

Chapter 3. White-Skinned Fresh Market Potato Variety Trial, 2006¹

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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)

1. This document is HS1087, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date June, 2007. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

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Table 2. Production statistics for White-Skinned Fresh Market potato selections.

Clone	Total		Marketable Yield ¹				Size				Size Class			Specific Gravity
	Yield (cwt/A)	(cwt/A)	%	standard	Distribution by Class (%) ²				Range (%)					
					C	B	A1	A2	A3	A4	A1 to A3	A2 to A3		
LaChipper	323	272	100	15	1	9	75	15	1	0	90	15	1.068	
Adora	319	237	87	0	1	17	81	0	0	0	82	0	1.064	
Ambra	327	258	95	6	1	10	82	6	0	0	89	6	1.057	
Andover	153	132	49	7	1	7	85	7	0	0	92	7	1.070	
Chippewa	338	277	102	6	1	11	82	6	1	0	88	7	1.067	
Early Gem	277	200	73	1	1	17	81	1	0	0	82	1	1.060	
Fabula	287	248	91	17	0	5	78	17	0	0	95	17	1.054	
Harley Blackwell	322	255	94	3	2	15	80	3	0	0	83	3	1.075	
Katahdin	312	253	93	3	1	13	83	3	0	0	86	3	1.067	
Sebago	154	116	43	12	1	11	75	12	0	0	88	12	1.063	
Superior	302	247	91	4	1	11	84	4	0	0	88	4	1.072	
Yukon Gold	292	250	92	25	1	6	68	25	0	0	93	25	1.070	
B1806-8	344	269	99	9	1	13	77	9	0	0	86	9	1.069	
B1870-3	376	324	119	28	1	5	61	28	5	0	93	33	1.059	
B2211-55	334	298	110	27	1	5	65	27	1	0	94	29	1.075	
B2273-75	215	164	60	39	1	5	34	39	21	0	94	60	1.063	
B2280-134	254	203	75	1	3	16	80	1	0	0	81	1	1.063	
B2287-38	350	303	112	1	1	11	87	1	0	0	89	1	1.063	
B2440-122	311	231	85	0	1	21	78	0	0	0	78	0	1.066	
B2451-6	175	128	47	4	2	12	82	4	0	0	86	4	1.059	
NYY41-67	369	297	109	16	1	6	77	16	0	0	93	16	1.071	
NYY73-49	343	266	98	21	1	9	70	21	0	0	90	21	1.076	
MSD ³	95	91		17	1	7	16	17	6	0	8	16	0.006	
P Value	0.0001	0.0001		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

¹Marketable Yield: size classes A1 to A3.

²Size classes: C = .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 3. 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
NY41-67	97	8.8	8.0	7.3	2.0	7.0	6.5	3.5	6.0	6.0	sl. flat, some lenticels
NY73-49	95	6.5	9.0	8.0	1.5	7.0	6.0	3.5	5.5	4.5	lenticels

¹See rating system outlined in Chapter 1.²See rating system outlined in Chapter 1.

Table 4. External and internal defects of White-Skinned Fresh Market potato selections.

Clone	% External Tuber Defects					Total Culls ¹	Rotten & misc.	% Internal Defects ²							
	Growth Cracks	Mis-shapen	Sun-burned					HH	BR	CRS	IHN	L	M	H	
LaChipper	0	1	2	3	6	0	0	0	0	0	0	0	0	0	
Adora	0	1	1	6	9	0	0	1	0	0	0	0	0	0	
Ambra	0	0	4	8	12	0	0	0	0	1	0	0	0	0	
Andover	0	0	1	5	6	0	0	0	0	0	0	0	0	0	
Chippewa	0	0	2	5	7	0	0	0	0	0	0	0	0	0	
Early Gem	5	4	1	1	12	0	0	0	1	0	0	0	0	0	
Fabula	0	0	2	6	9	0	0	0	0	0	0	0	0	0	
Harley Blackwell	0	0	2	3	5	0	0	0	0	0	0	0	0	0	
Katahdin	0	0	3	3	5	0	0	0	0	0	0	0	0	0	
Sebago	0	0	8	9	17	0	0	0	2	2	0	0	0	0	
Superior	0	1	0	7	8	0	0	0	0	0	0	0	0	0	
Yukon Gold	0	2	4	2	8	3	3	0	0	1	0	0	0	0	
B1806-8	0	0	3	5	8	0	0	0	1	0	0	0	0	0	
B1870-3	0	0	4	4	8	0	0	0	0	0	0	0	0	0	
B2211-55	0	0	2	3	5	0	0	0	0	1	0	0	0	0	
B2273-75	0	0	4	15	19	5	5	0	0	3	1	3	1	3	
B2280-134	0	0	1	0	2	0	0	0	0	0	0	0	0	0	
B2287-38	0	0	0	2	2	0	0	0	0	0	0	0	0	0	
B2440-122	0	1	2	1	4	1	1	0	0	0	0	0	0	0	
B2451-6	0	1	5	8	13	0	0	0	0	0	0	0	0	0	
NY41-67	0	6	1	7	14	0	0	0	0	0	0	0	0	0	
NY73-49	0	4	3	8	15	0	0	0	0	0	0	0	0	0	
<i>MSD</i> ³	0	3	4	11	13	5	5	0	ns	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	0.5561	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.