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2005 POTATO VARIETY EVALUATIONS

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INTRODUCTION

Each year we conduct a series of variety trials to assess advanced potato selections from the Michigan State University and other potato breeding programs at the Montcalm Research Farm. The evaluation also includes disease evaluation in the scab nursery and foliar and tuber late blight evaluation at the Muck Soils Research Farm. The objectives of the evaluations are to identify superior varieties for fresh market or for processing and to develop recommendations for the growing of those varieties. The varieties were compared in groups according to the tuber type and skin color and to the advancement in selection. Each season, total and marketable yields, specific gravity, tuber appearance, incidence of external and internal defects, chip color (from field, 45°F and 50°F storage), as well as susceptibilities to late blight (foliar and tuber), common scab, and blackspot bruising are determined.

PROCEDURE

Ten field experiments were conducted at the Montcalm Research Farm in Entrican, MI. They were planted as randomized complete block designs with two to four replications. The plots were 23 feet long and spacing between plants was 12 inches. Inter-row spacing was 34 inches. Supplemental irrigation was applied as needed. The field experiments were conducted on new potato ground that was in corn the previous year.

The round white tuber types were divided into chip-processors and tablestock and were harvested at two dates (Date-of-Harvest trial: Early and Late). The other field experiments were the Russet, North Central White, Red, Adaptation (tablestock and chip-processors), and Preliminary (tablestock and chip-processors) and Transgenic trials. In each of these trials, the yield was graded into four size classes, incidence of external and internal defects in > 3.25 in. diameter or 10 oz. potatoes were recorded, and samples for specific gravity, chipping, disease tests, bruising, and cooking tests were taken. Chip quality was assessed on 25-tuber samples, taking two slices from each tuber. Chips were fried at 365°F. The color was measured visually with the SFA 1-5 color chart. Tuber samples were also stored at 45°F and 50°F for chip-processing out of storage in January and March. Advanced selections are also placed in the Commercial Demonstration Storage for monthly sampling. The scab nursery at the MSU Soils Farm and the late blight trial at the Muck Soils Research Farm are used for scab and foliar late blight assessment of lines in the agronomic trials.

RESULTS

A. Round White Varieties:

Chip-processors and Tablestock (Tables 1 and 2)

There were 24 entries that were compared at two harvest dates. Atlantic, Snowden, Pike and three Frito Lay clones were used as checks. The plot yields were below average in the early harvest (98 days), and specific gravity values were also below average due to the high temperatures in July and August. Most lines increased at least 100 cwt/a in yield for the second harvest date (147 days). The results are summarized in **Tables 1 and 2**. Hollow heart and vascular discoloration were the prevalent internal defects. *Note that this year we changed the format of all variety trial tables so that the internal defects are presented as percentages rather than as a count.* Atlantic, MSE221-1, FL1833 and FL1879 showed the highest incidence of hollow heart between the two harvest dates. In the early harvest trial, the best yielding chipping lines were Atlantic, MSM051-3, MSE221-1, Atlantic and FL1833. MSM051-1, has high yield potential and shows scab resistance and chip-processing potential. Beacon Chipper also has high yield potential, reduced scab susceptibility and chip-processing potential. MSJ147-1 is showing promise as a chipper out of colder and long term storage. MSJ461-1 is a promising chip-processing line with strong foliar resistance to late blight that also has tablestock quality. MSL211-3 is a bright skinned round white with both late blight and scab resistance. In addition, MSM051-3, MSG227-2, MSJ036-A, MSJ316-A, MSH228-6, MSK061-4 and FL1922 offer scab resistance. MSG227-2 was discontinued after the chip-processors determined that the tuber shape is too long.

Variety Characteristics

Beacon Chipper – an unknown eastern chip processing line thought to be from USDA-Beltsville. It has high yield potential and scab tolerance along with excellent chip-processing quality. It is in the 500 cwt 2002, 2003 and 2004 Commercial Demonstration Storage bins. It was named and released in 2005.

MSG227-2 – a MSU chip-processing selection with strong scab resistance was discontinued because of its shape being too long for the chip-processors.

MSJ147-1 – a full season storage chipper that also has some early sizing. It has excellent chip-processing quality and a large percentage of A-size tubers. It has performed well in on-farm trials.

MSH228-6 – a chip-processing line with moderate scab resistance. It has a good type and has performed well in on-farm trials.

MSH095-4 - a mid-season maturing line with excellent chip quality and bruise susceptibility equal to Snowden. It had not yielded well in the past few years at Montcalm Research Farm or the on-farm trials. It is intermediate in scab tolerance between Atlantic and MSG227-2.

MSJ461-1 – an MSU chip-processing selection with strong foliar resistance to late blight and maturity similar to Snowden. It has excellent chip-processing quality, smooth round shape and above average yield, but an intermediate specific gravity in most years. The chips show few defects.

It has good tablestock quality too.

MSJ036-A – an MSU chip-processing selection. In 2003, MSJ036-A was the highest yielding line. It also has a high specific gravity reading and scab resistance. The tuber type of MSJ036-A is also round and attractive.

MSJ316-A – an MSU chip-processing selection. Has high yield potential and scab resistance and bright skin appearance. Currently in on-farm trials.

MSE221-1 – an MSU tablestock selection. A ‘Superior-type’ potato that has moderate scab resistance and a higher yield potential than the variety Superior. The tuber type is also more attractive than Superior.

Note: In December 2004 and 2005, MPIC sponsored a booth at the Great Lakes Expo to market Liberator, Michigan Purple and Jacqueline to the farm market/ roadside stand market segment. This grass roots effort may be the method to have these potatoes reach the consumers. The description of these varieties are below.

MICHIGAN PURPLE - a tablestock selection with an attractive purple skin. This selection has high yield potential and the tubers have a low incidence of internal defects. The vine maturity is mid-season to mid-early. Do not let the tubers oversize. A thin skin makes this variety a challenge market on a large scale without making adjustments in harvest, washing and grading process. We regard this as a variety that can compete in the red market. It has great potential in the roadside stand and farm markets.

JACQUELINE LEE – an MSU oval/oblong tablestock selection with a high tuber set. The tubers have the bright skinned, smooth and attractive appearance that is typical of many European cultivars. The tubers have very low incidence of internal defects and good baking quality. It is our best tasting potato! The strength of this selection is also its strong foliar resistance to the US8 genotype of late blight. Vine maturity is similar to Snowden. There is interest in California to market this variety. It has great potential in the roadside stand and farm markets.

LIBERATOR - a MSU selection for chip-processing with strong scab resistance. In 2005 it was being grown as a bright skinned tablestock potato.

B. North Central Regional Round White Trial (Table 3)

The North Central Trial is conducted in a wide range of environments (11 locations) to provide adaptability data for the release of new varieties from North Dakota, Minnesota, Wisconsin, Michigan and Canada. Sixteen breeding lines and 5 varieties were tested in Michigan. The results are presented in **Table 3**. The range of yield was very wide (424 cwt – 98 cwt) which is typical for this trial each year. Moreover, the yields were below average this year, while the specific gravity readings were average. The MSU lines MSJ461-1, MSI152-A, MSH095-4, MSH356-A and MSI005-20Y were the Michigan representatives included in the North Central Trial. Both MSJ461-

land MSI152-A have nice type and both have foliar late blight resistance. We will continue to evaluate MSH095-4 because of its excellent sugar profile in storage. NY126 and MSI005-20Y are yellow-fleshed lines with high yield potential and attractive round appearances. B0766-3 has high yield but was plagued by hollow heart. The most promising Wisconsin selections were Megachip, W2128-8 and W2133-1. Monticello was below average in yield and the most blackspot susceptible line in 2005.

C. Russet Varieties (Table 4)

The russet trial had 19 lines evaluated in 2005. GoldRush and Russet Norkotah were the standard varieties in the trial and the results are summarized in **Table 4**. Scab resistance was prevalent among the lines tested. Hollow heart was the most prevalent internal defect. At least 33% hollow heart was observed in CO904035-15RU, W2683-2RUS, AC92009-4RU, TXNS287, GemStar and TXA549-1RU. Specific gravity measurements were below average with Russet Norkotah and GoldRush having 1.065 and 1.064 readings, respectively. The yield of the overall trial was below average for 2005, which has been typical for the Russet trials at Montcalm Research Farm. Off type and cull tubers were found in all lines tested, but the frequency was generally low in 2005. Vine maturity varied among lines but it did not correlate with yield. Gemstar and Silverton Russet show the most promise, however, the varietal choice should take into account whether a new variety is a symptomless carrier of PVY. MSA8254-2BRUS is a high yielding MSU selection that has yielded well in on-farm trials. MSL794-BRUS had foliar late blight resistance, but did not exhibit strong resistance to scab. Stampede Russet has a very attractive type, but has a low yield. MSE192-8RUS has similar features. TXDH99-1RU has many valuable agronomic features and should be looked at further.

