

Red and Purple Fresh Market Potato Variety Trial, 2001

General Comments:

One goal of the Red and Purple Fresh Market Variety trial is to find a red potato that has better quality and production characteristics than Red LaSoda. In addition, the development of “specialty” potatoes that can expand the marketable varieties produced in Florida is a priority. Many established varieties were included in the trial for 2001. They were included to provide a baseline for the new numbered clones. No 2,4-D was applied in this trial to enhance skin color.

Planting Site:	Hastings REC, Yelvington Farm
Planting Date:	February 13, 2001
Harvest Date:	May 24, 2001
Season Length:	100 days
Replications:	4
Plot Size:	20 ft
Row Spacing:	12 inches in-row, 40 inches between-row
Fertilizer:	preplant, 168-24-144 lb/A; sidedress, 98-14-84 lb/A
Number of Varieties:Clones:	13:11
Early Plant Size (Vigor):	41 days after planting
Highest Total Yield:	Pontiac (381 cwt/acre)
Highest Marketable Yield:	Pontiac (341 cwt/acre)
Best Overall Tuber Appearance:	Michigan Purple (7.3), Redsen (7.3), Super Red Norland (7.3), B1951-5 (7.0), S48-6 (8.0)

Specific Comments:

Red LaSoda (MFX). This is the standard red skinned potato grown in Florida. It was used as a standard in this trial for comparison with all other varieties and clones. Total and marketable yield were 305 and 279 cwt/acre, respectively. Potato tuber skin color was red to pink with a slightly netted texture. Tuber flesh color was white to cream. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall external tuber appearance was noted as poor to fair. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as upright with a poor canopy. Plant maturity at harvest was rated as yellow and dying. Average specific gravity for Red LaSoda tubers was 1.064.

All Blue (MFX). Total and marketable yield were 196 and 117 cwt/acre, respectively. Potato tuber skin color was blue to purple with a netted texture. Tuber flesh color was mottled blue. All Blue is a unique potato for the specialty market. Tuber shape was rated as oblong with an eye depth of intermediate. Overall external tuber appearance was noted as poor. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as yellow and dying. Average specific gravity for All Blue tubers was 1.068.

Cherry Red (USDA). Total and marketable yield were 157 and 136 cwt/acre, respectively. Potato tuber skin color was red with a netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as poor. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for Cherry Red tubers was 1.077.

Chieftain (MFX). Total and marketable yield were 213 and 200 cwt/acre, respectively. Potato tuber skin color was pink with a slightly netted to moderately smooth texture. Tuber flesh color was white. Tuber

shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at digging was rated as yellow and dying. Average specific gravity for Chieftan (MFX) tubers was 1.066.

Chieftan (USDA). Total and marketable yield were 266 and 246 cwt/acre, respectively. Potato tuber skin color was pink with a netted to slightly netted texture. Tuber flesh color was white. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as yellow and dying. Average specific gravity for Chieftan (USDA) tubers was 1.067.

Dark Red Norland (MFX). Total and marketable yield were 152 and 137 cwt/acre, respectively. Potato tuber skin color was red with a netted to slightly netted texture. Tuber flesh color was white. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair to good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as decumbent with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for Dark Red Norland tubers was 1.061.

LaRouge (MFX). Total and marketable yield were 160 and 139 cwt/acre, respectively. Potato tuber skin color was pink with a moderately smooth texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Heat sprouts were noted with this variety at harvest. Average specific gravity for LaRouge tubers was 1.069.

Michigan Purple (MSU). Total and marketable yield were 218 and 203 cwt/acre, respectively. Potato tuber skin color was purple with a moderately smooth texture. Tuber flesh color was bright white. Tuber shape was rated as mostly oblong with an eye depth of intermediate. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead.

Norland (USDA). Total and marketable yield were 170 and 144 cwt/acre, respectively. Potato tuber skin color was red with a slightly netted texture. Tuber flesh color was white to cream. Tuber shape was rated as round to oblong with an eye depth of intermediate. Overall tuber appearance was rated as fair. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as decumbent with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for Norland tubers was 1.064.

Pontiac (MFX). Total and marketable yield were 381 and 341 cwt/acre, respectively. Potato tuber skin color was red to pink with a slightly netted to moderately smooth texture. Tuber flesh color was white. Tuber shape was rated as mostly round with an eye depth of intermediate. Overall tuber appearance was noted as poor. Early plant size was rated between 8 to 10 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as yellow and dying. Heat sprouts were noted with this variety at harvest. Average specific gravity for Pontiac tubers was 1.062.

