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2012 POTATO VARIETY EVALUATIONS

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INTRODUCTION

Each year, the MSU potato breeding and genetics team conducts a series of variety trials to assess advanced potato selections from the Michigan State University and other potato breeding programs at the Montcalm Research Center (MRC). In 2012, we tested 180 varieties and breeding lines in the replicated variety trials, plus single observational plots of 107 lines and 60 replicated lines in the National Chip Processing Trial. The variety evaluation also includes disease testing in the scab nursery (MSU Soils Farm, E. Lansing and Montcalm Research Farm, Lakeview) and foliar and tuber late blight evaluation (Muck Soils Research Farm, Bath). The objectives of the evaluations are to identify superior varieties for fresh or chip-processing markets. The varieties were compared in groups according to market class, tuber type, 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 the field, 45°F (7.2°C) and 50°F (10°C) storage), as well as susceptibilities to common scab, late blight (foliar and tuber), and blackspot bruising are determined.

We would like to acknowledge the collaborative effort of Bruce Sackett, Chris Long and the Potato Breeding Team (especially N. Garrity, A. McKenna, S. Mambetova) for getting the research done.

PROCEDURE

The field variety trials were conducted at the Montcalm Research Center in Entrican, MI. They were planted as randomized complete block designs with two to four replications. The plots were 23 feet (7 m) long and spacing between plants was 10 inches (25.4 cm). Inter-row spacing was 34 inches (86.4 cm). Supplemental irrigation was applied as needed. The field experiments were conducted on a sandy loam soil on the Comden ground that was in corn the previous 3 years and in potatoes four years previously.

The most advanced selections were tested in the Advanced trial, representing selections at a stage after the Adaptation Trial. The other field trials were the North Central, Russet, Adaptation (chip-processors and tablestock), Preliminary (chip-

processors and tablestock), the NCPT and the early and late observational trials. This year, the Advanced and Adaptation chip-processing trials were combined as a single trial. *The early observational trial is discussed in the breeding report.*

2012 was the third year of the National Chip Processing Trial (NCPT). The purpose of the trial is to evaluate early generation breeding lines from the US public breeding programs for their use in chip-processing. The NCPT has 10 sites (North: NY, MI, WI, ND, OR and South: NC, FL, MO, CA, TX) in addition to a scab trial in MN. A total of 167 lines were tested as 15-hill single observation plots. *The NCPT trial is discussed in the breeding report.*

In each of these trials, the yield was graded into four size classes, incidence of external and internal defects in >3.25 in. (8.25 cm) diameter (or 10 oz. (283.5 g) for Russet types) potatoes were recorded. Samples were taken for specific gravity, chipping, disease tests and bruising tests. Chip quality was assessed on 25-tuber composite sample from four replications, taking two slices from each tuber. Chips were fried at 365°F (185°C). The chip color was measured visually with the SFA 1-5 color chart. Tuber samples were also stored at 45°F (7.2°C) and 50°F (10°C) for chip-processing out of storage in January and March. Advanced selections are also placed in the MPIC B.F. Burt Cargill Commercial Demonstration Storage in Entrican, MI for monthly sampling. The lines in the agronomic trials were assessed for common scab resistance at the nursery at the Montcalm Research Farm. There has been very strong scab disease pressure at the new Montcalm Scab Disease Nursery for three years now. The 2012, late blight trial was again conducted at the Clarksville Research Center. Maturity ratings (1 early - 5 late) were taken for all variety trial plots in late August to differentiate early and late maturing lines. The simulated blackspot bruise results for average spots per tuber have also been incorporated into the summary sheets.

RESULTS

A. Advanced and Chip-Processing Trial (Table 1)

The Advanced Trial and the Adaptation Chip-Processing Trial were combined in 2012. A summary of the 30 entries evaluated in the trial results is given in **Table 1**. Overall, the yields for the Advanced trial (131 days) were above average. The check varieties for this trial were Snowden , Atlantic, and Pike. The highest yielding lines were AC03452-2W, MSQ131-A, NY140, MSQ086-3, NY148, MSS206-2, and MSR127-2. Hollow heart and vascular discoloration were the predominant internal defects; however, the amount of hollow heart was lower than average (only 7% HH in Atlantic). Specific gravity was slightly below average with seven lines having a specific gravity equal to or higher than Snowden (1.080): Lamoka (1.080), MSR128-4Y (1.083), Atlantic (1.084), MSR127-2 (1.084), MSS165-2Y (1.085), MSN190-2 (1.090) and NY148 (1.093). All chip-processing entries in the trial had excellent chip-processing quality out of the field, with an SFA score of 1.0 or 1.5. Many of the MSU breeding lines have moderate to strong scab resistance, including: MSJ126-9Y, MSL007-B, MSR169-8Y and MSP270-1.

