

## Chapter 11. USPB/Snack Food Association Potato Variety Trial, 2006<sup>1</sup>

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C. M. Hutchinson and Doug Gergela<sup>2</sup>

### **General Comments**

A goal of the Snack Food Association trial is to identify a short-season processing potato variety with better production and quality characteristics than placeAtlantic, the current standard. Chip quality was determined by personnel at Utz Quality Foods.

### **Planting Information**

Planting Site	PSREU - Hastings Farm, Hastings, FL
Planting Date	February 1, 2006
Harvest Date	May 22, 2006
Season Length	110 days
Fertilizer Program	preplant, 100-43-86 lb/A; sidedress, 65-0-56 lb/A (2 appl.)
Irrigation Program	seepage

### **Experimental Design**

Number of Varieties	3 (Standard: Atlantic)
Number of Clones	9
Within Row Spacing	Approx. 8 in (20.3 cm)
Between Row Spacing	40 in (102 cm)
Replications	1
Plot Size	Single 250 ft row (76.2 m) planted for each variety. Four, 20 ft (6.1 m) plots harvested from each row to determine production and quality statistics.

### **Production Statistics**

Early Vigor Ratings	41 days after planting.
Highest Total Yield	MSJ316-A (454 cwt/acre or 50.9 MT/ha)
Highest Marketable Yield	NY132 (394 cwt/acre or 44.1 MT/ha)
Highest Specific Gravity	Atlantic, AF2211-9, and MSJ147-1 (1.090)

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2. Chad M. Hutchinson, Associate Professor, Doug Gergela, Sr. Biological Scientist, Horticultural Sciences Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

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**Table 2.** Production statistics for USPB/SFA Chipping potato selections.

Clone	Total Yield (cwt/A)	Marketable Yield <sup>1</sup>		Size							Specific Gravity
		(cwt/A)	% of standard	Distribution by Class (%) <sup>2</sup>							
				C	B	A1	A2	A3	A4	A1 to A3 Range (%)	
Atlantic	363	327	100	1	6	72	21	0	93	21	1.090
Snowden	353	303	93	1	11	75	13	0	89	13	1.082
Beacon Chipper	366	310	95	1	8	76	15	0	91	15	1.088
A91814-5	370	287	88	1	17	77	5	0	82	5	1.082
AF2211-9	353	306	94	1	7	63	28	0	92	29	1.090
CO95051-7W	345	286	88	1	13	83	4	0	86	4	1.082
MSJ147-1	356	317	97	1	9	78	12	0	90	12	1.090
MSJ316-A	454	381	117	2	11	81	6	0	87	6	1.075
MSJ461-1	373	281	86	2	19	71	8	0	79	8	1.078
NY132	449	394	121	1	8	77	14	0	91	14	1.088
W2133-1	413	358	110	1	9	65	24	1	90	25	1.082
W2324-1	404	359	110	1	6	55	32	7	94	39	1.081
<b>Average</b>	<b>383</b>	<b>326</b>		<b>1</b>	<b>10</b>	<b>73</b>	<b>15</b>	<b>1</b>	<b>89</b>	<b>16</b>	<b>1.084</b>

<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"

**Table 3.** Plant growth and tuber characteristics of USPB/SFA Chipping potato selections.

Clone	Plant Growth Characteristics <sup>1</sup>				Tuber Characteristics <sup>2</sup>							Chip Rating <sup>3</sup> 1-5	Tuber Comments
	% Stand	Early Vigor	Vine Type	Vine Maturity	IFC	SC	ST	TS	ED	APP			
Atlantic	111	5.3	8-9	7.0	2.0	6.0	5.0	3.0	6.0	6.0	6.0	65.0	some scab
Snowden	83	7.3	8-9	3.0	2.0	6.0	5.0	3.0	4.0	4.0	7.0	65.8	nice appearance
Beacon Chipper	100	5.5	8	6.0	1.0	6.0	5.0	4.0	6.0	6.0	5.0	67.0	some scab
A91814-5	84	6.8	9	6.0	2.0	7.0	6.0	4.0	5.0	5.0	4.0	64.2	flat tubers
AF2211-9	93	5.0	8-9	6.0	2.0	6.0	6.0	2.0	6.0	6.0	5.0	63.8	mostly round shape
CO95051-7W	83	6.0	8	5.0	2.0	6.0	6.0	3.0	6.0	6.0	4.0	67.6	scab
MSJ147-1	96	5.5	9	7.0	2.0	7.0	6.0	4.0	7.0	7.0	5.0	70.0	some flat tubers
MSJ316-A	87	6.5	9	4.5	2.0	7.0	6.0	4.0	7.0	7.0	5.0	64.8	some lenticels
MSJ461-1	89	6.8	6-9	1.5	2.0	6.0	6.0	4.0	7.0	7.0	5.0	63.9	some lenticels
NY132	76	8.8	6-9	7.0	2.0	7.0	5.0	4.0	5.0	5.0	5.0	67.6	some flat tubers
W2133-1	78	9.0	6-9	1.5	2.0	6.0	5.0	4.0	6.0	6.0	6.0	63.2	flat tubers
W2324-1	73	8.5	6-9	4.0	1.0	6.0	5.0	4.0	4.0	4.0	6.0	64.1	many shapes

<sup>1</sup>See rating system outlined in Table 1 (page 8).<sup>2</sup>See rating system outlined in Table 2 (page 9).<sup>3</sup>For rating scale, see general potato variety production information in Chapter 1. (page 5)

**Table 4.** External and internal defects of USPB/SFA Chipping 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	L	M	H
Atlantic	1	0	2	0	4	0	0	0	0	0	0	0
Snowden	0	0	2	1	3	0	0	0	1	1	0	0
Beacon Chipper	0	0	2	5	7	0	0	0	0	0	0	0
A91814-5	0	1	3	2	5	0	0	0	0	0	0	0
AF2211-9	1	0	2	2	6	1	0	0	3	6	0	0
CO95051-7W	0	0	2	2	4	0	0	0	0	1	0	0
MSJ147-1	0	0	0	1	1	0	0	0	0	0	0	0
MSJ316-A	0	0	2	2	4	0	0	10	14	3	1	0
MSJ461-1	0	0	2	3	5	0	0	0	0	0	0	0
NY132	0	0	2	2	4	0	0	0	0	9	3	0
W2133-1	0	0	3	1	4	0	0	0	0	0	0	0
W2324-1	0	1	1	3	5	0	0	0	0	0	0	0

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