

Florida Potato Variety Trial Report, 2016



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Florida Potato Variety Trial Report, 2016

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Photograph

Cover photos: Potato variety trials at the Hastings Agricultural Extension Center (HAEC) Research Farm: canopy April 6th, 2015; 4 of bulk tubers May 13th, 2016; mixed tubers May 23rd, 2016.

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Chapter 1. Introduction

General Potato Production Information

Potato clones were obtained from university, government, and industry breeding programs. Clones progress through the evaluation program following the track described in the Potato Variety Evaluation Flowchart (Fig.1).

Variety trials, unless noted, were conducted at the University of Florida/IFAS Hastings Agricultural Extension Center (AEC) Demonstration and Research Farm in Hastings, FL. The Hastings AEC Research Farm is part of the University of Florida/IFAS network of research and demonstration farms located around the state to conduct research on important horticultural crops. The soil at the field site is classified as Ellzey fine sand (sandy, siliceous, hyperthermic Arenic Ochraqualf; sand 93%, < 1% clay, < 6% silt).

The trials were conducted under conditions that represent the grower's practices for potato (*Solanum tuberosum* L.) production in the Tri-County Agricultural Area (TCAA) around Hastings, Florida. The research plots were irrigated with seepage and subsurface drip irrigation for water table management. In this system, the perched water table depth is managed by water flow into irrigation furrows that evenly separate each bed. Potatoes were grown in 60 feet wide beds consisting of sixteen raised rows. The spacing between rows was 40 inches (center to center). A clay layer underlies the topsoil at a depth of 3 to 5 feet in the Tri-County Agricultural Area (TCAA).

Potatoes were planted following a sorghum/sudan grass summer cover crop (variety: Sugargrazer). The cover crop was incorporated into the potato beds in October, 2015. Potato beds were fumigated with Pic-Clor 60, 11 gal/A (1,3-dichloropropene 39%, and chloropicrin 59.4%) in December 2015. Fertilizer (14-6-12, 100 lb/acre N granular) was incorporated into the beds prior to planting.

Potato seed pieces were whole and hand cut tubers weighing approximately 2.5 oz and were dusted with fungicide (Maxim) prior to being planted. They were hand planted on an 8-inch within row spacing unless otherwise noted. Regent (3.0 oz/A), Quadris (10.4 oz/A), and Vydate C-LV (68 oz/A) were applied in a banded spray in the furrow after planting but before the seed was covered with soil. Boundary (24 oz/A) was broadcast sprayed at "boarding off" for weed control. Fungicides and insecticides were applied on a schedule during the season based on IPM practices. One side-dress fertilizer application (14-0-12, 100 lb/acre N granular) was made around plant emergence in all trials unless otherwise noted.

Plant growth characteristics were rated during the season using the rating scale listed in Table 1. An initial stand count was done around 30 days after planting. The final stand count, plant vigor rating, and vine type rating were done around 45 days after planting. The vine maturity rating was done around 80 days after planting. No growth enhancers or chemicals to enhance skin color were used in any trial unless otherwise noted.

Fresh market tablestock variety plots were vine-killed by chemical desiccation with diquat dibromide (Reglone, 2 pt/A). Plots were harvested with a single-row, commercial potato harvester. Potatoes were graded using commercial grading equipment. Culls were removed and remaining potatoes were separated into six size classes and weighed. Specific gravity was measured on a random 20-tuber sample (less if not enough tubers available) from each plot using the weight-in-air/weight-in-water method. A random sample was rated for external appearance characteristics. External tuber quality characteristics were rated using the rating scale listed in Table 2. A second random 20-tuber sample (less if not enough tubers available) was collected from each plot and each tuber was cut into fourths and rated for hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC), and enlarged lenticel. BC was rated as light, moderate, or heavy based on incidence.

Sub-samples of potatoes from the USPB/SFA trial were shipped to Utz Quality Foods. Chips were prepared following the procedures outlined in the Snack Food Association Chipping Potato Handbook (1995). Chips fried by Utz utilized the Hunter Lab rating scale.

Seasonal Weather and Growing Conditions

Daily rainfall and temperatures are reported in Appendix 1. The data reported was collected at a University weather station located at the UF/IFAS Hastings AEC Research Farm. Real-time and historic weather data from the weather station can be accessed at: <http://fawn.ifas.ufl.edu/> .

Overall growing conditions for the 2016 growing season were rated as good. There was a good distribution of rainfall throughout the season with few large rainfall events (e.g. March 24th with 1.38" and May 17th to 20th with cumulative 3.39"). Relatively good stands and plant vigor were observed. Overall temperatures were near normal for the season. There were no freeze events during the growing season. Total and marketable yields were good for most clones. Overall tuber specific gravity was near normal for most varieties.

Production

There were no major changes to the production system in 2016.

Figure 1. Potato Variety Program Evaluation Flowchart.

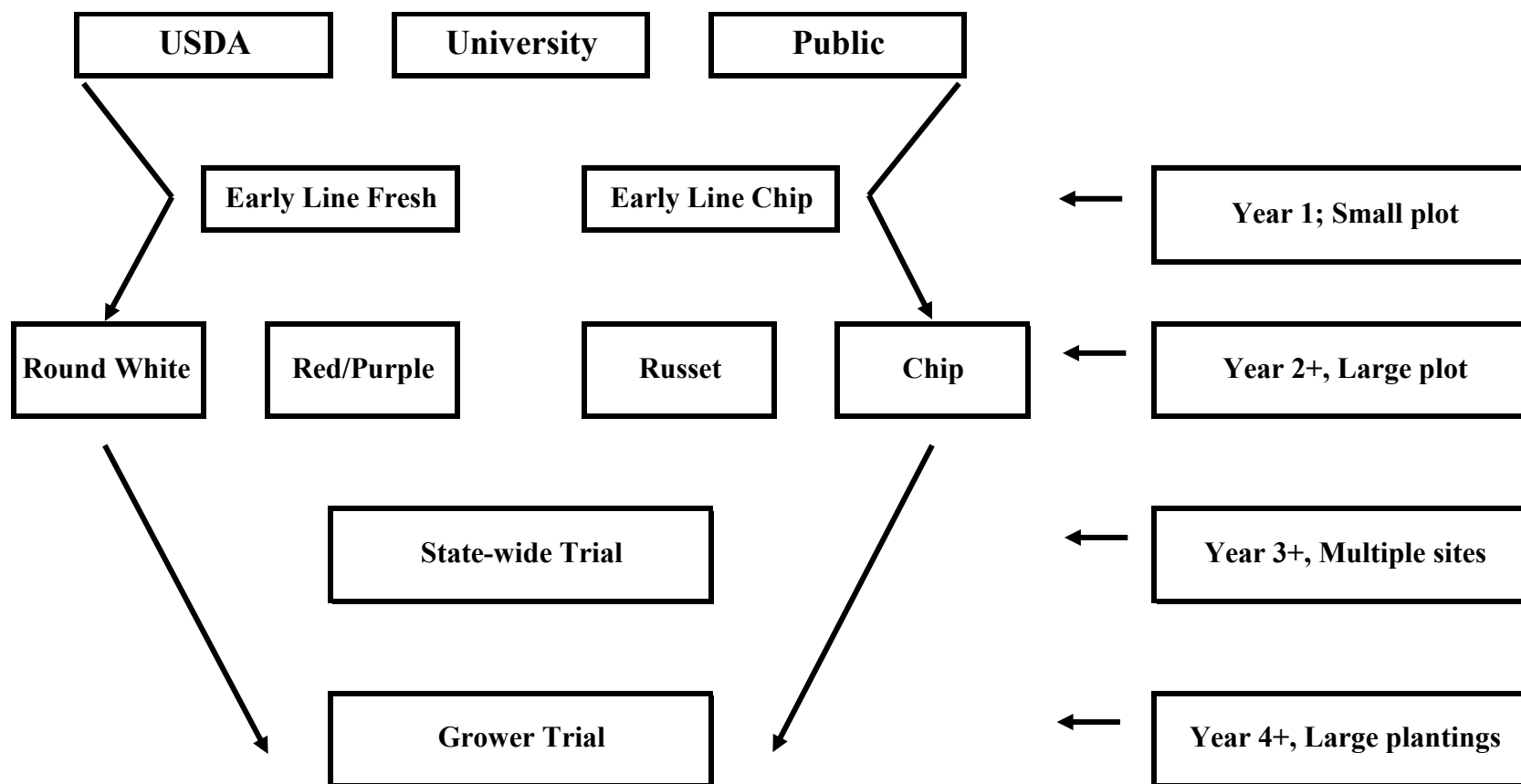


Table 1. Plant growth characteristics.

Rating	Early Vigor (plant height)	Vine Type	Vine Maturity at Harvest/Vine Kill
1	no emergence	decumbent – poor	dead
2	leaves in rosette	decumbent – fair	+ -
3	plants < 2 in	decumbent – good	yellow and dying
4	plants 2 to 4 in	spreading – poor	+ -
5	plants 4 to 6 in	spreading – fair	moderately senesced
6	plants 6 to 8 in	spreading – good	+ -
7	plants 8 to 10 in	upright – poor	starting to senesce
8	plants 10 to 12 in	upright – fair	+ -
9	plants > 12 in	upright – good	green and vigorous

Adapted from Sisson and Porter, 2002.

Table 2. External and Internal Potato Tuber Characteristics.

	Internal	Skin	Skin	Tuber	Eye	Overall
Rating	Flesh Color	Color	Texture	Shape	Depth	Appearance
1	White	Purple	Partial Russet	Round	Very Deep	Very Poor
2	Cream	Red	Heavy Russet	Mostly Round	+ -	+ -
3	Light Yellow	Pink	Mod. Russet	Round to Oblong	Deep	Poor
4	Medium Yellow	Dark Brown	Light Russet	Mostly Oblong	+ -	+ -
5	Dark Yellow	Brown	Netted	Oblong	Intermediate	Fair
6	Pink	Tan	Slightly Netted	Oblong to Long	+ -	+ -
7	Red	Buff	Mod. Smooth	Mostly Long	Shallow	Good
8	Blue	White	Smooth	Long	+ -	+ -
9	Purple	Cream	Very Smooth	Cylindrical	Very Shallow	Excellent

Adapted from Sisson and Porter, 2002.

Chapter 2. USDA 2nd Year Potato Variety Trial

General Comments

A goal of the 2nd year USDA trial is to continue evaluating new clones for production potential in Florida. The entries in this trial were selected from an early generation clone trial conducted in 2015.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	January 29, 2016
Vine Kill Date	N/A
Harvest Date	May 2, 2016
Season Length	94 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	6 (Standard: Atlantic)
Number of Clones	78
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	10 ft (3.0 m)

Production Statistics

Early Vigor Ratings	45 DAP
Highest Total Yield	B3280-1 (496 cwt/acre or 55.6 T/ha)
Highest Marketable Yield	B3280-1 (262 cwt/acre or 29.4 T/ha)
Best Appearance Rating	B3264-4, B3269-10, B3275-2, BNC630-1 (7, good)

Table 3. Production statistics for the 2016 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Season-94 days												
B3252-1	72	17	7	27	39	34	0	0	0	34	0	1.048
B3252-2	67	4	2	29	61	10	0	0	0	10	0	1.057
B3255-1	157	83	34	10	28	55	0	7	0	62	7	1.065
B3255-2	96	56	23	13	24	57	7	0	0	64	7	1.071
B3255-3	140	67	28	9	25	66	0	0	0	66	0	1.056
B3255-4	63	15	6	26	49	24	0	0	0	24	0	1.050
B3255-5	81	17	7	32	44	24	0	0	0	24	0	1.090
B3257-8	181	118	49	5	23	72	0	0	0	72	0	1.065
B3257-9	93	49	20	10	33	39	8	10	0	57	18	1.091
B3259-1	192	139	58	4	19	62	15	0	0	77	15	1.070
B3260-2	128	97	40	4	13	83	0	0	0	83	0	1.095
B3260-5	185	112	46	8	19	59	14	0	0	73	14	1.074
B3260-6	184	138	57	5	17	78	0	0	0	78	0	1.055
B3260-8	172	118	49	3	13	57	0	27	0	84	27	1.059
B3261-2	168	62	26	22	39	38	0	0	0	38	0	1.069
B3261-3	134	76	32	12	30	58	0	0	0	58	0	1.070
B3263-1	176	83	34	6	40	48	0	6	0	54	6	1.091
B3263-2	211	151	63	5	18	69	3	5	0	77	8	1.072
B3263-3	245	175	73	4	22	73	0	0	0	73	0	1.068
B3263-5	189	99	41	9	28	56	7	0	0	63	7	1.065
B3263-7	184	127	53	4	22	74	0	0	0	74	0	1.063
B3263-9	162	93	39	8	24	61	0	7	0	68	7	1.068
B3263-14	172	149	62	1	11	72	16	0	0	88	16	1.065
B3264-1	151	35	15	17	55	28	0	0	0	28	0	1.075
B3264-3	157	48	20	20	46	29	5	0	0	34	5	1.073
B3264-4	155	103	43	5	18	77	0	0	0	77	0	1.071
B3264-5	183	98	41	3	34	63	0	0	0	63	0	1.065
B3264-6	211	118	49	5	37	58	0	0	0	58	0	1.074
B3264-8	150	83	34	6	24	55	16	0	0	70	16	1.064
B3264-9	131	50	21	13	43	44	0	0	0	44	0	1.082

Table 3 (cont'd). Production statistics for the 2016 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
B3264-12	153	92	38	5	30	59	5	0	0	64	5	1.071
B3265-1	187	117	48	4	24	61	10	0	0	72	10	1.065
B3265-5	203	128	53	7	23	60	9	0	0	70	9	1.070
B3265-7	232	152	63	6	25	69	0	0	0	69	0	1.072
B3265-9	213	115	48	7	29	51	13	0	0	64	13	1.066
B3265-17	197	157	65	4	16	70	6	4	0	80	10	1.081
B3265-28	123	48	20	9	44	47	0	0	0	47	0	1.076
B3266-1	199	89	37	10	43	47	0	0	0	47	0	1.087
B3268-3	177	118	49	6	16	70	8	0	0	79	8	1.065
B3269-10	176	131	54	3	10	87	0	0	0	87	0	1.068
B3270-2	174	80	33	11	39	50	0	0	0	50	0	1.070
B3270-4	169	91	38	7	35	58	0	0	0	58	0	1.080
B3270-8	189	148	61	3	18	65	4	10	0	80	14	1.062
B3270-10	176	90	37	8	39	53	0	0	0	53	0	1.074
B3271-3	149	84	35	3	31	67	0	0	0	67	0	1.065
B3272-4	195	108	45	7	36	57	0	0	0	57	0	1.073
B3272-7	229	139	57	7	29	63	0	0	0	63	0	1.075
B3272-8	115	37	15	16	52	32	0	0	0	32	0	1.065
B3274-1	59	10	4	26	56	18	0	0	0	18	0	1.044
B3274-3	77	3	1	28	69	4	0	0	0	4	0	1.054
B3275-1	89	3	1	34	62	4	0	0	0	4	0	1.050
B3275-2	157	106	44	3	19	60	12	6	0	78	18	1.057
B3278-1	166	65	27	11	45	44	0	0	0	44	0	1.063
B3278-3	164	122	51	7	17	70	0	7	0	77	7	1.060
B3279-1	147	28	12	16	63	21	0	0	0	21	0	1.045
B3280-1	496	262	109	8	37	55	0	0	0	55	0	.
B3281-1	103	42	18	12	43	46	0	0	0	46	0	1.060
B3281-2	193	97	40	6	31	63	0	0	0	63	0	1.078
B3283-1	203	161	67	5	16	70	0	10	0	79	10	1.064
BNC623-1	210	96	40	6	46	48	0	0	0	48	0	1.064

Table 3 (cont'd). Production statistics for the 2016 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
BNC623-2	196	172	71	2	7	74	7	10	0	91	17	1.087
BNC626-3	206	165	69	1	12	50	7	30	0	86	36	1.063
BNC626-4	129	107	44	2	13	66	20	0	0	85	20	1.085
BNC626-7	179	137	57	3	14	57	17	9	0	83	26	1.069
BNC626-8	202	163	68	2	16	66	11	5	0	82	16	1.086
BNC626-13	156	97	40	3	28	41	28	0	0	68	28	1.067
BNC626-14	203	129	54	7	25	61	3	5	0	68	8	1.066
BNC626-15	235	162	67	3	25	60	12	0	0	72	12	1.060
BNC627-4	138	108	45	2	15	79	4	0	0	83	4	1.054
BNC630-1	123	55	23	2	29	69	0	0	0	69	0	1.058
BNC642-6	97	27	11	18	50	33	0	0	0	33	0	1.056
BNC644-3	161	93	38	4	27	62	0	6	0	68	6	1.072
BNC646-1	231	203	84	1	10	78	11	0	0	89	11	1.068
BNC646-3	219	157	65	3	23	74	0	0	0	74	0	1.067
BNC647-3	185	106	44	1	34	65	0	0	0	65	0	1.044
BNC648-1	176	156	65	2	10	69	12	8	0	89	20	1.052
BNC650-1	193	132	55	4	26	69	0	0	0	69	0	1.045
BNC650-3	203	165	69	1	4	58	20	17	0	94	36	1.078
Atlantic	256	241	100	0	3	71	10	16	0	97	26	1.077
Elkton	246	195	81	2	18	59	0	20	0	80	20	1.065
H. Blackwell	202	142	59	8	16	58	9	9	0	77	19	1.074
Snowden	244	183	76	4	20	72	0	4	0	76	4	1.070
Peter Wilcox	188	140	58	3	22	76	0	0	0	76	0	1.062
Fabula	151	118	49	0	13	74	7	6	0	87	13	1.044

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

Table 4. Plant growth and tuber characteristics for the 2016 USDA 2nd Year Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3252-1	100	7	9	6						5	4
B3252-2	100	8	9	5						5	4
B3255-1	88	7	9	7						4	4
B3255-2	100	7	9	7						5	3
B3255-3	100	7	9	6						5	4
B3255-4	100	7	9	6						6	3
B3255-5	100	7	9	7						5	3
B3257-8	100	9	6	7						5	3
B3257-9	100	7	9	6						5	3
B3259-1	100	7	9	9						5	2
B3260-2	100	6	9	8						5	3
B3260-5	100	7	9	8						6	3
B3260-6	88	6	9	8						5	4
B3260-8	100	7	9	9						4	3
B3261-2	100	9	9	7						3	4
B3261-3	100	8	9	7						4	3
B3263-1	100	8	9	7						5	3
B3263-2	100	6	9	9						5	2
B3263-3	100	8	9	9						4	2
B3263-5	100	8	9	7						4	3
B3263-7	100	4	9	9						4	3
B3263-9	100	5	9	9						4	4
B3263-14	100	9	6	7						5	2
B3264-1	100	8	9	8						4	3
B3264-3	100	8	9	7						6	3
B3264-4	100	7	9	9						7	4
B3264-5	100	7	9	7						5	3
B3264-6	100	8	9	8						6	4
B3264-8	100	8	9	7						5	4
B3264-9	100	7	9	7						5	3

Table 4 (cont'd). Plant growth and tuber characteristics for the 2016 USDA 2nd Year Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3264-12	100	8	9	7						5	3
B3265-1	100	8	9	8						5	3
B3265-5	100	9	9	6						5	3
B3265-7	100	8	9	7						5	4
B3265-9	88	9	9	7						6	3
B3265-17	100	8	9	8						5	2
B3265-28	100	5	9	7						5	3
B3266-1	100	9	9	7						5	3
B3268-3	100	6	9	8						4	3
B3269-10	100	7	9	7						7	3
B3270-2	100	9	9	7						5	3
B3270-4	100	7	9	8						6	3
B3270-8	100	8	9	8						5	2
B3270-10	100	7	9	7						6	3
B3271-3	100	9	9	6						6	3
B3272-4	100	9	9	7						5	3
B3272-7	88	9	9	7						5	4
B3272-8	100	9	6	6						5	3
B3274-1	100	8	9	8						4	3
B3274-3	100	7	9	7						4	4
B3275-1	100	6	9	9						4	4
B3275-2	100	6	9	9						7	3
B3278-1	100	6	8	8						6	3
B3278-3	100	7	9	7						5	3
B3279-1	100	8	9	8						6	4
B3280-1	100	7	9	5						.	1
B3281-1	100	7	9	7						5	3
B3281-2	100	8	9	7						5	3
B3283-1	100	7	9	7						4	3
BNC623-1	100	7	9	9						5	3

Table 4 (cont'd). Plant growth and tuber characteristics for the 2016 USDA 2nd Year Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
BNC623-2	100	7	9	8						5	2
BNC626-3	100	7	9	9						6	2
BNC626-4	100	7	9	8						5	3
BNC626-7	100	9	9	7						5	2
BNC626-8	100	7	9	8						6	2
BNC626-13	100	9	9	7						6	4
BNC626-14	100	9	9	7						5	3
BNC626-15	100	8	9	8						6	2
BNC627-4	100	8	9	7						6	3
BNC630-1	100	8	9	7						7	4
BNC642-6	100	6	9	8						6	3
BNC644-3	100	8	9	5						5	4
BNC646-1	100	9	9	7						6	2
BNC646-3	100	8	9	7						5	2
BNC647-3	88	4	9	9						6	3
BNC648-1	88	6	9	9						6	2
BNC650-1	100	5	9	8						5	3
BNC650-3	100	6	9	8						4	3
Atlantic	88	6	9	9						4	-
Elkton	100	7	9	9						6	2
H. Blackwell	100	8	9	8						6	2
Snowden	100	8	9	8						5	2
Peter Wilcox	100	6	9	8						6	2
Fabula	88	5	9	5						6	3

