

OUT-OF-STORAGE CHIP QUALITY 2006-2007 MICHIGAN REGIONAL REPORT

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Procedure:

The 2006 USPB / SFA Chip Trial was harvested on September 28, 2006 at Sandyland Farms, LLC Howard City, MI. Several chip storage samples were collected for each variety at harvest. Two 40 pound samples were collected from each entry and placed in the cooperating grower's commercial storage for later evaluation in December 2006 and March 2007. Four, 25 tuber samples were also collected from each entry at harvest and stored in cold storage at the Michigan Potato Industry Commission's (MPIC) Cargill Potato Demonstration Storage Facility. Two samples were stored at approximately 55°F for a January and April 2007 evaluation. The remaining two, 25 tuber samples were stored at approximately 48°F to be evaluated in January and April 2007.

Results:

The first set of the 40 pound tuber samples placed in the grower's commercial storage was removed in December 2006 (Table 1). The second set of 40 pound tuber samples was evaluated in late March 2007 (Table 2). Table 3 summarizes the chip quality of the four, 25 tuber samples stored at the Cargill Potato Demonstration Storage Facility. In all tables, the varieties are listed in yield order from top to bottom, highest to lowest. CIPC was applied to all of the storage potato samples in November 2006.

As seen in Table 1, Herr Foods rated MSJ147-1 as having the best all around chip quality from these early storage samples. SFA chip color for MSJ147-1 was excellent and total defects were low. Specific gravity for MSJ147-1 was low at 1.074.

From Table 2, W2133-1 had the best overall appearance at Herr Foods when evaluated by a six person panel. MSJ147-1 had the best SFA color score in this table at 2.0

Table 3 summarizes the chip quality of the 25 tuber samples collected at harvest from each entry and stored at the MPIC demonstration storage in the fall of 2006. The samples were stored at approximately 48°F and 55°F and were chipped on January 15th and April 20th, 2007.

Table 1. 2006-2007 Out of Storage Chip Quality 12/13/06, Sandyland Farms, LLC ¹.

Entry	Agtron Color	SFA ² Color	Specific Gravity	Percent Chip Defects ³			Comments
				Internal	External	Total	
W2324-1	56.7	3.0	1.077	9	13	22	Shading in chips, light pitted scab, surface defects, nice uniform grade.
MSJ461-1	54.3	3.5	1.075	27	1	28	Lots of shading, poor color, nice externals, good uniform grade, nice average size.
A91814-5	53.6	4.0	1.081	24	7	31	Vascular, shading - poor, a few green, some pitted scab, range from 1 1/4"- 4 1/2", not uniform.
MSJ316-A	53.2	4.0	1.074	59	2	61	Dark blotches, heavy shading, nice external appearance, large grade, some tubers 3 1/2" this is acceptable but not ideal.
W2133-1	58	2.0	1.075	4	6	10	Some light shading, very few defects, nice size (2 1/2" - 3 1/2")
Beacon Chipper	62	1.5	1.076	10	4	14	Nice chip color!, very few light stem-end vascular, a few hollow heart, nice externals, large grade, some oversize (3 3/4")
AF2211-9	56	3.0	1.076	10	4	14	Light shading throughout, a few light pitted scab, decent grade, a little small.
NY132	56.2	3.0	1.081	36	3	39	Uneven shading in chips, nice externals, large, some oversize.
Atlantic	52.0	4.5	1.082	42	8	50	Very dark chip sample, shading in 95 %, some hollow heart, light pitted scab, oversized (some 4"), internal defects mostly-shading
Snowden	56.5	3.0	1.074	12	11	23	Shading in 50 % of sample, 1 or 2 pitted scab otherwise nice external, good uniform size.
MSJ147-1	62.9	1.0	1.075	4	2	6	Excellent chip color, very nice externals, good size and grade.
CO95051-7W	56.7	2.5	1.076	11	6	17	Light shading chip sample, very few external defects, good size uniform grade (2-3")

¹ Samples removed from 54 °F storage and processed by Herr Foods Inc., Nottingham, PA on December 13, 2006.

Chip defects are included in Agtron and SFA samples.

² SFA Color: 1= lightest, 5 = darkest

³ Percent Chip Defects are a percentage by weight of the total sample; comprised of undesirable color, greening, internal defects and external defects.

