Florida Potato Variety Trial Report, 2018

Volume 9

HORTICULTURAL SCIENCES DEPARTMENT
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

UF UNIVERSITY of FLORIDA
IFAS Extension

Florida Potato Variety Trial Report, 2018

Editors

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Photograph

Cover photos: Heraldo T. Hashiguti

Acknowledgements

Many talented and dedicated people assisted in these experiments during the potato season of 2018. The variety evaluation team is indebted to Scott Chambers, James (Trey) Craig, Randal Lane Greene, Dave Baggett, Lynn Darby, Gary England, Deana Mckenzie, and Corry Moseley for their hard work. Without the commitment and effort from these individuals, the variety evaluation program would not be possible.

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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 (HAEC) Research Farm in Hastings, FL. The HAEC 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 methods. For these irrigation methods, the perched water table depth is managed by water flow into irrigation furrows that evenly separate each bed for seepage and using subsurface drip tape (permanently installed at 20 inches below the surface spaced every 20 ft). 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, 2017. Potato beds were fumigated with Telone II C35, 7.7 gal/A (1,3-dichloropropene 63.4%, and chloropicrin 34.7%) in December 2017. Fertilizer (14-6-14, 100 lb/acre N granular) was incorporated into the beds prior to planting.

Potato seed pieces were whole and cut tubers weighing approximately 2.5 oz and were dusted with fungicide (Maxim) prior to being planted. They were 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 (32 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. Two side-dress fertilizer applications (8-0-8, 50 lb/acre N liquid) were made around plant emergence and at layby 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 25 days after planting. The final stand count, plant vigor rating, and vine type rating were done around 40 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 SNAC 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 HAEC Research Farm. Real-time and historic weather data from the weather station can be accessed at: http://fawn.ifas.ufl.edu/ .

Growing conditions for the 2018 growing season were rated as good. The total precipitation between planting and harvest was 7.84", relatively good rainfall distribution during vegetative growth, tuber initiation and bulking stages. There was a large rainfall event (e.g. April 9th with 1.15" and April 10th with 2.17", see Table 42). Overall air temperatures were near normal for the season (Table 43). There was one freeze event reported March 15th during the growing season.

Production

There were no major changes to the production system in 2018.

Figure 1. Potato Variety Program Evaluation Flowchart.

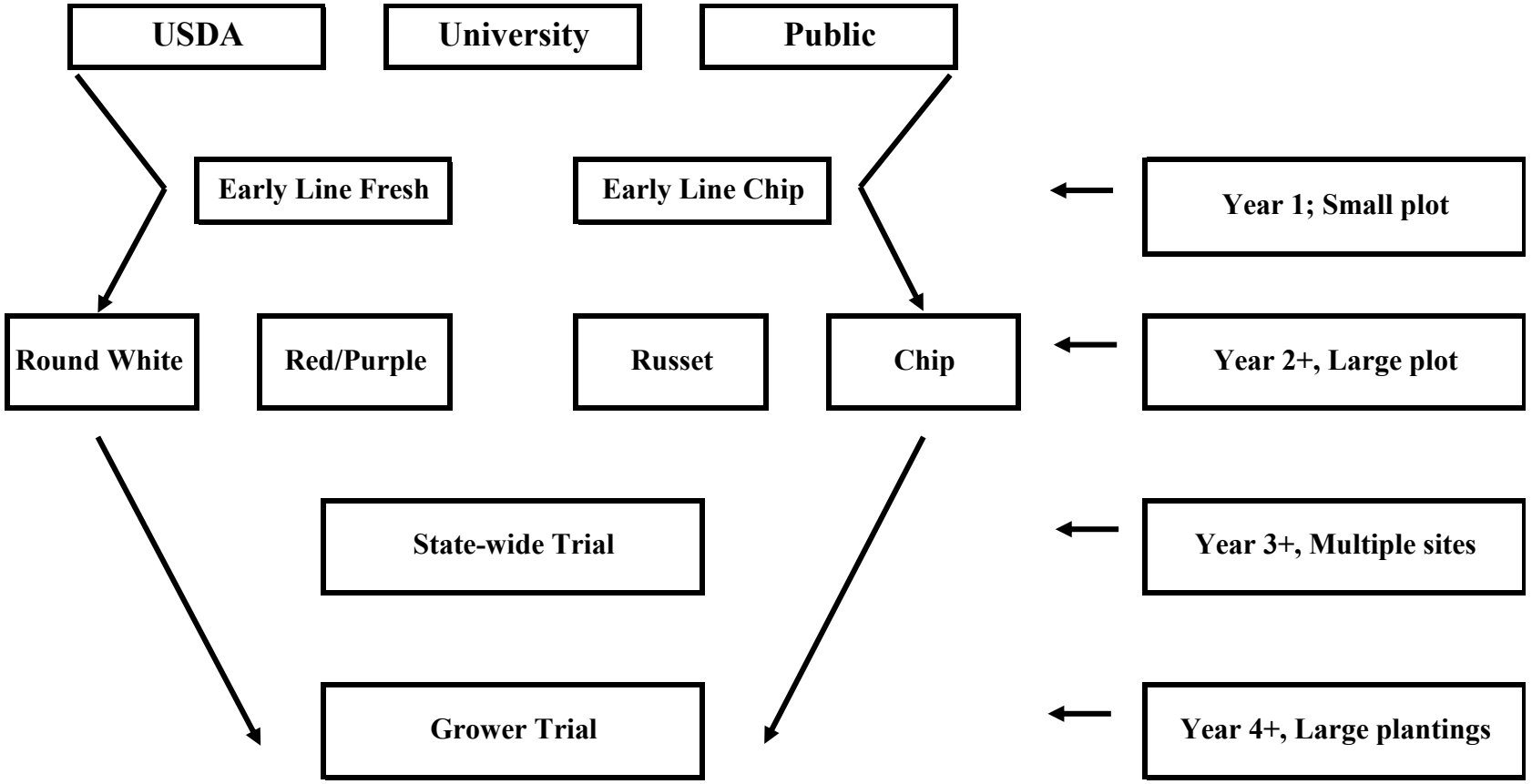

Table 1. Plant growth characteristics.

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.

Rating	Internal Flesh Color	Skin Color	Skin Texture	Tuber Shape	Eye Depth	Overall 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 2017.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 1, 2018
Vine Kill Date	N/A
Harvest Date	May 2, 2018
Season Length	90 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	5 (Standard: Atlantic)
Number of Clones	173
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	6 ft (1.8 m)

Production Statistics

Early Vigor Ratings	43 DAP
Highest Total Yield	B3372-1 (468 cwt/acre or 52.5 T/ha)
Highest Marketable Yield	B3372-1 (383 cwt/acre or 42.9 T/ha)
Best Appearance Rating	BNC815-6, BNC818-9, B3369-4, B3376-4, B3381-6, B3385-1, B3397-1, B3399-6, B3410-6, B3419-14, B3423-7, B3423-9, B3424-4, B3426-3, Soraya (9, excellent)

Table 3. Production statistics for the 2018 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–90 days												
BNC811-4	130	115	40	2	10	52	16	21	0	88	37	1.063
BNC811-6	203	154	54	4	8	81	0	7	0	88	7	1.068
BNC811-7	210	149	53	3	13	50	7	27	0	84	34	1.063
BNC811-9	342	251	89	5	13	66	15	0	0	81	15	1.077
BNC811-14	290	206	73	7	10	52	23	8	0	83	31	1.072
BNC811-15	317	231	82	4	10	65	21	0	0	86	21	1.075
BNC811-16	328	270	95	3	7	61	10	18	0	90	29	1.075
BNC811-17	418	254	90	2	5	34	21	30	9	85	51	1.066
BNC811-22	328	287	101	4	5	69	14	8	0	91	23	1.079
BNC811-25	385	320	113	1	7	33	10	49	0	92	59	1.079
BNC811-32	362	232	82	6	9	70	14	0	0	85	14	1.070
BNC811-33	291	233	82	3	8	80	9	0	0	89	9	1.078
BNC811-35	379	315	111	1	5	35	36	23	0	94	59	1.069
BNC811-36	315	247	87	4	17	69	9	0	0	78	9	1.078
BNC813-3	348	320	113	1	7	84	8	0	0	92	8	1.075
BNC814-2	288	253	89	3	10	55	8	25	0	88	33	1.086
BNC815-3	421	306	108	7	13	69	11	0	0	80	11	1.084
BNC815-4	359	231	82	10	26	64	0	0	0	64	0	1.082
BNC815-6	369	301	106	3	12	61	12	12	0	85	24	1.079
BNC815-7	330	273	96	4	13	83	0	0	0	83	0	1.076
BNC816-1	229	151	53	9	24	67	0	0	0	67	0	1.077
BNC816-2	265	216	76	3	13	80	4	0	0	84	4	1.065
BNC816-3	279	201	71	5	21	60	9	5	0	74	14	1.074
BNC817-1	227	177	63	4	18	71	7	0	0	78	7	1.084
BNC817-5	319	237	84	3	13	57	27	0	0	84	27	1.073
BNC818-1	297	206	73	4	4	62	18	13	0	92	30	1.081
BNC818-3	313	237	84	6	10	54	16	13	0	84	30	1.068
BNC818-8	265	178	63	5	15	63	9	7	0	79	17	1.070
BNC818-9	372	239	84	9	21	64	7	0	0	71	7	1.076
BNC818-11	394	218	77	9	19	59	13	0	0	72	13	1.076

Table 3 (cont'd). Production statistics for the 2018 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
BNC818-13	267	182	64	12	20	68	0	0	0	68	0	1.083
BNC818-14	352	284	100	4	15	69	11	0	0	81	11	1.069
BNC819-1	402	287	101	4	13	62	22	0	0	84	22	1.071
BNC819-2	347	307	108	4	3	77	16	0	0	93	16	1.077
BNC820-6	314	221	78	7	16	70	7	0	0	77	7	1.078
BNC820-9	299	244	86	4	11	71	2	11	0	85	13	1.077
BNC820-15	210	136	48	3	25	66	0	6	0	72	6	1.063
BNC821-1	362	303	107	4	7	73	15	0	0	89	15	1.073
BNC821-6	375	307	108	3	11	61	22	3	0	86	25	1.061
BNC821-7	240	188	66	3	18	73	0	6	0	78	6	1.081
BNC821-9	302	271	96	3	8	75	11	4	0	90	15	1.068
BNC821-11	322	279	99	3	7	48	0	41	0	90	41	1.063
BNC827-1	321	233	82	5	22	63	10	0	0	73	10	1.061
BNC828-1	338	77	27	27	49	24	0	0	0	24	0	1.079
BNC830-2	269	149	52	6	39	44	11	0	0	55	11	1.063
BNC831-1	356	186	66	8	38	54	0	0	0	54	0	1.070
BNC831-7	251	114	40	14	40	45	0	0	0	45	0	1.071
BNC831-8	305	184	65	3	36	62	0	0	0	62	0	1.068
BNC833-2	238	172	61	9	19	73	0	0	0	73	0	1.061
BNC833-3	308	82	29	25	48	27	0	0	0	27	0	1.060
BNC833-7	302	75	26	20	55	25	0	0	0	25	0	1.066
BNC833-8	222	31	11	45	40	15	0	0	0	15	0	1.073
BNC833-9	246	82	29	16	50	27	7	0	0	34	7	1.058
BNC833-13	304	45	16	29	56	15	0	0	0	15	0	1.053
BNC834-4	291	146	52	17	31	52	0	0	0	52	0	1.073
BNC839-2	308	161	57	7	40	51	3	0	0	53	3	1.052
BNC839-3	247	207	73	4	9	82	0	6	0	88	6	1.058
BNC839-5	217	182	64	3	13	79	5	0	0	84	5	1.069
BNC842-4	266	87	31	17	50	33	0	0	0	33	0	1.073
B3355-1	197	94	33	3	49	48	0	0	0	48	0	1.087

Table 3 (cont'd). Production statistics for the 2018 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
B3355-2	295	205	72	3	26	72	0	0	0	72	0	1.068
B3355-6	340	194	68	10	29	61	0	0	0	61	0	1.063
B3358-2	209	152	54	5	18	77	0	0	0	77	0	1.066
B3362-2	235	151	53	3	30	66	0	0	0	66	0	1.070
B3364-3	287	160	57	5	36	59	0	0	0	59	0	1.057
B3365-2	315	216	76	5	22	72	0	0	0	72	0	1.063
B3365-6	292	233	82	4	16	80	0	0	0	80	0	1.066
B3365-7	398	285	101	3	13	84	0	0	0	84	0	1.064
B3367-1	333	111	39	16	48	34	2	0	0	35	2	1.052
B3368-3	321	103	36	15	52	33	0	0	0	33	0	1.065
B3369-4	227	168	59	4	19	73	4	0	0	78	4	1.077
B3372-1	468	383	135	3	11	86	0	0	0	86	0	1.064
B3372-2	397	224	79	4	37	59	0	0	0	59	0	1.073
B3372-4	443	226	80	12	29	55	4	0	0	59	4	1.059
B3372-5	399	302	107	3	17	80	0	0	0	80	0	1.073
B3372-6	398	248	88	8	26	63	4	0	0	66	4	1.059
B3373-1	337	272	96	4	14	73	9	0	0	82	9	1.065
B3375-1	309	118	42	23	38	39	0	0	0	39	0	1.071
B3375-2	352	199	70	9	32	59	0	0	0	59	0	1.062
B3375-3	308	186	66	13	26	54	7	0	0	61	7	1.068
B3376-4	382	302	107	0	9	66	13	12	0	91	25	1.055
B3376-5	323	229	81	4	24	73	0	0	0	73	0	1.059
B3376-7	389	295	104	7	16	69	8	0	0	78	8	1.055
B3378-1	404	244	86	7	26	67	0	0	0	67	0	1.069
B3378-2	272	217	77	6	11	69	9	6	0	84	15	1.070
B3378-3	461	300	106	6	28	66	0	0	0	66	0	1.073
B3378-9	411	220	78	12	34	53	0	0	0	53	0	1.077
B3379-1	372	207	73	6	35	59	0	0	0	59	0	1.072
B3379-2	323	218	77	3	26	70	0	0	0	70	0	1.084
B3379-3	366	235	83	5	27	68	0	0	0	68	0	1.083

Table 3 (cont'd). Production statistics for the 2018 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
B3379-6	394	311	110	1	13	58	21	7	0	86	28	1.079
B3379-9	311	237	84	8	15	75	3	0	0	77	3	1.082
B3381-2	315	231	82	5	17	62	10	6	0	78	16	1.061
B3381-4	359	303	107	4	11	64	17	4	0	84	21	1.083
B3381-6	360	304	107	2	11	52	23	12	0	87	35	1.071
B3381-7	259	196	69	5	17	52	26	0	0	78	26	1.069
B3382-8	315	223	79	4	24	73	0	0	0	73	0	1.071
B3384-1	269	213	75	4	11	76	9	0	0	85	9	1.059
B3385-1	349	290	102	3	11	81	4	0	0	85	4	1.068
B3385-2	291	243	86	3	9	82	0	5	0	88	5	1.074
B3385-6	309	275	97	3	6	67	13	11	0	91	24	1.076
B3386-4	247	97	34	16	45	39	0	0	0	39	0	1.073
B3386-6	274	141	50	11	28	61	0	0	0	61	0	1.072
B3386-7	240	126	45	15	32	54	0	0	0	54	0	1.067
B3388-3	273	235	83	5	9	66	20	0	0	86	20	1.080
B3388-4	237	198	70	3	11	81	5	0	0	86	5	1.068
B3389-3	225	99	35	13	43	44	0	0	0	44	0	1.076
B3389-10	240	181	64	7	15	71	8	0	0	78	8	1.064
B3390-6	341	276	97	4	14	70	4	8	0	82	12	1.069
B3390-8	252	188	66	11	15	70	5	0	0	75	5	1.064
B3391-1	431	357	126	6	11	67	16	0	0	83	16	1.065
B3392-1	401	330	116	2	13	67	12	7	0	85	18	1.076
B3393-1	347	266	94	5	12	79	4	0	0	83	4	1.068
B3393-2	433	316	112	5	14	70	12	0	0	82	12	1.075
B3396-3	323	254	90	4	15	78	2	0	0	81	2	1.079
B3396-6	280	128	45	8	43	48	0	0	0	48	0	1.065
B3397-1	433	348	123	2	15	72	12	0	0	83	12	1.073
B3398-1	298	261	92	2	8	45	25	20	0	90	45	1.077
B3398-3	258	161	57	5	21	74	0	0	0	74	0	1.058
B3399-2	296	209	74	4	15	81	0	0	0	81	0	1.073

Table 3 (cont'd). Production statistics for the 2018 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
B3399-6	342	291	103	2	7	54	16	21	0	91	37	1.077
B3400-2	298	226	80	7	17	76	0	0	0	76	0	1.091
B3400-4	265	150	53	8	29	64	0	0	0	64	0	1.090
B3401-2	304	175	62	13	28	59	0	0	0	59	0	1.068
B3401-5	270	203	72	6	7	72	15	0	0	87	15	1.072
B3403-5	429	318	112	6	19	49	10	16	0	75	26	1.081
B3403-6	287	229	81	5	15	76	4	0	0	80	4	1.084
B3404-1	167	143	51	2	13	70	16	0	0	86	16	1.083
B3404-2	422	317	112	6	19	59	9	7	0	75	16	1.074
B3405-2	281	254	90	2	6	52	0	40	0	92	40	1.090
B3405-6	188	124	44	5	17	52	10	16	0	78	26	1.071
B3405-7	407	321	113	4	12	64	12	7	0	83	19	1.081
B3405-8	384	279	98	5	19	70	6	0	0	76	6	1.080
B3407-1	351	279	99	2	9	70	5	13	0	88	18	1.092
B3407-3	403	304	107	3	14	66	17	0	0	83	17	1.087
B3407-4	292	223	79	5	18	63	14	0	0	77	14	1.071
B3407-5	234	158	56	6	21	66	6	0	0	72	6	1.069
B3407-7	222	125	44	12	31	58	0	0	0	58	0	1.084
B3407-9	379	308	109	5	10	48	25	12	0	85	37	1.069
B3407-10	335	258	91	3	18	68	4	7	0	79	11	1.066
B3410-1	274	247	87	5	3	70	9	13	0	91	21	1.058
B3410-2	318	225	79	8	13	48	15	17	0	80	32	1.061
B3410-3	372	342	121	2	5	78	10	5	0	93	15	1.071
B3410-6	375	324	114	1	8	63	11	16	0	91	27	1.070
B3410-7	359	310	110	0	4	62	24	9	0	96	34	1.070
B3410-12	349	306	108	0	6	70	14	10	0	94	24	1.054
B3413-1	369	311	110	4	12	72	8	4	0	84	12	1.080
B3413-5	416	330	117	2	17	53	18	9	0	81	28	1.066
B3414-4	366	294	104	3	4	76	10	6	0	93	16	1.088
B3416-2	329	230	81	6	17	77	0	0	0	77	0	1.071

Table 3 (cont'd). Production statistics for the 2018 USDA 2nd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
B3416-15	276	241	85	3	9	71	10	6	0	87	16	1.064
B3418-5	331	261	92	2	10	68	10	10	0	88	20	1.052
B3418-9	269	173	61	3	9	82	6	0	0	88	6	1.081
B3419-1	319	279	99	3	7	71	10	9	0	90	19	1.057
B3419-4	328	260	92	4	11	51	14	20	0	85	34	1.060
B3419-5	213	176	62	3	9	87	0	0	0	87	0	1.047
B3419-6	185	148	52	3	11	56	20	10	0	86	30	1.055
B3419-14	158	134	47	0	8	66	26	0	0	92	26	1.064
B3419-16	224	196	69	0	10	65	25	0	0	90	25	1.079
B3421-1	386	347	122	3	2	57	18	19	0	95	38	1.069
B3421-4	268	200	71	8	17	76	0	0	0	76	0	1.074
B3422-3	294	194	68	7	15	69	10	0	0	79	10	1.062
B3422-5	241	208	74	3	10	86	0	0	0	86	0	1.066
B3423-5	229	219	77	2	0	71	9	19	0	98	27	1.062
B3423-7	294	245	87	3	3	46	31	17	0	94	47	1.072
B3423-9	244	194	69	3	14	60	14	8	0	83	23	1.068
B3423-11	316	257	91	5	12	79	4	0	0	83	4	1.067
B3423-13	398	348	123	4	9	60	20	7	0	88	28	1.065
B3423-14	335	231	82	6	20	70	4	0	0	74	4	1.069
B3423-16	272	236	83	3	10	79	8	0	0	87	8	1.059
B3424-4	251	181	64	4	23	73	0	0	0	73	0	1.058
B3426-3	216	94	33	13	44	35	9	0	0	44	9	1.062
B3427-7	374	342	121	2	5	58	19	15	0	92	34	1.065
Atlantic	335	283	100	1	8	63	0	27	0	91	27	1.087
Harley Blackwell (B0564-8)	368	313	111	2	10	54	14	21	0	88	34	1.082
Snowden	310	186	66	3	24	64	4	5	0	73	10	1.087
Peter Wilcox (B1816-5)	256	196	69	2	21	77	0	0	0	77	0	1.051
Soraya	378	304	108	6	13	73	7	0	0	81	7	1.046

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 2018 USDA 2nd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
BNC811-4	75	5	9	8						7	3
BNC811-6	75	5	9	8						8	3
BNC811-7	100	5	9	8						6	4
BNC811-9	100	7	9	8						7	1
BNC811-14	100	6	9	8						8	2
BNC811-15	100	7	9	8						5	2
BNC811-16	100	7	9	8						7	2
BNC811-17	100	8	9	8						8	2
BNC811-22	100	7	9	7						8	1
BNC811-25	100	8	9	8						8	3
BNC811-32	100	8	9	7						6	3
BNC811-33	100	7	9	8						8	2
BNC811-35	100	8	9	7						6	2
BNC811-36	100	8	9	7						6	1
BNC813-3	100	7	9	8						6	1
BNC814-2	88	9	9	7						8	2
BNC815-3	100	8	6	7						7	1
BNC815-4	100	9	9	8						7	2
BNC815-6	100	7	9	9						9	1
BNC815-7	100	8	9	7						8	1
BNC816-1	100	7	6	7						5	3
BNC816-2	100	6	9	9						8	2
BNC816-3	100	7	9	7						6	2
BNC817-1	100	8	9	9						5	2
BNC817-5	88	8	9	8						8	2
BNC818-1	100	8	6	7						8	3
BNC818-3	88	7	9	8						6	2
BNC818-8	88	7	9	9						6	3
BNC818-9	100	8	9	7						9	2
BNC818-11	100	7	9	8						6	3

Table 4 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 2nd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
BNC818-13	100	7	9	8						5	2
BNC818-14	100	8	9	7						8	1
BNC819-1	100	9	9	7						7	2
BNC819-2	100	8	9	8						7	1
BNC820-6	100	7	9	8						6	2
BNC820-9	100	6	9	8						8	1
BNC820-15	88	8	9	7						5	3
BNC821-1	100	9	9	7						8	1
BNC821-6	88	9	9	7						8	1
BNC821-7	100	8	9	7						8	2
BNC821-9	100	6	9	8						7	1
BNC821-11	100	7	9	7						6	1
BNC827-1	100	8	9	6						8	2
BNC828-1	100	8	6	6						3	3
BNC830-2	100	6	9	7						7	3
BNC831-1	100	8	6	7						7	3
BNC831-7	100	8	6	6						5	3
BNC831-8	100	8	9	7						7	3
BNC833-2	100	8	9	5						6	2
BNC833-3	100	7	9	6						4	3
BNC833-7	100	7	9	7						5	3
BNC833-8	100	8	9	6						4	3
BNC833-9	100	7	9	7						7	3
BNC833-13	100	8	9	6						4	3
BNC834-4	100	7	9	7						6	3
BNC839-2	88	8	9	7						8	2
BNC839-3	100	6	9	7						7	2
BNC839-5	100	5	9	7						6	2
BNC842-4	100	8	9	6						7	3
B3355-1	100	8	9	7						6	3