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 8 for 10 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 5. External and internal defects for the 2016 USDA 2nd Year Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
B3252-1	0	0	0	31	31	0	0	0	0	10	0	0	0
B3252-2	0	0	0	43	43	0	11	0	0	0	0	0	0
B3255-1	0	0	0	15	15	0	0	0	22	11	0	0	0
B3255-2	0	0	0	8	8	0	0	0	0	0	0	0	0
B3255-3	0	0	4	24	28	0	0	0	0	11	11	0	0
B3255-4	0	0	0	0	0	0	0	0	0	0	0	0	0
B3255-5	0	0	0	15	15	0	0	0	0	0	0	0	0
B3257-8	0	0	0	10	10	0	0	0	0	0	0	0	0
B3257-9	0	0	3	5	7	0	0	0	0	0	0	0	0
B3259-1	0	0	0	6	6	0	0	0	0	0	0	0	0
B3260-2	0	0	3	6	9	0	0	0	0	0	0	0	0
B3260-5	0	0	7	10	17	0	0	0	0	0	0	0	0
B3260-6	2	0	1	0	3	0	0	0	0	5	0	0	0
B3260-8	6	0	0	12	18	0	0	0	0	0	0	0	0
B3261-2	0	0	0	4	4	0	0	0	0	5	0	0	0
B3261-3	0	0	2	0	2	0	0	0	0	0	0	0	0
B3263-1	5	0	0	8	13	0	0	0	0	0	0	0	0
B3263-2	2	0	0	5	7	0	0	0	0	0	0	0	0
B3263-3	0	0	0	3	3	0	0	0	5	0	0	0	0
B3263-5	0	0	6	10	17	0	0	0	0	0	0	0	0
B3263-7	0	0	0	7	7	0	0	0	0	0	0	0	0
B3263-9	0	0	0	15	15	0	0	0	0	10	0	0	0
B3263-14	0	0	0	2	2	0	5	0	5	0	0	0	0
B3264-1	0	0	0	17	17	0	0	0	0	0	0	0	0
B3264-3	0	0	0	11	11	0	0	0	0	0	0	0	0
B3264-4	2	0	0	11	14	0	0	0	15	0	0	0	0
B3264-5	0	0	0	15	15	0	0	0	0	0	0	0	0
B3264-6	0	0	0	4	4	0	0	0	11	21	0	0	0
B3264-8	0	0	12	10	22	0	0	0	0	5	0	0	0
B3264-9	0	0	0	13	13	0	0	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2016 USDA 2nd Year Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
B3264-12	0	0	0	7	7	0	0	0	0	0	0	0	0
B3265-1	0	0	3	10	13	0	0	0	0	0	0	0	0
B3265-5	0	0	0	10	10	0	0	0	0	0	0	0	0
B3265-7	0	0	1	5	6	0	0	0	0	10	0	0	0
B3265-9	0	0	2	13	15	0	0	0	0	0	0	0	0
B3265-17	0	0	0	0	0	0	5	0	0	0	0	0	0
B3265-28	0	0	0	16	16	0	0	0	0	0	0	0	0
B3266-1	0	2	0	4	6	0	0	0	0	0	0	0	0
B3268-3	0	0	9	7	15	0	0	0	0	0	0	0	0
B3269-10	0	0	7	7	15	0	0	0	0	0	0	0	0
B3270-2	0	0	0	8	8	0	0	0	0	0	0	0	0
B3270-4	0	0	5	2	7	0	0	0	0	0	0	0	0
B3270-8	0	0	0	2	2	0	0	0	0	0	0	0	0
B3270-10	0	0	0	3	3	0	0	0	0	0	0	0	0
B3271-3	0	0	1	14	15	0	0	0	0	0	0	0	0
B3272-4	0	0	0	3	3	0	0	0	5	0	0	0	0
B3272-7	0	0	3	1	4	0	0	0	5	10	0	0	0
B3272-8	0	0	0	0	0	0	0	0	0	0	0	0	0
B3274-1	0	0	0	0	0	0	0	0	0	0	0	0	0
B3274-3	0	0	0	4	4	0	10	0	5	15	0	0	0
B3275-1	0	0	0	0	0	0	11	0	0	16	0	0	0
B3275-2	0	0	0	13	13	0	0	0	0	0	0	0	0
B3278-1	0	0	0	12	12	0	0	0	0	0	0	0	0
B3278-3	0	0	0	3	3	0	0	0	0	0	0	0	0
B3279-1	6	1	0	4	11	0	0	0	5	10	0	0	0
B3280-1	0	0	0	5	5
B3281-1	0	0	0	10	10	0	0	0	0	0	0	0	0
B3281-2	2	0	0	18	19	0	10	0	0	0	0	0	0
B3283-1	0	0	0	0	0	0	0	0	0	0	10	0	0
BNC623-1	0	0	3	2	5	0	0	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2016 USDA 2nd Year Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
BNC623-2	0	0	2	2	4	0	0	0	0	0	0	0	0
BNC626-3	0	0	2	5	7	0	0	0	0	0	0	0	0
BNC626-4	0	0	0	3	3	0	0	0	0	0	0	0	0
BNC626-7	0	0	0	7	7	0	0	0	0	0	0	0	0
BNC626-8	0	0	0	2	2	0	0	0	0	0	0	0	0
BNC626-13	0	0	0	9	9	0	0	0	0	5	0	0	0
BNC626-14	0	0	2	5	7	0	0	0	0	0	0	0	0
BNC626-15	0	0	1	4	4	0	0	0	0	0	0	0	0
BNC627-4	0	0	3	3	6	0	0	0	0	0	0	0	0
BNC630-1	0	0	3	33	36	0	0	0	10	0	0	0	0
BNC642-6	2	0	0	12	14	0	0	0	0	0	0	0	0
BNC644-3	0	0	1	14	16	0	15	0	0	0	0	0	0
BNC646-1	0	0	2	0	2	0	0	0	0	0	0	0	0
BNC646-3	0	0	0	3	3	0	0	0	0	0	0	0	0
BNC647-3	0	0	0	12	12	0	0	0	0	0	0	0	0
BNC648-1	0	0	0	0	0	0	0	0	0	0	0	0	0
BNC650-1	0	0	0	1	1	0	10	0	0	0	0	0	0
BNC650-3	0	0	0	14	14	0	0	0	0	0	0	0	0
Atlantic	3	0	0	0	3	0	16	0	0	5	0	0	0
Elkton	0	0	1	0	1	0	0	0	0	0	0	0	0
H. Blackwell	0	0	0	9	9	0	0	0	0	0	0	0	0
Snowden	0	0	1	0	1	0	0	0	0	0	0	0	0
Peter Wilcox	0	0	0	2	2	0	0	0	0	0	0	0	0
Fabula	0	0	0	10	10	0	0	0	0	0	0	0	0

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

Chapter 3. USDA 3rd Year Potato Variety Trial

General Comments

A goal of the 3rd year USDA trial is to continue evaluating new clones for production potential in Florida. The entries in this trial were selected from the 2nd year clone trial conducted in 2015.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 11, 2016
Vine Kill Date	N/A
Harvest Date	May 18, 2016
Season Length	97 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	6 (Standard: Atlantic)
Number of Clones	54
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	16 ft (4.9 m)

Production Statistics

Early Vigor Ratings	50 DAP
Highest Total Yield	B3179-10 (595 cwt/acre or 66.7 T/ha)
Highest Marketable Yield	B3179-10 (411 cwt/acre or 46.1 T/ha)
Best Appearance Rating	B3194-1, B3195-1, B3200-3, B3210-5, B3222-2, BNC549-1 (9, excellent)

Table 6. Production statistics for the 2016 USDA 3rd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Season-97 days												
B3174-4	315	244	77	4	9	66	19	2	0	87	21	1.075
B3175-5	380	279	89	5	20	74	1	0	0	75	1	1.067
B3175-8	422	328	104	3	12	63	15	7	0	85	22	1.062
B3175-15	346	235	75	8	21	56	16	0	0	72	16	1.066
B3176-1	373	275	87	4	18	44	16	19	0	79	35	1.062
B3176-2	492	356	113	4	16	47	16	17	0	80	33	1.057
B3177-6	452	371	118	4	10	68	10	9	0	87	19	1.069
B3177-9	403	259	82	6	20	73	2	0	0	74	2	1.059
B3178-2	338	240	76	6	14	64	8	8	0	80	16	1.069
B3179-5	546	382	121	5	21	74	0	0	0	74	0	1.066
B3179-10	595	411	130	6	22	65	4	3	0	71	7	1.064
B3182-1	359	168	53	15	38	44	3	0	0	47	3	1.077
B3183-6	519	401	127	4	17	70	6	3	0	79	9	1.081
B3187-11	258	96	30	20	42	37	0	0	0	37	0	1.061
B3191-6	296	264	84	4	5	57	33	0	0	91	33	1.063
B3192-2	379	286	91	5	19	65	7	5	0	77	12	1.071
B3193-2	328	246	78	4	9	69	15	3	0	87	18	1.065
B3194-1	372	250	79	8	25	67	0	0	0	67	0	1.079
B3194-3	454	228	72	13	37	50	0	0	0	50	0	1.069
B3194-5	387	242	77	8	29	63	0	0	0	63	0	1.070
B3194-8	262	198	63	6	8	54	32	0	0	87	32	1.064
B3195-1	151	88	28	18	23	54	5	0	0	59	5	1.065
B3195-2	376	248	79	8	24	69	0	0	0	69	0	1.064
B3195-5	457	197	62	16	38	45	0	0	0	45	0	1.069
B3195-8	375	227	72	8	30	56	6	0	0	62	6	1.090
B3195-9	409	273	87	10	24	65	2	0	0	67	2	1.076
B3195-11	382	281	89	8	19	61	11	1	0	74	12	1.076
B3198-9	469	387	123	2	10	79	6	3	0	88	9	1.069
B3198-13	368	217	69	7	29	65	0	0	0	65	0	1.069
B3200-3	360	296	94	4	11	68	8	10	0	86	18	1.069

Table 6 (cont'd). Production statistics for the 2016 USDA 3rd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
B3210-5	268	158	50	16	25	59	0	0	0	59	0	1.050
B3211-1	252	114	36	15	40	46	0	0	0	46	0	1.075
B3211-3	269	110	35	15	30	55	0	0	0	55	0	1.060
B3215-17	436	304	96	4	12	73	11	0	0	84	11	1.062
B3219-5	436	327	104	6	18	72	1	2	0	76	3	1.071
B3222-2	395	234	74	8	27	57	7	0	0	65	7	1.072
B3223-1	354	200	63	11	30	59	0	0	0	59	0	1.064
B3223-5	277	162	51	12	30	58	0	0	0	58	0	1.069
B3223-7	274	193	61	5	13	71	10	0	0	81	10	1.067
B3225-4	265	158	50	7	15	56	22	0	0	78	22	1.061
BNC537-3	376	296	94	3	13	59	18	7	0	84	25	1.082
BNC537-5	330	228	72	9	17	60	7	6	0	73	13	1.081
BNC537-7	311	190	60	10	24	61	0	5	0	66	5	1.071
BNC538-3	437	368	117	4	8	65	13	11	0	88	23	1.077
BNC539-1	467	405	128	3	9	68	13	7	0	88	20	1.074
BNC543-2	440	323	102	4	18	64	7	7	0	78	14	1.070
BNC549-1	258	117	37	3	51	45	0	0	0	45	0	1.081
BNC550-1	345	288	91	5	11	61	16	7	0	84	23	1.059
BNC555-4	377	295	94	5	17	70	5	4	0	78	9	1.062
BNC556-1	384	365	116	2	3	77	13	6	0	95	18	1.072
BNC559-1	361	286	91	3	17	80	0	0	0	80	0	1.083
BNC562-1	262	156	49	8	18	67	7	0	0	74	7	1.050
BNC567-2	360	228	72	12	25	63	0	0	0	63	0	1.060
BNC568-1	347	268	85	4	19	77	0	0	0	77	0	1.064
Atlantic	382	315	100	4	9	50	13	24	0	88	38	1.079
Elkton	296	238	76	4	10	63	11	12	0	86	23	1.074
H. Blackwell	280	166	53	10	27	45	6	11	0	62	17	1.071
Snowden	387	334	106	3	11	73	10	3	0	86	13	1.077
Peter Wilcox	346	214	68	9	29	57	5	0	0	62	5	1.073
Fabula	172	150	47	2	8	50	13	27	0	90	40	1.053

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

Table 7. Plant growth and tuber characteristics for the 2016 USDA 3rd Year Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3174-4	96	9	9	6						6	3
B3175-5	100	9	6	7						7	1
B3175-8	92	9	9	8						4	2
B3175-15	100	9	6	4						6	2
B3176-1	92	9	9	7						6	2
B3176-2	100	9	6	6						5	4
B3177-6	100	9	9	7						6	4
B3177-9	100	9	9	7						6	2
B3178-2	100	9	9	7						6	2
B3179-5	96	9	6	7						5	2
B3179-10	100	9	6	6						6	1
B3182-1	100	9	6	4						7	3
B3183-6	100	9	6	6						8	1
B3187-11	100	9	6	2						6	3
B3191-6	100	9	9	5						7	2
B3192-2	96	9	6	5						5	2
B3193-2	100	9	6	4						6	2
B3194-1	100	9	6	6						9	2
B3194-3	100	9	6	5						8	2
B3194-5	100	9	6	5						7	2
B3194-8	67	8	6	7						8	3
B3195-1	100	9	6	4						9	4
B3195-2	96	9	6	5						6	2
B3195-5	100	9	6	4						8	2
B3195-8	100	9	6	5						7	2
B3195-9	100	9	6	6						8	1
B3195-11	100	9	6	4						7	1
B3198-9	100	9	6	6						7	1
B3198-13	100	9	6	4						7	2
B3200-3	96	9	6	6						9	1

Table 7 (cont'd). Plant growth and tuber characteristics for the 2016 USDA 3rd Year Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3210-5	100	9	6	5						9	3
B3211-1	100	9	6	2						6	3
B3211-3	100	9	6	2						8	4
B3215-17	100	9	6	5						7	4
B3219-5	100	9	6	6						8	1
B3222-2	100	9	6	4						9	2
B3223-1	92	9	6	6						7	2
B3223-5	100	9	6	4						8	3
B3223-7	96	9	6	5						7	3
B3225-4	100	9	6	4						7	4
BNC537-3	100	9	6	7						6	1
BNC537-5	100	9	6	7						8	2
BNC537-7	100	9	6	5						7	2
BNC538-3	92	9	9	6						6	2
BNC539-1	100	9	9	7						5	2
BNC543-2	100	9	6	6						6	1
BNC549-1	100	9	6	6						9	3
BNC550-1	96	9	9	7						7	2
BNC555-4	100	9	9	6						6	1
BNC556-1	100	9	9	7						6	1
BNC559-1	100	9	9	5						7	1
BNC562-1	100	9	6	3						7	4
BNC567-2	100	9	6	5						7	2
BNC568-1	96	9	9	6						6	1
Atlantic	100	9	9	7						7	-
Elkton	100	9	9	7						4	3
H. Blackwell	96	9	6	6						8	3
Snowden	96	9	9	5						7	1
Peter Wilcox	100	9	6	4						7	2
Fabula	100	8	6	7						7	3

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 24 for 16 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 8. External and internal defects for the 2016 USDA 3rd Year Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²							
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center			
											L	M	H	
B3174-4	0	0	8	3	11	0	10	0	0	0	0	0	0	0
B3175-5	0	0	0	2	2	0	0	0	0	0	0	0	0	0
B3175-8	0	0	2	6	9	0	0	0	0	0	0	0	0	0
B3175-15	0	0	2	4	5	0	0	0	0	0	0	0	0	0
B3176-1	0	0	6	0	6	0	5	0	0	0	0	0	0	0
B3176-2	0	0	6	4	10	0	10	0	0	10	0	0	0	0
B3177-6	0	0	4	1	5	0	0	0	5	5	0	0	0	0
B3177-9	0	0	2	11	13	0	0	0	0	0	0	0	0	0
B3178-2	0	0	7	5	11	0	0	0	0	0	0	5	0	0
B3179-5	0	0	3	2	5	0	0	0	0	0	0	0	0	0
B3179-10	0	0	3	1	3	0	0	0	0	0	0	0	0	0
B3182-1	0	0	1	0	1	0	0	0	0	0	0	0	0	0
B3183-6	0	0	0	2	2	0	0	0	0	0	0	0	0	0
B3187-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B3191-6	0	0	0	2	2	0	0	0	0	0	0	0	0	0
B3192-2	0	0	2	0	2	0	0	0	0	0	0	0	0	0
B3193-2	0	0	4	10	14	0	0	0	0	0	0	0	0	0
B3194-1	0	0	0	0	0	0	0	0	0	0	5	0	0	0
B3194-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B3194-5	0	0	0	1	1	0	0	0	0	0	0	0	0	0
B3194-8	0	0	7	6	13	0	5	0	0	0	0	5	0	0
B3195-1	0	0	0	2	2	0	5	0	0	0	0	0	0	0
B3195-2	0	0	1	3	4	0	0	0	0	0	0	0	0	0
B3195-5	0	0	0	5	5	0	0	0	0	0	0	0	0	0
B3195-8	0	0	3	0	3	0	0	0	0	0	0	0	0	0
B3195-9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B3195-11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B3198-9	0	0	1	5	6	0	0	0	0	0	0	0	0	0
B3198-13	0	0	0	9	9	0	0	0	0	0	0	0	0	0
B3200-3	0	0	1	3	4	0	0	0	0	0	0	0	0	0

Table 8 (cont'd). External and internal defects for the 2016 USDA 3rd Year Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
B3210-5	0	0	0	0	0	0	0	0	0	0	0	0	0
B3211-1	0	0	0	1	1	0	0	0	0	0	0	0	0
B3211-3	0	0	1	24	25	0	0	0	0	5	0	0	0
B3215-17	0	0	0	16	17	0	0	0	0	5	0	0	0
B3219-5	0	0	0	1	1	0	0	0	0	0	0	0	0
B3222-2	0	1	1	7	9	0	0	0	0	0	0	0	0
B3223-1	0	0	0	4	4	0	0	0	0	0	0	0	0
B3223-5	0	0	0	0	0	0	0	0	0	0	0	0	0
B3223-7	0	0	13	0	13	0	0	0	0	0	0	0	0
B3225-4	0	0	0	23	23	0	0	0	0	0	0	0	0
BNC537-3	0	0	7	0	7	0	0	0	0	0	0	0	0
BNC537-5	0	0	6	0	6	0	0	0	0	0	0	0	0
BNC537-7	2	0	1	4	7	0	0	0	0	0	0	0	0
BNC538-3	0	0	4	0	4	0	5	0	0	0	0	0	0
BNC539-1	0	0	1	0	1	0	0	0	0	0	0	0	0
BNC543-2	0	0	5	0	5	0	0	0	0	0	0	0	0
BNC549-1	0	0	0	0	0	0	0	0	0	0	0	0	0
BNC550-1	0	0	0	0	0	0	0	0	0	0	0	5	0
BNC555-4	0	0	0	0	0	0	0	0	0	0	0	0	0
BNC556-1	0	0	0	0	0	0	0	0	0	0	0	0	0
BNC559-1	0	0	0	1	1	0	0	0	0	0	0	0	0
BNC562-1	0	0	0	20	20	0	0	0	0	0	0	0	0
BNC567-2	0	0	0	0	0	0	0	0	0	0	0	0	0
BNC568-1	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic	0	0	6	0	6	0	0	0	0	0	0	0	0
Elkton	2	0	5	0	6	0	0	0	0	0	0	0	0
H. Blackwell	0	0	0	5	5	0	0	0	0	0	0	0	0
Snowden	0	0	0	0	0	0	0	0	0	0	0	0	0
Peter Wilcox	0	0	0	0	0	0	0	0	0	0	0	0	0
Fabula	0	0	3	0	3	0	0	0	0	0	0	0	0

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

Chapter 4. Fresh Market, Red, And Purple Potato Variety Trial

General Comments

A goal of the fresh market, red, and purple variety trial is to identify a round white, red, or purple potato that has better quality and production characteristics than the “standard” Red LaSoda. Identification of “specialty” potatoes that expand the varieties produced in Florida is also a priority. Established varieties were included to provide a baseline for comparison with the numbered clones.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 18, 2016
Vine Kill Date	May 9, 2016
Harvest Date	May 23, 2016
Season Length	81 days planting to vine kill; 95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	39 (Standard: Red LaSoda)
Number of Clones	10
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	4
Plot Size	20 ft (6.1 m)

Production Statistics

Early Vigor Ratings	53 DAP
Highest Total Yield	Electra (394 cwt/acre or 44.2 T/ha)
Highest Marketable Yield	Marcy (318 cwt/acre or 35.6 T/ha)
Best Appearance Rating	Elfe, Gioconda, Coronada, Julinka (9, excellent)

Table 9. Production statistics for the 2016 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-81 days</u>												
Anuschka	293	195	215	4	26	69	1	0	0	70	1	1.062
Elfe	264	125	137	7	41	51	0	0	0	52	0	1.056
Gioconda (VDZ99-188)	329	194	214	4	27	68	0	0	0	68	0	1.058
Coronada	216	83	91	7	46	47	0	0	0	47	0	1.054
Malou	170	97	107	10	32	58	0	0	0	58	0	1.058
Julinka	293	116	128	11	46	43	0	0	0	43	0	1.057
Viviana	173	91	100	8	31	59	2	0	0	60	2	1.062
Belmonda	296	170	186	4	32	63	1	0	0	64	1	1.063
Lilly	146	73	80	10	34	54	1	1	0	56	2	1.057
Electra	394	287	315	3	18	79	0	0	0	79	0	1.053
Kag	221	85	93	13	41	46	0	0	0	46	0	1.058
Maybell	268	200	219	2	9	79	9	1	0	89	10	1.062
Red Duck	194	99	108	8	34	57	1	0	0	58	1	1.062
105-2-W-06	282	158	174	5	35	60	0	0	0	60	0	1.059
Actrice	265	180	198	5	18	70	7	0	0	77	7	1.060
W2978-3	262	175	192	7	25	68	0	0	0	68	0	1.070
Bute	220	135	149	6	27	67	0	0	0	67	0	1.053
Olympus	261	192	211	5	21	74	0	0	0	74	0	1.068
Soraya	342	232	255	4	20	72	4	0	0	76	4	1.054
Francisca	299	128	141	8	44	48	0	0	0	48	0	1.062
NC414-2	244	122	134	13	35	52	0	0	0	52	0	1.080
NCB2607-3	155	100	110	10	21	69	0	0	0	69	0	1.065
Fabula	249	193	212	3	8	82	4	2	0	88	6	1.049
All Blue	132	22	24	20	63	16	0	0	0	16	0	1.066
Chieftain	273	228	250	2	8	85	4	1	0	90	5	1.058
Peter Wilcox	305	209	230	5	26	70	0	0	0	70	0	1.069
P. Wilcox (B1816-5)	259	169	186	6	26	67	1	0	0	68	1	1.070
Red LaSoda	166	91	100	2	27	67	2	1	0	70	3	1.059
LaChipper	235	151	166	6	17	72	4	2	0	77	6	1.066
Goldrush	262	186	204	3	21	71	4	1	0	76	5	1.067

Table 9 (cont'd). Production statistics for the 2016 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Russian Banana	120	4	4	33	64	3	0	0	0	3	0	1.065
Vivaldi	298	194	213	5	25	68	0	1	0	70	1	1.064
Dark Red Norland	202	145	159	4	16	75	3	2	0	79	4	1.059
Adirondack Blue	272	181	199	3	26	64	6	0	0	71	6	1.060
Lamoka	261	185	204	3	12	82	3	0	0	85	3	1.069
Satina	286	198	218	3	11	77	5	4	0	86	9	1.061
Pike	257	188	207	3	9	69	16	2	0	87	18	1.067
PHYTO 455	216	123	135	9	32	59	0	0	0	59	0	1.072
PHYTO 456	216	41	46	31	50	19	0	0	0	19	0	1.063
PHYTO 457	239	102	112	12	46	42	0	0	0	42	0	1.070
CO00277-2R-08F31	223	118	129	10	30	59	1	0	0	60	1	1.070
CO00405-1RF-08I21	196	3	3	45	53	2	0	0	0	2	0	1.061
CO99256-2R-07L31	234	122	134	8	34	57	1	0	0	58	1	1.065
Yukon Gold	120	77	85	6	12	82	0	0	0	82	0	1.061
French Fingerling	203	24	27	25	63	12	0	0	0	12	0	1.068
Marcy	359	318	350	2	6	82	7	3	0	93	10	1.067
Minegra	307	39	43	29	58	13	0	0	0	13	0	1.063
Perline	165	7	8	47	49	4	0	0	0	4	0	1.055
Baby Boomer	172	13	14	47	45	8	0	0	0	8	0	1.067
MSD ³	123	93		9	17	21	12	4	ns	18	13	0.018
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	0.0488	-	<0.0001	<0.0001	<0.0001

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5", B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

³Means separated within columns by Tukey's Studentized Range (HSD) Test.

