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2003 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. 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, 42°F and 50°F storage), as well as susceptibilities to late blight (foliar and tuber), common scab, and blackspot bruising are determined.

PROCEDURE

Eight field experiments were conducted at the Montcalm Research Farm in Entrican, MI. They were planted as randomized complete block designs with 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. This year the new land which was leased to MSU was used for the field trials.

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 Regional, Adaptation (tablestock and chip-processors), and Preliminary (tablestock and chip-processors) 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 42°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 (Tables 1 and 2)

There were 17 entries that were compared at two harvest dates. Atlantic, Snowden and four Frito Lay clones were used as checks. The plot yields were below average in the early harvest (99 days), and most lines increased between 60-150 cwt/a in yield for the second harvest date (145 days). The results are summarized in **Tables 1 and 2**. Tuber specific gravity readings were significantly average to above average for 2003. Incidence of internal defects was generally low, but Atlantic and Snowden had a higher frequency of hollow heart in both early and late harvests. In the early harvest trial, MSJ147-1 had the highest yield, while FL1833, MSH112-6 and AC87340-2W were similar in yield behind MSJ147-1. At the later harvest, different lines were found at the top tier for yield. MSG227-2 and MSJ461-1 were new additions, along with AC87340-2W and MSH112-6. MSF373-8 (Boulder), MSF099-3 and MSH112-6 were also high in specific gravity along with Atlantic, MSH067-3, and MSH095-4. MSF099-3 and UEC were also the top yielding lines in the on-farm processing trials. MSJ461-1 is a promising chip-processing line with strong foliar resistance to late blight. It also has tablestock cooking quality. Liberator, Pike and MSG227-2 continue to be the lines with the highest scab resistance along with chip-processing ability. UEC, Dakota Pearl and FL1922 demonstrated scab tolerance in 2003. Chip-processing quality was high among all the entries in the out-of-the-field samples. UEC, Liberator and W1201 are in the 500 cwt bins of the Commercial Demonstration Storage this year.

Variety Characteristics

LIBERATOR - a MSU selection for chip-processing with strong scab resistance. Yield and specific gravity over the past 6 years were comparable to Snowden. It has performed well in other states (Nebraska, Pennsylvania and California). It was in the national SFA and the North Central regional trials. Liberator was released in 2001 and is in the 2003 Commercial Demonstration Storage.

MSG227-2 – a MSU chip-processing selection with strong scab resistance. It has a specific gravity acceptable for chip-processing, excellent chip quality and cold-chipping potential. The tubers are smooth-shaped with a flattened round appearance that is attractive. It has chip-processed well from the 42°F MPIC demonstration storage studies. It has yielded well in some on-farm trials. This line will be considered for release in 2004.

MSF099-3 – a MSU chip-processing selection. It has high specific gravity, smooth attractive tubers, and excellent chip quality and will chip-process from 45°F cold storage. In 2000 it was one of the best chip-processors in the 42°F MPIC demonstration storage. It yielded well on the on-farm trials, but the large tubers tended to elongate. It is also scab susceptible. MSF099-3 is in the 2001 and 2002 Commercial Demonstration Storage.

MSJ461-1 – an exciting, new 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 average yield, but an intermediate specific gravity. Has good tablestock quality too.

UEC – 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 and 2003 Commercial Demonstration Storage bins.

Boulder (MSF373-8) - a high yielding selection with acceptable specific gravity for chip-processing. It will chip out-of-the-field and from 50°F storage. Produces large tubers with a low incidence of internal defects. Performance is good under dry land conditions. Scab tolerance is intermediate.

MSH095-4 - a mid-season maturing line with excellent chip quality and bruise susceptibility equal to Snowden. It was comparable to Atlantic for yield and solids at the Montcalm Research Farm. It is intermediate in scab tolerance between Atlantic and MSG227-2.

B. Round White Varieties: Tablestock (Tables 3 and 4)

There were 9 entries that were compared at two harvest dates. Onaway was used as a check. The plot yields were average in the early harvest (99 days), and a yield increase was observed for the second harvest date (141 days). Tuber specific gravity readings were average. The results are summarized in **Tables 3 and 4**. In the early harvest trial, Onaway, Michigan Purple, MSE018-1, MSE221-1 and MSH031-5 were the top yielding lines. There was very little incidence of internal defects in the early harvest. In the later harvest, MSE018-1, Onaway, and Michigan Purple were the top yielding lines. Overall, incidence of internal defects was low in comparison to previous years. MSE221-1 and Onaway were the only lines to classify as scab tolerant. Jacqueline Lee, MSI152-A and MSJ317-1 are late blight resistant. Michigan Purple is also a strong performing line under dryland conditions.

Variety Characteristics

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. We regard this as a variety that can compete in the red market.

MSH031-5 – a MSU tablestock/chip selection with high yield potential, attractive round shape and bright skin. It has also performed well in North Carolina. It is not scab resistant.

MSE221-1 - a MSU tablestock selection. It has high yield potential as seen in the MSU and on-farm trials in other years. General appearance is good, but it has a netted appearance similar to Superior. It has strong resistance to scab.

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. The strength of this selection is 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.

C. Russet Varieties (Table 5)

The russet trial had 19 lines evaluated in 2003. GoldRush and Russet were the standard varieties in the trial and the results are summarized in **Table 5**. Scab resistance was prevalent among the lines tested. Internal quality was high except for hollow heart in CO93016-3RUS and ATX84378-6RUS. Specific gravity measurements were below average with Russet Burbank and GoldRush having 1.074 and 1.068 readings. The yield of the overall trial was below average for 2003. Off type and cull tubers were found in all lines tested with Russet Burbank, ATX84378-6RU and A9305-10 being the greatest. The earliest maturing lines were MSE192-8RUS, Silverton Russet and CO93001-11RU.

Variety Characteristics

MSE192-8RUS - a MSU tablestock selection. The tubers have an attractive russeting and shape. The vine is small which may make this line uncompetitive in small plot trials. The tuber type suggests that it be considered a replacement for Russet Norkotah. The tubers have a clean white flesh that does not darken after cooking. Scab resistance is better than Russet Norkotah. It has performed well in taste tests.

MSE202-3RUS – a MSU dual-purpose russet selection. It has a late maturity and high yield potential. Its specific gravity is equivalent to Russet Burbank and the tubers are long with a lighter, but attractive russet skin. Scab resistance is also high. It performed well in Minnesota in 2003.

D. North Central Regional Trial (Table 6)

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. Twenty-two breeding lines and 7 check varieties were tested in Michigan. The results are presented in **Table 6**. The range of yield was very wide (553 cwt – 170 cwt) and specific gravities of the lines were high in 2003. The MSU lines MSG227-2, MSE221-1, MSE202-3RUS and MSH031-5 were all included in the North Central Trial. Similar to 2002, ND5822C-7 was very high yielding, but was susceptible to hollow heart. This line also has some Colorado potato beetle resistance. ND2470-27 was also a high performing line and chip-processed out of the field. MSG227-2 and W1773-7 offer good chip-processing and scab resistance. A9014-2RUS is an excellent russet selection for yield and type. The top-rated red-skinned line was W2275-3R because of its combination of good skin color, round shape and uniform small red tubers. MSE221-1, a scab resistant MSU tablestock selection, was also a promising selection in the trial.

E. Adaptation Trial (Tables 7A and 7B)

The Adaptation trial was divided into chip-processing and tablestock trials. Three cultivars (Snowden, Pike and Atlantic) and 15 advanced breeding lines are reported in the chip-processing trial. The trial was harvested after 124 days and the results are summarized in **Table 7A**. The high yielding lines identified in 2003 were MSJ036-A, MSJ453-4, MSK498-1Y and MSL757-1. The specific gravity readings were high with the check varieties at or above 1.086. Many MSU selections had specific gravity readings similar or higher than Atlantic. Other lines of interest were

observed. MSJ316-A, MSK061-4, MSG301-9, MSK409-1 and MSK476-1 has some scab resistance and chip-processing ability. MSJ453-4, MSL757-1 and MSJ456-4 have strong foliar late blight resistance.

In the tablestock trial Onaway and Yukon Gold were the check varieties and 17 advanced breeding lines and new varieties are summarized in the table. The trial was harvested after 141 days and the results are summarized in **Table 7B**. Seven red-skinned entries were compared. NDTX4271-5R and ND5281-2RED had the best combination of shape and red skin color. MSI049-A was the highest yielding line and was also a strong performing line in the dry land trial. MSK136-2 is a round white selection with chip-processing and strong foliar resistance to late blight. MSI005-20Y is a scab tolerant yellow-fleshed selection that shows promise. MSK125-3 has some late blight tolerance (not resistance) and high yield potential. MSJ204-3 and MSL175-1 are round white selections with bright attractive tuber skins and may have some scab tolerance.

