

# CHAPTER 4. RED AND PURPLE-SKINNED FRESH MARKET POTATO VARIETY TRIAL, 2006

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## *General Comments*

A goal of the red/purple-skinned fresh market variety trial is to identify a red potato that has better quality and production characteristics than Red LaSoda or LaRouge. 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 15, 2006
Season Length	87 days planting to vine kill; 104 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	9 (Standard: Red LaSoda)
Number of Clones	7
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	Red LaSoda (431 cwt/acre or 48.3 MT/ha)
Highest Marketable Yield	Red LaSoda (399 cwt/acre or 44.7 MT/ha)
Best Appearance Rating	B2327-2 (6.5, fair to good)

Table 9. Production statistics for Red and Purple-Skinned potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield <sup>1</sup>		Size Distribution by Class (%) <sup>2</sup>						Size Class Range (%)		Specific Gravity
		(cwt/A)	% of standard	C	B	A1	A2	A3	A4	A1 to A3	A2 to A3	
Red LaSoda	431	399	100	1	4	66	28	0	0	95	29	1.063
Red LaSoda10	376	347	87	0	5	74	20	1	0	94	21	1.064
Red LaSoda13	391	356	89	0	3	70	23	4	0	97	26	1.063
All Blue	266	87	22	4	63	33	0	0	0	33	0	1.071
Cherry Red	256	221	55	1	11	84	4	0	0	88	4	1.071
Chieftain	314	263	66	1	13	84	2	0	0	87	3	1.060
Dark Red Norland	318	282	71	1	7	85	7	0	0	92	7	1.063
LaRouge	412	374	94	1	7	84	8	0	0	92	8	1.063
Red Pontiac	374	337	84	1	6	72	21	1	0	93	22	1.062
B0984-1	340	296	74	1	9	66	22	2	0	90	25	1.074
B1816-5	333	273	68	2	15	84	0	0	0	84	0	1.070
B2152-17	316	221	55	1	28	69	1	0	0	70	1	1.069
B2327-2	225	138	35	5	33	62	0	0	0	62	0	1.064
B2332-2	379	325	81	2	9	58	22	9	0	89	31	1.063
NY129	226	193	48	1	11	86	2	0	0	88	2	1.057
NY136	322	234	58	2	25	68	6	0	0	73	6	1.066
<i>MSD</i> <sup>3</sup>	67	76		2	10	14	6	6	0	11	10	0.006
<i>P Value</i>	0.0001	0.0001		0.0001	0.0001	0.0001	0.0001	0.0015	-	0.0001	0.0001	0.0001

<sup>1</sup>Marketable Yield: size classes A1 to A3.

<sup>2</sup>Size 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"

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

Table 10. Plant growth and tuber characteristics of Red and Purple-Skinned potato selections.

Clone	Plant Growth Characteristics <sup>1</sup>				Tuber Characteristics <sup>2</sup>						Tuber Comments
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP	
Red LaSoda	100	5.5	9.0	8.0	1.0	2.5	7.0	2.5	4.0	6.0	light skin color
Red LaSoda10	95	6.5	9.0	7.0	1.0	2.5	7.0	2.5	4.0	6.0	light skin color
Red LaSoda13	98	5.5	9.0	8.0	1.0	2.5	7.0	2.5	4.0	6.0	light skin color
All Blue	79	5.0	8.8	8.0	8.0	1.0	5.5	4.5	4.5	4.5	mottled flesh color
Cherry Red	95	5.5	8.3	8.3	2.0	2.0	6.0	3.5	5.0	5.5	too much netting
Chieftain	100	6.0	9.0	7.8	1.0	3.0	6.0	2.5	5.5	5.0	too much netting
Dark Red Norland	96	6.5	8.3	6.5	1.0	2.5	6.5	3.5	7.0	6.0	sl. flat
LaRouge	97	6.3	9.0	7.3	2.0	2.5	7.0	3.5	4.5	5.5	all shapes
Red Pontiac	100	6.5	9.0	8.0	2.0	2.5	6.0	2.5	5.5	4.0	very poor appearance
B0984-1	96	6.3	8.3	7.8	2.0	1.5	6.0	2.5	6.5	6.0	dark skin color
B1816-5	100	6.0	8.8	7.8	4.0	1.5	5.5	3.0	6.5	6.0	nice yellow flesh
B2152-17	100	6.5	9.0	7.5	3.0	2.0	6.0	2.5	6.5	6.0	dark skin color, flat
B2327-2	97	5.3	8.3	6.8	1.0	2.0	7.0	2.0	7.0	6.5	dark skin color
B2332-2	100	6.8	8.0	6.8	2.0	2.5	7.0	2.5	6.5	6.0	sl. mishapen
NY129	86	4.8	7.0	8.0	1.0	2.5	6.0	2.5	7.5	6.0	dark skin, too much netting
NY136	97	7.3	8.7	6.5	1.0	2.0	6.5	2.5	7.0	6.0	very dark skin

<sup>1</sup> See rating system outlined in Table 1 (page 8).

<sup>2</sup> See rating system outlined in Table 2 (page 9).

Table 11. External and internal defects of Red and Purple-Skinned potato selections.

Clone	% External Tuber Defects					% Internal Defects <sup>2</sup>						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls <sup>1</sup>	HH	BR	CRS	IHN	Brown Center		
						L	M	H				
Red LaSoda	0	0	0	2	3	0	0	0	0	1	0	0
Red LaSoda10	0	0	0	2	2	0	0	0	0	0	0	0
Red LaSoda13	2	0	1	3	6	0	0	0	0	1	1	0
All Blue	0	0	0	1	1	0	0	0	0	0	0	0
Cherry Red	0	1	0	1	1	0	0	0	0	0	0	0
Chieftain	0	0	0	3	3	0	0	0	0	0	0	0
Dark Red Norland	0	0	0	3	4	0	0	0	0	0	0	0
LaRouge	0	0	0	0	1	0	0	0	0	5	1	0
Red Pontiac	0	0	1	2	3	0	0	0	0	0	0	0
B0984-1	0	0	0	3	4	0	0	0	0	0	0	0
B1816-5	0	0	1	1	3	0	0	0	0	0	0	0
B2152-17	0	0	0	1	1	0	0	0	0	0	0	0
B2327-2	0	1	0	2	2	0	0	0	0	0	0	0
B2332-2	0	0	2	2	4	1	0	0	0	0	0	0
NY129	0	0	0	3	3	0	0	0	1	0	0	0
NY136	0	0	1	1	2	0	0	0	0	0	0	0
<i>MSD</i> <sup>3</sup>	1	ns	2	3	ns	ns	0	0	ns	5	ns	0
<i>P Value</i>	0.0176	0.1345	0.0013	0.0185	0.0822	0.4613	-	-	0.4613	0.0176	0.4613	-

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

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

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

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