Table 4 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 2nd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3355-2	100	9	9	7						6	2
B3355-6	100	7	9	7						6	2
B3358-2	100	9	6	5						5	4
B3362-2	100	8	9	3						8	3
B3364-3	100	6	9	7						6	2
B3365-2	100	8	9	3						7	2
B3365-6	100	8	9	5						6	2
B3365-7	100	9	9	5						7	2
B3367-1	100	8	9	5						6	3
B3368-3	100	8	9	6						3	3
B3369-4	100	6	9	7						9	2
B3372-1	100	9	6	6						6	1
B3372-2	100	8	9	7						4	2
B3372-4	100	9	6	6						7	4
B3372-5	100	8	9	7						5	1
B3372-6	100	9	9	5						6	1
B3373-1	100	7	9	5						6	1
B3375-1	100	9	9	5						3	3
B3375-2	100	8	9	5						8	2
B3375-3	100	9	9	4						7	2
B3376-4	100	8	6	6						9	2
B3376-5	100	9	9	4						8	2
B3376-7	100	9	9	5						6	1
B3378-1	100	9	9	6						6	2
B3378-2	100	9	6	5						5	2
B3378-3	100	9	6	7						5	1
B3378-9	100	9	9	7						5	2
B3379-1	100	9	6	7						6	2
B3379-2	100	9	9	8						7	2
B3379-3	88	9	9	7						7	2

Table 4 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 2nd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3379-6	100	9	6	7						8	1
B3379-9	100	7	9	7						6	2
B3381-2	100	9	9	7						8	2
B3381-4	88	9	9	7						7	1
B3381-6	100	9	9	7						9	1
B3381-7	100	9	9	7						7	2
B3382-8	100	8	6	7						7	2
B3384-1	50	8	9	7						6	2
B3385-1	88	8	9	7						9	1
B3385-2	88	8	9	7						8	1
B3385-6	100	7	9	7						7	1
B3386-4	100	8	6	7						4	3
B3386-6	100	8	6	7						5	3
B3386-7	100	7	9	7						6	3
B3388-3	100	8	9	7						8	2
B3388-4	100	6	9	7						7	2
B3389-3	100	7	9	7						6	3
B3389-10	100	9	6	7						5	2
B3390-6	100	8	6	7						8	1
B3390-8	100	8	6	7						8	2
B3391-1	88	8	9	7						7	1
B3392-1	100	8	6	8						7	1
B3393-1	100	9	9	7						7	1
B3393-2	100	9	9	7						8	2
B3396-3	100	9	6	7						8	1
B3396-6	100	9	6	7						8	3
B3397-1	100	7	9	7						9	1
B3398-1	100	8	9	7						8	1
B3398-3	100	5	9	8						5	3
B3399-2	100	8	9	7						7	2

Table 4 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 2nd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3399-6	100	9	9	7						9	2
B3400-2	100	9	6	8						5	2
B3400-4	100	8	9	8						4	3
B3401-2	100	8	6	7						7	2
B3401-5	100	8	9	7						5	2
B3403-5	100	9	6	7						6	1
B3403-6	100	9	9	7						6	2
B3404-1	100	8	9	7						6	3
B3404-2	100	8	9	7						5	1
B3405-2	75	6	9	8						8	1
B3405-6	75	7	9	7						8	3
B3405-7	100	8	9	7						7	1
B3405-8	100	8	9	8						6	1
B3407-1	100	6	9	8						6	2
B3407-3	100	8	9	7						8	1
B3407-4	100	7	9	7						7	2
B3407-5	88	6	9	7						7	2
B3407-7	88	5	9	8						5	3
B3407-9	100	8	9	7						8	1
B3407-10	100	7	9	7						8	1
B3410-1	88	8	9	7						7	1
B3410-2	100	7	9	7						6	2
B3410-3	88	6	9	7						8	1
B3410-6	100	7	9	7						9	1
B3410-7	100	7	9	7						8	2
B3410-12	100	7	9	7						6	1
B3413-1	88	8	9	7						6	1
B3413-5	100	9	9	7						6	1
B3414-4	100	8	9	7						8	2
B3416-2	100	7	9	7						7	2

Table 4 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 2nd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3416-15	100	6	9	7						7	1
B3418-5	100	8	9	7						7	2
B3418-9	100	7	9	7						7	3
B3419-1	100	8	9	7						7	1
B3419-4	100	8	9	7						8	1
B3419-5	100	6	9	7						8	2
B3419-6	100	7	9	7						7	3
B3419-14	100	7	9	7						9	3
B3419-16	100	7	9	7						8	2
B3421-1	100	8	9	7						8	1
B3421-4	100	7	9	7						6	2
B3422-3	100	8	9	7						8	3
B3422-5	100	7	9	7						7	2
B3423-5	100	6	9	7						8	2
B3423-7	100	8	9	7						9	2
B3423-9	100	6	9	7						9	2
B3423-11	100	9	9	7						8	1
B3423-13	100	9	9	7						8	1
B3423-14	100	8	9	7						7	2
B3423-16	100	8	6	7						6	2
B3424-4	100	9	6	6						9	2
B3426-3	100	8	6	1						9	3
B3427-7	100	9	9	5						8	1
Atlantic	100	9	9	7						7	-
Harley Blackwell (B0564-8)	75	9	9	7						8	1
Snowden	100	8	9	6						8	3
Peter Wilcox (B1816-5)	63	8	9	6						6	2
Soraya	100	8	9	6						9	1

[1]Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 8 for 6 ft plot, 8 in spacing.
Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

[2]Internal 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 2018 USDA 2nd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
BNC811-4	0	0	0	0	0	0	0	0	0	0	0
BNC811-6	3	10	0	0	14	0	5	0	0	5	0
BNC811-7	0	0	6	9	15	0	15	0	0	0	15
BNC811-9	0	0	8	1	9	0	0	0	0	0	0
BNC811-14	5	0	10	0	15	0	0	0	0	0	0
BNC811-15	10	0	5	0	15	0	0	0	0	0	0
BNC811-16	0	0	7	1	9	0	0	0	0	0	5
BNC811-17	8	6	15	0	28	0	0	0	0	0	0
BNC811-22	0	0	4	0	4	0	0	0	0	0	0
BNC811-25	0	0	7	4	10	0	10	0	0	0	0
BNC811-32	19	0	5	0	24	0	0	0	0	0	0
BNC811-33	0	0	8	2	10	0	0	0	0	0	0
BNC811-35	0	0	10	2	11	0	0	0	0	0	0
BNC811-36	0	0	0	0	0	0	0	0	0	0	0
BNC813-3	0	0	0	0	0	0	0	0	0	0	0
BNC814-2	0	0	0	0	0	0	5	0	0	0	0
BNC815-3	0	0	9	0	9	0	0	0	0	0	0
BNC815-4	0	0	0	0	0	0	0	0	0	0	0
BNC815-6	0	0	4	0	4	0	0	0	0	0	0
BNC815-7	0	0	0	0	0	0	0	0	0	0	0
BNC816-1	0	0	2	0	2	0	0	0	0	0	0
BNC816-2	0	0	3	0	3	0	0	0	0	0	0
BNC816-3	0	0	3	0	3	0	0	0	0	0	0
BNC817-1	0	0	0	0	0	0	7	0	0	0	0
BNC817-5	4	0	9	0	12	0	0	0	0	0	0
BNC818-1	0	0	12	12	24	0	0	0	0	0	0
BNC818-3	0	0	2	8	10	0	0	0	0	0	0
BNC818-8	0	0	14	2	15	0	0	0	0	0	0
BNC818-9	0	0	2	7	9	0	0	0	0	0	0
BNC818-11	12	3	4	4	24	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2018 USDA 2nd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
BNC818-13	0	0	0	0	0	0	0	0	0	0	0
BNC818-14	0	0	0	0	0	0	0	0	0	0	0
BNC819-1	0	0	15	0	15	0	0	0	0	0	0
BNC819-2	0	0	5	0	5	0	0	0	0	0	0
BNC820-6	0	0	9	0	9	0	0	0	0	0	0
BNC820-9	0	0	4	0	4	0	0	0	0	0	0
BNC820-15	0	0	10	0	10	0	0	0	0	0	0
BNC821-1	0	0	6	0	6	0	0	0	0	0	0
BNC821-6	0	0	5	0	5	0	0	0	0	0	0
BNC821-7	0	0	0	0	0	0	5	0	0	0	0
BNC821-9	0	0	0	0	0	0	0	0	0	0	0
BNC821-11	0	3	0	0	3	0	0	0	0	0	0
BNC827-1	0	0	0	0	0	0	0	0	0	0	0
BNC828-1	0	5	0	0	5	0	0	0	0	0	0
BNC830-2	0	0	0	0	0	0	0	0	0	0	0
BNC831-1	2	0	0	0	2	0	0	0	0	10	0
BNC831-7	0	0	0	0	0	0	0	0	0	0	0
BNC831-8	0	2	0	0	2	0	0	0	0	10	0
BNC833-2	0	0	0	0	0	0	0	0	0	0	0
BNC833-3	0	0	0	0	0	0	0	0	0	0	0
BNC833-7	0	0	0	0	0	0	0	0	0	0	0
BNC833-8	8	0	0	0	8	0	0	0	0	0	0
BNC833-9	0	0	0	0	0	0	0	0	0	0	0
BNC833-13	0	0	0	0	0	0	0	0	0	0	0
BNC834-4	0	0	4	0	4	0	0	0	0	0	0
BNC839-2	0	0	2	0	2	0	0	0	0	0	0
BNC839-3	0	0	2	2	4	0	0	0	0	0	0
BNC839-5	0	0	0	0	0	0	0	0	0	0	0
BNC842-4	0	0	0	0	0	0	0	0	0	0	0
B3355-1	0	0	0	0	0	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2018 USDA 2nd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3355-2	0	3	0	0	3	0	0	0	0	0	0
B3355-6	0	7	0	0	7	0	0	0	0	0	0
B3358-2	0	5	0	0	5	0	0	0	0	5	0
B3362-2	3	0	0	0	3	0	0	0	0	0	0
B3364-3	5	0	0	0	5	0	0	0	0	0	0
B3365-2	3	2	0	0	5	0	0	0	0	0	0
B3365-6	0	0	0	0	0	0	0	0	0	0	0
B3365-7	8	6	1	0	15	0	0	0	0	0	0
B3367-1	2	3	0	1	6	0	0	0	0	0	0
B3368-3	0	2	0	1	3	0	0	0	0	0	0
B3369-4	0	2	0	3	4	0	0	0	0	0	0
B3372-1	4	0	0	0	4	0	0	0	0	0	0
B3372-2	0	4	0	0	4	0	0	0	0	0	0
B3372-4	0	14	0	0	14	0	0	0	0	35	0
B3372-5	0	5	0	0	5	0	0	0	0	0	0
B3372-6	0	6	0	0	6	0	0	0	0	0	0
B3373-1	0	0	0	2	2	0	0	0	0	0	0
B3375-1	0	2	0	0	2	0	0	0	0	0	0
B3375-2	1	2	0	0	3	0	0	0	0	0	0
B3375-3	0	0	0	0	0	0	0	0	0	0	0
B3376-4	1	11	0	0	13	0	0	0	0	0	0
B3376-5	0	2	0	0	2	0	0	0	0	0	0
B3376-7	0	3	0	0	3	0	0	0	0	0	0
B3378-1	0	8	1	0	10	0	0	0	0	0	5
B3378-2	0	0	2	3	5	0	0	0	0	0	0
B3378-3	0	0	2	0	2	0	0	0	0	0	0
B3378-9	0	0	0	0	0	0	0	0	0	0	0
B3379-1	0	4	2	0	6	0	0	0	0	0	0
B3379-2	0	3	1	0	4	0	0	0	0	0	0
B3379-3	4	2	0	0	6	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2018 USDA 2nd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3379-6	3	6	0	0	8	0	0	0	0	0	0
B3379-9	1	0	0	0	1	0	0	0	0	0	0
B3381-2	6	0	0	0	6	0	0	0	0	0	0
B3381-4	0	0	0	0	0	0	0	0	0	0	0
B3381-6	0	0	3	0	3	0	0	0	0	0	0
B3381-7	3	0	0	0	3	0	0	0	0	0	0
B3382-8	0	0	2	0	2	0	0	0	0	0	0
B3384-1	5	0	2	0	6	0	0	0	0	0	0
B3385-1	3	0	0	0	3	0	0	0	0	0	0
B3385-2	2	3	0	0	4	0	0	0	0	0	0
B3385-6	2	0	0	0	2	0	0	0	0	0	0
B3386-4	0	0	0	0	0	0	0	0	0	0	0
B3386-6	4	11	0	0	16	0	0	0	0	0	0
B3386-7	0	2	0	0	2	0	0	0	0	0	0
B3388-3	0	0	0	0	0	0	0	0	0	0	0
B3388-4	0	3	0	0	3	0	0	0	0	0	0
B3389-3	0	0	0	0	0	0	0	0	0	0	0
B3389-10	0	4	0	0	4	0	0	0	0	0	0
B3390-6	0	0	2	0	2	0	0	0	0	0	0
B3390-8	0	0	0	0	0	0	0	0	0	0	0
B3391-1	0	0	0	0	0	0	0	0	0	0	0
B3392-1	0	0	0	3	3	0	0	0	0	0	0
B3393-1	2	5	0	0	7	0	0	0	0	0	0
B3393-2	0	9	1	0	10	0	0	0	0	0	0
B3396-3	3	0	0	0	3	0	0	0	0	0	0
B3396-6	5	0	0	0	5	0	0	0	0	0	0
B3397-1	2	0	1	0	4	0	0	0	0	0	0
B3398-1	0	0	0	2	2	0	0	0	0	0	0
B3398-3	5	2	2	8	16	0	11	0	0	0	0
B3399-2	0	0	11	2	13	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2018 USDA 2nd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3399-6	0	0	6	0	6	0	6	0	0	0	0
B3400-2	0	0	0	0	0	0	0	0	0	0	0
B3400-4	2	6	3	0	11	0	10	0	0	0	0
B3401-2	0	0	2	0	2	0	0	0	0	0	0
B3401-5	4	5	4	0	14	0	0	0	0	0	0
B3403-5	0	0	1	0	1	0	0	0	0	0	0
B3403-6	0	0	0	0	0	0	0	0	0	0	0
B3404-1	0	0	0	0	0	0	0	0	0	0	0
B3404-2	0	0	0	0	0	0	0	0	0	0	0
B3405-2	0	0	2	0	2	0	0	0	0	0	0
B3405-6	0	6	10	0	16	0	0	0	0	0	0
B3405-7	0	4	1	0	6	0	0	0	0	0	0
B3405-8	0	0	3	1	4	0	0	0	0	0	0
B3407-1	4	0	5	1	10	0	5	0	0	0	0
B3407-3	0	2	5	2	9	0	0	0	0	0	0
B3407-4	0	0	0	1	1	0	0	0	0	0	0
B3407-5	0	0	7	0	7	0	0	0	0	0	0
B3407-7	0	0	0	2	2	0	0	0	0	0	0
B3407-9	0	0	4	0	4	0	0	0	0	0	0
B3407-10	0	0	2	0	2	0	0	0	0	0	0
B3410-1	0	0	2	0	2	0	0	0	0	0	0
B3410-2	0	9	2	0	11	0	0	0	0	0	0
B3410-3	0	0	0	1	1	0	0	0	0	0	0
B3410-6	0	2	3	0	5	0	0	0	0	0	0
B3410-7	0	3	7	0	10	0	0	0	0	0	0
B3410-12	0	0	6	0	6	0	0	0	0	0	0
B3413-1	0	0	0	0	0	0	0	0	0	0	0
B3413-5	0	0	1	0	1	0	0	0	0	0	0
B3414-4	0	9	2	3	13	0	0	0	0	0	0
B3416-2	0	7	2	0	10	0	0	0	0	0	0

Table 5 (cont'd). External and internal defects for the 2018 USDA 2nd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3416-15	0	0	0	0	0	0	0	0	0	0	0
B3418-5	5	2	3	0	10	0	0	0	0	0	0
B3418-9	0	23	4	0	27	0	0	0	0	0	0
B3419-1	0	0	3	0	3	0	0	0	0	0	0
B3419-4	0	0	6	0	6	0	0	0	0	0	0
B3419-5	0	3	2	0	5	0	0	0	0	0	0
B3419-6	0	0	7	0	7	0	0	0	0	0	0
B3419-14	7	0	0	0	7	0	0	0	0	0	0
B3419-16	0	0	0	3	3	0	0	0	0	0	0
B3421-1	0	0	5	0	5	0	0	0	0	0	0
B3421-4	0	0	2	0	2	0	0	0	0	0	0
B3422-3	8	0	6	2	16	0	0	0	0	0	0
B3422-5	0	0	0	0	0	0	0	0	0	0	0
B3423-5	0	0	3	0	3	0	0	0	0	0	0
B3423-7	0	0	11	0	11	0	0	0	0	0	0
B3423-9	0	0	4	0	4	0	0	0	0	0	0
B3423-11	0	0	2	0	2	0	0	0	0	0	0
B3423-13	0	0	0	0	0	0	0	0	0	0	0
B3423-14	0	5	2	0	7	0	0	0	0	0	0
B3423-16	0	0	0	0	0	0	0	0	0	0	0
B3424-4	0	2	0	0	2	0	0	0	0	0	0
B3426-3	0	0	0	0	0	0	0	0	0	0	0
B3427-7	0	0	1	0	1	0	0	0	0	0	0
Atlantic	3	0	3	0	7	0	10	0	0	0	0
Harley Blackwell (B0564-8)	0	0	4	0	4	0	0	0	0	0	0
Snowden	9	2	7	0	18	0	0	0	0	0	0
Peter Wilcox (B1816-5)	0	0	0	0	0	0	0	0	0	0	0
Soraya	0	0	0	0	0	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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 2017.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 1, 2018
Vine Kill Date	N/A
Harvest Date	May 3, 2018
Season Length	91 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	5 (Standard: Atlantic)
Number of Clones	68
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	40 DAP
Highest Total Yield	B3295-9 (465 cwt/acre or 52.1 T/ha)
Highest Marketable Yield	B3295-9 (403 cwt/acre or 45.2 T/ha)
Best Appearance Rating	B3298-6, B3328-3, BNC726-1, BNC733-2, Harley Blackwell (B0564-8) (9, excellent)

Table 6. Production statistics for the 2018 USDA 3rd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–91 days												
B3292-5	288	250	81	3	6	57	29	5	0	91	34	1.046
B3293-1	357	270	88	4	17	72	3	4	0	79	7	1.069
B3294-1	397	302	98	5	15	71	9	0	0	80	9	1.074
B3294-4	423	344	112	3	10	77	8	2	0	87	10	1.062
B3295-5	459	382	125	2	12	60	12	14	0	86	26	1.085
B3295-9	465	403	131	3	7	67	17	5	0	90	22	1.066
B3296-3	407	332	108	4	11	49	25	11	0	84	36	1.072
B3297-1	348	190	62	13	31	53	3	0	0	56	3	1.071
B3297-5	390	216	70	14	28	53	4	2	0	59	5	1.077
B3298-3	314	240	78	4	17	69	10	0	0	79	10	1.066
B3298-6	339	232	76	3	7	67	15	9	0	91	24	1.074
B3299-4	432	303	99	4	25	70	0	2	0	71	2	1.067
B3299-5	319	118	38	13	49	35	2	0	0	38	2	1.076
B3302-1	307	139	45	15	39	46	0	0	0	46	0	1.070
B3303-2	446	370	121	3	13	75	9	0	0	84	9	1.069
B3304-1	346	187	61	10	34	53	3	0	0	56	3	1.090
B3304-12	343	252	82	5	20	64	11	0	0	75	11	1.069
B3305-1	307	187	61	6	31	62	0	0	0	62	0	1.079
B3305-3	384	250	81	6	22	69	3	0	0	72	3	1.062
B3306-2	289	215	70	7	18	68	5	2	0	75	7	1.077
B3307-5	367	159	52	9	38	51	2	0	0	53	2	1.067
B3311-3	285	197	64	2	27	68	3	0	0	71	3	1.052
B3314-1	314	154	50	9	40	51	0	0	0	51	0	1.054
B3317-1	340	253	82	5	17	74	5	0	0	79	5	1.074
B3318-1	276	203	66	4	21	74	1	0	0	75	1	1.065
B3320-4	256	155	50	6	25	69	0	0	0	69	0	1.071
B3322-5	385	285	93	4	18	62	14	3	0	78	16	1.067
B3325-6	323	255	83	3	17	64	11	5	0	81	16	1.066
B3326-3	389	276	90	5	22	64	9	0	0	73	9	1.062
B3328-3	361	196	64	4	37	58	1	0	0	59	1	1.055

Table 6 (cont'd). Production statistics for the 2018 USDA 3rd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
B3328-4	400	270	88	7	22	67	4	0	0	71	4	1.070
B3328-5	324	221	72	5	22	72	1	0	0	73	1	1.061
B3328-6	393	300	98	3	17	67	11	3	0	80	14	1.056
B3329-4	350	172	56	16	33	46	5	0	0	51	5	1.079
B3335-2	390	268	87	5	22	66	4	3	0	72	7	1.078
B3340-3	391	301	98	5	9	49	21	16	0	86	37	1.058
B3342-2	369	250	81	10	19	57	14	0	0	71	14	1.067
B3344-2	219	145	47	5	26	64	2	3	0	69	5	1.068
BNC708-1	438	304	99	7	19	66	6	2	0	74	8	1.059
BNC712-3	304	204	66	5	27	65	2	0	0	68	2	1.060
BNC716-1	205	140	46	5	24	67	4	0	0	71	4	1.053
BNC718-1	279	207	67	5	19	69	4	3	0	76	6	1.072
BNC718-2	309	242	79	5	17	73	3	2	0	78	5	1.079
BNC720-1	213	169	55	4	13	70	11	3	0	83	14	1.065
BNC723-1	264	157	51	9	26	59	4	2	0	66	7	1.073
BNC723-4	386	300	98	5	12	56	12	14	0	83	26	1.059
BNC725-1	333	275	89	3	12	71	9	5	0	85	14	1.078
BNC726-1	381	298	97	2	7	62	20	10	0	92	30	1.066
BNC726-4	278	236	77	4	6	61	12	18	0	91	30	1.081
BNC726-5	321	248	81	6	15	71	8	0	0	79	8	1.070
BNC728-1	295	207	67	8	19	66	8	0	0	73	8	1.061
BNC729-3	261	213	70	3	9	58	17	13	0	88	30	1.077
BNC731-2	272	225	73	4	12	61	16	8	0	84	23	1.050
BNC733-2	313	263	85	1	10	62	15	12	0	89	27	1.065
BNC736-1	297	231	75	3	15	63	16	4	0	82	19	1.074
BNC738-2	402	316	103	4	13	70	9	4	0	83	13	1.072
BNC740-1	283	211	69	5	18	75	0	2	0	77	2	1.086
BNC742-1	332	218	71	6	17	59	7	12	0	77	18	1.070
BNC742-2	239	170	55	7	15	70	4	3	0	77	7	1.077
BNC751-1	249	116	38	10	43	47	0	0	0	47	0	1.092

Table 6 (cont'd). Production statistics for the 2018 USDA 3rd Year Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
BNC754-7	184	56	18	21	48	31	0	0	0	31	0	1.063
B3263-2	326	262	85	4	12	70	9	6	0	84	14	1.085
B3263-7	299	203	66	7	22	65	6	0	0	71	6	1.063
B3264-3	268	125	41	18	34	48	0	0	0	48	0	1.060
B3278-3	218	77	25	10	54	36	0	0	0	36	0	1.064
BNC626-7	347	292	95	3	11	65	9	12	0	86	21	1.063
BNC626-8	320	265	86	4	10	66	10	10	0	86	20	1.063
BNC626-15	357	295	96	5	10	80	5	0	0	85	5	1.054
Atlantic	360	307	100	3	9	82	6	0	0	88	6	1.078
Harley Blackwell (B0564-8)	259	200	65	7	14	64	8	6	0	79	14	1.065
Snowden	215	126	41	8	29	57	6	0	0	63	6	1.044
Peter Wilcox (B1816-5)	283	195	64	5	24	71	0	0	0	71	0	1.066
Soraya	364	243	79	9	23	68	0	0	0	68	0	1.042

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 2018 USDA 3rd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3292-5	96	7	9	7						7	2
B3293-1	88	8	9	7						8	1
B3294-1	100	9	6	7						6	1
B3294-4	96	8	9	7						5	1
B3295-5	96	8	9	8						8	1
B3295-9	96	9	9	7						6	1
B3296-3	100	8	9	7						5	1
B3297-1	96	8	9	7						6	2
B3297-5	92	9	9	7						6	2
B3298-3	92	7	9	7						7	2
B3298-6	92	4	9	7						9	3
B3299-4	96	9	6	7						6	1
B3299-5	100	9	6	7						6	3
B3302-1	92	9	9	7						4	3
B3303-2	100	7	9	7						8	1
B3304-1	96	7	9	7						6	2
B3304-12	100	9	9	7						8	2
B3305-1	96	7	9	6						6	2
B3305-3	100	9	9	6						6	2
B3306-2	100	9	6	7						8	2
B3307-5	96	6	9	7						8	3
B3311-3	100	8	9	6						8	2
B3314-1	100	7	9	6						8	3
B3317-1	100	7	9	7						7	2
B3318-1	100	8	9	6						7	2
B3320-4	83	6	9	7						7	3
B3322-5	100	9	9	7						8	1
B3325-6	100	8	9	7						6	2
B3326-3	88	9	9	7						6	1
B3328-3	88	9	6	6						9	2

Table 7 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 3rd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3328-4	100	6	9	7						6	1
B3328-5	92	7	9	7						7	2
B3328-6	96	7	9	8						7	1
B3329-4	96	9	9	7						6	2
B3335-2	92	9	9	7						7	1
B3340-3	100	8	9	7						8	3
B3342-2	100	8	9	7						7	2
B3344-2	88	4	9	7						6	3
BNC708-1	96	9	6	7						8	2
BNC712-3	92	6	9	8						6	2
BNC716-1	88	4	9	8						7	3
BNC718-1	75	4	9	7						7	2
BNC718-2	92	7	9	7						8	2
BNC720-1	96	5	9	7						8	2
BNC723-1	96	9	6	5						7	3
BNC723-4	100	9	6	7						8	1
BNC725-1	96	8	9	7						8	1
BNC726-1	96	8	9	7						9	2
BNC726-4	100	8	9	7						7	2
BNC726-5	100	9	6	7						6	2
BNC728-1	100	9	6	7						6	2
BNC729-3	92	7	9	8						6	3
BNC731-2	50	4	9	9						8	2
BNC733-2	92	7	9	7						9	1
BNC736-1	88	9	6	6						8	2
BNC738-2	96	9	6	6						8	1
BNC740-1	96	6	9	8						6	2
BNC742-1	100	9	9	6						7	2
BNC742-2	100	9	6	4						8	2
BNC751-1	96	8	9	7						6	3

Table 7 (cont'd). Plant growth and tuber characteristics for the 2018 USDA 3rd Year Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
BNC754-7	96	7	9	5						6	3
B3263-2	92	9	9	7						7	2
B3263-7	96	6	9	7						6	2
B3264-3	92	9	9	7						7	3
B3278-3	92	7	9	7						5	3
BNC626-7	100	8	9	7						8	1
BNC626-8	92	7	9	7						7	1
BNC626-15	96	8	9	7						7	1
Atlantic	100	8	9	7						7	-
Harley Blackwell (B0564-8)	96	9	9	7						9	2
Snowden	96	9	9	6						6	3
Peter Wilcox (B1816-5)	92	8	6	7						7	2
Soraya	100	9	6	6						7	2

[1]Percent 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.