Table 10. Plant growth and tuber characteristics for the 2016 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²					
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP
Anuschka	100	9	6	7	2	7	6	3	8	8
Elfe	98	9	6	6	2	7	7	4	8	9
Gioconda (VDZ99-188)	97	9	6	6	2	9	9	4	8	9
Coronada	99	9	6	6	2	9	8	3	8	9
Malou	98	9	6	4	2	7	7	2	7	7
Julinka	100	9	7	6	3	9	9	3	8	9
Viviana	99	9	6	4	2	9	8	2	7	6
Belmonda	99	9	7	7	2	7	7	2	8	7
Lilly	97	9	6	7	2	7	7	2	7	7
Electra	98	9	6	7	2	7	7	2	9	7
Kag	99	9	7	8	2	7	7	4	7	5
Maybell	81	9	8	8	2	7	7	6	6	6
Red Duck	97	9	6	7	3	3	7	4	7	6
105-2-W-06	98	9	8	7	1	9	9	3	6	7
Actrice	100	9	6	6	2	7	8	2	7	7
W2978-3	97	9	6	7	2	8	8	2	8	7
Bute	93	9	7	7	1	8	8	3	6	7
Olympus	99	9	7	6	1	6	5	1	9	8
Soraya	96	9	7	7	3	7	8	2	9	7
Francisca	99	9	7	7	3	7	7	3	7	6
NC414-2	99	9	6	6	9	1,9	8	2	4	5
NCB2607-3	98	8	6	6	2	2	8	2	7	7
Fabula	98	9	6	6	2	9	9	4	6	6
All Blue	98	9	6	5	9	1	7	3	6	6
Chieftain	98	9	9	7	1	2	7	2	7	7
Peter Wilcox	98	9	6	6	3	1	7	3	7	7
P. Wilcox (B1816-5)	98	9	6	6	3	1	7	3	7	7
Red LaSoda	98	9	6	5	1	2	8	2	6	7
LaChipper	96	9	6	6	1	7	7	2	5	6
Goldrush	98	9	8	6	1	5	3	6	7	7

Table 10 (cont'd). Plant growth and tuber characteristics for the 2016 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²					
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP
Russian Banana	100	8	6	7	2	9	9	6	8	6
Vivaldi	98	9	6	6	2	9	8	3	7	8
Dark Red Norland	98	9	6	5	1	2	7	3	9	7
Adirondack Blue	97	9	6	6	9	1	7	4	5	6
Lamoka	100	9	6	7	1	7	7	2	6	7
Satina	97	9	8	7	3	9	7	2	8	8
Pike	98	9	6	7	1	7	7	2	7	7
PHYTO 455	100	9	6	9	3	2	6	2	8	8
PHYTO 456	100	9	6	6	3,9	1	7	2	6	6
PHYTO 457	98	9	6	6	1	1	6	3	7	6
CO00277-2R-08F31	99	9	6	5	1	2	8	2	9	8
CO00405-1RF-08I21	98	9	6	5	1	2	9	6	9	8
CO99256-2R-07L31	99	9	6	5	1	2	8	4	8	8
Yukon Gold	98	9	8	6	3	9	9	2	8	7
French Fingerling	97	9	6	5	3	3	9	6	7	8
Marcy	97	9	7	8	1	6	5	2	6	7
Minegra	84	9	6	6	3	1	7	3	4	6
Perline	85	9	6	4	3	9	9	2	7	7
Baby Boomer	99	9	6	6	3	9	8	2	6	6

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 30 for 20 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Table 11. External and internal defects for the 2016 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Anuschka	1	0	0	5	6	0	0	0	1	0	0	0	0
Elfe	0	0	0	10	10	0	1	0	1	0	0	0	0
Gioconda (VDZ99-188)	0	0	3	11	13	0	3	0	3	1	0	0	0
Coronada	0	0	2	22	23	0	0	0	1	1	0	0	0
Malou	0	0	0	6	6	0	0	0	0	1	0	0	0
Julinka	0	0	0	8	8	0	0	0	0	0	0	0	0
Viviana	0	0	1	14	14	0	0	0	0	5	0	0	0
Belmonda	0	0	1	12	13	0	0	0	0	1	0	0	0
Lilly	0	0	1	11	12	0	0	0	3	0	0	0	0
Electra	0	0	1	9	9	0	0	0	0	0	0	0	0
Kag	0	0	0	23	23	0	0	0	0	0	0	0	0
Maybell	1	0	3	13	17	0	0	0	0	3	0	0	0
Red Duck	0	0	1	13	13	0	0	0	4	5	0	1	0
105-2-W-06	0	0	1	5	6	0	1	0	0	0	0	0	0
Actrice	0	0	0	12	12	0	0	0	0	1	0	0	0
W2978-3	0	0	0	3	3	0	0	0	0	1	0	0	0
Bute	1	0	0	7	8	0	0	0	0	1	0	0	0
Olympus	0	0	0	1	1	0	0	0	0	0	0	0	0
Soraya	0	0	0	10	10	0	0	0	1	1	0	0	0
Francisca	0	0	0	11	11	0	0	0	4	0	0	0	0
NC414-2	0	0	0	4	5	0	1	0	0	0	0	0	0
NCB2607-3	0	0	0	5	5	0	0	0	1	0	0	0	0
Fabula	1	0	1	10	11	0	0	0	3	4	0	0	0
All Blue	0	0	0	1	1	0	0	0	1	0	0	0	0
Chieftain	0	0	1	6	7	0	0	0	3	1	0	0	0
Peter Wilcox	0	0	0	1	2	0	0	0	3	0	0	0	0
P. Wilcox (B1816-5)	0	0	0	4	4	0	0	0	3	1	0	0	0
Red LaSoda	0	0	0	18	18	0	3	0	4	1	0	0	0
LaChipper	0	0	1	16	17	0	1	0	0	1	0	0	0
Goldrush	0	0	0	6	7	0	0	0	0	1	0	0	0

Table 11 (cont'd). External and internal defects for the 2016 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Russian Banana	0	0	0	0	0	0	0	0	0	0	0	0	0
Vivaldi	0	0	0	6	6	0	0	0	0	0	0	0	0
Dark Red Norland	0	0	0	11	11	0	0	0	0	0	0	0	0
Adirondack Blue	1	0	0	6	7	0	0	0	1	0	0	0	0
Lamoka	1	0	1	14	16	0	0	0	4	3	0	0	0
Satina	0	0	1	18	19	0	0	0	1	3	0	0	0
Pike	0	0	2	14	16	0	0	0	1	4	0	0	0
PHYTO 455	0	0	0	2	2	0	0	0	0	0	0	0	0
PHYTO 456	0	0	0	0	0	0	0	0	0	0	0	0	0
PHYTO 457	0	0	0	3	3	0	3	0	1	16	1	0	0
CO00277-2R-08F31	0	0	0	11	11	0	0	0	0	0	0	0	0
CO00405-1RF-08I21	0	0	1	0	1	0	0	0	0	0	0	0	0
CO99256-2R-07L31	0	0	0	11	12	0	0	0	0	1	0	0	0
Yukon Gold	0	0	1	21	22	0	0	0	3	1	0	0	0
French Fingerling	1	0	0	3	4	0	1	0	0	0	0	0	0
Marcy	1	0	0	3	4	0	0	0	1	0	0	0	0
Minegra	0	0	0	0	0	0	0	0	0	5	0	0	0
Perline	0	0	0	3	3	0	0	0	0	0	0	0	0
Baby Boomer	0	0	0	1	1	0	0	0	5	1	0	0	0
MSD ³	ns	ns	2	15	15	ns	ns	ns	ns	ns	ns	ns	ns
P Value	0.0813	-	<0.0001	<0.0001	<0.0001	-	0.7205	-	0.8077	0.2697	0.4843	0.4843	-

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

³Means separated within columns by Tukey's Studentized Range (HSD) Test.

Chapter 5. University of Maine Advanced Selection Potato Variety Trial

General Comments

A goal of the University of Maine advanced selection trial is to continue gathering data on these advanced potato selections for potential Florida production. The chipping “standard” Atlantic was included to provide a baseline for comparison with the numbered clones.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 3, 2016
Vine Kill Date	April 26, 2016
Harvest Date	May 12, 2016
Season Length	83 days planting to vine kill; 99 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	5 (Standard: Atlantic)
Number of Clones	39
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	4
Plot Size	20 ft (6.1 m)

Production Statistics

Early Vigor Ratings	49 DAP
Highest Total Yield	Atlantic (301 cwt/acre or 33.7 T/ha)
Highest Marketable Yield	Atlantic (236 cwt/acre or 26.5 T/ha)
Best Appearance Rating	AF5426-3 (8, very good)

Table 12. Production statistics for the 2016 University of Maine Advanced Selection Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-83 days</u>												
Atlantic	301	236	100	3	13	74	5	5	0	84	10	1.071
Elkton	219	163	69	4	19	75	0	2	0	78	2	1.065
H. Blackwell	258	156	66	9	25	65	0	0	0	66	0	1.069
Snowden	260	165	70	5	30	65	0	0	0	65	0	1.066
Yukon Gold	143	82	35	6	25	65	2	1	0	69	4	1.068
AF0338-17	268	170	72	6	24	65	5	1	0	70	5	1.061
AF4138-8	149	78	33	7	27	64	2	0	0	66	2	1.055
AF4157-6	209	139	59	4	24	70	1	1	0	72	1	1.064
AF4953-6	203	108	46	4	31	65	0	0	0	65	0	1.063
AF4985-1	224	160	68	3	15	77	4	1	0	81	4	1.057
AF5040-8	196	112	48	6	26	67	1	0	0	68	1	1.072
AF5245-1	168	71	30	14	42	43	1	0	0	44	1	1.067
AF5164-19	195	67	28	10	52	38	0	0	0	38	0	1.060
AF5312-1	225	116	49	7	38	54	1	1	0	55	1	1.057
AF4615-5	173	120	51	4	24	72	0	0	0	72	0	1.066
AF5225-1	219	125	53	8	29	62	1	0	0	63	1	1.059
AF5426-3	185	145	62	4	14	78	3	1	0	83	4	1.062
AF5435-7	205	135	57	4	17	65	7	8	0	80	15	1.062
WAF10131-11	139	86	37	9	25	62	0	4	0	66	4	1.051
AF5412-3	214	166	71	4	18	75	1	2	0	78	3	1.056
AF5414-1	177	83	35	9	42	48	1	0	0	48	1	1.062
NDAF102573-2	86	30	13	7	50	44	0	0	0	44	0	1.060
AF5469-2	182	63	27	9	55	36	0	0	0	36	0	1.052
AAF08065-2	160	81	35	7	36	58	0	0	0	58	0	1.052
AF5468-5	153	66	28	6	44	50	0	0	0	50	0	1.056
AF5416-2	176	112	48	5	18	71	3	2	0	77	5	1.058
AF5447-4	106	90	38	2	7	67	11	13	0	91	24	1.068
NDAF102629C-4	203	155	66	2	8	69	13	8	0	90	21	1.056
AF5481-4	175	116	49	4	13	75	5	3	0	83	9	1.065
AF5558-13	200	126	54	6	24	69	0	1	0	70	1	1.065

Table 12 (cont'd). Production statistics for the 2016 University of Maine Advanced Selection Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
AF5561-2	162	110	47	3	10	77	4	7	0	87	10	1.062
AF5563-5	135	104	44	4	9	77	7	4	0	87	10	1.066
AF5568-6	193	130	55	3	18	64	8	8	0	80	16	1.059
AF5585-2	168	133	57	2	9	75	11	3	0	89	14	1.068
WAF10629-5	212	139	59	5	27	66	1	1	0	68	1	1.063
WAF10636-1	205	136	58	4	15	73	5	3	0	81	8	1.061
WAF10636-3	206	122	52	6	28	66	0	0	0	66	0	1.070
WAF10664-3	199	129	55	5	24	67	5	0	0	71	5	1.066
AF5483-1	127	109	46	3	8	68	14	7	0	90	21	1.067
AF5574-16	165	95	40	8	29	63	0	0	0	63	0	1.062
AAF08155-1	235	114	48	10	38	51	0	0	0	51	0	1.055
NDAF102696C-1	190	113	48	8	29	55	6	3	0	64	9	1.061
NDAF102696C-5	201	70	30	23	43	35	0	0	0	35	0	1.061
NDAF113303C-8	53	20	9	9	36	51	0	4	0	55	4	1.047
MSD ³	50	39		4	9	11	5	9	ns	11	8	0.007
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	0.0103	-	<0.0001	<0.0001	<0.0001

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

³Means separated within columns by Waller-Duncan K-ratio t Test.

Table 13. Plant growth and tuber characteristics for the 2016 University of Maine Advanced Selection Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Atlantic	94	9	8	7						6	-
Elkton	89	8	9	7						6	2
H. Blackwell	98	9	8	7						7	2
Snowden	98	9	9	7						6	2
Yukon Gold	96	9	9	5						7	3
AF0338-17	98	9	7	6						6	2
AF4138-8	94	8	9	8						7	4
AF4157-6	91	5	9	9						7	2
AF4953-6	98	8	9	8						6	4
AF4985-1	100	8	9	6						7	3
AF5040-8	98	9	6	6						7	3
AF5245-1	100	9	6	4						7	3
AF5164-19	98	9	8	5						6	3
AF5312-1	100	8	9	7						6	3
AF4615-5	89	6	9	9						6	3
AF5225-1	98	9	9	7						7	3
AF5426-3	88	6	9	8						8	2
AF5435-7	96	9	9	9						6	3
WAF10131-11	77	4	9	9						7	3
AF5412-3	99	7	9	7						6	2
AF5414-1	98	8	9	7						7	3
NDAF102573-2	100	9	9	5						5	4
AF5469-2	98	9	9	6						5	3
AAF08065-2	96	7	9	7						5	3
AF5468-5	100	9	9	6						6	3
AF5416-2	99	9	9	7						7	3
AF5447-4	95	8	9	7						7	3
NDAF102629C-4	93	9	9	6						7	3
AF5481-4	99	7	9	8						6	3
AF5558-13	99	9	9	7						7	3

Table 13 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Advanced Selection Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
AF5561-2	100	9	9	8						6	4
AF5563-5	99	7	9	8						7	3
AF5568-6	98	8	9	7						5	3
AF5585-2	95	8	9	8						7	3
WAF10629-5	93	5	9	9						7	2
WAF10636-1	96	9	9	7						7	3
WAF10636-3	98	9	7	6						7	3
WAF10664-3	99	9	7	7						7	3
AF5483-1	58	9	9	7						7	3
AF5574-16	100	9	7	5						7	3
AAF08155-1	98	9	9	6						6	3
NDAF102696C-1	99	9	8	6						6	3
NDAF102696C-5	99	9	6	5						6	3
NDAF113303C-8	97	8	9	5						6	4

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 30 for 20 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 14. External and internal defects for the 2016 University of Maine Advanced Selection Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Atlantic	0	0	1	5	7	0	0	0	0	0	0	0	0
Elkton	0	0	1	2	3	0	0	0	0	0	0	0	0
H. Blackwell	0	0	1	7	8	0	0	0	0	0	0	0	0
Snowden	0	0	0	1	2	0	0	0	0	0	0	0	0
Yukon Gold	0	0	0	18	18	0	0	0	0	0	0	0	0
AF0338-17	0	0	1	11	12	0	0	0	1	0	0	0	0
AF4138-8	0	0	1	22	22	0	3	0	0	0	0	0	0
AF4157-6	1	0	1	4	6	0	0	0	0	0	0	0	0
AF4953-6	0	0	0	20	20	0	0	0	0	0	0	0	0
AF4985-1	1	0	0	13	13	0	0	0	0	1	0	0	0
AF5040-8	0	0	2	15	17	0	0	0	0	0	0	0	0
AF5245-1	0	0	0	7	7	0	0	0	0	1	0	0	0
AF5164-19	0	0	0	9	9	0	0	0	0	0	0	0	0
AF5312-1	0	0	1	5	6	0	0	0	0	0	0	0	0
AF4615-5	0	0	1	2	4	0	0	0	0	0	0	0	0
AF5225-1	1	0	1	6	9	0	0	0	0	0	0	0	0
AF5426-3	0	0	2	3	5	0	0	0	0	0	0	0	0
AF5435-7	0	0	2	16	18	0	0	0	3	0	0	0	0
WAF10131-11	3	0	1	4	8	0	0	0	0	0	0	0	0
AF5412-3	0	0	0	1	1	0	0	0	0	0	0	0	0
AF5414-1	0	0	0	3	3	0	0	0	0	0	0	0	0
NDAF102573-2	0	0	0	23	23	0	0	0	0	0	0	0	0
AF5469-2	0	0	1	5	6	0	0	0	0	0	0	0	0
AAF08065-2	0	0	0	11	11	0	0	0	0	0	0	0	0
AF5468-5	0	0	0	16	16	0	1	0	0	0	0	0	0
AF5416-2	0	0	1	14	15	0	0	0	0	0	0	0	0
AF5447-4	2	0	0	5	7	0	0	0	0	0	0	0	0
NDAF102629C-4	0	0	4	12	16	0	1	0	0	0	0	0	0
AF5481-4	1	0	3	14	18	0	0	0	0	0	0	0	0
AF5558-13	1	0	1	8	10	0	0	0	0	0	0	0	0

Table 14 (cont'd). External and internal defects for the 2016 University of Maine Advanced Selection Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
AF5561-2	0	0	1	26	27	0	3	0	0	3	0	0	0
AF5563-5	0	0	4	8	12	0	0	0	0	1	0	0	0
AF5568-6	2	0	0	13	15	0	0	0	1	0	0	0	0
AF5585-2	1	0	2	8	11	0	0	0	0	0	4	0	0
WAF10629-5	0	0	1	1	1	0	0	0	0	0	0	0	0
WAF10636-1	10	0	1	7	17	0	0	0	0	0	0	0	0
WAF10636-3	0	0	1	10	11	0	0	0	0	0	0	0	0
WAF10664-3	1	0	2	7	10	0	0	0	0	0	0	0	0
AF5483-1	0	0	1	4	4	0	0	0	0	0	0	0	0
AF5574-16	0	0	0	9	9	0	1	0	0	0	0	0	0
AAF08155-1	0	0	0	6	6	0	0	0	0	0	0	0	0
NDAF102696C-1	1	0	0	5	6	0	0	0	0	0	0	0	0
NDAF102696C-5	0	0	0	1	1	0	0	0	0	0	0	0	0
NDAF113303C-8	2	0	0	29	31	0	0	0	1	0	0	0	0
MSD ³	2	ns	3	9	9	ns	ns	ns	ns	ns	ns	ns	ns
P Value	<0.0001	0.4834	0.0130	<0.0001	<0.0001	-	0.1317	-	0.5422	0.5842	0.4834	-	-

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

³Means separated within columns by Waller-Duncan K-ratio t Test.

Chapter 6. University of Maine Early Line Potato Variety Trial

General Comments

A goal of the University of Maine early line trial is to continue gathering data on early line potato selections for potential Florida production. The chipping “standard” Atlantic was included to provide a baseline for comparison with the numbered clones.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 2, 2016
Vine Kill Date	April 26, 2016
Harvest Date	May 10, 2016
Season Length	84 days planting to vine kill; 98 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	10 (Standard: Atlantic)
Number of Clones	23
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	15 ft (6.1 m)

Production Statistics

Early Vigor Ratings	48 DAP
Highest Total Yield	AAF08185-2 (324 cwt/acre or 36.3 T/ha)
Highest Marketable Yield	AF5682-5 (263 cwt/acre or 29.5 T/ha)
Best Appearance Rating	Satina, AF5622-4, AF5677-6, AAF11884-2, AAF10577-1 (9, excellent)

Table 15. Production statistics for the 2016 University of Maine Early Line Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-84 days</u>												
Red LaSoda	128	70	42	2	20	79	0	0	0	79	0	1.053
Atlantic	190	159	95	0	3	83	10	5	0	97	14	1.059
Peter Wilcox	241	106	64	12	44	45	0	0	0	45	0	1.065
Fabula	187	134	80	3	14	63	8	12	0	83	20	1.040
Satina	206	106	64	3	22	64	11	0	0	75	11	1.041
Snowden	217	130	78	4	32	64	0	0	0	64	0	1.051
Dark Red Norland	196	126	76	4	19	77	0	0	0	77	0	1.054
All Blue	96	9	5	33	58	9	0	0	0	9	0	1.055
LaChipper	180	128	77	3	13	84	0	0	0	84	0	1.065
AF5615-1	225	157	94	4	21	75	0	0	0	75	0	1.044
AF5622-4	18	14	8	0	21	79	0	0	0	79	0	1.059
AF5635-8	278	146	88	8	34	59	0	0	0	59	0	1.048
AF5639-6	187	140	84	3	12	85	0	0	0	85	0	1.074
AF5648-3	237	133	80	7	30	62	0	0	0	62	0	1.068
AF5648-5	267	122	73	15	37	48	0	0	0	48	0	1.064
AF5658-6	148	35	21	23	51	26	0	0	0	26	0	1.049
AF5677-6	286	193	116	4	18	79	0	0	0	79	0	1.064
AF5682-5	283	263	158	3	3	85	9	0	0	94	9	1.058
AF5682-9	149	112	67	6	12	82	0	0	0	82	0	1.059
AAF08185-2	324	227	136	4	21	75	0	0	0	75	0	1.057
AAF11884-2	247	103	62	14	41	44	0	0	0	44	0	1.059
AAF10577-1	280	121	73	7	44	49	0	0	0	49	0	1.050
WAF12080-3	291	218	131	2	12	71	2	13	0	86	15	1.063
WAF12065-8	264	218	131	3	4	40	23	30	0	93	53	1.048
NDAF113394CAB-2	243	91	55	10	50	40	0	0	0	40	0	1.072
NDAF113470C-3	252	128	76	6	39	55	0	0	0	55	0	1.064
NDAF113490C-6	244	176	106	3	14	73	5	5	0	83	9	1.066
AF5633-2	164	83	50	13	33	54	0	0	0	54	0	1.040
AF5658-2	257	85	51	13	49	38	0	0	0	38	0	1.063
NDAF113458-2	264	191	115	4	19	78	0	0	0	78	0	1.049

Table 15 (cont'd). Production statistics for the 2016 University of Maine Early Line Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Atlantic	231	175	105	2	9	89	0	0	0	89	0	1.052
NDAF113483B-6	229	125	75	9	35	53	0	4	0	57	4	1.045
NDAF113484B-1	238	148	89	3	27	69	0	0	0	69	0	1.058

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

Table 16. Plant growth and tuber characteristics for the 2016 University of Maine Early Line Variety Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Red LaSoda	100	9	9	6						6	4
Atlantic	100	9	9	7						8	-
Peter Wilcox	100	9	6	6						8	3
Fabula	92	8	9	6						8	2
Satina	100	9	9	7						9	3
Snowden	100	9	9	7						8	2
Dark Red Norland	100	9	9	5						8	2
All Blue	96	7	9	6						6	4
LaChipper	100	9	9	6						8	2
AF5615-1	79	5	9	8						8	1
AF5622-4	17	4	9	9						9	4
AF5635-8	96	7	9	8						6	2
AF5639-6	100	7	9	7						7	2
AF5648-3	92	7	9	7						8	2
AF5648-5	100	9	6	6						8	2
AF5658-6	58	4	9	8						8	4
AF5677-6	96	8	9	8						9	2
AF5682-5	100	6	9	8						8	1
AF5682-9	54	5	9	8						8	3
AAF08185-2	100	9	9	6						8	1
AAF11884-2	92	9	9	6						9	3
AAF10577-1	100	9	6	5						9	2
WAF12080-3	92	9	9	7						8	2
WAF12065-8	58	6	9	8						8	1
NDAF113394CAB-2	100	8	9	8						8	3
NDAF113470C-3	96	8	9	7						8	2
NDAF113490C-6	96	8	9	6						8	2
AF5633-2	92	5	9	7						6	4
AF5658-2	92	8	9	8						7	4
NDAF113458-2	88	9	9	6						8	2

