

CHAPTER 3. WHITE-SKINNED FRESH MARKET POTATO VARIETY TRIAL, 2006

General Comments

A goal of the white-skinned fresh market variety trial is to identify a round white potato that has better quality and production characteristics than LaChipper. Identification of “specialty” potatoes that expand the marketable varieties produced in Florida is also a priority. Established varieties were included to provide a baseline for the numbered clones.

Planting Information

Planting Site	PSREU - Hastings Farm, Hastings, FL
Planting Date	January 31, 2006
Vine Kill Date	April 28, 2006
Harvest Date	May 17, 2006
Season Length	87 days planting to vine kill; 106 days planting to harvest
Fertilizer Program	preplant, 100-43-86 lb/A; sidedress, 65-0-56 lb/A (2 appl.)
Irrigation Program	seepage

Experimental Design

Number of Varieties	12 (Standard: LaChipper)
Number of Clones	10
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	41 days after planting
Highest Total Yield	B1870-3 (376 cwt/acre or 42.1 MT/ha)
Highest Marketable Yield	B1870-3 (324 cwt/acre or 36.3 MT/ha)
Best Appearance Rating	Ambra (7.0, good to excellent)

Table 6. Production statistics for White-Skinned Fresh Market potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
LaChipper	323	272	100	1	9	75	15	1	0	90	15	1.068
Adora	319	237	87	1	17	81	0	0	0	82	0	1.064
Ambra	327	258	95	1	10	82	6	0	0	89	6	1.057
Andover	153	132	49	1	7	85	7	0	0	92	7	1.070
Chippewa	338	277	102	1	11	82	6	1	0	88	7	1.067
Early Gem	277	200	73	1	17	81	1	0	0	82	1	1.060
Fabula	287	248	91	0	5	78	17	0	0	95	17	1.054
Harley Blackwell	322	255	94	2	15	80	3	0	0	83	3	1.075
Katahdin	312	253	93	1	13	83	3	0	0	86	3	1.067
Sebago	154	116	43	1	11	75	12	0	0	88	12	1.063
Superior	302	247	91	1	11	84	4	0	0	88	4	1.072
Yukon Gold	292	250	92	1	6	68	25	0	0	93	25	1.070
B1806-8	344	269	99	1	13	77	9	0	0	86	9	1.069
B1870-3	376	324	119	1	5	61	28	5	0	93	33	1.059
B2211-55	334	298	110	1	5	65	27	1	0	94	29	1.075
B2273-75	215	164	60	1	5	34	39	21	0	94	60	1.063

Table 6 (cont'd). Production statistics for White-Skinned Fresh Market potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
B2280-134	254	203	75	3	16	80	1	0	0	81	1	1.063
B2287-38	350	303	112	1	11	87	1	0	0	89	1	1.063
B2440-122	311	231	85	1	21	78	0	0	0	78	0	1.066
B2451-6	175	128	47	2	12	82	4	0	0	86	4	1.059
NY41-67	369	297	109	1	6	77	16	0	0	93	16	1.071
NY73-49	343	266	98	1	9	70	21	0	0	90	21	1.076
<i>MSD</i> ³	95	91		1	7	16	17	6	0	8	16	0.006
<i>P Value</i>	<i>0.0001</i>	<i>0.0001</i>		<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = .5 to 1.5", B = 1.5 to 1 7/8", A1 = 1 7/8 to 2.5", A2 = 2.5 to 3.25", A3 = 3.25 to 4", A4 = >4"

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

Table 7. Plant growth and tuber characteristics of White-Skinned Fresh Market potato selections.