[2]Internal 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 2018 USDA 3rd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3292-5	2	0	2	1	5	0	0	0	0	0	0
B3293-1	0	2	1	0	4	0	0	0	0	0	0
B3294-1	4	1	0	0	5	0	0	0	0	0	0
B3294-4	4	0	3	0	6	0	0	0	0	0	0
B3295-5	1	2	0	0	3	0	0	0	0	0	0
B3295-9	1	0	0	2	3	0	0	0	0	0	0
B3296-3	2	0	1	0	3	0	0	0	0	0	0
B3297-1	0	1	0	1	2	0	0	0	0	0	0
B3297-5	2	1	2	1	5	0	0	0	0	0	0
B3298-3	2	0	1	0	3	0	0	0	0	0	0
B3298-6	15	5	2	3	25	0	0	0	0	0	0
B3299-4	0	2	0	0	2	0	0	0	0	0	0
B3299-5	0	0	0	2	2	0	0	0	0	0	0
B3302-1	0	0	1	0	1	0	0	0	0	0	0
B3303-2	0	0	0	0	1	0	0	0	0	0	0
B3304-1	1	2	1	0	4	0	0	0	0	0	0
B3304-12	0	1	1	0	2	0	0	0	0	0	0
B3305-1	1	0	0	1	2	0	0	0	0	0	0
B3305-3	1	4	2	3	9	0	0	0	0	0	0
B3306-2	0	0	0	1	1	0	0	0	0	0	0
B3307-5	1	13	4	0	18	0	0	0	0	0	0
B3311-3	1	1	0	0	2	0	0	0	0	0	0
B3314-1	0	3	1	1	4	0	0	0	0	0	0
B3317-1	3	0	2	1	5	0	0	0	0	0	0
B3318-1	0	0	1	1	2	0	0	0	0	0	0
B3320-4	6	3	2	1	12	0	0	0	0	0	0
B3322-5	1	2	1	1	5	0	0	0	0	0	0
B3325-6	1	0	1	0	2	0	0	0	0	0	0
B3326-3	2	0	0	0	2	0	0	0	0	0	0
B3328-3	0	8	1	0	8	0	0	0	0	0	0

Table 8 (cont'd). External and internal defects for the 2018 USDA 3rd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3328-4	3	0	0	1	4	0	0	0	0	0	0
B3328-5	1	3	2	1	7	0	0	0	0	0	0
B3328-6	1	0	4	0	5	0	0	0	0	0	0
B3329-4	1	3	0	0	3	0	0	0	0	0	0
B3335-2	2	3	1	0	5	0	0	0	0	0	0
B3340-3	1	5	0	4	10	0	10	0	0	0	0
B3342-2	2	2	1	0	5	0	5	0	0	0	0
B3344-2	0	2	0	2	4	0	0	0	0	0	0
BNC708-1	0	1	4	2	6	0	5	0	0	0	0
BNC712-3	0	0	0	1	1	0	0	0	0	0	0
BNC716-1	0	2	1	0	3	0	0	0	0	0	0
BNC718-1	0	0	1	1	2	0	0	0	0	0	0
BNC718-2	0	0	0	0	0	0	0	0	0	0	0
BNC720-1	2	2	0	0	4	0	0	0	0	0	0
BNC723-1	0	3	6	0	9	0	0	0	0	0	0
BNC723-4	1	0	5	0	6	0	0	0	0	0	0
BNC725-1	0	2	1	0	3	0	0	0	0	0	0
BNC726-1	6	0	5	4	15	0	0	0	0	0	0
BNC726-4	3	0	3	1	6	0	0	0	0	0	0
BNC726-5	1	0	1	0	2	0	0	0	0	0	0
BNC728-1	0	3	1	1	5	0	0	0	0	0	5
BNC729-3	2	0	3	1	7	0	10	0	0	0	0
BNC731-2	0	0	1	1	1	0	0	0	0	0	0
BNC733-2	0	2	1	3	6	0	0	0	0	0	0
BNC736-1	0	1	3	1	5	0	0	0	0	0	0
BNC738-2	1	2	1	1	5	0	0	0	0	0	0
BNC740-1	0	2	1	0	3	0	0	0	0	0	0
BNC742-1	8	4	0	3	15	0	0	0	0	0	0
BNC742-2	5	1	1	2	8	0	0	0	0	0	0
BNC751-1	0	1	0	0	1	0	0	0	0	0	0

Table 8 (cont'd). External and internal defects for the 2018 USDA 3rd Year Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
BNC754-7	0	2	0	0	2	0	5	0	0	0	0
B3263-2	1	0	1	3	5	0	5	0	0	0	0
B3263-7	3	0	1	1	5	0	0	0	0	0	0
B3264-3	0	0	0	2	2	0	0	0	0	0	0
B3278-3	0	1	0	0	1	0	0	0	0	0	0
BNC626-7	0	0	1	1	2	0	0	0	0	0	0
BNC626-8	1	1	2	0	4	0	0	0	0	0	0
BNC626-15	1	1	1	0	3	0	0	0	0	0	0
Atlantic	2	0	1	0	3	0	0	0	0	0	0
Harley Blackwell (B0564-8)	1	0	1	0	2	0	0	0	0	0	0
Snowden	0	3	3	1	7	0	0	0	0	0	0
Peter Wilcox (B1816-5)	0	3	0	0	3	0	0	0	0	0	0
Soraya	0	1	0	1	1	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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 20, 2018
Vine Kill Date	May 15, 2018
Harvest Date	June 4, 2018
Season Length	84 days planting to vine kill; 104 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	34 (Standard: Red LaSoda)
Number of Clones	8
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	3
Plot Size	20 ft (6.1 m)

Production Statistics

Early Vigor Ratings	44 DAP
Highest Total Yield	Soraya (337 cwt/acre or 37.8 T/ha)
Highest Marketable Yield	Marcy (208 cwt/acre or 23.3 T/ha)
Best Appearance Rating	Coronada, White Beauty, Montreal, Queen Anne, Natascha (9, excellent)

Table 9. Production statistics for the 2018 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–84 days												
AC Hamer	221	77	47	19	46	35	0	0	0	35	0	1.060
Coronada	199	101	62	9	40	51	0	0	0	51	0	1.049
Gioconda	278	145	89	9	38	52	1	1	0	53	1	1.059
Madison	175	78	48	14	41	45	0	0	0	45	0	1.074
Malou	196	98	60	13	37	50	1	0	0	50	1	1.057
Ricarda	204	78	48	14	46	40	0	0	0	40	0	1.066
Belmonda	269	98	60	18	46	36	0	0	0	36	0	1.060
NY140	230	162	99	5	19	69	7	2	0	77	8	1.071
Avalanche	189	101	62	8	34	57	0	0	0	57	0	1.060
Moonlight	237	159	97	7	25	66	1	0	0	67	1	1.061
White Beauty	279	182	112	4	23	73	0	0	0	73	0	1.062
NC470-3	220	158	97	5	21	68	5	1	0	74	6	1.061
NC502-10	68	5	3	40	54	6	0	0	0	6	0	1.069
NC507-15	39	1	1	62	36	2	0	0	0	2	0	1.059
NC509-16	145	67	41	9	48	43	0	0	0	43	0	1.062
NC554-1	86	16	10	33	46	21	0	0	0	21	0	1.047
NCB3171-7	171	62	38	19	42	38	1	0	0	39	1	1.065
Allora	144	65	40	12	41	47	0	0	0	47	0	1.061
BIE03-320	214	142	87	9	21	65	1	3	0	70	4	1.053
Electra	242	150	92	7	29	63	1	1	0	64	1	1.064
Montreal	300	192	118	6	24	67	2	0	0	69	2	1.064
Queen Anne	139	37	23	20	51	28	1	0	0	29	1	1.061
Soraya	299	175	107	10	32	58	0	1	0	59	1	1.062
Belmonda	275	123	75	13	43	44	0	0	0	44	0	1.062
Natascha	236	115	70	8	43	49	0	0	0	49	0	1.054
Toscana	249	135	83	12	35	53	0	0	0	53	0	1.053
Adirondack Blue	147	65	40	9	46	45	0	0	0	45	0	1.059
All Blue	228	35	21	23	62	16	0	0	0	16	0	1.067
Chieftain	226	170	104	4	18	73	4	2	0	79	6	1.062
Dark Red Norland	195	108	66	9	34	56	1	0	0	57	1	1.064

Table 9 (cont'd). Production statistics for the 2018 Fresh Market, Red, and Purple Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
French Fingerling	112	4	3	48	48	4	0	0	0	4	0	1.060
Goldrush	198	101	62	13	35	48	3	2	0	52	4	1.056
Lamoka	237	190	116	3	14	79	3	1	0	83	4	1.075
Marcy	245	208	127	3	11	80	5	2	0	87	7	1.067
Red LaSoda	211	177	108	4	10	78	8	1	0	86	8	1.057
Pike	220	177	108	3	12	82	2	1	0	85	3	1.069
Red LaSoda	197	150	92	4	18	74	2	2	0	78	4	1.049
Russian Banana	128	1	1	50	50	1	0	0	0	1	0	1.065
Satina	260	191	117	5	18	74	2	0	0	76	2	1.051
Soraya	337	200	123	7	32	60	1	1	0	61	1	1.060
Vivaldi	246	102	63	11	46	43	0	0	0	43	0	1.059
Yukon Gold	127	90	55	8	18	73	0	0	0	73	0	1.061
MSD[3]	158	124		14	20	27	7	ns	ns	26	8	ns
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	0.0022	0.0749	-	<0.0001	0.0001	0.1108

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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.

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

Table 10. Plant growth and tuber characteristics for the 2018 Fresh Market, Red, and Purple Variety Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]					
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP
AC Hamer	93	8	6	3	1	8	8	2	8	7
Coronada	83	8	8	6	3	9	9	6	9	9
Gioconda	97	9	6	4	3	9	9	6	8	8
Madison	96	9	8	4	1	7	7	2	7	6
Malou	98	8	8	5	3	9	8	3	5	7
Ricarda	90	9	9	4	1	3	9	3	7	8
Belmonda	98	9	7	4	3	7	8	2	8	7
NY140	99	9	9	6	1	7	8	3	7	8
Avalanche	99	9	9	6	1	9	7	3	7	7
Moonlight	99	7	9	7	1	7	7	3	8	6
White Beauty	96	8	8	6	1	8	9	3	7	9
NC470-3	87	9	9	7	1	6	4	3	8	7
NC502-10	88	8	6	2	9	1	8	3	7	6
NC507-15	96	7	9	2	6	2	8	6	8	7
NC509-16	80	7	6	4	9	1	8	3	7	6
NC554-1	93	8	9	2	1	2	7	3	8	7
NCB3171-7	96	9	7	5	1	9	7	2	6	7
Allora	96	8	9	4	2	9	8	3	8	8
BIE03-320	99	9	6	3	3	7	7	3	8	7
Electra	99	9	7	5	2	7	7	4	9	8
Montreal	96	9	7	4	1	9	8	3	8	9
Queen Anne	71	7	9	6	3	9	8	3	9	9
Soraya	89	9	7	4	3	7	8	3	9	8
Belmonda	92	9	8	4	3	7	7	3	8	7
Natascha	97	9	9	5	3	9	9	5	8	9
Toscana	99	9	6	4	3	9	9	3	9	8
Adirondack Blue	92	8	7	2	9	1	7	3	7	7
All Blue	93	8	7	4	9	1	7	3	6	6
Chieftain	99	9	9	6	1	2	7	3	7	6
Dark Red Norland	100	8	8	4	1	2	8	3	7	8

Table 10 (cont'd). Plant growth and tuber characteristics for the 2018 Fresh Market, Red, and Purple Variety Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]					
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP
French Fingerling	92	9	7	3	3	3	9	6	7	8
Goldrush	98	8	8	4	1	5	3	6	9	8
Lamoka	92	9	9	6	1	6	7	3	7	7
Marcy	93	9	9	7	1	6	6	3	8	7
Red LaSoda	98	9	8	5	1	2	8	3	7	7
Pike	92	9	9	7	1	7	7	3	7	7
Red LaSoda	96	8	9	4	1	2	8	3	7	7
Russian Banana	98	8	6	5	1	7	8	6	8	6
Satina	97	9	9	4	3	9	8	3	7	8
Soraya	99	9	7	4	3	9	8	3	9	8
Vivaldi	93	9	9	4	3	9	9	3	8	8
Yukon Gold	94	9	9	2	1	7	8	2	8	8

[1]Percent 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.

[2]Internal 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 2018 Fresh Market, Red, and Purple Variety Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AC Hamer	0	0	0	2	3	0	0	0	0	0	0
Coronada	0	0	1	0	1	0	0	0	0	0	0
Gioconda	0	0	2	1	3	0	0	0	0	0	0
Madison	0	0	0	1	1	0	0	0	2	0	0
Malou	0	0	1	1	3	0	0	0	0	0	0
Ricarda	0	0	3	2	5	0	0	0	0	0	0
Belmonda	0	0	1	2	3	0	0	0	0	0	0
NY140	0	0	3	4	7	0	0	0	0	0	0
Avalanche	0	1	1	7	8	0	0	0	0	0	0
Moonlight	0	0	0	3	4	0	0	0	0	0	0
White Beauty	0	0	4	6	10	0	0	0	0	0	0
NC470-3	0	0	1	2	3	0	0	0	0	0	0
NC502-10	0	0	0	0	0	0	3	0	0	0	0
NC507-15	0	0	0	0	0	0	0	0	0	0	0
NC509-16	0	0	0	0	0	0	2	0	0	0	0
NC554-1	9	0	0	1	11	0	0	0	0	2	0
NCB3171-7	0	0	1	4	5	0	0	0	0	0	0
Allora	0	0	1	7	8	0	0	0	0	0	0
BIE03-320	0	0	3	4	6	0	0	0	0	0	2
Electra	0	0	0	5	5	0	0	0	0	0	0
Montreal	0	0	1	6	8	0	0	0	0	0	0
Queen Anne	0	0	3	6	9	0	0	0	0	0	0
Soraya	0	1	0	1	3	2	0	0	0	0	0
Belmonda	0	0	1	1	1	0	0	0	0	0	0
Natascha	0	0	1	1	3	0	0	0	0	0	0
Toscana	0	0	0	1	1	0	0	0	0	0	0
Adirondack Blue	0	1	1	2	4	0	0	0	2	0	0
All Blue	0	0	0	2	2	0	0	0	0	0	0
Chieftain	2	0	1	4	5	0	0	0	0	0	0
Dark Red Norland	0	0	3	1	4	0	0	0	0	0	0

Table 11 (cont'd). External and internal defects for the 2018 Fresh Market, Red, and Purple Variety Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
French Fingerling	0	0	0	1	1	0	0	0	0	0	0
Goldrush	0	1	0	1	2	0	0	0	0	0	0
Lamoka	1	0	1	2	4	0	0	0	3	0	0
Marcy	0	0	1	2	3	17	0	0	0	0	0
Red LaSoda	0	0	0	3	3	0	0	0	0	0	0
Pike	0	0	2	3	6	0	0	0	0	0	0
Red LaSoda	0	0	1	5	6	0	0	0	0	0	0
Russian Banana	0	0	0	1	1	0	0	0	0	0	0
Satina	0	0	1	3	3	0	0	0	0	0	0
Soraya	1	1	0	1	3	0	0	0	0	0	2
Vivaldi	0	0	1	3	4	0	0	0	0	0	0
Yukon Gold	0	0	1	2	3	0	0	0	0	0	0
MSD[3]	5	ns	4	8	10	ns	ns	ns	ns	ns	ns
P Value	<0.0001	0.5772	0.0011	0.0006	0.0003	0.4986	0.5311	-	0.4880	0.4880	0.4880

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

[3]Means 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	January 26, 2018
Vine Kill Date	April 21, 2018
Harvest Date	May 4, 2018
Season Length	85 days planting to vine kill; 98 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	6 (Standard: Atlantic)
Number of Clones	26
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	42 DAP
Highest Total Yield	AF5891-1 (304 cwt/acre or 34.1 T/ha)
Highest Marketable Yield	AF5677-6 (220 cwt/acre or 24.7 T/ha)
Best Appearance Rating	Atlantic, AAF10626-1, AF5811-1 (9, excellent)

Table 12. Production statistics for the 2018 University of Maine Advanced Selection Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–85 days												
Atlantic	169	133	94	2	7	59	16	15	0	90	31	1.071
Harley Blackwell (B0564-8)	286	208	146	5	14	68	7	6	0	81	13	1.074
Snowden	265	191	135	4	20	73	3	1	0	77	3	1.077
Yukon Gold	254	183	129	5	14	73	6	3	0	81	8	1.075
AF4659-12	290	68	48	18	57	25	0	0	0	25	0	1.063
AF5677-4	214	158	111	3	11	75	4	7	0	86	11	1.071
AF5677-6	271	220	155	3	10	76	6	5	0	87	11	1.069
AAF10237-4	128	102	72	2	8	73	14	3	0	90	17	1.066
AAF10626-1	252	176	124	5	21	71	3	0	0	74	3	1.066
NDAF113470C-3	282	192	135	5	23	70	0	2	0	72	2	1.073
WAF10612-1	268	199	141	4	17	77	2	1	0	80	3	1.065
WAF10664-3	261	176	124	4	13	67	8	8	0	83	16	1.069
AF5648-3	149	107	75	5	20	74	2	0	0	75	2	1.071
NDAF113458-2	265	197	138	3	16	72	6	3	0	81	9	1.058
AF5811-1	278	206	145	3	17	70	6	4	0	80	10	1.059
AF5819-2	228	176	124	3	14	76	5	1	0	83	6	1.064
AF5855-1	240	169	119	4	17	70	5	3	0	79	9	1.062
AF5869-2	290	210	148	4	14	67	9	6	0	82	15	1.068
MSAFB609-5	250	177	125	5	17	75	1	0	0	77	2	1.071
AF5857-1	290	201	142	5	16	70	6	4	0	80	10	1.067
AF5891-1	304	213	150	3	17	69	3	8	0	80	11	1.069
AF5806-1	290	215	151	4	19	72	4	1	0	77	5	1.062
AF5831-2	254	186	131	4	19	74	2	1	0	76	3	1.073
AF5707-1	242	65	46	15	52	29	1	2	0	33	3	1.061
AF5723-1	269	188	132	5	19	72	3	1	0	76	4	1.069
AF5745-3	136	94	66	5	26	70	0	0	0	70	0	1.073
AF5759-9	194	123	87	5	27	66	1	1	0	68	2	1.070
AF5774-2	188	119	84	6	30	64	0	0	0	64	0	1.066
AF5789-1	240	174	123	3	20	73	3	0	0	77	3	1.069
NDAF113555CB-2	254	200	141	2	16	80	1	2	0	82	3	1.072

Table 12 (cont'd). Production statistics for the 2018 University of Maine Advanced Selection Trial potato selections.

	Total	Marketable Yield[1]										
	Yield		% of	Size Distribution by Class (%)[2]						Size Class Range (%)		Specific
Clone	(cwt/A)	(cwt/A)	standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	Gravity
Atlantic	203	151	106	3	9	59	19	10	0	88	30	1.075
Snowden	218	151	107	3	21	72	1	3	0	76	4	1.074
MSD[3]	47	41		2	6	9	6	4	ns	6	7	0.007
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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.

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

Table 13. Plant growth and tuber characteristics for the 2018 University of Maine Advanced Selection Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Atlantic	38	7	9	8						9	-
Harley Blackwell (B0564-8)	92	9	9	7						6	2
Snowden	99	9	9	7						7	1
Yukon Gold	88	8	9	6						7	2
AF4659-12	94	7	9	8						8	3
AF5677-4	86	7	9	8						8	2
AF5677-6	88	7	9	8						8	1
AAF10237-4	48	6	9	8						8	2
AAF10626-1	94	7	9	7						9	1
NDAF113470C-3	98	9	9	7						7	1
WAF10612-1	95	6	9	8						8	1
WAF10664-3	93	9	9	7						6	2
AF5648-3	83	5	9	7						7	2
NDAF113458-2	91	8	9	7						8	1
AF5811-1	77	8	9	7						9	1
AF5819-2	92	6	9	7						6	1
AF5855-1	85	5	9	8						8	2
AF5869-2	95	8	8	7						7	2
MSAFB609-5	93	9	9	7						8	1
AF5857-1	93	7	9	8						8	2
AF5891-1	98	9	9	7						7	2
AF5806-1	93	9	7	7						7	1
AF5831-2	95	8	9	7						6	1
AF5707-1	98	6	9	8						6	3
AF5723-1	93	6	9	8						7	1
AF5745-3	81	4	9	7						6	2
AF5759-9	93	4	9	8						7	1
AF5774-2	95	6	9	7						7	2
AF5789-1	77	5	9	8						8	1
NDAF113555CB-2	93	7	9	8						7	1

Table 13 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Advanced Selection Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Atlantic	47	8	9	8						8	-
Snowden	80	8	9	7						8	1

[1]Percent 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.