Table 16 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Early Line Variety Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Atlantic	96	9	9	7						7	-
NDAF113483B-6	96	8	9	7						6	2
NDAF113484B-1	96	8	9	7						8	2

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 24 for 15 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 17. External and internal defects for the 2016 University of Maine Early Line Variety Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Red LaSoda	5	0	0	25	30	0	0	0	0	0	0	0	0
Atlantic	0	0	8	6	14	0	0	0	0	0	0	0	0
Peter Wilcox	0	0	0	1	1	0	0	0	0	0	0	0	0
Fabula	0	0	0	15	15	0	0	0	0	0	0	0	0
Satina	0	0	10	21	31	0	0	0	0	0	0	0	0
Snowden	0	0	0	5	5	0	0	0	0	0	0	0	0
Dark Red Norland	2	0	0	15	17	0	0	0	0	0	0	0	0
All Blue	0	0	0	0	0	0	0	0	0	0	0	0	0
LaChipper	0	0	1	14	15	0	0	0	0	0	0	0	0
AF5615-1	0	0	0	7	7	0	0	0	0	0	0	0	0
AF5622-4	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5635-8	0	0	6	5	11	0	0	0	0	0	0	0	0
AF5639-6	0	0	0	13	13	0	0	0	0	0	0	0	0
AF5648-3	0	0	0	10	10	0	0	0	0	0	0	0	0
AF5648-5	0	0	0	5	5	0	0	0	0	0	0	0	0
AF5658-6	0	0	8	3	11	0	0	0	7	0	0	0	0
AF5677-6	0	0	0	14	14	0	0	0	0	0	0	0	0
AF5682-5	0	0	0	1	1	0	0	0	0	0	0	0	0
AF5682-9	3	0	0	6	9	0	0	0	0	0	0	0	0
AAF08185-2	0	0	0	6	6	0	0	0	0	0	0	0	0
AAF11884-2	0	0	0	6	6	0	0	0	0	0	0	0	0
AAF10577-1	0	0	0	12	12	0	0	0	0	0	0	0	0
WAF12080-3	0	0	2	11	13	0	0	0	0	0	0	0	0
WAF12065-8	2	0	5	4	11	0	0	0	0	0	0	0	0
NDAF113394CAB-2	0	0	2	4	6	0	0	0	0	0	0	0	0
NDAF113470C-3	0	0	3	6	9	0	0	0	0	0	0	0	0
NDAF113490C-6	0	0	6	7	13	0	0	0	0	0	0	0	0
AF5633-2	0	0	0	5	5	0	0	0	0	0	0	0	0
AF5658-2	0	0	0	13	13	0	0	0	0	0	0	0	0
NDAF113458-2	1	0	0	6	7	0	0	0	0	0	0	0	0

Table 17 (cont'd). External and internal defects for the 2016 University of Maine Early Line Variety Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Atlantic	0	0	0	14	14	0	0	0	0	0	0	0	0
NDAF113483B-6	0	0	0	4	4	0	0	0	0	0	0	0	0
NDAF113484B-1	0	0	0	10	10	0	0	0	0	0	0	0	0

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

Chapter 7. University of Maine Early Generation Red and Specialty Potato Variety Trial

General Comments

A goal of the University of Maine early generation red and specialty trial gives us an opportunity to look at these newest breeding clones for the first time. The plot size is limited to 8 hills, as seed supply is limited. This trial only evaluated red and purple-skinned clones.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 2, 2016
Vine Kill Date	April 26, 2016
Harvest Date	May 10, 2016
Season Length	84 days planting to vine kill; 98 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	10 (Standard: Atlantic instead of Red LaSoda)
Number of Clones	26
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	10 ft (3.0 m)

Production Statistics

Early Vigor Ratings	48 DAP
Highest Total Yield	AF5847-2 (185 cwt/acre or 20.7 T/ha)
Highest Marketable Yield	AF5847-2 (153 cwt/acre or 17.1 T/ha)
Best Appearance Rating	Dark Red Norland (9, excellent)

Table 18. Production statistics for the 2016 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-84 days</u>												
Red LaSoda	80	19	15	0	22	78	0	0	0	78	0	1.058
Atlantic	145	108	85	5	3	62	30	0	0	92	30	1.066
Peter Wilcox	33	13	10	3	58	38	0	0	0	38	0	1.063
Fabula	126	80	63	5	13	82	0	0	0	82	0	1.048
Satina	148	95	75	1	11	88	0	0	0	88	0	1.049
Snowden	132	85	67	3	18	72	6	0	0	78	6	1.074
Dark Red Norland	98	66	52	6	11	84	0	0	0	84	0	1.053
All Blue	45	3	3	34	58	8	0	0	0	8	0	1.056
LaChipper	94	53	41	4	16	80	0	0	0	80	0	1.064
AF5806-1	107	28	22	13	58	29	0	0	0	29	0	1.055
AF5806-2	64	6	5	17	53	30	0	0	0	30	0	1.056
AF5831-2	125	81	64	6	16	70	8	0	0	78	8	1.065
AF5831-3	100	59	46	3	18	79	0	0	0	79	0	1.062
AF5847-2	185	153	121	1	16	83	0	0	0	83	0	1.065
AF5866-1	137	77	60	7	37	56	0	0	0	56	0	1.074
MSAFB603-2	95	20	16	29	50	21	0	0	0	21	0	1.051
MSAFB603-3	86	3	2	47	49	4	0	0	0	4	0	1.059
MSAFB603-7	87	0	0	58	42	0	0	0	0	0	0	1.040
MSAFB603-9	135	61	48	7	36	56	0	0	0	56	0	1.061
Atlantic	159	146	115	1	7	92	0	0	0	92	0	1.060
MSAFB607-3	105	45	35	22	33	45	0	0	0	45	0	1.059
MSAFB607-4	85	27	21	22	46	31	0	0	0	31	0	1.053
MSAFB607-5	131	77	60	10	32	58	0	0	0	58	0	1.063
MSAFB608-3	131	54	42	8	43	48	0	0	0	48	0	1.060
NDAF1240-1	75	18	14	20	57	23	0	0	0	23	0	1.056
NDAF12127B-1	69	21	17	15	49	36	0	0	0	36	0	1.064
NDAF12129-1	97	53	42	7	17	76	0	0	0	76	0	1.067
NDAF12129-4	82	30	24	7	36	57	0	0	0	57	0	1.063
NDAF12129-6	55	5	4	12	73	15	0	0	0	15	0	1.067
NDAF12143-1	98	66	52	3	10	86	0	0	0	86	0	1.058

Table 18 (cont'd). Production statistics for the 2016 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
NDAF12144B-1	115	39	31	10	42	48	0	0	0	48	0	1.057
NDAF12144B-2	108	42	33	10	46	44	0	0	0	44	0	1.064
NDAF12144B-3	142	64	51	9	34	56	0	0	0	56	0	1.063
NDAF12198B-2	152	103	82	7	21	61	0	11	0	72	11	1.057
NDAF12198B-4	142	115	91	3	12	79	6	0	0	84	6	1.059
NDAF12198B-5	97	37	29	9	38	53	0	0	0	53	0	1.055

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

Table 19. Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Red LaSoda	100	8	9	7						6	4
Atlantic	100	9	9	8						7	-
Peter Wilcox	88	9	9	6						6	3
Fabula	88	6	9	6						8	3
Satina	100	9	9	8						8	3
Snowden	88	9	9	8						8	3
Dark Red Norland	88	9	9	6						9	4
All Blue	88	6	9	5						7	3
LaChipper	88	9	9	7						8	4
AF5806-1	100	9	6	5						4	4
AF5806-2	88	9	6	6						5	4
AF5831-2	88	9	9	6						8	3
AF5831-3	88	9	9	6						7	4
AF5847-2	88	9	9	5						7	1
AF5866-1	75	9	6	5						8	2
MSAFB603-2	100	9	6	4						7	3
MSAFB603-3	100	8	9	7						6	3
MSAFB603-7	88	9	9	4						8	3
MSAFB603-9	88	8	9	5						7	4
Atlantic	88	9	9	8						8	-
MSAFB607-3	100	9	9	8						6	3
MSAFB607-4	100	9	6	5						7	3
MSAFB607-5	100	9	9	7						7	2
MSAFB608-3	100	9	9	7						8	3
NDAF1240-1	100	9	6	5						6	3
NDAF12127B-1	100	8	9	6						8	3
NDAF12129-1	100	8	9	7						7	3
NDAF12129-4	100	8	9	7						8	4
NDAF12129-6	100	9	9	7						7	4
NDAF12143-1	100	8	9	8						7	4

Table 19 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
NDAF12144B-1	100	9	9	6						5	4
NDAF12144B-2	80	9	9	7						7	3
NDAF12144B-3	100	9	9	7						7	4
NDAF12198B-2	100	9	9	6						8	1
NDAF12198B-4	88	9	6	6						8	1
NDAF12198B-5	100	9	9	7						8	4

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 8 for 10 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 20. External and internal defects for the 2016 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Red LaSoda	0	0	0	70	70	0	0	0	0	0	0	0	0
Atlantic	0	0	4	14	19	0	0	0	0	0	0	0	0
Peter Wilcox	0	0	0	0	0	0	0	0	7	0	0	0	0
Fabula	0	0	3	20	23	0	0	0	0	0	0	0	0
Satina	0	0	0	27	27	0	0	0	0	0	0	0	0
Snowden	0	0	3	15	18	0	0	0	0	0	0	0	0
Dark Red Norland	0	0	0	20	20	0	0	0	5	0	0	0	0
All Blue	0	0	0	0	0	0	0	0	0	0	0	0	0
LaChipper	0	0	0	30	30	0	0	0	5	0	0	0	0
AF5806-1	0	0	0	9	9	0	0	0	15	0	0	0	0
AF5806-2	0	0	0	67	67	0	0	0	13	0	0	0	0
AF5831-2	0	0	0	17	17	0	0	0	5	0	0	0	0
AF5831-3	0	0	0	26	26	0	0	0	20	0	0	0	0
AF5847-2	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5866-1	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB603-2	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB603-3	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB603-7	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB603-9	0	0	0	21	21	0	0	0	15	0	0	0	0
Atlantic	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB607-3	0	0	0	6	6	0	0	0	0	0	0	0	0
MSAFB607-4	0	0	0	0	0	0	0	0	0	0	0	5	0
MSAFB607-5	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB608-3	0	0	0	15	15	0	0	0	0	0	0	0	0
NDAF1240-1	0	0	0	0	0	0	0	0	0	0	0	0	0
NDAF12127B-1	0	0	0	14	14	0	0	0	0	0	0	0	0
NDAF12129-1	0	0	0	27	27	0	0	0	0	0	0	0	0
NDAF12129-4	0	0	0	36	36	0	0	0	30	0	0	0	0
NDAF12129-6	0	0	0	36	36	0	0	0	11	0	0	0	0
NDAF12143-1	0	0	0	22	22	0	0	0	0	0	0	0	0

Table 20 (cont'd). External and internal defects for the 2016 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²							
	Growth	Mis-	Sun-	Rotten	Total	Enlarged	HH	BR	CRS	IHN	Brown Center			
	Cracks	shapen	burned	& misc.	Culls ¹	Lenticel					L	M	H	
NDAF12144B-1	0	0	0	30	30	0	0	0	0	0	0	0	0	0
NDAF12144B-2	0	0	0	13	13	0	0	0	8	0	0	0	0	0
NDAF12144B-3	0	0	0	20	20	0	0	0	5	0	0	0	0	0
NDAF12198B-2	0	0	0	5	5	0	0	0	0	0	0	0	0	0
NDAF12198B-4	0	0	0	4	4	0	0	0	20	0	0	0	0	0
NDAF12198B-5	0	0	0	28	28	0	0	0	0	0	0	0	0	0

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

Chapter 8. University of Maine Early Generation Round White Potato Variety Trial

General Comments

The University of Maine early generation round white trial gives us an opportunity to look at these newest breeding clones for the first time. This trial only evaluated round white clones.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 15, 2016
Vine Kill Date	N/A
Harvest Date	May 19, 2016
Season Length	94 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	19 (Standard: Atlantic instead of LaChipper)
Number of Clones	111
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	10 ft (3.0 m)

Production Statistics

Early Vigor Ratings	52 DAP
Highest Total Yield	MSAFB635-1 (432 cwt/acre or 48.4 T/ha)
Highest Marketable Yield	MSAFB635-1 (363 cwt/acre or 40.7 T/ha)
Best Appearance Rating	AF5855-1, MSAFB616-9, MSAFB634-4, AF5846-3 (9, excellent)

Table 21. Production statistics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Season-94 days												
Red LaSoda	79	55	41	5	16	42	0	37	0	79	37	1.054
Atlantic	139	112	84	6	14	43	27	11	0	80	38	1.079
Peter Wilcox	167	103	77	8	23	69	0	0	0	69	0	1.058
Fabula	104	100	75	0	4	40	18	38	0	96	56	1.050
Satina	167	127	96	8	16	61	9	6	0	76	15	1.044
Snowden	209	166	125	4	13	60	13	9	0	83	22	1.070
Dark Red Norland	93	65	49	12	15	73	0	0	0	73	0	1.048
All Blue	59	11	8	36	43	21	0	0	0	21	0	1.057
LaChipper	159	116	87	6	10	58	18	8	0	84	26	1.060
AF5710-2	152	84	63	12	28	59	0	0	0	59	0	1.074
AF5715-6	149	103	78	7	21	72	0	0	0	72	0	1.059
AF5803-1	161	115	87	3	12	56	29	0	0	85	29	1.061
AF5807-3	139	102	77	4	13	83	0	0	0	83	0	1.069
AF5808-3	173	152	115	2	2	97	0	0	0	97	0	1.049
AF5811-1	281	214	161	2	11	68	11	8	0	86	18	1.057
AF5812-3	304	253	190	3	8	60	18	10	0	89	29	1.069
AF5817-1	248	206	155	1	9	79	11	0	0	90	11	1.063
AF5817-7	220	154	116	10	13	77	0	0	0	77	0	1.062
AF5819-2	186	120	90	3	14	63	20	0	0	82	20	1.060
AF5819-6	240	209	157	3	8	51	19	19	0	89	38	1.063
AF5822-3	156	127	96	4	3	45	25	23	0	93	49	1.064
AF5824-3	235	188	142	6	11	65	6	11	0	82	17	1.066
AF5824-6	135	99	75	6	20	68	6	0	0	74	6	1.057
AF5825-3	173	112	84	6	29	47	10	8	0	66	18	1.074
AF5827-1	141	109	82	5	10	53	31	0	0	85	31	1.070
AF5829-2	116	73	55	12	8	73	8	0	0	81	8	1.071
AF5830-3	58	48	36	0	10	37	53	0	0	90	53	1.051
AF5842-1	122	86	65	7	13	66	8	7	0	80	15	1.072
AF5842-3	92	51	39	5	9	45	41	0	0	86	41	1.073
AF5847-1	166	111	84	3	11	34	31	21	0	86	51	1.068

Table 21 (cont'd). Production statistics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
AF5850-1	184	123	93	3	9	74	8	6	0	88	14	1.064
AF5851-1	142	114	86	2	0	57	22	19	0	98	41	1.054
AF5852-2	266	232	175	1	2	39	14	44	0	97	58	1.058
AF5853-2	349	258	194	1	7	50	14	28	0	92	42	1.062
AF5853-4	157	97	73	4	20	69	8	0	0	76	8	1.054
AF5855-1	247	161	121	3	19	78	0	0	0	78	0	1.060
AF5858-3	303	218	164	2	7	60	18	13	0	91	31	1.069
Atlantic	226	198	149	2	4	53	4	38	0	95	42	1.077
AF5861-1	330	245	184	4	12	73	3	8	0	84	11	1.066
AF5869-2	256	188	141	6	11	68	6	9	0	83	15	1.073
AF5870-1	209	135	102	6	24	70	0	0	0	70	0	1.068
AF5870-2	261	154	116	10	27	56	3	4	0	63	7	1.072
AF5872-1	213	125	94	7	30	63	0	0	0	63	0	1.069
AF5884-4	333	273	205	5	12	77	0	6	0	83	6	1.066
AF5884-6	178	110	83	7	10	62	20	0	0	83	20	1.070
AF5886-3	157	128	96	4	7	79	11	0	0	90	11	1.069
AF5888-1	173	147	111	3	9	80	9	0	0	89	9	1.069
AF5888-2	241	216	162	2	6	52	15	26	0	93	41	1.066
AF5888-3	276	244	183	1	7	92	0	0	0	92	0	1.066
AF5889-2	130	72	54	5	27	68	0	0	0	68	0	1.067
AAF11478-1	204	141	106	9	22	65	4	0	0	69	4	1.069
AAF10903-2	168	152	114	2	5	50	23	20	0	93	43	1.066
WAF13058-1	116	71	53	11	16	73	0	0	0	73	0	1.068
WAF13067-1	122	70	53	11	12	77	0	0	0	77	0	1.070
WAF13074-2	285	194	146	9	20	67	0	4	0	71	4	1.077
WAF13076-2	110	99	74	4	5	66	24	0	0	90	24	1.080
WAF13076-3	227	146	110	6	18	75	0	0	0	75	0	1.077
MSAFB601-1	99	55	41	10	25	64	0	0	0	64	0	1.075
MSAFB601-2	168	101	76	11	25	64	0	0	0	64	0	1.067
MSAFB604-5	305	238	179	5	14	70	6	6	0	81	12	1.066

Table 21 (cont'd). Production statistics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
MSAFB605-2	249	188	141	3	16	74	7	0	0	81	7	1.061
MSAFB605-3	322	259	194	6	11	59	12	12	0	83	24	1.067
MSAFB605-4	207	132	99	0	19	75	6	0	0	81	6	1.061
MSAFB609-1	285	206	155	3	21	76	0	0	0	76	0	1.073
MSAFB609-5	264	213	160	5	10	56	11	18	0	85	29	1.076
MSAFB609-12	244	151	113	6	24	69	0	0	0	69	0	1.075
MSAFB610-1	216	149	112	5	18	72	5	0	0	77	5	1.063
MSAFB610-2	242	197	148	2	8	76	9	5	0	90	14	1.068
MSAFB610-4	258	208	156	5	15	73	8	0	0	81	8	1.065
MSAFB611-5	159	112	84	11	18	72	0	0	0	72	0	1.069
MSAFB612-2	171	84	63	10	41	49	0	0	0	49	0	1.069
MSAFB614-4	359	292	220	4	10	61	13	12	0	86	25	1.076
MSAFB614-5	182	127	95	8	21	72	0	0	0	72	0	1.070
MSAFB614-6	284	254	191	2	6	61	19	12	0	92	31	1.073
MSAFB615-3	202	178	134	3	8	61	28	0	0	88	28	1.068
MSAFB616-6	315	281	212	1	7	45	20	27	0	92	47	1.073
MSAFB616-9	226	171	129	6	14	69	11	0	0	80	11	1.074
MSAFB617-3	357	333	250	1	5	38	27	28	0	93	56	1.070
MSAFB618-2	140	114	86	4	11	51	34	0	0	85	34	1.072
MSAFB618-3	129	102	77	3	12	39	13	32	0	85	46	1.063
MSAFB618-5	214	185	139	2	4	44	23	26	0	94	49	1.068
MSAFB619-2	234	206	155	3	4	71	7	15	0	93	22	1.073
MSAFB619-4	244	223	168	2	2	27	34	34	0	95	68	1.066
MSAFB619-7	330	291	218	1	6	55	0	38	0	93	38	1.071
MSAFB620-4	73	48	36	6	29	65	0	0	0	65	0	1.069
MSAFB620-6	107	65	49	9	14	76	0	0	0	76	0	1.069
MSAFB620-8	44	22	17	28	15	57	0	0	0	57	0	1.072
MSAFB622-5	70	36	27	8	29	62	0	0	0	62	0	1.067
MSAFB622-7	88	67	50	4	10	86	0	0	0	86	0	1.070
MSAFB623-6	224	171	129	4	13	77	0	5	0	83	5	1.074

Table 21 (cont'd). Production statistics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
MSAFB626-2	190	149	112	5	14	37	44	0	0	81	44	1.074
MSAFB626-5	129	106	80	3	8	76	12	0	0	88	12	1.069
MSAFB626-8	95	68	51	0	28	72	0	0	0	72	0	1.064
MSAFB632-3	180	106	80	7	19	59	7	7	0	74	15	1.078
MSAFB634-3	291	249	187	3	12	86	0	0	0	86	0	1.074
MSAFB634-4	239	158	119	6	22	72	0	0	0	72	0	1.068
MSAFB635-1	432	363	273	1	9	78	6	6	0	90	12	1.068
MSAFB635-3	158	119	90	10	15	62	6	7	0	75	13	1.073
MSAFB635-15	315	274	206	2	7	47	13	30	0	90	43	1.074
MSAFB636-1	328	257	193	5	13	53	19	10	0	82	29	1.080
MSAFB636-5	194	169	127	4	9	61	26	0	0	87	26	1.077
MSAFB636-7	142	120	91	2	13	73	12	0	0	85	12	1.066
NDAF12139C-2	380	326	245	3	7	78	12	0	0	90	12	1.066
AF5797-4	212	186	139	3	9	60	15	13	0	88	28	1.078
AF5799-1	190	145	109	3	15	64	18	0	0	82	18	1.063
AF5801-1	171	99	74	9	34	50	0	7	0	57	7	1.062
AF5838-1	210	190	143	1	4	71	15	9	0	95	24	1.057
AF5840-2	236	174	131	4	7	51	13	25	0	89	38	1.069
AF5846-3	200	155	117	1	11	82	0	5	0	87	5	1.065
AF5846-4	312	266	200	2	7	68	9	14	0	91	23	1.070
AF5848-1	265	241	181	1	8	53	19	19	0	91	38	1.083
AF5857-1	227	197	148	5	8	44	28	15	0	87	43	1.060
AF5891-1	156	128	96	8	10	82	0	0	0	82	0	1.066
AF5892-1	252	193	145	6	7	78	9	0	0	88	9	1.072
AF5909-1	175	132	99	6	14	71	0	10	0	80	10	1.075
AF5909-2	135	105	79	4	8	72	16	0	0	88	16	1.082
VAAF20149-2	141	101	76	8	20	62	10	0	0	72	10	1.065
VAAF20149-4	176	111	83	7	25	61	0	7	0	68	7	1.048
VAAF201410-1	171	145	109	2	7	71	7	13	0	91	20	1.069
WAF13066-2	129	107	81	1	8	91	0	0	0	91	0	1.070

Table 21 (cont'd). Production statistics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
WAF13073-3	176	158	119	1	9	57	33	0	0	90	33	1.091
Red LaSoda	142	128	96	3	6	90	0	0	0	90	0	1.055
Atlantic	114	89	67	4	13	40	7	35	0	83	43	1.072
Peter Wilcox	142	119	89	4	12	83	0	0	0	83	0	1.060
Fabula	154	137	103	0	0	61	39	0	0	100	39	1.051
Satina	288	209	157	3	8	75	7	8	0	89	15	1.060
Snowden	226	196	147	3	11	74	13	0	0	87	13	1.071
Dark Red Norland	180	161	121	3	8	81	8	0	0	89	8	1.056
All Blue	55	14	10	20	55	25	0	0	0	25	0	1.058
LaChipper	251	129	97	4	16	67	0	13	0	80	13	1.064

