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2006 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 North Central White, Russet, 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. Date of Harvest Trial Varieties:

Chip-processors and Tablestock (Tables 1 and 2)

There were 24 entries that were compared at two harvest dates. Atlantic, Snowden, Pike and four Frito-Lay clones were used as checks. The two new Frito-Lay clones evaluated this year were FL2048 and FL2053. The plot yields were below average in the early harvest (94 days), and specific gravity values were more typical to an average year. Most lines increased at least 100 cwt/a in yield for the second harvest date (152 days). The results are summarized in **Tables 1 and 2**. Hollow heart and vascular discoloration were the most prevalent internal defects this year, and above average internal brown spots in the late harvest material. *Note that last 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 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 FL1879, FL2053, MSJ036-A, and MSJ147-1. MSM171-A is a round-white tablestock line with scab resistance, strong foliar late resistance, and an early maturity. The highest yielder for the late harvest was MSJ036-A, followed by FL1879, Beacon Chipper and MSJ461-1. MSJ036-A 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. MSN105-1 is a round-white tablestock with good scab resistance and moderate late blight resistance. In addition, MSJ036-A, MSJ316-A, MSH228-6, MSK061-4, MSM171-A, MSN105-1, MSL007-B, MSK409-1 and FL1922 offer scab resistance.

The out-of-the-field chip scores for 2006 were darker than we have seen in past years. The chips were consistently darker for all trials from the Montcalm Research Farm, including control reference varieties. In general, chip scores seemed to be 0.5 to 1.0 degrees darker, using the Snack Food Association 1-5 rating system (i.e. chip scores for Atlantic, Snowden, Pike, and FL1879).

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. Beacon Chipper was named and released in 2005.

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.

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

MSJ036-A – an MSU chip-processing selection with high yield potential. It also has a high specific gravity and scab resistance. The tuber type of MSJ036-A is round and attractive.

MSJ126-9Y – an earlier season chip-processing line with excellent chip quality and long-term storage potential. This line also has moderate scab resistance and an attractive type.

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 and has demonstrated an excellent long-term storage chipping profile.

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

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.

MSK061-4 – an attractive round-white chip-processing line with good scab resistance. This line produces clean chips with good specific gravity and average yield, with low blackspot bruising.

MSK409-1 – a round-white chip-processing line with good scab resistance. This earlier maturing line has average yield and slightly lower specific gravity.

MSL007-B – an MSU chip-processing selection with strong scab resistance, uniform round type, and a unique netted skin. This newer line produces excellent chips with a good specific gravity and average yield.

MSL211-3 – an attractive round-white tablestock line with strong foliar late blight resistance, moderate scab resistance, and an early maturity.

MSM171-A – a round-white tablestock line in excellent scab resistance and strong foliar late blight resistance. This line also has an early maturity with an attractive set of tubers.

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. The booth was not at the Great Lakes Expo in 2006 due to a scheduling conflict.

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.

B. North Central Regional Trial Entries (Tables 3, 4, 5)

The North Central Trial is conducted in a wide range of environments (11 regional locations) to provide adaptability data for the release of new varieties from North Dakota, Minnesota, Wisconsin, Michigan and Canada. Eighteen breeding lines and 6 varieties were tested in Michigan. The clones were incorporated in the Round White (7 entries), Russet (7 entries), or Red-Skinned (4 entries) trials according to market class, and the results are presented in **Tables 3, 4, and 5**. These lines are all designated with the superscript$^{\mathbf{NCR}}$ in the tables. The MSU lines MSJ461-1, MSI005-20Y and MSA8254-2BRUS were the Michigan representatives included in the North Central Trial. MSJ461-1 has a uniformly nice type with strong foliar late blight resistance. MSI005-20Y is a yellow-fleshed line with high yield potential and an attractive round appearance. The russet line MSA8254-2BRUS has good agronomic characteristics including high yield potential and strong scab resistance. The most promising Wisconsin selections were W2324-1 (the highest yielder in the Round White Trial) and W2133-1.

C. Round White Trial (Table 3)

The 23 lines in the Round White Trial consisted mainly of the round-white chip-processing entries from the North Central Regional Trial, as well as other breeding lines from New York, Wisconsin, and Colorado. The top yielding lines were W2324-1,

ND5775-3, and MSJ461-1. The specific gravities were comparable to a typical year in Michigan (1.087 for Atlantic). Hollow heart and vascular discoloration were the predominant internal defects, as well as higher levels of internal brown spots. The greatest hollow heart was seen in Atlantic (58%) and ND5775-3 (53%). MSL268-D is round-white chip-processing line with foliar late blight resistance and a mid-early maturity.

D. Russet Varieties (Table 4)

The russet trial had 23 lines evaluated in 2006. Russet Burbank and Russet Norkotah were the reference varieties used 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. The most hollow heart was observed in A93157-6LS, AND98324-1RUS, and MSA8254-2BRUS. Specific gravity measurements were average with Russet Burbank and Russet Norkotah having 1.076 and 1.066 readings, respectively. The yield of the overall trial was below average for 2006, which has been typical for the Russet trials at the Montcalm Research Farm. Off type and cull tubers were found in nearly all lines tested. Vine maturity varied among lines but it did not correlate with yield. The highest yielding entry was MSL794-BRUS, which has foliar late blight resistance, but does not exhibit strong resistance to scab. MSA8254-2BRUS is a high yielding MSU selection with excellent scab resistance that has also performed well in on-farm trials. Stampede Russet has a very attractive type, but has a low yield. Two of the russets evaluated are being considered for release from Idaho (A93157-6LS) and Wisconsin (W2683-2RUS).

E. Red-Skinned Tablestock Trial (Table 5)

Twelve lines were tested in the red trial in 2006. The highest yielding line was Michigan Purple by 100 cwt, followed by ND5002-3R. In general, internal quality was good, with only MN99460-14R having 18% hollow heart. Tolerance to scab was generally high among the lines in the trial. MSN230-1RY has a rose skin, yellow flesh and late blight resistance. MSN215-2P is a hybrid between Norland and Michigan Purple that has a stronger purple skin than Michigan Purple and has good scab tolerance. MSL228-1 has unique splashes of color around the eyes that may make it attractive to the specialty market. The MSU line MSN109-6RR is a red-skinned and red-flesh line which may offer some specialty tablestock market niches.

F. Adaptation Trial (Tables 6 and 7)

The Adaptation Trial was divided into chip-processing and tablestock trials. The majority of the lines evaluated in the Adaptation Trial were tested in the Preliminary Trial the previous year. Three reference cultivars (Atlantic, Snowden and Pike), two recently released varieties (MegaChip and Monticello) and 19 advanced breeding lines are

reported in the chip-processing trial. The trial was harvested after 141 days and the results are summarized in **Table 6**. Lines that combine scab resistance and chip-processing are MSM058-A, MSM102-A, MSN099-B, MSN238-A, and MSN073-2. Good scab resistance was also noted in MSM060-3, MSN190-2, and MSP292-7. MSL603-319Y has foliar late blight resistance and shows promise as a chip-processing line. MS246-B is a good chip-processing line that has yield potential and a specific gravity comparable to Atlantic. Two other promising chip-processing lines are MSL292-A and MSN191-2Y.

In the tablestock trial, Saginaw Gold was the check variety and 11 advanced breeding lines are summarized in the table. The trial was harvested after 127 days and the results are summarized in **Table 7**. In general, the yield was good in this trial and internal defects were low. Four of the 11 lines have late blight resistance and 5 lines have moderate to strong scab resistance. MSP408-14Y was the highest yielding line and has foliar late blight resistance and moderate scab resistance; Boulder and MSK498-1 also yielded well and have moderate scab resistance. MSE221-1 and MSP239-1 are two other tablestock lines with good scab resistance. Promising lines with attractive type for the tablestock market and strong foliar late blight resistance include MSP408-14Y, MSL082-A, MSL183-AY, and MSM148-A. Another line that has a very attractive, smooth type and bright skin is MSN084-3.

G. 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. The chip-processing Preliminary Trial had 41 advanced selections and three check varieties (Atlantic, Snowden and Pike). The chip-processing trial that is summarized in **Table 8** was harvested after 136 days. Most lines chip-processed well from the field although the range included some darker chips than average. Specific gravities values and yields were average for the trial. Fifteen of the lines were also classified to be resistant or moderately resistant to scab. Ten lines have demonstrated late blight resistance and 6 are potentially late blight resistant. The two highest yielding lines (MSQ089-1 and MSQ279-7) both had good scab resistance, as well as MSQ089-1 having possible late blight resistance. MSQ070-1 combines scab resistance and foliar late blight resistance with an above average specific gravity and yield. Both MSP459-5 and MSN313-A have excellent chip quality and above average yield potential. MSQ289-1 has strong resistance to scab and an early maturity. The strengths of MSQ047-1 are scab resistance and high specific gravity. Chip quality and late blight resistance are found in MSQ245-1, MSQ214-1, MSQ029-1, and MSP516-A.