Table 2. 2006-2007 Out of Storage Chip Quality, 3/29/07, Sandyland Farms, LLC¹

Entry	Agron Color	SFA ² Color	Specific Gravity	Percent Chip Defects ³			Comments
				Internal	External	Total	
W2324-1	50.8	3.5	1.080	47	12	59	Very poor chip color, light scab, nice size.
MSJ461-1	50	5.0	1.072	57	1	58	Very poor chip color, very nice external appearance, small grade.
A91814-5	55.1	5.0	1.082	41	14	55	Poor chip color, (internal defects-shading), moderate pitted scab, good size.
MSJ316-A	58.8	5.0	1.077	19	1	20	Some blotches on vascular ring area, light shading in chips, nice externals, good size.
W2133-1	56.7	3.0	1.074	7	15	22	A few chips with light bruise & shading, otherwise nice chip color, very nice external appearance, very nice size profile.
Beacon Chipper	53.6	2.5	1.075	23	11	34	Poor chip color, very nice external appearance, large grade
AF2211-9	46.5	4.0	1.077	71	15	86	Blotches on vascular ring, very poor chip color, some fusarium, light scab, nice size.
NY132	57.9	4.0	1.087	16	3	19	Chip sample marginal, a few bruises, nice externals, very nice size
Atlantic	47.9	5.0	1.078	64	11	75	Poor chip color, nice externals, good size.
Snowden	47.6	3.5	1.077	57	11	68	Poor chip color, light scab, nice size
MSJ147-1	54.4	2.0	1.079	25	10	35	A few hollow heart, poor chip color, most internal defects from shading, most external defects are minor, size good, some small
CO95051-7W	49.9	3.5	1.072	31	10	40	Brown centers, poor chip color, good externals, good size.

¹ Samples removed from 48 °F storage and processed by Herr Foods Inc., Nottingham, PA on March 29, 2007.

Chip defects are included in Agron and SFA samples.

² SFA Color: 1 = lightest, 5 = darkest

³ Percent Chip Defects are a percentage by weight of the total sample; comprised of undesirable color, greening, internal defects and external defects.

Table 3. 2006-2007 Out of Storage Chip Quality Samples, Cargill Storage¹

ENTRY	55.6°F January 15, 2007					54.6°F January 16, 2007					48°F April 20, 2007					53.8°F April 20, 2007 ⁴				
	SFA ² COLOR		CHIP Defects ³			SFA ² COLOR		CHIP Defects ³			SFA ² COLOR		CHIP Defects ³			SFA ² COLOR		CHIP Defects ³		
	HH	BC	IBS	VD	SED	HH	BC	IBS	VD	SED	HH	BC	IBS	VD	SED	HH	BC	IBS	VD	SED
W2324-1	1.0	4%		8%		1.0	4%	8%	32%	8%	2.0			4%	8%	2.0			12%	24%
MSJ461-1	1.0			30%	30%	1.0					1.0			4%	16%	1.0			8%	8%
A91814-5	1.0	12%		8%	16%	1.0			4%	16%	1.0				32%	1.0			8%	40%
MSJ316-A	1.0			4%		1.0				8%	1.0			4%		1.0			20%	
W2133-1	1.0					1.0			4%		1.0			8%	16%	1.0			12%	8%
Beacon Chipper	1.0		4%	12%	24%	1.0					2.0	4%		16%	32%	3.0	4%		4%	8%
AF2211-9	1.0	12%			8%	1.0	4%		4%	8%	2.0			8%		2.0		8%		16%
NY132	1.0	4%			8%	1.0				24%	1.0	4%			8%	1.0			4%	
Atlantic	1.0			24%	56%	1.0			4%	32%	2.0				32%	1.0			4%	16%
Snowden	1.0			12%	16%	1.0	4%		32%	16%	3.0		8%	12%	8%	2.0			12%	8%
MSJ147-1	1.0			4%	8%	1.0			8%	8%	1.0	4%	4%			1.0			8%	24%
CO95051-7W	1.0			4%		1.0		4%	4%		1.0			8%		1.0			20%	16%

¹ Samples Stored at the Michigan Potato Industry Commission's Cargill Potato Demonstration Storage

² SFA 1-5 Color Score; 1 = lightest, 5 = darkest

³ HH = hollow heart, BC = brown center, IBS = internal brown spot, VD = vascular discoloration; SED = stem end discoloration in finished chips.

⁴ These tubers were held at 48°F until February 26, 2007 at which time they were placed in 53.8°F until removal on April 19, and processed on April 20, 2007.