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

Table 22. Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Red LaSoda	100	9	6	4						8	3
Atlantic	100	9	6	6						6	-
Peter Wilcox	100	9	6	3						7	2
Fabula	100	9	6	3						8	2
Satina	100	9	6	3						8	1
Snowden	100	9	6	3						8	1
Dark Red Norland	100	9	6	2						6	3
All Blue	100	9	6	2						7	3
LaChipper	100	9	6	4						6	2
AF5710-2	100	9	6	5						8	2
AF5715-6	100	9	6	3						8	2
AF5803-1	100	9	6	4						7	2
AF5807-3	100	9	6	6						7	2
AF5808-3	100	9	6	2						6	1
AF5811-1	88	9	6	6						8	2
AF5812-3	100	9	9	7						7	2
AF5817-1	100	9	6	5						8	1
AF5817-7	100	9	6	6						7	1
AF5819-2	100	9	6	4						8	2
AF5819-6	100	9	6	6						8	1
AF5822-3	100	9	6	7						7	2
AF5824-3	88	9	6	5						6	1
AF5824-6	100	9	6	3						8	2
AF5825-3	100	9	6	7						7	2
AF5827-1	100	9	6	6						7	2
AF5829-2	100	9	6	6						7	3
AF5830-3	100	8	9	8						5	3
AF5842-1	100	9	6	6						7	3
AF5842-3	100	9	6	7						6	4
AF5847-1	100	9	6	7						6	3

Table 22 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
AF5850-1	100	9	6	6						8	2
AF5851-1	100	9	9	8						5	2
AF5852-2	88	9	6	8						3	3
AF5853-2	100	9	6	7						7	2
AF5853-4	100	9	6	7						7	2
AF5855-1	100	9	6	6						9	2
AF5858-3	100	9	6	7						7	2
Atlantic	100	9	6	7						8	-
AF5861-1	100	9	6	7						5	2
AF5869-2	100	9	6	5						8	2
AF5870-1	100	9	6	7						8	1
AF5870-2	100	9	6	7						7	1
AF5872-1	100	9	6	5						7	1
AF5884-4	100	9	6	7						7	1
AF5884-6	100	9	6	6						6	3
AF5886-3	100	9	6	6						7	1
AF5888-1	100	9	6	7						7	1
AF5888-2	100	9	6	7						7	1
AF5888-3	100	9	6	7						6	1
AF5889-2	100	9	6	7						8	3
AAF11478-1	100	9	6	6						5	1
AAF10903-2	100	9	6	6						6	1
WAF13058-1	100	9	9	7						7	3
WAF13067-1	100	9	6	2						6	4
WAF13074-2	100	9	6	2						7	1
WAF13076-2	100	9	6	7						6	2
WAF13076-3	100	9	6	8						7	2
MSAFB601-1	100	9	6	9						4	3
MSAFB601-2	100	9	6	8						5	2
MSAFB604-5	100	9	6	6						6	1

Table 22 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
MSAFB605-2	100	9	6	7						6	1
MSAFB605-3	100	9	6	7						6	1
MSAFB605-4	100	8	9	7						7	2
MSAFB609-1	100	9	6	6						8	1
MSAFB609-5	100	9	6	7						7	1
MSAFB609-12	100	9	6	7						8	2
MSAFB610-1	100	9	6	7						6	2
MSAFB610-2	100	8	6	7						7	1
MSAFB610-4	100	9	6	7						7	1
MSAFB611-5	100	9	6	7						7	2
MSAFB612-2	100	9	6	7						8	2
MSAFB614-4	100	9	6	7						8	1
MSAFB614-5	100	9	6	7						8	1
MSAFB614-6	100	9	6	7						8	1
MSAFB615-3	100	9	6	7						7	1
MSAFB616-6	100	9	6	8						8	1
MSAFB616-9	100	9	6	6						9	1
MSAFB617-3	100	9	6	7						5	2
MSAFB618-2	100	8	9	9						7	1
MSAFB618-3	100	5	9	9						6	2
MSAFB618-5	100	9	9	8						6	1
MSAFB619-2	100	9	6	8						6	1
MSAFB619-4	100	9	6	9						5	2
MSAFB619-7	100	9	6	7						6	4
MSAFB620-4	100	9	6	6						7	3
MSAFB620-6	100	9	6	7						8	4
MSAFB620-8	100	9	6	7						6	3
MSAFB622-5	100	9	6	7						6	3
MSAFB622-7	100	9	6	3						4	3
MSAFB623-6	100	9	9	6						8	1

Table 22 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
MSAFB626-2	100	9	6	7						7	1
MSAFB626-5	100	9	6	6						7	2
MSAFB626-8	100	9	6	7						7	3
MSAFB632-3	100	9	9	8						6	3
MSAFB634-3	100	9	6	7						7	1
MSAFB634-4	100	9	6	7						9	1
MSAFB635-1	100	9	6	7						6	1
MSAFB635-3	100	9	6	7						7	1
MSAFB635-15	100	9	6	8						7	1
MSAFB636-1	100	9	6	7						8	1
MSAFB636-5	88	9	6	7						7	1
MSAFB636-7	100	9	6	7						8	1
NDAF12139C-2	100	9	6	5						8	1
AF5797-4	100	9	6	4						8	1
AF5799-1	100	9	6	5						8	1
AF5801-1	100	8	9	8						8	2
AF5838-1	100	9	6	7						6	1
AF5840-2	100	9	6	7						5	2
AF5846-3	100	9	6	7						9	2
AF5846-4	100	9	6	6						6	1
AF5848-1	100	9	6	9						5	2
AF5857-1	100	9	6	8						6	1
AF5891-1	100	9	6	7						7	3
AF5892-1	100	9	6	4						8	2
AF5909-1	100	9	6	7						7	1
AF5909-2	100	9	6	9						5	2
VAAF20149-2	100	9	6	6						5	2
VAAF20149-4	88	9	6	7						7	2
VAAF201410-1	100	9	6	6						6	1
WAF13066-2	100	9	6	7						6	2

Table 22 (cont'd). Plant growth and tuber characteristics for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
WAF13073-3	100	9	6	7						7	1
Red LaSoda	100	9	6	4						7	1
Atlantic	100	9	6	7						6	-
Peter Wilcox	100	9	6	6						6	1
Fabula	100	9	6	7						6	2
Satina	100	9	6	7						7	2
Snowden	100	9	6	6						7	1
Dark Red Norland	100	9	6	2						7	1
All Blue	100	9	6	4						6	3
LaChipper	100	9	6	6						8	3

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 8 for 10 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 23. External and internal defects for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Red LaSoda	5	0	0	7	12	0	0	0	0	0	0	0	0
Atlantic	0	0	0	0	0	0	0	0	0	0	5	0	0
Peter Wilcox	10	0	0	0	10	0	0	0	0	0	0	0	0
Fabula	0	0	0	0	0	0	0	0	0	0	0	0	0
Satina	0	0	0	0	0	0	0	0	0	0	0	0	0
Snowden	0	0	4	0	4	0	0	0	0	0	0	0	0
Dark Red Norland	0	0	0	4	4	0	0	0	0	0	0	0	0
All Blue	0	0	0	13	13	0	0	0	0	0	0	0	0
LaChipper	0	0	0	13	13	0	0	0	0	0	0	0	0
AF5710-2	0	0	0	7	7	0	0	0	0	0	0	0	0
AF5715-6	0	0	4	0	4	0	0	0	0	0	0	0	0
AF5803-1	2	0	3	10	16	0	0	0	0	0	5	0	0
AF5807-3	0	0	0	11	11	0	0	0	0	0	0	0	0
AF5808-3	0	0	3	6	9	0	0	0	0	0	0	0	0
AF5811-1	4	0	3	5	12	0	0	0	0	0	5	0	0
AF5812-3	3	0	3	0	6	0	0	0	0	0	5	0	0
AF5817-1	0	0	2	6	7	0	0	0	0	0	0	0	0
AF5817-7	0	0	0	9	9	0	0	0	0	0	0	0	0
AF5819-2	0	0	3	18	21	0	0	0	0	0	0	0	0
AF5819-6	0	0	0	2	2	0	0	0	0	0	0	0	0
AF5822-3	0	0	7	6	13	0	0	0	0	0	0	0	0
AF5824-3	1	0	0	2	3	0	0	0	0	0	0	0	0
AF5824-6	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5825-3	2	0	0	0	2	0	0	0	0	0	0	0	0
AF5827-1	0	0	0	9	9	0	0	0	0	0	0	0	0
AF5829-2	3	0	14	4	22	0	0	0	0	0	0	0	0
AF5830-3	0	0	0	9	9	0	0	0	0	0	0	0	0
AF5842-1	0	0	3	10	12	0	0	0	0	0	0	0	0
AF5842-3	5	0	0	30	35	0	0	0	0	0	0	0	0
AF5847-1	3	0	15	4	22	0	0	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
AF5850-1	0	0	4	21	24	0	0	0	0	0	0	0	0
AF5851-1	10	0	0	8	18	0	0	0	0	0	0	0	0
AF5852-2	3	0	0	7	10	0	0	0	0	0	0	0	0
AF5853-2	1	0	13	5	19	0	0	0	0	0	0	0	0
AF5853-4	0	0	0	19	19	0	0	0	0	0	0	0	0
AF5855-1	2	0	4	10	17	0	0	0	0	0	0	0	0
AF5858-3	4	0	5	12	21	0	0	0	0	0	0	0	0
Atlantic	0	0	0	7	7	0	0	0	0	0	0	0	0
AF5861-1	1	0	0	11	12	0	0	0	0	0	0	0	0
AF5869-2	0	0	6	6	12	0	0	0	0	0	0	0	0
AF5870-1	2	0	0	6	7	0	0	0	0	0	0	0	0
AF5870-2	0	0	0	6	6	0	0	0	0	0	0	0	0
AF5872-1	0	0	2	6	7	0	0	0	0	0	0	0	0
AF5884-4	0	0	0	1	1	0	0	0	0	0	0	0	0
AF5884-6	7	0	0	18	25	0	0	0	0	0	0	0	0
AF5886-3	0	0	2	7	9	0	0	0	0	0	0	0	0
AF5888-1	0	0	3	2	4	0	0	0	0	0	0	0	0
AF5888-2	0	0	4	0	4	0	0	0	0	0	0	0	0
AF5888-3	0	0	0	4	4	0	0	0	0	0	0	0	0
AF5889-2	0	0	4	14	19	0	0	0	0	0	0	0	0
AAF11478-1	0	0	0	0	0	0	0	0	0	0	0	0	0
AAF10903-2	0	0	3	0	3	0	0	0	0	0	0	0	0
WAF13058-1	5	0	0	11	16	0	0	0	0	0	10	0	0
WAF13067-1	0	0	0	25	25	0	0	0	0	0	0	0	0
WAF13074-2	3	0	1	0	4	0	0	0	0	0	0	0	0
WAF13076-2	0	0	0	0	0	0	0	0	0	0	0	0	0
WAF13076-3	4	0	4	7	14	0	0	0	0	0	0	0	0
MSAFB601-1	0	0	0	13	13	0	0	0	0	0	0	0	0
MSAFB601-2	2	0	2	2	7	0	0	0	0	0	0	0	0
MSAFB604-5	0	0	1	3	4	0	0	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
MSAFB605-2	0	0	4	3	7	0	0	0	0	0	0	0	0
MSAFB605-3	0	0	3	0	3	0	0	0	0	0	0	0	0
MSAFB605-4	0	0	11	10	21	0	0	0	0	0	0	0	0
MSAFB609-1	0	0	1	4	5	0	0	0	0	0	0	0	0
MSAFB609-5	1	0	4	0	5	0	0	0	0	0	0	0	0
MSAFB609-12	0	0	11	0	11	0	0	0	0	0	0	0	0
MSAFB610-1	0	0	11	0	11	0	0	0	0	0	0	0	0
MSAFB610-2	3	0	6	0	9	0	0	0	0	0	0	0	0
MSAFB610-4	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB611-5	0	0	0	2	2	0	0	0	0	0	0	0	0
MSAFB612-2	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB614-4	4	0	2	0	6	0	0	0	0	0	0	0	0
MSAFB614-5	0	0	3	0	3	0	0	0	0	0	0	0	0
MSAFB614-6	0	0	3	0	3	0	0	0	0	0	0	0	0
MSAFB615-3	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB616-6	1	0	2	0	2	0	0	0	0	0	0	0	0
MSAFB616-9	0	0	3	2	5	0	0	0	0	0	0	0	0
MSAFB617-3	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB618-2	0	0	4	0	4	0	0	0	0	0	0	0	0
MSAFB618-3	4	0	0	3	7	0	0	0	0	0	0	0	0
MSAFB618-5	1	0	6	0	8	0	0	0	0	0	0	0	0
MSAFB619-2	0	0	2	3	5	0	0	0	0	0	0	0	0
MSAFB619-4	4	0	0	0	4	0	0	0	0	0	5	0	0
MSAFB619-7	0	0	4	1	5	0	30	0	0	0	0	0	0
MSAFB620-4	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB620-6	0	0	0	20	20	0	0	0	0	5	0	0	0
MSAFB620-8	0	0	0	11	11	0	0	0	0	0	0	0	0
MSAFB622-5	0	0	8	8	16	0	0	0	0	0	0	0	0
MSAFB622-7	0	0	0	10	10	0	0	0	0	0	0	0	0
MSAFB623-6	0	0	0	8	8	0	0	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
MSAFB626-2	0	0	3	0	3	0	0	0	0	0	0	0	0
MSAFB626-5	0	0	0	7	7	0	0	0	0	0	0	0	0
MSAFB626-8	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB632-3	0	0	4	16	20	0	0	0	0	0	0	0	0
MSAFB634-3	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB634-4	0	0	0	8	8	0	0	0	0	0	0	0	0
MSAFB635-1	0	0	0	7	7	0	0	0	0	0	0	0	0
MSAFB635-3	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB635-15	0	0	0	4	4	0	0	0	0	0	0	0	0
MSAFB636-1	0	0	0	4	4	0	0	0	0	0	0	0	0
MSAFB636-5	0	0	0	0	0	0	0	0	0	0	0	0	0
MSAFB636-7	0	0	0	0	0	0	0	0	0	0	0	0	0
NDAF12139C-2	0	0	2	3	5	0	0	0	0	0	0	0	0
AF5797-4	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5799-1	0	0	3	3	6	0	0	0	0	0	0	0	0
AF5801-1	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5838-1	5	0	0	0	5	0	0	0	0	0	0	0	0
AF5840-2	0	0	5	12	17	0	0	0	0	0	0	0	0
AF5846-3	0	0	0	11	11	0	0	0	5	0	0	0	0
AF5846-4	0	0	2	4	6	0	0	0	0	0	0	0	0
AF5848-1	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5857-1	0	0	0	0	0	0	0	0	0	0	0	0	0
AF5891-1	0	0	0	0	0	0	0	0	10	0	0	0	0
AF5892-1	0	0	0	13	13	0	0	0	0	0	0	0	0
AF5909-1	0	0	6	0	6	0	0	0	0	0	0	0	0
AF5909-2	0	0	11	0	11	0	0	0	0	0	0	0	0
VAAF20149-2	0	0	0	0	0	0	0	0	0	0	0	0	0
VAAF20149-4	0	0	0	7	7	0	0	0	0	0	0	0	0
VAAF201410-1	0	0	0	6	6	0	0	0	0	0	0	0	0
WAF13066-2	5	0	4	0	8	0	0	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2016 University of Maine Early Generation Round Whites Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis- shapen	Sun- burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
WAF13073-3	0	0	0	0	0	0	0	0	0	0	0	0	0
Red LaSoda	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlantic	0	0	0	5	5	0	0	0	0	0	0	0	0
Peter Wilcox	0	0	0	0	0	0	0	0	0	0	0	0	0
Fabula	0	0	6	5	11	0	0	0	0	0	0	0	0
Satina	3	0	0	16	19	0	0	0	0	0	0	0	0
Snowden	0	0	0	0	0	0	0	0	0	0	0	0	0
Dark Red Norland	0	0	0	0	0	0	0	0	0	0	0	0	0
All Blue	0	0	0	0	0	0	0	0	0	0	0	0	0
LaChipper	0	0	0	35	35	0	0	0	0	0	0	0	0

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

Chapter 9. USPB National Chip Processing Trial

General Comments

In the past, many selections from breeding programs may have been eliminated before they had an opportunity to be evaluated in many locations. This study has been set up to evaluate the earliest selections from public breeding programs. These selections are also evaluated in several other locations across the United States. Clones that performed the best at multiple locations are then compared and kept for further evaluation. This trial is supported by the United States Potato Board.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	January 29, 2016
Vine Kill Date	N/A
Harvest Date	May 2, 2016
Season Length	94 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	4 (Standard: Atlantic)
Number of Clones	130
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1 replication for Tier 1 & 2 replications for Tier 2
Plot Size	10 ft (3.0 m)

Production Statistics

Early Vigor Ratings	45 DAP
Highest Total Yield	NC473-2 (445 cwt/acre or 49.9 T/ha)
Highest Marketable Yield	NC473-2 (358 cwt/acre or 40.1 T/ha)
Highest Specific Gravity	NCB3171-4 (1.093)

Table 24. Production statistics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-94 days</u>												
Atlantic	369	280	100	4	15	64	6	11	0	81	17	1.074
Lamoka	289	197	70	5	17	72	3	2	0	78	5	1.070
Pike	342	274	98	2	12	68	10	7	0	86	18	1.072
Snowden	332	198	71	6	32	61	1	1	0	62	2	1.077
<u>Tier 1 = 1 rep</u>												
NYM7-4	330	246	88	5	19	76	0	0	0	76	0	1.079
NYM7-6	388	292	104	5	18	73	2	2	0	77	4	1.051
NYM8-5	312	202	72	4	31	63	3	0	0	66	3	1.071
AC10239-7W	161	109	39	1	30	62	7	0	0	70	7	1.074
AFC5551-4W	218	107	38	11	36	48	0	5	0	53	5	1.071
AFC5563-5W	216	82	29	15	42	37	0	6	0	43	6	1.081
CO10030-3W	237	84	30	20	43	34	3	0	0	37	3	1.067
CO10032-8W	244	120	43	14	35	51	0	0	0	51	0	1.055
CO10073-7W	278	139	50	14	33	42	5	6	0	53	10	1.067
CO10076-4W	187	91	33	6	44	50	0	0	0	50	0	1.076
MSV242-7	298	197	71	6	27	56	6	5	0	67	11	1.082
MSV434-04	302	237	85	7	13	61	10	10	0	80	20	1.058
MSV507-001	306	86	31	13	53	34	0	0	0	34	0	1.087
MSV507-003	321	148	53	10	43	47	0	0	0	47	0	1.082
MSV507-007	293	209	75	4	21	62	8	4	0	75	12	1.078
MSV507-073	387	260	93	3	30	65	2	0	0	67	2	1.085
MSV507-198	336	247	88	3	23	71	0	3	0	74	3	1.077
MSW324-1	332	94	34	24	47	30	0	0	0	30	0	1.083
MSW394-1	358	252	90	4	25	68	2	0	0	70	2	1.077
MSZ020-08	388	306	110	3	16	77	2	2	0	82	4	1.068
MSZ022-07	379	257	92	6	23	66	3	3	0	71	5	1.075
MSZ022-19	368	302	108	2	15	83	0	0	0	83	0	1.075
MSZ045-09	226	162	58	4	20	63	0	13	0	77	13	1.084
MSZ052-11	362	221	79	6	29	65	0	0	0	65	0	1.066
MSZ052-31	316	208	74	3	23	74	0	0	0	74	0	1.065

Table 24 (cont'd). Production statistics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
MSZ062-10	217	129	46	6	35	59	0	0	0	59	0	1.083
MSZ096-03	233	102	37	14	39	48	0	0	0	48	0	1.077
MSZ101-06	383	264	94	3	27	66	4	0	0	70	4	1.084
MSZ101-07	411	272	97	4	28	62	6	0	0	68	6	1.081
MSZ118-08	222	149	53	7	26	60	0	7	0	67	7	1.078
MSZ219-13	427	344	123	3	15	78	2	2	0	82	4	1.081
MSZ242-09	292	227	81	2	17	66	9	7	0	82	15	1.069
MSZ242-13	268	163	58	9	29	57	5	0	0	62	5	1.074
NC470-3	434	297	106	4	27	59	5	6	0	70	11	1.086
NC472-1	437	251	90	7	34	52	2	5	0	59	7	1.083
NC473-2	445	358	128	3	13	66	10	8	0	84	18	1.073
NCB3146-1	298	153	55	15	32	53	0	0	0	53	0	1.074
NCB3165-3	269	127	45	15	36	48	0	0	0	48	0	1.085
NCB3171-4	270	118	42	10	45	46	0	0	0	46	0	1.093
NCB3171-7	349	126	45	20	43	37	0	0	0	37	0	1.083
ND102642C-2	258	155	55	4	19	68	8	0	0	76	8	1.065
ND102858CB-2	382	314	112	1	10	59	12	18	0	89	30	1.067
ND102921C-3	151	26	9	30	53	17	0	0	0	17	0	1.073
ND113278-3	283	207	74	3	24	73	0	0	0	73	0	1.073
ND113307C-3	358	149	53	13	45	42	0	0	0	42	0	1.082
ND113394CAB-7	293	149	53	9	39	52	0	0	0	52	0	1.088
ND4100C-19	317	248	89	3	10	71	16	0	0	87	16	1.066
ND5255-59	294	153	55	11	36	50	2	0	0	53	2	1.078
AOR11455-4	328	117	42	23	40	36	0	0	0	36	0	1.085
AOR11470-1	422	233	83	8	34	58	0	0	0	58	0	1.082
AOR11484-2	278	200	71	5	19	76	0	0	0	76	0	1.067
OR12479-5	359	286	102	4	14	72	10	0	0	82	10	1.066
AORTX09032-3W	369	208	74	9	29	59	3	0	0	62	3	1.078
AORTX09033-4W	341	182	65	5	35	57	0	3	0	60	3	1.059
AORTX09037-1W	274	156	56	9	26	46	14	5	0	65	19	1.070

Table 24 (cont'd). Production statistics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
AORTX09037-4W	383	262	94	4	25	62	6	3	0	71	8	1.068
AORTX10247-1W/Y	291	151	54	9	37	50	0	4	0	54	4	1.073
ATTX11476-11W	231	107	38	10	39	50	0	0	0	50	0	1.073
NDTX102852CB-3Ru	138	29	10	15	60	25	0	0	0	25	0	1.061
NDTX102852CB-4Ru	132	34	12	17	55	28	0	0	0	28	0	1.077
NDTX113030C-10W	248	93	33	8	52	40	0	0	0	40	0	1.069
NDTX113030C-3W	338	106	38	15	50	35	0	0	0	35	0	1.077
NDTX113037C-3W	345	146	52	12	43	45	0	0	0	45	0	1.070
WTX10666-8W	237	134	48	11	25	64	0	0	0	64	0	1.090
AF5563-2	386	294	105	3	8	76	5	8	0	89	13	1.086
AF5584-1	311	154	55	9	34	56	0	0	0	56	0	1.087
AF5635-8	282	165	59	13	28	53	3	3	0	59	6	1.073
AF5639-6	176	102	36	12	17	69	3	0	0	71	3	1.069
AF5648-3	353	291	104	3	13	84	0	0	0	84	0	1.087
AF5665-2	268	138	49	11	34	54	0	0	0	54	0	1.068
AF5677-6	275	181	65	7	24	63	0	7	0	69	7	1.078
AF5682-3	243	160	57	6	26	64	4	0	0	68	4	1.080
AF5682-5	258	127	45	8	33	59	0	0	0	59	0	1.089
NDAF113470C-3	257	168	60	5	27	68	0	0	0	68	0	1.068
WAF12065-8	272	213	76	2	13	65	6	14	0	84	19	1.064
AFW5484-6 (removed)												
AFW5563-1 (removed)												
W10637-20 (removed)												
W10645-7 (removed)												
W10659-16	342	196	70	5	33	59	2	3	0	63	4	1.062
W10659-8	299	193	69	9	21	64	2	3	0	70	6	1.063
B3012-1	293	197	70	6	27	64	3	0	0	67	3	1.066
B3147-3	283	196	70	5	22	74	0	0	0	74	0	1.073
B3152A-3	162	34	12	21	56	24	0	0	0	24	0	1.087
B3153-3	254	71	25	23	48	29	0	0	0	29	0	1.078