Two promising chip-processing lines are MSL292-A (chip quality, high yield, good specific gravity, and shows potential as a long-term storage chipper) and MSQ086-3 (good yield and chip quality). A new line of interest is MSR127-2 (strong yield, high specific gravity, scab resistance, and good chip quality).

B. North Central Regional Trial Entries (Table 2)

The North Central Trial is conducted in a wide range of environments (6 regional locations) to provide adaptability data for the release of new varieties from Michigan, Minnesota, North Dakota, Wisconsin, and Canada. Sixteen entries were tested in Michigan in 2012. The results are presented in **Table 2**. Due to seed availability, there were no entries from MSU in the 2012 North Central Regional Trial. The entries from Wisconsin, Minnesota, and North Dakota had lower than average yields and smaller size profiles, with a large percentage of B-size tubers.

C. Russet Trial (Table 3)

We continue to increase our russet breeding efforts to reflect the growing interest in russet types in Michigan. In 2012, 22 lines were evaluated after 131 days. The results are summarized in **Table 3**. Russet Burbank, Russet Norkotah, Silverton Russet and GoldRush were the reference varieties used in the trial. The highest yielding lines were W7449-1Rus, Silverton Russet, Dakota Trailblazer, AF3362-1Rus, Teton Russet, and W6234-4Rus. There was a high incidence of hollow heart (73% in Russet Norkotah LT, 70% in Dakota Trailblazer, 50% in AND00618-2RussY, and 45% in both Teton Russet and Russet Norkotah) and vascular discoloration in the internal quality. Specific gravity measurements were average to below average with Russet Norkotah at 1.065 and Russet Burbank at 1.067. Off type and cull tubers were found in nearly all lines tested, with the highest being Russet Burbank (21%). In general, the Colorado russet lines had the lowest yields and a high percentage of B-sized tubers.

D. Adaptation Trials (Table 4)

This year the Adaptation Trial for chip-processing lines was combined with the Advanced Trial (Table 1). The Adaptation Trial of the tablestock lines was harvested after 131 days and the results are summarized in **Table 4**. The majority of the lines evaluated in the Adaptation Trial were tested in the Preliminary Trial the previous year. Three reference cultivars (Onaway, NorWis, and Yukon Gold), and 17 advanced breeding lines are reported in the tablestock trial. In general, the yields were average in this trial and internal defects were low, with Yukon Gold having the most hollow heart (20%). The highest yielding lines were Reba, MSR216-AP, and MSS576-05SPL. Promising and attractive yellow-fleshed table selections are MSM288-2Y and MSQ341-BY. MSL211-3 is round-oval white with bright skin, early maturity, and excellent internal quality. MSQ176-5 is uniformly round, bright white skinned potato and has

demonstrated late blight resistance to both US-8 and US-22. MSS544-1R and MSR217-1R have attractive red color. We continue to evaluate breeding lines with specialty market potential (purple skin such as MSR216-AP and MSR214-2P; splashes of color such MSS576-05SPL, Spartan Splash, and Purple Haze; and red-skin, purple flesh such as Purple Heart).

E. Preliminary Trials (Tables 5 and 6)

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 pedigree assessment for chip-processing and tablestock utilization. The chip-processing Preliminary Trial (**Table 5**) had 43 advanced selections and three check varieties (Atlantic, Pike and Snowden). Results are shown for 26 lines and the controls. The chip-processing trial was harvested after 133 days. Most lines chip-processed well from the field. Specific gravity values were below average with Atlantic at 1.081 and Snowden at 1.075. Nine advanced selections had 1.079 or higher specific gravities. Internal quality was good across all the lines in the trial. Promising MSU lines are MSS934-4, MSW485-2, MSW259-6, and MSW140-3, combining yield, specific gravity, and chip quality. We continue to make progress selecting chip-processing with scab resistance and late blight resistance.