[2]Internal 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 2018 University of Maine Advanced Selection Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Atlantic	2	0	11	1	14	0	0	0	0	0	0
Harley Blackwell (B0564-8)	0	0	7	4	11	0	0	0	0	0	0
Snowden	0	1	4	1	6	0	0	0	0	0	0
Yukon Gold	1	2	4	4	12	0	0	0	0	0	0
AF4659-12	0	4	1	1	5	0	0	0	0	0	0
AF5677-4	0	4	5	5	14	0	0	0	0	0	0
AF5677-6	0	1	4	2	7	0	0	0	0	0	1
AAF10237-4	2	3	5	1	11	0	0	0	0	0	0
AAF10626-1	0	3	3	0	6	0	0	0	1	0	0
NDAF113470C-3	0	2	3	1	6	0	0	0	0	0	0
WAF10612-1	0	0	3	4	7	0	0	0	0	0	0
WAF10664-3	6	2	7	3	18	0	0	0	0	0	0
AF5648-3	0	0	4	0	4	0	0	0	0	0	0
NDAF113458-2	0	1	7	0	9	0	0	0	0	0	0
AF5811-1	0	1	2	4	7	0	1	0	0	0	0
AF5819-2	1	1	2	2	7	0	0	0	0	0	0
AF5855-1	0	3	5	2	10	0	0	0	0	0	0
AF5869-2	0	0	5	7	12	0	0	0	0	0	0
MSAFB609-5	0	0	2	7	8	0	0	0	0	0	0
AF5857-1	3	1	5	3	13	0	0	0	0	0	0
AF5891-1	0	1	4	7	13	0	0	0	0	0	0
AF5806-1	0	0	1	2	4	0	0	0	0	0	0
AF5831-2	0	0	2	2	4	0	0	0	0	0	0
AF5707-1	0	16	1	2	18	0	0	0	0	0	0
AF5723-1	1	2	4	1	8	0	0	0	0	0	0
AF5745-3	0	0	1	1	1	0	0	0	0	0	0
AF5759-9	0	5	2	1	8	0	0	0	0	0	0
AF5774-2	0	1	1	0	1	0	0	0	0	0	0
AF5789-1	0	3	1	1	6	0	0	0	0	0	0
NDAF113555CB-2	0	1	2	1	4	0	0	0	0	0	0

Table 14 (cont'd). External and internal defects for the 2018 University of Maine Advanced Selection Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Atlantic	1	1	11	4	17	0	0	0	0	0	0
Snowden	0	1	6	1	8	0	0	0	0	0	0
MSD[3]	2	2	3	3	6	ns	ns	ns	ns	ns	ns
P Value	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	-	0.4805	-	0.4805	-	0.4805

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

[3]Means 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 fresh market "standard" Red LaSoda 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 15, 2018
Vine Kill Date	May 9, 2018
Harvest Date	May 21, 2018
Season Length	83 days planting to vine kill; 95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	6 (Standard: Red LaSoda)
Number of Clones	30
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	41 DAP
Highest Total Yield	AF6031-2 (415 cwt/acre or 46.5 T/ha)
Highest Marketable Yield	AF5994-2 (317 cwt/acre or 35.5 T/ha)
Best Appearance Rating	Red LaSoda, Satina, Dark Red Norland, AF5974-2, AF5975-1, AF6030-1, AF6037-2, AF6031-2, AAF09055-2 (8, very good)

Table 15. Production statistics for the 2018 University of Maine Early Line Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–83 days												
Red LaSoda	275	223	98	2	7	91	0	0	0	91	0	1.055
Red LaSoda	273	230	102	2	10	87	2	0	0	89	2	1.059
Soraya	332	216	95	5	25	70	0	0	0	70	0	1.055
Satina	349	291	129	2	12	77	6	3	0	86	9	1.058
Dark Red Norland	219	155	68	5	22	73	0	0	0	73	0	1.053
All Blue	221	15	7	22	71	7	0	0	0	7	0	1.061
AF5931-1	313	234	103	2	20	76	2	0	0	78	2	1.053
AF5933-4	307	216	96	4	26	71	0	0	0	71	0	1.070
AF5938-6	311	221	97	3	23	73	0	0	0	73	0	1.060
AF5994-2	353	317	140	0	5	69	22	3	0	94	25	1.070
AF5960-4	250	142	63	10	26	65	0	0	0	65	0	1.070
AF5966-1	235	185	82	4	12	78	4	3	0	84	6	1.068
AF5971-4	295	246	109	2	11	80	5	2	0	87	7	1.061
AF5974-2	306	233	103	2	4	64	16	14	0	94	30	1.065
AF5975-1	229	133	59	7	28	64	0	0	0	64	0	1.067
AF6006-2	295	168	74	7	34	58	0	0	0	58	0	1.074
AF6018-3	288	236	104	2	9	85	4	0	0	89	4	1.069
AF6030-1	258	199	88	4	12	69	10	6	0	84	15	1.078
AF6033-3	222	143	63	5	24	71	0	0	0	71	0	1.069
AF6037-2	289	230	102	3	16	76	3	2	0	81	4	1.063
AF6037-3	321	181	80	7	35	58	0	0	0	58	0	1.066
WAF14067-6	325	140	62	13	43	44	0	0	0	44	0	1.067
WAF14074-5	278	227	100	4	10	75	2	10	0	87	11	1.070
WAF14187-5	349	249	110	3	19	73	4	0	0	78	4	1.072
WAF14104-5	297	211	93	4	15	71	6	4	0	82	10	1.051
NDAF14440C-2	240	164	72	3	23	74	0	0	0	74	0	1.057
AF5984-1	396	207	92	10	37	52	1	0	0	53	1	1.062
AF6016-2	283	220	97	3	16	73	4	5	0	82	9	1.071
AF6031-2	415	312	138	6	17	72	4	1	0	77	6	1.076
AF6034-1	330	188	83	7	34	59	0	0	0	59	0	1.062

Table 15 (cont'd). Production statistics for the 2018 University of Maine Early Line Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
AF6036-1	276	228	101	2	15	81	2	0	0	83	2	1.077
AAF09055-2	313	232	102	2	17	79	2	0	0	80	2	1.066
AF6045-1	219	149	66	8	17	68	4	2	0	75	6	1.051
WAF14096-5	280	130	57	8	44	46	3	0	0	49	3	1.063
NDAF12238Y-2	220	110	49	2	45	51	2	0	0	53	2	1.063
NDAF14437CAB-3	192	89	39	5	48	47	0	0	0	47	0	1.067

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 2018 University of Maine Early Line Variety Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Red LaSoda	96	8	9	6						8	-
Red LaSoda	92	8	9	6						8	-
Soraya	100	8	9	6						7	1
Satina	96	8	9	6						8	1
Dark Red Norland	96	8	9	4						8	2
All Blue	100	7	9	6						6	3
AF5931-1	100	8	9	7						7	1
AF5933-4	100	8	6	7						7	1
AF5938-6	100	8	9	7						5	2
AF5994-2	92	8	9	8						7	1
AF5960-4	100	9	9	6						6	3
AF5966-1	92	7	9	8						6	2
AF5971-4	92	9	9	7						6	1
AF5974-2	96	8	9	7						8	3
AF5975-1	92	8	9	7						8	3
AF6006-2	92	9	9	6						6	2
AF6018-3	100	9	9	7						6	1
AF6030-1	100	8	9	7						8	1
AF6033-3	88	9	9	7						6	2
AF6037-2	100	7	9	7						8	1
AF6037-3	96	8	9	7						7	2
WAF14067-6	100	9	6	6						6	2
WAF14074-5	92	9	6	5						7	2
WAF14187-5	96	9	9	7						5	2
WAF14104-5	96	7	9	7						6	2
NDAF14440C-2	96	8	6	5						7	2
AF5984-1	92	9	9	4						6	1
AF6016-2	92	7	9	7						7	1
AF6031-2	83	9	6	7						8	1
AF6034-1	100	8	9	7						7	2

Table 16 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Early Line Variety Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
AF6036-1	96	9	6	5						7	1
AAF09055-2	96	8	9	7						8	1
AF6045-1	96	9	6	5						7	2
WAF14096-5	92	9	6	6						6	2
NDAF12238Y-2	100	9	6	6						7	3
NDAF14437CAB-3	96	8	9	6						7	3

[1]Percent 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.

[2]Internal 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 2018 University of Maine Early Line Variety Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Red LaSoda	0	0	4	6	11	0	0	0	0	0	0
Red LaSoda	0	0	0	5	5	0	0	0	0	0	0
Soraya	0	0	1	6	7	0	0	0	0	0	0
Satina	0	0	0	3	3	0	0	0	0	0	0
Dark Red Norland	0	0	1	3	4	0	0	0	0	0	0
All Blue	0	2	0	0	2	0	0	0	0	0	0
AF5931-1	0	0	0	4	4	0	0	0	0	0	0
AF5933-4	0	0	0	0	0	0	0	0	0	0	0
AF5938-6	0	0	3	0	3	0	5	0	0	0	0
AF5994-2	0	2	0	3	5	0	0	0	0	0	0
AF5960-4	0	7	0	5	12	0	0	0	10	0	0
AF5966-1	0	0	6	1	6	0	0	0	0	0	0
AF5971-4	0	3	0	1	4	0	0	0	0	0	0
AF5974-2	0	0	2	17	19	0	10	0	0	0	0
AF5975-1	0	3	2	5	10	0	0	0	0	0	0
AF6006-2	0	2	0	0	2	0	0	0	0	0	5
AF6018-3	0	0	2	6	8	0	0	0	0	0	0
AF6030-1	0	2	0	7	8	0	0	0	0	0	0
AF6033-3	0	3	1	5	9	0	0	0	0	0	0
AF6037-2	0	0	1	1	2	0	0	0	0	0	0
AF6037-3	0	1	0	1	2	0	0	0	0	0	0
WAF14067-6	3	0	0	0	3	0	0	0	0	0	0
WAF14074-5	1	0	1	4	6	0	0	0	0	0	10
WAF14187-5	0	3	3	2	8	0	0	0	0	0	5
WAF14104-5	0	1	0	12	13	0	0	0	0	0	0
NDAF14440C-2	0	0	2	6	8	0	0	0	0	0	0
AF5984-1	0	0	0	2	2	0	0	0	0	0	0
AF6016-2	0	0	0	5	5	0	0	0	0	0	0
AF6031-2	1	1	1	0	3	0	0	0	0	0	0
AF6034-1	0	0	2	1	3	0	0	0	0	0	0

Table 17 (cont'd). External and internal defects for the 2018 University of Maine Early Line Variety Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AF6036-1	0	0	0	0	0	0	0	0	0	0	0
AAF09055-2	0	4	3	1	8	0	0	0	0	0	0
AF6045-1	1	0	0	7	9	0	0	0	0	0	0
WAF14096-5	0	0	0	5	5	0	0	0	0	0	0
NDAF12238Y-2	0	2	2	1	6	0	0	0	5	0	0
NDAF14437CAB-3	0	0	0	2	2	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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

General Comments

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.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 15, 2018
Vine Kill Date	May 9, 2018
Harvest Date	May 21, 2018
Season Length	83 days planting to vine kill; 95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	9 (Standard: Dark Red Norland instead of Red LaSoda)
Number of Clones	36
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	6 ft (1.8 m)

Production Statistics

Early Vigor Ratings	41 DAP
Highest Total Yield	NDAF13136Y-7 (547 cwt/acre or 61.3 T/ha)
Highest Marketable Yield	NDAF13136Y-7 (415 cwt/acre or 46.5 T/ha)
Best Appearance Rating	Red LaSoda, Snowden, AF6289-2, COAF14107-1, COAF14128-2, NDAF13138BY-1, NDAF13158BY-2, NDAF13235CY-3, NDAF13262BY-3 (8, very good)

Table 18. Production statistics for the 2018 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–83 days												
Red LaSoda	164	152	76	2	6	80	13	0	0	93	13	1.066
Atlantic	250	212	105	2	6	75	17	0	0	92	17	1.077
Peter Wilcox (B1816-5)	277	197	98	6	23	71	0	0	0	71	0	1.067
Soraya	310	203	101	6	27	67	0	0	0	67	0	1.055
Satina	136	101	50	0	23	77	0	0	0	77	0	1.061
Snowden	230	147	73	3	29	62	6	0	0	68	6	1.072
Dark Red Norland	259	201	100	2	14	77	7	0	0	84	7	1.060
All Blue	186	0	0	22	78	0	0	0	0	0	0	1.073
Chieftain	235	178	88	3	20	66	11	0	0	77	11	1.062
AF6164-3	268	154	77	9	30	61	0	0	0	61	0	1.063
AF6183-10	.	.	.	.	.	.	.	.	.	.	.	.
AF6183-12	366	281	139	3	14	76	7	0	0	84	7	1.071
AF6251-3	96	37	18	10	37	53	0	0	0	53	0	1.092
AF6269-4	266	155	77	2	31	66	0	0	0	66	0	1.078
AF6271-1	172	71	35	14	42	44	0	0	0	44	0	1.063
AF6278-9	234	149	74	9	18	72	0	0	0	72	0	1.062
AF6280-1	244	91	45	16	45	40	0	0	0	40	0	1.063
AF6280-7	194	63	31	17	51	32	0	0	0	32	0	1.061
AF6282-2	338	125	62	13	48	39	0	0	0	39	0	1.068
AF6282-9	260	75	37	27	44	30	0	0	0	30	0	1.070
AF6283-1	176	112	56	7	24	69	0	0	0	69	0	1.069
AF6285-2	231	101	50	12	44	44	0	0	0	44	0	1.066
AF6287-4	237	170	85	3	10	79	8	0	0	87	8	1.064
AF6287-6	363	212	105	8	31	60	0	0	0	60	0	1.063
AF6287-8	188	107	53	6	28	59	7	0	0	66	7	1.068
AF6289-2	278	169	84	4	33	62	0	0	0	62	0	1.058
COAF14107-1	135	90	45	12	19	69	0	0	0	69	0	1.060
COAF14128-1	275	150	75	14	25	61	0	0	0	61	0	1.063
COAF14128-2	391	220	110	7	35	57	0	0	0	57	0	1.066
NDAF13136Y-2	314	229	114	6	19	67	8	0	0	75	8	1.063

Table 18 (cont'd). Production statistics for the 2018 University of Maine Early Generation Red and Specialty Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
NDAF13136Y-5	301	246	122	2	14	79	0	5	0	84	5	1.070
NDAF13136Y-7	547	415	206	1	17	82	0	0	0	82	0	1.060
NDAF13138BY-1	195	159	79	2	14	69	16	0	0	84	16	1.062
NDAF13158BY-2	339	211	105	5	20	74	0	0	0	74	0	1.058
NDAF13158BY-3	307	178	89	9	31	60	0	0	0	60	0	1.072
NDAF13176CB-1	429	258	128	8	26	67	0	0	0	67	0	1.064
NDAF13176CB-2	309	212	105	2	25	73	0	0	0	73	0	1.061
NDAF13235CY-3	421	360	179	1	2	63	18	16	0	97	34	1.059
NDAF13260BY-1	325	285	142	0	7	77	16	0	0	93	16	1.057
NDAF13262BY-3	109	73	36	4	15	68	13	0	0	81	13	1.061
NDAF13296Y-6	.	.	.	.	.	.	.	.	.	.	.	.
AF6265-2	318	204	101	10	18	57	9	7	0	73	16	1.064
AF6286-1	203	122	61	4	32	64	0	0	0	64	0	1.068
AF6291-1	311	186	93	3	20	56	0	21	0	77	21	1.059
COAF14076-1	182	72	36	9	50	41	0	0	0	41	0	1.067

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 2018 University of Maine Early Generation Red and Specialty Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Red LaSoda	88	8	9	6						8	2
Atlantic	88	9	9	7						6	1
Peter Wilcox (B1816-5)	100	8	6	6						6	1
Soraya	100	9	9	6						7	1
Satina	100	9	9	6						6	3
Snowden	100	8	9	7						8	2
Dark Red Norland	100	8	9	6						6	-
All Blue	100	8	9	6						6	3
Chieftain	100	9	9	7						7	1
AF6164-3	100	8	9	6						7	2
AF6183-10	100	9	9	7						.	.
AF6183-12	100	9	9	8						7	1
AF6251-3	100	8	9	5						7	4
AF6269-4	100	9	9	6						6	2
AF6271-1	100	8	6	7						6	3
AF6278-9	100	6	9	7						7	2
AF6280-1	100	8	9	5						5	3
AF6280-7	100	9	6	4						6	4
AF6282-2	100	9	6	6						7	2
AF6282-9	88	7	9	6						5	3
AF6283-1	100	8	9	7						5	2
AF6285-2	100	9	9	7						7	3
AF6287-4	100	7	9	8						7	2
AF6287-6	100	8	9	6						6	1
AF6287-8	100	6	9	8						5	3
AF6289-2	100	9	6	5						8	2
COAF14107-1	88	9	9	2						8	3
COAF14128-1	100	8	9	5						7	2
COAF14128-2	100	8	9	7						8	1
NDAF13136Y-2	100	8	9	7						7	1

Table 19 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Early Generation Red and Specialty Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
NDAF13136Y-5	100	8	9	6						5	1
NDAF13136Y-7	100	8	9	7						5	1
NDAF13138BY-1	100	8	6	5						8	2
NDAF13158BY-2	100	8	9	5						8	2
NDAF13158BY-3	100	9	9	7						7	1
NDAF13176CB-1	100	8	6	5						6	2
NDAF13176CB-2	100	9	9	5						6	2
NDAF13235CY-3	100	9	9	6						8	2
NDAF13260BY-1	100	7	9	7						6	1
NDAF13262BY-3	100	8	9	7						8	3
NDAF13296Y-6	100	8	9	6						.	.
AF6265-2	100	8	6	6						7	2
AF6286-1	100	8	9	5						7	2
AF6291-1	100	9	6	6						7	2
COAF14076-1	100	8	9	2						7	3

[1]Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 8 for 6 ft plot, 8 in spacing.
Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

[2]Internal 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 2018 University of Maine Early Generation Red and Specialty Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Red LaSoda	0	0	0	0	0	0	0	0	0	0	0
Atlantic	0	4	0	4	8	0	0	0	0	0	0
Peter Wilcox (B1816-5)	0	0	0	0	0	0	0	0	0	0	0
Soraya	0	2	0	0	2	0	0	0	0	0	0
Satina	0	0	0	4	4	0	0	0	0	0	0
Snowden	0	0	0	5	5	0	0	0	0	0	0
Dark Red Norland	0	0	5	2	8	0	0	0	0	0	0
All Blue	0	0	0	0	0	0	0	0	0	0	0
Chieftain	0	0	1	0	1	0	0	0	0	0	0
AF6164-3	0	5	0	0	5	0	0	0	0	0	0
AF6183-10	.	.	.	.	.	.	.	.	.	.	.
AF6183-12	0	0	1	7	9	0	0	0	0	0	0
AF6251-3	0	0	0	27	27	0	0	0	0	0	0
AF6269-4	0	3	3	6	12	0	0	0	0	0	0
AF6271-1	0	0	6	0	6	0	0	0	0	0	0
AF6278-9	0	0	9	4	12	0	0	0	0	0	0
AF6280-1	0	0	2	4	6	0	0	0	0	0	0
AF6280-7	0	0	0	0	0	0	0	0	0	0	15
AF6282-2	0	0	0	5	5	0	0	0	0	0	0
AF6282-9	0	0	2	0	2	0	0	0	0	0	0
AF6283-1	0	0	4	4	8	0	0	0	0	0	0
AF6285-2	0	0	0	0	0	0	0	0	0	0	0
AF6287-4	0	0	4	14	17	0	0	0	0	0	0
AF6287-6	0	3	0	0	3	0	0	0	0	0	0
AF6287-8	0	5	3	6	14	0	0	0	0	0	0
AF6289-2	0	0	2	0	2	0	0	0	0	0	0
COAF14107-1	0	0	0	4	4	0	0	0	0	0	0
COAF14128-1	0	0	0	11	11	0	0	0	0	0	0
COAF14128-2	0	0	0	2	2	0	0	0	0	0	0
NDAF13136Y-2	0	0	0	3	3	0	0	0	0	0	0

Table 20 (cont'd). External and internal defects for the 2018 University of Maine Early Generation Red and Specialty Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
NDAF13136Y-5	0	0	0	2	2	0	0	0	0	0	0
NDAF13136Y-7	1	0	4	2	7	0	0	0	0	0	0
NDAF13138BY-1	0	0	0	3	3	0	0	0	0	0	5
NDAF13158BY-2	0	0	2	15	16	0	0	0	0	0	0
NDAF13158BY-3	0	2	0	2	4	0	0	0	0	0	0
NDAF13176CB-1	0	0	2	8	10	0	0	0	0	0	0
NDAF13176CB-2	0	3	0	2	6	0	0	0	0	0	5
NDAF13235CY-3	0	0	7	5	12	0	5	0	0	0	0
NDAF13260BY-1	0	0	0	5	5	0	0	0	0	0	0
NDAF13262BY-3	8	0	0	10	18	0	0	0	0	0	0
NDAF13296Y-6	.	.	.	.	.	.	.	.	.	.	.
AF6265-2	0	4	5	3	12	0	0	0	0	0	0
AF6286-1	0	0	0	6	6	0	0	0	0	0	0
AF6291-1	0	0	0	22	22	0	0	0	0	0	0
COAF14076-1	0	0	0	3	3	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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 1, 2018
Vine Kill Date	N/A
Harvest Date	May 7, 2018
Season Length	95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	18 (Standard: Atlantic instead of LaChipper)
Number of Clones	103
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	6 ft (1.8 m)

Production Statistics

Early Vigor Ratings	40 DAP
Highest Total Yield	AF6255-2 (502 cwt/acre or 56.3 T/ha)
Highest Marketable Yield	AF6255-2 (452 cwt/acre or 50.7 T/ha)
Best Appearance Rating	Atlantic, AF6182-8, AF6189-12, AF6195-2, AF6197-8, AF6203-2, AF6208-12, AF6241-3, AF6255-2, WAF15158-2, WAF15165-1 (9, excellent)

Table 21. Production statistics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–95 days												
Red LaSoda	233	209	85	3	7	59	11	19	0	90	31	1.066
Atlantic	254	165	67	4	11	42	12	31	0	85	43	1.086
Peter Wilcox (B1816-5)	253	219	89	4	2	83	10	0	0	94	10	1.071
Soraya	356	263	107	5	17	63	15	0	0	78	15	1.055
Satina	447	423	172	1	4	71	13	11	0	94	23	1.058
Snowden	238	195	79	0	15	58	27	0	0	85	27	1.075
Dark Red Norland	328	274	112	2	12	66	19	0	0	85	19	1.059
All Blue	284	61	25	14	61	25	0	0	0	25	0	1.072
Katahdin	274	204	83	6	17	77	0	0	0	77	0	1.066
AF6168-7	262	204	83	3	12	70	9	6	0	85	15	1.078
AF6172-1	302	233	95	4	4	43	27	22	0	92	49	1.075
AF6181-9	166	156	63	0	0	41	15	44	0	100	59	1.079
AF6182-6	465	432	176	3	3	66	16	13	0	94	29	1.073
AF6182-8	449	392	160	3	4	68	8	17	0	94	26	1.069
AF6188-6	173	139	56	3	9	56	25	8	0	88	33	1.076
AF6188-8	217	145	59	3	13	70	0	15	0	85	15	1.082
AF6188-10	205	152	62	5	15	69	11	0	0	80	11	1.073
AF6189-5	319	281	114	1	3	39	33	24	0	96	57	1.083
AF6189-12	202	174	71	1	8	41	20	31	0	91	50	1.078
AF6190-2	426	343	140	1	8	32	26	33	0	91	59	1.078
AF6190-7	395	334	136	2	5	47	21	25	0	93	46	1.081
AF6190-9	372	288	117	4	13	67	16	0	0	83	16	1.078
AF6190-10	369	307	125	5	12	75	8	0	0	83	8	1.077
AF6190-12	315	271	110	3	8	78	7	4	0	89	11	1.085
AF6190-13	363	298	121	3	9	61	21	6	0	88	27	1.091
AF6192-3	322	284	116	1	7	64	18	10	0	91	28	1.075
AF6192-6	333	306	125	2	2	72	11	13	0	96	23	1.079
AF6193-3	356	317	129	2	4	42	21	30	0	93	51	1.075
AF6193-4	285	224	91	1	11	88	0	0	0	88	0	1.077
AF6195-2	237	195	79	2	9	75	8	5	0	88	14	1.080