F. Preliminary Trial (Tables 8A, 8B and 8C)

The Preliminary trial is the first replicated trial for evaluating new advanced selections from the MSU potato breeding program. Fifty-nine advanced selections and three check varieties were tested and reported in three separate Preliminary trials. The division of the trials was based upon chip-processing, late blight resistance pedigree and tablestock utilization. The chip-processing trial is summarized in **Table 8A** was harvested after 119 days. Most lines chip-processed well from the field. Specific gravities were high, but yield was below average. The top yielding line was MSK117-AY. MSM051-3, MSM190-8, MS046-4, MSL007-B and MSM188-1 are promising lines that demonstrated some scab tolerance along with chip-processing ability. MSM190-8 and MSM185-1 have some tolerance to Colorado potato beetle damage in the field. **Table 8B** summarizes the chip-processing lines with late blight resistant pedigrees. This trial was harvested and evaluated after 119 days. Eight of the 13 lines were late blight resistant. Despite the late blight resistance, the vine maturities were not late in all cases. Seven different late blight resistance sources were also represented. The most promising lines combining chip-processing and late blight resistance are MSM417-A, MSL737-A, MSK128-A and MSL179-AY. MSL179-AY also has an attractive bright skin that would serve the tablestock market well. **Table 8C** summarizes the results from the Preliminary tablestock trial. Harvest was completed after 120 days. Of the 22 entries evaluated, 10 had foliar late blight resistance. The most promising lines with late blight resistance were MSM224-1, MSM171-A, MSL159-AY and MSL211-3. MSL025-ARUS is a russet selection with good type and MSL228-2 is selection with purple splashes. MSL159-AY also chip-processes out of the field.

G. Potato Scab Evaluation (Table 9)

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 9** categorizes many of the varieties and advanced selections tested in 2003 at the MSU Soils Farm Scab Nursery. This

disease trial is a severe test. 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. In 2003 the scab disease incidence at the nursery was typical compared to other years, and the data were separated into three categories (Resistant = 0.0-1.0; Moderately Resistant = 1.3 – 1.8; and Susceptible = 2 or higher).The check varieties Russet Burbank, GoldRush, Superior, Onaway, Pike, Red Pontiac, Yukon Gold, Atlantic and Snowden can be used as references (bolded in **Table 9**). This year's results 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, MSG301-9, MSH228-6, MSK409-1, MSK476-1, 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, 4-8C**).

H. Late Blight Trial (Table 10)

In 2003, 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 4 June and inoculated 25 July with isolate 95-7, 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 10**. 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 2003 as in previous years (not shown in table). Twenty-one MSU lines were highly resistant to late blight. In addition 5 MSU lines (Jacqueline Lee, MSJ461-1, MSI152-A, MSJ317-1 and MSJ453-4) were highly resistant in a separate National Breeder Trial. Resistance of the MSU lines is derived from Tollocan (a Mexican variety), B0718-3 (USDA clone), AWN96518-2 (USDA clone), Stirling (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. Some of the most promising late blight resistant clones are MSJ461-1, MSL159-AY, MSL179-AY, MSM171-A, MSI152-A and MSK136-2. We find these late blight resistant lines valuable because many of them also have marketable maturity. Many of these lines also have other desirable traits such as scab tolerance resistance and/or chip-processing quality. Tuber late blight resistance is being evaluated on many of the selections with foliar late blight resistance.

I. Blackspot Susceptibility (Table 11)

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 11**. 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. However, these results become more meaningful when evaluated over 3 years that reflects different growing seasons and harvest conditions. In 2003 the bruise levels were lower than other years. The most bruise resistant lines this year were FL1922, Keystone Russet, GoldRush, Onaway, Silverton Russet, MSE202-3RUS, and MSE221-1. The most susceptible lines were MSH095-4, UEC, Norvalley, FL1833, Snowden, Atlantic, Jacqueline Lee and MSI005-20Y.

ROUND WHITE CHIP POTATOES: EARLY HARVEST
MONTCALM RESEARCH FARM
AUGUST 14, 2003 (99 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL	3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	CWT/A
MSJ147-1	302	320	94	5	92	2	0	1.081	1.0	5	0	0	0	40	-
FL1833	287	297	97	3	79	17	0	1.080	1.0	17	0	0	0	40	-
MSH112-6	278	304	92	7	87	5	1	1.087	1.0	2	0	0	0	40	-
AC87340-2W	271	313	87	13	86	0	0	1.072	1.0	0	0	0	0	40	-
FL1879	254	266	96	4	72	23	0	1.073	1.0	8	0	0	0	40	-
ATLANTIC	**252**	**268**	**94**	**5**	**86**	**8**	**1**	**1.085**	**1.5**	**12**	**1**	**0**	**0**	**40**	**288**
MSJ080-1	249	271	92	8	76	16	0	1.072	1.0	12	0	0	0	40	-
FL1867	239	251	95	5	92	4	0	1.087	1.0	8	0	0	0	40	-
MSF099-3	230	251	92	8	91	1	0	1.083	1.0	1	0	0	0	40	215
DAKOTA PEARL	224	241	93	7	90	3	0	1.075	1.0	0	1	0	2	40	272*
MSG227-2	222	240	92	7	86	7	1	1.079	1.0	6	0	0	0	40	222
MSF373-8	221	233	95	4	62	33	1	1.070	2.0	5	0	0	0	40	262
MSH095-4	209	223	94	5	79	15	2	1.080	1.0	0	0	0	0	40	269
SNOWDEN	**209**	**234**	**89**	**11**	**87**	**3**	**0**	**1.083**	**1.0**	**8**	**1**	**0**	**0**	**40**	**217**
LIBERATOR	203	229	89	6	80	9	5	1.083	1.0	1	1	0	0	40	227
UEC	201	211	96	4	76	19	0	1.076	1.0	8	1	0	0	40	226*
MSH067-3	195	206	95	4	92	3	1	1.084	1.0	16	0	0	0	40	251*
FL1922	192	222	86	12	86	0	2	1.079	1.0	0	0	0	0	40	-
MSJ461-1[LBR]	180	200	90	10	81	9	0	1.068	1.0	3	0	0	0	40	193
MSH360-1	170	194	88	12	85	3	0	1.082	1.0	0	0	0	0	40	-
MSH228-6	168	178	95	5	88	6	0	1.077	1.0	2	0	0	0	40	-
MSH094-8	143	161	89	11	80	9	0	1.078	1.0	11	0	0	0	40	204
MSJ167-1	86	128	68	32	68	0	0	1.079	1.0	0	0	0	0	40	-
MEAN	217	237						1.079							
$LSD_{0.05}$	43	45						0.005						* Two-Year Average	