Table 6 summarizes 23 of the 30 tablestock lines evaluated in the Preliminary Trial (Onaway and Reba were the check varieties). This tablestock trial was harvested and evaluated after 133 days. MSW123-3, CF7523-1, Reba, MSW125-3, and MSS487-2 were the highest yielding lines. This trial also had a low incidence of internal defects, with Reba having the most hollow heart (35%). The number of tablestock selections with scab resistance and late blight resistance continue to increase. In addition to traditional round white, red-skinned, and yellow flesh freshmarket categories, there are some unique specialty lines such as MSR226-ARR and MSW148-1P.

F. Potato Common Scab Evaluation (Table 7)

Each year, a replicated field trial is conducted to assess resistance to common scab. We have moved the scab testing to two ranges at the Montcalm Research Center where high common scab disease pressure was observed in previous years. This location is being used for the early generation observational scab trial (over 375 lines), the scab variety trial (~170 lines), the scab trial of a tetraploid mapping population (>200 progeny) and the national scab trial sponsored by USDA/ARS. *Additionally, we conducted a second year of the replicated On-Farm scab trial (24 lines), which is summarized in the MPIC Research Report.*

We use a rating scale of 0-5 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. The 2010-

2012 scab ratings are based upon the Montcalm Research Center site. **Table 7** categorizes many of the varieties and advanced selections tested in 2012 over a three-year period. The varieties and breeding lines are placed into six categories based upon scab infection level and lesion severity. A rating of 0 indicates zero scab 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, GoldRush, Red Norland, Red Pontiac, Yukon Gold, Onaway, Pike, Atlantic, and Snowden can be used as references (bolded in **Table 7**). The table is sorted in ascending order by 2012 scab rating. This year's results continue to indicate that we have been able to breed numerous lines with resistance to scab. A total of 52 lines, of the 161 tested, had a scab rating of 1.5 or lower in 2012. Most notable scab resistant MSU lines are MSJ126-9Y, MSL007-B, MSN215-2P, MSP270-1, MSQ279-1, MSR061-1, MSR127-2 and MSR169-8Y; as well as some earlier generation lines MSS297-3, MST096-2Y, MST096-4, MST441-1, MSW509-2, and MSW125-3. 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. There are also an increasing number of scab resistant lines that also have late blight resistance and PVY resistance. We also continue to conduct early generation scab screening on selections in the breeding program beginning after two years of selection. Of the 379 early generation selections that were evaluated, over 117 had scab resistance (scab rating of ≤ 1.5). Scab results from the disease nursery for the advanced selections are also found in the Trial Summaries (**Tables 1-6**).

H. Late Blight Trial (Tables 8, 9, and 10)

In 2012, the late blight trial was planted again at the Clarksville Research Center rather than the Muck Soils Research Farm. Over 300 entries were planted in early June for late blight evaluation. These include lines tested in a replicated manner from the agronomic variety trial (162 lines) and entries in the National Late Blight Variety Trial (37 lines) and about 200 entries in the early generation observation plots. The trials were inoculated in early August with a US-22 genotype of *P. infestans*. Late blight infection was identified in the plots within 2 weeks after inoculation. The plots were evaluated 1-2 times per week over a 50 day period following inoculation. The disease reaction in the plots was not as aggressive as previous years when US-8 was predominant. In 2012, there were 27 lines from the national late blight trial that had moderate to strong late blight resistance to US-22. For the replicated variety trial 54 lines had moderate to strong late blight resistance, while 87 lines in the early generation observation plots had moderate to strong late blight resistance. These were from various late blight resistance sources in the pedigree of the selections (LBR9, Malinche, Kenya Baraka, Monserrat, Torridon, Stirling, NY121, B0718-3, etc.). **Tables 9, 10 and 11** list the foliar late blight disease ratings for select lines based on percent disease over time (RAUDPC; Relative Area Under the Disease Progress Curve).

I. Blackspot Bruise Susceptibility (Table 12)

Evaluations of advanced seedlings and new varieties for their susceptibility to blackspot bruising are also important in the variety evaluation program. Based upon the results collected over the past years, the non-bruised check sample has been removed from our bruise assessment. A composite bruise sample of each line in the trials consisted of 25 tubers (a composite of 4 replications) from each line, collected at the time of grading. The 25 tuber sample was held in 50°F (10°C) 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.