Table 21 (cont'd). Production statistics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
AF6197-3	357	281	114	2	17	69	5	7	0	81	12	1.058
AF6197-8	408	356	145	2	7	50	40	0	0	90	40	1.079
AF6198-2	205	121	49	8	15	55	14	7	0	76	22	1.075
AF6198-3	385	303	123	7	10	63	11	9	0	83	20	1.075
AF6199-2	445	338	137	3	10	80	8	0	0	88	8	1.079
AF6199-4	472	369	150	3	7	61	4	25	0	90	29	1.075
AF6199-5	347	276	112	6	15	53	6	21	0	80	27	1.074
AF6200-2	264	227	92	3	11	55	19	12	0	86	30	1.075
AF6200-4	257	216	88	6	8	68	3	15	0	86	18	1.083
AF6202-1	251	227	92	3	5	74	11	7	0	92	18	1.073
AF6202-3	263	162	66	5	24	64	8	0	0	72	8	1.077
AF6202-7	220	200	81	2	3	63	20	12	0	95	33	1.072
AF6203-2	255	213	87	1	1	44	20	33	0	97	53	1.066
AF6203-3	355	287	117	3	10	49	26	12	0	87	38	1.073
AF6203-4	351	327	133	2	3	73	15	7	0	95	23	1.077
AF6206-3	242	214	87	2	6	72	15	6	0	92	21	1.091
AF6206-8	331	257	104	2	13	85	0	0	0	85	0	1.078
AF6206-11	331	254	103	3	17	80	0	0	0	80	0	1.087
AF6208-8	281	228	93	3	7	56	23	12	0	90	34	1.086
AF6208-12	276	211	86	5	7	61	11	16	0	88	27	1.076
AF6209-1	297	264	108	1	8	55	30	5	0	91	36	1.075
AF6221-3	345	260	106	7	9	71	3	10	0	84	13	1.076
AF6221-5	159	82	34	10	15	24	0	51	0	75	51	1.075
AF6221-7	361	294	120	6	10	77	0	7	0	84	7	1.075
AF6223-2	436	365	149	3	7	52	14	26	0	91	39	1.075
AF6224-1	365	295	120	5	14	56	15	10	0	81	25	1.075
AF6225-1	392	330	134	1	8	75	0	16	0	90	16	1.073
AF6225-5	342	240	98	3	5	49	4	39	0	92	43	1.070
AF6226-6	425	272	111	3	8	49	16	23	0	88	39	1.070
AF6227-3	153	97	40	2	28	70	0	0	0	70	0	1.084

Table 21 (cont'd). Production statistics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
AF6230-1	166	107	44	3	22	75	0	0	0	75	0	1.075
AF6230-2	166	115	47	2	17	53	27	0	0	81	27	1.072
AF6231-7	211	180	73	3	5	60	0	32	0	92	32	1.073
AF6232-1	440	370	151	2	11	63	7	18	0	87	25	1.075
AF6232-9	310	237	96	4	11	51	13	21	0	85	34	1.082
AF6232-10	375	274	112	8	17	75	0	0	0	75	0	1.073
AF6235-8	396	348	142	2	6	59	13	19	0	92	32	1.079
AF6236-2	416	364	148	2	6	70	8	14	0	92	22	1.080
AF6236-7	261	197	80	4	14	46	36	0	0	83	36	1.080
AF6237-3	187	143	58	2	5	50	7	35	0	93	43	1.072
AF6237-4	176	132	54	9	7	84	0	0	0	84	0	1.074
AF6241-3	179	157	64	0	0	64	36	0	0	100	36	1.081
AF6241-4	304	254	104	2	10	63	20	5	0	88	25	1.085
AF6243-14	257	180	73	8	17	76	0	0	0	76	0	1.080
AF6245-6	267	185	75	3	9	74	14	0	0	88	14	1.073
AF6245-7	271	250	102	2	5	68	24	0	0	92	24	1.082
AF6247-3	291	254	103	2	3	60	23	11	0	95	34	1.074
AF6252-1	298	265	108	0	1	84	15	0	0	99	15	1.085
AF6252-3	482	444	181	1	6	38	12	43	0	93	54	1.066
AF6253-1	293	236	96	6	13	68	14	0	0	82	14	1.077
AF6255-2	502	452	184	3	4	29	12	52	0	93	64	1.079
AF6256-6	350	316	129	2	8	56	6	28	0	90	35	1.080
AF6261-2	439	325	132	4	16	72	7	0	0	80	7	1.084
WAF15126-1	259	230	94	2	8	66	24	0	0	90	24	1.079
WAF15143-3	319	291	119	4	2	68	6	20	0	94	26	1.088
WAF15147-2	226	132	54	8	31	61	0	0	0	61	0	1.080
WAF15158-2	356	300	122	4	6	49	16	26	0	90	42	1.077
WAF15165-1	330	268	109	6	13	81	0	0	0	81	0	1.080
WAF15180-6	191	156	63	6	10	64	21	0	0	84	21	1.073
WAF15184-2	350	220	90	9	23	68	0	0	0	68	0	1.071

Table 21 (cont'd). Production statistics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
WAF15184-4	328	284	116	2	8	70	7	13	0	91	20	1.082
WAF15190-1	378	209	85	15	19	48	0	18	0	66	18	1.073
WAF15195-3	276	187	76	15	15	70	0	0	0	70	0	1.080
WAF15205-2	101	68	27	0	18	82	0	0	0	82	0	1.054
WAF15205-3	189	105	43	12	32	56	0	0	0	56	0	1.085
WAF15206-1	111	60	24	20	24	56	0	0	0	56	0	1.074
WAF15207-3	255	183	74	10	6	59	12	13	0	84	25	1.064
WAF15207-4	252	182	74	7	10	83	0	0	0	83	0	1.087
WAF15211-5	297	207	84	7	16	66	11	0	0	77	11	1.071
WAF15212-2	156	105	43	9	11	62	18	0	0	80	18	1.080
WAF15217-1	423	313	127	4	13	61	21	0	0	82	21	1.068
WAF15221-2	161	125	51	3	9	69	0	19	0	88	19	.
WAF15227-1	213	182	74	3	9	88	0	0	0	88	0	1.076
COAF14207-3	321	266	108	7	10	83	0	0	0	83	0	1.086
NDAF1393Y-2	446	352	143	4	10	63	16	7	0	86	23	1.059
NDAF1393Y-4	339	279	114	3	8	78	11	0	0	89	11	1.070
AF6194-2	243	179	73	5	10	73	4	8	0	85	12	1.076
AF6194-4	318	267	109	3	6	68	18	6	0	91	23	1.076
AF6211-3	271	204	83	2	17	75	0	6	0	81	6	1.082
AF6233-1	142	98	40	7	11	62	20	0	0	82	20	1.062
AF6260-1	327	229	93	2	7	45	28	19	0	91	46	1.078
COAF14206-3	431	307	125	5	16	75	5	0	0	80	5	1.060
Red LaSoda	231	215	87	3	2	73	23	0	0	95	23	.
Atlantic	340	326	133	1	3	74	6	16	0	96	22	1.083
Peter Wilcox (B1816-5)	315	238	97	3	14	84	0	0	0	84	0	1.074
Soraya	216	169	69	4	18	78	0	0	0	78	0	1.051
Satina	162	120	49	7	8	85	0	0	0	85	0	1.058
Snowden	318	248	101	3	16	73	4	5	0	82	9	1.070
Dark Red Norland	303	240	98	3	17	65	14	0	0	79	14	1.063
All Blue	264	74	30	14	54	31	0	0	0	31	0	1.073

Table 21 (cont'd). Production statistics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	Total	Marketable Yield[1]										
	Yield		% of	Size Distribution by Class (%)[2]						Size Class Range (%)		Specific
Clone	(cwt/A)	(cwt/A)	standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	Gravity
Katahdin	288	224	91	3	15	82	0	0	0	82	0	1.068

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 2018 University of Maine Early Generation Round Whites Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Red LaSoda	100	8	9	7						8	2
Atlantic	75	8	9	7						9	-
Peter Wilcox (B1816-5)	100	6	9	7							1
Soraya	100	7	9	7						8	1
Satina	100	9	9	7						6	1
Snowden	100	8	9	7						4	2
Dark Red Norland	88	8	9	7						7	1
All Blue	100	7	9	7						7	3
Katahdin	88	6	9	7						7	2
AF6168-7	88	7	9	8						.	2
AF6172-1	100	5	9	8						6	2
AF6181-9	100	8	9	7						7	2
AF6182-6	100	7	9	7						7	1
AF6182-8	100	6	9	8						9	1
AF6188-6	88	4	9	8						6	2
AF6188-8	88	4	9	8						6	3
AF6188-10	88	4	9	8						7	2
AF6189-5	100	7	9	7						6	1
AF6189-12	100	6	9	8						9	2
AF6190-2	100	8	9	7						6	2
AF6190-7	88	9	9	8						6	1
AF6190-9	100	6	9	8						6	1
AF6190-10	100	7	9	7							1
AF6190-12	100	6	9	7						5	1
AF6190-13	100	6	9	7						5	1
AF6192-3	100	6	9	7						7	1
AF6192-6	88	5	9	7						6	1
AF6193-3	100	6	9	7						7	1
AF6193-4	100	4	9	8						5	2
AF6195-2	88	6	9	7						9	2

Table 22 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
AF6197-3	100	9	9	6						8	1
AF6197-8	100	9	9	7						9	1
AF6198-2	100	5	9	6						5	4
AF6198-3	100	8	9	7						7	1
AF6199-2	100	9	9	7						8	2
AF6199-4	100	9	9	8						7	2
AF6199-5	100	8	9	7						7	1
AF6200-2	100	7	9	7						6	1
AF6200-4	100	8	9	7						8	1
AF6202-1	100	8	9	7						6	1
AF6202-3	100	7	9	7						8	3
AF6202-7	75	7	9	7						6	2
AF6203-2	88	9	9	7						9	2
AF6203-3	100	8	9	7						7	1
AF6203-4	100	8	9	7						7	1
AF6206-3	88	5	9	8						6	1
AF6206-8	100	8	9	7						7	1
AF6206-11	100	8	9	7						7	1
AF6208-8	100	6	9	7						6	2
AF6208-12	100	8	9	7						9	2
AF6209-1	100	8	9	7						8	1
AF6221-3	100	8	9	7						6	2
AF6221-5	38	4	9	9						6	4
AF6221-7	100	8	9	7						7	1
AF6223-2	100	8	9	7						7	2
AF6224-1	100	8	6	7						7	1
AF6225-1	100	9	9	7						8	1
AF6225-5	88	9	6	7						8	2
AF6226-6	100	6	9	8						6	2
AF6227-3	88	7	9	7						7	3

Table 22 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
AF6230-1	75	6	9	7						7	3
AF6230-2	100	7	9	7						8	3
AF6231-7	100	6	9	8						7	2
AF6232-1	100	9	6	7						8	1
AF6232-9	88	5	9	7						7	2
AF6232-10	100	8	9	7						7	1
AF6235-8	100	9	6	7						7	1
AF6236-2	100	9	6	7						8	1
AF6236-7	100	5	9	8						6	2
AF6237-3	88	4	9	7						6	3
AF6237-4	75	4	9	7						8	3
AF6241-3	88	5	9	8						9	3
AF6241-4	100	8	9	7						8	1
AF6243-14	88	8	9	7						6	2
AF6245-6	100	7	9	7						8	3
AF6245-7	88	6	9	7						7	1
AF6247-3	100	6	9	8						6	1
AF6252-1	100	6	9	7						6	2
AF6252-3	100	8	9	7						6	1
AF6253-1	100	8	6	7						6	1
AF6255-2	100	6	9	7						9	1
AF6256-6	100	8	9	7						8	1
AF6261-2	100	7	9	7						5	1
WAF15126-1	100	8	9	7						7	2
WAF15143-3	100	7	9	7						6	1
WAF15147-2	100	7	9	7						6	3
WAF15158-2	100	7	9	7						9	1
WAF15165-1	100	8	9	7						9	1
WAF15180-6	88	6	9	7						6	2
WAF15184-2	100	9	9	7						6	1

Table 22 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
WAF15184-4	100	8	9	8						.	1
WAF15190-1	100	9	9	7						7	2
WAF15195-3	100	6	9	8						6	2
WAF15205-2	75	7	9	7						5	3
WAF15205-3	13	4	9	9						6	3
WAF15206-1	75	6	9	7						6	3
WAF15207-3	100	6	9	7						6	2
WAF15207-4	63	5	9	8						6	2
WAF15211-5	100	8	6	7						5	2
WAF15212-2	100	8	6	7						5	3
WAF15217-1	100	6	9	8						8	2
WAF15221-2	75	4	9	8						6	3
WAF15227-1	100	6	9	8						7	2
COAF14207-3	100	9	6	7						6	1
NDAF1393Y-2	100	8	9	7						5	2
NDAF1393Y-4	100	6	9	8						4	1
AF6194-2	0	1	-	8						5	2
AF6194-4	100	5	9	8						7	1
AF6211-3	100	8	9	7							2
AF6233-1	100	9	9	6						7	3
AF6260-1	100	4	9	8						7	3
COAF14206-3	100	8	9	7						6	3
Red LaSoda	100	5	9	7						7	1
Atlantic	88	9	6	7						4	-
Peter Wilcox (B1816-5)	88	6	9	7						8	2
Soraya	100	8	6	7							2
Satina	88	7	9	8						4	3
Snowden	100	8	9	7						6	1
Dark Red Norland	100	7	9	7						8	1
All Blue	100	6	9	7						6	3

Table 22 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Katahdin	100	6	9	7						6	1

[1]Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 8 for 6 ft plot, 8 in spacing.
Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

[2]Internal 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 2018 University of Maine Early Generation Round Whites Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Red LaSoda	0	0	0	0	0	0	5	0	0	0	5
Atlantic	0	0	23	0	23	0	0	0	0	0	0
Peter Wilcox (B1816-5)	0	8	0	0	8	0	0	0	0	0	0
Soraya	0	3	2	0	5	0	0	0	0	0	0
Satina	0	0	0	0	0	0	0	0	0	0	0
Snowden	0	0	4	0	4	0	0	0	0	0	0
Dark Red Norland	2	0	0	0	2	0	0	0	0	0	0
All Blue	0	12	0	2	13	0	0	0	0	0	0
Katahdin	0	0	3	0	3	0	0	0	0	0	0
AF6168-7	4	0	5	0	8	0	0	0	0	0	0
AF6172-1	16	0	0	0	16	0	0	0	0	0	0
AF6181-9	0	0	6	0	6	0	0	0	0	0	5
AF6182-6	0	0	1	0	1	0	0	0	0	0	0
AF6182-8	2	2	2	0	7	0	0	0	0	0	0
AF6188-6	0	0	9	0	9	0	0	0	0	0	0
AF6188-8	0	15	6	0	21	0	0	0	0	0	0
AF6188-10	0	0	7	0	7	0	0	0	0	0	0
AF6189-5	0	2	3	3	8	0	0	0	0	0	0
AF6189-12	0	0	5	0	5	0	0	0	0	0	0
AF6190-2	1	9	1	0	11	0	0	0	0	0	0
AF6190-7	0	3	6	0	9	0	0	0	0	0	0
AF6190-9	0	0	7	0	7	0	0	0	0	0	0
AF6190-10	0	0	0	0	0	0	0	0	0	0	0
AF6190-12	0	0	3	0	3	0	0	0	0	0	0
AF6190-13	2	0	5	0	7	0	0	0	0	0	0
AF6192-3	0	0	3	0	3	0	0	0	0	0	0
AF6192-6	0	0	4	0	4	0	0	0	0	0	0
AF6193-3	0	3	1	0	5	0	0	0	0	0	0
AF6193-4	8	0	3	0	11	0	0	0	0	0	0
AF6195-2	0	0	7	0	7	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AF6197-3	0	3	0	0	3	0	0	0	0	0	0
AF6197-8	2	0	1	0	3	0	0	0	0	0	0
AF6198-2	0	15	8	0	23	0	0	0	0	0	0
AF6198-3	0	2	3	0	5	0	0	0	0	0	0
AF6199-2	0	11	0	2	13	0	0	0	0	0	0
AF6199-4	0	12	0	1	13	0	0	0	0	0	0
AF6199-5	0	0	0	0	0	0	0	0	0	0	0
AF6200-2	0	0	0	0	0	0	0	0	0	0	0
AF6200-4	0	0	3	0	3	0	0	0	0	0	0
AF6202-1	0	0	0	2	2	0	0	0	0	0	0
AF6202-3	2	0	3	9	14	0	0	0	0	0	0
AF6202-7	0	0	5	0	5	0	0	0	0	0	0
AF6203-2	0	4	4	6	14	0	0	0	0	0	0
AF6203-3	4	0	3	0	7	0	0	0	0	0	0
AF6203-4	0	0	2	0	2	0	0	0	0	0	0
AF6206-3	0	4	0	0	4	0	0	0	0	0	0
AF6206-8	0	2	5	1	9	0	0	0	0	0	0
AF6206-11	0	0	4	0	4	0	0	0	0	0	0
AF6208-8	8	0	2	0	10	0	0	0	0	0	0
AF6208-12	0	1	3	9	14	0	0	0	0	0	0
AF6209-1	0	0	0	2	2	0	0	0	0	0	0
AF6221-3	0	4	4	1	10	0	0	0	0	0	5
AF6221-5	0	0	31	0	31	0	0	0	0	0	0
AF6221-7	0	0	2	1	3	0	0	0	0	0	0
AF6223-2	0	6	2	0	8	0	5	0	0	0	0
AF6224-1	0	0	0	0	0	0	0	0	0	0	0
AF6225-1	0	0	6	1	7	0	0	0	0	0	0
AF6225-5	0	7	15	2	24	0	0	0	0	0	0
AF6226-6	0	26	1	0	27	0	0	0	0	0	0
AF6227-3	0	0	6	4	10	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AF6230-1	0	10	4	0	14	0	0	0	0	0	0
AF6230-2	0	0	13	0	13	0	0	0	0	0	0
AF6231-7	0	3	4	0	7	0	0	0	0	0	0
AF6232-1	0	0	4	0	4	0	0	0	0	0	0
AF6232-9	0	4	6	0	10	0	0	0	0	0	0
AF6232-10	0	0	2	0	2	0	0	0	0	0	0
AF6235-8	4	0	0	0	4	0	0	0	0	0	0
AF6236-2	0	2	1	2	5	0	0	0	0	0	0
AF6236-7	0	0	8	0	8	0	0	0	0	0	0
AF6237-3	3	0	15	0	17	0	0	0	0	0	0
AF6237-4	0	3	7	0	10	0	0	0	0	0	0
AF6241-3	0	6	6	0	12	0	0	0	0	0	0
AF6241-4	0	3	3	0	5	0	0	0	0	0	0
AF6243-14	0	0	7	0	7	0	0	0	0	0	0
AF6245-6	0	0	15	7	21	0	0	0	0	0	0
AF6245-7	0	0	0	0	0	0	0	0	0	0	0
AF6247-3	5	0	3	0	8	0	0	0	0	0	0
AF6252-1	0	5	0	5	10	0	0	0	0	0	0
AF6252-3	0	0	1	0	1	0	0	0	0	0	0
AF6253-1	0	0	1	0	1	0	0	0	0	0	0
AF6255-2	0	2	2	0	4	0	0	0	0	0	0
AF6256-6	0	0	0	0	0	0	0	0	0	0	0
AF6261-2	6	0	1	0	7	0	0	0	0	0	0
WAF15126-1	0	0	2	0	2	0	5	0	0	0	0
WAF15143-3	0	0	0	3	3	0	0	0	0	0	0
WAF15147-2	0	3	2	0	4	0	0	0	0	0	0
WAF15158-2	0	7	0	0	7	0	0	0	0	0	0
WAF15165-1	0	0	0	0	0	0	0	0	0	0	0
WAF15180-6	3	0	0	0	3	0	0	0	0	0	0
WAF15184-2	0	2	4	1	7	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
WAF15184-4	4	0	0	0	4	0	0	0	0	0	0
WAF15190-1	8	3	3	4	17	0	0	0	0	0	0
WAF15195-3	0	0	2	2	4	0	0	0	0	0	0
WAF15205-2	0	12	7	0	19	0	0	0	0	0	0
WAF15205-3	0	0	0	0	0	0	0	0	0	0	0
WAF15206-1	0	0	4	0	4	0	0	0	0	0	0
WAF15207-3	4	0	10	0	15	0	0	0	0	0	0
WAF15207-4	8	3	0	2	13	0	0	0	0	0	5
WAF15211-5	3	5	2	0	10	0	5	0	0	0	0
WAF15212-2	0	8	8	0	16	0	0	0	0	0	0
WAF15217-1	0	5	5	0	10	0	0	0	0	0	0
WAF15221-2	0	12	0	0	12	.	.	.	.	.	.
WAF15227-1	0	0	3	0	3	0	0	0	0	0	0
COAF14207-3	0	0	0	0	0	0	0	0	0	0	0
NDAF1393Y-2	0	6	3	0	8	0	5	0	0	0	0
NDAF1393Y-4	0	2	4	2	7	0	0	0	0	0	0
AF6194-2	0	8	6	0	14	0	0	0	0	0	0
AF6194-4	0	5	3	0	8	0	0	0	0	0	0
AF6211-3	0	7	0	0	7	0	0	0	0	0	0
AF6233-1	0	0	0	17	17	0	0	0	0	0	0
AF6260-1	0	19	4	0	23	0	0	0	0	0	10
COAF14206-3	0	5	3	3	11	0	0	0	0	5	0
Red LaSoda	2	0	0	0	2	0	0	0	0	0	0
Atlantic	0	0	0	0	0	0	0	0	0	0	0
Peter Wilcox (B1816-5)	0	10	0	0	10	0	0	0	0	0	0
Soraya	0	0	0	0	0	0	0	0	0	0	0
Satina	7	0	6	0	13	0	0	0	0	0	0
Snowden	0	4	0	0	4	0	0	0	0	0	0
Dark Red Norland	0	0	0	0	0	0	0	0	0	0	0
All Blue	0	5	2	2	10	0	0	0	0	0	0

Table 23 (cont'd). External and internal defects for the 2018 University of Maine Early Generation Round Whites Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Katahdin	0	0	5	0	5	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

Chapter 9. Potatoes USA 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 perform the best at multiple locations are then compared and kept for further evaluation. This trial is supported by Potatoes USA, formerly the United States Potato Board.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 8, 2018
Vine Kill Date	N/A
Harvest Date	May 14, 2018
Season Length	95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	4 (Standard: Atlantic)
Number of Clones	146
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	40 DAP
Highest Total Yield	NYOR14Q9-9 (737 cwt/acre or 82.6 T/ha)
Highest Marketable Yield	NYOR14Q9-9 (542 cwt/acre or 60.8 T/ha)
Highest Specific Gravity	MSAA079-07Y (1.098)

Table 24. Production statistics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–95 days												
Atlantic	336	266	100	3	14	79	2	1	0	82	3	1.083
Lamoka	323	255	96	3	14	79	1	3	0	83	4	1.083
Pike	345	269	101	2	13	81	3	1	0	85	4	1.082
Snowden	326	245	92	3	20	69	7	1	0	77	8	1.080
Tier 1 = 1 rep												
CO11023-9W	279	191	72	5	20	63	12	0	0	75	12	1.071
A11516-1C	301	207	78	6	24	70	0	0	0	70	0	1.075
A11520-1C	320	273	103	2	8	89	0	0	0	89	0	1.067
NDA1448CAB-1C	194	104	39	11	33	57	0	0	0	57	0	1.074
WIA14067-1C	248	64	24	19	56	26	0	0	0	26	0	1.067
B3296-3	337	208	78	7	24	61	8	0	0	69	8	1.086
B3297-1	457	246	93	9	36	47	6	3	0	55	8	1.078
B3299-5	366	114	43	26	42	31	2	0	0	32	2	1.076
B3305-1	246	168	63	7	21	71	0	0	0	71	0	1.082
AF5635-8	217	145	55	10	21	69	0	0	0	69	0	1.071
AF5677-4	332	252	95	2	15	74	9	0	0	83	9	1.084
AF5819-2	292	222	84	6	15	79	0	0	0	79	0	1.070
AF5825-3	301	218	82	2	20	79	0	0	0	79	0	1.092
MSAFB605-4	278	179	67	6	27	67	0	0	0	67	0	1.085
MSAFB609-5	317	211	79	5	26	70	0	0	0	70	0	1.081
MSAFB609-12	338	244	92	2	23	71	4	0	0	75	4	1.082
MSAFB610-2	193	145	55	3	20	69	8	0	0	77	8	1.084
MSAFB610-4	142	78	29	5	38	57	0	0	0	57	0	1.080
MSAFB614-4	442	358	135	4	12	84	0	0	0	84	0	1.089
MSAFB614-6	256	172	65	6	25	68	0	0	0	68	0	1.078
MSAFB619-2	310	212	80	7	19	63	7	4	0	74	11	1.082
MSAFB626-8	164	126	47	3	17	74	0	6	0	80	6	1.082
MSAFB635-3	319	226	85	6	19	75	0	0	0	75	0	1.092
MSAFB635-15	380	290	109	2	21	70	3	3	0	76	6	1.079
AF5938-6	301	184	69	8	28	64	0	0	0	64	0	1.076