Table 9 summarizes the Preliminary Trial tablestock lines, including material from South Africa and Mexico. This tablestock trial was harvested and evaluated after 134 days. Eleven of the 26 lines were late blight resistant, and 4 are possibly late blight resistant. Despite the late blight resistance, the vine maturities were not late in all cases. Six of the lines had chip scores to be considered for chip-processing. MSQ176-6 was the

highest yielding line and also has late blight resistance. It sister line, MSQ176-5 has both scab and lat blight resistance and an attractive type for the fresh market. Other tablestock lines with above average yield and late blight resistance are the yellow-fleshed MSQ181-1Y and the red MSQ441-6R. MSQ244-1 is both scab and late blight resistant. The Mexican lines Malinche and Monserrat were of interest due to their late blight resistance. Interestingly, the South African lines grouped together at the low end for yield: Devlin, Caren, Darius, BP1, Eden, Vanderplank, Esco, and Karna.

H. Transgenic Trial (Table 10)

A field trial was conducted to continue to evaluate *Bt-cry1Ia1* transgenic potato lines. The results are summarized in **Table 10.** The trial this year (129 days) produced smaller tuber sizes yields that were below average. In general, Spunta G2 and Spunta G3 had good overall agronomic performance and good type, consistent with the untransformed parent line Spunta. We are in the process of commercializing Spunta G2 in South Africa. Due to the potato 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 similar to Jacqueline Lee. This line also has demonstrated resistance to the potato tuber moth.

I. Potato Scab Evaluation (Table 11)

Each year a replicated field trial at the MSU Soils Farm is conducted to assess resistance to common 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 2006 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.

The check varieties Russet Burbank, Russet Norkotah, Red Norland, NorValley, 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 2005, indicate that we have been able to breed numerous lines for the chip-processing and tablestock markets with resistance to scab. A total of 51 lines had a scab rating of 1.5 or better in 2006. Most notable scab resistant MSU lines are MSA8254-2BRUS, MSL007-B, MSK409-1, MSM058-A, MSN215-2P, MSP239-1, MSJ036-A, MSN073-2, MSN099-B, MSH228-6, MSE221-1, MSJ126-9Y, and MSN238-A; as well as some earlier generation lines MSQ289-5, MSQ334-3, MSQ283-2, MSQ293-2, MSQ047-1, MSQ335-2, MSQ461-

1RR, and MSQ493-1. A number of lines with scab resistance also have late blight resistance, including MSP516-A, MSQ086-3, MSM171-A, MSN105-1, MSQ023-5, MSQ039-5. 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

In 2006, a late blight trial was conducted at the Muck Soils Research Farm. As in previous years, over 100 entries were planted for evaluation in replicated plots. The field was planted on June 15 and inoculated July 26 with a combination of isolates. Over the next week, almost seven inches of rain fell at the farm. The flooding from these and subsequent rains damaged the plants beyond recovery. Unfortunately, all plots were destroyed and no data was taken. Fortunately, we are able to continue to test tuber late blight resistance in many of the selections with foliar late blight resistance from past years. We will try again for a successful late blight disease field test in 2007.

K. Blackspot Susceptibility (Table 12)

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 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 2006, the bruise levels were comparable to previous years. The most bruise resistant lines this year from the advanced trials were FL1922, MSM037-3, MSJ126-9Y, MSN105-1, MSM058-A, MSP270-1, MSP335-1, MSP292-7, MSN073-2, MSL292-A, MSN238-A, W2982-1, MSI005-20Y, NY137, MSJ461-1, Stampede Russet, MSA8254-2BRUS, ND5002-3R, MSL228-1, Michigan Purple, MSN215-2P, MSN084-3, MSL183-AY, MSE221-1, MSP197-1, MSP239-1. The most susceptible lines from the advanced

trials were Beacon Chipper, FL2048, CO95051-7W, W2324-1, W2133-1, A93157-6LS, W2683-2RUS, Monticello, MSP408-14Y, and MSP498-1Y. From the earlier generation trials, the most bruise resistant lines were MSQ461-1RR, MSQ089-1, MSQ237-2, MSQ029-1, MSQ441-6R, MSQ440-2, and MSQ181-1Y. The most bruise susceptible of this material was MSN313-A, MSP516-A, MSQ293-2, and Malinche. The bruise resistant MSU entries in the US Potato Board/Snack Food Association Trial were MSJ316-A, MSJ461-1, MSJ147-1. Beacon Chipper and Atlantic were the most bruise susceptible in this trial.

Table 1

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

DATE OF HARVEST TRIAL: EARLY HARVEST
MONTCALM RESEARCH FARM
May 8 to August 9, 2006 (94 days)

	CWT/A		PERCENT OF TOTAL[1]							PERCENT (%) TUBER QUALITY[3]				3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	CHIP SCORE[2]	HH	VD	IBS	BC	CWT/A
FL1879	274	291	94	5	85	10	1	1.078	1.0	45	10	0	0	234
FL2053	262	309	85	12	85	0	3	1.092	1.0	0	0	0	0	-
MSM171-A[LBR]	243	261	93	7	92	1	0	1.064	1.0	0	0	0	0	-
MSJ036-A	240	273	88	12	87	0	0	1.076	2.0	0	0	0	0	204*
MSJ147-1	220	247	89	11	88	1	0	1.078	1.0	0	0	0	0	220
Beacon Chipper	210	233	90	9	88	2	1	1.075	1.5	3	0	0	0	213
MSJ461-1[LBR]	200	246	81	19	81	0	0	1.066	1.0	0	0	0	0	192
MSL007-B	195	229	85	15	85	0	0	1.076	1.0	0	0	0	0	-
MSM051-3	194	215	90	10	88	3	0	1.076	1.0	0	3	0	0	244*
Snowden	**190**	**229**	**83**	**17**	**83**	**0**	**0**	**1.080**	**1.0**	**0**	**15**	**0**	**0**	**216**
Atlantic	**188**	**209**	**90**	**10**	**86**	**4**	**0**	**1.085**	**1.0**	**23**	**0**	**0**	**0**	**241**
MSJ126-9	188	215	87	13	87	1	0	1.072	1.0	0	0	0	0	-
MSL211-3[LBR]	180	207	87	12	86	0	2	1.071	2.5	0	0	0	0	182*
FL1922	174	223	78	22	75	3	0	1.075	1.0	3	0	0	0	151
MSM182-1[LBR]	169	242	70	30	70	0	0	1.067	1.0	0	3	0	0	-
MSK409-1	169	207	82	17	80	1	1	1.078	1.0	3	5	0	0	-
MSH228-6	164	181	91	9	91	0	0	1.074	1.0	0	3	0	0	159
MSM037-3	156	183	86	14	86	0	1	1.065	1.0	0	3	0	0	-
MSK061-4	156	191	81	19	81	0	0	1.083	1.0	0	5	0	0	121*
FL2048	151	174	87	13	87	0	0	1.081	1.0	0	3	0	0	-
Pike	**125**	**154**	**81**	**19**	**81**	**0**	**0**	**1.078**	**1.0**	**0**	**0**	**0**	**0**	**138***
MSN105-1[LBMR]	116	135	86	12	86	0	1	1.076	1.0	0	0	0	0	-
MSJ316-A	104	126	82	17	82	0	0	1.069	1.0	0	0	0	0	95*
MEAN	186	217						1.075						
$LSD_{0.05}$	41	39						0.004						* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

[3]QUALITY: 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 GENETICS

DATE OF HARVEST TRIAL: LATE HARVEST
MONTCALM RESEARCH FARM
May 8 to October 6, 2006 (152 days)