Table 24 (cont'd). Production statistics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
B3155-3	247	132	47	11	35	54	0	0	0	54	0	1.075
B3159-7	271	192	69	6	21	70	3	0	0	73	3	1.068
B3165-11	308	163	58	10	35	56	0	0	0	56	0	1.081
B3172-12	338	98	35	19	49	32	0	0	0	32	0	1.084
B3172-3	261	151	54	4	31	64	0	0	0	64	0	1.089
B3172-8	282	138	49	14	36	47	3	0	0	50	3	1.068
BNC469-12	319	209	75	5	28	66	0	0	0	66	0	1.083
BNC469-16	252	144	51	12	31	47	6	4	0	57	10	1.078
BNC469-17	217	110	39	13	36	51	0	0	0	51	0	1.058
BNC469-7	379	257	92	8	22	53	6	11	0	69	16	1.072
BNC472-3	261	120	43	11	38	50	0	0	0	50	0	1.082
Tier 2 = 2 reps												
NY154	392	240	86	5	31	61	1	1	0	64	3	1.066
NYK27-3	301	220	79	3	25	71	2	0	0	72	2	1.084
NYK31-4	287	184	66	4	26	67	3	0	0	70	3	1.077
NYL17-3	336	161	58	10	39	51	0	0	0	51	0	1.080
NYL2-12	296	134	48	7	46	47	0	0	0	47	0	1.081
NYL7-2	304	168	60	6	38	49	4	3	0	56	8	1.075
NYL8-12	263	122	44	6	45	49	0	0	0	49	0	1.079
AC01144-1W	253	110	39	12	40	48	0	0	0	48	0	1.071
MSU379-1	331	271	97	3	16	78	4	0	0	81	4	1.076
MSU383-A	323	250	89	2	18	69	4	8	0	80	11	1.063
MSV033-1	377	251	90	4	26	65	2	3	0	70	5	1.089
MSV383-B	275	193	69	6	20	71	3	0	0	75	3	1.086
MSV498-1	258	155	55	8	30	61	2	0	0	62	2	1.081
MSW075-2	243	138	49	8	34	56	1	0	0	58	1	1.074
MSZ219-1	287	148	53	7	40	51	1	0	0	52	1	1.072
MSZ219-14	410	262	94	4	26	62	4	4	0	70	8	1.090
MSZ222-19	356	269	96	2	19	74	3	1	0	79	5	1.076
NC252-49	334	152	54	9	44	46	1	0	0	47	1	1.082
NC280-89	416	236	84	9	32	55	2	2	0	59	4	1.077
NC371-3	365	223	80	7	30	59	4	0	0	63	4	1.076

Table 24 (cont'd). Production statistics for the 2016 USPB National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
AOR09034-3	318	180	64	6	31	60	3	0	0	63	3	1.073
OR9256-2	346	269	96	5	15	78	2	0	0	80	2	1.078
AF5040-8	329	212	76	5	24	68	3	0	0	71	3	1.079
AF5393-1	165	123	44	5	14	82	0	0	0	82	0	1.076
AF5445-2	370	162	58	12	44	43	0	2	0	44	2	1.073
AF5484-3	256	169	60	5	27	68	0	0	0	68	0	1.086
AF5583-3	330	257	92	5	15	59	13	9	0	80	22	1.076
W10128-1 (removed)												
W9891-1	358	269	96	5	16	65	7	6	0	79	14	1.082
W9905-3	331	227	81	6	24	70	0	0	0	70	0	1.074
W9968-5	380	222	80	4	35	60	1	0	0	61	1	1.074
B2869-29	304	146	52	12	40	46	0	2	0	48	2	1.080
B2904-2	357	267	96	4	15	70	7	3	0	81	10	1.067
BNC311-4	332	235	84	4	20	68	6	2	0	75	7	1.076

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

Table 25. Plant growth and tuber characteristics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²							SFA Chip Score	SED Score	Merit
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP				
Atlantic	100	7	9	9	2	6	6	5	8	8	1.3	2	2	
Lamoka	97	7	9	9	2	6	7	2	8	6	1.3	1	3	
Pike	100	7	9	9	2	7	6	4	7	7	1.6	2	3	
Snowden	98	8	9	8	2	7	5	2	7	7	1.3	2	2	
Tier 1 = 1 rep														
NYM7-4	100	7	9	8	2	7	6	5	9	9	1.0	0	1	
NYM7-6	100	7	9	9	2	7	5	5	7	8	1.5	1	3	
NYM8-5	100	9	9	8	2	7	6	3	9	7	1.0	0	2	
AC10239-7W	100	8	9	8	2	7	7	6	7	8	1.5	2	3	
AFC5551-4W	87	7	9	8	2	5	7	2	8	5	1.5	1	3	
AFC5563-5W	100	8	9	8	2	7	6	1	7	5	1.0	2	3	
CO10030-3W	100	8	9	7	2	6	8	1	9	7	1.5	1	3	
CO10032-8W	100	7	9	7	2	6	7	1	7	4	1.0	0	3	
CO10073-7W	100	8	9	7	2	6	7	5	8	5	1.5	2	3	
CO10076-4W	100	7	9	6	1	6	8	1	7	7	1.5	2	3	
MSV242-7	100	8	9	7	2	5	6	2	7	6	1.0	1	3	
MSV434-04	100	7	9	8	2	5	5	2	7	8	1.0	0	3	
MSV507-001	100	8	9	7	2	5	5	5	8	6	1.5	1	3	
MSV507-003	100	8	9	7	1	7	7	4	9	6	1.0	1	3	
MSV507-007	100	8	9	6	2	9	7	4	8	6	1.5	2	2	
MSV507-073	100	7	9	8	2	7	8	4	7	8	2.0	2	1	
MSV507-198	100	8	9	7	2	7	7	5	8	8	1.5	2	3	
MSW324-1	93	7	9	7	2	5	6	2	8	7	1.0	0	4	
MSW394-1	100	8	9	8	2	7	6	5	9	8	1.0	0	1	
MSZ020-08	100	8	9	8	2	5	5	4	8	8	1.5	0	2	
MSZ022-07	100	8	9	7	2	5	5	5	8	7	1.5	2	1	
MSZ022-19	93	8	9	7	2	7	7	1	8	5	1.0	0	1	
MSZ045-09	100	7	9	9	2	7	7	1	7	6	1.0	2	2	
MSZ052-11	100	8	9	8	2	5	6	2	8	7	1.0	1	4	
MSZ052-31	100	8	9	7	2	7	5	5	7	8	1.0	0	2	

Table 25 (cont'd). Plant growth and tuber characteristics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²								
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
MSZ062-10	93	7	9	8	2	7	6	2	7	5	1.0	0	3
MSZ096-03	100	8	9	8	2	7	6	1	7	5	1.5	1	4
MSZ101-06	100	7	9	9	2	7	6	5	6	8	1.5	2	1
MSZ101-07	93	8	9	9	2	7	7	3	8	8	1.0	0	1
MSZ118-08	100	8	9	8	2	5	6	1	8	6	1.0	1	3
MSZ219-13	100	8	9	9	2	5	5	3	6	9	1.5	2	3
MSZ242-09	100	7	9	8	2	7	5	4	9	6	1.0	1	2
MSZ242-13	100	8	9	8	2	5	5	1	7	7	1.0	1	2
NC470-3	100	8	9	8	2	5	6	6	8	8	1.0	0	1
NC472-1	100	9	9	8	2	5	6	4	8	8	1.5	2	1
NC473-2	100	7	9	8	2	5	5	6	7	9	1.0	1	1
NCB3146-1	100	9	9	5	2	6	6	3	7	7	1.0	1	4
NCB3165-3	100	8	9	7	2	6	8	1	7	5	1.5	2	4
NCB3171-4	100	9	9	7	2	9	8	1	7	6	1.5	1	3
NCB3171-7	100	9	9	7	2	7	7	2	8	6	1.0	0	3
ND102642C-2	100	7	9	8	2	9	8	3	9	5	1.0	1	3
ND102858CB-2	100	8	9	7	2	7	7	5	7	7	1.5	2	2
ND102921C-3	100	8	9	5	2	9	7	1	8	8	1.0	1	3
ND113278-3	93	8	9	7	2	7	5	5	9	8	1.0	0	2
ND113307C-3	87	8	9	6	2	9	9	5	9	9	1.0	1	3
ND113394CAB-7	100	8	9	7	2	7	7	2	7	4	1.5	1	4
ND4100C-19	100	7	9	8	2	5	7	4	7	7	2.5	2	2
ND5255-59	100	8	9	6	2	9	6	1	7	6	1.5	0	3
AOR11455-4	100	9	9	8	2	7	6	2	9	6	1.5	2	3
AOR11470-1	100	7	9	9	2	7	6	5	9	7	1.5	1	2
AOR11484-2	100	8	9	7	2	7	6	2	7	7	1.0	1	2
OR12479-5	100	7	9	7	2	6	7	6	9	6	2.0	2	2
AORTX09032-3W	100	8	9	8	2	7	7	5	8	7	1.5	2	2
AORTX09033-4W	100	8	9	6	1	6	8	5	9	5	1.5	1	3
AORTX09037-1W	100	8	9	6	2	7	8	2	8	6	1.5	2	3

Table 25 (cont'd). Plant growth and tuber characteristics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²								
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
AORTX09037-4W	100	7	9	9	2	9	7	3	8	8	1.5	2	2
AORTX10247-1W/Y	100	9	9	7	2	7	6	2	8	7	1.5	1	3
ATTX11476-11W	100	8	9	6	2	5	7	5	9	5	1.5	2	3
NDTX102852CB-3Ru	100	7	9	7	2	5	6	2	9	4	1.0	1	3
NDTX102852CB-4Ru	100	7	9	7	2	7	5	5	9	8	1.0	1	3
NDTX113030C-10W	100	8	9	7	2	6	7	5	7	5	1.0	2	3
NDTX113030C-3W	100	8	9	7	2	9	8	5	8	8	1.0	1	3
NDTX113037C-3W	93	9	9	6	2	9	6	1	9	5	2.0	2	3
WTX10666-8W	80	8	9	7	2	6	7	3	7	4	1.5	1	3
AF5563-2	100	7	9	9	2	7	5	5	7	8	1.0	1	2
AF5584-1	100	8	9	7	2	6	7	5	7	6	1.0	1	3
AF5635-8	100	6	9	9	2	9	8	1	7	6	1.5	2	2
AF5639-6	100	8	9	8	2	6	7	2	9	5	1.5	0	3
AF5648-3	100	7	9	8	2	7	7	1	7	9	1.0	0	1
AF5665-2	100	7	9	9	2	7	6	3	7	7	1.0	1	3
AF5677-6	100	7	9	9	2	9	7	3	9	5	1.5	2	2
AF5682-3	100	4	6	9	2	6	7	2	7	7	2.0	3	2
AF5682-5	100	8	9	9	2	7	8	6	9	5	2.0	2	3
NDAF113470C-3	100	7	9	9	2	7	6	2	8	5	1.0	2	2
WAF12065-8	87	5	8	9	2	7	7	2	8	5	1.5	1	2
AFW5484-6 (removed)													
AFW5563-1 (removed)													
W10637-20 (removed)													
W10645-7 (removed)													
W10659-16	100	8	9	7	2	6	6	3	8	7	1.0	1	2
W10659-8	100	8	9	7	2	7	6	2	8	6	1.0	2	2
B3012-1	100	8	9	7	2	7	6	2	8	7	1.5	1	2
B3147-3	100	7	9	8	1	6	9	5	8	8	1.0	2	3
B3152A-3	100	9	9	7	2	1	7	5	9	9	1.0	1	3
B3153-3	100	8	9	9	2	6	7	1	9	6	1.0	1	3

Table 25 (cont'd). Plant growth and tuber characteristics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²								
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
B3155-3	100	7	9	9	2	9	6	6	9	6	1.5	1	3
B3159-7	100	6	9	8	2	7	7	1	9	5	1.0	0	2
B3165-11	87	8	9	7	2	9	7	4	9	6	1.0	2	2
B3172-12	100	8	9	7	2	7	7	3	7	6	1.5	2	3
B3172-3	100	9	9	7	2	9	6	1	7	6	1.5	2	3
B3172-8	100	9	9	7	3	7	5	2	7	8	1.5	1	3
BNC469-12	100	8	9	7	2	7	5	3	8	9	1.5	1	2
BNC469-16	100	8	9	7	2	7	5	5	9	7	1.0	0	3
BNC469-17	73	9	7	9	1	6	6	5	8	7	1.5	1	3
BNC469-7	93	8	9	7	2	5	5	2	7	7	1.0	1	1
BNC472-3	93	8	9	7	2	7	5	6	8	7	1.0	2	3
Tier 2 = 2 reps													
NY154	97	8	9	8	2	7	6	6	7	9	1.0	1	2
NYK27-3	100	7	9	9	2	6	7	5	7	8	1.0	2	3
NYK31-4	100	7	9	9	2	7	7	6	9	7	1.0	1	3
NYL17-3	97	8	9	8	2	8	7	4	9	7	1.3	2	3
NYL2-12	100	8	9	8	2	7	7	4	8	7	1.0	1	3
NYL7-2	93	6	9	9	2	7	8	3	8	6	1.3	2	2
NYL8-12	100	9	9	7	2	7	8	2	7	7	1.0	1	3
AC01144-1W	83	8	9	8	2	8	7	4	7	6	1.5	2	4
MSU379-1	93	8	9	7	2	6	5	5	7	8	1.0	1	2
MSU383-A	97	8	9	7	2	6	6	4	8	7	1.3	1	3
MSV033-1	100	9	9	8	2	6	6	5	9	8	1.0	1	3
MSV383-B	100	8	9	8	2	5	5	2	8	6	1.0	1	3
MSV498-1	100	8	9	7	2	5	6	3	9	7	1.0	1	4
MSW075-2	100	7	9	8	2	7	8	2	8	6	1.0	1	3
MSZ219-1	100	9	9	7	2	5	5	4	8	7	1.5	1	3
MSZ219-14	100	9	9	8	2	5	5	4	6	8	1.3	1	2
MSZ222-19	100	8	9	8	2	5	5	5	8	9	1.0	1	3
NC252-49	100	8	9	9	2	7	6	3	7	7	1.0	1	3
NC280-89	100	8	9	7	2	7	7	6	8	7	2.5	3	2
NC371-3	100	8	9	7	2	7	7	4	8	8	1.3	1	2

Table 25 (cont'd). Plant growth and tuber characteristics for the 2016 USBP National Chip Processing Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²								
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
AOR09034-3	100	9	9	8	2	7	7	4	9	6	1.0	1	3
OR9256-2	97	8	9	8	2	5	5	5	8	8	1.3	2	3
AF5040-8	100	8	9	8	2	7	7	4	7	6	1.0	1	3
AF5393-1	88	6	8	9	2	6	6	1	9	6	1.0	1	3
AF5445-2	100	9	9	7	2	8	6	3	9	7	1.3	2	3
AF5484-3	100	7	9	9	2	7	8	3	8	7	1.0	2	3
AF5583-3	100	6	9	9	2	7	8	2	9	7	1.5	2	3
W10128-1 (removed)													
W9891-1	100	8	9	8	2	6	6	4	8	8	1.5	1	2
W9905-3	100	8	9	7	2	7	6	4	8	7	1.3	2	2
W9968-5	100	8	9	7	2	8	7	4	8	9	1.0	2	2
B2869-29	100	9	9	8	2	8	6	2	8	6	1.0	0	3
B2904-2	100	7	9	9	2	7	6	5	8	8	1.3	1	3
BNC311-4	100	8	9	7	2	7	6	4	8	8	1.0	0	3

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 15 for 10 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

SFA Chip Score: Snack Food Association Scale (out of the field) Ratings 1-5: 1 = no defects, exceptionally bright, 2 = excellent, bright, 3 = good, light or golden, 4 = dark defects, marginal, 5 = not acceptable.

SED Score: Stem End Defect, based on Paul Bethke's (USDA/UWisconsin - Madison) 0-5 scale: 0 = no SED, 3 = significant SED, 5 = severe SED.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 26. External and internal defects for the 2016 USBP National Chip Processing Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Atlantic	3	0	2	1	7	0	8	0	0	0	3	0	0
Lamoka	1	2	2	10	16	0	0	0	0	8	0	0	0
Pike	0	0	3	3	6	0	0	0	0	6	1	5	0
Snowden	0	0	2	2	4	0	0	0	0	0	4	0	0
Tier 1 = 1 rep													
NYM7-4	1	1	0	0	2	0	0	0	0	0	0	0	0
NYM7-6	0	0	0	2	2	0	0	0	0	0	0	0	0
NYM8-5	0	0	1	0	1	0	0	0	0	0	0	0	0
AC10239-7W	3	0	0	0	3	0	0	0	0	0	0	0	0
AFC5551-4W	0	6	2	0	8	0	0	0	0	6	13	0	0
AFC5563-5W	0	6	0	5	11	0	0	0	0	0	0	0	0
CO10030-3W	0	4	0	0	4	0	0	0	0	6	0	0	0
CO10032-8W	0	0	3	0	3	0	0	0	0	0	0	0	0
CO10073-7W	0	0	0	4	4	0	0	0	0	0	6	0	0
CO10076-4W	0	0	0	3	3	0	0	0	0	0	0	0	0
MSV242-7	0	0	1	0	1	0	0	0	0	6	0	0	0
MSV434-04	0	0	2	0	2	0	0	0	0	0	0	0	0
MSV507-001	0	12	2	3	16	0	0	0	0	7	0	0	0
MSV507-003	0	0	0	3	3	0	0	0	0	0	0	0	0
MSV507-007	0	3	2	0	5	0	0	0	0	0	0	0	0
MSV507-073	0	0	0	0	0	0	0	0	0	0	0	0	0
MSV507-198	0	0	0	1	1	0	15	0	0	0	0	0	0
MSW324-1	4	0	1	0	4	0	0	0	0	45	10	0	0
MSW394-1	0	0	0	0	0	0	0	0	0	0	0	0	0
MSZ020-08	1	0	0	2	3	0	0	0	0	0	0	0	0
MSZ022-07	0	0	2	2	5	0	0	0	0	0	0	0	0
MSZ022-19	0	0	1	1	2	0	0	0	0	0	0	0	0
MSZ045-09	3	0	3	0	7	0	0	0	0	0	0	0	0
MSZ052-11	1	0	1	5	6	0	0	0	0	10	0	0	0
MSZ052-31	1	0	3	7	11	0	0	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2016 USB National Chip Processing Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
MSZ062-10	0	0	0	0	0	0	0	0	0	0	0	0	0
MSZ096-03	2	0	1	4	8	0	0	0	6	13	0	0	0
MSZ101-06	0	0	0	2	2	0	0	0	0	0	0	0	0
MSZ101-07	0	0	0	3	3	0	0	0	0	0	0	0	0
MSZ118-08	0	0	0	0	0	0	0	0	5	5	0	0	0
MSZ219-13	0	0	1	1	2	0	10	0	0	0	0	0	0
MSZ242-09	0	0	2	3	4	0	0	0	0	0	0	0	0
MSZ242-13	0	0	1	2	3	0	0	0	0	0	0	0	0
NC470-3	0	0	0	2	2	0	0	0	0	0	0	0	0
NC472-1	0	1	1	0	2	0	0	0	0	0	0	0	0
NC473-2	0	0	3	1	4	0	0	0	0	0	0	0	0
NCB3146-1	0	0	0	3	3	0	0	0	0	16	0	0	0
NCB3165-3	0	0	1	1	2	0	0	0	0	19	13	0	0
NCB3171-4	0	1	0	3	4	0	0	0	0	0	0	0	0
NCB3171-7	0	1	0	2	3	0	0	0	0	0	0	0	0
ND102642C-2	0	0	3	19	21	0	6	0	0	0	0	0	0
ND102858CB-2	2	2	3	0	8	0	0	0	0	0	0	0	0
ND102921C-3	0	0	0	0	0	0	0	0	0	0	0	0	0
ND113278-3	0	0	0	0	0	0	0	0	0	0	0	0	0
ND113307C-3	0	0	0	2	2	0	0	0	0	0	0	0	0
ND113394CAB-7	0	2	0	1	2	0	0	0	0	50	5	5	0
ND4100C-19	8	0	3	0	10	0	0	0	0	0	0	0	0
ND5255-59	0	0	0	1	1	0	0	0	10	5	0	0	0
AOR11455-4	0	0	1	1	2	0	0	0	0	0	0	0	0
AOR11470-1	0	0	5	1	5	0	0	0	0	0	0	0	0
AOR11484-2	0	0	0	5	5	0	0	0	0	0	0	0	0
OR12479-5	0	0	1	1	2	0	0	0	0	0	0	0	0
AORTX09032-3W	0	0	2	8	10	0	5	0	0	0	0	0	0
AORTX09033-4W	4	0	3	4	11	0	0	0	0	0	0	0	0
AORTX09037-1W	1	0	3	8	13	0	0	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2016 USB National Chip Processing Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
AORTX09037-4W	0	0	2	1	3	0	0	0	0	0	0	0	0
AORTX10247-1W/Y	0	0	4	0	4	0	0	0	0	0	0	0	0
ATTX11476-11W	0	0	0	8	8	0	0	0	0	0	0	0	0
NDTX102852CB-3Ru	0	0	0	14	14	0	0	0	0	0	0	0	0
NDTX102852CB-4Ru	0	0	0	8	8	0	0	0	0	0	0	0	0
NDTX113030C-10W	0	0	0	6	6	0	0	0	7	0	0	0	0
NDTX113030C-3W	6	0	0	4	10	0	0	0	0	0	0	0	0
NDTX113037C-3W	0	0	5	1	6	0	0	0	0	0	0	0	0
WTX10666-8W	3	0	0	9	12	0	0	0	0	0	0	0	0
AF5563-2	3	0	11	1	15	0	5	0	0	0	0	0	0
AF5584-1	0	0	4	8	12	0	0	0	0	0	0	0	0
AF5635-8	0	0	0	1	1	0	0	0	0	0	0	0	0
AF5639-6	0	0	0	19	19	0	0	0	0	0	0	0	0
AF5648-3	2	0	0	0	2	0	0	0	0	0	0	0	0
AF5665-2	0	1	1	3	5	0	5	0	0	0	0	0	0
AF5677-6	0	0	4	1	5	0	0	0	0	0	0	0	0
AF5682-3	0	0	0	3	3	0	0	0	0	0	0	0	0
AF5682-5	7	0	5	4	17	0	0	0	0	0	0	0	0
NDAF113470C-3	0	0	1	3	4	0	0	0	0	0	0	0	0
WAF12065-8	0	4	0	3	7	0	0	0	0	0	5	0	0
AFW5484-6 (removed)													
AFW5563-1 (removed)													
W10637-20 (removed)													
W10645-7 (removed)													
W10659-16	0	0	0	9	9	0	0	0	0	0	0	5	0
W10659-8	0	0	3	5	8	0	0	0	0	0	0	0	0
B3012-1	0	0	0	0	0	0	0	0	0	0	0	0	0
B3147-3	0	0	4	2	6	0	0	0	0	5	0	0	0
B3152A-3	0	0	0	11	11	0	0	0	0	0	0	0	0
B3153-3	0	1	2	0	3	0	0	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2016 USBP National Chip Processing Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
B3155-3	0	0	0	1	1	0	0	0	0	0	0	0	0
B3159-7	0	0	0	3	3	0	0	0	0	0	5	0	0
B3165-11	0	0	0	6	6	0	0	0	0	0	0	0	0
B3172-12	0	0	0	10	10	0	0	0	0	7	0	0	0
B3172-3	0	0	0	11	11	0	0	0	0	5	5	0	0
B3172-8	0	0	1	2	3	0	0	0	0	0	0	0	0
BNC469-12	1	0	0	0	1	0	0	0	0	0	0	0	0
BNC469-16	0	0	0	0	0	0	0	0	0	0	0	0	0
BNC469-17	0	0	0	2	2	0	0	0	0	0	0	0	0
BNC469-7	0	0	2	0	2	0	0	0	0	0	0	0	0
BNC472-3	1	0	3	4	8	0	0	0	0	0	0	0	0
Tier 2 = 2 reps													
NY154	1	0	1	1	3	0	0	0	0	0	0	0	0
NYK27-3	0	1	2	0	3	0	0	0	0	8	0	0	0
NYK31-4	0	8	1	0	9	0	0	0	0	0	3	0	0
NYL17-3	0	0	1	5	6	0	3	0	0	0	0	0	0
NYL2-12	0	0	1	1	2	0	0	0	0	0	0	0	0
NYL7-2	0	0	1	1	2	0	0	0	0	0	0	0	0
NYL8-12	0	0	1	4	5	0	0	0	5	0	0	0	0
AC01144-1W	0	0	1	9	9	0	0	0	0	5	0	0	0
MSU379-1	0	0	0	0	0	0	0	0	0	0	0	0	0
MSU383-A	0	0	0	4	4	0	0	0	0	0	0	0	0
MSV033-1	3	0	0	2	5	0	0	0	0	5	0	0	0
MSV383-B	1	3	4	1	8	0	5	0	0	0	0	0	0
MSV498-1	2	0	0	2	4	0	0	0	0	8	0	0	0
MSW075-2	0	3	0	1	3	0	0	0	0	0	0	0	0
MSZ219-1	0	0	0	1	1	0	0	0	0	3	0	0	0
MSZ219-14	0	0	1	7	8	0	0	0	0	0	0	0	0
MSZ222-19	0	1	0	3	5	0	0	0	0	0	5	0	0
NC252-49	0	0	0	2	3	0	0	0	0	0	0	0	0
NC280-89	0	1	1	2	5	0	0	0	0	0	0	0	0
NC371-3	0	0	0	0	1	0	0	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2016 USB National Chip Processing Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
AOR09034-3	0	0	0	8	8	0	0	0	0	4	4	0	0
OR9256-2	2	0	0	1	3	0	5	0	10	5	0	0	0
AF5040-8	0	0	1	8	9	0	5	0	0	8	0	0	0
AF5393-1	0	3	5	0	8	0	0	0	0	0	0	0	0
AF5445-2	0	0	0	2	2	0	5	0	0	0	0	0	0
AF5484-3	0	1	4	0	5	0	0	0	0	0	0	0	0
AF5583-3	0	0	1	3	3	0	10	0	0	5	0	0	0
W10128-1 (removed)													
W9891-1	0	0	2	3	5	0	0	0	0	3	0	0	0
W9905-3	0	1	0	3	4	0	0	0	0	0	0	0	0
W9968-5	0	0	1	3	3	0	0	0	0	0	0	0	0
B2869-29	0	0	0	2	2	0	0	0	0	0	3	0	0
B2904-2	0	3	3	2	8	0	0	0	0	0	0	0	0
BNC311-4	1	0	0	4	6	0	0	0	3	5	0	0	0