D. Red-Skinned Tablestock Trial

Thirteen lines were tested in the red trial. The top yielding lines were Michigan Purple, NDTX4271-5R and ND5281-2R. In general, internal quality was good. Tolerance to scab was generally high among the lines in the trial. MSN230-1RY has a rose skin, yellow flesh and late blight resistance. NDTX42715R has a deep red color, attractive round shape and an early maturity. MSN215-2P is a hybrid between Norland and Michigan Purple that has a stronger purple skin than Michigan Purple. Some purple and red-fleshed lines were also in the trial which may offer some novelty tablestock market niches.

E. Adaptation Trial (Tables 6 and 7)

The Adaptation trial was divided into chip-processing and tablestock trials. Two cultivars (Snowden and Atlantic) and 16 advanced breeding lines are reported in the chip-processing trial. The trial was harvested after 139 days and the results are summarized in **Table 6**. Lines that combine scab resistance and chip-processing are MSM058-A, MSL292-A, MSL007-B, MSK409-1 and MSJ126-9Y. Three lines have foliar late blight resistance, but only MSL603-319-Y shows promise as a chip-processing line. MSM182-1 has late blight resistance, but should be considered for the tablestock market.

In the tablestock trial Onaway was the check variety and 11 advanced breeding lines are summarized in the table. The trial was harvested after 139 days and the results are summarized in **Table 7**. Six of the 11 lines have late blight resistance and 6 lines have moderate to strong scab resistance. In general the yield was good in this trial and internal defects were low. The most noteworthy lines are MSM037-3 due to its high yield and scab resistance; MSN105-1, a scab and late blight resistant line with a bright appearance and early maturity, MSM171-A, a late blight resistant line with early maturity; MSN106-2, a scab resistant line with a smooth attractive netted appearance and MSL228-1, a purple and white splashed skin with an appealing taste.

F. Preliminary Trial (Tables 8 and 9)

The Preliminary trial is the first replicated trial for evaluating new advanced selections from the MSU potato breeding program. The division of the trials was based upon chip-processing and tablestock utilization. Thirty-one advanced selections and three check varieties (Atlantic, Snowden and Pike) were reported in the chip-processing Preliminary trial. The chip-processing trial is summarized in **Table 8** was harvested after 127 days. Most lines chip-processed well from the field and the most exceptional chipper tended to have a lower marketable yield. Specific gravities were average, but yield was average. Many lines were also classified to be resistant or moderately resistant to scab. Five lines have late blight resistance: MSP515-2, MSP542-04, MSL268-D, MSP542-11 and MSP459-5,. The most overall promising lines chip-processing lines were MSP515-2, MSN170-A, MSN238-A and MSN123-B. MSM060-3 had exceptional chip color, high specific gravity, scab resistance, but a low yield similar to Pike. **Table 9** summarizes the tablestock lines with Onaway as a check. Interestingly, many have foliar late blight resistance like we saw in the 2004 trial. This tablestock trial was harvested and evaluated after 127 days. Twelve of the 24 lines were late blight resistant. Despite the late blight resistance, the vine maturities were not late in all cases. Five of the lines had specific gravity and chip scores to be considered for chip-processing. Three Idaho russet lines were also evaluated. A95109-1 shows the most promise with high yield, good sizing, good type and scab resistance. The most promising lines combining tablestock qualities and late blight resistance are MSP408-14Y, MSL082-A, MSP408-10Y, MSP403-2 and MSM148-A. MSN084-3 is a selection with bright, round tubers. It is a cross between Boulder and Chaleur. MSN099-B may show promise as a chip-processor.

G. Transgenic Trial (Table 10)

A field trial was conducted to evaluate *Bt-cryIIaI* transgenic potato lines. The results are summarized in **Table 10**. Spunta G2 and Spunta G3 have good agronomic performance and good type. We are attempting to commercialize Spunta-G2 in South Africa. Due to the tuber moth problem in the Pacific Northwest, We have tested these lines in Washington State and the resistance is complete in the field. We also have a transgenic line of Jacqueline Lee (MSG274-35.1) that is agronomically equivalent to Jacqueline Lee.

H. Potato Scab Evaluation (Table 11)

Each year a replicated field trial at the MSU Soils Farm is conducted to assess resistance to common and pitted scab. We are using a modified scale of a 0-5 ranking based upon a combined score for scab coverage and lesion severity. Usually examining one year's data does not indicate

which varieties are resistant but it should begin to identify ones that can be classified as susceptible to scab. Our goal is to evaluate important advanced selections and varieties in the study at least three years to obtain a valid estimate of the level of resistance in each line. **Table 11** categorizes many of the varieties and advanced selections tested in 2005 at the MSU Soils Farm Scab Nursery over a three-year period. The varieties and lines are placed into six arbitrary categories based upon scab infection level and lesion severity. A rating of 0 indicates zero infection. A score of 1.0 indicates a trace amount of infection. A moderate resistance (1.2 – 1.8) correlates with <10% infection. Scores of 4.0 or greater are found on lines with >50% infection and severe pitted lesions. This disease trial is a typically a severe test, but the scab infection in 2005 was low. As a consequence, the scab rating in 2005 is an average score that is biased towards a low value. If one looks at the worst plot score in 2005, this value may indicate the potential susceptibility of the line tested. The check varieties Russet Burbank, GoldRush, Onaway, Pike, Atlantic and Snowden can be used as references (bolded in **Table 11**). In general, most russet lines were scab resistant. This year's results, like 2004, indicate that we have been able to breed numerous lines for the chip-processing and tablestock markets with resistance to scab. Most notable scab resistant MSU lines are Liberator, MSG227-2, MSE192-8RUS, MSE202-3RUS, MSE221-1, MSH228-6, MSK409-1, MSL211-3, MSN105-1, MSJ126-9Y, MSK061-4, MSM051-3, MSL007-1 and MSJ036-A. The greater number of MSU lines in the resistant and moderately resistant categories indicates we are making progress in breeding more scab resistant lines for the chip-processing and tablestock markets. Scab results from the disease nursery are also found in the Trial Summaries (**Tables 2-10**).

J. Late Blight Trial (Table 12)

In 2005, a late blight trial was conducted at the Muck Soils Research Farm. Over 100 entries were evaluated in replicated plots. The field was planted on June 2 and inoculated July 26 with a combinations of isolates (see Table 12 for isolates), and ratings were taken throughout August. Most lines were highly susceptible to the US-8 genotype of late blight. Included in this trial are the varieties and lines from the MSU trials at the Montcalm Research Farm. The partial results are summarized in **Table 12**. The first column lists the lines classified as resistant, while the second column lists select varieties that are susceptible. The late blight differential lines LBR8 and LBR9 were resistant in 2004 as in previous years (not shown in table). Forty MSU lines were highly resistant to late blight. Resistance of the MSU lines is derived from Tollocan (a Mexican variety), B0718-3 (USDA clone), AWN96518-2 (USDA clone), Stirling (Scottish variety), Torridon (Scottish variety), NY121 (Cornell University clone) and Jacqueline Lee (MSU variety). These resistant progeny indicate that we can continue to breed for resistance using this group of resistant clones. We find these late blight resistant lines valuable because many of them also have marketable maturity and some are more tolerant to scab as compared to the first generation of late blight resistant lines. Also, some of these lines have chip-processing quality. Tuber late blight resistance is being evaluated on many of the selections with foliar late blight resistance.

K. Blackspot Susceptibility (Table 13)

Increased evaluations of advanced seedlings and new varieties for their susceptibility to blackspot bruising have been implemented in the variety evaluation program over the past decade. Based upon the results collected over the past three years we decided to eliminate the check sample from our bruise assessment. Therefore a composite bruise sample of each line in the trials was collected. The sample consisted of 25 tubers (a composite of 4 reps) from each line at the time of grading. The 25 tuber sample was held in 50°F storage overnight and then was placed in a hexagon plywood drum and tumbled 10 times to provide a simulated bruise. The samples were peeled in an abrasive peeler in October and individual tubers were assessed for the number of blackspot bruises on each potato. These data are shown in **Table 12**. The bruise data are represented in two ways: percentage of bruise free potatoes and average number of bruises per tuber. A high percentage of bruise-free potatoes is the desired goal; however, the numbers of blackspot bruises per potato is also important. Cultivars which show blackspot incidence greater than Atlantic are approaching the bruise-susceptible rating. In addition, the data is grouped by trial, since the bruise levels can vary between trials. Conducting the simulated bruise on 50°F tubers is helping to standardize the bruise testing. We are observing less variation between trials since we standardized the handling of the bruise sample. In 2005 the bruise levels were comparable to other years. The most bruise resistant lines this year were FL1922, MSM051-3, MSH228-6, MSJ036-A, MSL211-3, MSK061-4, MSM171-A, MSN105-1, MSM037-3, MSP270-1, MSN084-3, MSL072-C, MSI005-20Y, GoldRush and Russet Norkotah. The most susceptible lines were Beacon Chipper, NY132, MSN180-3, Monticello, W2133-1, W2310-3, W2683-2RUS, Snowden and Atlantic.

