

Chip Potato Variety Trial, 2001

General Comments:

The goal of the Chip Potato Variety trial is to find a chip potato that has better quality and production characteristics than Atlantic.

Planting Site:	Hastings REC, Yelvington Farm
Planting Date:	February 13, 2001
Harvest Date:	June 4, 2001
Season Length:	103 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:	7:16
Early Plant Size (Early Vigor):	39 days after planting
Highest Total Yield:	B1884-9 (450 cwt/acre)
Highest Marketable Yield:	Snowden (407 cwt/acre)
Best Overall Tuber Appearance:	Atlantic (7.0), MSF373-3 (6.7)

Specific Comments:

Atlantic (MFX). This is the standard chip 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 341 and 310 cwt/acre, respectively. Potato tuber skin color was brown to tan with a russet to netted texture. Tuber flesh color was white to cream. Tuber shape was rated as mostly round with an eye depth of shallow. Scab was noted on tubers. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 4-6 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Atlantic tubers was 1.082. The Agron reading was 52 with no defects. Chips were noted as "light golden".

Atlantic (USDA). Total and marketable yield were 357 and 326 cwt/acre, respectively. Potato tuber skin color was brown to tan with a russet to netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Scab was noted on tubers. Overall external tuber appearance was noted as good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Atlantic tubers was 1.082. The Agron reading was 55 with 32% external defects.

Coastal Chip (MFX). Total and marketable yield were 202 and 183 cwt/acre, respectively. Potato tuber skin color was buff 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. Scab was noted on tubers. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 8-10 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 Coastal Chip tubers was 1.067. The Agron reading was 56 with 13% external defects. Chips were noted as "golden".

La Chipper (MFX). Total and marketable yield were 286 and 254 cwt/acre, respectively. Potato tuber skin color was tan to buff 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 external tuber appearance was noted as fair to good. Early plant size was rated between 2-4 inches. Plant type at full flower was scored as spreading to upright with a good canopy. Plant maturity at harvest was rated as completely dead.

Average specific gravity for La Chipper tubers was 1.072. The Agtron reading was 58 with 1% internal defects.

Sebago (MFX). Total and marketable yield were 367 and 309 cwt/acre, respectively. Potato tuber skin color was buff to white 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. Tubers were noted for scab. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as spreading to upright with a good canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Sebago tubers was 1.067. The Agtron reading was 55 with 13% external defects. Chips were noted as “dark golden”.

Snowden (MFX). Total and marketable yield were 440 and 407 cwt/acre, respectively. Potato tuber skin color was brown to tan 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. Tubers were noted for scab and large lenticels. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as upright with a good canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Snowden tubers was 1.077. The Agtron reading was 52 with no defects. Chips were noted as “golden”.

Snowden (USDA). Total and marketable yield were 363 and 312 cwt/acre, respectively. Potato tuber skin color was tan with a netted texture. Tuber flesh color was white. Tubers were noted for scab. Tuber shape was rated as mostly round with an eye depth of intermediate. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as upright with a poor canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Snowden tubers was 1.081. The Agtron reading was 55 with no defects. Chips were noted as “nice”.

Suncrisp (MFX). Total and marketable yield were 351 and 298 cwt/acre, respectively. Potato tuber skin color was buff 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. Tubers were noted for scab and heat sprouts at harvest. Overall external tuber appearance was noted as fair. Early plant size was rated between 4-6 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for Suncrisp tubers was 1.078. The Agtron reading was 52 with 19% external defects. Chips were noted as having “edge browning”.

AF875-15 (UM). Total and marketable yield were 255 and 232 cwt/acre, respectively. Potato tuber skin color was tan to buff 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 external tuber appearance was noted as fair to good. Early plant size was rated between 10-12 inches. Plant type at full flower was scored as decumbent to spreading with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for AF875-15 tubers was 1.076. The Agtron reading was 51 with 5 % internal defects. Chips were noted as “golden”.

AF2079-9 (UM). Total and marketable yield were 169 and 146 cwt/acre, respectively. Potato tuber skin color was buff to white with a slightly netted texture. Tuber flesh color was cream. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Tubers were noted for scab and enlarged lenticels at harvest. Overall external tuber appearance was scored as fair. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as spreading to upright with a fair canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for AF2079-9 tubers was 1.072. The Agtron reading was 57 with no defects. Chips were noted as “nice”.