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

Chapter 10. USDA Chipping Potato Variety Trial

General Comments

A goal of the chipping trial is to identify a short-season processing potato variety with better production and quality characteristics than the “standard” Atlantic.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 11, 2016
Vine Kill Date	N/A
Harvest Date	May 18, 2016
Season Length	97 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	11 (Standard: Atlantic)
Number of Clones	57
Within Row Spacing	8 in (20 cm)
Between Row Spacing	40 in (102 cm)
Replications	4
Plot Size	16 ft (4.9 m)

Production Statistics

Early Vigor Ratings	50 DAP
Highest Total Yield	BNC369-4 (446 cwt/acre or 50.0 T/ha)
Highest Marketable Yield	BNC470-16 (393 cwt/acre or 44.0 T/ha)
Highest Specific Gravity	BD982-15 (1.080)

Table 27. Production statistics for the 2016 USDA Chipping Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-97 days</u>												
BNC468-1	403	322	105	5	13	65	16	0	0	81	16	1.063
BNC469-1	339	231	75	6	22	66	5	1	0	71	6	1.070
BNC469-2	366	249	81	9	23	57	8	3	0	68	10	1.070
BNC469-5	293	247	80	4	10	71	12	3	0	86	15	1.069
BNC469-9	406	340	111	4	10	58	16	11	0	86	27	1.071
BNC469-11	345	254	82	6	17	64	8	4	0	77	12	1.065
BNC469-12	321	208	68	9	24	63	2	2	0	67	4	1.076
BNC469-13	318	198	64	8	27	60	3	1	0	64	4	1.069
BNC470-16	438	393	128	2	5	52	28	12	0	93	41	1.068
BNC471-2	275	205	67	4	17	63	7	8	0	78	15	1.064
BNC476-1	374	313	102	2	7	56	16	18	0	91	35	1.070
BNC478-2	288	189	61	7	23	67	3	0	0	70	3	1.078
BNC481-2	277	106	35	20	43	37	0	0	0	37	0	1.069
BNC481-4	317	153	50	14	37	49	0	0	0	49	0	1.067
BNC481-6	181	65	21	19	44	37	0	0	0	37	0	1.056
BNC483-2	304	137	45	18	36	46	0	0	0	46	0	1.065
BNC484-3	289	221	72	3	14	73	6	3	0	83	10	1.065
BNC485-1	247	92	30	16	46	38	0	0	0	38	0	1.063
B3148-15	345	190	62	14	31	54	1	0	0	56	1	1.068
B3148-21	370	284	92	4	15	80	2	0	0	82	2	1.074
B3148-22	345	249	81	6	17	65	11	0	0	77	12	1.063
B3150-3	285	214	70	5	15	70	9	0	0	79	9	1.071
B3150-7	366	265	86	5	16	64	9	6	0	79	15	1.070
B3155-1	303	223	73	5	17	75	0	3	0	78	3	1.072
B3155-3	310	217	71	8	19	73	0	0	0	73	0	1.079
B3156-2	305	175	57	9	26	60	4	0	0	64	4	1.070
B3156-10	361	223	73	7	29	57	7	0	0	63	7	1.070
B3156-11	336	206	67	6	30	64	0	0	0	64	0	1.070
B3156-15	291	188	61	9	22	63	5	1	0	70	6	1.059
B3159-7	224	143	46	7	27	65	1	0	0	66	1	1.075

Table 27 (cont'd). Production statistics for the 2016 USDA Chipping Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
B3161-5	325	244	79	6	19	72	2	1	0	75	3	1.076
B3168-3	283	196	64	8	20	68	2	2	0	72	5	1.072
B3172-3	243	177	57	5	20	68	3	4	0	74	7	1.079
B3083-4	418	377	123	2	5	48	24	22	0	94	46	1.065
B3083-10	355	279	91	3	13	64	7	12	0	84	20	1.066
B3083-11	295	248	81	3	9	63	15	10	0	88	25	1.072
B3084-3	372	321	104	3	8	68	14	7	0	90	21	1.075
B3103-4	247	162	53	8	22	65	5	1	0	71	6	1.060
BNC420-2	293	215	70	6	20	71	3	0	0	74	3	1.070
BNC426-2	287	209	68	4	17	66	11	2	0	79	13	1.077
BNC364-1	376	297	96	4	15	72	6	3	0	81	10	1.072
BNC369-4	446	359	117	4	13	72	9	2	0	83	11	1.072
BD982-15	167	39	13	39	36	23	2	0	0	25	2	1.080
B3005-7	291	184	60	9	23	64	3	1	0	68	4	1.073
Elkton	321	245	80	4	18	72	5	1	0	78	6	1.073
B2152-17	271	114	37	17	37	46	0	0	0	46	0	1.066
BNC177-5	287	204	66	7	20	66	4	3	0	73	7	1.069
BNC182-5	408	321	104	5	14	64	12	6	0	82	17	1.070
BNC201-1	307	245	80	4	14	63	13	5	0	81	18	1.076
B2832-12	352	273	89	4	12	65	14	5	0	84	19	1.076
B2834-8	388	328	107	3	8	63	17	9	0	89	26	1.073
B2869-28	358	294	96	3	14	69	12	2	0	83	14	1.067
B2873-1	241	163	53	10	20	67	2	1	0	70	2	1.063
B2904-2	413	344	112	3	10	68	14	5	0	86	19	1.078
BNC266-6	383	310	101	4	12	67	7	10	0	84	17	1.071
B2954-11	317	226	73	8	17	57	14	3	0	74	17	1.066
B2968-3	358	291	94	4	12	74	6	5	0	85	11	1.069
BNC318-9	327	233	76	6	16	67	8	2	0	78	11	1.067
Atlantic	365	308	100	3	9	64	18	7	0	88	25	1.075
Chieftain	322	268	87	4	12	64	15	6	0	85	21	1.062

Table 27 (cont'd). Production statistics for the 2016 USDA Chipping Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Dk. Red Norland	260	148	48	9	25	65	1	0	0	66	1	1.055
Elkton	340	285	92	3	13	62	16	5	0	84	22	1.070
H. Blackw (B0564-8)	313	203	66	11	24	55	8	2	0	65	10	1.070
Katahdin	349	271	88	4	14	72	5	5	0	82	10	1.063
Kennebec	319	263	86	3	9	76	6	6	0	88	12	1.071
Snowden	344	272	88	3	16	74	6	2	0	82	8	1.071
Superior	231	133	43	5	26	68	1	0	0	69	1	1.067
Yukon Gold	266	197	64	3	10	64	9	14	0	87	23	1.076
MSD ³	83	67		3	6	10	9	6	ns	8	10	0.006
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5", B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

³Means separated within columns by Waller-Duncan K-ratio t Test.

Table 28. Plant growth and tuber characteristics for the 2016 USDA Chipping Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
BNC468-1	96	9	6	7	1	6	5	1	7	7	1
BNC469-1	100	9	6	6	1	6	5	3	8	7	2
BNC469-2	98	9	6	6	1	7	6	2	7	8	2
BNC469-5	94	9	6	6	1	7	7	2	6	5	2
BNC469-9	100	9	6	7	1	6	7	2	6	5	2
BNC469-11	97	9	6	6	1	7	7	2	7	7	2
BNC469-12	99	9	6	5	1	6	6	3	8	7	2
BNC469-13	98	9	6	5	1	7	7	3	9	7	2
BNC470-16	100	9	6	6	1	7	6	3	5	5	1
BNC471-2	99	9	6	6	2	6	6	2	6	7	2
BNC476-1	98	9	6	7	2	6	6	3	8	6	1
BNC478-2	89	9	6	5	1	9	7	2	6	7	2
BNC481-2	100	9	6	4	2	1	9	3	7	6	3
BNC481-4	100	9	6	4	2	1	9	3	6	8	3
BNC481-6	100	9	6	2	1	1	9	3	5	7	3
BNC483-2	100	9	6	4	2	2	9	3	7	7	3
BNC484-3	100	9	6	5	3	2	8	3	7	7	2
BNC485-1	100	9	6	2	1	1	9	3	4	7	3
B3148-15	99	9	6	5	1	6	7	2	6	7	2
B3148-21	100	9	8	7	3	9	8	4	8	8	1
B3148-22	99	9	8	6	1	6	6	2	7	4	2
B3150-3	98	9	6	4	2	6	6	3	6	6	2
B3150-7	98	9	7	6	2	7	8	3	7	6	1
B3155-1	98	9	7	6	1	9	8	3	8	9	2
B3155-3	100	9	8	8	4	7	8	3	8	5	2
B3156-2	100	9	6	3	2	9	8	2	8	7	3
B3156-10	95	9	6	5	1	8	9	6	8	9	2
B3156-11	97	9	7	6	1	7	8	4	7	7	2
B3156-15	100	9	6	4	2	9	9	2	7	9	2
B3159-7	98	9	6	5	1	7	7	1	7	9	3

Table 28 (cont'd). Plant growth and tuber characteristics for the 2016 USDA Chipping Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3161-5	100	9	6	6	1	7	7	2	8	6	2
B3168-3	95	9	6	6	1	7	8	2	8	4	3
B3172-3	100	9	6	5	2	7	7	1	7	7	2
B3083-4	99	9	6	5	1	6	7	2	7	5	1
B3083-10	98	9	6	5	1	7	8	4	8	6	1
B3083-11	98	9	6	6	2	7	7	2	8	8	2
B3084-3	100	9	7	8	1	6	7	2	8	5	2
B3103-4	99	9	6	4	4	7	7	2	8	9	3
BNC420-2	97	9	6	4	4	2	9	3	8	7	2
BNC426-2	98	9	6	6	2	7	7	3	8	8	2
BNC364-1	100	9	6	5	1	7	7	3	7	6	2
BNC369-4	97	9	6	5	1	7	8	3	6	7	1
BD982-15	98	9	6	4	2	9	7	2	8	6	3
B3005-7	97	9	7	5	1	7	7	2	5	6	2
Elkton	98	9	6	5	2	6	5	4	8	7	2
B2152-17	100	9	6	3	3	2	9	3	7	8	3
BNC177-5	98	9	6	6	1	6	6	3	7	5	2
BNC182-5	100	9	6	5	1	7	7	3	8	8	1
BNC201-1	98	9	8	6	2	2	9	2	6	9	2
B2832-12	99	9	6	6	1	6	6	2	7	7	1
B2834-8	100	9	6	5	1	7	6	2	8	5	2
B2869-28	97	9	6	5	1	7	7	2	6	6	1
B2873-1	99	9	6	2	2	1	8	3	6	8	3
B2904-2	95	9	7	6	1	7	7	2	7	7	1
BNC266-6	98	9	6	5	1	9	8	2	4	6	1
B2954-11	97	9	6	4	1	6	6	2	9	7	2
B2968-3	97	9	6	6	1	7	7	1	8	8	1
BNC318-9	96	9	7	6	1	6	5	4	6	8	2
Atlantic	100	9	7	6	1	6	6	2	8	5	-
Chieftain	100	9	7	5	1	3	8	3	6	6	2

Table 28 (cont'd). Plant growth and tuber characteristics for the 2016 USDA Chipping Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Dk. Red Norland	98	9	7	4	2	2	9	3	8	6	3
Elkton	100	9	6	6	1	6	6	2	9	8	1
H. Blackw (B0564-8)	98	9	6	6	1	6	7	2	7	7	2
Katahdin	99	9	6	5	1	9	9	2	6	8	1
Kennebec	93	9	8	7	1	7	6	4	7	5	1
Snowden	99	9	6	6	2	6	5	2	4	5	1
Superior	99	9	6	5	4	7	7	3	8	7	3
Yukon Gold	99	9	9	6	2	7	7	3	6	5	3

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 24 for 16 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 29. External and internal defects for the 2016 USDA Chipping Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
BNC468-1	0	0	0	1	1	0	0	0	0	0	0	0	0
BNC469-1	0	0	2	2	4	0	0	0	0	1	0	0	0
BNC469-2	0	0	1	0	1	0	0	0	0	0	0	0	0
BNC469-5	0	0	1	2	2	0	0	0	0	0	0	0	0
BNC469-9	0	0	2	0	2	0	0	0	0	1	0	0	0
BNC469-11	0	0	1	3	4	0	0	0	0	0	0	0	0
BNC469-12	0	0	1	3	4	0	0	0	0	1	0	0	0
BNC469-13	0	0	0	2	3	0	1	0	3	0	0	0	0
BNC470-16	0	0	3	0	4	0	1	0	0	0	0	0	0
BNC471-2	0	0	5	0	5	0	0	0	0	1	0	0	0
BNC476-1	0	0	6	1	8	0	0	0	0	0	0	0	0
BNC478-2	0	0	0	6	7	0	1	0	0	0	0	0	0
BNC481-2	0	0	0	2	2	0	0	0	0	0	0	0	0
BNC481-4	0	0	0	2	2	0	0	0	0	0	0	0	0
BNC481-6	0	0	0	5	5	0	0	0	3	1	1	0	0
BNC483-2	0	0	0	1	1	0	0	0	0	0	0	0	0
BNC484-3	0	0	0	7	7	0	0	0	0	1	0	0	0
BNC485-1	0	0	0	3	4	0	0	0	0	0	0	0	0
B3148-15	0	0	1	0	1	0	0	0	0	0	0	0	0
B3148-21	0	0	5	2	7	0	0	0	0	0	0	0	0
B3148-22	0	0	3	3	6	0	0	0	0	0	0	0	0
B3150-3	0	0	1	6	7	0	0	0	0	0	0	0	0
B3150-7	0	0	8	0	8	0	0	0	0	0	0	0	0
B3155-1	0	0	3	3	5	0	0	0	0	0	0	0	0
B3155-3	0	0	4	0	4	0	0	0	0	0	0	0	0
B3156-2	0	0	1	11	11	0	0	0	0	0	0	0	0
B3156-10	0	0	0	4	5	0	0	0	0	4	0	0	0
B3156-11	0	0	1	4	5	0	0	0	0	0	0	0	0
B3156-15	0	0	0	7	8	0	0	0	0	0	0	0	0
B3159-7	0	0	2	1	3	0	0	0	0	0	0	0	0

Table 29 (cont'd). External and internal defects for the 2016 USDA Chipping Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
B3161-5	0	0	1	0	1	0	0	0	0	0	0	0	0
B3168-3	0	0	0	3	4	0	0	0	4	1	3	0	0
B3172-3	0	0	0	4	4	0	0	0	0	0	0	0	0
B3083-4	0	0	2	1	3	0	0	0	0	0	0	0	0
B3083-10	0	0	0	4	4	0	0	0	0	0	0	0	0
B3083-11	0	0	2	4	6	0	0	0	0	0	0	0	0
B3084-3	0	0	4	1	5	0	0	0	0	1	0	0	0
B3103-4	0	0	1	7	8	0	0	0	0	0	0	0	0
BNC420-2	0	0	0	1	2	0	0	0	0	0	0	0	0
BNC426-2	1	0	4	2	7	0	0	0	0	0	0	0	0
BNC364-1	0	0	3	1	4	0	0	0	0	3	0	0	0
BNC369-4	0	0	3	0	3	0	0	0	0	0	0	0	0
BD982-15	0	0	0	2	2	0	0	0	0	0	0	0	0
B3005-7	0	0	1	4	5	0	0	0	0	0	0	0	0
Elkton	0	0	2	2	3	0	0	0	0	0	0	0	0
B2152-17	0	0	0	10	10	0	0	0	3	0	0	0	0
BNC177-5	0	0	2	2	5	0	0	0	0	0	0	0	0
BNC182-5	0	0	3	1	3	0	0	0	0	0	0	0	0
BNC201-1	1	0	0	1	2	0	0	0	0	0	0	0	0
B2832-12	0	0	2	5	7	0	0	0	0	0	0	0	0
B2834-8	0	0	2	5	7	0	0	0	0	1	0	0	0
B2869-28	0	0	0	1	2	0	0	0	0	0	0	0	0
B2873-1	0	0	0	3	3	0	0	0	0	0	0	0	0
B2904-2	0	0	2	1	4	0	0	0	0	0	0	0	0
BNC266-6	0	0	3	1	4	0	0	0	0	0	0	0	0
B2954-11	0	0	2	3	5	0	0	0	0	0	0	0	0
B2968-3	0	0	2	2	4	0	0	0	0	0	0	0	0
BNC318-9	0	0	7	3	10	0	0	0	0	1	0	0	0
Atlantic	0	0	2	1	4	0	0	0	1	0	0	0	0
Chieftain	0	0	1	1	2	0	0	0	0	1	0	0	0

Table 29 (cont'd). External and internal defects for the 2016 USDA Chipping Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Dk. Red Norland	0	0	0	12	12	0	0	0	1	3	0	0	0
Elkton	0	0	0	0	1	0	0	0	0	0	0	0	0
H. Blackw (B0564-8)	0	0	1	1	2	0	0	0	0	0	0	0	0
Katahdin	0	0	3	3	6	0	0	0	0	0	1	0	0
Kennebec	0	0	5	2	7	0	1	0	0	0	0	0	0
Snowden	0	0	3	0	3	0	0	0	0	0	0	0	0
Superior	0	0	1	16	16	0	1	0	0	1	0	0	0
Yukon Gold	0	0	3	13	15	0	0	0	3	1	3	0	0
MSD ³	1	ns	3	4	5	ns	ns	ns	ns	ns	ns	ns	ns
P Value	0.0028	-	<0.0001	<0.0001	<0.0001	-	0.5616	-	0.4403	0.4746	0.5605	-	-

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

³Means separated within columns by Waller-Duncan K-ratio t Test.

Chapter 11. USPB Snack Food Association Potato Variety Trial

General Comments

A goal of the Snack Food Association trial is to identify a short-season processing potato variety with better production and quality characteristics than the “standard” Atlantic. Potatoes were fried and chip scores are noted in Table 31. This trial is supported by the United States Potato Board.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 15, 2016
Vine Kill Date	N/A
Harvest Date	May 17, 2016
Season Length	92 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	2 (Standard: Atlantic)
Number of Clones	13
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	4
Plot Size	20 ft (6.1 m) x 2

Production Statistics

Early Vigor Ratings	52 DAP
Highest Total Yield	MSW485-2 (436 cwt/acre or 48.9 T/ha)
Highest Marketable Yield	Atlantic (318 cwt/acre or 35.6 T/ha)
Highest Specific Gravity	W6822-3 (1.083)

Table 30. Production statistics for the 2016 USPB Snack Food Association Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Season-92 days												
AF5040-8	363	260	82	4	18	75	2	1	0	78	3	1.080
B2727-2	374	305	96	3	13	78	3	3	0	84	6	1.077
CO07070-10W	299	169	53	14	27	55	2	2	0	59	4	1.077
CO07070-13W	272	165	52	11	26	60	3	0	0	63	3	1.072
MSR127-2	383	310	97	4	14	76	4	3	0	82	6	1.079
MSW485-2	436	249	78	9	33	56	1	1	0	59	2	1.071
NC0349-3	353	294	92	4	10	65	11	10	0	86	21	1.073
NDTX081648CB-13W	304	200	63	7	22	67	3	1	0	71	4	1.070
TX09396-1W	374	305	96	4	12	72	7	5	0	85	12	1.076
NY152	374	289	91	3	17	76	2	2	0	80	4	1.075
NY157	343	241	76	6	20	67	6	1	0	74	7	1.072
W6822-3	352	226	71	8	27	60	2	3	0	65	5	1.083
W8822-1	408	296	93	5	21	71	1	2	0	74	3	1.080
ATLANTIC	397	318	100	4	13	73	6	4	0	83	10	1.076
SNOWDEN	322	227	71	5	23	68	3	1	0	72	3	1.078
MSD ³	88	85		3	7	9	4	5	ns	8	7	0.009
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

³Means separated within columns by Tukey's Studentized Range (HSD) Test.