Table 1

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICSDATE OF HARVEST TRIAL: EARLY HARVEST
MONTCALM RESEARCH FARM
May 4 - August 9, 2005 (98 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	CHIP SCORE ²	PERCENT (%)				3-YR AVG
	US#1	TOTAL	US#1	Bs	As	OV	PO			TUBER QUALITY ³				US#1
									HH	VD	IBS	BC	CWT/A	
MSM051-3	294	312	94	6	90	4	0	1.074	1.0	5	0	0	0	-
MSE221-1	267	285	94	6	84	10	1	1.066	1.5	35	0	0	0	-
Atlantic	261	287	91	9	89	2	0	1.082	1.0	23	0	0	0	263
FL1833	247	265	93	6	88	5	0	1.075	1.0	18	3	0	0	257
Snowden	222	263	84	16	84	0	0	1.076	1.0	0	0	0	0	222
FL1879	207	221	94	6	90	4	0	1.069	1.0	20	0	0	0	228
Beacon Chipper	206	224	92	8	91	1	0	1.078	1.0	5	0	0	0	210
MSJ147-1	202	233	87	13	86	1	0	1.077	1.0	3	0	3	0	248
MSK498-1Y	199	237	84	16	84	0	0	1.067	1.5	0	0	0	0	-
MSL211-3 ^{LBR}	185	214	86	14	80	7	0	1.063	3.0	0	0	0	0	-
MSJ461-1 ^{LBR}	176	233	76	24	76	0	0	1.067	1.5	0	0	0	0	185
MSJ036-A	169	214	79	21	79	0	0	1.072	1.5	0	0	0	0	-
MSK128-A ^{LBR}	157	177	89	11	88	1	0	1.080	1.0	8	0	3	0	-
Pike	150	187	80	20	80	0	0	1.075	1.0	0	3	0	0	-
NY132	149	188	79	21	79	0	0	1.077	1.0	0	0	0	0	-
MSG227-2	146	168	87	13	87	0	0	1.072	1.0	0	0	0	0	187
A91814-2	140	177	79	20	79	0	1	1.078	1.0	0	0	0	0	-
MSK009-B	137	165	83	17	83	0	0	1.068	1.0	0	0	0	0	-
FL1922	129	160	81	18	80	1	2	1.071	1.0	0	0	0	0	157
MSH228-6	120	143	84	16	84	0	0	1.071	1.0	0	0	0	0	161
W2128-8	116	146	80	20	79	1	0	1.085	1.0	0	0	0	0	-
MSJ316-A	87	111	78	22	78	0	0	1.069	1.0	0	0	0	0	-
MSK061-4	87	135	64	36	64	0	0	1.080	1.0	0	3	0	0	-
MSK049-A	61	170	36	64	36	0	0	1.076	1.0	3	0	0	0	-
MEAN	171	205						1.074						
LSD _{0.05}	45	45						0.003						

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.

³QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

Table 2

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICSDATE OF HARVEST TRIAL: LATE HARVEST
MONTCALM RESEARCH FARM
May 4 - September 27, 2005 (147 days)

LINE	CWT/A		PERCENT OF TOTAL ¹						CHIP SCORE ²	PERCENT (%) TUBER QUALITY ³					MAT ⁵	3-YR AVG
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR		HH	VD	IBS	BC	SCAB ⁴		US#1
																CWT/A
Beacon Chipper	414	431	96	3	80	16	1	1.083	1.0	23	5	0	0	1	3.5	332
Atlantic	351	374	94	5	85	8	1	1.087	1.0	45	3	5	0	0-3	2.0	347
MSK498-1Y	350	393	89	11	89	0	1	1.075	1.0	0	0	0	0	1-2	3.3	-
MSM051-3	344	364	95	5	86	8	0	1.075	1.0	10	0	0	0	1	1.5	-
Snowden	338	375	90	10	86	4	0	1.081	1.0	28	8	0	0	0-3	2.5	295
FL1879	336	349	96	3	79	17	1	1.076	1.5	55	13	0	0	2-3	1.8	316
MSE221-1	336	361	93	3	80	13	4	1.071	-	28	3	0	0	1	1.3	-
MSJ461-1 ^{LBR}	331	381	87	13	87	0	0	1.075	1.0	0	0	0	0	1-2	3.3	315
FL1833	330	346	95	4	87	8	1	1.081	1.0	38	8	0	0	1-2	2.5	303
MSJ316-A	306	335	91	9	89	2	0	1.082	1.0	5	0	5	0	1	4.0	-
A91814-2	287	353	81	15	81	0	4	1.087	1.0	0	5	0	0	1-2	3.3	-
MSJ036-A	286	333	86	14	85	0	0	1.080	1.0	5	0	0	0	0-1	2.0	-
MSJ147-1	276	301	92	8	86	6	1	1.084	1.0	5	0	0	0	2	3.0	293
MSL211-3 ^{LBR}	267	295	91	8	82	9	1	1.067	-	0	3	0	0	1	1.5	-
NY132	250	286	87	12	86	1	0	1.086	1.0	3	0	0	0	1-2	2.8	-
MSK128-A ^{LBR}	236	271	87	12	86	1	1	1.083	1.0	0	0	0	0	1-3	1.0	-
FL1922	234	257	91	7	89	2	1	1.077	1.0	18	5	0	0	1	1.8	211
W2128-8	234	271	86	12	81	5	1	1.090	1.0	10	0	13	0	0-1	2.5	-
MSK061-4	227	269	84	16	84	0	0	1.088	1.0	0	13	0	0	0-1	2.8	-
MSK009-B	225	257	88	11	84	4	1	1.077	1.0	8	3	0	0	0-1	1.5	-
Pike	219	261	84	16	84	0	0	1.081	1.0	0	0	0	0	1	2.0	-
MSK049-A	199	304	65	34	64	1	0	1.087	1.0	3	13	5	0	1-3	3.3	-
MSG227-2	195	263	74	13	74	0	13	1.079	1.0	20	0	0	0	1	2.8	259
MSH228-6	191	222	86	11	83	3	2	1.077	1.0	15	5	0	0	1	2.5	243
MEAN	282	319						1.080								
LSD _{0.05}	68	69						0.003								

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.³QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.⁴SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁵MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 3

ROUND WHITE TRIAL
MONTCALM RESEARCH FARM
May 4 - September 12, 2005 (132 days)

LINE	CWT/A		PERCENT OF TOTAL ¹						CHIP SCORE ²	PERCENT (%) TUBER QUALITY ³					MAT ⁵	3-YR AVG
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR		HH	VD	IBS	BC	SCAB ⁴		US#1 CWT/A
NY126	424	443	96	4	92	4	1	1.078	1.5	15	3	0	0	1	2.5	-
MSJ461-1 ^{LBR}	400	475	84	15	83	1	0	1.076	1.5	0	0	0	0	1-2	3.5	-
MSI005-20Y	400	433	92	7	87	6	1	1.073	-	0	0	0	0	1-2	2.0	-
B0766-3	385	413	93	4	84	9	3	1.083	1.5	90	0	0	0	2-3	3.5	299*
Snowden	382	423	90	9	88	2	1	1.080	1.0	13	0	0	0	0-3	1.0	-
Atlantic	380	411	92	6	87	5	2	1.088	1.5	33	5	5	0	0-3	1.5	-
MSI152-A ^{LBR}	338	390	87	13	86	1	1	1.072	-	0	0	0	0	1	3.3	-
MegaChip	336	377	89	5	86	4	5	1.092	1.0	20	13	0	0	0-2	3.0	-
W2128-8	333	367	91	8	85	5	1	1.093	1.5	23	3	25	3	0-1	2.0	-
W2133-1	269	315	85	14	83	2	1	1.086	1.0	8	0	5	0	1	2.3	-
MSH095-4	254	274	93	6	78	14	1	1.082	1.0	10	8	0	0	1-2	1.5	256
Liberator	238	272	88	9	82	5	4	1.079	1.5	5	5	0	0	0-1	2.5	237
MSH356-A	235	250	94	6	85	9	0	1.073	1.0	35	0	0	0	1-2	1.3	-
CO95051-7W	231	280	83	16	83	0	1	1.089	1.5	0	0	3	3	0-1	3.0	-
Monticello	229	264	87	13	86	1	0	1.081	1.0	3	5	0	0	1	1.3	-
W2717-5	226	259	87	11	87	0	2	1.085	1.5	20	25	5	0	1-3	1.0	-
W2310-3	220	251	88	10	88	0	3	1.093	1.0	0	0	3	0	1-2	2.3	-
MN99380-1	156	218	72	26	72	0	2	1.071	1.0	0	0	3	0	-	2.0	-
W4013-1	153	210	73	27	73	0	1	1.083	1.0!	0	0	0	0	2	1.0	-
W2309-7	101	139	72	24	71	1	3	1.082	1.5	20	0	3	0	1-2	1.8	-
MN99144-1	98	152	64	31	64	0	4	1.072	1.5	0	13	7	0	1-2	2.0	-
MEAN	276	315						1.081								
LSD _{0.05}	53	53						0.002								* Two-Year Average

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.

³QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

⁴SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁵MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 4

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICSRUSSET and LONG TYPES TRIAL
MONTCALM RESEARCH FARM
May 4 - September 12, 2005 (132 days)

LINE	CWT/A		PERCENT OF TOTAL ¹						PERCENT (%) TUBER QUALITY ²						3-YR AVG
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB ³	MAT ⁴	US#1 CWT/A
MSL794-BRUS ^{LBR}	348	411	85	10	67	17	5	1.082	0	0	20	0	1-2	3.3	287*
MSA8254-2BRUS	295	386	76	18	68	8	5	1.070	23	0	0	0	0	2.5	292
CO904035-15RU	290	367	79	19	74	5	2	1.071	40	0	0	0	1	4.0	-
W2683-2RUS	287	371	77	16	64	13	7	1.070	38	0	0	0	0-1	2.5	-
TXDH99-1RU	281	345	81	17	74	7	2	1.085	0	0	0	0	1	3.5	-
MWTX2609-2RU	277	333	83	15	71	12	2	1.082	5	0	0	0	1-5	3.3	-
Silverton Russet	263	305	86	13	68	19	1	1.069	7	0	0	0	0-1	2.8	245
Stampede Russet	224	297	75	20	65	10	4	1.058	7	3	0	0	1	1.3	159*
AC92009-4RU	216	269	80	15	71	9	5	1.081	45	0	0	0	0-3	2.3	-
CO93001-11RU	206	285	72	27	68	4	0	1.064	5	8	0	0	0-2	1.3	-
GoldRush	197	253	78	17	67	11	5	1.064	5	13	0	0	0-1	1.5	196
A8893-1	187	278	67	31	64	4	1	1.079	30	0	0	0	0-1	3.0	200*
TXNS287	184	267	69	26	64	5	5	1.067	33	3	0	0	1-2	1.5	-
ND7994-1RUS	183	265	69	26	67	2	5	1.076	0	13	0	0	0-1	1.8	-
GemStar	182	228	80	18	67	13	2	1.078	33	3	0	0	0	3.0	251*
TXA549-1RU	176	245	72	22	62	10	6	1.073	45	5	0	0	0-1	2.5	-
MN99460-21	152	217	70	25	62	8	5	1.073	27	0	17	0	-	2.8	106*
Russet Norkotah	136	193	71	27	67	4	3	1.065	18	10	0	0	1-2	1.5	131*
W1879-1RUS	129	205	63	36	57	5	1	1.072	18	0	0	0	0-1	1.8	-
MEAN	222	290						1.073							
LSD _{0.05}	59	65						0.002							* Two-Year Average

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 4 oz.; A: 4-10 oz.; OV: > 10 oz.; PO: Pickouts.

²QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

³SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁴MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 5

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

RED-SKINNED TABLESTOCK TRIAL
MONTCALM RESEARCH FARM
May 5 - September 7, 2005 (127 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					PERCENT (%) TUBER QUALITY ²					SCAB ³	MAT ⁴
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC		
	Michigan Purple	400	448	89	4	76	13	7	1.070	5	3	0		
NDTX4271-5R	360	412	87	8	79	8	5	1.055	0	5	0	0	1	1.5
ND5281-2R	352	409	86	10	86	0	4	1.067	13	5	0	0	2	1.0
NDTX4304-1R	294	352	84	7	74	10	9	1.055	5	0	0	0	1-3	1.0
MSN109-7PP	284	313	91	4	72	18	5	1.062	8	0	0	0	-	3.3
MSN111-4PP	265	286	93	7	91	2	0	1.070	0	0	0	0	1-3	1.8
MSN230-1RY ^{LBR}	257	311	83	14	81	1	4	1.085	0	8	0	0	0-1	3.3
NDTX731-1R	250	297	84	10	81	3	6	1.049	0	3	0	0	1	2.3
CO89097-2R	242	308	79	11	75	3	10	1.066	8	8	0	0	1	1.5
MSN215-2P	221	274	81	11	81	0	8	1.076	0	0	0	0	1	1.0
MSN109-6RR	203	299	68	29	68	0	4	1.066	0	0	0	0	-	3.8
Villetta Rose	197	259	76	22	68	8	2	1.056	0	3	0	0	0-1	1.0
MN96013-1R	109	140	78	19	76	2	3	1.066	0	0	0	0	-	2.0
MEAN	264	316						1.065						
LSD _{0.05}	80	86						0.004						

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

³SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁴MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 6

ADAPTATION TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 4 - September 19, 2005 (139 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	CHIP SCORE ²	PERCENT (%) TUBER QUALITY ³					
	US#1	TOTAL	US#1	Bs	As	OV	PO			HH	VD	IBS	BC	SCAB ⁴	MAT ⁵
Atlantic	366	393	93	5	89	4	1	1.088	1.0	33	0	0	0	0-3	1.5
MSM058-A	339	356	95	4	93	2	1	1.074	1.5	3	0	0	0	0-1	2.3
MSN180-3	328	342	96	4	82	14	0	1.088	1.5	15	8	0	0	2-3	2.5
MSN143-3	323	342	94	5	81	13	0	1.071	1.5	35	0	0	0	1-2	1.5
Snowden	295	328	90	10	88	2	0	1.084	1.0	8	5	0	0	0-3	1.5
MSM182-1 ^{LBR}	273	337	81	19	81	0	0	1.072	3.0	5	3	0	0	1-2	2.0
MSL292-A	269	291	92	8	88	5	0	1.079	1.0	13	3	0	0	1	1.0
MSL007-B	268	306	88	12	87	0	0	1.078	1.0	15	3	0	0	0-1	2.8
MSL603-319Y ^{LBR}	267	293	91	8	88	3	1	1.083	1.5	15	0	3	0	1-2	3.3
MSN073-2	265	289	91	7	89	2	1	1.076	1.0	15	0	0	0	1-2	1.0
MSN184-2	264	285	93	7	86	7	0	1.072	1.0	0	0	0	0	1	2.8
MSK409-1	232	283	82	18	81	1	0	1.084	1.0	15	3	0	0	0-1	1.3
MSK437-A	221	227	97	2	75	23	0	1.073	1.0	50	0	0	0	1-3	3.3
MSJ126-9Y	217	250	87	13	84	3	1	1.073	1.5	10	0	0	0	1	1.0
MSN191-2Y	200	237	84	16	82	2	0	1.091	1.5	5	0	0	0	1-2	2.0
MSM053-4	183	214	86	14	86	0	0	1.090	2.0	28	3	3	3	1-2	3.8
MSN200-2 ^{LBR}	175	281	62	37	62	0	0	1.088	1.5	0	5	0	0	2-3	2.8
MSM297-AY	111	139	80	20	79	1	1	1.080	1.0	0	0	0	0	1	1.0
MEAN	255	289						1.080							
LSD _{0.05}	66	70						0.003							

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.

³QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

⁴SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁵MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 7

ADAPTATION TRIAL, TABLESTOCK LINES
 MONTCALM RESEARCH FARM
 May 4 - September 19, 2005 (139 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					PERCENT (%) TUBER QUALITY ²					SCAB ³	MAT ⁴
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC		
MSM037-3	422	457	92	5	90	2	2	1.074	0	3	0	0	1.0	3.3
MSM224-1 ^{LBR}	386	434	89	7	81	8	4	1.075	15	0	0	0	1-2	3.8
MSL045-AY	355	397	90	7	82	7	3	1.070	0	10	0	0	0-1	2.3
MSN105-1 ^{LBR}	308	362	85	14	85	1	0	1.082	3	5	0	0	1	1.3
MSL183-AY ^{LBR}	303	350	87	13	86	1	1	1.065	3	5	0	0	2	1.5
MSM171-A ^{LBR}	302	340	89	6	73	16	6	1.059	5	0	0	0	1?	1.0
MSN106-2	288	300	96	3	80	16	1	1.098	10	8	0	0	1	3.8
ONAWAY	276	320	86	4	76	11	10	1.062	0	18	0	0	1	1.0
MSM183-1 ^{LBR}	275	360	76	17	76	0	7	1.088	3	0	0	0	0-1	2.3
MSN159-4 ^{LBR}	240	277	87	13	82	5	0	1.078	5	13	0	0	1-3	2.8
MSL228-1	222	257	87	11	82	5	3	1.075	0	3	3	0	1-3	1.0
MSN188-1	213	293	73	13	73	0	14	1.073	10	8	0	0	1-3	2.8
MEAN	299	346						1.075						
LSD _{0.05}	72	77						0.004						

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

³SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁴MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICSPRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 5 - September 7, 2005 (127 days)