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

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

Planted May 7, 2003

ROUND WHITE CHIP POTATOES: LATE HARVEST
MONTCALM RESEARCH FARM
SEPTEMBER 29, 2003 (145 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL			3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]	CWT/A
FL1879	364	372	98	2	67	31	1	1.076	1.0	4	0	0	1	40	-	2.3	-
AC87340-2W	360	400	90	9	87	3	1	1.076	1.0	0	0	0	0	40	2.7	3.8	-
MSJ080-1	360	389	92	6	73	20	1	1.073	1.0	11	0	1	0	40	2.0	2.8	-
MSF373-8	349	357	98	1	42	55	1	1.082	1.0	6	0	0	0	40	2.0	4.0	401
ATLANTIC	**341**	**366**	**93**	**3**	**84**	**9**	**3**	**1.089**	**1.0**	**11**	**0**	**0**	**1**	**40**	**2.3**	**3.0**	**372**
MSH112-6	330	361	91	5	81	11	4	1.087	1.0	0	0	0	0	40	2.3	2.0	-
MSF099-3	327	349	94	5	88	5	1	1.088	1.0	0	0	0	0	40	2.7	3.0	310
MSG227-2	323	346	93	5	82	11	2	1.081	1.0	8	0	0	0	40	0.8	3.5	327
MSJ461-1[LBR]	321	349	92	8	78	14	0	1.076	1.0	1	0	0	0	40	2.0	3.5	300
UEC	309	317	97	3	72	25	0	1.082	1.0	7	0	1	0	40	1.3	3.0	349
FL1833	302	320	95	4	70	25	1	1.084	1.0	11	0	0	0	40	1.7	2.8	-
MSH095-4	297	312	95	3	75	20	2	1.086	1.0	0	0	1	0	40	1.7	3.0	356
MSH067-3	291	299	97	2	74	23	1	1.087	1.0	28	0	0	0	40	2.0	2.8	330*
MSH228-6	286	301	95	4	76	20	1	1.082	1.0	1	0	0	1	40	0.7	4.0	-
LIBERATOR	284	334	85	4	72	13	11	1.080	1.0	1	0	0	0	40	0.0	2.8	318
MSJ147-1	284	302	94	5	81	13	1	1.081	1.0	6	0	0	0	40	1.7	3.8	-
SNOWDEN	**273**	**294**	**93**	**6**	**88**	**5**	**1**	**1.085**	**1.0**	**14**	**0**	**0**	**0**	**40**	**2.4**	**3.5**	**310**
DAKOTA PEARL	243	266	91	7	86	5	2	1.079	1.0	1	2	0	2	40	1.3	1.5	254*
MSH094-8	238	259	92	6	73	18	2	1.084	1.0	7	0	0	0	40	2.3	3.8	302
FL1922	231	264	87	9	83	5	4	1.076	1.0	1	0	0	0	40	1.3	1.3	-
FL1867	231	241	96	3	90	5	1	1.085	1.0	9	0	0	0	40	1.5	1.8	-
MSH360-1	212	235	90	7	86	4	3	1.084	1.0	1	1	0	1	40	2.3	2.3	-
MSJ167-1	150	172	87	11	84	3	2	1.087	1.0	0	0	0	0	40	2.0	4.0	-
MEAN	292	313						1.082									
$LSD_{0.05}$	60	59						0.004									

* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.
[1]SIZE: B: <2"; A: 2-3.25"; OV: >3.25"; PO: Pickouts.
[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.
[3]CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.
[4]SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.
[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)
Planted May 7, 2003

Table 3

ROUND WHITE TABLESTOCK POTATOES: EARLY HARVEST
MONTCALM RESEARCH FARM
AUGUST 14, 2003 (99 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						TUBER QUALITY[2]				TOTAL	3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	CUT	CWT/A
ONAWAY	**291**	**307**	**95**	**3**	**76**	**19**	**2**	**1.071**	**0**	**0**	**0**	**0**	**40**	**332**
MICHIGAN PURPLE	269	288	93	5	73	20	2	1.070	1	0	0	0	40	317
MSE018-1	262	286	92	8	84	8	0	1.085	7	0	0	1	40	248
MSH031-5	236	259	91	8	86	5	1	1.084	0	0	0	0	40	290
MSE221-1	230	253	91	4	72	19	5	1.071	6	0	0	0	40	316
JACQUELINE LEE[LBR]	207	280	74	25	73	1	1	1.083	0	0	0	0	40	173
MSG050-2	202	220	92	8	88	3	1	1.078	0	0	0	0	40	-
MSI152-A[LBR]	193	250	77	22	75	2	0	1.072	1	0	0	0	40	264*
MSJ197-1	168	188	90	10	81	8	0	1.077	4	0	0	0	40	-
MSJ317-1[LBR]	167	197	85	15	83	2	0	1.072	1	0	0	0	40	-
MEAN	223	253						1.076						
$LSD_{0.05}$	51	55						0.003						

* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

Planted May 7, 2003

Table 4

ROUND WHITE TABLESTOCK POTATOES: LATE HARVEST
MONTCALM RESEARCH FARM
SEPTEMBER 25, 2003 (141 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						TUBER QUALITY[2]				TOTAL			3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	CUT	SCAB[3]	MAT[4]	CWT/A
MSE018-1	430	456	94	4	73	21	2	1.088	5	10	0	0	40	2.0	4.0	409
ONAWAY	**326**	**364**	**90**	**2**	**58**	**32**	**8**	**1.066**	**0**	**4**	**0**	**0**	**40**	**1.4**	**1.0**	**334**
MICHIGAN PURPLE	323	346	93	3	62	32	4	1.066	2	1	0	0	40	2.3	1.8	328
MSG050-2	313	345	91	7	73	18	2	1.075	0	0	1	0	40	1.7	2.0	-
JACQUELINE LEE [LBR]	299	368	81	18	80	1	1	1.084	0	0	0	0	40	2.5	2.8	236
MSJ197-1	295	314	94	5	76	18	1	1.077	12	4	0	0	40	1.7	3.5	-
MSI152-A[LBR]	282	314	90	10	84	6	1	1.070	6	0	0	0	40	3.0	3.8	296*
MSH031-5	276	309	90	9	80	10	1	1.079	0	2	0	0	40	1.7	1.8	307
MSJ317-1[LBR]	270	302	89	9	85	5	1	1.079	6	4	1	0	40	3.7	3.8	-
MSE221-1	263	307	86	3	61	25	11	1.067	4	2	0	0	40	1.0	1.3	324
MEAN	308	343						1.075								
$LSD_{0.05}$	44	51						0.003								

* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

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

[4]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)

Planted May 7, 2003

RUSSET TRIAL
MONTCALM RESEARCH FARM
SEPTEMBER 18, 2003 (128 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						TUBER QUALITY[2]				TOTAL			3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]	CWT/A
CO93016-3RU	325	371	88	10	66	21	3	1.080	15	0	0	0	40	1.0	3.5	-
A8254-2BRUS	310	394	79	13	69	10	8	1.075	2	0	0	0	40	0.0	4.0	-
KEYSTONE RUSSET	299	324	92	4	62	31	4	1.068	0	11	0	0	40	0.5	3.5	-
ALTURAS RUSSET	297	356	84	14	78	6	3	1.077	2	5	0	0	40	1.7	4.3	-
RUSSET BURBANK	**257**	**343**	**75**	**9**	**62**	**12**	**17**	**1.074**	**0**	**1**	**0**	**0**	**40**	**0.5**	**3.3**	**205**
A9305-10	252	335	75	12	67	8	13	1.076	0	4	0	0	40	1.7	3.8	-
AC89536-5RU	235	302	78	19	71	7	3	1.081	6	0	0	0	40	0.0	3.5	255
AC93026-9RU	234	279	84	9	59	25	7	1.077	3	4	0	0	40	0.0	4.0	-
A95109-1	224	253	89	7	76	13	4	1.078	0	10	0	0	40	0.0	3.0	-
CO93001-11RU	218	268	82	11	68	13	8	1.072	1	0	0	0	40	1.8	2.5	-
GOLDRUSH	**217**	**261**	**83**	**11**	**75**	**9**	**6**	**1.068**	**0**	**0**	**0**	**0**	**40**	**1.0**	**3.0**	**224**
MSE192-8RUS	212	251	85	14	64	21	2	1.070	0	3	0	0	40	0.3	2.3	231
SILVERTON RUSSET	204	235	87	6	68	19	7	1.067	1	0	1	0	40	0.3	2.5	184
AC92009-4RU	198	219	91	6	65	26	3	1.081	3	2	0	0	40	0.3	3.0	243*
ATX84706-2RU	193	216	89	7	79	10	3	1.071	1	1	0	0	40	2.0	3.5	-
A9304-3	192	240	80	10	57	23	10	1.078	7	2	0	0	40	0.5	2.8	-
MSE202-3RUS	184	243	76	14	66	9	10	1.075	1	0	0	0	40	0.3	2.8	266
CO85026-4RU	178	204	87	8	67	21	5	1.085	4	2	0	0	40	2.3	3.3	209
ATX84378-6RU	170	218	78	3	42	36	19	1.072	15	3	1	0	40	0.5	3.0	-
MEAN	232	279						1.075								
$LSD_{0.05}$	65	69						0.004								

* Two-Year Average

[1]SIZE: B: < 4oz.; A: 4-10oz.; OV: > 10oz.; PO: Pickouts.
[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.
[4]SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.
[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).
[6]BRUISE: These lines demonstrated blackspot bruise susceptibility in simulated bruise testing in 2003.
Planted May 13, 2003