Redsen (USDA). Total and marketable yield were 89 and 60 cwt/acre, respectively. Potato tuber skin color was red to pink with a moderately to very smooth texture. Potato flesh color was white. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a poor canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for Redsen tubers was 1.067.

Rideau (USDA). Total and marketable yield were 249 and 240 cwt/acre, respectively. Potato tuber skin color was red to pink with a netted to slightly netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was

noted as fair to good. Early plant size was rated between 2 to 4 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as between moderately mature and yellow and dying. Average specific gravity for Rideau tubers was 1.066.

Super Red Norland (USDA). Total and marketable yield were 206 and 187 cwt/acre, respectively. Potato tuber skin color was red to pink with a slightly netted to moderately smooth texture. Tuber flesh color was white to cream. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for Super Red Norland tubers was 1.057.

B1523-4 (USDA). Total and marketable yield were 298 and 270 cwt/acre, respectively. Potato tuber skin color was red to pink with a netted texture. Tuber flesh color was white to cream. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair to good. Early plant size was rated between 8 to 10 inches. Plant type at full flower was scored as decumbent with a good canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for B1523-4 tubers was 1.070.

B1758-3 (USDA). Total and marketable yield were 286 and 255 cwt/acre, respectively. Potato tuber skin color was red to pink with a netted to slightly netted texture. Tuber flesh color was white. Tuber shape was rated as mostly round with an eye depth of shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as yellow and dying. Average specific gravity for B1758-3 tubers was 1.074.

B1758-4 (USDA). Total and marketable yield were 217 and 190 cwt/acre, respectively. Potato tuber skin color was with a slightly netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair to good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for B1758-4 tubers was 1.072.

B1816-5 (USDA). Total and marketable yield were 313 and 259 cwt/acre, respectively. Potato tuber skin color was red with a netted texture. Tuber flesh color was light to medium yellow. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair to good. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as yellow and dying. Average specific gravity for B1816-5 tubers was 1.069.

B1950-8 (USDA). Total and marketable yield were 8 and 4 cwt/acre, respectively. Potato tuber skin color was red with a slightly netted to moderately smooth texture. Tuber flesh color was white. Tuber shape was rated as mostly oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair to good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B1950-8 tubers was 1.072. This clone exhibited severe sensitivity to metribuzin herbicide early in the season resulting in reduced production.

B1951-5 (USDA). Total and marketable yield were 122 and 80 cwt/acre, respectively. Potato tuber skin color was red with a moderately smooth to very smooth texture. Tuber flesh color was cream. Tuber shape was rated as oblong to long to oblong with an eye depth of shallow to very shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a poor canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for B1951-5 tubers was 1.081.

B1952-2 (USDA). Total and marketable yield were 224 and 213 cwt/acre, respectively. Potato tuber skin color was red with a slightly netted texture. Tuber flesh color was white. Tuber shape was rated as round

to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for B1952-2 tubers was 1.080.

B1952-4 (USDA). Total and marketable yield were 208 and 167 cwt/acre, respectively. Potato tuber skin color was red to pink with a slightly netted to moderately smooth texture. Tuber flesh color was white. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for B1952-4 tubers was 1.084.

ND2224-5R (NDSU). Total and marketable yield were 164 and 131 cwt/acre, respectively. Potato tuber skin color was red to pink with a slightly netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall tuber appearance was noted as good. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as spreading with a poor canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for ND2224-5R tubers was 1.069.

S45-5 (Cornell). Total and marketable yield were 145 and 107 cwt/acre, respectively. S45-5 is a unique potato for the specialty market. Potato tuber skin color was purple with a slightly netted texture. Tuber flesh color was mottled purple. Tuber shape was rated as oblong to long with an eye depth of intermediate to shallow. Overall tuber appearance was noted as fair to good. Early plant size was rated between 4 to 6 inches. Plant type at full flower was scored as decumbent with a fair canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for S45-5 tubers was 1.067.

