

Chapter 4. Red and Purple-Skinned Fresh Market Potato Variety Trial, 2006¹

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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)

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Table 2. Production statistics for Red and Purple-Skinned potato selections.

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

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

Table 4. External and internal defects of Red and Purple-Skinned potato selections.

Clone	% External Tuber Defects					% Internal Defects ²						
	Growth Cracks	Mis-shapen	Sun-burned	Rotten & misc.	Total Culls ¹	HH	BR	CRS	IHN	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> ³	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	-

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.