NORTH CENTRAL REGIONAL TRIAL
MONTCALM RESEARCH FARM
SEPTEMBER 23, 2003 (133 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL			
ENTRY	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]	MERIT[6]
ND5822C-7	553	579	96	3	71	25	2	1.086	1.0	12	1	0	2	40	1.7	3.3	1W
RED PONTIAC	**450**	**487**	**92**	**4**	**60**	**32**	**3**	**1.063**	**3.5**	**9**	**2**	**0**	**0**	**40**	**3.2**	**2.8**	
SNOWDEN	**433**	**456**	**95**	**3**	**77**	**19**	**1**	**1.089**	**1.0**	**20**	**7**	**0**	**1**	**40**	**2.7**	**4.0**	
ND2470-27	421	448	94	3	67	27	3	1.077	1.0	0	6	0	0	40	3.0	3.0	
A9014-2RUS	391	447	87	6	51	37	6	1.079	2.0	3	1	0	0	40	1.0	3.3	1RUS
W1773-7	378	402	94	6	77	17	0	1.089	1.0	2	3	1	0	40	0.7	2.8	2W
MSG227-2	373	398	94	5	83	10	1	1.081	1.0	2	1	0	0	40	1.3	3.0	3W
V0056-1	360	377	95	3	75	21	1	1.082	1.0	9	0	0	0	40	2.3	1.8	
W1201	350	373	94	4	78	15	3	1.091	1.0	0	8	0	2	40	1.7	3.5	
CV89023-2R	348	397	88	10	75	12	3	1.068	3.5	0	3	0	0	40	3.0	2.5	
W1836-3RUS	341	382	89	8	72	17	3	1.080	2.5	6	0	0	0	40	0.7	3.3	2RUS
MN18710RUS	329	359	91	7	73	18	2	1.078	2.5	2	1	0	0	40	0.3	3.8	
UEC	312	330	95	3	64	31	2	1.082	1.0	4	0	0	0	40	1.3	3.5	
ATLANTIC	**294**	**318**	**92**	**4**	**72**	**20**	**3**	**1.089**	**1.0**	**14**	**2**	**0**	**0**	**40**	**2.3**	**2.8**	
MSE221-1	293	323	90	2	66	25	7	1.069	2.5	3	2	0	1	40	1.0	1.8	
V0379-2	279	309	90	7	83	8	3	1.075	1.5	0	3	0	0	40	3.0	1.0	
MSH031-5	266	294	91	9	82	8	1	1.080	1.5	0	0	0	0	40	1.7	2.3	
PACIFIC RUSSET (V0168-3)	239	255	94	6	85	8	0	1.069	2.0	0	1	0	0	40	1.7	1.0	
MN15620LR	229	302	76	20	71	5	5	1.073	2.0	0	4	0	0	40	2.3	2.8	
MN19525R	219	280	78	13	71	7	9	1.064	3.5	2	2	0	0	40	1.0	2.3	3RD
MN18747RUS	210	225	93	5	70	23	2	1.068	1.0	0	5	2	0	40	-	1.0	
NORVALLEY	**206**	**235**	**88**	**3**	**57**	**30**	**9**	**1.076**	**1.0**	**1**	**1**	**1**	**0**	**40**	**-**	**2.8**	
MSE202-3RUS	204	270	76	16	68	8	8	1.079	2.5	0	1	0	0	40	0.3	2.5	
RED NORLAND	**201**	**237**	**85**	**15**	**83**	**2**	**0**	**1.064**	**1.5**	**4**	**2**	**1**	**0**	**40**	**1.0**	**1.0**	

continued on following page:

NORTH CENTRAL REGIONAL TRIAL
MONTCALM RESEARCH FARM
SEPTEMBER 23, 2003 (133 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL			
ENTRY	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]	MERIT[6]
continued:																	
ND3196-1R	200	230	87	9	73	14	4	1.069	3.5	3	1	1	1	40	1.0	1.3	2RD
RUSSET BURBANK	**199**	**325**	**61**	**10**	**51**	**10**	**29**	**1.075**	**2.0**	**5**	**0**	**0**	**0**	**40**	**0.5**	**3.3**	
W2275-3R	182	252	72	27	72	0	1	1.057	2.0	0	3	0	0	40	1.0	2.5	1RD
STAMPEDE RUSSET (AC)	182	213	85	13	68	17	1	1.060	1.5	0	4	1	0	40	0.3	1.5	3RUS
RUSSET NORKOTAH	**170**	**229**	**74**	**23**	**68**	**6**	**3**	**1.070**	**2.0**	**1**	**3**	**0**	**0**	**40**	**2.0**	**1.5**	
MEAN	297	336						1.075									
$LSD_{0.05}$	66	71						0.003									

[1]SIZE: B: <2"; A: 2-3.25"; OV: >3.25"; PO: Pickouts.
[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.
[3]CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.
[4]SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.
[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).
[6]MERIT: A Merit rating was given for the best 3 entries within each market class (rank order, 1 = best).
Planted May 13, 2003

ADAPTATION TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
SEPTEMBER 15, 2003 (124 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL		
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]
MSJ036-A	389	424	92	8	81	10	0	1.083	1.0	6	2	1	1	40	1.3	3.0
MSJ453-4[LBR]	331	380	87	12	77	10	1	1.087	1.5	15	3	1	0	40	1.7	3.3
ATLANTIC	**330**	**402**	**82**	**18**	**82**	**0**	**0**	**1.086**	**1.5**	**0**	**4**	**1**	**1**	**40**	**2.3**	**3.5**
MSK498-1Y	326	352	93	7	88	5	1	1.079	1.5	0	0	0	0	40	2.7	4.0
MSL757-1[LBR]	325	362	90	10	76	14	1	1.084	2.0	6	0	0	0	40	2.5	3.0
MSJ316-A	296	313	95	5	83	12	0	1.083	1.5	0	0	0	0	40	1.7	4.0
SNOWDEN	**277**	**295**	**94**	**6**	**86**	**8**	**0**	**1.087**	**1.0**	**15**	**5**	**0**	**0**	**40**	**2.4**	**3.3**
MSK061-4	264	293	90	10	88	2	0	1.086	1.0	0	10	0	0	40	2.0	3.5
MSK476-1	260	290	90	9	87	3	1	1.097	1.5	0	1	0	0	40	1.0	3.3
MSK437-A	245	256	96	3	60	36	1	1.076	1.0	8	0	0	1	40	2.0	3.8
MSK409-1	229	250	91	8	80	11	1	1.085	1.0	1	2	0	0	40	0.7	2.5
MSJ080-8	226	248	91	8	84	7	1	1.086	1.0	0	0	0	0	40	2.0	2.5
MSH356-A	210	234	90	9	84	5	1	1.081	1.5	11	2	0	0	40	1.7	3.3
MSG301-9	207	231	90	10	85	4	0	1.078	1.0	0	0	0	0	40	0.0	1.5
PIKE	**203**	**224**	**91**	**9**	**91**	**0**	**0**	**1.086**	**1.0**	**0**	**0**	**0**	**0**	**40**	**1.5**	**3.3**
MSJ456-4[LBR]	181	223	81	19	72	10	0	1.079	1.0	7	2	0	0	40	2.3	2.0
MSH015-2	126	142	89	7	83	6	4	1.091	1.0	2	0	0	0	40	1.0	3.0
MSJ126-9Y	119	146	81	18	81	1	1	1.073	1.0	0	0	0	0	40	1.3	2.5
MEAN	252	281						1.084								
$LSD_{0.05}$	61	63						0.003								

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.
[1]SIZE: B: <2"; A: 2-3.25"; OV: >3.25"; PO: Pickouts.
[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.
[3]CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.
[4]SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.
[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)
Planted May 14, 2003