S48-6 (Cornell). Total and marketable yield were 209 and 176 cwt/acre, respectively. S48-6 is a unique potato for the specialty market. Potato tuber skin color was red with a slightly netted to moderately smooth texture. Tuber flesh color was mottled pink. Tuber shape was rated as mostly oblong with an eye depth of shallow to very shallow. Overall tuber appearance was noted as good to excellent. Early plant size was rated between 6 to 8 inches. Plant type at full flower was scored as decumbent with a fair canopy. Plant maturity at harvest was rated as between yellow and dying and completely dead. Average specific gravity for S48-6 tubers was 1.067.

Florida Table 7. Red and Purple Fresh Market Potato Variety Trial. Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of red, purple, and white-skinned fresh market potato clones grown at Hastings, FL. - 2001.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²					Size Distribution (%)		Specific Gravity
		(cwt/A)	percent of standard	1	2	3	4	5	2 to 4	3 to 4	
Season-100 days											
Red LaSoda	305	279	100	3	42	42	13	0	97	55	1.064
All Blue	196	117	42	38	62	0	0	0	62	0	1.068
Atlantic (MFX)	329	314	112	2	27	46	25	1	98	71	1.082
Atlantic (MFX)	308	289	104	3	32	47	19	0	97	65	1.085
Atlantic (MFX)	325	308	110	2	27	44	27	1	97	71	1.082
Cherry Red	157	136	49	13	81	6	1	0	87	6	1.077
Chieftain (MFX)	213	200	72	4	58	37	1	0	96	38	1.066
Chieftain (USDA)	266	246	88	5	49	40	6	0	95	46	1.067
Dark Red Norland	152	137	49	7	71	21	1	0	93	22	1.061
La Chipper	275	256	92	3	55	38	3	0	97	41	1.074
La Rouge	160	139	50	6	53	39	2	0	94	41	1.069
Michigan Purple	218	203	73	5	50	40	5	0	95	45	1.070
Norland	170	144	52	9	79	12	1	0	91	13	1.064
Pontiac	381	341	122	2	33	50	15	0	98	65	1.062
Redsen	89	60	22	31	66	3	0	0	69	3	1.067
Rideau	249	240	86	2	23	46	29	0	98	75	1.066
Super Red Norland	206	187	67	2	45	34	19	0	98	53	1.057
B1523-4	298	270	97	4	40	41	16	0	96	56	1.070
B1758-3	286	255	91	6	63	29	0	1	92	29	1.074
B1758-4	217	190	68	8	64	23	5	0	92	28	1.072
B1816-5	313	259	93	14	77	8	1	0	86	9	1.069
B1950-8	8	4	1	50	50	0	0	0	50	0	1.072
B1951-5	122	80	29	32	68	0	0	0	68	0	1.081
B1952-2	224	213	76	4	56	36	4	0	96	40	1.080
B1952-4	208	167	60	15	65	17	3	0	85	20	1.084

Florida Table 7 (cont'd). Red and Purple Fresh Market Potato Variety Trial. Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of red, purple, and white-skinned fresh market potato clones grown at Hastings, FL. - 2001.

Clone	Total Yield (cwt/A)	Marketable Yield ¹		Size Distribution by Class (%) ²					Size Distribution (%)		Specific Gravity
		(cwt/A)	percent of standard	1	2	3	4	5	2 to 4	3 to 4	
Season-100 days											
ND2224-5R	164	131	47	19	80	1	0	0	81	1	1.069
S45-5	145	107	38	21	72	6	0	0	79	6	1.067
S48-6	209	176	63	10	74	16	0	0	90	16	1.067
<i>LSD</i> ³	<i>63</i>	<i>62</i>		<i>7</i>	<i>36</i>	<i>36</i>	<i>36</i>	<i>ns</i>	<i>13.1</i>	<i>13.1</i>	<i>0.004</i>
<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>0.5465</i>	<i>0.0001</i>	<i>0.0001</i>	<i>0.0001</i>

Planted on Feb.13, 2001, fertilizer rate was 168-24-144/A plus 98-14-84/A sidedressed, harvested on May 24, 2001.

¹ - Marketable Yield: size classes 2 to 4

² - Size classes: 1 = <1 7/8", 2 = 1 7/8 to 2.5", 3 = 2.5 to 3.25", 4 = 3.25 to 4", 5 = >4"

³ - Means separated within columns by Waller-Duncan's *k* - ratio t test.

Florida Table 8. Red and Purple Fresh Market Potato Variety Trial. Yield, vine maturity, tuber characteristics, and internal defects of red, purple, and white-skinned fresh market potato clones grown at Hastings, FL - 2001.