LINE	CWT/A		PERCENT OF TOTAL ¹						CHIP SCORE ²	PERCENT (%) TUBER QUALITY ³					
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR		HH	VD	IBS	BC	SCAB ⁴	MAT ⁵
	MSP515-2 ^{LBR}	408	444	92	7	76	16	1		1.079	1.0	40	0	0	0
MSM070-1	408	440	93	7	85	8	0	1.077	1.5	0	0	0	0	1-2	2.0
MSN170-A	389	420	93	6	89	4	1	1.083	1.0	0	0	0	0	1	2.5
MSP497-1	385	425	91	9	88	2	0	1.077	2.0	5	0	0	0	1-2	4.0
MSN238-A	358	373	96	4	89	7	0	1.085	1.0	20	0	0	0	1	3.0
MSN123-B	357	397	90	10	89	1	0	1.092	1.0	0	5	0	0	1-3	3.0
Snowden	339	393	86	14	85	1	0	1.084	1.0	5	5	0	0	0-3	2.5
Atlantic	330	354	93	4	81	12	3	1.087	1.0	70	5	0	0	0-3	2.5
MSN252-HY	329	411	80	17	80	0	3	1.087	2.5	0	0	0	0	-	3.5
MSP542-04 ^{LBR}	326	368	88	11	88	0	0	1.082	1.0	30	0	0	0	1-2	3.0
MSM246-B	319	352	91	9	91	0	0	1.079	1.5	0	0	0	0	0-2	2.0
MSP238-1	304	338	90	6	84	6	4	1.070	2.5	0	0	75	0	1	3.0
MSP450-2	300	317	95	5	83	11	0	1.071	2.0	0	0	5	0	0-1	3.0
MSN313-A	291	336	86	13	86	0	1	1.098	1.0	10	0	0	0	0-2	3.5
MSP365-1	285	304	94	6	91	3	0	1.076	1.0	0	0	0	0	1-3	2.0
MSL268-D ^{LBR}	285	323	88	8	85	3	3	1.077	1.0	0	10	5	0	0-2	3.0
MSN148-A	279	317	88	10	84	4	2	1.087	1.0	5	0	0	0	1-2	3.5
MSP542-11 ^{LBR}	278	457	61	37	61	0	2	1.077	1.0	0	0	0	0	1-3	3.0
MSP252-3	272	305	89	11	84	5	0	1.08	1.5	5	0	0	0	0-1	2.0
MSP368-1	263	298	88	9	84	5	3	1.084	1.0	25	0	5	0	1	3.0
MSP270-1	259	292	89	11	89	0	0	1.075	1.0	0	0	0	0	1.0	3.5
MSP327-6	245	292	84	15	84	0	1	1.075	1.5	5	0	0	0	1.0	2.5
MSP292-7	240	259	93	7	86	6	0	1.081	1.0	5	0	0	0	1.0	1.0
MSP239-1	239	278	86	11	86	0	3	1.071	1.0	0	0	0	0	1	1.5
MSN190-2	238	289	83	17	81	1	1	1.085	1.0	45	0	0	0	1-2	1.0
Pike	229	266	86	12	86	0	2	1.087	1.0	0	0	0	0	1	3.0

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 5 - September 7, 2005 (127 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	CHIP SCORE ²	PERCENT (%)					
	US#1	TOTAL	US#1	Bs	As	OV	PO			TUBER QUALITY ³					
										HH	VD	IBS	BC	SCAB ⁴	MAT ⁵
continued:															
MSP382-13	221	253	87	12	85	2	1	1.088	1.0	35	0	0	0	1-2	3.5
MSM060-3	219	298	73	27	73	0	0	1.093	1.0!	0	0	0	0	1	1.0
MSP459-5 ^{LBMR}	205	255	81	19	81	0	0	1.075	1.0!	5	10	0	0	1-2	2.5
MSN236-A	187	260	72	28	72	0	0	1.074	1.0!	0	0	0	0	2	2.0
MSP262-4	161	189	85	15	85	0	0	1.085	1.0!	0	0	10	0	0-2	2.0
MSN085-2Y	150	193	78	22	78	0	0	1.088	1.0!	5	0	0	0	2-3	3.0
MSM108-A	147	202	73	26	73	0	1	1.084	1.0!	20	5	5	5	1-3	2.5
MSM102-A	129	165	78	22	78	0	0	1.087	1.0	0	0	0	0	1.0	3.0
MEAN	276	320						1.082							
LSD _{0.05}	102	102						0.005							

^{LBMR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.

³QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 20 Oversize and/or A-size tubers cut.

⁴SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁵MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 9

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICSPRELIMINARY TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 5 - September 7, 2005 (127 days)

LINE	PERCENT (%)														
	CWT/A		PERCENT OF TOTAL ¹					CHIP SCORE ²	TUBER QUALITY ³					SCAB ⁴	MAT ⁵
	US#1	TOTAL	US#1	Bs	As	OV	PO		SP GR	HH	VD	IBS	BC		
MSP464-4 ^{LBR}	436	469	93	4	88	5	3	1.090	1.5	20	0	0	0	0-1	3.5
MSP408-14Y ^{LBR}	406	458	89	6	82	6	5	1.069	1.5	0	0	0	0	1-3	3.0
A95109-1	383	418	92	5	72	20	3	1.076	-	25	0	0	0	0	2.5
MSL082-A ^{LBR}	379	437	87	7	87	0	6	1.076	-	0	0	0	0	0-2	2.5
MSP408-10Y ^{LBR}	376	440	85	15	85	0	0	1.079	-	0	0	0	0	0-2	3.0
MSP197-1	371	385	96	3	87	9	0	1.067	-	50	5	0	0	1-2	2.0
MSL072-C ^{LBR}	366	427	86	7	83	2	7	1.074	-	5	0	0	0	1-3	3.0
MSP403-2 ^{LBR}	323	382	85	9	85	0	6	1.082	-	5	0	0	0	0-1	4.0
MSN205-A ^{LBR}	322	346	93	6	82	11	1	1.073	-	25	0	0	0	2	3.5
Onaway	295	351	84	6	74	10	10	1.059	-	0	0	0	0	1	2.0
MSN084-3	294	303	97	3	73	24	0	1.065	-	5	10	0	0	1-3	1.5
MSN099-B	291	328	89	9	84	5	2	1.078	1.0	5	0	0	0	1-2	1.0
MSP216-1R	290	352	82	14	82	0	4	1.062	-	0	0	0	0	0-1	2.5
MSM148-A ^{LBR}	271	341	79	18	79	1	3	1.079	1.0	0	10	0	0	0-1	2.5
MSP445-2P ^{LBR}	268	345	78	21	78	0	2	1.088	-	40	0	0	0	-	3.0
MSM231-CY ^{LBR}	254	338	75	24	74	1	0	1.079	1.0	0	0	0	0	0-1	3.0
A9045-7	245	282	87	11	78	9	2	1.077	-	0	0	0	0	1-2	3.0
A93157-6LS	240	313	77	17	66	11	6	1.086	1.0	90	0	0	0	0-2	2.5
MSP420-7Y ^{LBR}	233	339	69	30	69	0	1	1.086	-	0	0	0	0	2-3	3.0
MSN222-ARUS	216	260	83	10	82	1	7	1.066	-	15	0	0	0	0-1	1.0
MSN199-B ^{LBR}	184	264	70	30	70	0	0	1.079	-	0	0	0	0	1-2	1.0
ARS4036-2	180	242	75	25	75	0	0	1.083	-	0	0	0	0	0-1	2.5
MSI201-2PY ^{sport}	151	242	62	38	62	0	0	1.065	-	0	0	0	0	2-3	1.0
MSN224-AR	146	184	79	7	79	0	14	1.056	-	5	0	0	0	1	3.0
MEAN	288	344						1.075							
LSD _{0.05}	111	113						0.004							

^{LBR} Line(s) demonstrated foliar resistance to Late Blight (*Phytophthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.

³QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 20 Oversize and/or A-size tubers cut.

⁴SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁵MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 10

**Bt TRANSGENIC TRIAL
 MONTCALM RESEARCH FARM
 May 4 - September 7, 2005 (127 days)**

LINE	CWT/A		PERCENT OF TOTAL ¹					PERCENT (%) TUBER QUALITY ²					SCAB ³	MAT ⁴
	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC		
Spunta	460	520	89	4	75	14	7	1.062	18	8	3	0	1.0	2.5
Spunta-G2	425	477	89	6	74	16	5	1.064	5	3	0	0	0.8	2.5
Spunta-6A3	397	457	87	6	73	14	7	1.062	10	3	3	0	1.0	2.5
Spunta-G3	374	430	87	9	77	10	4	1.063	3	3	3	3	1.3	2.5
Jacqueline Lee	348	465	75	19	74	1	6	1.081	0	5	0	0	2.3	2.0
G274-35.1	316	440	72	17	71	1	11	1.082	0	3	0	0	1.8	1.8
MEAN	387	465						1.069						
LSD _{0.05}	89	92						0.002						

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.

²QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.

³SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

⁴MATURITY RATING: August 25, 2005; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 11

2003-2005 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI

LINE	2005 RATING	2005 WORST	2005 N	2004 RATING	2004 WORST	2004 N	2003 RATING	2003 WORST	2003 N
<i>Sorted by ascending 2005 Rating;</i>									
A8254-2BRUS	0.0	0	5	0.0	0	4	0.0	0	3
A95109-1	0.0	0	4	1.8	2	4	0.0	0	2
GemStar (A9014-2)	0.0	0	2	0.8	1	4	1.0	1	3
MSN109-6RR	0.0	0	1	-	-	-	-	-	-
Goldrush	0.3	1	4	0.0	0	4	1.0	1	2
A8893-1	0.3	1	3	0.5	1	2	-	-	-
W1879-1	0.3	1	3	-	-	-	-	-	-
W2683-2RUS	0.3	1	6	-	-	-	-	-	-
ARS4036-2	0.5	1	2	-	-	-	-	-	-
C095051-7W	0.5	1	2	-	-	-	-	-	-
MSH361-1	0.5	1	4	-	-	-	-	-	-
MSM231-CY	0.5	1	2	-	-	-	-	-	-
MSP403-2	0.5	1	2	-	-	-	-	-	-
MSK409-1	0.7	1	3	1.3	2	3	0.7	1	3
MSL045-AY	0.7	1	3	1.0	1	2	3.0	3	1
MSM051-3	0.7	1	3	1.0	1	4	1.0	1	1
MSM183-1Y	0.7	1	3	2.3	3	3	-	-	-
MSN222-ARUS	0.7	1	3	-	-	-	-	-	-
TXA549-1RUS	0.7	1	3	-	-	-	-	-	-
A93157-6LS	0.8	2	4	-	-	-	-	-	-
MSJ036-A	0.8	1	4	0.8	1	4	1.3	2	3
MSK009-B	0.8	1	4	1.5	2	4	3.0	3	3
MSK061-4	0.8	1	4	1.3	2	4	2.0	3	3
MSK476-1	0.8	1	4	1.3	2	4	1.0	1	3
MSL007-B	0.8	1	4	2.0	3	4	0.7	1	3
MSL175-1	0.8	1	4	2.0	3	3	2.0	2	3
Liberator	0.8	1	4	0.3	1	4	0.0	0	3
MSM058-A	0.8	1	4	-	-	-	-	-	-
MSM148-A	0.8	1	4	1.0	1	2	-	-	-
MSN230-1RY	0.8	1	4	-	-	-	-	-	-
ND7994-1RUS	0.8	1	4	0.0	0	4	-	-	-
MSP216-1R	0.8	1	4	-	-	-	-	-	-
MSP252-3	0.8	1	4	-	-	-	-	-	-
MSP450-2	0.8	1	4	-	-	-	-	-	-
MSP464-4	0.8	1	4	-	-	-	-	-	-
SPG2	0.8	1	4	2.0	3	4	-	-	-
Villetta Rose	0.8	1	4	1.0	2	4	-	-	-
W2128-8	0.9	1	7	1.4	2	8	-	-	-
Beacon Chipper	1.0	1	4	1.5	2	4	1.3	2	6
C089097-2R	1.0	1	2	-	-	-	-	-	-
C093001-11RUS	1.0	2	5	-	-	-	-	-	-
C094035-15RUS	1.0	1	2	-	-	-	-	-	-
C095086-8RUS	1.0	1	3	-	-	-	-	-	-

**2003-2005 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI**

LINE	2005 RATING	2005 WORST	2005 N	2004 RATING	2004 WORST	2004 N	2003 RATING	2003 WORST	2003 N
<i>Sorted by ascending 2005 Rating;</i>									
MSE221-1	1.0	1	4	-	-	-	-	-	-
FL1922	1.0	1	4	1.0	1	4	1.3	2	3
MSG227-2	1.0	1	3	0.8	1	4	0.8	2	6
MSH228-6	1.0	1	4	1.3	2	4	0.7	1	3
MSI152-A	1.0	1	2	1.0	1	3	3.0	3	3
MSJ033-10Y	1.0	1	4	1.0	1	3	-	-	-
MSJ126-9Y	1.0	1	3	1.3	2	3	1.3	2	3
MSJ316-A	1.0	1	4	-	-	-	-	-	-
MSL082-A	1.0	2	3	-	-	-	-	-	-
MSL211-3	1.0	1	4	1.3	2	4	1.0	1	1
MSL268-D	1.0	2	4	2.0	3	3	-	-	-
MSL292-A	1.0	1	3	2.0	3	3	-	-	-
MSL603-203	1.0	1	3	-	-	-	-	-	-
MSM037-3	1.0	1	4	1.3	2	4	-	-	-
MSM060-3	1.0	1	4	1.0	1	4	0.7	1	3
MSM102-A	1.0	1	4	-	-	-	-	-	-
MSM171-A	1.0	1	3	2.5	4	4	2.0	2	3
MSM246-B	1.0	2	4	-	-	-	-	-	-
MSM297-AY	1.0	1	2	-	-	-	-	-	-
MegaChip	1.0	2	4	-	-	-	-	-	-
Monticello	1.0	1	4	-	-	-	-	-	-
MSN105-1	1.0	1	3	1.3	2	3	-	-	-
MSN106-2	1.0	1	3	-	-	-	-	-	-
MSN109-7PP	1.0	1	1	-	-	-	-	-	-
MSN170-A	1.0	1	3	-	-	-	-	-	-
MSN184-2	1.0	1	4	1.8	2	4	-	-	-
MSN215-2P	1.0	1	4	-	-	-	-	-	-
MSN224-AR	1.0	1	1	-	-	-	-	-	-
MSN238-A	1.0	1	4	-	-	-	-	-	-
MSN252-HY	1.0	1	1	-	-	-	-	-	-
MSN313-A	1.0	2	4	-	-	-	-	-	-
NDTX4271-5R	1.0	1	4	-	-	-	-	-	-
NDTX731-1R	1.0	1	4	-	-	-	-	-	-
NY126	1.0	1	4	1.5	2	4	-	-	-
Onaway	1.0	1	8	1.0	1	5	1.4	3	9
MSP238-1	1.0	1	4	-	-	-	-	-	-
MSP239-1	1.0	1	3	-	-	-	-	-	-
MSP262-4	1.0	2	4	-	-	-	-	-	-
MSP270-1	1.0	1	4	-	-	-	-	-	-
MSP292-7	1.0	1	4	-	-	-	-	-	-
MSP327-6	1.0	1	4	-	-	-	-	-	-
MSP368-1	1.0	1	4	-	-	-	-	-	-
MSP408-10Y	1.0	2	4	-	-	-	-	-	-
MSP445-2P	1.0	1	1	-	-	-	-	-	-
MSP515-2	1.0	1	4	-	-	-	-	-	-

**2003-2005 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI**

LINE	2005 RATING	2005 WORST	2005 N	2004 RATING	2004 WORST	2004 N	2003 RATING	2003 WORST	2003 N
<i>Sorted by ascending 2005 Rating;</i>									
MSP556-3	1.0	2	4	-	-	-	-	-	-
Pike	1.0	1	8	0.9	1	7	1.5	2	8
SP6a3	1.0	1	3	2.3	3	4	-	-	-
Spunta	1.0	1	4	2.3	3	4	3.0	5	3
Stampede Russet	1.0	1	4	0.5	1	2	0.3	1	3
TXDH99-1RUS	1.0	1	3	-	-	-	-	-	-
W2133-1	1.0	1	4	1.5	2	4	-	-	-
A9045-7	1.3	2	4	-	-	-	-	-	-
AC92009-4RUS	1.3	3	4	-	-	-	-	-	-
MSH356-A	1.3	2	4	-	-	-	-	-	-
MSI005-20Y	1.3	2	4	1.3	2	4	1.0	1	3
MSL794-BRUS	1.3	2	4	2.0	3	4	-	-	-
MSM224-1	1.3	2	4	2.3	3	4	-	-	-
MSN099-B	1.3	2	4	-	-	-	-	-	-
MSN190-2	1.3	2	4	-	-	-	-	-	-
MSP303-2	1.3	2	4	-	-	-	-	-	-
MSP542-4	1.3	2	4	-	-	-	-	-	-
Russet Norkotah	1.3	2	4	1.3	2	4	2.0	2	3
SPG3	1.3	2	4	1.8	2	4	-	-	-
MSJ461-1	1.3	2	7	1.8	2	4	2.0	2	3
A91814-2	1.3	2	3	2.8	3	4	-	-	-
NY132	1.3	2	3	1.5	2	4	-	-	-
MSP382-13	1.3	2	3	-	-	-	-	-	-
MSP459-5	1.3	2	3	-	-	-	-	-	-
Silverton Russet	1.3	1	3	0.0	0	4	0.3	1	3
W2309-7	1.3	2	3	-	-	-	-	-	-
FL1833	1.5	2	4	2.0	3	4	1.7	2	3
MSI049-A	1.5	2	4	2.3	3	4	2.3	3	3
MSK136-2	1.5	2	2	2.5	3	4	2.0	2	3
MSK437-A	1.5	3	4	2.0	3	4	2.0	2	3
MSL252-1	1.5	3	4	-	-	-	-	-	-
MSM046-4	1.5	2	4	1.3	2	3	0.7	1	3
MSM053-4	1.5	2	4	2.0	3	4	-	-	-
MSM070-1	1.5	2	4	1.3	2	3	-	-	-
MSM108-A	1.5	3	4	-	-	-	-	-	-
Michigan Purple	1.5	2	6	3.3	4	4	2.3	4	6
MN99144-1	1.5	2	2	-	-	-	-	-	-
MSN073-2	1.5	2	2	-	-	-	-	-	-
MSN148-A	1.5	2	4	-	-	-	-	-	-
MSN191-2Y	1.5	2	2	-	-	-	-	-	-
MSN199-B	1.5	2	4	-	-	-	-	-	-
NDTX4304-1R	1.5	3	4	-	-	-	-	-	-
MSP197-1	1.5	2	4	-	-	-	-	-	-
RN278	1.5	2	2	-	-	-	-	-	-
W2310-3	1.5	2	4	-	-	-	-	-	-
Atlantic	1.6	2	11	<small>35</small> 2.1	3	15	2.3	4	11