	CWT/A		PERCENT OF TOTAL[1]							PERCENT (%) TUBER QUALITY[3]						3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	CHIP SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]	CWT/A
MSJ036-A	317	391	81	19	80	1	0	1.078	2.0	0	18	3	0	1.2	2.5	301*
FL1879	315	347	91	8	84	7	1	1.078	1.5	55	28	5	0	2.6	1.8	300
Beacon Chipper	299	330	90	9	83	7	1	1.080	1.5	8	45	5	0	1.8	3.0	328
MSJ461-1[LBR]	297	374	79	20	78	2	0	1.073	1.5	5	0	0	0	1.8	3.0	307
MSM037-3	284	334	85	15	84	1	0	1.071	2.0	5	23	0	0	1.6	3.5	-
Atlantic	**272**	**308**	**88**	**11**	**82**	**6**	**1**	**1.087**	**2.0**	**38**	**30**	**13**	**0**	**2.8**	**2.5**	**324**
MSJ316-A	267	311	86	14	80	6	0	1.082	1.5	18	3	0	0	1.6	4.3	286*
MSL007-B	259	315	82	18	80	2	0	1.078	1.5!	0	23	5	0	0.8	2.8	-
Snowden	**258**	**319**	**81**	**18**	**77**	**4**	**1**	**1.081**	**2.0**	**10**	**48**	**5**	**0**	**2.8**	**2.5**	**291**
FL2053	253	329	77	19	74	3	5	1.091	1.5	3	13	0	0	2.5	1.0	-
MSM171-A[LBR]	245	280	87	12	80	7	0	1.061	n/a	0	13	0	0	1.3	1.0	-
MSH228-6	240	273	88	11	83	5	0	1.076	1.5	23	33	5	0	1.4	2.0	228
MSJ126-9Y	222	275	81	19	79	2	1	1.077	1.5	3	28	3	0	1.5	1.3	-
MSM051-3	219	254	86	14	79	8	0	1.072	2.0	5	15	0	0	1.5	1.5	282*
MSJ147-1	217	277	78	21	76	2	0	1.081	1.5	3	13	0	3	1.8	2.8	271
MSM182-1[LBR]	203	326	62	38	61	1	0	1.072	n/a	0	25	8	0	2.7	2.8	-
MSL211-3[LBR]	194	256	76	22	74	2	2	1.079	n/a	0	5	3	0	2.3	2.0	230*
FL2048	191	228	83	16	83	1	1	1.081	2.0	0	40	3	0	3.1	2.5	-
MSK409-1	189	255	74	26	73	1	0	1.076	2.0	3	25	3	0	1.0	1.3	-
FL1922	183	251	73	26	73	0	1	1.077	2.0	0	5	0	0	1.5	1.0	195
MSN105-1[LBMR]	179	237	75	17	74	1	7	1.083	n/a	0	10	0	0	1.5	1.8	-
MSK061-4	166	219	76	24	75	1	0	1.089	1.5	0	50	0	0	1.3	2.8	196*
Pike	**165**	**214**	**77**	**23**	**77**	**0**	**0**	**1.083**	**2.0**	**3**	**33**	**0**	**0**	**1.4**	**3.0**	**192***
MSM053-4	105	154	69	31	69	0	0	1.082	n/a	15	15	10	13	1.7	3.8	-
MEAN	231	286						1.079								
$LSD_{0.05}$	50	48						0.004								* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

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

[5]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 3

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

ROUND WHITE TRIAL
MONTCALM RESEARCH FARM
May 8 to Septmeber 18, 2006 (134 days)

	CWT/A		PERCENT OF TOTAL[1]							PERCENT (%) TUBER QUALITY[3]						3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	CHIP SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]	CWT/A
W2324-1[NCR]	533	565	94	4	83	11	2	1.084	1.0	0	8	0	0	2.6	3.0	-
ND5775-3[NCR]	489	521	94	5	88	6	1	1.086	1.5	53	0	0	10	2.0	3.0	-
MSJ461-1[LBR NCR]	411	459	90	10	85	5	0	1.075	1.0	0	0	0	0	1.8	3.0	405*
Snowden[NCR]	**385**	**421**	**91**	**7**	**88**	**4**	**1**	**1.080**	**2.0**	**5**	**8**	**0**	**0**	**2.8**	**2.8**	**383***
VC1123-2W/Y	369	415	89	10	86	3	2	1.069	1.0	5	30	3	0	2.2	3.5	-
VC1009-1W/Y	368	426	87	11	83	4	3	1.070	1.5	10	3	0	0	1.9	3.3	-
VC1002-3W/Y	360	413	87	10	85	2	3	1.076	1.5	0	13	10	0	1.8	2.3	-
Atlantic[NCR]	**339**	**368**	**92**	**6**	**81**	**11**	**2**	**1.087**	**2.0**	**58**	**0**	**5**	**0**	**2.8**	**2.0**	**360***
W2982-1	339	382	89	10	86	3	1	1.071	1.0	0	15	3	0	2.4	1.5	-
MSI005-20Y[NCR]	337	391	86	13	81	5	1	1.069	1.5	0	5	0	0	2.5	2.3	368*
NY41-67	334	359	93	5	82	11	2	1.071	1.0	0	13	0	0	1.8	1.5	-
NorValley[NCR]	**327**	**371**	**88**	**9**	**79**	**9**	**3**	**1.072**	**1.0**	**3**	**0**	**3**	**0**	**3.0**	**1.5**	**-**
W2133-1[NCR]	318	359	89	9	84	5	2	1.084	1.5	5	5	5	0	2.0	3.5	294*
W2438-3	311	325	96	4	86	10	1	1.069	2.0	8	25	5	0	2.4	1.3	-
NY137	302	340	89	11	84	4	0	1.059	1.0	0	0	0	0	1.5	1.3	-
MSL268-D[LBR]	302	363	83	14	83	1	2	1.079	1.5	0	15	0	0	2.3	2.0	-
ND7818-1Y[NCR]	300	376	80	16	79	1	5	1.060	1.0	0	10	3	0	3.3	1.0	-
W2717-5	248	288	86	13	84	2	1	1.085	1.0	13	18	0	0	2.5	1.5	237*
MN00307-1[NCR]	232	276	84	16	84	0	0	1.063	2.0	0	0	0	0	1.0	1.8	-
W2310-3	226	259	87	9	85	2	4	1.087	1.0	0	0	0	0	1.8	2.0	223*
W4013-1	212	270	79	20	79	0	1	1.082	1.0	0	3	0	0	2.6	1.0	182
CO95051-7W	189	221	86	14	85	0	1	1.085	1.0	0	0	0	3	1.4	3.3	210*
W2309-7	160	207	77	22	77	0	1	1.083	1.5	18	8	0	0	2.0	1.0	130*
MEAN	321	364						1.076								
$LSD_{0.05}$	71	70						0.004								* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

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

[5]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 4

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

RUSSET and LONG TYPES TRIAL
MONTCALM RESEARCH FARM
May 8 to September 11, 2006 (127 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[2]						3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB[3]	MAT[4]	CWT/A
MSL794-BRUS[LBR]	369	447	83	13	59	24	4	1.080	0	8	5	0	2.5	2.5	315
AND98324-1RUS[NCR]	343	410	84	14	71	12	2	1.084	35	5	0	0	3.0	1.5	-
MSA8254-2BRUS[NCR]	330	437	76	19	62	13	6	1.074	33	3	0	10	0.0	2.5	299
W3328-1RUS	329	416	79	18	74	6	2	1.076	0	0	3	0	1.5	3.0	-
W3140-3RUS[NCR]	305	409	74	25	71	4	1	1.069	0	0	0	0	2.0	1.8	-
W2683-2RUS[NCR]	275	379	73	25	69	4	2	1.074	0	3	0	0	0.3	2.5	281*
W2466-5RUS	274	399	69	31	64	5	0	1.070	3	3	0	0	1.5	2.0	-
CO95086-8RU	272	350	78	20	69	8	2	1.073	5	0	0	0	0.3	1.7	-
A95409-1	269	353	76	19	66	11	4	1.082	0	0	0	0	2.5	2.6	-
A95109-1	262	318	82	16	71	11	2	1.073	3	15	0	0	1.5	2.0	-
CO95172-3RU	250	345	72	26	68	4	1	1.082	0	5	0	0	1.8	2.6	-
ND7882b-7RUS[NCR]	247	362	68	28	67	1	4	1.078	0	3	0	0	1.0	1.3	186*
Russet Burbank[NCR]	**243**	**379**	**64**	**30**	**63**	**1**	**6**	**1.076**	**3**	**0**	**0**	**3**	**2.3**	**2.3**	**195***
A9305-10	240	332	72	21	64	9	7	1.079	0	25	0	0	1.5	2.8	-
A93157-6LS	233	341	69	28	64	5	3	1.090	38	3	0	0	1.5	3.5	-
Stampede Russet	224	316	71	26	68	3	4	1.055	0	10	0	0	1.0	1.0	181
MN18710RUS[NCR]	196	294	67	33	60	7	1	1.076	3	0	0	0	0.8	2.8	-
Superior	193	209	92	6	92	0	1	1.067	3	3	3	0	1.0	1.0	-
Russet Norkotah[NCR]	**162**	**235**	**69**	**29**	**66**	**3**	**2**	**1.066**	**8**	**3**	**0**	**0**	**2.3**	**1.0**	**141**
AOTX95265-3RU	148	255	58	41	56	2	1	1.071	20	5	8	0	2.0	1.3	-
W1879-1RUS[NCR]	146	271	54	46	54	0	0	1.074	0	3	0	0	0.3	1.0	138*
AC96052-1RUS	140	244	57	42	57	0	1	1.080	3	3	5	0	0.8	3.5	-
AOTX95295-3RU	71	185	39	61	39	0	1	1.071	8	3	3	3	1.5	1.0	-
MEAN	240	334						1.075							
$LSD_{0.05}$	54	63						0.003							

* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

[4]MATURITY RATING: August 30, 2006; 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 8 to September 18, 2006 (134 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[2]					
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB[3]	MAT[4]
Michigan Purple	433	451	96	3	76	20	1	1.066	3	5	0	0	2.8	1.8
ND5002-3R[NCR]	332	379	87	12	86	2	0	1.065	0	8	0	0	1.0	3.3
ATTX961014-1RY	275	331	83	17	82	1	0	1.067	0	0	0	0	3.6	1.8
MSN109-6RR	270	373	72	25	72	0	3	1.062	0	0	0	0	2.3	4.0
Red Norland[NCR]	**258**	**280**	**92**	**8**	**90**	**1**	**0**	**1.054**	**0**	**10**	**0**	**0**	**1.0**	**1.0**
MN99460-14R[NCR]	256	314	81	18	78	3	1	1.070	18	30	0	0	2.0	1.8
COTX00104-7R	256	316	81	10	76	5	9	1.058	0	8	0	0	1.6	3.5
ND4659-5R[NCR]	232	277	84	16	82	2	0	1.064	0	0	0	0	1.3	1.4
MSL228-1	231	257	90	8	86	4	3	1.074	3	10	0	0	2.6	2.3
MSN215-2P	217	282	77	20	76	0	4	1.068	0	3	0	0	1.1	1.3
MSN230-1RY[LBR]	211	278	76	24	76	0	0	1.082	0	0	0	0	1.9	3.7
MN00177-6R[NCR]	80	210	38	61	38	0	1	1.064	0	0	0	0	0.9	1.8
MEAN	254	313						1.066						
$LSD_{0.05}$	52	51						0.002						

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

[4]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 6

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

ADAPTATION TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 8 to September 25, 2006 (141 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%)							
									CHIP	TUBER QUALITY[3]						
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]
Monticello	362	413	88	12	87	1	0	1.082	1.5	5	15	0	0	2.3	2.3
MegaChip	350	373	94	5	87	7	1	1.087	2.0	5	28	0	0	1.5	2.3
Atlantic	**345**	**365**	**95**	**5**	**91**	**3**	**1**	**1.086**	**1.5**	**13**	**18**	**0**	**0**	**3.0**	**1.8**
MSM246-B	331	345	96	4	84	12	0	1.085	1.0	5	20	0	0	2.5	2.7
Snowden	**313**	**353**	**89**	**11**	**87**	**1**	**1**	**1.081**	**1.5**	**5**	**5**	**0**	**0**	**3.0**	**2.8**
MSP335-1	309	342	90	10	88	2	0	1.070	1.5	0	15	0	0	2.5	1.0
MSN099-B	307	340	90	8	84	6	2	1.076	2.0	3	5	0	0	1.3	1.0
MSN180-3	302	332	91	9	86	5	0	1.078	1.5	3	13	0	0	3.0	1.3
MSL603-319Y[LBR]	292	332	88	11	85	3	1	1.077	1.5	8	5	0	0	2.8	2.3
MSM058-A	292	332	88	10	86	2	2	1.070	1.5	0	5	0	0	1.0	2.5
MSL292-A	284	310	92	8	86	6	1	1.077	1.5	5	8	0	0	2.5	1.0
MSN238-A	281	293	96	4	92	4	0	1.083	1.5	20	8	0	0	1.5	2.3
MSN191-2Y	272	302	90	10	89	1	0	1.090	1.5	0	3	0	0	2.5	2.5
MSP270-1	260	290	90	9	84	6	1	1.069	1.0	3	3	0	0	2.3	3.8
MSM108-A	259	306	85	15	84	1	0	1.083	1.5	23	8	0	0	2.5	2.0
MSN184-2	257	293	88	8	82	5	4	1.069	1.5	0	3	0	0	2.0	2.8
MSN073-2	254	288	88	11	87	1	1	1.076	1.5	3	3	0	0	1.3	1.3
MSN190-2	252	284	89	10	87	2	1	1.082	1.5	5	8	3	0	1.8	1.5
MSM060-3	247	301	82	16	81	1	2	1.085	2.0	8	15	0	0	1.8	2.0
Pike	**233**	**260**	**90**	**10**	**87**	**3**	**0**	**1.083**	**1.0**	**0**	**5**	**0**	**0**	**1.3**	**3.0**
MSN135-A	224	297	76	22	74	1	2	1.083	1.0	0	5	0	0	3.0	1.5
MSP292-7	213	251	85	14	81	4	1	1.079	2.0	5	3	0	0	1.8	1.0
MSM102-A	202	239	84	14	80	4	2	1.084	1.0	0	3	0	0	1.5	2.5
MSM046-E	156	179	87	12	87	1	0	1.069	1.5	0	0	0	0	2.3	1.5
MEAN	275	309						1.079							
$LSD_{0.05}$	59	59						0.003							

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

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

[5]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

ADAPTATION TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 8 to September 11, 2006 (127 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[2]					
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB[3]	MAT[4]
MSP408-14Y[LBR]	421	460	92	5	77	14	3	1.068	0	3	0	0	2.0	2.8
Boulder	398	401	99	1	44	55	0	1.079	0	0	0	0	1.8	3.3
MSK498-1	393	421	93	7	92	2	0	1.076	0	0	0	0	2.0	3.0
MSP197-1	352	367	96	3	77	18	1	1.067	30	5	0	0	3.0	1.0
MSL082-A[LBR]	344	415	83	14	81	2	3	1.078	5	0	0	0	3.0	2.3
Saginaw Gold	**301**	**336**	**90**	**10**	**88**	**1**	**0**	**1.071**	**0**	**0**	**0**	**0**	**2.3**	**1.0**
MSE221-1	265	286	92	3	80	12	5	1.069	5	20	0	0	1.5	1.5
MSL183-AY[LBR]	257	289	89	11	84	5	0	1.065	0	0	0	0	3.0	1.3
MSN084-3	256	266	96	4	87	9	0	1.064	5	5	0	0	2.5	1.8
MSP239-1	227	244	93	7	89	4	0	1.072	0	5	3	0	1.3	1.5
MSM148-A[LBR]	224	294	76	20	75	1	4	1.078	0	15	0	0	2.3	2.5
MSN032-A	212	334	63	34	63	0	2	1.077	3	0	0	0	3.0	1.5
MEAN	304	343						1.072						
$LSD_{0.05}$	48	53						0.002						

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

[4]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 8 to Septmeber 20, 2006 (136 days)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	PERCENT (%) TUBER QUALITY[3]					
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]
MSQ089-1[LBR?]	409	452	91	8	83	8	1	1.068	1.0	0	0	5	0	1.0	3.0
MSQ279-7	397	414	96	4	80	16	0	1.086	2.5	0	0	10	0	1.0	3.5
MSQ245-1[LBR]	386	459	84	15	82	2	1	1.079	1.5	20	5	0	0	3.0	3.0
MSQ035-2[LBR]	376	423	89	11	87	2	0	1.061	1.0	0	15	0	0	3.0	5.0
MSP524-C	370	444	83	15	78	5	2	1.076	3.0	0	0	0	0	3.0	2.0
MSQ245-2[LBR?]	363	446	81	17	80	2	1	1.080	1.5	5	15	0	0	2.5	3.3
MSQ082-3[LBR?]	360	393	92	8	89	2	1	1.083	1.0	40	0	0	0	2.0	4.0
MSP459-5	355	387	92	8	91	1	1	1.075	1.0!	10	5	0	0	2.0	1.0
MSQ461-1RR	347	382	91	9	80	11	0	1.069	2.0	0	0	0	0	1.5	4.5
MSN313-A	344	411	84	15	83	1	1	1.088	1.0	15	0	0	0	3.0	4.0
MSQ070-1[LBR]	334	365	92	8	92	0	0	1.088	2.0	0	0	0	0	1.0	4.0
MSQ214-1[LBR]	330	368	90	10	88	2	0	1.083	2.0	25	0	0	0	2.0	4.0
Atlantic	**326**	**350**	**93**	**6**	**87**	**6**	**1**	**1.086**	**1.5**	**35**	**5**	**0**	**0**	**3.0**	**1.5**
Snowden	**325**	**354**	**92**	**8**	**90**	**2**	**1**	**1.076**	**1.5**	**15**	**50**	**0**	**0**	**3.0**	**1.0**
MSQ039-5[LBR?]	311	327	95	5	77	18	0	1.083	2.5	10	0	5	0	1.5	4.0
MSQ363-2	311	331	94	6	88	6	0	1.074	1.5	25	0	0	0	2.5	1.0
MSQ293-2	311	340	91	9	87	4	0	1.081	2.0	5	0	5	5	1.3	2.0
MSQ029-1[LBR]	303	334	91	8	84	6	1	1.071	1.5	5	10	0	0	2.0	5.0
MSP542-4	297	332	89	11	83	6	0	1.077	2.0	25	5	0	0	3.0	2.0
MSQ201-1[LBR?]	293	336	87	13	87	0	0	1.079	2.0	10	0	0	0	3.0	2.5
MSQ108-1[LBR]	289	302	96	4	90	6	0	1.075	2.0	0	0	0	0	2.5	2.0
MSQ335-2	286	322	89	11	89	0	0	1.073	1.5	0	10	0	0	1.5	1.0
MSQ289-5	281	291	97	3	90	7	0	1.079	1.5	0	20	10	0	0.5	1.0
MSQ047-1	277	327	85	15	85	0	0	1.089	2.0	0	5	0	0	1.5	3.5
MSQ060-5[LBR?]	270	326	83	17	83	0	0	1.074	2.5	0	0	0	0	2.0	3.5

continued on next page:

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 8 to Septmeber 20, 2006 (136 days)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	PERCENT (%) TUBER QUALITY[3]					
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]
continued:															
MSQ490-3	270	305	89	11	86	2	0	1.076	1.5	15	0	0	0	2.5	4.0
MSP542-11	269	334	81	19	81	0	0	1.080	2.0	0	0	0	0	3.0	3.0
MSQ001-1	269	310	87	13	86	1	0	1.078	1.5	15	0	15	0	3.0	2.0
MSP368-1	268	318	84	14	82	2	2	1.081	1.0	10	10	0	0	2.8	2.0
MSP516-A[LBR]	264	298	89	11	89	0	0	1.076	1.5	0	0	0	0	1.0	3.5
MSQ237-2	261	277	94	6	88	7	0	1.070	1.0	0	10	0	0	ND	4.0
Pike	**257**	**290**	**89**	**11**	**87**	**2**	**0**	**1.083**	**1.0**	**5**	**5**	**0**	**0**	**1.3**	**3.5**
MSQ283-2	254	278	92	7	87	4	1	1.074	1.5	10	5	0	0	1.3	1.0
MSP557-B[LBR]	250	306	82	16	82	0	2	1.080	1.0	0	0	0	0	2.5	4.0
MSQ023-5[LBR]	241	265	91	9	87	4	0	1.086	1.0	10	10	0	0	1.5	4.5
MSQ492-2[LBR]	237	270	88	12	85	2	0	1.072	2.0	0	10	5	0	1.8	4.5
MSQ334-3	235	264	89	11	82	7	0	1.059	2.5	20	5	15	0	1.0	2.0
MSM080-1	226	251	90	8	90	0	2	1.075	1.0	5	0	0	0	2.5	1.0
MSQ493-1	210	237	89	10	87	1	1	1.083	1.5	5	0	0	0	1.5	2.5
MSQ383-2	205	244	84	15	80	4	1	1.077	1.5	10	5	5	0	2.5	2.0
MSQ393-11	204	238	86	13	84	3	1	1.072	1.5	0	30	10	0	2.5	2.5
MSP346-5	197	246	80	18	80	0	2	1.083	1.0	5	10	10	0	2.5	3.0
MSN236-A	156	244	64	36	64	0	0	1.071	2.0	0	20	0	0	3.0	2.0
MSQ405-1PP	110	200	55	44	55	0	1	1.066	2.0	0	0	0	0	3.0	4.5
MEAN	287	327						1.077							
$LSD_{0.05}$	78	90						0.005							

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

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

[5]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

PRELIMINARY TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 8 - September 18, 2006 (134 days)

	CWT/A		PERCENT OF TOTAL[1]							PERCENT (%) TUBER QUALITY[3]					
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	CHIP SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]
MSQ176-6[LBR]	398	436	91	8	84	8	1	1.073	1.0	40	0	0	0	3.0	4.0
MSQ434-4P	393	414	95	3	67	28	2	1.063	3.0	0	20	0	0	2.0	2.5
MSQ181-1Y[LBR?]	362	409	88	6	80	8	6	1.061	1.5	0	5	5	0	2.0	3.5
MSQ176-5[LBR]	339	362	94	5	78	16	1	1.068	2.5	10	0	5	0	2.5	1.5
MSQ441-6R[LBR]	325	350	93	7	89	3	0	1.055	3.0	5	5	0	0	3.0	1.0
MSQ410-4P	322	377	85	14	85	0	1	1.076	2.0	0	5	0	0	2.0	2.0
Malinche[LBR]	301	381	79	18	79	0	3	1.087	2.0	0	10	5	0	ND	5.0
MSQ244-1[LBR]	297	325	91	7	90	1	2	1.083	3.0	0	0	10	0	1.0	4.5
MSN111-4PP	286	331	86	13	86	0	0	1.070	2.0	0	0	0	0	2.5	1.0
MSQ086-3[LBR]	269	284	95	4	85	10	1	1.079	2.5	25	5	0	0	1.0	3.5
MSE69.6[LBR]	267	310	86	14	86	0	0	1.066	2.0	10	5	10	0	2.5	2.0
Spunta RB[LBR]	265	319	83	14	80	3	3	1.064	4.0	5	0	0	5	ND	3.0
MSQ087-3[LBR?]	262	283	92	6	92	0	1	1.069	3.0	0	5	0	0	1.0	1.5
MSQ134-5[LBR?]	256	283	90	9	89	1	0	1.069	1.5	0	5	0	0	1.0	2.5
MSQ440-2[LBR?]	246	263	94	6	86	7	1	1.056	4.0	0	30	0	0	1.8	1.5
Teena[LBR]	245	396	62	22	62	0	17	1.071	3.0	0	20	80	0	1.8	4.5
Devlin	243	286	85	11	83	2	3	1.078	1.5	50	20	0	0	2.0	3.0
Caren	220	332	66	20	66	0	14	1.080	4.0	15	5	10	0	2.0	4.0
Darius	182	240	76	21	76	0	3	1.077	2.5	25	15	0	0	2.5	3.5
BP1	175	248	70	22	70	0	8	1.069	2.5	10	0	5	0	2.3	5.0
Eden	174	256	68	21	68	0	11	1.080	1.5	15	50	0	0	2.5	5.0
Vanderplank	134	175	76	17	76	0	6	1.058	4.0	25	40	5	0	ND	2.0
Esco	128	188	68	23	68	0	8	1.067	1.5	5	10	0	0	2.0	5.0
Kufri Jeeven[LBR]	126	209	60	33	60	0	6	1.061	4.0	0	35	5	0	ND	2.5
Monserrat[LBR]	115	244	47	34	47	0	19	1.078	4.0	20	0	100	0	ND	5.0
Karna	12	84	15	75	15	0	10	1.079	ND	0	0	0	0	2.3	5.0
MEAN	244	300						1.071							
$LSD_{0.05}$	69	72						0.004							

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

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

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

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

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

[5]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 10

MICHIGAN STATE UNIVERSITY

POTATO BREEDING and GENETICS

Bt TRANSGENIC TRIAL
MONTCALM RESEARCH FARM
May 8 - September 13, 2006 (129 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[2]					
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB[3]	MAT[4]
G274-3.5.1	126	399	32	65	32	0	4	1.076	0	8	0	0	ND	1.8
Jacqueline Lee	**186**	**405**	**46**	**51**	**44**	**2**	**3**	**1.079**	**0**	**5**	**0**	**0**	**ND**	**2.8**
Spunta	**289**	**357**	**81**	**14**	**58**	**23**	**5**	**1.055**	**23**	**3**	**8**	**0**	**ND**	**3.0**
Spunta G2	286	367	78	17	66	12	5	1.062	8	18	0	0	ND	2.5
Spunta G3	316	396	80	14	69	11	7	1.061	3	13	0	0	ND	3.0
MEAN	241	385						1.067						
$LSD_{0.05}$	90	NS						0.003						

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

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

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

[4]MATURITY RATING: August 30, 2006; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

Table 11

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2004-2006 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI

LINE	2006 RATING	2006 WORST	2006 N	2005 RATING	2005 WORST	2005 N	2004 RATING	2004 WORST	2004 N
Sorted by ascending 2006 Rating;									
MSA8254-2BRUS[NCR]	0.0	0	4	0.0	0	5	0.0	0	4
CO95086-8RU	0.3	1	4	1.0	1	3	-	-	-
ND7994-1RUS	0.3	1	4	0.8	1	4	0.0	0	4
W1879-1RUS[NCR]	0.3	3	4	0.3	1	3	-	-	-
W2683-2RUS[NCR]	0.3	1	4	0.3	1	6	-	-	-
MSQ289-5	0.5	1	4	-	-	-	-	-	-
AC96052-1RUS	0.8	2	4	-	-	-	-	-	-
MN18710RUS[NCR]	0.8	1	4	-	-	-	-	-	-
MSL007-B	0.8	1	4	0.8	1	4	2.0	3	4
ND7882b-7RUS[NCR]	0.8	1	4	-	-	-	-	-	-
MN00177-6R[NCR]	0.9	2	4	-	-	-	-	-	-
MN00307-1[NCR]	1.0	1	4	-	-	-	-	-	-
MSK409-1	1.0	1	4	0.7	1	3	1.3	2	3
MSM058-A	1.0	1	4	0.8	1	4	-	-	-
MSP516-A[LBR]	1.0	1	1	-	-	-	-	-	-
MSQ086-3[LBR]	1.0	1	4	-	-	-	-	-	-
MSQ334-3	1.0	1	3	-	-	-	-	-	-
ND5002-3R[NCR]	1.0	1	4	-	-	-	-	-	-
Red Norland[NCR]	**1.0**	**2**	**4**	-	-	-	-	-	-
Stampede Russet	1.0	1	4	1.0	1	4	0.5	1	2
Superior	1.0	1	4	-	-	-	-	-	-
MSN215-2P	1.1	2	4	1.0	1	4	-	-	-
MSP239-1	1.1	2	4	1.0	1	3	-	-	-
MSJ036-A	1.2	2	3	0.8	1	4	0.8	1	4
CO95172-3RU	1.3	2	4	-	-	-	-	-	-
MSM171-A[LBR]	1.3	2	4	1.0	1	3	2.5	4	4
MSN073-2	1.3	2	4	1.5	2	2	-	-	-
MSN099-B	1.3	2	4	1.3	2	4	-	-	-
MSQ283-2	1.3	2	4	-	-	-	-	-	-
MSQ293-2	1.3	2	4	-	-	-	-	-	-
MSQ480-7RR	1.3	2	4	-	-	-	-	-	-
ND4659-5R[NCR]	1.3	3	4	-	-	-	-	-	-
MSK061-4	1.3	2	3	0.8	1	4	1.3	2	4
Pike	**1.4**	**2**	**7**	**1.0**	**1**	**8**	**0.9**	**1**	**7**
A93157-6LS	1.4	3	4	0.8	2	4	-	-	-
CO95051-7W	1.4	2	4	0.5	1	2	-	-	-
MSH228-6	1.4	2	4	1.0	1	4	1.3	2	4
FL1922	1.5	2	4	1.0	1	4	1.0	1	4
MegaChip	1.5	2	4	1.0	2	4	-	-	-
MSE221-1	1.5	2	4	1.0	1	4	-	-	-

2004-2006 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI

	2006	2006	2006	2005	2005	2005	2004	2004	2004
LINE	RATING	WORST	N	RATING	WORST	N	RATING	WORST	N
Sorted by ascending 2006 Rating;									
MSJ126-9Y	1.5	2	4	1.0	1	3	1.3	2	3
MSM051-3	1.5	3	4	0.7	1	3	1.0	1	4
MSN105-1[LBMR]	1.5	2	2	1.0	1	3	1.3	2	3
MSN238-A	1.5	2	4	1.0	1	4	-	-	-
MSQ023-5[LBR]	1.5	2	2	-	-	-	-	-	-
MSQ039-5[LBR?]	1.5	2	4	-	-	-	-	-	-
MSQ047-1	1.5	2	2	-	-	-	-	-	-
MSQ335-2	1.5	2	3	-	-	-	-	-	-
MSQ461-1RR	1.5	2	1	-	-	-	-	-	-
MSQ493-1	1.5	2	2	-	-	-	-	-	-
NY137	1.5	2	4	-	-	-	-	-	-
W2466-5RUS	1.5	2	3	-	-	-	-	-	-
W3328-1RUS	1.5	2	4	-	-	-	-	-	-
Boulder	1.6	2	4	-	-	-	-	-	-
COTX00104-7R	1.6	2	4	-	-	-	-	-	-
MSJ316-A	1.6	2	4	1.0	1	4	-	-	-
MSM037-3	1.6	3	4	1.0	1	4	1.3	2	4
MSM102-A	1.6	2	4	1.0	1	4	-	-	-
MSN190-2	1.6	2	4	1.3	2	4	-	-	-
A95109-1	1.7	3	3	0.0	0	4	1.8	2	4
AOTX95295-3RU	1.7	3	6	-	-	-	-	-	-
MSM053-4	1.7	2	3	1.5	2	4	2.0	3	4
MSP292-7	1.7	2	3	1.0	1	4	-	-	-
Beacon Chipper	1.8	2	4	1.0	1	4	1.5	2	4
MSJ147-1	1.8	2	4	2.0	2	4	1.8	2	4
MSJ461-1[LBR NCR]	1.8	2	4	1.3	2	7	1.8	2	4
MSQ440-2[LBR?]	1.8	2	4	-	-	-	-	-	-
NY41-67	1.8	2	4	-	-	-	-	-	-
Teena[LBR]	1.8	2	4	-	-	-	-	-	-
VC1002-3W/Y	1.8	3	4	-	-	-	-	-	-
W2310-3	1.8	3	4	1.5	2	4	-	-	-
MSM060-3	1.8	2	3	1.0	1	4	1.0	1	4
MSP408-10Y	1.8	2	3	1.0	2	4	-	-	-
MSQ383-2	1.8	3	3	-	-	-	-	-	-
MSQ492-2[LBR]	1.8	2	3	-	-	-	-	-	-
A9305-10	1.9	3	7	-	-	-	-	-	-
MSE202-3RUS	1.9	3	4	-	-	-	-	-	-
MSN230-1RY[LBR]	1.9	3	4	0.8	1	4	-	-	-
MSQ434-4P	1.9	2	4	-	-	-	-	-	-
VC1009-1W/Y	1.9	3	4	-	-	-	-	-	-
W3140-3RUS[NCR]	1.9	2	4	-	-	-	-	-	-
Caren	2.0	2	4	-	-	-	-	-	-

2004-2006 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI

	2006	2006	2006	2005	2005	2005	2004	2004	2004
LINE	RATING	WORST	N	RATING	WORST	N	RATING	WORST	N
Sorted by ascending 2006 Rating;									
Esco	2.0	2	1	-	-	-	-	-	-
MN99460-14R[NCR]	2.0	3	4	-	-	-	-	-	-
MSK498-1	2.0	2	4	1.8	2	4	1.5	2	4
MSN108-3	2.0	2	1	-	-	-	-	-	-
MSN184-2	2.0	3	4	1.0	1	4	1.8	2	4
MSP346-5	2.0	3	4	-	-	-	-	-	-
MSP408-14Y[LBR]	2.0	2	4	2.0	3	3	-	-	-
MSP459-5	2.0	2	4	1.3	2	3	-	-	-
MSQ029-1[LBR]	2.0	2	1	-	-	-	-	-	-
MSQ060-5[LBR?]	2.0	3	3	-	-	-	-	-	-
MSQ082-3[LBR?]	2.0	3	2	-	-	-	-	-	-
MSQ181-1Y[LBR?]	2.0	2	2	-	-	-	-	-	-
ND5775-3[NCR]	2.0	3	3	-	-	-	-	-	-
W2133-1[NCR]	2.0	2	4	1.0	1	4	1.5	2	4
W2309-7	2.0	2	3	1.3	2	3	-	-	-
W2438-5	2.0	2	1	-	-	-	-	-	-
MSM148-A[LBR]	2.1	3	4	0.8	1	4	1.0	1	2
MSN106-2	2.1	3	4	1.0	1	3	-	-	-
Devlin	2.2	3	3	-	-	-	-	-	-
Russet Norkotah[NCR]	**2.2**	**3**	**3**	**1.3**	**2**	**4**	**1.3**	**2**	**4**
VC1123-2W/Y	2.2	1	3	-	-	-	-	-	-
A95409-1	2.2	3	5	-	-	-	-	-	-
BP1	2.3	3	4	-	-	-	-	-	-
Karna	2.3	3	4	-	-	-	-	-	-
Monticello	2.3	3	4	1.0	1	4	-	-	-
MSL072-C	2.3	3	4	2.0	3	4	2.0	2	2
MSL211-3[LBR]	2.3	3	4	1.0	1	4	1.3	2	4
MSL268-D	2.3	3	4	1.0	2	4	2.0	3	3
MSM046-E	2.3	3	4	-	-	-	-	-	-
MSN109-6RR	2.3	3	4	0.0	0	1	-	-	-
MSQ410-4P	2.3	3	2	-	-	-	-	-	-
MSQ490-3	2.3	3	2	-	-	-	-	-	-
Russet Burbank[NCR]	**2.3**	**2**	**4**	-	-	-	-	-	-
Saginaw Gold	2.3	3	4	-	-	-	-	-	-
MSP270-1	2.3	3	3	1.0	1	4	-	-	-
MSQ108-1[LBR]	2.3	3	3	-	-	-	-	-	-
MSM080-1	2.4	3	4	-	-	-	-	-	-
MSM246-B	2.4	4	4	1.0	2	4	-	-	-
W2438-3	2.4	2	4	-	-	-	-	-	-
W2982-1	2.4	3	4	-	-	-	-	-	-
Darius	2.5	3	2	-	-	-	-	-	-
Eden	2.5	3	4	-	-	-	-	-	-