ADAPTATION TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
SEPTEMBER 25, 2003 (141 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL		
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[3]	MAT[4]
MSI049-A	365	394	93	4	70	22	4	1.069	1.0	8	1	0	0	40	2.3	2.8
MSK125-3	350	391	90	9	82	7	1	1.075	2.0	5	2	0	0	40	2.0	4.0
STIRLING[LBR]	346	371	93	4	70	23	3	1.075	2.0	18	0	0	0	40	2.7	4.0
NDTX4271-5R	329	367	90	5	75	15	5	1.065	-	0	0	0	0	40	2.0	1.0
MSE149-5Y	328	350	94	4	77	17	2	1.070	1.0	5	0	0	0	40	2.0	2.0
ONAWAY	**327**	**352**	**93**	**2**	**70**	**23**	**5**	**1.068**	**-**	**0**	**6**	**0**	**0**	**40**	**1.5**	**1.0**
MSI005-20Y	303	341	89	6	79	10	5	1.077	-	0	0	0	0	40	1.0	1.5
CO89097-2RED	302	342	88	7	68	20	5	1.074	-	0	6	0	0	40	3.0	2.3
NDTX4304-1R	295	311	95	5	86	9	1	1.056	-	1	6	0	0	40	1.7	1.0
MSK136-2[LBR]	287	321	89	11	89	1	0	1.090	1.0	0	2	0	0	40	2.0	4.0
MSJ204-3	273	287	95	4	81	14	1	1.078	-	0	2	0	0	40	1.0	3.8
CO93037-6RED	269	350	77	15	70	7	8	1.065	-	0	0	0	0	40	2.0	2.5
DAKOTA ROSE	**258**	**276**	**93**	**4**	**76**	**18**	**3**	**1.058**	**-**	**1**	**3**	**0**	**0**	**40**	**1.5**	**1.0**
NDC5281-2RED	256	290	88	11	83	5	1	1.074	-	0	1	0	0	40	2.3	1.0
MSK068-2	231	267	86	13	83	3	0	1.081	-	1	1	0	0	40	3.3	4.0
MSL175-1	227	234	97	2	61	36	1	1.069	-	0	0	0	0	40	1.7	2.5
A83350-9R	222	246	90	10	87	3	0	1.068	-	0	0	0	0	40	2.5	1.0
YUKON GOLD	**220**	**238**	**92**	**6**	**78**	**14**	**2**	**1.080**	**-**	**4**	**1**	**0**	**0**	**40**	**2.3**	**1.0**
MSG004-3	193	206	94	6	81	13	0	1.070	-	1	2	0	0	40	2.0	2.5
MSJ033-6Y	171	231	74	13	64	10	13	1.070	-	0	0	0	0	40	2.7	1.5
MEAN	278	308						1.072								
$LSD_{0.05}$	49	49						0.003								

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

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

[4]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)

Planted May 7, 2003

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
SEPTEMBER 10, 2003 (119 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL		
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]
MSK117-AY	365	395	93	7	77	16	0	1.086	1.0	0	1	0	1	20	-	3.5
MSM072-1	337	360	93	7	76	17	0	1.092	1.0	1	0	0	0	20	3.0	3.5
ATLANTIC	**327**	**339**	**97**	**3**	**89**	**8**	**0**	**1.095**	**1.0**	**2**	**0**	**1**	**0**	**20**	**2.3**	**1.0**
MSK085-A	299	334	90	10	88	1	0	1.083	1.5	0	0	0	0	20	2.3	4.0
SNOWDEN	**298**	**320**	**93**	**7**	**85**	**8**	**0**	**1.089**	**1.0**	**3**	**4**	**0**	**0**	**20**	**2.4**	**2.5**
MSM051-3	284	287	99	1	85	13	0	1.086	1.0	1	0	0	0	20	1.0	2.0
MSK009-B	267	285	94	6	82	12	0	1.079	1.0	0	0	0	0	20	3.0	3.0
MSR3-26	264	284	93	6	92	2	1	1.093	2.0	1	0	0	0	20	1.3	2.5
MSI037-5	260	280	93	7	87	6	0	1.087	1.5	0	0	0	0	20	3.3	4.0
MSM190-8	241	270	89	11	89	0	0	1.087	1.0	0	0	0	0	20	1.0	2.0
MSM083-A	240	279	86	14	86	0	0	1.091	1.0	0	0	0	0	20	2.5	2.5
MSL164-A	239	250	95	5	75	21	0	1.090	1.0	4	0	0	0	20	1.5	3.5
MSM414-1Y	236	255	93	5	88	5	2	1.088	1.0	0	0	1	1	20	1.7	3.5
MSM046-4	226	265	85	15	85	0	0	1.095	1.0	0	2	0	0	20	0.7	3.5
MSL007-B	225	261	86	14	86	0	0	1.086	1.5	0	0	0	0	20	0.7	2.5
MSM058-3	221	248	89	11	89	0	0	1.077	1.0	0	4	0	0	20	2.0	1.0
MSM144-CY	220	253	87	12	85	2	1	1.074	1.0	0	2	0	0	20	2.0	1.0
MSK072-B	220	228	96	4	92	4	0	1.091	1.0	0	1	0	0	20	2.5	2.5
MSK116-B	201	211	95	5	88	7	0	1.079	1.0	1	0	0	0	20	2.7	1.0
MSM188-1	188	228	82	18	82	0	0	1.092	1.5	0	0	0	0	20	1.3	2.5
MSM185-1	176	197	89	11	84	5	0	1.087	1.0	1	0	0	0	20	3.3	1.0
MSM107-7	166	187	89	11	89	0	0	1.069	1.0	0	0	0	0	20	2.0	2.0
PIKE	**155**	**171**	**90**	**10**	**90**	**0**	**0**	**1.088**	**1.0**	**0**	**0**	**0**	**0**	**20**	**1.5**	**2.0**
MSM414-3Y[LBR]	151	230	66	34	64	2	0	1.079	1.0	0	0	0	0	20	3.0	1.0
MSM060-3	148	216	68	31	68	0	1	1.092	1.0	0	0	1	1	20	0.7	1.0
MSM109-3Y	146	191	77	23	77	0	0	1.085	1.0	0	0	0	0	20	2.0	2.0
MEAN	229	257						1.086								
$LSD_{0.05}$	80	83						0.004								

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

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

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

[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)

Planted May 14, 2003

PRELIMINARY TRIAL, CHIP-PROCESSING LINES WITH LATE BLIGHT RESISTANT PEDIGREES
MONTCALM RESEARCH FARM
SEPTEMBER 10, 2003 (119 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL		
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]
ATLANTIC	**327**	**339**	**97**	**3**	**89**	**8**	**0**	**1.095**	**1.0**	**2**	**0**	**1**	**0**	**20**	**2.3**	**1.0**
MSM417-A[LBR]	305	327	93	7	77	16	0	1.084	1.0	0	1	0	0	20	4.0	2.0
SNOWDEN	**298**	**320**	**93**	**7**	**85**	**8**	**0**	**1.089**	**1.0**	**3**	**4**	**0**	**0**	**20**	**2.4**	**2.5**
MSM164-2Y	296	322	92	5	64	28	4	1.080	1.0	2	0	3	0	20	1.3	3.5
MSM170-D	282	306	92	8	83	10	0	1.078	1.5	0	0	0	0	20	3.3	1.5
MSL737-A[LBR]	273	301	91	9	88	3	0	1.085	1.0	0	0	0	0	20	4.0	4.0
MSK027-C[LBR]	267	302	88	12	86	3	0	1.093	1.5	0	0	0	0	20	2.7	1.5
MSK128-A[LBR]	255	276	92	7	86	6	1	1.080	1.0	0	0	0	0	20	-	1.5
MSK124-A[LBR]	254	281	90	10	83	7	0	1.077	1.5	0	0	0	0	20	4.0	3.5
MSL045-AY[LBR]	253	272	93	6	89	4	1	1.073	1.0	0	0	0	0	20	3.0	3.0
MSL179-AY[LBR]	245	279	88	12	82	5	0	1.072	1.5	0	0	0	0	20	3.0	1.5
MSL023-B	241	268	90	6	79	11	4	1.082	1.0	1	0	0	0	20	3.3	2.0
MSL258-CY	225	252	89	10	83	6	1	1.081	1.0	0	0	0	0	20	2.0	2.5
MSM409-2Y[LBR]	212	286	74	26	74	0	0	1.084	1.0	0	0	0	0	20	2.7	2.0
MSL276-A	192	241	80	19	77	3	1	1.097	1.0	0	0	0	0	20	2.0	4.0
PIKE	**155**	**171**	**90**	**10**	**90**	**0**	**0**	**1.088**	**1.0**	**0**	**0**	**0**	**0**	**20**	**1.5**	**2.0**
MEAN	255	284						1.084								
$LSD_{0.05}$	NS	NS						0.008								

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

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

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

[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)

