

OUT-OF-STORAGE CHIP QUALITY 2005-2006 MICHIGAN REGIONAL REPORT

Chris Long, Michigan State University

Procedure:

The 2005 USPB / SFA Chip Trial was harvested on October 10, 2005 at V & G Farms in Stanton, MI. Several chip storage samples were collected at harvest. A 40 pound sample was collected from each entry and placed in the cooperating grower's commercial storage for later evaluation. Four, 25 tuber samples were also collected from each entry at harvest and stored in cold storages at the Michigan Potato Industries (MPIC), Cargill Potato Demonstration Storage Facility. Two samples were stored at approximately 55°F for a January and March evaluation. The remaining two, 25 tuber samples were stored at approximately 48°F to be evaluated in January and March as well.

Results:

The 40 pound tuber samples placed in the grower's commercial storage were removed in late March 2006. The storage temperature was maintained at 48 °F. For sprout control, CIPC was applied in the storage in late November 2005. Table 1 summarizes the chip quality of these 40 pound samples after being processed at Herr Foods, Inc. on March 30, 2006. The varieties are listed in yield order from top to bottom, highest to lowest.

Table 2 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 2005. The samples were stored at approximately 48°F and 55°F and were chipped on January 27th and March 24th, 2006. All samples were treated with CIPC in late October.

As seen in Table 1, Herr Foods rated W2133-1 as having the best all around chip quality from these storage samples. ND5822C-7 exhibited the best Agtron score as well as the least number of chip defects in the group.

From Table 2, W2133-1 appears to have the best quality chip color and internal defect scores across temperatures and sampling dates. ND5822C-7 exhibited a very high level of hollow heart in this evaluation.

Table 1. 2005-2006 Out of Storage Chip Quality, V & G Farms¹.

Entry	Agron Color	SFA ² Color	Specific Gravity	Percent Chip Defects ³			Comments
				Internal	External	Total	
ND5822C-7	60.3	2.0	1.091	8	7	15	large grade some over 4", nice external, no scab, light hollow heart, nice appearance, some light shading
MSJ461-1	57.1	3.0	1.077	37	7	44	nice size but some small, 30% pitted surface scab, poor appearance with necrosis type color
MSJ316-A	53.9	2.0	1.084	38	0	38	nice external, few light green, no scab, good average size, high internal vascular ring
Snowden	57.0	2.0	1.078	3	37	40	nice size, 40% deep pitted scab, some sunburn & light shading with few green edges
Megachip	54.7	2.5	1.090	11	11	23	little large, good consistent size, some light scab, good externals, some color, overall good appearance
W2133-1	57.0	2.0	1.080	7	10	18	nice consistent size, good external, very light scab, nice appearance, few with color
A91814-5	55.0	3.0	1.075	25	40	65	many under 1.5", deep pitted scab over 50% tubers, very poor finished appearance
Atlantic	49.5	4.0	1.077	47	13	60	nice size, 25% deep pitted scab, chipped poorly with dark color
NY132	51.2	4.0	1.082	30	10	40	nice size, good external appearance, light scab on less than 5%
AF2211-9	58.7	2.5	1.075	13	9	22	high % of tubers 2" and smaller, some pitted scab up to 30%, some light shading and light green

¹ Samples removed from 48 °F storage and processed by Herr Foods Inc., Nottingham, PA on March 30, 2006.

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 2. 2005-2006 Out of Storage Chip Quality Samples, Cargill Storage¹.

ENTRY	46°F January 27, 2006						54°F January 27, 2006						50°F March 24, 2006						55°F March 24, 2006					
	SFA ²		CHIP Defects ³				SFA ²		CHIP Defects ³				SFA ²		CHIP Defects ³				SFA ²		CHIP Defects ³			
	COLOR	HH	BC	IBS	VD	SED	COLOR	HH	BC	IBS	VD	SED	COLOR	HH	BC	IBS	VD	SED	COLOR	HH	BC	IBS	VD	SED
ND5822C-7	3.5	32%				n/a	1.5	36%			12%	n/a	2.5	40%			4%	n/a	2.0	40%			8%	n/a
MSJ461-1	2.5				8%	n/a	1.5	4%		4%	4%	n/a	2.5	4%			4%	n/a	2.0			8%		n/a
MSJ316-A	1.5	9%		4%	4%	n/a	1.0	8%			8%	n/a	1.5	12%			12%	n/a	2.0	16%			8%	n/a
SNOWDEN	1.5	4%			12%	n/a	1.0	8%			8%	n/a	1.0	8%		4%	12%	n/a	2.5			8%	12%	n/a
MegaChip	1.0		16%			n/a	1.0	12%		4%	8%	n/a	1.5	12%		4%	12%	n/a	2.0	30%		10%	10%	n/a
W2133-1	1.0	20%				n/a	1.5					n/a	1.0				12%	n/a	1.5			8%	12%	n/a
A91814-5	1.5					n/a	1.5				4%	n/a	2.0			4%	8%	n/a	1.5		4%	8%	12%	n/a
Atlantic	1.5		20%			n/a	1.5	4%		4%		n/a	2.0	12%		4%	4%	n/a	3.0	8%		4%	4%	n/a
NY132	2.0	4%				n/a	1.5					n/a	1.5	4%		4%		n/a	2.0				8%	n/a
AF2211-9	3.0	12%	4%		4%	n/a	1.5	4%	4%	4%	12%	n/a	1.5	8%		4%	12%	n/a	2.0	20%		12%	8%	n/a

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.