2004-2006 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI

	2006	2006	2006	2005	2005	2005	2004	2004	2004
LINE	RATING	WORST	N	RATING	WORST	N	RATING	WORST	N
Sorted by ascending 2006 Rating;									
FL2053	2.5	3	4	-	-	-	-	-	-
MSI005-20Y[NCR]	2.5	3	4	1.3	2	4	1.3	2	4
MSL292-A	2.5	3	4	1.0	1	3	2.0	3	3
MSL794-BRUS[LBR]	2.5	3	4	1.3	2	4	2.0	3	4
MSM108-A	2.5	3	4	1.5	3	4	-	-	-
MSN084-3	2.5	3	4	2.3	3	4	-	-	-
MSN111-4PP	2.5	3	4	2.0	3	4	-	-	-
MSN191-2Y	2.5	3	4	1.5	2	2	-	-	-
MSP232-B	2.5	3	2	-	-	-	-	-	-
MSP335-1	2.5	3	2	-	-	-	-	-	-
MSP557-B[LBR]	2.5	3	3	-	-	-	-	-	-
MSQ176-5[LBR]	2.5	3	2	-	-	-	-	-	-
MSQ245-1[LBR]	2.5	2	2	-	-	-	-	-	-
MSQ393-11	2.5	3	2	-	-	-	-	-	-
W2717-5	2.5	3	4	1.8	3	4	-	-	-
FL1879	2.6	3	4	2.3	3	3	2.5	3	4
MSE69.6[LBR]	2.6	4	4	-	-	-	-	-	-
MSL228-1	2.6	3	4	2.0	3	4	1.8	3	4
MSN135-A	2.6	3	4	-	-	-	-	-	-
W2324-1[NCR]	2.6	3	4	-	-	-	-	-	-
W4013-1	2.6	3	4	2.0	2	4	-	-	-
MSM182-1[LBR]	2.7	3	3	1.8	2	4	-	-	-
Michigan Purple	2.8	3	4	1.5	2	6	3.3	4	4
MSL603-319Y[LBR]	2.8	3	4	1.7	2	3	-	-	-
MSP368-1	2.8	3	4	1.0	1	4	-	-	-
Atlantic[NCR]	**2.8**	**3**	**16**	**1.6**	**2**	**11**	**2.1**	**3**	**15**
MSN180-3	2.8	4	3	2.3	3	4	-	-	-
Snowden[NCR]	**2.8**	**3**	**16**	**2.0**	**3**	**12**	**1.9**	**3**	**8**
MSL082-A[LBR]	2.9	3	4	1.0	2	3	-	-	-
AND98324-1RUS[NCR]	3.0	4	4	-	-	-	-	-	-
AOTX95265-3RU	3.0	3	2	-	-	-	-	-	-
MSL183-AY[LBR]	3.0	3	3	2.0	2	4	2.0	2	2
MSN032-A	3.0	3	4	-	-	-	-	-	-
MSN236-A	3.0	3	4	2.0	2	2	-	-	-
MSN313-A	3.0	3	4	1.0	2	4			
MSP197-1	3.0	3	4	1.5	2	4	-	-	-
MSP403-2	3.0	3	4	0.5	1	2	-	-	-
MSP524-C	3.0	3	2	-	-	-	-	-	-
MSP542-11	3.0	3	4	2.0	3	4	-	-	-
MSP542-4	3.0	3	3	1.3	2	4	-	-	-
MSQ001-1	3.0	3	2	-	-	-	-	-	-

2004-2006 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, EAST LANSING, MI

	2006	2006	2006	2005	2005	2005	2004	2004	2004
LINE	RATING	WORST	N	RATING	WORST	N	RATING	WORST	N
Sorted by ascending 2006 Rating;									
MSQ035-2[LBR]	3.0	3	2	-	-	-	-	-	-
MSQ176-6[LBR]	3.0	3	2	-	-	-	-	-	-
MSQ201-1[LBR?]	3.0	3	2	-	-	-	-	-	-
MSQ363-2	3.0	3	1	-	-	-	-	-	-
MSQ405-1PP	3.0	3	1	-	-	-	-	-	-
MSQ441-6R[LBR]	3.0	3	2	-	-	-	-	-	-
NorValley[NCR]	3.0	3	4	-	-	-	-	-	-
FL2048	3.1	4	4	-	-	-	-	-	-
ND7818-1Y[NCR]	3.3	4	4	-	-	-	-	-	-
MSK128-A	3.6	4	5	2.0	3	3	2.8	4	4
ATTX961014-1RY	3.6	5	4	-	-	-	-	-	-

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

$LSD_{0.05}$ = 0.9

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Muck Soils Research Farm.

[NCR] North Central Regional Entry

N = Number of replications (observations).

Table 12

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2006 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

	NUMBER OF SPOTS PER TUBER						PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
ENTRY	0	1	2	3	4	5+		
DATE OF HARVEST: LATE HARVEST								
FL1922	14	5					74	0.3
MSM037-3	14	5	1				70	0.4
MSJ126-9Y	13	6	1				65	0.4
MSN105-1	13	5	2				65	0.5
MSJ316-A	9	8	2				47	0.6
MSM051-3	10	6	1		1		56	0.7
MSH228-6	9	8	3				45	0.7
MSK409-1	9	8	3				45	0.7
MSK061-4	8	8	3				42	0.7
MSM182-1	7	11	2				35	0.8
Pike	**11**	**5**	**3**		**1**		**55**	**0.8**
FL1879	8	8	4				40	0.8
MSM171-A	7	7	2	1			41	0.8
FL2053	8	6	5				42	0.8
MSJ147-1	8	6	2	4			40	1.1
MSJ036-A	3	11	6				15	1.2
MSL211-3	6	5	7	2			30	1.3
MSJ461-1	7	4	4	4			37	1.3
MSL007-B	6	5	6	3			30	1.3
Snowden	**4**	**8**	**2**	**5**			**21**	**1.4**
Atlantic	**3**	**5**	**4**	**5**	**2**		**16**	**1.9**
Beacon Chipper	1	6	4	7			**6**	**1.9**
FL2048	0	7	7	4		1	0	2.0
ROUND-WHITE TRIAL								
NY41-67	19	1					95	0.1
VC1009-1W/Y	18	2					90	0.1
ND7818-1Y	17	3					85	0.2
W2982-1	16	4					80	0.2
MN00307-1	15	2	1				83	0.2
MSI005-20Y	15	5					75	0.3
NY137	16	3	1				80	0.3
VC1002-3W/Y	15	5					75	0.3
VC1123-2W/Y	13	6					68	0.3
W2438-3	14	5	1				70	0.4
ND5775-3	13	6	1				65	0.4
W2309-7	13	6	1				65	0.4
W2717-5	12	7	1				60	0.5
MSJ461-1	13	5	1	1			65	0.5
W2310-3	10	9	1				50	0.6

2006 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

	NUMBER OF SPOTS PER TUBER						PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
ENTRY	0	1	2	3	4	5+		
Snowden	**7**	**9**	**4**				**35**	**0.9**
MSL268-D	6	8	4	1			32	1.0
NorValley	6	10	2	2			30	1.0
W4013-1	2	15	3				10	1.1
Atlantic	**8**	**4**	**3**	**2**	**1**		**44**	**1.1**
CO95051-7W	5	8	5	2			25	1.2
W2324-1	5	6	7	2			25	1.3
W2133-1	3	7	9				16	1.3
RUSSET TRIAL								
AOTX95265-3RU	18	2					90	0.1
CO95086-8RU	18	2					90	0.1
Stampede Russet	18	2					90	0.1
Russet Norkotah	**17**	**3**					**85**	**0.2**
A9305-10	16	4					80	0.2
AOTX95295-3RU	18	1		1			90	0.2
MSA8254-2BRUS	16	4	1				76	0.3
W3140-3RUS	14	5	1				70	0.4
MN18710RUS	12	6	2				60	0.5
CO95172-3RU	13	4	2	1			65	0.6
ND7882b-7RUS	11	7	2				55	0.6
ND7994-1RUS	8	4	1	1			57	0.6
Russet Burbank	**10**	**7**	**3**				**50**	**0.7**
W1879-1RUS	9	8	3				45	0.7
W2466-5RUS	9	7	4				45	0.8
Superior	8	9	2	1			40	0.8
AND98324-1RUS	9	9	3	1			41	0.8
A95109-1	8	7	4	1			40	0.9
AC96052-1RUS	7	8	3	2			35	1.0
W3328-1RUS	7	6	6	1			35	1.1
MSL794-BRUS	4	4	7	4			21	1.6
A95409-1	4	4	7	5			20	1.7
A93157-6LS	4	5	3	6	2		20	1.9
W2683-2RUS	0	5	6	6	2	1	0	2.4