Planted May 14, 2003

PRELIMINARY TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
SEPTEMBER 11, 2003 (120 DAYS)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	TUBER QUALITY[2]				TOTAL		
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[3]	HH	VD	IBS	BC	CUT	SCAB[4]	MAT[5]
MSM224-1[LBR]	444	483	92	8	77	15	0	1.078	1.5	0	0	0	0	20	-	4.5
MSM418-5[LBR]	378	393	96	2	83	13	2	1.077	1.0	0	3	0	0	20	2.0	3.0
MSM171-A[LBR]	349	357	98	2	78	20	0	1.068	1.5	0	0	0	1	20	2.0	1.5
MSM183-1[LBR]	327	391	84	16	80	4	0	1.092	1.0	0	0	0	0	20	1.3	4.0
MSM200-6	287	336	85	14	79	6	0	1.088	1.0	1	0	0	0	20	1.3	2.5
MSK193-B	283	302	94	4	78	15	3	1.082	1.0	1	0	0	0	20	3.0	3.5
ONAWAY	**274**	**335**	**82**	**3**	**61**	**20**	**16**	**1.067**	**3.0**	**0**	**1**	**0**	**0**	**20**	**1.5**	**1.0**
MSM066-4	272	285	95	4	91	4	1	1.076	1.0	4	0	0	0	20	1.0	3.5
MSL175-B	260	283	92	8	82	10	0	1.083	3.0	0	0	0	0	20	2.0	2.0
MSL228-1	259	283	92	7	82	9	2	1.084	1.5	0	0	0	0	20	1.3	2.0
MSM205-A	252	323	78	14	78	0	8	1.085	1.5	0	0	0	0	20	3.0	3.5
MSL210-A	249	295	84	14	83	1	2	1.081	1.0	1	1	0	0	20	3.0	1.0
MSL159-AY[LBR]	244	299	82	18	82	0	0	1.096	1.0	0	1	0	0	20	2.7	2.5
MSM143-CY	230	256	90	10	85	5	0	1.078	1.0	0	0	0	2	20	2.0	1.5
MSM182-1[LBR]	229	276	83	16	83	0	1	1.080	2.5	0	0	0	0	20	-	1.5
MSM140-B	229	295	78	22	77	1	0	1.078	1.0	0	0	0	0	20	3.0	3.0
MSL211-3[LBR]	228	269	85	15	83	1	1	1.076	2.5	0	0	0	0	20	1.0	1.5
A95053-61	217	301	72	26	72	0	2	1.085	1.5	0	0	0	0	20	3.0	3.5
MSL025-ARUS	212	290	73	26	66	7	1	1.071	2.0	0	1	0	0	20	0.7	3.0
MSM288-2Y	181	231	78	22	78	0	0	1.072	1.0	0	0	0	0	20	2.7	1.5
A96895-58LB[LBR]	167	195	86	5	52	33	9	1.065	3.0	11	1	0	0	20	2.3	3.0
A97039-51LB[LBR]	164	206	79	19	76	4	1	1.082	1.0	0	0	0	0	20	3.7	1.5
MSM286-EY	147	177	83	17	83	0	0	1.072	1.0	0	0	0	0	20	2.0	1.0
MEAN	256	298						1.079								
$LSD_{0.05}$	94	102						0.004								

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

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

[2]QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot.

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

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

[5]MATURITY RATING: Taken August 28, 2003; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering)

Planted May 14, 2003

2003 SCAB DISEASE TRIAL
SCAB NURSERY, EAST LANSING, MI

Potato Line	Mean Rating (0-5)	Worst Rating (0-5)
RESISTANT CATEGORY:		
A8254-2BRUS	0.0	0
A95109-1	0.0	0
AC89536-5RU	0.0	0
AC93026-9RU	0.0	0
LIBERATOR	0.0	0
MSG301-9	0.0	0
AC92009-4RUS	0.3	1
MN18710RUS	0.3	1
MSE192-8RUS	0.3	1
MSE202-3RUS	0.3	1
SILVERTON RUSSET	0.3	1
STAMPEDE RUSSET	0.3	1
A9304-3	0.5	1
ATX84378-6RU	0.5	1
KEYSTONE RUSSET	0.5	1
RUSSET BURBANK	**0.5**	**2**
MSH228-6	0.7	1
MSK409-1	0.7	1
MSL007-B	0.7	1
MSL019-AY	0.7	1
MSL025-ARUS	0.7	1
MSM046-4	0.7	1
MSM060-3	0.7	1
RED NORLAND	**0.7**	**1**
W1773-7	0.7	1
W1836-3RUS	0.7	1
MSG227-2	0.8	2
A9014-2RUS	1.0	1
CO93016-3RU	1.0	2
GOLDRUSH	**1.0**	**1**
MN19525R	1.0	1
MSE221-1	1.0	2
MSH015-2	1.0	2
MSI005-20Y	1.0	1
MSJ204-3	1.0	2
MSK476-1	1.0	1
MSL211-3[LBR]	1.0	1
MSM051-3	1.0	1
MSM066-4	1.0	1
MSM190-8	1.0	1
ND3196-1R	1.0	1
W2275-3R	1.0	1

Potato Line	Mean Rating (0-5)	Worst Rating (0-5)
MODERATELY-RESISTANT CATEGORY:		
DAKOTA PEARL	**1.3**	**2**
FL1922	1.3	2
MSJ036-A	1.3	2
MSJ047-5	1.3	2
MSJ126-9Y	1.3	2
MSJ453-4[LBR]	1.3	2
MSL228-1	1.3	2
MSM164-2Y	1.3	2
MSM188-1	1.3	2
MSM200-6	1.3	2
MSR3-26	1.3	2
UEC	1.3	2
ONAWAY	**1.4**	**3**
DAKOTA ROSE	**1.5**	**2**
FL1867	1.5	3
MN18747LW	1.5	3
MSL164-A	1.5	2
MSM151-1Y	1.5	2
PIKE	**1.5**	**2**
A83350-9R	1.7	3
A9305-10	1.7	2
ALTURAS RUSSET	1.7	2
FL1833	1.7	2
MSG050-2	1.7	2
MSH031-5	1.7	2
MSH095-4	1.7	2
MSH356-A	1.7	3
MSJ042-3	1.7	2
MSJ147-1	1.7	3
MSJ197-1	1.7	2
MSJ316-A	1.7	3
MSM057-A	1.7	2
MSM058-3	1.7	3
MSM414-1Y	1.7	2
MSM418-5[LBR]	1.7	3
ND5822C-7	1.7	2
NDTX4304-1R	1.7	2
V0168-3	1.7	3
W1201	1.7	2
CO93001-11RUS	1.8	4

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

$LSD_{0.05} = 1.3$

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

2003 SCAB DISEASE TRIAL
SCAB NURSERY, EAST LANSING, MI

Potato Line	Mean Rating (0-5)	Worst Rating (0-5)
SUSCEPTIBLE CATEGORY:		
ATX84706-2Rus	2.0	3
CO93037-6R	2.0	3
LADY ROSETTA	2.0	5
MSE018-1	2.0	3
MSE149-5Y	2.0	3
MSF373-8	2.0	3
MSG004-3	2.0	3
MSH067-3	2.0	3
MSI032-6	2.0	3
MSJ080-1	2.0	2
MSJ080-8	2.0	2
MSJ167-1	2.0	4
MSJ461-1^{LBR}	2.0	2
MSK061-4	2.0	3
MSK136-2^{LBR}	2.0	2
MSK437-A	2.0	2
MSK469-1	2.0	3
MSL143-1	2.0	2
MSL175-1	2.0	2
MSL175-B	2.0	3
MSL258-CY	2.0	3
MSL265-BY	2.0	2
MSL276-A	2.0	2
MSM107-7	2.0	2
MSM109-3Y	2.0	2
MSM144-CY	2.0	3
MSM147-A	2.0	2
MSM171-A^{LBR}	2.0	2
MSM286-EY	2.0	3
NDTX4271-5R	2.0	2
RUSSET NORKOTAH	**2.0**	**2**

Potato Line	Mean Rating (0-5)	Worst Rating (0-5)
SUSCEPTIBLE CATEGORY:		
MSK125-3	2.2	3
MSL766-1	2.2	3
ATLANTIC	**2.3**	**4**
A96895-58LB^{LBR}	2.3	3
CO85026-4Rus	2.3	3
MICHIGAN PURPLE	2.3	4
MN15620R	2.3	3
MSH094-8	2.3	3
MSH112-6	2.3	3
MSH360-1	2.3	3
MSI049-A	2.3	3
MSJ456-4^{LBR}	2.3	3
MSK085-A	2.3	3
MSM151-2	2.3	3
NDC5281-2R	2.3	3
V0056-1	2.3	3
YUKON GOLD	**2.3**	**3**
SNOWDEN	**2.4**	**3**
JACQUELINE LEE^{LBR}	2.5	3
MSI002-3	2.5	3
MSK072-B	2.5	3
MSL757-1^{LBR}	2.5	4
MSM083-A	2.5	3
MSM288-2Y	2.5	3
SPUNTA G2	2.5	4
SPUNTA G3	2.5	4
AC87340-2W	2.7	4
MSF099-3	2.7	4
MSI061-B	2.7	4
MSJ033-6Y	2.7	3
MSJ143-4	2.7	3
MSJ456-2Y^{LBR}	2.7	3
MSK027-C^{LBR}	2.7	4
MSK116-B	2.7	4
MSK188-AY	2.7	3
MSK193-B	2.7	4
MSK410-2Y	2.7	3
MSK498-1Y	2.7	4
MSL159-AY^{LBR}	2.7	3
MSL179-AY^{LBR}	2.7	4
MSL753-AR	2.7	3
MSM183-1^{LBR}	2.7	3
MSM409-2Y^{LBR}	2.7	3
STIRLING	2.7	4