AF2081-3 (UM). Total and marketable yield were 188 and 146 cwt/acre, respectively. Potato tuber skin color was brown to tan with a slightly netted texture. Tuber flesh color was cream. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as upright with a fair canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for AF2081-3 tubers was 1.072. The Agtron reading was 57 with no defects. Chips were noted as “nice”.

gravity for AF2081-3 tubers was 1.076. The Agrtron reading was 53 with no defects.

AF2082-18 (UM). Total and marketable yield were 341 and 300 cwt/acre, respectively. Potato tuber skin color was tan to buff 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 fair to good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as spreading to upright with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for AF2082-18 tubers was 1.068. The Agrtron reading was 54 with 12% internal defects.

ARSW96-4654-1 (USDA). Total and marketable yield were 279 and 228 cwt/acre, respectively. Potato tuber skin color was tan with a netted texture. Tuber flesh color was cream. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Tubers were noted at harvest for misshapes, scab, and heat sprouts. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 4-6 inches. Plant type at full flower was scored as upright with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for ARSW96-4654-1 tubers was 1.083. The Agrtron reading was 56 with 11% external defects. Chips were noted as having “edge color”.

B0766-3 (USDA). Total and marketable yield were 324 and 272 cwt/acre, respectively. Potato tuber skin color was tan to buff 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. Tubers were noted at harvest for scab and heat sprouts. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 8-10 inches. Plant type at full flower was scored as decumbent to spreading with a good canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B0766-3 tubers was 1.073. The Agrtron reading was 55 with 12% external defects. Chips were noted as having “stem end color”.

B1497-22 (USDA). Total and marketable yield were 365 and 285 cwt/acre, respectively. Potato tuber skin color was tan to buff with a netted texture. Tubers flesh color was cream. Tuber shape was rated as oblong to mostly oblong with an eye depth of intermediate. Tuber misshapes were noted at harvest. Overall external tuber appearance was noted as poor to fair. Early plant size was rated between 8-10 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 B1497-22 tubers was 1.069. The Agrtron reading was 55 with 2 % external and 1% internal defects. Chips were noted as having “golden edges”.

B1591-1 (USDA). Total and marketable yield were 261 and 228 cwt/acre, respectively. Potato tuber skin color was brown to tan with a russet to netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong with an eye depth of intermediate to shallow. Scab was noted on tubers at harvest. Overall external tuber appearance was noted as fair. Early plant size was rated between 8-10 inches. Plant type at full flower was scored as decumbent to spreading with a fair canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B1591-1 tubers was 1.082. The Agrtron reading was 53 with 6% external defects. Chips were noted as “dark golden”.

B1806-8 (USDA). Total and marketable yield were 253 and 228 cwt/acre, respectively. Potato tuber skin color was tan to buff with a slightly netted to moderately smooth texture. Tuber flesh color was cream. Tuber shape was rated as round to oblong with an eye depth of shallow. Flat tubers were noted at harvest. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 8-10 inches. Plant type at full flower was scored as upright with a poor canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B1806-8 tubers was 1.078. The Agrtron reading was 58 with no defects.

B1829-5 (USDA). Total and marketable yield were 170 and 143 cwt/acre, respectively. Potato tuber skin color was tan to buff 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 external tuber appearance was noted as fair to good. Early plant size was rated between 4-6 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

B1829-5 tubers was 1.081. The Agron reading was 51 with 2 % external defects.

B1884-9 (USDA). Total and marketable yield were 450 and 405 cwt/acre, respectively. Potato tuber skin color was tan to buff 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. Scab was noted on tubers at harvest. Overall external tuber appearance was noted as fair. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for B1884-9 tubers was 1.072. The Agron reading was 55 with no defects.