2006 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

	NUMBER OF SPOTS PER TUBER						PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
ENTRY	0	1	2	3	4	5+		
RED TRIAL								
ND5002-3R	19	1					95	0.1
MSL228-1	18	2					90	0.1
Red Norland	**18**	**2**					**90**	**0.1**
COTX00104-7R	17	3					85	0.2
MN00177-6R	16	4					80	0.2
ND4659-5R	16	4					80	0.2
ATTX961014-1RY	15	5					75	0.3
Michigan Purple	15	3	2				75	0.4
MSN215-2P	13	6	1				65	0.4
MN99460-14R	13	4	3				65	0.5
MSN109-6RR	11	8	1				55	0.5
MSN230-1RY	6	9	4	1			30	1.0
ADAPTATION TRIAL, CHIP-PROCESSING LINES								
MSM058-A	16	4					80	0.2
MSP270-1	16	4					80	0.2
MSM046-E	15	5					75	0.3
MSN135-A	16	3	1				80	0.3
MSP335-1	16	3	1				80	0.3
MSP292-7	15	4	1				75	0.3
MSN073-2	13	6					68	0.3
MSL292-A	13	6	1				65	0.4
MSN238-A	13	6	1				65	0.4
MSM060-3	13	5	2				65	0.5
MSL603-319Y	11	7	2				55	0.6
MSM246-B	9	8	1				50	0.6
MSN184-2	12	4	2	2			60	0.7
MSN190-2	10	6	4				50	0.7
MSN191-2Y	9	6	5				45	0.8
MSM102-A	7	9	2	1			37	0.8
MSN099-B	9	6	4	1			45	0.9
MSN180-3	7	9	1	3			35	1.0
Pike	**8**	**7**	**3**	**1**	**1**		**40**	**1.0**
Snowden	**4**	**11**	**3**	**1**	**1**		**20**	**1.2**
MSM108-A	4	7	6	3			20	1.4
MegaChip	6	4	6	3	1		30	1.5
Atlantic	**1**	**10**	**6**	**3**			**5**	**1.6**
Monticello	2	2	4	6	1	2	12	2.5

2006 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	NUMBER OF SPOTS PER TUBER 0	1	2	3	4	5+	PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
ADAPTATION TRIAL, TABLESTOCK LINES								
MSN084-3	17	4	1				77	0.3
MSL183-AY	16	4	1				76	0.3
MSE221-1	14	4	1				74	0.3
MSP197-1	17	4		1			77	0.3
MSP239-1	13	13					50	0.5
MSM148-A	12	5	4				57	0.6
MSL082-A	10	7	3				50	0.7
MSN032-A	9	8	3				45	0.7
Boulder	6	11	2				32	0.8
Saginaw Gold	**7**	**7**	**5**	**3**			**32**	**1.2**
MSP408-14Y	2	4	9	4			11	1.8
MSK498-1Y	3	11	5	11			10	1.8
PRELIMINARY TRIAL, CHIP-PROCESSING LINES								
MSQ461-1RR	19	1					95	0.1
MSQ035-2	17	2	1				85	0.2
MSQ039-5	15	5					75	0.3
MSQ089-1	15	5					75	0.3
MSQ237-2	16	3	1				80	0.3
MSQ001-1	14	6					70	0.3
PMS542-4	13	5	1				68	0.4
MSM080-1	14	5		1			70	0.4
MSQ029-1	12	8					60	0.4
MSP557-B	11	8					58	0.4
MSP542-11	11	8	1				55	0.5
MSQ490-3	12	6	2				60	0.5
Pike	**11**	**6**	**2**				**58**	**0.5**
MSP459-5	10	8	2				50	0.6
MSP524-C	9	9	2				45	0.7
MSQ060-5	10	7	1	2			50	0.8
MSQ108-1	10	5	5				50	0.8
MSQ201-1	11	5	2	2			55	0.8
MSQ283-2	10	6	3	1			50	0.8
MSQ393-11	8	9	3				40	0.8
MSQ334-3	3	6	1				30	0.8
MSQ363-2	9	7	2	2			45	0.9
MSQ023-5	7	12	1		1		33	0.9
MSQ383-2	8	8	5				38	0.9
MSN236-A	8	6	5	1			40	1.0
MSP346-5	7	9	2	2			35	1.0

2006 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

	NUMBER OF SPOTS PER TUBER						PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
ENTRY	0	1	2	3	4	5+		
MSQ289-5	10	4	3	3			50	1.0
Snowden	**7**	**9**	**6**				**32**	**1.0**
MSQ047-1	7	7	4	2			35	1.1
MSQ279-7	6	8	5	1			30	1.1
MSQ492-2	3	11	3	1			17	1.1
MSQ245-1	4	10	5	1			20	1.2
MSQ070-1	6	6	5	3			30	1.3
MSQ214-1	4	9	5	2			20	1.3
MSQ245-2	6	7	3	4			30	1.3
MSP368-1	6	7	4	4			29	1.3
MSN313-A	2	8	7	3			10	1.6
Atlantic	**1**	**7**	**7**	**4**	**1**		**5**	**1.9**
MSQ082-3	1	4	8	4	2	1	5	2.3
MSP516-A	1	6	4	6	1	2	5	2.3
MSQ293-2	0	4	4	5	5	2	0	2.9
PRELIMINARY TRIAL, TABLESTOCK LINES								
MSQ441-6R	19	1					95	0.1
Spunta RB/CSPAG.13	19	1					95	0.1
Vanderplank	18	1	1				90	0.2
Caren	17	2	1				85	0.2
Esco	16	4					80	0.2
BP 1	15	4	1				75	0.3
MSQ440-2	12	6					67	0.3
Eden	14	5	1				70	0.4
Kufri Jeeven	14	6	1				67	0.4
MSQ181-1Y	14	6	1				67	0.4
Devlin	12	8					60	0.4
MSN111-4PP	12	8					60	0.4
MSQ434-4P	8	7					53	0.5
MSQ134-5	11	7	1				58	0.5
MSQ176-5	10	7	3				50	0.7
Darius	10	6	4				50	0.7
MSQ410-4P	7	9	3				37	0.8
E69.6	8	9	2	1			40	0.8
Teena	4	4	2				40	0.8
MSQ086-3	10	6	3	3			45	1.0
MSQ244-1	7	7	4	2			35	1.1
MSQ087-3	7	6	5	2			35	1.1
MSQ176-6	6	4	6	3	1		30	1.5
Monserrat	2	8	9	2			10	1.5
Malinche	0	5	6	5	2	3	0	2.6

2006 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	NUMBER OF SPOTS PER TUBER 0	1	2	3	4	5+	PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
USPB/SFA TRIAL CHECK SAMPLES								
A91814-5	25						100	0.0
Beacon Chipper	25						100	0.0
MSJ316-A	25						100	0.0
W2324-1	25						100	0.0
MSJ461-1	25						100	0.0
Snowden	**25**						**100**	**0.0**
W2133-1	25						100	0.0
AF2211-9	24	1					96	0.0
Atlantic	**24**	**1**					**96**	**0.0**
CO95051-7W	24	1					96	0.0
MSJ147-1	24	1					96	0.0
NY132	23	2					92	0.1
USPB/SFA TRIAL BRUISE SAMPLES								
MSJ316-A	21	4					84	0.2
CO95051-7W	19	6					76	0.2
AF2211-9	19	6					76	0.2
MSJ461-1	17	8					68	0.3
MSJ147-1	17	6	2				68	0.4
W2324-1	17	8	1				68	0.4
W2133-1	12	8	3		1		48	0.7
A91814-5	7	8	6	2			28	1.0
Snowden	**6**	**7**	**8**	**4**	**1**		**24**	**1.6**
Beacon Chipper	6	6	6	6	1		24	1.6
NY132	6	4	7	5	1	2	24	1.9
Atlantic	**3**	**3**	**7**	**7**	**3**	**2**	**12**	**2.4**

* Twenty or 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.