Potato Line	Mean Rating (0-5)	Worst Rating (0-5)
SUSCEPTIBLE CATEGORY:		
A95053-61	3.0	4
CO89097-2R	3.0	3
CV89023-2	3.0	4
MSI152-A^{LBR}	3.0	3
MSK009-B	3.0	3
MSL045-AY^{LBR}	3.0	3
MSL181-A	3.0	4
MSL210-A	3.0	3
MSL727-CY	3.0	3
MSM072-1	3.0	3
MSM140-8	3.0	3
MSM205-A	3.0	4
MSM288-AY	3.0	3
MSM414-3Y^{LBR}	3.0	4
ND2470-27	3.0	3
SPUNTA	3.0	5
RED PONTIAC	**3.2**	**4**
MSI037-5	3.3	4
MSK068-2	3.3	4
MSK482-A	3.3	4
MSL023-B	3.3	4
MSM170-D	3.3	4
MSM185-1	3.3	5
A97039-51LB^{LBR}	3.7	4
MSJ317-1^{LBR}	3.7	4
B0718-1^{LBR}	4.0	4
MSK124-A^{LBR}	4.0	4
MSL737-A^{LBR}	4.0	4
MSM417-A^{LBR}	4.0	5

*SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.
$LSD_{0.05}$ = 1.3

2003 LATE BLIGHT VARIETY TRIAL
MUCK SOILS RESEARCH FARM

LINE	RAUDPC[1] MEAN	Table[2]	LINE	RAUDPC[1] MEAN
Foliar Resistance Category:			***Foliar Susceptibility Category (select lines)*** [3] ***:***	
A97039-51LB	0.0	Table 8C	**SNOWDEN**	**18.2**
MSL159-AY	**0.0**	**Table 8C**	KEYSTONE RUSSET	18.6
MSL179-AY	**0.0**	**Table 8B**	ALTURAS RUSSET	21.2
MSM183-1	**0.0**	**Table 8C**	FL1879	22.8
MSL766-1	**0.0**		SILVERTON RUSSET	23.1
MSK128-A	**0.1**	**Table 8B**	GOLDRUSH	24.3
MSL265-BY	**0.1**		**NORVALLEY**	**24.3**
MSM140-B	**0.2**		FL1833	25.0
MSM182-1	**0.2**	**Table 8C**	**PIKE**	**25.1**
STIRLING	0.2	Table 7B	W1201	27.0
MSL045-AY	**0.3**	**Table 8B**	UEC	31.4
MSL211-3	**0.4**	**Table 8C**	**RUSSET BURBANK**	**32.3**
MSM224-1	**0.4**	**Table 8C**	FL1867	32.7
A96895-58LB	0.4	Table 8C	STAMPEDE RUSSET	34.4
MSL737-A	**0.5**	**Table 8B**	**YUKON GOLD**	**34.5**
MSM171-A	**0.6**	**Table 8C**	**RED NORLAND**	**36.3**
MSI152-A	**0.7**	**Tables 3,4**	**RUSSET NORKOTAH**	**37.3**
MSK136-2	**1.5**	**Table 7B**	**ATLANTIC**	**39.3**
MSM151-1Y	**1.6**		**ONAWAY**	**46.3**
MSL757-1	**1.6**	**Table 7A**	FL1922	47.8
MSJ453-4	**2.0**	**Table 7A**		
MSK124-A	**4.5**	**Table 8B**		
MSK027-C	**4.6**	**Table 8B**		
MSM418-5	**6.0**	**Table 8C**		
$LSD_{0.05}$	8.4			8.4

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

[2] Agronomic performance data of this line may be found on the referenced table.

[3] 100 potato varieties and advanced breeding lines were tested in all. For brevity purposes, only selected varieties and breeding lines are listed. Varieties and breeding lines with a mean RAUDPC value of 8.4 and less are considered resistant in 2003.

Phytopthora infestans isolate 95-7 was inoculated 25 July 2003.

Planted as a randomized complete block design consisting of 3 replications of 4 hill plots on 4 June 20

2003 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
ROUND WHITES: CHIP-PROCESSING LINES								
FL1922	24	1					96	0.0
DAKOTA PEARL	18	6	1				72	0.3
AC87340-2W	17	7	1				68	0.4
B0766-3	15	9	1				60	0.4
MSJ080-1	18	4	1	2			72	0.5
LIBERATOR	16	6	2	1			64	0.5
MSH228-6	13	11	1				52	0.5
MSJ147-1	12	13					48	0.5
MSJ461-1[LBR]	13	11	1				52	0.5
MSF099-3	13	10	2				52	0.6
MSH112-6	14	9	1	1			56	0.6
FL1879	13	8	2	1			52	0.6
MSG227-2	14	6	4	1			56	0.7
MSH094-8	14	6	3	2			56	0.7
MSF373-8	12	8	4		1		48	0.8
MSJ167-1	11	9	2	2	1		44	0.9
MSH067-3	12	6	3	4			48	1.0
MSH360-1	13	6	2	2	1	1	52	1.0
FL1833	11	6	2	5		1	44	1.2
SNOWDEN	**5**	**12**	**5**	**2**	**1**		**20**	**1.3**
ATLANTIC	**10**	**5**	**3**	**3**	**1**	**3**	**40**	**1.6**
MSH095-4	6	3	7	4	4	1	24	2.0

* 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 on October 24, 2002. The table is presented in ascending order of average number of spots per tuber.

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials in 2003 at the MSU Muck Soils Research Farm.

2003 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
ROUND WHITES: TABLESTOCK LINES								
MSE221-1	19	6					76	0.2
MICHIGAN PURPLE	17	8					68	0.3
MSH031-5	19	4	1	1			76	0.4
MSJ317-1[LBR]	15	9	1				60	0.4
ONAWAY	**17**	**6**	**1**	**1**			**68**	**0.4**
MSI152-A[LBR]	13	10	2				52	0.6
MSJ197-1	10	11	3	1			40	0.8
MSG050-2	12	8	2	3			48	0.8
MSE018-1	4	6	8	5	1	1	16	1.8
JACQUELINE LEE [LBR]	3	9	4	6	3		12	1.9
RUSSET TRIAL								
ATX84706-2RU	24	1					96	0.0
ALTURAS RUSSET	23	2					92	0.1
KEYSTONE RUSSET	23	2					92	0.1
A9305-10	22	3					88	0.1
GOLDRUSH	**22**	**3**					**88**	**0.1**
MSE202-3RUS	22	3					88	0.1
SILVERTON RUSSET	21	4					84	0.2
A8254-2BRUS	20	5					80	0.2
AC93026-9RU	22	1	2				88	0.2
RUSSET BURBANK	**20**	**4**	**1**				**80**	**0.2**
AC89536-5RU	19	5	1				76	0.3
MSE192-8RUS	18	5	2				72	0.4
CO93016-3RU	16	7	2				64	0.4
A9304-3	14	7	4				56	0.6
ATX84378-6RU	14	7	4				56	0.6
AC92009-4RU	16	5	2	1	1		64	0.6
A95109-1	11	11	3				44	0.7
CO85026-4RU	12	7	4	2			48	0.8
CO93001-11RU	9	11	4	1			36	0.9