Clone	Total Yield (cwt/A)	Marketable Yield (cwt/A)	Vine Maturity ¹	Tuber Characteristics ¹						Internal Defects ²			
				IFC	SC	ST	TS	ED	APP	HH	BR	CRS	INT
Red LaSoda	305	279	2.8	1.5	2.7	7.0	2.7	5.3	3.7	0	0	0	0
All Blue	196	117	2.5	8.5-0	1.0	6.0	5.3	5.0	3.0	0	0	0	0
Atlantic (MFX)	329	314	3.8	2.0	6.7	6.3	3.0	5.7	5.7	0	0	0	0
Atlantic (MFX)	308	289	4.0	1.5	7.0	6.0	2.7	7.0	5.7	0	0	0	0
Atlantic (MFX)	325	308	4.3	1.5	6.7	6.0	2.7	7.0	6.0	0	0	0	0
Cherry Red	157	136	2.3	1.5	2.0	5.7	2.7	6.3	5.0	0	0	0	0
Chieftain (MFX)	213	200	3.5	1.0	3.0	7.7	3.0	5.7	5.3	0	0	0	0
Chieftain (USDA)	266	246	3.3	1.0	3.0	6.7	2.3	6.0	4.7	0	0	0	5
Dark Red Norland	152	137	1.3	1.0	2.0	6.3	2.3	5.7	6.0	0	0	0	0
La Chipper	275	256	3.0	1.0	8.0	7.7	3.0	6.0	7.0	0	0	0	0
La Rouge	160	139	2.0	1.0	3.0	8.0	3.3	5.3	5.0	0	0	0	0
Michigan Purple	218	203	1.5	1.0	1.0	8.0	4.0	5.0	7.3	0	0	0	0
Norland	170	144	1.3	1.5	2.0	7.3	2.7	6.3	5.3	0	0	0	0
Pontiac	381	341	3.0	1.0	2.7	7.3	2.3	5.0	3.0	0	0	0	0
Redsen	89	60	1.3	1.0	2.3	8.3	2.3	6.3	7.3	0	0	0	0
Rideau	249	240	3.5	1.0	2.7	6.3	3.3	6.7	6.0	0	0	0	0
Super Red Norland	206	187	1.5	1.5	2.7	7.3	2.7	6.0	7.3	0	0	0	0
B1523-4	298	270	1.9	1.5	2.7	6.0	2.3	6.3	6.0	0	0	1	0
B1758-3	286	255	2.5	1.0	2.3	6.7	2.3	7.0	6.7	0	0	0	0
B1758-4	217	190	1.8	1.0	2.3	7.0	2.7	5.3	6.3	0	0	0	0
B1816-5	313	259	2.8	3.5	1.0	6.0	3.0	6.7	6.3	0	0	0	0
B1950-8	8	4	1.0	1.0	1.0	7.7	3.7	5.3	5.7	0	0	0	0
B1951-5	122	80	1.8	2.0	1.0	8.3	5.7	7.3	7.0	0	0	0	0
B1952-2	224	213	2.5	1.0	1.0	7.0	3.3	6.7	5.7	0	0	0	0
B1952-4	208	167	2.8	1.0	2.7	7.7	2.0	6.0	6.0	0	0	0	0

Florida Table 8 (cont'd). Red and Purple Fresh Market Potato Variety Trial. Yield, vine maturity, tuber characteristics, and internal defects of red, purple, and white-skinned fresh market potato clones grown at Hastings, FL - 2001.

Clone	Total Yield (cwt/A)	Marketable Yield (cwt/A)	Vine Maturity ¹	Tuber Characteristics ¹						Internal Defects ²			
				IFC	SC	ST	TS	ED	APP	HH	BR	CRS	INT
ND2224-5R	164	131	1.0	1.0	2.0	7.0	3.3	6.0	6.7	0	0	0	0
S45-5	145	107	1.3	9-0	1.0	7.0	5.7	5.3	6.3	0	0	0	0
S48-6	209	176	1.6	6-0	2.0	7.7	4.3	7.3	8.0	0	0	0	0

¹ - See rating system outlined in Florida Rating Code Table.

² - Percent of tubers showing defects. HH = hollow heart, BR = brown rot, CRS = corky ring spot, INT = internal browning.