Table 24 (cont'd). Production statistics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
AF6027-2	386	230	86	7	31	62	0	0	0	62	0	1.080
AF6037-2	306	239	90	4	14	82	0	0	0	82	0	1.082
AF6037-3	465	320	120	5	22	71	2	0	0	72	2	1.080
WAF14187-5	335	235	88	5	22	69	0	4	0	73	4	1.080
NDAF14437CAB-3	299	216	81	6	22	72	0	0	0	72	0	1.077
MSV507-128	30	19	7	13	24	63	0	0	0	63	0	1.074
MSAA036-03	303	221	83	4	22	74	0	0	0	74	0	1.075
MSAA036-09	285	237	89	3	12	76	5	3	0	85	9	1.076
MSAA036-10	337	245	92	2	25	73	0	0	0	73	0	1.073
MSAA038-09Y	408	313	118	4	19	75	2	0	0	77	2	1.074
MSAA056-05	212	105	39	16	34	50	0	0	0	50	0	1.077
MSAA072-04	365	272	102	6	19	75	0	0	0	75	0	1.080
MSAA072-05	329	261	98	1	14	77	8	0	0	85	8	1.081
MSAA076-04	335	99	37	15	55	30	0	0	0	30	0	1.069
MSAA079-07Y	273	188	71	7	20	73	0	0	0	73	0	1.098
MSAA091-01	209	111	42	7	36	57	0	0	0	57	0	1.081
MSAA218-03	296	116	44	16	44	40	0	0	0	40	0	1.070
MSAA241-01	372	300	113	3	13	84	0	0	0	84	0	1.076
MSAA252-07	265	217	82	4	14	74	8	0	0	82	8	1.078
MSAA254-04	315	254	96	3	14	75	7	0	0	83	7	1.076
MSAA260-03	390	257	97	5	28	59	5	3	0	67	8	1.077
MSAA271-05	385	314	118	3	10	76	10	0	0	86	10	1.069
MSAA290-02	304	249	94	0	16	84	0	0	0	84	0	1.078
MSAA309-15	231	174	65	6	16	78	0	0	0	78	0	1.080
MSAA313-01	238	181	68	5	11	71	4	9	0	83	12	1.076
MSAA324-04	262	159	60	8	27	65	0	0	0	65	0	1.076
MSAA328-04	124	99	37	2	18	80	0	0	0	80	0	1.081
MSAA342-02	300	233	88	3	14	79	3	0	0	83	3	1.076
MSAA342-11Y	262	179	67	5	22	73	0	0	0	73	0	1.072
MSAA373-03	230	135	51	6	34	60	0	0	0	60	0	1.095

Table 24 (cont'd). Production statistics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
MSAA392-05	231	122	46	19	27	54	0	0	0	54	0	1.073
MSAA498-07	26	0	0	60	40	0	0	0	0	0	0	1.064
MSAA513-01	323	265	100	3	15	82	0	0	0	82	0	1.084
MSAA556-03Y	320	256	97	4	15	77	4	0	0	81	4	1.077
MSAA678-01	306	228	86	3	22	75	0	0	0	75	0	1.071
MSAA725-03	394	355	134	5	5	76	8	6	0	90	14	1.071
ND102921C-3	356	188	71	15	29	56	0	0	0	56	0	1.078
ND113307C-3	329	158	60	10	41	50	0	0	0	50	0	1.078
ND122C-1	346	195	73	9	33	58	0	0	0	58	0	1.086
ND1221-1	419	267	101	9	26	65	0	0	0	65	0	1.074
ND1328YABC-1	360	221	83	9	25	63	0	3	0	66	3	1.072
ND14358AB-1	351	245	92	6	18	69	7	0	0	76	7	1.080
ND14437CAB-1	322	182	68	9	33	58	0	0	0	58	0	1.074
ND14437CAB-2	335	193	73	8	34	58	0	0	0	58	0	1.089
NYN16-10	366	233	88	9	27	64	0	0	0	64	0	1.085
NYN16-11	327	187	70	7	32	58	3	0	0	61	3	1.081
NYP14-1	350	231	87	6	27	66	0	0	0	66	0	1.081
NYP19-2	305	221	83	5	22	73	0	0	0	73	0	1.084
NYP103-1	400	323	122	3	16	81	0	0	0	81	0	1.084
NYP103-22	263	180	68	6	20	74	0	0	0	74	0	1.082
NYP108-2	352	287	108	2	15	75	5	3	0	83	8	1.079
NYP108-6	335	263	99	2	19	76	2	0	0	79	2	1.081
NYP111-9	322	247	93	4	19	75	2	0	0	77	2	1.078
NYP111-16	149	131	49	6	0	72	22	0	0	94	22	1.081
NYP114-1	341	309	116	3	5	92	0	0	0	92	0	1.084
NYP116-6	349	205	77	3	27	70	0	0	0	70	0	1.081
NYP118-6	309	179	67	4	25	71	0	0	0	71	0	1.069
NYP119-3	364	292	110	3	10	77	10	0	0	87	10	1.080
AOR13125-2	306	197	74	9	25	66	0	0	0	66	0	1.083
AOR13125-9	371	226	85	6	30	62	2	0	0	64	2	1.092

Table 24 (cont'd). Production statistics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
AOR13136-4	361	310	117	4	8	61	8	20	0	89	28	1.072
NYOR14Q9-5	429	394	148	2	5	67	8	19	0	93	26	1.081
NYOR14Q9-9	737	542	204	3	23	70	4	0	0	74	4	1.079
NYOR14Q12-1	294	247	93	3	13	76	8	0	0	84	8	1.078
COOR13270-2	325	205	77	7	22	71	0	0	0	71	0	1.082
COOR13428-1	332	166	62	9	41	48	2	0	0	51	2	1.084
TX14695-2W	374	278	105	4	21	72	2	0	0	74	2	1.077
TX13580-1W	289	224	84	6	5	71	18	0	0	89	18	1.082
TX12483-6W	266	148	56	5	31	60	4	0	0	64	4	1.078
NDTX1246-5W/Y	324	205	77	7	28	65	0	0	0	65	0	1.086
W13069-5	239	178	67	3	20	77	0	0	0	77	0	1.084
W13058-4	298	238	90	4	16	78	2	0	0	81	2	1.082
W13057-3	273	162	61	6	31	63	0	0	0	63	0	1.092
W13058-19	318	248	93	4	13	78	5	0	0	83	5	1.091
W13NYP12-2	351	217	82	7	30	61	3	0	0	63	3	1.085
W13NYP117-2	231	130	49	10	34	56	0	0	0	56	0	1.081
W13NYP19-2	406	267	101	4	23	63	4	5	0	72	9	1.083
Tier 2 = 2 reps												
CO10073-7W	325	217	82	5	23	72	1	0	0	73	1	1.071
CO10076-4W	363	266	100	6	18	76	0	0	0	76	0	1.071
CO11023-2W	375	272	102	4	20	69	7	0	0	76	7	1.072
CO11037-5W	332	270	102	2	13	83	2	0	0	85	2	1.082
B2904-2	338	287	108	2	10	81	2	5	0	88	7	1.078
B3012-1	310	149	56	10	41	49	0	0	0	49	0	1.081
B3183-6	327	212	80	6	26	64	4	0	0	68	4	1.084
BNC469-7	228	159	60	8	20	69	0	2	0	72	2	1.069
BNC544-2	287	174	65	8	30	60	1	0	0	61	1	1.085
BNC549-1	338	156	59	15	37	48	0	0	0	48	0	1.081

Table 24 (cont'd). Production statistics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
AF5563-2	376	318	120	2	5	59	4	29	0	93	34	1.080
AF5563-5	324	261	98	4	10	69	17	0	0	86	17	1.081
AF5648-3	310	237	89	5	17	74	4	0	0	77	4	1.081
NDAF113470C-3	309	210	79	6	25	64	4	0	0	69	4	1.081
MSV030-4	291	136	51	12	39	49	0	0	0	49	0	1.083
MSV507-003	378	262	99	6	24	66	2	1	0	70	4	1.086
MSV507-012	276	218	82	2	14	79	4	0	0	84	4	1.077
MSW004-1	299	158	59	10	34	53	1	2	0	56	3	1.078
MSX111-3	339	256	96	4	15	78	3	0	0	81	3	1.076
MSX225-2	286	206	77	6	16	78	0	0	0	78	0	1.081
MSY022-2	335	180	68	11	35	53	0	1	0	54	1	1.080
MSY041-1	326	125	47	21	39	40	0	0	0	40	0	1.084
MSY156-2	310	116	44	11	47	41	0	0	0	41	0	1.074
MSZ022-16	299	216	81	5	21	74	0	0	0	74	0	1.077
MSZ042-7	298	195	74	6	28	64	2	0	0	67	2	1.088
MSZ242-09	322	241	91	6	18	76	0	0	0	76	0	1.089
MSZ242-13	347	254	96	3	21	75	1	0	0	76	1	1.087
MSZ246-1	297	187	70	8	28	59	1	4	0	64	5	1.075
NC470-3	403	313	118	2	15	71	11	1	0	84	13	1.084
NCB3171-7	316	124	47	16	44	39	1	0	0	41	1	1.089
ND12180ABC-8	251	130	49	16	30	53	2	0	0	55	2	1.076
NYM8-5	253	179	67	3	27	67	3	0	0	70	3	1.081
NYN40-7	245	188	71	4	19	72	6	0	0	78	6	1.080
AOR12197-4	383	264	99	5	22	62	3	7	0	73	11	1.078
AOR09034-3	352	237	89	8	24	64	3	1	0	68	4	1.075
OR09256-2	280	221	83	4	14	76	6	0	0	82	6	1.079
AORTX09037-5W/Y	288	191	72	11	24	63	3	0	0	65	3	1.076
AORTX09144-2W	258	174	65	5	13	82	0	0	0	82	0	1.089
COTX12235-2W	237	98	37	15	43	41	0	0	0	41	0	1.071
COTX12428-1W	220	131	49	12	25	62	1	0	0	63	1	1.075

Table 24 (cont'd). Production statistics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
NDTX12203AB-1W	222	128	48	8	28	64	0	0	0	64	0	1.075
NDTX1244-3W/Y	256	191	72	6	17	77	0	0	0	77	0	1.084
NDTX1246-3W	255	151	57	7	35	56	2	0	0	59	2	1.087
W12078-76	255	174	66	6	25	67	2	0	0	69	2	1.085

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 2018 Potatoes USA National Chip Processing Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]								
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
Atlantic	88	8	8	7	2	7	7	3	7	8	1.5	1	1
Lamoka	97	8	9	7	1	7	7	3	7	7	1.0	1	2
Pike	97	7	9	8	2	8	6	4	6	6	1.8	1	3
Snowden	98	8	9	7	1	7	7	2	6	6	1.1	1	1
Tier 1 = 1 rep													
CO11023-9W	73	7	9	7	2	7	6	2	5	5	1.0	1	2
A11516-1C	100	6	9	7	2	7	6	2	6	7	1.5	1	2
A11520-1C	100	7	9	7	2	9	8	3	6	7	2.5	2	1
NDA1448CAB-1C	93	5	9	8	2	9	7	2	7	5	2.0	2	4
WIA14067-1C	100	7	6	5	1	6	6	3	7	5	1.5	2	4
B3296-3	100	8	9	7	1	7	6	2	6	4	2.0	2	2
B3297-1	93	8	6	6	3	7	7	3	8	5	1.0	1	1
B3299-5	100	8	6	7	1	8	8	2	8	4	2.0	3	3
B3305-1	100	7	9	7	1	6	5	3	7	8	1.5	1	3
AF5635-8	93	7	9	7	2	7	8	1	7	6	1.5	2	2
AF5677-4	93	8	9	8	1	8	7	4	7	8	1.0	1	1
AF5819-2	100	7	9	6	1	9	8	2	8	8	1.0	1	2
AF5825-3	100	7	9	7	2	7	8	4	5	7	1.0	1	3
MSAFB605-4	87	4	9	8	3	5	7	1	8	6	1.5	1	2
MSAFB609-5	93	8	9	7	2	6	6	2	6	7	1.0	1	2
MSAFB609-12	100	7	9	8							1.0	0	1
MSAFB610-2	93	7	9	7	4	7	6	2	7	8	1.5	1	2
MSAFB610-4	93	7	9	7	1	8	9	2	7	8	2.0	2	3
MSAFB614-4	100	7	9	7	1	7	7	4	6	6	2.5	3	1
MSAFB614-6	80	6	9	7	1	7	6	3	7	6	1.0	1	2
MSAFB619-2	87	6	9	8							2.0	1	3
MSAFB626-8	60	4	9	9	1	9	7	2	8	6	1.5	1	3
MSAFB635-3	93	7	9	7	2	7	7	1	7	6	1.5	1	3
MSAFB635-15	100	7	9	8	1	6	6	2	7	7	1.5	2	1
AF5938-6	100	6	9	7	2	7	8	1	8	5	1.0	2	2

Table 25 (cont'd). Plant growth and tuber characteristics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]								
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
AF6027-2	100	7	9	7	1	7	6	4	7	6	1.0	1	1
AF6037-2	100	5	9	8	2	8	6	1	7	8	1.5	1	1
AF6037-3	100	7	9	7	2	7	8	2	7	8	1.0	1	1
WAF14187-5	93	8	9	7	1	8	7	4	6	6	1.5	2	1
NDAF14437CAB-3	87	8	6	7	3	7	6	1	7	7	1.5	1	2
MSV507-128	0	1	-	9	1	8	8	1	7	5	1.5	2	3
MSAA036-03	100	8	9	7	2	7	7	4	6	7	1.0	1	2
MSAA036-09	93	6	9	7	1	7	6	2	7	8	1.0	2	3
MSAA036-10	100	7	9	7	1	7	6	1	7	6	1.5	2	1
MSAA038-09Y	100	8	6	7	2	4	6	1	8	6	1.0	1	1
MSAA056-05	100	6	9	7	3	5	5	2	7	6	1.5	1	3
MSAA072-04	93	9	6	7	2	7	7	1	7	7	1.0	1	1
MSAA072-05	100	9	6	6	2	7	6	3	7	8	1.5	2	2
MSAA076-04	100	8	6	7	3	6	6	1	8	5	1.5	0	3
MSAA079-07Y	87	8	9	7	3	6	6	3	8	7	1.0	1	2
MSAA091-01	100	7	6	7	2	7	6	1	9	6	2.0	1	3
MSAA218-03	100	7	9	7	1	7	7	2	6	6	2.5	2	3
MSAA241-01	100	9	9	6	2	7	6	1	7	8	1.0	0	1
MSAA252-07	100	8	9	7	3	6	6	2	9	7	2.5	1	2
MSAA254-04	100	8	9	7	2	7	7	1	8	7	2.5	2	3
MSAA260-03	100	9	9	7	2	7	7	2	7	6	1.5	2	1
MSAA271-05	67	7	9	7	2	7	6	1	5	5	1.0	1	1
MSAA290-02	100	7	9	7	1	6	6	3	7	6	2.0	2	1
MSAA309-15	100	8	9	7	2	7	7	4	6	8	1.0	1	2
MSAA313-01	100	8	6	6	1	7	6	4	8	6	1.0	1	2
MSAA324-04	100	8	9	6	1	8	7	1	8	7	1.0	1	2
MSAA328-04	100	9	9	7	2	7	6	2	5	7	1.5	1	3
MSAA342-02	100	7	6	7	2	9	6	5	7	6	1.5	2	1
MSAA342-11Y	100	8	6	6	3	6	7	1	8	6	1.0	0	2
MSAA373-03	93	8	9	7	4	6	6	3	8	7	2.0	1	4

Table 25 (cont'd). Plant growth and tuber characteristics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]								
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
MSAA392-05	93	7	9	7	2	7	7	1	9	3	1.0	1	3
MSAA498-07	87	6	9	7	3	8	6	1	6	7	1.5	2	3
MSAA513-01	93	8	9	7	2	7	7	3	7	6	1.5	2	1
MSAA556-03Y	100	8	9	7	3	7	7	1	6	7	1.5	1	1
MSAA678-01	100	8	9	7	1	8	7	1	8	7	1.5	1	1
MSAA725-03	100	9	6	7	1	7	7	5	8	7	1.0	1	1
ND102921C-3	100	7	9	6	2	7	6	2	6	6	1.5	2	2
ND113307C-3	87	8	6	5	1	7	6	2	6	7	1.0	1	2
ND122C-1	100	8	9	6	1	7	6	1	9	5	1.0	1	3
ND1221-1	93	8	6	7	2	7	7	1	7	7	1.5	1	1
ND1328YABC-1	100	8	6	6	1	7	8	2	8	7	1.5	1	2
ND14358AB-1	100	8	6	7	1	7	8	1	5	7	1.0	1	2
ND14437CAB-1	100	8	6	7	1	7	8	1	7	7	1.0	1	2
ND14437CAB-2	100	8	6	7	3	7	3	2	8	7	1.0	1	2
NYN16-10	100	7	9	8	1	7	7	3	7	8	1.5	1	1
NYN16-11	93	8	9	7	1	9	6	4	8	6	1.0	0	2
NYP14-1	100	7	9	7	1	8	8	2	7	6	1.0	1	1
NYP19-2	100	7	9	8	2	9	6	4	7	7	1.0	0	2
NYP103-1	100	7	9	7	2	8	6	2	6	7	1.0	0	3
NYP103-22	100	8	9	6	2	8	7	3	8	6	1.0	0	2
NYP108-2	93	8	6	7	2	9	7	2	8	6	1.5	1	1
NYP108-6	100	8	9	7	1	7	7	1	5	6	1.0	1	1
NYP111-9	80	7	9	7	1	7	6	3	6	7	1.5	1	1
NYP111-16	80	7	9	7	2	7	8	1	7	6	1.5	2	4
NYP114-1	100	7	9	8	2	7	7	5	8	8	1.5	1	3
NYP116-6	100	8	9	7	1	7	7	3	6	7	1.0	1	3
NYP118-6	87	7	9	7	2	7	6	3	7	8	1.0	0	4
NYP119-3	80	7	9	7	3	7	6	5	7	7	1.0	2	1
AOR13125-2	100	7	9	6	1	8	8	3	8	6	1.0	2	2
AOR13125-9	93	8	9	8	3	7	6	2	7	6	1.0	1	3

Table 25 (cont'd). Plant growth and tuber characteristics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]								
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
AOR13136-4	93	6	9	7	2	6	7	1	7	7	1.5	1	1
NYOR14Q9-5	100	7	9	8	1	8	8	3	8	7	1.0	1	1
NYOR14Q9-9	93	8	9	7	1	7	8	1	6	7	1.0	1	1
NYOR14Q12-1	80	6	9	7	2	7	6	3	6	7	1.5	1	1
COOR13270-2	100	7	9	7	2	7	6	3	8	7	2.0	2	2
COOR13428-1	100	7	9	6	2	7	8	1	8	7	1.0	1	2
TX14695-2W	93	8	9	7	1	9	7	5	7	6	1.0	0	1
TX13580-1W	73	7	9	7	1	6	6	5	5	5	1.5	1	3
TX12483-6W	100	8	6	7	2	7	5	2	7	7	1.0	2	3
NDTX1246-5W/Y	100	7	6	7	3	7	8	1	8	6	1.0	1	2
W13069-5	100	6	9	7	2	7	6	1	6	8	1.0	0	2
W13058-4	100	8	6	7	1	7	7	1	7	7	1.5	1	1
W13057-3	100	7	9	6	1	7	7	3	8	8	1.5	2	3
W13058-19	93	8	9	8	1	5	6	2	6	3	1.0	2	1
W13NYP12-2	100	7	9	7	2	7	6	2	6	6	1.5	2	2
W13NYP117-2	100	7	9	6	1	8	7	1	8	6	1.0	0	3
W13NYP19-2	87	8	6	7	1	7	7	4	6	8	1.5	2	1
Tier 2 = 2 reps													
CO10073-7W	97	9	8	6	2	7	7	2	6	7	1.0	1	2
CO10076-4W	100	8	8	7	1	7	7	1	8	7	1.5	1	1
CO11023-2W	100	8	9	7	2	6	7	3	7	7	1.5	1	1
CO11037-5W	60	7	9	7	2	7	6	3	7	8	1.3	1	1
B2904-2	93	8	9	8	1	7	8	2	7	7	1.3	1	1
B3012-1	100	8	9	7	2	8	6	3	8	6	1.3	2	2
B3183-6	100	8	9	7	2	7	7	3	8	7	1.8	1	1
BNC469-7	97	8	8	7	1	7	7	1	8	7	1.5	2	2
BNC544-2	100	7	9	7	1	9	7	2	8	8	1.3	1	2
BNC549-1	100	8	9	7	2	8	8	2	7	6	1.0	2	2

Table 25 (cont'd). Plant growth and tuber characteristics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]								
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
AF5563-2	93	8	9	8	2	7	7	4	7	8	1.0	1	2
AF5563-5	97	6	9	7	2	7	6	3	9	8	1.0	0	2
AF5648-3	97	6	9	7	2	7	6	4	7	7	1.3	2	1
NDAF113470C-3	100	9	9	6	1	8	8	3	8	7	1.5	1	3
MSV030-4	97	7	9	7	1	7	6	3	7	7	1.5	1	2
MSV507-003	100	8	6	7	2	7	7	2	8	8	1.3	1	1
MSV507-012	87	8	9	7	2	7	7	2	7	6	1.3	1	1
MSW004-1	93	9	9	7	3	8	7	4	7	6	1.5	1	2
MSX111-3	97	8	9	8	3	7	7	3	8	7	1.5	2	1
MSX225-2	100	8	6	7	2	7	7	3	8	7	1.0	1	2
MSY022-2	100	8	8	7	2	7	8	2	7	7	2.0	3	2
MSY041-1	100	8	8	7	1	8	7	3	8	6	1.8	2	2
MSY156-2	100	8	8	7	2	7	7	1	8	6	1.5	1	3
MSZ022-16	100	8	9	7	1	7	7	1	8	6	1.0	1	1
MSZ042-7	97	8	6	7	2	7	5	2	8	8	1.3	1	2
MSZ242-09	97	8	6	7	2	8	6	3	5	6	1.3	1	2
MSZ242-13	97	8	9	7	2	7	8	1	7	6	1.0	1	3
MSZ246-1	93	7	9	7	1	7	7	2	9	7	1.3	1	2
NC470-3	77	7	9	8	1	6	6	4	8	8	1.3	1	2
NCB3171-7	100	7	6	7	2	8	8	2	6	6	1.5	2	2
ND12180ABC-8	100	7	6	6	2	8	8	2	7	7	1.0	1	2
NYM8-5	97	8	9	7	2	7	7	2	8	6	1.0	1	2
NYN40-7	60	5	9	8	2	7	6	3	7	7	1.3	1	2
AOR12197-4	100	8	9	7	4	7	7	2	8	7	1.8	2	1
AOR09034-3	93	9	8	6	1	7	7	3	7	7	1.0	2	1
OR09256-2	90	7	9	7	2	7	6	3	7	6	1.5	2	1
AORTX09037-5W/Y	97	7	8	7	3	7	6	2	6	6	1.3	1	2
AORTX09144-2W	93	7	9	7	2	7	7	2	8	6	1.8	1	3
COTX12235-2W	93	8	8	7	2	7	7	2	7	6	1.5	1	3
COTX12428-1W	90	7	9	7	2	7	7	2	6	6	1.8	1	3

Table 25 (cont'd). Plant growth and tuber characteristics for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]								
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	SFA Chip Score	SED Score	Merit
NDTX12203AB-1W	100	8	6	6	2	7	7	2	5	5	1.8	2	3
NDTX1244-3W/Y	90	8	8	8	3	8	7	1	7	7	1.3	2	2
NDTX1246-3W	100	9	6	7	2	7	7	3	8	6	1.3	1	3
W12078-76	90	8	9	7	2	7	6	2	8	5	1.3	1	3

[1]Percent 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.

