF13273-1	0	0	0	0	0	0	0	0	0	0	Pi-Dpi	S	R-O	MT-SF	MS	MS-MD	6	low yld!
NDAF13176CB-2	0	0	0	0	0	0	0	0	0	0	Dpi	RS	R	R	S	MS	5	Irr! Low yld! Sl sc
NDAF13158BY-2	0	0	0	0	0	0	0	0	0	0	DPI	RS-SN	R-O	R-MT	S	S	7	L, Sc!! yld
NDAF13138BY-1	0	0	0	0	0	0	0	0	0	0	Pu	RS	R	R	S	MS-MD	8	bright, pretty, low yld!
NDAF13136Y-5	0	0	0	0	0	0	0	0	0	0	Pi	RS-SN	R	R	MS	MS-MD	6	low yld

<sup>1</sup> -See footnotes in Table 1.



Harvesting plots on Mount Pleasant