**2003-2005 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI**

LINE	2005 RATING	2005 WORST	2005 N	2004 RATING	2004 WORST	2004 N	2003 RATING	2003 WORST	2003 N
<i>Sorted by ascending 2005 Rating;</i>									
MSL603-319Y	1.7	2	3	-	-	-	-	-	-
MSP497-1	1.7	2	3	-	-	-	-	-	-
MSG274-35.1	1.8	3	4	-	-	-	-	-	-
MSH095-4	1.8	2	4	2.3	3	8	1.7	2	3
MSK498-1Y	1.8	2	4	1.5	2	4	2.7	4	3
MSL766-1	1.8	3	4	2.3	3	4	2.2	3	6
MSM182-1	1.8	2	4	-	-	-	-	-	-
MSN123-B	1.8	3	4	-	-	-	-	-	-
MSN159-4	1.8	3	4	-	-	-	-	-	-
W2717-5	1.8	3	4	-	-	-	-	-	-
MSK049-A	1.8	3	5	2.3	3	4	-	-	-
MSJ147-1	2.0	2	4	1.8	2	4	1.7	3	3
MSK128-A	2.0	3	3	2.8	4	4	-	-	-
MSL072-C	2.0	3	4	2.0	2	2	-	-	-
MSL183-AY	2.0	2	4	2.0	2	2	-	-	-
MSL228-1	2.0	3	4	1.8	3	4	1.3	2	3
MSM137-2	2.0	3	4	3.0	3	4	-	-	-
MSN046-3	2.0	2	3	-	-	-	-	-	-
MSN111-4PP	2.0	3	4	-	-	-	-	-	-
MSN143-3	2.0	2	3	-	-	-	-	-	-
MSN188-1	2.0	3	4	2.3	4	4	-	-	-
MSN205-A	2.0	2	1	-	-	-	-	-	-
MSN236-A	2.0	2	2	-	-	-	-	-	-
NDC5281-2R	2.0	2	4	-	-	-	-	-	-
MSP408-14Y	2.0	3	3	-	-	-	-	-	-
MSP542-11	2.0	3	4	-	-	-	-	-	-
Snowden	2.0	3	12	1.9	3	8	2.4	3	12
W4013-1	2.0	2	4	-	-	-	-	-	-
MSI201-2PYSport	2.3	3	4	-	-	-	-	-	-
Jacqueline Lee	2.3	3	4	2.8	3	4	2.5	3	6
MSN084-3	2.3	3	4	-	-	-	-	-	-
MSN085-2Y	2.3	3	4	2.0	3	4	-	-	-
MSN180-3	2.3	3	4	-	-	-	-	-	-
MSP365-1	2.3	3	4	-	-	-	-	-	-
MSP420-7Y	2.3	3	4	-	-	-	-	-	-
FL1879	2.3	3	3	2.5	3	4	-	-	-
MSN309-2	2.5	3	4	-	-	-	-	-	-
MWTX2609-2RUS	2.7	5	3	-	-	-	-	-	-
MSN228-5	2.7	3	3	2.3	3	4	-	-	-
B0766-3	2.8	3	4	1.8	2	4	-	-	-
MSN200-2	2.8	3	4	-	-	-	-	-	-

*SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.

LSD_{0.05} = 0.9

Table 12

2005 LATE BLIGHT VARIETY TRIAL
MUCK SOILS RESEARCH FARM

LINE	RAUDPC ¹		LINE	RAUDPC ¹
	MEAN	Female		Male
<i>Sorted by ascending RAUDPC value:</i>				
Foliar Resistance Category (select lines):				Foliar Susceptibility Category (select lines)²:
MSL072-C	0.0	MSE033-1R	Tollocan	Spunta
MSL766-1	0.0	B0718-3	A91846-5R	A95109-1
MSN230-1RY	0.0	Norland	Jacqueline Lee	B0766-3
MSP445-2P	0.0	MI Purple	MSJ459-3	Russet Norkotah
MSP542-4	0.0	MSJ461-1	MSJ306-5	Liberator
MSP556-3	0.0	MSJ306-5	MSJ319-1	Snowden
MSP542-11	0.1	MSJ461-1	MSJ306-5	W2717-5
MSM183-1	0.1	Torridon	Jacqueline Lee	ND7994-1RUS
MSM231-CY	0.1	ND4093-4rus	Jacqueline Lee	Onaway
MSP403-2	0.1	MSC120-1Y	Jacqueline Lee	Monticello
MSJ461-1	0.2	Tollocan	NY88	CO93001-11RUS
MSI152-A	0.2	Mainestay	B0718-3	Atlantic
Jacqueline Lee	0.2	Tollocan	Chaleur	Beacon Chipper
MSL757-1	0.2	AWN86514-2	A84180-8	A9045-7
MSM182-1	0.2	Stirling	NY121	Pike
MSM148-A	0.4	Jacqueline Lee	MSE028-1	Silverton Russet
MSL082-A	0.4	MSE221-1	Jacqueline Lee	W4013-1
MSL603-203	0.5	Jacqueline Lee	MSG227-2	Goldrush
MSM224-1	0.5	MSB106-7	Jacqueline Lee	
MSK128-A	0.6	Jacqueline Lee	MSH094-3	
MSL045-AY	0.6	MSB107-1	Jacqueline Lee	
MSL268-D	0.6	NY103	Jacqueline Lee	
MSN159-4	0.7	MSH120-1	Jacqueline Lee	
MSL211-3	0.8	MSG301-9	Jacqueline Lee	
MSL183-AY	0.8	Boulder	Tollocan	
MSP408-10Y	1.0	MSG004-3	Jacqueline Lee	
MSM137-2	1.0	Eramosa	Jacqueline Lee	
MSN199-B	1.1	MSJ319-1	MSJ461-1	
MSP464-4	1.2	Torridon	MSJ060-2	
MSP497-1	1.8	MSJ456-4	NY120	
LSD _{0.05}	10.1			

¹ Ratings indicate the average plot RAUDPC (Relative Area Under the Disease Progress Curve).

² 104 potato varieties and advanced breeding lines were tested in all. For brevity purposes, only selected varieties and breeding lines are listed.

Phytophthora infestans isolates US-1 (Pi 95-3); US-6 (Pi 95-2, Pi 96-2); US-8 (Pi 02-007, Pi 95-7, Pi 02-006, Pi 00-003); US-10 (SR83-84); US-11 (Pi 96-1); US-14 (Pi 94-2, Pi 98-1, Pi 99-2, Pi 00-001) were inoculated 7/26/2005.

Planted as a randomized complete block design consisting of 3 replications of 4 hill plots on 6/2/2005.

Table 12

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

**2005 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES***

ENTRY	NUMBER OF SPOTS PER TUBER						PERCENT (%)	AVERAGE SPOTS/TUBER
	0	1	2	3	4	5+	BRUISE FREE	
DATE OF HARVEST: LATE HARVEST								
FL1922	22	3					88	0.1
MSM051-3	21	4					84	0.2
MSH228-6	20	5					80	0.2
MSK009-B	21	3		1			84	0.2
MSJ036-A	17	6	2				68	0.4
MSL211-3	16	8	1				64	0.4
MSK061-4	16	6	3				64	0.5
MSK498-1Y	15	8	2				60	0.5
Pike	17	6		2			68	0.5
FL1879	14	8	2	1			56	0.6
MSJ316-A	16	4	4	1			64	0.6
W2128-8	12	11	2				48	0.6
MSG227-2	14	7	3	1			56	0.6
MSJ461-1	12	9	4				48	0.7
MSE221-1	12	9	3	1			48	0.7
MSK049-A	11	8	5		1		44	0.9
Atlantic	12	6	4	2	1		48	1.0
MSJ147-1	12	6	4	1	2		48	1.0
FL1833	7	7	6	4	1		28	1.4
A91814-2	10	3	4	7	1		40	1.4
Snowden	7	5	7	6			28	1.5
MSK128-A	7	6	7	3	1	1	28	1.5
Beacon Chipper	3	5	7	6	4		12	2.1
NY132	4	6	3	8	3	1	16	2.1
ADAPTATION TRIAL, CHIP-PROCESSING LINES								
MSJ126-9Y	21	4					84	0.2
MSN073-2	23	1		1			92	0.2
MSL007-B	21	3	1				84	0.2
MSL292-A	20	3	1	1			80	0.3
MSK409-1	17	7	1				68	0.4
MSM182-1	17	6	2				68	0.4
MSM058-A	16	7	2				64	0.4
MSL603-319Y	17	5	2	1			68	0.5
MSL766-1	17	4	1	3			68	0.6

**2005 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES***

ENTRY	NUMBER OF SPOTS PER TUBER						PERCENT (%)	AVERAGE SPOTS/TUBER
	0	1	2	3	4	5+	BRUISE FREE	
MSN046-3	14	7	4				56	0.6
MSN191-2Y	17	4	3			1	68	0.6
MSN184-2	14	7	3	1			56	0.6
MSN143-3	13	5	6		1		52	0.8
Atlantic	12	2	5	4	2		48	1.3
Snowden	9	8	3	3	1	1	36	1.3
MSM053-4	5	10	4	5	1		20	1.5
MSN180-3	3	4	4	7	4	3	12	2.6