[2]Internal 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 2018 Potatoes USA National Chip Processing Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Atlantic	2	0	1	1	4	0	0	0	0	1	1
Lamoka	2	2	1	1	5	0	0	0	0	3	0
Pike	0	5	2	1	8	0	0	0	0	15	0
Snowden	0	1	1	0	3	0	0	0	0	0	0
Tier 1 = 1 rep											
CO11023-9W	0	5	2	2	9	0	0	0	0	0	0
A11516-1C	0	0	2	0	2	0	0	0	0	0	0
A11520-1C	0	0	4	0	4	0	0	0	0	0	0
NDA1448CAB-1C	3	3	0	0	6	0	0	0	0	40	10
WIA14067-1C	0	0	0	0	0	0	0	0	5	5	0
B3296-3	1	1	1	9	11	0	0	0	0	0	0
B3297-1	0	1	1	0	2	0	0	0	0	0	0
B3299-5	0	0	0	4	4	0	0	0	0	0	0
B3305-1	0	5	0	0	5	0	0	0	0	15	0
AF5635-8	0	2	0	2	3	0	0	0	0	0	0
AF5677-4	0	2	6	1	9	0	0	0	0	0	0
AF5819-2	0	0	0	3	3	0	0	0	0	0	0
AF5825-3	0	7	1	0	8	0	0	0	0	10	0
MSAFB605-4	0	1	2	1	5	0	0	0	0	0	0
MSAFB609-5	0	1	2	1	4	0	0	0	0	0	0
MSAFB609-12	0	4	0	0	4	0	0	0	0	0	0
MSAFB610-2	0	0	2	0	2	0	0	0	0	0	0
MSAFB610-4	0	3	0	0	3	0	0	0	0	0	0
MSAFB614-4	0	2	1	1	4	0	0	0	0	0	0
MSAFB614-6	0	0	0	1	1	0	0	0	0	0	0
MSAFB619-2	4	3	0	1	7	0	0	0	0	5	0
MSAFB626-8	0	5	0	0	5	0	0	0	0	0	0
MSAFB635-3	0	2	1	2	5	0	0	0	15	5	0
MSAFB635-15	0	0	0	0	0	0	0	0	0	0	0
AF5938-6	0	0	5	0	5	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AF6027-2	0	3	0	0	3	0	0	0	0	0	0
AF6037-2	0	0	1	4	5	0	0	0	0	0	0
AF6037-3	2	1	2	0	5	0	0	0	0	0	0
WAF14187-5	0	4	0	0	4	0	0	0	0	0	0
NDAF14437CAB-3	0	0	0	0	0	0	0	0	0	0	0
MSV507-128	0	0	0	0	0	0	0	0	0	0	0
MSAA036-03	0	0	1	1	2	0	0	0	0	0	0
MSAA036-09	0	0	2	0	2	0	0	0	0	5	0
MSAA036-10	0	0	0	0	0	0	0	0	0	0	0
MSAA038-09Y	0	0	0	0	0	0	0	0	0	0	0
MSAA056-05	0	2	0	0	2	0	0	0	0	0	0
MSAA072-04	0	0	1	0	1	0	0	0	0	0	0
MSAA072-05	0	2	1	4	6	0	0	0	5	0	0
MSAA076-04	0	0	1	0	1	0	0	0	0	0	0
MSAA079-07Y	0	3	0	2	5	0	0	0	0	0	0
MSAA091-01	0	4	4	0	8	0	0	0	0	0	0
MSAA218-03	0	0	1	0	1	0	0	0	0	0	0
MSAA241-01	3	0	0	1	4	0	0	0	0	0	0
MSAA252-07	0	0	0	0	0	0	0	0	0	0	0
MSAA254-04	0	3	0	0	3	0	0	0	0	5	0
MSAA260-03	2	0	0	0	2	0	0	0	0	0	0
MSAA271-05	0	1	1	3	5	0	0	0	0	0	0
MSAA290-02	0	1	0	1	3	0	0	0	0	0	0
MSAA309-15	0	0	1	3	4	0	0	0	0	0	0
MSAA313-01	2	6	0	0	8	0	0	0	0	0	0
MSAA324-04	1	0	0	5	6	0	0	0	0	0	0
MSAA328-04	0	0	0	0	0	0	0	0	0	0	0
MSAA342-02	1	1	1	3	6	0	0	0	0	0	0
MSAA342-11Y	0	0	6	1	7	0	0	0	0	0	0
MSAA373-03	0	0	0	2	2	0	0	0	0	5	0

Table 26 (cont'd). External and internal defects for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
MSAA392-05	0	2	0	0	2	0	0	0	0	0	0
MSAA498-07	0	0	0	0	0	0	0	0	0	0	0
MSAA513-01	0	0	0	0	0	0	0	0	0	0	0
MSAA556-03Y	1	0	0	0	1	0	0	0	0	0	0
MSAA678-01	0	1	0	0	1	0	0	0	0	0	0
MSAA725-03	0	0	0	0	0	0	0	0	0	0	0
ND102921C-3	5	0	0	0	5	0	0	0	0	0	0
ND113307C-3	0	2	0	1	3	0	0	0	0	0	0
ND122C-1	0	0	0	3	3	0	5	0	0	20	5
ND1221-1	0	0	1	2	3	0	0	0	0	0	0
ND1328YABC-1	0	2	2	4	7	0	0	0	0	0	0
ND14358AB-1	0	0	4	5	9	0	0	0	10	0	0
ND14437CAB-1	0	3	0	0	3	0	0	0	0	0	0
ND14437CAB-2	0	1	0	0	1	0	0	0	0	0	0
NYN16-10	0	0	1	0	1	0	0	0	0	0	0
NYN16-11	0	2	1	3	6	0	0	0	0	0	0
NYP14-1	0	0	0	1	1	0	0	0	0	0	0
NYP19-2	0	0	0	1	1	0	0	0	0	0	0
NYP103-1	0	0	0	0	0	0	0	0	0	5	0
NYP103-22	7	0	0	0	7	0	0	0	0	0	0
NYP108-2	0	0	1	0	1	0	0	0	0	0	0
NYP108-6	0	0	0	0	0	0	0	0	0	0	0
NYP111-9	0	0	0	0	0	0	0	0	0	0	0
NYP111-16	0	0	2	4	6	0	0	0	0	5	0
NYP114-1	0	0	1	1	2	0	0	0	0	5	0
NYP116-6	0	0	1	16	16	0	0	0	0	5	0
NYP118-6	0	0	0	18	18	0	0	0	0	10	0
NYP119-3	0	6	3	0	8	0	0	0	0	0	0
AOR13125-2	0	2	1	0	2	0	0	0	0	0	0
AOR13125-9	0	0	0	5	5	0	0	0	5	5	0

Table 26 (cont'd). External and internal defects for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AOR13136-4	3	0	0	0	3	0	0	0	0	0	0
NYOR14Q9-5	0	0	1	0	1	0	0	0	0	0	0
NYOR14Q9-9	1	0	0	0	1	0	0	0	0	0	0
NYOR14Q12-1	0	0	0	0	0	0	0	0	0	0	0
COOR13270-2	0	2	7	2	11	0	0	0	0	0	0
COOR13428-1	0	0	0	1	1	0	0	0	0	0	0
TX14695-2W	0	0	0	0	0	0	0	0	0	0	0
TX13580-1W	0	0	2	11	13	0	0	0	0	15	0
TX12483-6W	5	0	0	8	13	0	0	0	0	0	0
NDTX1246-5W/Y	0	0	1	1	2	0	0	0	0	0	0
W13069-5	0	2	1	0	4	0	0	0	0	0	0
W13058-4	1	0	0	0	1	0	0	0	0	0	0
W13057-3	0	5	2	0	6	0	0	0	5	5	0
W13058-19	6	1	0	0	7	0	0	0	0	0	0
W13NYP12-2	0	0	1	1	2	0	0	0	0	0	0
W13NYP117-2	0	0	0	0	0	0	0	0	0	0	0
W13NYP19-2	5	3	1	0	9	0	0	0	0	0	0
Tier 2 = 2 reps											
CO10073-7W	1	0	1	5	8	0	0	0	0	0	0
CO10076-4W	2	0	1	1	4	0	0	0	0	0	0
CO11023-2W	0	1	3	1	5	0	0	0	0	0	0
CO11037-5W	1	2	0	0	3	0	0	0	0	0	0
B2904-2	0	2	1	0	3	0	0	0	0	0	0
B3012-1	1	0	0	0	1	0	0	0	0	0	0
B3183-6	1	1	0	0	2	0	0	0	0	0	0
BNC469-7	1	2	0	0	3	0	0	0	0	0	0
BNC544-2	1	0	2	1	4	0	0	0	0	0	0
BNC549-1	0	1	0	2	3	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AF5563-2	0	1	9	0	10	0	3	0	0	0	0
AF5563-5	1	1	3	2	6	0	3	0	0	0	0
AF5648-3	0	0	1	0	1	0	0	0	0	0	0
NDAF113470C-3	0	2	0	0	2	0	0	0	0	5	0
MSV030-4	9	0	0	0	9	0	0	0	0	0	0
MSV507-003	0	1	0	0	2	0	0	0	0	0	0
MSV507-012	2	1	2	0	5	0	0	0	0	0	0
MSW004-1	4	1	1	2	7	0	0	0	0	0	0
MSX111-3	5	1	2	0	8	0	0	0	0	0	0
MSX225-2	3	2	1	2	8	0	0	0	0	0	0
MSY022-2	1	1	0	0	1	0	3	0	0	0	0
MSY041-1	4	2	0	0	5	0	0	0	0	0	0
MSY156-2	1	0	0	10	10	0	0	0	0	3	0
MSZ022-16	3	0	0	0	3	0	0	0	0	0	0
MSZ042-7	0	0	1	1	2	0	0	0	0	0	0
MSZ242-09	2	0	1	0	3	0	0	0	0	3	0
MSZ242-13	1	0	3	0	4	0	0	0	0	10	0
MSZ246-1	0	1	1	0	2	0	0	0	0	0	0
NC470-3	2	2	3	1	7	0	0	0	0	3	0
NCB3171-7	0	3	1	0	3	0	0	0	0	0	0
ND12180ABC-8	1	3	0	1	5	0	0	0	0	0	0
NYM8-5	0	0	0	0	0	0	0	0	0	5	0
NYN40-7	0	1	0	0	2	0	0	0	0	0	0
AOR12197-4	2	0	4	0	6	0	0	0	0	0	0
AOR09034-3	0	0	1	1	2	0	0	0	0	0	0
OR09256-2	1	0	2	0	3	0	0	0	0	0	0
AORTX09037-5W/Y	0	0	0	0	0	0	0	0	0	0	0
AORTX09144-2W	4	8	0	8	21	0	0	0	0	3	0
COTX12235-2W	0	0	1	0	1	0	0	0	0	0	0
COTX12428-1W	3	0	2	1	6	0	0	0	0	0	0

Table 26 (cont'd). External and internal defects for the 2018 Potatoes USA National Chip Processing Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
NDTX12203AB-1W	2	0	1	8	10	0	0	0	0	25	0
NDTX1244-3W/Y	1	0	3	0	4	0	0	0	0	0	0
NDTX1246-3W	0	0	0	2	2	0	0	0	0	5	0
W12078-76	0	0	0	2	2	0	0	0	0	3	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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 1, 2018
Vine Kill Date	N/A
Harvest Date	May 3, 2018
Season Length	91 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	12 (Standard: Atlantic)
Number of Clones	20
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	40 DAP
Highest Total Yield	BNC369-4 (359 cwt/acre or 40.2 T/ha)
Highest Marketable Yield	BNC369-4 (323 cwt/acre or 36.2 T/ha)
Highest Specific Gravity	B2869-29, B2727-2 (1.084)

Table 27. Production statistics for the 2018 USDA Chipping Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–91 days												
B3175-5	328	242	111	4	20	74	2	0	0	76	2	1.079
B3175-8	246	153	70	7	28	65	1	0	0	66	1	1.079
BNC538-3	208	155	71	5	17	61	9	8	0	78	17	1.069
BNC559-1	337	280	128	3	11	77	4	5	0	86	9	1.067
BNC568-1	248	164	75	5	26	69	0	0	0	69	0	1.070
BNC469-9	333	261	119	5	14	74	3	4	0	81	7	1.074
BNC470-13	293	161	74	9	36	52	3	0	0	55	3	1.075
B3156-10	298	222	102	3	19	75	1	2	0	78	3	1.076
BNC182-5	348	294	135	3	11	75	9	2	0	86	11	1.074
BNC201-1	261	202	93	4	15	78	3	0	0	81	3	1.082
B2834-8	268	225	103	2	10	67	17	4	0	88	22	1.078
B2869-28	273	221	101	3	14	68	9	6	0	82	15	1.069
B2869-29	296	219	100	6	19	73	1	1	0	75	2	1.084
BNC364-1	330	263	120	3	13	79	3	3	0	84	5	1.076
BNC369-4	359	323	148	2	6	75	10	7	0	92	17	1.074
B2727-2	276	227	104	2	12	75	10	1	0	86	11	1.084
B3083-4	343	248	114	3	7	66	14	10	0	90	24	1.073
B3083-11	265	202	93	4	15	75	5	2	0	81	7	1.079
B3084-3	255	197	90	4	15	74	5	2	0	81	8	1.079
BNC426-2	311	235	108	4	17	76	3	0	0	79	3	1.079
Atlantic	277	218	100	3	11	79	5	2	0	86	7	1.082
Chieftain	327	272	125	2	13	77	3	5	0	85	8	1.067
Chippewa	309	211	97	6	23	68	1	1	0	71	2	1.064
Dark Red Norland	272	207	95	5	15	74	3	3	0	79	6	1.062
Elkton	304	263	120	2	10	73	11	4	0	88	15	1.079
Harley Blackwell (B0564-8)	339	274	125	5	12	73	7	3	0	83	10	1.082
Katahdin	305	222	102	5	20	72	1	1	0	75	3	1.076
Kennebec	269	214	98	4	12	77	6	1	0	85	8	1.073
Peter Wilcox (B1816-5)	209	140	64	5	25	70	0	0	0	70	0	1.075
Snowden	216	141	65	6	29	65	0	0	0	66	0	1.075

Table 27 (cont'd). Production statistics for the 2018 USDA Chipping Trial potato selections.

	Total	Marketable Yield[1]										
	Yield		% of	Size Distribution by Class (%)[2]						Size Class Range (%)		Specific
Clone	(cwt/A)	(cwt/A)	standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	Gravity
Superior	213	146	67	7	23	68	1	1	0	70	2	1.078
Yukon Gold	205	157	72	4	12	70	7	6	0	83	14	1.072
MSD[3]	88	68		2	5	9	5	7	ns	6	7	0.004
P Value	0.0002	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	0.0078	-	<0.0001	<0.0001	<0.0001

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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.

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

Table 28. Plant growth and tuber characteristics for the 2018 USDA Chipping Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
B3175-5	97	7	9	7	2	7	7	2	8	7	2
B3175-8	95	5	9	8	3	1	8	3	7	8	2
BNC538-3	97	5	9	7	2	7	6	2	8	8	2
BNC559-1	98	7	9	7	2	1	6	5	7	9	2
BNC568-1	96	4	9	7	4	1	7	1	8	6	2
BNC469-9	95	7	9	7	2	7	7	1	7	8	1
BNC470-13	96	8	9	7	2	7	6	2	6	6	2
B3156-10	83	8	9	8	2	7	8	4	8	8	1
BNC182-5	97	8	8	7	1	7	6	2	7	7	1
BNC201-1	96	6	9	8	3	2	8	2	7	7	1
B2834-8	97	8	9	7	1	7	7	1	9	8	1
B2869-28	100	9	8	7	2	7	7	1	7	7	1
B2869-29	94	9	8	7	2	7	8	1	8	7	1
BNC364-1	96	7	9	7	1	8	8	5	8	8	1
BNC369-4	98	8	9	7	2	2	7	1	7	8	1
B2727-2	95	6	9	7	2	7	6	3	8	8	1
B3083-4	98	7	9	7	2	7	9	4	6	7	2
B3083-11	79	5	9	7	2	7	8	2	7	7	1
B3084-3	96	6	9	8	1	7	8	1	8	7	1
BNC426-2	97	8	9	7	2	7	7	1	9	8	1
Atlantic	95	7	9	7	2	7	6	2	7	6	-
Chieftain	97	6	9	8	1	2	7	3	7	6	1
Chippewa	96	8	9	6	1	9	8	2	6	6	1
Dark Red Norland	99	8	9	6	2	2	8	3	7	8	1
Elkton	95	7	9	7	2	7	7	4	8	8	2
Harley Blackwell (B0564-8)	92	8	9	7	1	7	7	2	8	7	1
Katahdin	96	6	9	7	2	7	7	5	6	8	1
Kennebec	96	6	9	8	2	7	8	6	6	8	1
Peter Wilcox (B1816-5)	83	5	9	7	4	1	8	3	8	7	2
Snowden	96	8	9	6	2	7	6	2	7	6	2

Table 28 (cont'd). Plant growth and tuber characteristics for the 2018 USDA Chipping Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Superior	97	5	9	7	2	7	7	2	8	7	2
Yukon Gold	91	5	9	7	4	9	8	5	7	9	2

[1]Percent 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.

[2]Internal 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 2018 USDA Chipping Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
B3175-5	0	1	2	0	3	0	0	0	0	3	0
B3175-8	0	1	4	0	6	0	0	0	0	0	0
BNC538-3	0	0	4	0	5	0	0	0	1	0	0
BNC559-1	1	2	1	0	3	0	0	0	4	9	0
BNC568-1	0	2	1	0	4	0	0	0	0	0	0
BNC469-9	0	0	2	0	3	0	0	0	0	0	0
BNC470-13	0	0	0	0	1	0	0	0	0	0	0
B3156-10	0	4	1	0	5	0	0	0	0	0	0
BNC182-5	0	0	1	0	2	0	0	0	0	0	0
BNC201-1	1	1	2	0	4	0	0	0	0	0	0
B2834-8	0	1	4	0	5	0	0	0	0	0	0
B2869-28	0	1	2	0	3	0	0	0	0	0	0
B2869-29	1	1	1	0	2	0	0	0	0	0	0
BNC364-1	1	4	1	0	6	0	0	0	0	0	0
BNC369-4	1	0	1	0	2	0	0	0	0	0	0
B2727-2	0	0	4	1	5	0	0	0	0	0	0
B3083-4	17	1	1	0	19	0	0	0	0	0	0
B3083-11	2	1	3	0	6	0	0	0	0	0	0
B3084-3	1	0	3	0	4	0	0	0	0	0	0
BNC426-2	1	1	3	0	6	0	0	0	0	0	0
Atlantic	4	0	4	0	8	0	1	0	0	0	0
Chieftain	1	1	1	0	2	0	0	0	0	0	0
Chippewa	1	2	1	0	3	0	0	0	0	0	0
Dark Red Norland	3	1	1	0	5	0	0	0	0	0	0
Elkton	1	0	2	0	3	0	0	0	0	1	0
Harley Blackwell (B0564-8)	0	1	2	0	3	0	0	0	0	0	0
Katahdin	0	1	2	0	3	0	0	0	0	0	0
Kennebec	0	2	4	0	6	0	0	0	2	0	0
Peter Wilcox (B1816-5)	1	3	2	0	6	0	0	0	0	0	0
Snowden	0	0	1	0	1	1	0	0	0	0	0

Table 29 (cont'd). External and internal defects for the 2018 USDA Chipping Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Superior	0	2	2	0	4	0	0	0	0	0	0
Yukon Gold	0	3	5	0	9	0	0	0	0	0	0
MSD[3]	3	4	ns	ns	5	ns	ns	ns	2	ns	ns
P Value	<0.0001	0.0426	0.1949	0.5074	<0.0001	0.5231	0.5231	-	0.0131	0.5444	-

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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

Chapter 11. Potatoes USA SNAC Potato Variety Trial

General Comments

A goal of the SNAC 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.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	February 1, 2018
Vine Kill Date	N/A
Harvest Date	May 7, 2018
Season Length	95 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	2 (Standard: Atlantic)
Number of Clones	8
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	43 DAP
Highest Total Yield	ND7519-1 (301 cwt/acre or 33.7 T/ha)
Highest Marketable Yield	ND7519-1 (222 cwt/acre or 24.9 T/ha)
Highest Specific Gravity	MSV030-4 (1.082)

Table 30. Production statistics for the 2018 Potatoes USA SNAC Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–95 days												
AF5040-8	232	178	80	3	12	79	3	2	0	85	5	1.077
MSV030-4	225	148	67	6	23	69	1	1	0	71	1	1.082
MSW044-1	247	136	62	8	34	57	0	0	0	58	1	1.073
MSX540-4	257	189	85	5	21	73	1	0	0	75	1	1.081
NDTX081648CB-13W	274	206	93	4	18	74	2	1	0	77	3	1.071
ND7519-1	301	222	100	5	18	74	2	1	0	77	3	1.078
NY162	221	162	73	4	14	77	4	1	0	82	5	1.079
W9968-5	244	184	83	3	16	75	4	2	0	81	6	1.079
Atlantic	279	221	100	3	12	75	7	3	0	85	10	1.080
Snowden	234	167	75	4	20	73	2	1	0	76	3	1.074
MSD[3]	65	49		3	7	9	4	3	ns	8	6	0.006
P Value	0.0032	<0.0001		<0.0001	<0.0001	<0.0001	0.0016	0.0065	-	<0.0001	0.0002	<0.0001

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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.

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

Table 31. Plant growth and tuber characteristics for the 2018 Potatoes USA SNAC Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]							
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Chip Score	Merit
AF5040-8	97	8	9	7	2	7	7	2	5	5	71.3	2
MSV030-4	95	6	9	7	1	6	7	2	7	6	74.0	2
MSW044-1	91	8	9	7	1	7	8	2	5	6	71.8	2
MSX540-4	95	8	9	7	2	6	7	3	7	7	70.6	1
NDTX081648CB-13W	97	9	9	7	1	6	7	2	6	7	69.8	1
ND7519-1	96	9	9	7	1	6	7	2	5	7	66.3	1
NY162	90	6	9	7	1	6	7	2	7	5	74.5	2
W9968-5	92	8	9	7	1	6	8	3	7	6	73.9	2
Atlantic	90	8	9	7	1	6	7	1	8	6	69.4	1
Snowden	91	8	9	7	1	6	7	2	7	7	71.8	2

[1]Percent 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.