Clone	Plant Growth Characteristics ¹				Tuber Characteristics ²						
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	Tuber Comments
LaChipper	85	6.3	8.7	7.0	1.0	8.0	7.5	3.0	4.5	6.0	sl. flat, some lenticels
Adora	96	6.8	8.0	6.5	2.0	7.0	7.5	5.0	6.0	5.5	lenticels, sl. lumpy
Ambra	80	5.0	8.5	7.0	3.0	7.0	6.5	4.0	6.0	7.0	sl. flat, lenticels
Andover	46	5.8	7.3	7.0	1.5	6.0	5.0	3.0	6.5	5.0	some scab
Chippewa	95	6.3	9.0	7.0	1.5	8.0	6.5	3.5	6.5	6.0	sl. flat, some lenticels
Early Gem	90	4.5	8.0	7.3	1.0	5.0	3.5	4.5	6.5	4.5	some mishapen
Fabula	49	4.8	7.7	9.0	2.0	6.5	6.0	3.5	6.0	6.0	some lenticels
Harley Blackwell	94	6.8	8.8	7.5	1.5	7.0	5.5	2.5	6.0	6.0	nice white flesh, small
Katahdin	97	5.3	9.0	7.0	1.5	6.5	6.5	3.5	6.5	4.0	sl. flat, some scab
Sebago	44	5.3	8.0	7.0	1.5	7.0	7.0	4.0	5.5	4.0	some lenticels
Superior	98	6.5	8.3	7.0	1.5	6.5	5.5	3.0	6.0	5.5	sl. flat
Yukon Gold	82	4.5	8.0	7.3	3.5	7.0	7.5	3.5	5.5	6.0	sl. fat, pink eyes
B1806-8	83	6.5	9.0	8.0	3.5	6.5	6.0	3.5	7.0	4.5	sl. flat, poor skin set
B1870-3	93	7.0	8.0	7.3	1.5	7.0	6.5	3.5	6.0	5.5	some lenticels
B2211-55	98	5.0	8.0	8.0	1.5	6.0	5.5	3.5	6.0	4.5	some skinning
B2273-75	36	6.5	8.0	7.5	3.0	6.0	5.5	3.0	5.5	4.5	lenticels
B2280-134	93	4.8	8.0	8.8	1.5	6.0	5.5	2.5	5.5	5.0	alligator skin
B2287-38	100	5.8	9.0	8.0	1.5	6.5	6.5	3.5	6.0	5.5	sl. flat
B2440-122	89	5.0	8.0	8.8	3.0	7.0	6.5	3.5	7.0	5.5	lenticels
B2451-6	45	5.8	8.0	7.0	1.5	6.0	5.5	3.5	6.0	5.0	sl. flat
NYY41-67	97	8.8	8.0	7.3	2.0	7.0	6.5	3.5	6.0	6.0	sl. flat, some lenticels
NYY73-49	95	6.5	9.0	8.0	1.5	7.0	6.0	3.5	5.5	4.5	lenticels

¹ See rating system outlined in Table 1 (page 8).

² See rating system outlined in Table 2 (page 9).

Table 8. External and internal defects of White-Skinned Fresh Market potato selections.

Clone	% External Tuber Defects					% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	HH	BR	CRS	IHN	Brown Center		
						L	M	H				
LaChipper	0	1	2	3	6	0	0	0	0	0	0	0
Adora	0	1	1	6	9	0	0	1	0	0	0	0
Ambra	0	0	4	8	12	0	0	0	0	1	0	0
Andover	0	0	1	5	6	0	0	0	0	0	0	0
Chippewa	0	0	2	5	7	0	0	0	0	0	0	0
Early Gem	5	4	1	1	12	0	0	0	1	0	0	0
Fabula	0	0	2	6	9	0	0	0	0	0	0	0
Harley Blackwell	0	0	2	3	5	0	0	0	0	0	0	0
Katahdin	0	0	3	3	5	0	0	0	0	0	0	0
Sebago	0	0	8	9	17	0	0	0	2	2	0	0
Superior	0	1	0	7	8	0	0	0	0	0	0	0
Yukon Gold	0	2	4	2	8	3	0	0	0	1	0	0
B1806-8	0	0	3	5	8	0	0	1	1	0	0	0
B1870-3	0	0	4	4	8	0	0	0	0	0	0	0
B2211-55	0	0	2	3	5	0	0	0	0	1	0	0
B2273-75	0	0	4	15	19	5	0	0	0	3	1	3

Table 8 (cont'd). External and internal defects of White-Skinned Fresh Market potato selections.

Clone	% External Tuber Defects					% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	HH	BR	CRS	IHN	Brown Center		
						L	M	H				
B2280-134	0	0	1	0	2	0	0	0	0	0	0	0
B2287-38	0	0	0	2	2	0	0	0	0	0	0	0
B2440-122	0	1	2	1	4	1	0	0	0	0	0	0
B2451-6	0	1	5	8	13	0	0	0	0	0	0	0
NYY41-67	0	6	1	7	14	0	0	0	0	0	0	0
NYY73-49	0	4	3	8	15	0	0	0	0	0	0	0
<i>MSD</i> ³	0	3	4	11	13	5	0	ns	ns	ns	ns	2
<i>P Value</i>	-	0.0001	0.0065	0.0044	0.0002	0.0486	-	0.5528	0.4736	0.5561	0.4736	0.0012

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

²Percent tubers; HH, hollow heart; BR, brown rot; CRS, corky ring spot; IHN, internal heat necrosis.

Brown Center: L = Light, M = Moderate, H = Heavy

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