2003 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
NORTH CENTRAL REGIONAL TRIAL								
MSE202-3RUS	24	1					96	0.0
RED NORLAND	**24**	**1**					**96**	**0.0**
STAMPEDE RUSSET (AC)	24	1					96	0.0
MN18710RUS	23	2					92	0.1
W2275-3R	23	2					92	0.1
MN19525R	20	5					80	0.2
MN15620LR	19	6					76	0.2
RUSSET NORKOTAH	**21**	**3**		**1**			**84**	**0.2**
MN18747RUS	21	2	1	1			84	0.3
RED PONTIAC	**19**	**5**	**1**				**76**	**0.3**
CV89023-2R	18	6	1				72	0.3
ND3196-1R	18	6	1				72	0.3
MSG227-2	18	5	2				72	0.4
MSH031-5	18	6		1			72	0.4
PACIFIC RUSSET (V0168-3)	18	5	1	1			72	0.4
RUSSET BURBANK	**18**	**4**	**3**				**72**	**0.4**
W1836-3RUS	19	3	2	1			76	0.4
A9014-2RUS	18	4	2	1			72	0.4
ND2470-27	17	3	4		1		68	0.6
V0379-2	17	3	3	2			68	0.6
V0056-1	12	10	2	1			48	0.7
ATLANTIC	**13**	**8**	**3**			**1**	**52**	**0.8**
W1773-7	13	6	3	3			52	0.8
ND5822C-7	7	14	4				28	0.9
W1201	8	13	2	2			32	0.9
MSE221-1	13	4	4	3	1		52	1.0
NORVALLEY	13	2	7	2		1	52	1.1
B0766-3	9	6	8	2			36	1.1
SNOWDEN	**3**	**5**	**4**	**6**	**2**	**5**	**12**	**2.6**

2003 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, CHIP-PROCESSING LINES								
MSG301-9	25						100	0.0
MSK437-A	24	1					96	0.0
MSJ126-9Y	23	1	1				92	0.1
MSJ316-A	18	7					72	0.3
MSL757-1[LBR]	19	5	1				76	0.3
PIKE	**21**	**1**	**3**				**84**	**0.3**
MSK476-1	18	6	1				72	0.3
MSJ080-8	17	6	2				68	0.4
MSK061-4	16	7	1	1			64	0.5
MSK498-1Y	15	7	3				60	0.5
MSJ456-4[LBR]	15	6	3	1			60	0.6
MSH015-2	13	6	4	1	1		52	0.8
MSK409-1	11	7	5	2			44	0.9
MSJ036-A	11	7	3	3	1		44	1.0
SNOWDEN	**10**	**6**	**4**	**4**	**1**		**40**	**1.2**
ATLANTIC	**9**	**5**	**5**	**6**			**36**	**1.3**
MSH356-A	9	7	2	5	2		36	1.4
MSJ453-4Y[LBR]	8	7	4	5	1		32	1.4
ADAPTATION TRIAL, TABLESTOCK LINES								
DAKOTA ROSE	23	2					92	0.1
MSL175-1	22	3					88	0.1
NDTX4304-1R	22	3					88	0.1
ONAWAY	**22**	**3**					**88**	**0.1**
MSJ033-6Y	21	4					84	0.2
NDC5281-2RED	22	2	1				88	0.2
A83350-9R	22	1	2				88	0.2
CO89097-2RED	18	7					72	0.3
MSK068-2	18	7					72	0.3
YUKON GOLD	20	3	2				80	0.3
CO93037-6RED	19	4	2				76	0.3
MSG004-3	16	6	3				64	0.5
NDTX4271-5R	14	8	3				56	0.6
MSE149-5Y	13	7	5				52	0.7
MSI049-A	12	5	6	2			48	0.9
MSK136-2[LBR]	7	12	6				28	1.0
MSJ204-3	8	9	4	4			32	1.2
MSI005-20Y	4	7	9	4	1		16	1.6
MSK125-3	5	6	8	5	1		20	1.6
STIRLING[LBR]	4	1	5	9	3	3	16	2.6

2003 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
PRELIMINARY TRIAL, CHIP-PROCESSING LINES								
MSM072-1	22	3					88	0.1
MSM060-3	20	5					80	0.2
MSM107-7	21	3	1				84	0.2
MSK072-B	20	4		1			80	0.3
PIKE	**19**	**5**	**1**				**76**	**0.3**
MSI037-5	19	4	2				76	0.3
MSK085-A	18	5	2				72	0.4
MSM058-3	18	5	2				72	0.4
MSM144-CY	17	7	1				68	0.4
MSK009-B	17	6	2				68	0.4
MSM185-1	17	5	3				68	0.4
MSM190-8	18	4	2	1			72	0.4
MSM109-3Y	15	8	2				60	0.5
MSM188-1	15	8	2				60	0.5
MSM051-3	15	6	3	1			60	0.6
MSM414-3Y[LBR]	18	3	2		2		72	0.6
MSR3-26	13	9	2	1			52	0.6
MSM046-4	13	7	5				52	0.7
MSK116-B	15	5	2	3			60	0.7
MSM083-A	10	11	3	1			40	0.8
ATLANTIC	**11**	**7**	**4**	**2**	**1**		**44**	**1.0**
MSK117-AY	9	9	5	2			36	1.0
MSL007-B	6	12	7				24	1.0
SNOWDEN	**10**	**6**	**7**	**2**			**40**	**1.0**
MSL164-A	10	6	6	3			40	1.1
MSM414-1Y	11	5	6	1	2		44	1.1

2003 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
PRELIMINARY TRIAL, CHIP-PROCESSING LINES with LATE BLIGHT RESISTANT PEDIGREES								
MSL179-AY^{LBR}	23	2					92	0.1
MSK128-A^{LBR}	23	1		1			92	0.2
MSL737-A^{LBR}	19	5	1				76	0.3
MSM409-2Y^{LBR}	19	5	1				76	0.3
PIKE	**19**	**5**	**1**				**76**	**0.3**
MSM170-D	15	8	2				60	0.5
MSL258-CY	18	3	2	2			72	0.5
MSL023-B	15	6	3	1			60	0.6
MSL045-AY^{LBR}	15	7	1	2			60	0.6
MSK027-C^{LBR}	14	6	5				56	0.6
MSK124-A^{LBR}	11	10	3	1			44	0.8
MSM417-A^{LBR}	14	6	3	1	1		56	0.8
ATLANTIC	**11**	**7**	**4**	**2**	**1**		**44**	**1.0**
SNOWDEN	**10**	**6**	**7**	**2**			**40**	**1.0**
MSL276-A	10	6	6	2	1		40	1.1
MSM164-2Y	11	6	4	2	2		44	1.1
PRELIMINARY TRIAL, TABLESTOCK LINES								
MSM286-EY	25						100	0.0
MSL025-ARUS	23	2					92	0.1
MSM288-2Y	23	2					92	0.1
MSL210-A	22	3					88	0.1
MSL175-B	20	5					80	0.2
MSM066-4	20	5					80	0.2
MSM140-B	20	5					80	0.2
A97039-51LB^{LBR}	18	4	3				72	0.4
MSL211-3^{LBR}	17	6	2				68	0.4
MSL228-1	18	4	3				72	0.4
MSM171-A^{LBR}	19	3	2	1			76	0.4
ONAWAY	**17**	**5**	**2**	**1**			**68**	**0.5**
A96895-58LB^{LBR}	16	5	4				64	0.5
MSM143-CY	17	5	1	2			68	0.5
MSM182-1^{LBR}	13	7	5				52	0.7
MSK193-B	14	6	4		1		56	0.7
MSM224-1^{LBR}	15	3	5	1	1		60	0.8
MSM205-A	12	7	2	4			48	0.9
MSM200-6	6	13	2	4			24	1.2
MSL159-AY^{LBR}	9	7	5	2	2		36	1.2
A95053-61$^{LBR?}$	10	4	6	4		1	40	1.3
MSM418-5^{LBR}	7	5	4	8	1		28	1.6
MSM183-1^{LBR}	5	6	5	5	1	3	20	2.0

2003 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
SNACK FOOD ASSOCIATION: BRUISE SAMPLES								
AF1424-7	24	1					96	0.0
SNOWDEN	**23**	**2**					**92**	**0.1**
MSF099-3	23	1	1				92	0.1
NDTX4930-5W	22	3					88	0.1
A91790-13	21	3	1				84	0.2
ATLANTIC	**20**	**5**					**80**	**0.2**
MSH095-4	19	3	2	1			76	0.4
MSG227-2	14	9	2				56	0.5
ND5822C-7	16	7	1		1		64	0.5
ND2470-27	14	8	3				56	0.6
W1355-1	14	8	3				56	0.6
W1201	12	10	3				48	0.6
SNACK FOOD ASSOCIATION: CHECK SAMPLES								
A91790-13	25						100	0.0
AF1424-7	25						100	0.0
ATLANTIC	**25**						**100**	**0.0**
MSF099-3	25						100	0.0
MSG227-2	25						100	0.0
ND2470-27	25						100	0.0
NDTX4930-5W	25						100	0.0
SNOWDEN	**25**						**100**	**0.0**
W1201	25						100	0.0
W1355-1	25						100	0.0
MSH095-4	24	1					96	0.0
ND5822C-7	24	1					96	0.0