Table 31. Plant growth and tuber characteristics for the 2016 USBP Snack Food Association Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²							
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Chip Score	Merit
AF5040-8	100	9	6	5	2	9	8	2	5	7	64.2	4
B2727-2	98	9	6	6	2	7	7	3	8	6	63.7	1
CO07070-10W	98	9	6	5	1	6	6	2	5	6	64.1	4
CO07070-13W	99	9	6	4	2	9	6	1	8	8	62.1	4
MSR127-2	99	9	6	7	1	6	7	2	7	6	60.9	2
MSW485-2	99	9	6	6	2	7	7	1	7	9	61.9	2
NC0349-3	97	9	6	6	1	7	6	2	5	7	64.7	4
NDTX081648CB-13W	100	9	6	4	1	7	7	2	6	7	65.2	3
TX09396-1W	99	9	6	7	2	7	7	2	5	5	62.4	3
NY152	99	9	6	7	2	7	7	2	7	6	62.4	3
NY157	99	9	6	6	2	7	7	1	7	8	63.8	4
W6822-3	100	9	6	5	2	7	6	2	7	8	62.0	4
W8822-1	99	9	6	7	2	6	6	2	7	8	61.2	3
ATLANTIC	100	9	6	6	2	7	6	2	7	7	62.1	-
SNOWDEN	99	9	6	4	1	6	6	2	5	8	64.6	-

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 30 for 20 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2. Chip Score: A subsample of potatoes from the trial was shipped to Utz Quality Snacks, chipped and scored according to the Hunter Lab rating. Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 32. External and internal defects for the 2016 USBP Snack Food Association Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
AF5040-8	0	0	2	6	8	0	0	0	0	3	0	0	0
B2727-2	0	0	3	1	4	0	0	0	0	0	0	0	0
CO07070-10W	0	0	2	2	4	0	0	0	0	0	0	0	0
CO07070-13W	0	0	2	2	4	0	0	0	0	0	1	0	0
MSR127-2	0	0	1	1	2	0	0	0	0	1	0	0	0
MSW485-2	0	0	1	1	2	0	0	0	0	0	0	0	0
NC0349-3	0	0	2	1	4	0	2	0	0	8	1	1	0
NDTX081648CB-13W	0	0	1	6	7	0	1	0	0	0	1	1	1
TX09396-1W	0	0	2	2	4	0	1	0	0	1	0	0	0
NY152	0	0	2	2	4	0	0	0	0	1	1	1	0
NY157	0	0	1	4	6	0	1	0	0	6	1	1	1
W6822-3	0	0	2	1	3	0	0	0	0	3	1	0	0
W8822-1	0	0	1	1	3	0	0	0	0	1	0	0	0
ATLANTIC	0	0	2	2	4	0	1	0	0	2	0	1	0
SNOWDEN	0	0	1	1	2	0	0	0	0	1	0	0	1
MSD ³	ns	ns	ns	4	4	ns	ns	ns	ns	7	ns	ns	ns
P Value	0.4708	-	0.2016	<0.0001	<0.0001	-	0.1083	-	-	0.0033	0.7697	0.7841	0.5935

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

³Means separated within columns by Tukey's Studentized Range (HSD) Test.

Chapter 12. NE1231 Regional Project Potato Variety Trial

General Comments

The NE1231 regional project trial is a multi-state potato evaluation program developed to identify and evaluate new and advanced potato clones. The production, adaptation, and performance stability of new potato clones is documented under a wide range of geographic, climatic, soil, and cultural conditions. The University of Maine produces and supplies all cooperators with similar seed.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	January 29, 2016
Vine Kill Date	N/A
Harvest Date	May 3, 2016
Season Length	95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	15 (Standard: Atlantic)
Number of Clones	15
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	4
Plot Size	16 ft (4.9 m)

Production Statistics

Early Vigor Ratings	45 DAP
Highest Total Yield	NY154 (399 cwt/acre or 44.7 T/ha)
Highest Marketable Yield	Atlantic (292 cwt/acre or 32.7 T/ha)
Highest Specific Gravity	Snowden (1.087)
Best Appearance Rating	Elkton, Red LaSoda, Atlantic, Kennebec, AF4648-2, BNC364-1 (9, excellent)

Table 33. Production statistics for the 2016 University of Maine NE1231 Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-95 days</u>												
Elkton	322	222	80	4	25	69	0	1	0	70	1	1.071
Red LaSoda	353	261	94	4	13	67	8	9	0	84	17	1.077
Atlantic	343	292	106	2	10	72	9	7	0	88	16	1.083
Chieftain	303	218	79	6	18	72	2	2	0	76	4	1.066
Dark Red Norland	197	82	30	14	38	47	0	1	0	48	1	1.070
Katahdin	265	176	64	4	24	68	3	1	0	72	4	1.072
Kennebec	290	217	79	3	16	74	3	5	0	82	8	1.075
Russet Burbank	247	75	27	14	48	36	1	0	0	38	1	1.076
Russet Norkotah	235	99	36	11	44	44	1	0	0	45	1	1.069
Shepody	249	137	49	9	30	56	4	1	0	60	5	1.077
Snowden	285	185	67	5	28	63	1	2	0	67	4	1.087
Superior	254	146	53	5	24	69	2	1	0	71	3	1.075
Teton Russet	210	123	44	11	27	62	0	0	0	62	0	1.072
Yukon Gold	270	143	52	3	15	76	2	4	0	82	6	1.078
AF3362-1 (Caribou Russet)	271	173	62	3	23	71	3	1	0	74	4	1.080
AF4138-8	271	160	58	8	23	64	3	2	0	69	5	1.070
AF4552-5	285	221	80	4	15	69	6	7	0	82	13	1.084
AF4615-5	213	113	41	16	34	49	1	0	0	51	1	1.070
AF4648-2	298	217	78	4	18	71	4	2	0	77	7	1.081
AF4953-6	274	151	55	7	36	56	1	0	0	57	1	1.071
AF4985-1	263	182	66	3	13	77	5	3	0	85	8	1.070
AF5040-8	247	135	49	4	26	67	2	1	0	70	3	1.083
AF5245-1	278	159	58	10	27	53	5	6	0	64	11	1.078
AF5280-5	265	212	77	2	12	71	5	10	0	86	15	1.076
Atlantic	341	261	94	4	14	65	11	5	0	82	17	1.079
B3005-7	314	192	69	8	28	64	0	0	0	64	0	1.071
BNC244-10	189	41	15	32	45	22	1	0	0	23	1	1.073
BNC364-1	320	202	73	5	29	66	0	0	0	66	0	1.074
NY154 (NYH15-17)	399	268	97	3	26	69	2	0	0	71	2	1.070
NY157	288	199	72	4	20	62	6	8	0	76	14	1.082
MSD ³	114	97		11	17	24	10	9	ns	25	15	ns
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	0.0007	<0.0001	-	<0.0001	<0.0001	0.2478

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

³Means separated within columns by Tukey's Studentized Range (HSD) Test.

Table 34. Plant growth and tuber characteristics for the 2016 University of Maine NE1231 Variety Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Elkton	89	7	9	8	2	5	5	7	9	9	3
Red LaSoda	100	9	8	7	2	2	8	3	7	9	3
Atlantic	99	7	9	9	2	7	7	3	8	9	-
Chieftain	99	6	9	9	2	2	6	5	7	8	3
Dark Red Norland	98	7	9	7	2	2	7	2	8	7	4
Katahdin	99	6	9	7	2	7	8	3	8	8	3
Kennebec	97	4	9	9	2	7	9	6	7	9	2
Russet Burbank	94	6	9	8	2	5	5	3	8	7	4
Russet Norkotah	98	4	9	9	2	5	5	6	9	7	4
Shepody	100	5	9	9	2	5	5	6	9	8	3
Snowden	100	8	9	8	2	7	5	2	7	8	2
Superior	92	7	9	8	2	6	6	4	8	8	3
Teton Russet	92	6	9	8	2	5	5	5	7	8	4
Yukon Gold	95	7	9	8	3	7	7	5	7	8	4
AF3362-1 (Caribou Russet)	98	7	9	8	2	5	5	8	8	8	3
AF4138-8	97	5	9	9	2	7	6	5	8	8	3
AF4552-5	82	8	9	8	2	5	6	1	7	7	2
AF4615-5	96	4	9	9	2	6	7	5	9	7	4
AF4648-2	97	6	9	9	2	7	8	5	8	9	2
AF4953-6	99	6	9	9	2	5	5	6	7	8	3
AF4985-1	99	6	9	9	2	2	9	5	8	8	3
AF5040-8	95	9	8	7	2	6	8	1	7	8	3
AF5245-1	99	8	9	7	2	1	7	4	8	8	3
AF5280-5	100	8	9	8	2	7	8	5	8	8	3
Atlantic	98	8	9	9	2	5	5	5	7	9	-
B3005-7	97	5	9	9	2	7	8	5	8	8	4
BNC244-10	100	9	7	7	9	1	8	1	8	7	3
BNC364-1	99	6	9	7	2	7	7	8	7	9	4
NY154 (NYH15-17)	100	9	8	8	2	7	6	4	8	7	2
NY157	97	6	9	8	2	5	7	1	8	7	3

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 24 for 16 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Merit Score: 1-4 scale: 1 = outstanding, 2 = good/keep, 3 = marginal, 4 = not acceptable/drop.

Table 35. External and internal defects for the 2016 University of Maine NE1231 Variety Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Elkton	1	0	1	1	3	0	3	0	3	3	0	0	0
Red LaSoda	0	1	0	10	11	0	0	0	3	3	1	0	0
Atlantic	0	0	1	2	3	0	0	0	0	3	0	0	0
Chieftain	1	1	0	4	6	0	0	0	3	3	1	0	0
Dark Red Norland	1	1	1	10	12	0	3	0	3	10	0	0	0
Katahdin	0	0	3	5	8	0	0	0	3	3	0	0	0
Kennebec	0	0	4	4	8	0	0	0	3	0	0	0	0
Russet Burbank	1	17	0	2	19	0	0	0	5	7	0	0	0
Russet Norkotah	0	4	1	5	10	0	4	0	0	5	0	0	0
Shepody	0	1	1	8	10	0	1	0	0	0	0	0	0
Snowden	0	0	1	3	4	0	0	0	0	0	0	0	0
Superior	0	0	0	20	21	0	0	0	6	3	0	0	0
Teton Russet	3	2	0	5	10	0	2	0	3	6	2	0	0
Yukon Gold	5	1	0	30	37	0	0	0	6	4	4	0	0
AF3362-1 (Caribou Russet)	0	1	1	13	15	0	0	0	4	3	0	0	0
AF4138-8	0	0	1	14	15	0	0	0	3	3	0	0	0
AF4552-5	0	0	2	4	6	0	0	0	1	5	0	0	0
AF4615-5	0	1	1	3	5	0	7	0	8	12	0	0	0
AF4648-2	1	1	1	4	7	0	0	0	4	5	4	0	0
AF4953-6	0	0	0	5	5	0	0	0	0	5	0	0	0
AF4985-1	3	3	0	12	18	0	0	0	3	1	6	0	0
AF5040-8	0	0	2	19	22	0	0	0	3	8	0	0	0
AF5245-1	0	0	0	5	5	0	0	0	11	0	1	0	0
AF5280-5	0	0	2	4	6	0	0	0	8	4	0	0	0
Atlantic	1	0	2	2	6	0	13	0	0	0	0	0	0
B3005-7	0	0	1	2	4	0	0	0	3	8	0	0	0
BNC244-10	0	0	1	1	2	0	0	0	0	3	0	0	0
BNC364-1	0	0	2	3	5	0	0	0	0	10	0	0	0
NY154 (NYH15-17)	0	0	2	4	6	0	0	0	0	0	0	0	0
NY157	1	0	0	8	9	0	0	0	5	6	0	0	0
MSD ³	4	4	4	10	11	ns	ns	ns	ns	ns	ns	ns	ns
P Value	0.0013	<0.0001	0.0170	<0.0001	<0.0001	-	0.3927	-	0.8589	0.1475	0.0588	-	-

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

³Means separated within columns by Tukey's Studentized Range (HSD) Test.

Chapter 13. Canadian Industries Potato Variety Trial

General Comments

A goal of the Canadian Industries trial is to identify varieties and clones that will perform well under Florida growing conditions.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 3, 2016
Vine Kill Date	April 26, 2016
Harvest Date	May 13, 2016
Season Length	83 days planting to vine kill; 100 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-12 (100 lb/acre N); Side-dress, 14-0-12 (100 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	11 (Standard: Atlantic)
Number of Clones	7
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	4
Plot Size	16 ft (4.9 m)

Production Statistics

Early Vigor Ratings	49 DAP
Highest Total Yield	Brooks (277 cwt/acre or 31.0 T/ha)
Highest Marketable Yield	Atlantic (168 cwt/acre or 18.8 T/ha)
Best Appearance Rating	AR2015-12, AR2015-14, Brooks, PHYTO 455, PHYTO 457, Munich (8, very good)

Table 36. Production statistics for the 2016 Canadian Industries Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
<u>Season-83 days</u>												
Atlantic	231	168	100	4	13	67	11	5	0	83	17	1.072
LaChipper	206	134	80	4	18	64	5	9	0	78	14	1.063
Fabula	177	111	66	6	18	66	9	1	0	77	11	1.048
Red LaSoda	160	81	48	5	21	63	9	2	0	74	11	1.055
Yukon Gold	172	83	49	5	29	61	6	0	0	66	6	1.066
CIT #1 (AR2015-05)	227	73	43	16	47	34	1	1	0	36	2	1.060
CIT #2 (AR2015-09)	228	83	50	12	45	43	0	0	0	43	0	1.064
CIT #3 (AR2015-12)	228	86	51	8	49	42	0	0	0	43	0	1.063
CIT #4 (AR2015-14)	227	131	78	7	31	60	1	1	0	62	2	1.053
CIT #5 (Benton)	250	73	43	22	48	27	2	1	0	30	3	1.063
CIT #6 (Jasper)	102	38	23	6	38	53	3	0	0	56	3	1.060
CIT #7 (Brooks)	277	155	92	6	34	57	3	0	0	60	3	1.062
CIT #8 (PHYTO 455)	222	67	40	20	47	33	1	0	0	33	1	1.073
CIT #9 (PHYTO 456)	220	13	8	58	37	6	0	0	0	6	0	1.071
CIT #10 (PHYTO 457)	241	52	31	23	56	21	0	0	0	21	0	1.066
Banff	212	74	44	3	22	70	5	0	0	76	5	1.059
Munich	119	33	20	9	55	34	1	0	0	35	1	1.057
Gouda	204	111	66	6	32	59	2	0	0	62	2	1.063
MSD ³	49	41		4	9	11	7	4	ns	10	8	0.003
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	0.0011	<0.0001	-	<0.0001	0.0002	<0.0001

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = 0.5 to 1.5" , B = 1.5 to 1.88", A1 = 1.88 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4". Size Class Distribution calculated based on weight using the formula, Class Wt / (Total Yield Wt – Cull Wt) * 100.

³Means separated within columns by Waller-Duncan K-ratio t Test.

Table 37. Plant growth and tuber characteristics for the 2016 Canadian Industries Trial potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²					
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP
Atlantic	99	9	9	8	2	6	6	2	8	7
LaChipper	100	9	7	6	1	9	8	2	5	6
Fabula	93	8	8	7	3	9	7	3	6	6
Red LaSoda	100	9	8	3	1	2	8	2	5	7
Yukon Gold	99	9	9	5	3	9	7	2	5	7
CIT #1 (AR2015-05)	94	9	7	6	3	9	8	6	7	7
CIT #2 (AR2015-09)	100	9	8	5	3	9	8	3	7	7
CIT #3 (AR2015-12)	98	9	8	5	6	2	7	3	4	8
CIT #4 (AR2015-14)	99	9	6	6	1	9	9	3	5	8
CIT #5 (Benton)	100	9	7	5	1	6	7	6	5	5
CIT #6 (Jasper)	98	9	6	5	2	5	4	6	6	6
CIT #7 (Brooks)	100	8	9	8	1	5	2	6	7	8
CIT #8 (PHYTO 455)	99	9	6	7	3	2	6	2	5	8
CIT #9 (PHYTO 456)	100	9	6	4	1,9	1	8	3	4	7
CIT #10 (PHYTO 457)	100	9	8	4	2	1	7	2	3	8
Banff	94	9	8	6	1	9	9	6	7	5
Munich	98	9	9	6	2	9	9	7	8	8
Gouda	97	9	9	7	3	5	3	7	9	7

¹Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 24 for 16 ft plot, 8 in spacing.

Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

²Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP): see rating system outlined in Table 2.

Table 38. External and internal defects for the 2016 Canadian Industries Trial potato selections.

Clone	% External Tuber Defects						% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	Enlarged Lenticel	HH	BR	CRS	IHN	Brown Center		
											L	M	H
Atlantic	1	0	3	10	13	0	1	0	0	0	0	0	0
LaChipper	0	0	0	18	18	0	0	0	0	0	0	0	0
Fabula	0	0	1	18	19	0	0	0	0	0	0	0	0
Red LaSoda	0	0	0	33	33	0	0	0	0	0	0	0	0
Yukon Gold	0	0	1	31	33	0	0	0	3	1	0	0	0
CIT #1 (AR2015-05)	0	0	0	12	12	0	0	0	0	0	0	0	0
CIT #2 (AR2015-09)	1	0	0	13	15	0	0	0	0	0	0	0	0
CIT #3 (AR2015-12)	0	0	0	12	12	0	1	0	1	0	0	0	0
CIT #4 (AR2015-14)	0	0	1	7	8	0	3	0	0	1	0	0	0
CIT #5 (Benton)	0	0	0	6	6	0	0	0	0	0	0	0	0
CIT #6 (Jasper)	0	0	0	32	32	0	0	0	0	0	0	0	0
CIT #7 (Brooks)	0	0	0	6	6	0	0	0	0	0	0	0	0
CIT #8 (PHYTO 455)	0	0	1	8	10	0	0	0	0	0	1	0	0
CIT #9 (PHYTO 456)	0	0	0	1	1	0	0	0	0	0	0	0	0
CIT #10 (PHYTO 457)	0	0	0	2	2	0	1	0	1	0	0	0	0
Banff	1	0	2	51	54	0	0	0	0	0	0	0	0
Munich	0	0	1	24	24	0	0	0	3	3	0	0	0
Gouda	0	0	4	10	14	0	0	0	0	0	0	0	0
MSD ³	ns	ns	3	9	9	ns	ns	ns	ns	ns	ns	ns	ns
P Value	0.3976	-	0.0211	<0.0001	<0.0001	-	0.2405	-	0.4196	0.5998	0.5138	-	-

¹Percent of Total Yield. Total culls include the sum of growth cracks, misshapen, sunburned and rotten/misc.

²Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), Brown Center: light (L), moderate (M), heavy (H).

³Means separated within columns by Waller-Duncan K-ratio t Test.

Appendix 1. Potato Season Weather Data for Northeast Florida

Weather data was obtained from the Florida Automated Weather Network (FAWN). FAWN provides up-to-date weather information through a system of automated weather stations distributed throughout the state of Florida. An automated FAWN weather station is located at the University of Florida/IFAS Hastings AEC Research Farm in Hastings, FL. Current and historical weather data can be obtained for many sites in Florida including Hastings at the FAWN website: <http://fawn.ifas.ufl.edu/> .

Table 39. Daily rainfall amounts (in) at the UF/IFAS Hastings AEC Research Farm at Hastings, FL Jan. 1 - May 31, 2016.

Day	January	February	March	April	May
1	0.14	0.00	0.00	0.88	0.00
2	0.01	0.00	0.00	0.24	0.00
3	0.68	0.00	0.00	0.00	0.00
4	0.00	2.36	0.24	0.00	1.69
5	0.00	0.00	0.00	0.00	0.00
6	0.14	0.22	0.00	0.00	0.00
7	0.00	0.24	0.00	0.00	0.00
8	0.09	0.03	0.00	0.00	0.00
9	0.01	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.02
12	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.66	0.05	0.50
14	0.00	0.00	0.01	0.02	0.00
15	0.18	0.00	0.00	0.00	0.00
16	0.10	0.99	0.00	0.00	0.00
17	0.69	0.00	0.06	0.01	1.74
18	0.00	0.00	0.01	0.00	0.14
19	0.00	0.00	0.01	0.00	1.36
20	0.00	0.00	0.00	0.00	0.15
21	0.00	0.00	0.00	0.00	0.01
22	0.84	0.00	0.00	0.82	0.00
23	0.00	0.02	0.00	0.08	0.00
24	0.00	0.44	1.38	0.00	0.00
25	0.00	0.00	0.17	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00
27	0.81	0.00	0.93	0.00	0.00
28	0.23	0.00	0.00	0.00	0.02
29	0.01	0.00	0.00	0.00	0.00
30	0.00		0.01	0.00	0.56
31	0.00		0.00		0.05
Total	3.93	4.30	3.48	2.10	6.24

Table 40. Daily maximum and minimum temperatures (°F) at the UF/IFAS Hastings AEC Research Farm at Hastings, FL Jan. 1 - May 31, 2016.

Day	January		February		March		April		May	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	80	59	79	52	79	44	87	62	87	66
2	60	56	79	60	78	49	82	64	89	65
3	56	50	84	69	76	47	71	52	89	70
4	62	46	77	52	63	49	78	52	75	63
5	59	49	54	42	67	44	79	51	77	57
6	57	51	60	46	70	47	74	60	75	51
7	60	52	55	42	74	47	80	62	81	51
8	68	58	63	36	77	51	83	55	87	55
9	69	60	57	44	80	54	74	50	85	57
10	68	48	54	34	82	60	75	47	84	64
11	55	37	67	32	82	60	77	57	87	65
12	62	35	75	44	81	60	84	56	88	66
13	57	37	63	42	81	65	75	65	91	67
14	62	39	63	39	84	65	75	67	88	68
15	73	54	71	47	86	65	73	68	82	60
16	73	50	72	55	87	64	75	65	85	62
17	63	47	72	47	81	66	72	55	90	70
18	59	39	64	45	79	63	74	55	87	69
19	51	35	67	51	76	66	78	54	87	68
20	64	33	73	47	79	62	78	51	85	69
21	70	37	77	54	63	43	81	59	86	70
22	70	53	76	54	70	38	85	60	84	67
23	53	36	83	61	77	45	81	64	83	62
24	54	31	80	56	83	51	80	60	86	62
25	67	34	63	48	75	62	80	60	87	62
26	70	47	61	42	81	66	82	56	84	62
27	68	57	64	37	83	70	86	62	84	64
28	61	56	71	37	83	67	88	64	85	65
29	66	46	75	45	79	61	89	64	90	67
30	68	40			77	59	88	67	92	68
31	68	47			86	66			93	69
Avg.	64	46	69	47	78	57	80	59	86	64