ADAPTATION TRIAL, TABLESTOCK LINES

MSM171-A	22	3					88	0.1
MSN105-1	21	3	1				84	0.2
MSI049-A	20	4	1				80	0.2
MSM037-3	20	4		1			80	0.3
Onaway	18	6	1				72	0.3
MSM224-1	14	8	3				56	0.6
MSN159-4	15	8	1		1		60	0.6
MSN076-1	12	9	2	2			48	0.8
MSL228-1	11	8	4	2			44	0.9
MSL183-AY	13	4	5	3			52	0.9
MSM183-1	16	3	1	1	2	2	64	1.0
MSN106-2	8	7	9	1			32	1.1
MSL045-AY	8	8	7		2		32	1.2

PRELIMINARY TRIAL, CHIP-PROCESSING LINES

MSP270-1	21	4					84	0.2
MSP292-7	20	5					80	0.2
Pike	20	5					80	0.2
MSM060-3	19	6					76	0.2
MSP542-04	19	6					76	0.2
MSP542-11	19	6					76	0.2
MSM108-A	17	7	1				68	0.4
MSN123-B	19	3	3				76	0.4
MSP238-1	18	5	2				72	0.4
MSN236-A	17	6	2				68	0.4
MSP327-6	18	5	1	1			72	0.4
MSN085-2Y	17	5	3				68	0.4
MSN170-A	15	9	1				60	0.4

**2005 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES***

ENTRY	NUMBER OF SPOTS PER TUBER						PERCENT (%)	
	0	1	2	3	4	5+	BRUISE FREE	AVERAGE SPOTS/TUBER
MSN238-A	16	6	2	1			64	0.5
MSP262-4	15	7	3				60	0.5
MSM070-1	15	7	2	1			60	0.6
MSM246-B	17	6			2		68	0.6
MSP459-5	14	9	1	1			56	0.6
MSN190-2	17	4	2	1	1		68	0.6
MSP382-13	14	8	1	2			56	0.6
MSP365-1	12	9	4				48	0.7
MSL268-D	13	7	4	1			52	0.7
MSN148-A	14	5	5	1			56	0.7
MSP368-1	11	9	5				44	0.8
MSP497-1	12	6	6	1			48	0.8
MSP450-2	9	12	2	2			36	0.9
MSN252-HY	11	7	5	2			44	0.9
MSM102-A	11	8	3	2	1		44	1.0
MSP252-3	6	13	5	1			24	1.0
MSN313-A	8	8	4	5			32	1.2
MSP515-2	8	6	6	3	2		32	1.4
Snowden	7	5	9	4			28	1.4
Atlantic	5	5	7	4	4		20	1.9

PRELIMINARY TRIAL, TABLESTOCK LINES

MSP197-1	23	2					92	0.1
MSP216-1R	23	2					92	0.1
MSN084-3	22	3					88	0.1
Onaway	22	3					88	0.1
MSN224-AR	21	4					84	0.2
MSI201-2PYSPORT	21	3	1				84	0.2
MSL072-C	21	3	1				84	0.2
MSN199-B	22	2			1		88	0.2
MSN205-A	20	2	3				80	0.3
MSP408-10Y	18	5	2				72	0.4
A93157-6LS	19	3	2	1			76	0.4
MSL082-A	18	5	1	1			72	0.4
MSP420-7Y	16	7	2				64	0.4
MSN222-ARUS	17	4	1	3			68	0.6
A95109-1	13	10	1		1		52	0.6
MSM148-A	12	10	3				48	0.6

**2005 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES***

ENTRY	NUMBER OF SPOTS PER TUBER						PERCENT (%)	AVERAGE SPOTS/TUBER
	0	1	2	3	4	5+	BRUISE FREE	
MSN099-B	16	4	3	1	1		64	0.7
MSP403-2	15	4	5	1			60	0.7
MSP445-2P	9	9	6	1			36	1.0
MSM231-CY	8	6	10	1			32	1.2
A9045-7	8	10	2	3	1	1	32	1.3
MSP408-14Y	9	3	9	4			36	1.3
MSP464-4	8	7	5	3	1	1	32	1.4

ROUND-WHITE TRIAL (+NCR-84)

MSI005-20Y	22	1	2				88	0.2
MN99144-1	18	3	4				72	0.4
MN99380-1	17	5	3				68	0.4
W2309-7	18	3	3	1			72	0.5
W2717-5	17	6		1	1		68	0.5
Liberator	16	7		1	1		64	0.6
MSJ461-1	13	9	3				52	0.6
NY126	10	12	3				40	0.7
MSI152-A	13	8	1	3			52	0.8
B0766-3	8	11	6				32	0.9
W2128-8	11	4	8	2			44	1.0
MSH095-4	11	5	3	3	2	1	44	1.3
W4013-1	9	6	6	2	1	1	36	1.3
MegaChip	10	3	5	6	1		40	1.4
Atlantic	5	5	11	3		1	20	1.6
Snowden	6	6	6	4	3		24	1.7
CO95051-7W	7	3	9	3	1	2	28	1.8
W2310-3	6	3	6	5	4	1	24	2.0
W2133-1	5	4	5	5	4	2	20	2.2
Monticello	1	2	4	5	6	7	4	3.4

RUSSET TRIAL (+NCR-84)

GoldRush	22	3					88	0.1
Russet Norkotah	20	5					80	0.2
A8893-1	18	7					72	0.3
CO904035-15RU	20	3	2				80	0.3
TXNS287	17	8					68	0.3
Silverton Russet	18	3	3	1			72	0.5
TXA549-1RU	16	5	4				64	0.5

**2005 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES***

ENTRY	NUMBER OF SPOTS PER TUBER						PERCENT (%)	AVERAGE SPOTS/TUBER
	0	1	2	3	4	5+	BRUISE FREE	
CO93001-11RU	17	4	3		1		68	0.6
GemStar	18	2	4		1		72	0.6
MN99460-21	16	4	4	1			64	0.6
MSA8254-2BRUS	15	3	6	1			60	0.7
Stampede Russet	13	8	2	2			52	0.7
W1879-1RUS	15	7		1	1	1	60	0.8
TXDH99-1RU	12	8	2	2		1	48	0.9
MSL794-BRUS	11	6	4	2		2	44	1.2
MWTX2609-2RU	8	6	8	2		1	32	1.3
AC92009-4RU	5	9	3	5	2	1	20	1.7
W2683-2RUS	9	3	2	5	4	2	36	1.9
RED TRIAL (+NCR-84)								
MSN109-6RR	24	1					96	0.0
ND5281-2R	24	1					96	0.0
NDTX4304-1R	24	1					96	0.0
NDTX731-1R	24	1					96	0.0
MN96013-1R	23	2					92	0.1
MSN109-7PP	23	2					92	0.1
Villetta Rose	22	3					88	0.1
CO89097-2R	21	4					84	0.2
MI PURPLE	21	3	1				84	0.2
MSN215-2P	20	5					80	0.2
NDTX4271-5R	20	4	1				80	0.2
MSN230-1RY	16	9					64	0.4
QUAD STATE TRIAL (+NCR-84)								
Red Norland	24	1					96	0.0
V0319-1	21	4					84	0.2
Red Pontiac	19	6					76	0.2
FV12486-2	18	7					72	0.3
NorValley	17	5	3				68	0.4
Russet Norkotah	15	4	5	1			60	0.7
Russet Burbank	11	9	4		1		44	0.8
V1102-1	7	10	3	2	3		28	1.4

**2005 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES***

ENTRY	NUMBER OF SPOTS PER TUBER						PERCENT (%)	AVERAGE SPOTS/TUBER
	0	1	2	3	4	5+	BRUISE FREE	
SFA TRIAL CHECK SAMPLES								
A91814-5	25						100	0.0
AF2211-9	25						100	0.0
Atlantic	25						100	0.0
MegaChip	25						100	0.0
MSJ316-A	25						100	0.0
MSJ461-1	25						100	0.0
Snowden	25						100	0.0
NDC5822C-7	24	1					96	0.0
NY132	22	3					88	0.1
W2133-1	20	5					80	0.2
SFA TRIAL BRUISE SAMPLES								
MegaChip	19	6					76	0.2
A91814-5	20	3	1	1			80	0.3
Atlantic	17	8					68	0.3
MSJ316-A	19	5		1			76	0.3
MSJ461-1	15	9	1				60	0.4
ND5822C-7	17	5	2	1			68	0.5
AF2211-9	12	12	1				48	0.6
W2133-1	16	5	2	1		1	64	0.7
Snowden	10	12	2	1			40	0.8
NY132	5	11	1	5	3		20	1.6

* Twenty-five A-size tuber samples were collected at harvest, held at 50 F at least 12 hours, and placed in a six-sided plywood drum and rotated ten times to produce simulated bruising. Samples were abrasive-peeled and scored. The table is presented in ascending order of average number of spots per tuber.