B1944-2 (USDA). Total and marketable yield were 208 and 180 cwt/acre, respectively. Potato tuber skin color was tan to buff with a netted texture. Tuber flesh color was white. Tuber shape was rated as mostly oblong with an eye depth of intermediate to shallow. Misshapen tubers were noted at harvest. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 6-8 inches. Plant type at full flower was scored as upright with a poor canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B1944-2 tubers was 1.076. The Agron reading was 53 with no defects.

B1964-4 (USDA). Total and marketable yield were 144 and 124 cwt/acre, respectively. Potato tubers were rated as netted to slightly netted, buff skinned with white flesh. Tuber shape was rated as mostly round with an eye depth of intermediate to shallow. Overall external tuber appearance was rated as fair to good. Early plant size was rated between 8-10 inches. Plant type at full flower was rated as spreading with a poor canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for B1964-4 tubers was 1.080. The Agron reading was 55 with no defects noted. Chips were noted as “golden”.

MSF099-3 (MSU). Total and marketable yield were 159 and 124 cwt/acre, respectively. Potato tuber skin color was tan to buff with a netted to slightly netted texture. Tuber flesh color was white. Tuber shape was rated as round to oblong to mostly oblong with an eye depth of intermediate to shallow. Large lenticels and scab were noted on tubers were noted at harvest. Overall external tuber appearance was noted as poor to fair. Early plant size was rated between 8-10 inches. Plant type at full flower was scored as decumbent with a poor to fair canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for MSF099-3 tubers was 1.077. The Agron reading was 53 with no defects. Chips were noted as “golden”.

MSF373-3 (MSU). Total and marketable yield were 340 and 314 cwt/acre, respectively. Potato tuber skin color was tan to buff 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. Scab was noted on tubers at harvest. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 8-10 inches. Plant type at full flower was scored as spreading with a good canopy. Plant maturity at harvest was rated as yellow and dying to completely dead. Average specific gravity for MSF373-3 tubers was 1.074. The Agron reading was 56 with 7% internal defects.

MSH095-4 (MSU). Total and marketable yield were 238 and 204 cwt/acre, respectively. Potato tuber skin color was buff 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. Scab was noted on tubers at harvest. Overall external tuber appearance was noted as fair to good. Early plant size was rated between 8-10 inches. Plant type at full flower was scored as spreading with a fair canopy. Plant maturity at harvest was rated as completely dead. Average specific gravity for MSH095-4 tubers was 1.079. The Agron reading was 54 with 4% external defects.

Florida Table 11. Chipping Potato Variety Trial. Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of chipping 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-111 days											
Atlantic (MFX)	328	297	100	1	26	47	26	0	99	73	1.084
Atlantic (MFX)	341	310	104	1	21	47	31	0	99	78	1.082
Atlantic (USDA)	357	326	110	1	23	48	26	1	98	75	1.082
Coastal Chip	202	183	62	4	53	38	5	0	96	43	1.067
La Chipper	286	254	85	3	49	37	11	0	97	48	1.072
Sebago	367	309	104	3	35	46	16	0	97	62	1.067
Snowden (MFX)	440	407	137	2	26	36	36	0	98	71	1.077
Snowden (USDA)	363	312	105	3	41	43	12	0	97	55	1.081
Suncrisp	351	298	100	3	42	44	10	0	97	55	1.078
AF875-15	255	232	78	3	47	40	11	0	97	50	1.076
AF2079-9	169	146	49	3	34	54	9	0	97	64	1.072
AF2081-3	188	146	49	14	79	7	0	0	86	7	1.076
AF2082-18	341	300	101	2	37	45	16	0	98	61	1.068
ARSW96-4654-1	279	228	77	12	68	19	1	0	88	20	1.083
B0766-3	324	272	92	3	33	44	21	0	97	64	1.073
B1497-22	365	285	96	3	49	39	10	0	97	48	1.069
B1591-1	261	228	77	3	47	42	8	0	97	50	1.082
B1806-8	253	228	77	4	62	30	5	0	96	34	1.078
B1829-5	170	143	48	13	75	12	0	0	87	12	1.081
B1884-9	450	405	136	1	18	37	44	0	99	81	1.072

Florida Table 11 (cont'd). Chipping Potato Variety Trial. Yield, marketable yield, percentage of yield by grade, size distribution and specific gravity of chipping potato clones grown at Hastings, FL. - 2001.