[2]Internal 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 2018 Potatoes USA SNAC Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AF5040-8	1	1	5	3	10	0	0	0	0	0	0
MSV030-4	1	4	2	0	7	0	0	0	0	0	0
MSW044-1	0	0	1	3	5	0	0	0	0	0	0
MSX540-4	0	0	2	1	2	0	0	0	0	0	1
NDTX081648CB-13W	0	0	2	1	3	0	0	0	0	0	0
ND7519-1	0	1	3	0	5	0	0	0	0	0	2
NY162	1	7	2	0	11	0	0	0	0	0	0
W9968-5	0	2	3	1	7	0	0	0	0	0	0
Atlantic	2	1	4	0	7	0	0	0	0	0	0
Snowden	0	2	4	1	7	0	0	0	0	0	0
MSD[3]	2	3	3	1	5	ns	ns	ns	ns	ns	ns
P Value	0.0278	<0.0001	0.0061	<0.0001	<0.0001	-	-	-	-	-	0.5349

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

[3]Means 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 are 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	February 8, 2018
Vine Kill Date	N/A
Harvest Date	May 10, 2018
Season Length	91 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	14 (Standard: Atlantic)
Number of Clones	23
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	40 DAP
Highest Total Yield	NY151 (414 cwt/acre or 46.4 T/ha)
Highest Marketable Yield	Chieftain (299 cwt/acre or 33.5 T/ha)
Highest Specific Gravity	Atlantic (1.088)
Best Appearance Rating	Harley Blackwell (B0564-8), Atlantic, Dark Red Norland, Katahdin, Russet Norkotah, Superior, AF4648-2, AF5429-3, AF5450-7, ND8068-5Russ, NY149 (8, very good)

Table 33. Production statistics for the 2018 University of Maine NE1231 Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–91 days												
Harley Blackwell (B0564-8)	305	242	85	5	14	79	2	0	0	81	2	1.079
Red LaSoda	281	219	78	5	14	73	4	5	0	81	8	1.064
Atlantic	357	283	100	4	13	80	2	1	0	83	3	1.088
Chieftain	387	299	106	5	15	72	2	5	0	80	8	1.069
Dark Red Norland	295	204	72	6	23	69	0	1	0	71	1	1.066
Katahdin	347	230	81	7	24	69	0	0	0	69	0	1.072
Kennebec	391	266	94	4	20	70	2	3	0	75	5	1.072
Reveille Russet	239	105	37	15	29	53	3	1	0	56	3	1.062
Russet Burbank	286	128	45	14	31	54	0	1	0	55	1	1.071
Russet Norkotah	278	164	58	9	27	62	1	1	0	64	2	1.071
Shepody	331	206	73	7	23	67	2	0	0	70	2	1.079
Snowden	302	189	67	7	29	63	0	1	0	63	1	1.081
Superior	294	233	82	4	13	79	0	3	0	83	3	1.082
Yukon Gold	267	204	72	3	13	70	8	6	0	84	14	1.079
AF4648-2	337	242	86	4	15	73	2	5	1	80	8	1.079
AF4872-2	319	250	88	4	16	78	2	0	0	81	2	1.082
AF5040-8	314	227	80	6	19	72	3	1	0	75	4	1.082
AF5164-19	289	76	27	15	55	30	0	0	0	30	0	1.072
AF5280-5	358	276	98	2	7	69	11	10	0	91	21	1.067
AF5412-3	277	153	54	5	32	62	1	0	0	63	1	1.066
AF5414-1	237	107	38	14	40	46	0	0	0	46	0	1.074
AF5429-3	368	258	91	7	21	66	6	0	0	72	6	1.080
AF5450-7	345	267	94	5	16	70	7	2	0	79	9	1.074
B2869-29	277	171	60	9	28	64	0	0	0	64	0	1.083
B2904-2	320	264	93	3	13	79	1	3	0	83	4	1.079
B3012-1	303	151	53	10	40	50	0	0	0	50	0	1.074
B3183-6	340	196	69	9	32	59	0	0	0	59	0	1.084
BNC364-1	315	244	86	5	16	78	1	0	0	79	1	1.079
BNC469-7	356	230	81	8	27	64	1	0	0	65	1	1.073
ND8068-5Russ	301	188	66	5	29	66	0	0	0	66	0	1.081

Table 33 (cont'd). Production statistics for the 2018 University of Maine NE1231 Variety Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
NDAF102629C-4	308	221	78	4	19	77	0	0	0	77	0	1.076
NY149	310	149	53	11	39	50	0	0	0	50	0	1.072
NY151	414	285	101	5	19	74	0	1	0	76	1	1.062
NY152	339	228	81	6	25	68	1	0	0	69	1	1.082
NY157	320	209	74	5	28	65	2	1	0	67	2	1.078
NY161	312	230	81	5	20	73	2	1	0	76	3	1.072
NY162	256	163	58	6	23	70	1	0	0	70	1	1.082
MSD[3]	118	110		6	14	20	8	7	ns	17	10	0.010
P Value	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.4819	<0.0001	<0.0001	<0.0001

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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.

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

Table 34. Plant growth and tuber characteristics for the 2018 University of Maine NE1231 Variety Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
Harley Blackwell (B0564-8)	96	8	8	7	1	6	7	1	8	8	1
Red LaSoda	99	9	7	6	1	2	8	3	6	7	2
Atlantic	97	9	8	8	2	6	7	2	8	8	-
Chieftain	96	8	9	8	1	2	8	3	7	6	1
Dark Red Norland	98	9	8	6	1	2	8	1	7	8	2
Katahdin	98	8	9	7	2	9	9	2	6	8	2
Kennebec	97	8	9	7	1	7	7	6	8	6	2
Reveille Russet	74	4	9	9	1	5	3	4	8	7	4
Russet Burbank	89	6	9	8	1	5	3	4	7	6	3
Russet Norkotah	94	6	9	7	1	5	3	6	7	8	2
Shepody	93	8	9	7	2	7	9	6	7	7	2
Snowden	97	9	9	7	1	6	7	2	6	6	2
Superior	95	8	9	7	1	6	7	3	7	8	2
Yukon Gold	90	7	9	7	3	7	9	3	7	7	2
AF4648-2	93	9	6	8	2	7	8	3	7	8	2
AF4872-2	90	8	9	7	2	7	7	6	8	6	1
AF5040-8	94	9	7	7	2	7	8	2	6	7	2
AF5164-19	95	8	7	7	1	6	7	6	7	7	3
AF5280-5	90	8	9	7	1	7	8	2	6	7	2
AF5412-3	94	7	9	7	9	1	8	6	6	7	3
AF5414-1	91	7	9	7	6	2	8	3	7	7	3
AF5429-3	96	9	7	7	1	8	9	2	9	8	1
AF5450-7	93	7	9	8	2	7	7	2	7	8	1
B2869-29	96	9	6	6	1	7	7	2	8	6	2
B2904-2	94	9	8	7	1	6	7	3	7	7	1
B3012-1	97	8	9	7	2	6	7	2	7	7	3
B3183-6	96	8	9	7	1	6	7	3	7	7	2
BNC364-1	93	8	6	7	1	7	7	3	7	7	1
BNC469-7	99	9	6	7	1	7	7	1	8	7	2
ND8068-5Russ	96	9	8	7	1	6	7	5	8	8	2

Table 34 (cont'd). Plant growth and tuber characteristics for the 2018 University of Maine NE1231 Variety Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]						
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Merit
NDAF102629C-4	93	8	8	8	1	7	8	2	9	7	2
NY149	97	9	9	7	3	9	9	4	8	8	3
NY151	96	8	9	7	1	7	8	3	7	7	1
NY152	99	8	8	8	2	6	7	3	7	7	2
NY157	90	8	9	7	1	6	7	2	8	6	2
NY161	92	9	7	7	3	7	8	2	8	7	2
NY162	92	7	9	8	1	7	7	4	8	7	2

[1]Percent 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.

[2]Internal 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 2018 University of Maine NE1231 Variety Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Harley Blackwell (B0564-8)	0	0	1	1	2	0	0	0	0	0	0
Red LaSoda	1	1	0	2	4	0	0	0	0	0	0
Atlantic	0	3	1	1	5	0	0	0	0	0	0
Chieftain	1	1	1	1	3	0	1	0	0	0	0
Dark Red Norland	1	0	1	1	3	0	0	0	0	0	0
Katahdin	0	1	2	1	4	0	0	0	0	0	0
Kennebec	1	5	2	1	10	0	0	0	0	0	0
Reveille Russet	1	11	8	2	22	0	0	0	0	0	0
Russet Burbank	1	13	2	0	17	0	1	0	0	0	0
Russet Norkotah	0	2	5	2	9	0	0	0	0	0	0
Shepody	0	6	3	3	12	0	0	0	0	0	0
Snowden	0	1	0	0	2	0	0	0	0	0	0
Superior	0	1	1	2	4	0	0	0	0	0	0
Yukon Gold	0	4	2	4	11	0	0	0	0	0	0
AF4648-2	4	4	2	1	11	0	3	0	0	0	0
AF4872-2	0	2	0	1	3	0	0	0	0	0	0
AF5040-8	0	3	0	1	5	0	0	0	0	0	0
AF5164-19	0	11	0	0	12	0	0	0	0	0	0
AF5280-5	0	4	2	8	14	0	0	0	0	0	0
AF5412-3	1	10	0	0	11	0	0	0	0	0	0
AF5414-1	0	0	0	2	3	0	0	0	0	0	0
AF5429-3	1	0	1	0	2	0	0	0	0	0	0
AF5450-7	0	1	1	1	2	0	0	0	0	0	0
B2869-29	0	0	0	3	3	0	0	0	0	0	0
B2904-2	0	0	0	0	1	0	0	0	0	0	0
B3012-1	0	1	1	1	3	0	0	0	1	0	0
B3183-6	0	3	0	1	4	0	0	0	0	0	0
BNC364-1	1	1	1	0	3	0	0	0	0	0	0
BNC469-7	1	0	1	0	1	0	0	0	0	0	0
ND8068-5Russ	0	2	1	3	7	0	0	0	0	0	0

Table 35 (cont'd). External and internal defects for the 2018 University of Maine NE1231 Variety Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
NDAF102629C-4	0	0	1	6	7	0	0	0	0	0	0
NY149	0	3	1	2	5	0	0	0	8	0	0
NY151	0	7	1	1	9	0	0	0	0	0	0
NY152	0	0	2	0	2	0	1	0	0	0	0
NY157	3	0	0	0	4	0	0	0	6	0	0
NY161	0	2	0	0	3	0	0	0	1	0	0
NY162	1	6	0	1	9	0	0	0	0	0	0
MSD[3]	2	9	4	7	11	ns	ns	ns	ns	ns	ns
P Value	<0.0001	<0.0001	<0.0001	0.0235	<0.0001	-	0.5774	-	0.4819	-	-

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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

Chapter 13. French Fry Selection

General Comments

The objective of this trial is to initiate a selection of clones with potential for French Fry processing.

Planting Information

Planting Site	Hastings AEC Research Farm, Hastings, FL
Planting Date	January 25, 2018, February 22, 2018
Vine Kill Date	N/A
Harvest Date	May 17, 2018, June 7, 2018
Season Length	112 and 105 days planting to harvest
Fertilizer Program	Pre-plant, 14-6-14 (100 lb/acre N); Side-dress, 8-0-8 (50 lb/acre N)
Irrigation Program	seepage

Experimental Design

Number of Varieties	18 (Standard: Atlantic)
Number of Clones	15
Within Row Spacing	8 in (20.3 cm)
Between Row Spacing	40 in (1.02 m)
Replications	1
Plot Size	20 ft (6.1 m), 16 ft (4.9 m)

Production Statistics

Highest Total Yield	Atlantic (299 cwt/acre or 33.5 T/ha)
Highest Marketable Yield	Atlantic (259 cwt/acre or 29.0 T/ha)
Highest Specific Gravity	NDAF113470C-3, Echo Russet (1.084)

Table 36. Production statistics for the 2018 French Fry Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–112 days												
Atlantic	299	259	100	1	6	59	19	16	0	93	35	1.080
Caribou Russet (AF3362-1)	185	118	46	3	14	73	6	4	1	83	10	1.067
Harley Blackwell (B0564-8)	259	184	71	6	13	55	15	12	0	82	27	1.070
Snowden	202	166	64	2	10	71	7	11	0	88	17	1.075
Elkton	264	217	83	1	6	63	16	13	0	92	29	1.074
Easton (AF3001-6)	111	93	36	4	8	89	0	0	0	89	0	1.064
Sebec (AF0338-17)	251	216	83	2	6	68	12	12	0	92	24	1.079
AF5677-4	281	237	91	2	7	65	13	13	0	91	26	1.077
AF5677-6	282	240	92	1	9	58	21	11	0	89	31	1.079
NDAF113470C-3	289	222	86	4	16	75	3	2	0	80	5	1.084
WAF10664-3	280	216	83	3	13	68	9	6	0	84	15	1.069
A06021-1T	135	98	38	3	18	76	3	0	0	79	3	1.073
Classic Russet	77	58	22	6	12	82	0	0	0	82	0	1.063
Mountain Gem Russet	109	70	27	12	13	73	2	0	0	75	2	1.066
Teton Russet	85	53	21	9	18	66	3	3	0	73	6	1.073
AND97279-5Russ	263	139	54	10	34	55	1	0	0	56	1	1.073
ND7882b-7Russ	246	142	55	7	24	69	0	0	0	69	0	1.065
ND8068-5Russ	211	149	57	5	19	75	2	0	0	77	2	1.063
Elkton	258	198	76	3	18	79	0	0	0	79	0	1.076
ND050032-4Russ	228	160	62	5	21	69	3	2	0	74	5	1.074
ND060735-4Russ	147	63	24	15	35	45	2	3	0	50	5	1.067
ND070927-2Russ	160	86	33	10	30	55	3	2	0	59	5	1.072
WND8625-2Russ	203	131	50	5	24	69	0	3	0	71	3	1.070
COTX09022-3RuRE/Y	77	46	18	6	29	60	5	0	0	65	5	1.067
Reveille Russet	123	75	29	8	21	59	10	2	0	71	12	1.060
Stampede Russet	63	33	13	11	33	56	0	0	0	56	0	1.061
TXA549-1Ru	136	88	34	7	19	56	12	5	0	73	17	1.060
TX08352-Ru	120	43	16	12	45	39	4	0	0	43	4	1.053

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 37. Plant growth and tuber characteristics for the 2018 French Fry Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]					
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS[3]	ED	APP
Atlantic	85	8	9	8				1		
Caribou Russet (AF3362-1)	74	7	9	8				6		
Harley Blackwell (B0564-8)	76	8	9	7				3		
Snowden	85	7	9	8				2		
Elkton	88	7	9	7				3		
Easton (AF3001-6)	48	6	9	7				5		
Sebec (AF0338-17)	83	8	9	7				1		
AF5677-4	100	8	9	8				2		
AF5677-6	100	7	9	8				3		
NDAF113470C-3	95	8	9	6				3		
WAF10664-3	100	8	9	7				3		
A06021-1T	98	6	9	7				5		
Classic Russet	48	6	9	7				6		
Mountain Gem Russet	80	6	9	7				6		
Teton Russet	78	6	9	7				5		
AND97279-5Russ	100	8	9	7				5		
ND7882b-7Russ	100	7	9	7				7		
ND8068-5Russ	98	8	9	7				8		
Elkton	100	7	9	7				5		
ND050032-4Russ	100	7	9	7				6		
ND060735-4Russ	100	7	9	7				7		
ND070927-2Russ	85	6	9	7				5		
WND8625-2Russ	93	8	9	8				7		
COTX09022-3RuRE/Y	50	7	9	7				5		
Reveille Russet	65	8	9	7				7		
Stampede Russet	58	7	9	6				4		
TXA549-1Ru	68	8	9	7				4		
TX08352-Ru	83	7	9	7				4		

[1]Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 20 for 20 ft plot, 12 in spacing.
Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

[2]Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP)

[3] Tuber Shape: (1) round, (2) mostly round, (3) round to oblong, (4) mostly oblong, (5) oblong, (6) oblong to long, (7) mostly long, (8) long, (9) cylindrical.

Table 38. External and internal defects for the 2018 French Fry Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
Atlantic	1	0	5	0	7	0	5	0	0	0	0
Caribou Russet (AF3362-1)	0	0	22	1	23	0	0	0	0	0	0
Harley Blackwell (B0564-8)	1	0	11	1	13	0	0	0	0	0	0
Snowden	0	0	6	1	6	0	0	0	0	0	0
Elkton	3	0	6	1	11	0	0	0	0	0	0
Easton (AF3001-6)	0	3	5	0	8	0	0	0	0	0	0
Sebec (AF0338-17)	1	0	5	0	6	0	0	0	0	0	0
AF5677-4	0	0	5	3	7	0	0	0	0	0	0
AF5677-6	0	0	5	0	6	0	0	0	0	0	0
NDAF113470C-3	1	0	1	1	3	0	0	0	0	0	0
WAF10664-3	3	1	3	1	8	0	0	0	0	0	0
A06021-1T	0	0	4	0	4	0	0	0	0	0	0
Classic Russet	0	0	8	0	8	0	0	0	0	0	0
Mountain Gem Russet	5	1	4	1	11	0	0	0	0	0	0
Teton Russet	4	0	9	0	13	0	0	0	0	0	0
AND97279-5Russ	1	0	4	1	6	0	0	0	0	0	0
ND7882b-7Russ	0	8	7	1	16	0	0	0	0	0	0
ND8068-5Russ	0	0	5	2	8	0	0	0	0	0	0
Elkton	0	0	3	0	3	0	0	0	0	0	0
ND050032-4Russ	1	0	3	0	5	0	0	0	0	0	0
ND060735-4Russ	0	2	10	0	12	0	0	0	0	0	0
ND070927-2Russ	1	0	7	1	9	0	0	0	0	0	0
WND8625-2Russ	0	1	7	0	9	0	0	0	0	0	0
COTX09022-3RuRE/Y	0	0	8	0	8	0	0	0	0	0	0
Reveille Russet	1	0	6	3	11	0	0	0	0	0	0
Stampede Russet	0	0	8	0	8	0	0	0	0	0	0
TXA549-1Ru	1	0	7	1	9	0	0	0	0	0	0
TX08352-Ru	0	2	8	0	10	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

Table 39. Production statistics for the 2018 French Fry Extra Trial potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield[1] (cwt/A)	Marketable Yield[1] % of standard	Size Distribution by Class (%)[2] C	B	A1	A2	A3	A4	Size Class Range (%) A1 to A3	Size Class Range (%) A2 to A3	Specific Gravity
Season–105 days												
AO03123-2	75	38	181	16	29	55	0	0	0	55	0	1.073
AO06191-1	86	56	268	8	12	59	12	9	0	80	21	1.066
AOR06070-1KF	119	42	200	9	56	35	0	0	0	35	0	1.079
Castle Russet	141	84	403	7	29	63	0	0	0	63	0	1.077
Echo Russet	78	22	105	24	46	31	0	0	0	31	0	1.084
OR5039-4	25	14	66	12	32	55	0	0	0	55	0	1.057
Reveille Russet	77	49	234	4	12	84	0	0	0	84	0	1.058
Russet Burbank	55	21	100	13	49	38	0	0	0	38	0	1.060
Russet Norkotah	58	29	139	12	36	53	0	0	0	53	0	1.065

[1]Marketable Yield: size classes A1 to A3.

[2]Size 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 40. Plant growth and tuber characteristics for the 2018 French Fry Extra Trial potato selections.

	Plant Growth Characteristics[1]				Tuber Characteristics[2]					
Clone	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS[3]	ED	APP
AO03123-2	100	7	9	6				6		
AO06191-1	100	7	9	8				6		
AOR06070-1KF	100	8	9	5				6		
Castle Russet	100	8	9	7				6		
Echo Russet	100	8	9	6				6		
OR5039-4	100	8	9	6				6		
Reveille Russet	100	7	9	7				6		
Russet Burbank	100	9	9	5				5		
Russet Norkotah	100	7	9	5				6		

[1]Percent Stand: final stand / number of seeds planted per plot * 100 where number of seeds was 16 for 16 ft plot, 12 in spacing.
Early Vigor, Vine Type, Vine Maturity: see rating system outlined in Table 1.

[2]Internal Flesh Color (IFC), Skin Color (SC), Skin Texture (ST), Tuber Shape (TS), Eye Depth (ED), Overall Appearance (APP)

[3] Tuber Shape: (1) round, (2) mostly round, (3) round to oblong, (4) mostly oblong, (5) oblong, (6) oblong to long, (7) mostly long, (8) long, (9) cylindrical.

Table 41. External and internal defects for the 2018 French Fry Extra Trial potato selections.

	% External Tuber Defects						% Internal Defects[2]				
Clone	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls[1]	Enlarged Lenticel	HH	BR	CRS	IHN	BC
AO03123-2	0	0	0	9	9	0	0	0	0	0	0
AO06191-1	0	0	0	19	19	0	0	0	0	0	0
AOR06070-1KF	0	0	0	0	0	0	0	0	0	0	0
Castle Russet	0	0	1	4	6	0	0	0	0	0	0
Echo Russet	0	0	0	7	7	0	0	0	0	0	0
OR5039-4	0	0	0	0	0	0	0	0	0	0	0
Reveille Russet	0	0	0	24	24	0	0	0	0	0	0
Russet Burbank	0	0	0	0	0	0	0	0	0	0	0
Russet Norkotah	0	0	0	4	4	0	0	0	0	0	0

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

[2]Percent tubers hollow heart (HH), brown rot (BR), corky ringspot (CRS), internal heat necrosis (IHN), brown center (BC).

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 42. Daily rainfall amounts (in) at the UF/IFAS Hastings AEC Research Farm between Jan. 1 and Jun. 30, 2018.

Day	January	February	March	April	May	June
1	0.04	0.00	0.00	0.00	0.00	0.08
2	0.00	0.00	0.00	0.00	0.00	0.04
3	1.25	0.00	0.00	0.03	0.00	0.00
4	0.00	0.11	0.00	0.02	0.00	0.04
5	0.00	0.01	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.18
7	0.00	0.00	0.00	0.20	0.00	0.00
8	0.00	0.02	0.00	0.00	0.00	0.25
9	0.22	0.00	0.00	1.15	0.00	0.01
10	0.65	0.00	0.00	2.17	0.00	0.01
11	0.20	0.00	0.00	0.01	0.00	0.15
12	0.37	0.03	0.04	0.00	0.00	1.00
13	0.00	0.52	0.00	0.00	0.00	0.82
14	0.00	0.00	0.00	0.00	1.38	0.03
15	0.00	0.00	0.00	0.64	0.76	1.04
16	0.00	0.00	0.00	0.00	1.08	1.36
17	0.00	0.00	0.00	0.00	0.23	0.68
18	0.00	0.00	0.00	0.00	0.14	0.00
19	0.00	0.00	0.99	0.00	0.01	0.00
20	0.00	0.00	0.22	0.00	0.48	0.22
21	0.00	0.00	0.00	0.00	0.71	2.79
22	0.00	0.00	0.00	0.82	0.00	0.00
23	0.21	0.00	0.00	0.50	0.00	0.00
24	0.00	0.00	0.00	0.01	0.00	0.00
25	0.02	0.00	0.01	0.00	0.00	0.00
26	0.00	0.00	0.28	0.04	0.07	0.30
27	0.00	0.00	0.00	0.00	0.50	0.01
28	1.94	0.00	0.00	0.00	0.42	0.16
29	1.56		0.00	0.00	0.14	0.00
30	0.00		0.02	0.00	0.65	1.81
31	0.00		0.00		0.01	
Total	6.46	0.69	1.56	5.59	6.58	10.98

Table 43. Daily maximum and minimum air temperatures (°F) at the UF/IFAS Hastings AEC Research Farm between Jan. 1 and Jun. 30, 2018.

	January		February		March		April		May		June	
Day	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	51	39	70	43	83	62	74	59	78	53	90	73
2	46	37	70	49	77	55	83	56	78	55	90	71
3	48	32	62	44	67	42	83	59	79	58	91	71
4	48	30	72	51	62	40	84	63	81	60	93	77
5	48	30	68	47	70	38	72	50	80	56	89	70
6	50	31	71	45	77	44	79	52	86	68	75	70
7	58	33	79	53	70	53	82	63	84	61	86	70
8	67	42	65	57	61	41	67	58	81	58	87	69
9	73	57	77	58	66	37	73	60	82	58	90	70
10	69	62	82	59	71	36	65	58	85	57	85	69
11	75	62	84	62	78	49	70	53	91	62	89	69
12	75	60	82	66	70	46	74	49	82	63	86	70
13	60	40	67	56	64	39	77	56	81	62	90	69
14	54	35	66	54	64	39	81	58	74	69	90	70
15	52	39	80	53	69	32	84	59	81	67	89	72
16	62	38	78	59	76	34	69	51	84	67	90	71
17	61	32	81	60	82	44	75	44	83	70	88	72
18	48	26	79	60	84	57	86	47	83	70	88	73
19	63	29	80	61	74	63	83	53	83	68	92	72
20	63	35	81	63	80	62	69	61	75	67	90	74
21	71	48	82	67	64	53	76	62	80	70	92	72
22	78	48	80	59	64	44	75	67	83	71	93	77
23	75	56	80	59	67	39	81	70	87	67	95	75
24	64	45	82	59	76	43	79	63	87	70	94	74
25	60	45	84	63	81	48	79	60	85	69	91	73
26	70	48	84	65	63	60	82	57	84	70	91	72
27	74	59	70	59	72	54	81	61	79	72	90	72
28	76	59	80	55	77	53	80	55	86	75	91	72
29	68	54			81	58	82	60	88	73	90	71
30	56	40			80	63	77	59	80	73	87	72
31	59	38			70	60			88	72		
Avg.	62	43	76	57	72	48	77	57	83	65	89	72