Clone	Total Yield	Marketable Yield ¹		Size Distribution by Class (%) ²					Size Distribution (%)		Specific Gravity
	(cwt/A)	(cwt/A)	percent of standard	1	2	3	4	5	2 to 4	3 to 4	
B1944-2	208	180	61	9	74	16	0	0	91	16	1.076
B1964-4	144	124	42	11	64	25	0	0	89	25	1.080
MSF099-3	159	124	42	18	75	7	0	0	82	7	1.077
MSF373-8	340	314	106	2	25	48	26	0	98	74	1.074
MSH095-4	238	204	69	5	55	27	13	0	95	40	1.079
<i>LSD</i> ³	<i>134</i>	<i>118</i>		<i>7.3</i>	<i>26.6</i>	<i>21.2</i>	<i>25.0</i>	<i>ns</i>	<i>7.3</i>	<i>28.5</i>	<i>0.006</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>0.4778</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 June 4, 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 Tukey's Studentized Range (HSD) Test.

Florida Table 12. Chipping Potato Variety Trial. Yield, vine maturity, tuber characteristics, and internal defects of chipping 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
Atlantic (MFX)	328	297	1.8	1.0	5.7	6.0	3.3	6.0	6.0	0	0	0	0
Atlantic (MFX)	341	310	1.4	1.3	5.7	5.7	2.3	7.0	5.7	0	0	0	0
Atlantic (USDA)	357	326	1.3	1.0	5.3	5.7	3.0	5.3	7.0	0	0	0	0
Coastal Chip	202	183	1.0	1.0	7.0	6.3	2.3	5.3	5.7	0	5	0	0
La Chipper	286	254	1.0	1.0	6.7	7.0	3.0	5.7	6.0	0	0	0	0
Sebago	367	309	1.8	1.0	7.3	7.0	3.3	6.3	5.7	0	0	0	20
Snowden (MFX)	440	407	2.3	1.0	5.3	6.0	3.0	5.3	6.0	0	0	0	0
Snowden (USDA)	363	312	1.8	1.0	6.0	6.0	2.3	5.0	5.7	0	0	0	0
Suncrisp	351	298	2.1	1.0	7.0	6.3	2.7	5.7	5.0	0	0	0	0
AF875-15	255	232	1.1	1.0	6.7	6.3	2.7	6.7	6.7	0	0	0	0
AF2079-9	169	146	1.0	2.0	7.3	7.0	3.0	6.0	6.0	20	0	0	0
AF2081-3	188	146	1.0	2.0	5.7	7.0	3.0	6.3	5.3	0	0	0	0
AF2082-18	341	300	1.3	1.3	6.7	7.0	2.7	6.0	5.3	5	0	0	0
ARSW96-4654-1	279	228	1.0	2.0	6.0	6.3	2.0	6.0	5.3	0	0	0	0
B0766-3	324	272	1.3	1.0	6.3	6.0	2.0	7.0	5.7	0	0	0	0
B1497-22	365	285	1.0	2.0	6.3	6.3	4.3	5.0	4.3	0	0	0	0
B1591-1	261	228	1.0	1.0	5.3	5.7	3.3	6.0	5.0	0	0	0	0
B1806-8	253	228	1.0	2.0	6.3	7.3	3.0	7.0	6.0	0	0	0	0
B1829-5	170	143	1.1	1.0	6.3	6.7	2.0	7.0	5.3	0	0	0	0
B1884-9	450	405	1.9	1.0	6.7	6.3	3.0	5.7	5.0	0	0	0	0
B1944-2	208	180	1.0	1.0	6.7	6.0	4.0	5.7	5.3	0	0	5	5
B1964-4	144	124	1.0	1.0	7.0	6.3	2.3	6.0	5.3	0	0	0	0
MSF099-3	159	124	1.0	1.0	6.3	6.7	3.7	6.3	4.7	0	0	0	0
MSF373-8	340	314	1.6	1.0	6.7	7.3	2.7	6.0	6.7	0	0	0	0
MSH095-4	238	204	1.0	1.0	7.0	7.0	2.3	5.3	6.3	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.