In 2012, the bruise levels were comparable to previous years. The most bruise resistant MSU breeding lines this year from the Advanced/Adaptation Chip-processing Trial were MSR148-4, MSJ126-9Y, MSQ131-A, MSQ440-2 and MSS206-2. The most susceptible lines from the Advanced trial were MSP516-A, MSQ035-3, and NY148 (E106-4). The most bruise resistant russet entries were CO04233-1Rus, AF3362-1Rus, and A01124-3Rus; the most susceptible were CO03187-1Rus, ND8068-5Rus, and Dakota Trailblazer. The Adaptation Trial MSU lines (Tablestock) with the least bruising were MSM288-2Y, NY150, MSR214-2P, MSQ176-5, MSS582-2SPL, and MSS544-1R. MSR216-AP, MSE149-5Y, Purple Heart, and Reba were the most bruise susceptible. Of the earlier generation breeding lines (Preliminary Trials), the most of the lines had little blackspot bruising, with MSW474-1, MSW509-5, MSW140-3, and MSW443-3 showing significant blackspot bruising for chip-processing lines, and MSW148-1P and CF7523-1 for tablestock lines. The most bruise resistant entries in the US Potato Board/Snack Food Association Trial were AF4157-6, CO00188-4W, W6483-5, CO00197-3W, W2978-3, A01143-3C and MSL292-A, while NY148, ND8305-1, and W5015-12 had more bruising than Atlantic.

Table 1

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

ADVANCED and CHIP-PROCESSING TRIAL
MONTCALM RESEARCH FARM
May 10 to September 17, 2012 (131 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%)							LB	3-YR AVG
									CHIP	TUBER QUALITY[3]						RAUDPC	US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]	BRUISE[6]	x100	CWT/A
AC03452-2W	532	583	91	7	73	19	2	1.068	1.0	5	0	0	0	2.5	2.9	1.1	-	-
MSQ131-A	421	427	99	1	67	32	0	1.067	2.0	1	0	0	0	1.9	1.6	0.6	12.0	-
NY140[LBR]	399	433	92	7	89	3	0	1.077	1.0	0	19	0	0	2.8	2.6	1.8	2.6	372*
MSQ086-3[LBR]	398	498	80	19	79	1	1	1.074	1.0	0	9	0	0	1.9	2.5	1.8	4.4	363
NY148[LBR]	376	469	80	20	78	2	0	1.093	1.5	0	2	0	0	1.8	2.8	3.2	1.4	370*
MSS206-2	374	410	91	6	79	12	2	1.063	2.0	0	12	0	0	1.6	2.1	0.6	9.1	439*
MSR127-2	370	402	92	8	83	9	0	1.084	1.0	0	3	0	0	1.5	2.5	2.3	-	381*
Lamoka	357	382	93	6	88	5	1	1.080	1.5	0	13	0	0	1.5	1.4	2.0	13.5	381
MSQ279-1	347	387	90	8	73	17	2	1.072	1.5	2	3	0	0	1.3	2.6	1.1	-	345
MSQ089-1	339	381	89	11	86	3	0	1.070	1.5	0	6	0	0	1.9	2.3	0.7	10.0	340*
MSS165-2Y	333	444	75	25	74	1	0	1.085	1.0	0	9	0	0	1.9	2.5	2.2	6.1	310*
MSL292-A	312	357	87	13	82	6	0	1.077	1.0	0	6	0	0	2.5	1.1	1.1	-	341
MSQ035-3	312	403	77	22	77	0	1	1.078	1.5	0	1	0	0	1.4	1.5	4.1	13.6	385
MSL007-B	306	376	81	18	81	1	0	1.078	1.0	0	8	0	0	1.5	1.9	1.7	-	296
CO02321-4W	305	363	84	16	81	3	0	1.078	1.0	1	5	0	0	2.8	1.0	1.4	-	334*
FL1879	303	334	91	9	83	7	0	1.074	1.0	1	10	0	0	2.3	1.4	1.7	19.7	322
Atlantic	**289**	**336**	**86**	**14**	**81**	**5**	**0**	**1.084**	**1.0**	**7**	**4**	**1**	**0**	**2.8**	**1.4**	**1.8**	**24.1**	**308**
MSN190-2	283	384	74	26	72	2	0	1.090	1.0	0	7	0	0	1.5	1.0	2.1	-	271*
MSP516-A[LBR]	281	334	84	15	79	5	0	1.074	1.5	6	13	0	0	1.4	2.3	4.3	2.3	-
W4980-1	276	318	87	13	82	4	0	1.077	1.0	0	4	3	0	1.9	1.1	2.7	24.6	-
AC00206-2W	257	305	84	15	82	2	0	1.074	1.0	0	3	0	0	3.8	1.3	0.7	-	-
MSJ126-9Y	249	309	81	19	80	0	0	1.075	1.0	0	11	2	0	0.8	1.5	0.6	-	235
Snowden	**249**	**342**	**73**	**27**	**72**	**0**	**0**	**1.080**	**1.0**	**0**	**17**	**0**	**0**	**2.6**	**1.4**	**1.4**	**15.8**	**312**
MSR061-1[LBMR,PVYR]	241	299	81	19	79	1	0	1.076	1.5	1	12	0	0	1.9	1.4	1.3	1.1	225
MSQ440-2	235	280	84	16	81	3	0	1.057	N/A	0	29	0	0	1.5	1.0	0.6	15.8	245
Pike	**214**	**280**	**76**	**24**	**76**	**0**	**0**	**1.079**	**1.0**	**0**	**10**	**0**	**0**	**1.1**	**1.4**	**0.5**	**22.9**	**208**
MSP270-1	202	252	80	20	79	1	0	1.069	1.0	0	4	0	0	0.8	2.5	1.9	-	212
MSR148-4	196	296	66	34	66	1	0	1.065	1.0	0	12	0	0	2.3	1.3	0.2	-	338
MSR169-8Y	188	251	75	25	72	2	0	1.077	1.0	2	12	0	0	0.8	1.5	1.6	-	239
MSR128-4Y	173	239	72	27	70	2	1	1.083	1.0	4	1	0	0	1.5	2.1	0.8	-	153*
MEAN	304	362						1.076						1.9	1.8	1.6	11.7	
$HSD_{0.05}$	132	131						0.006						1.4	0.7	-	21.5	

* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*), [LBMR] lines showed moderate resistance, in inoculated field trials at the MSU Clarksville Research Center.

[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, 2012; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

[6]BRUISE: Simulated blackspot bruise test average number of spots per tuber.

Table 2

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

NORTH CENTRAL REGIONAL TRIAL
MONTCALM RESEARCH FARM
May 10 to September 17, 2012 (131 days)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	PERCENT (%) TUBER QUALITY[3]							LB RAUDPC	3-YR AVG US#1
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]	BRUISE[6]	x100	CWT/A
W8405-1R	331	439	75	24	75	0	0	1.056	N/A	0	13	0	0	2.5	1.1	1.0	22.6	-
NorValley	**311**	**408**	**76**	**19**	**75**	**1**	**4**	**1.070**	**1.5**	**0**	**10**	**0**	**3**	**3.0**	**1.0**	**2.6**	**26.1**	**314**
Snowden	**306**	**372**	**82**	**18**	**80**	**3**	**0**	**1.077**	**1.0**	**8**	**40**	**0**	**0**	**2.6**	**1.4**	**1.4**	**15.8**	**328**
Atlantic	**297**	**336**	**88**	**12**	**84**	**4**	**0**	**1.082**	**1.0**	**10**	**13**	**0**	**0**	**2.8**	**1.3**	**2.0**	**24.1**	**310**
Red Pontiac	**296**	**372**	**80**	**8**	**67**	**13**	**13**	**1.055**	**N/A**	**20**	**43**	**0**	**3**	**3.4**	**1.5**	**1.2**	**9.9**	**300**
W5015-12	275	385	71	28	69	2	0	1.081	1.0	5	40	0	0	2.6	2.0	1.6	11.9	324*
Dk. Red Norland	**251**	**272**	**92**	**8**	**87**	**6**	**0**	**1.083**	**2.5**	**8**	**45**	**5**	**0**	**1.4**	**1.0**	**0.3**	**32.7**	**245**
MN02586	243	362	67	32	67	0	0	1.066	N/A	0	10	0	0	2.8	1.0	0.8	17.6	212*
MN02467[LBMR]	240	361	66	30	65	2	3	1.076	N/A	20	0	0	0	1.5	1.8	1.8	5.2	-
ND7519-1	239	341	70	29	70	0	1	1.079	1.0	0	23	0	3	2.4	1.0	1.4	21.2	-
W6002-1R	239	300	80	20	78	2	0	1.052	N/A	0	5	0	0	2.3	1.1	0.2	25.1	219*
MN18747	215	270	80	18	78	2	2	1.058	1.0	0	28	0	0	2.4	1.0	0.3	27.3	-
Lelah (W2717-5)	211	266	79	20	78	1	1	1.084	1.0	10	18	3	3	2.6	1.0	1.0	-	225
ND08305-1	170	277	62	38	62	0	0	1.082	1.0	0	3	0	0	3.1	1.1	2.8	20.7	-
MN02419[LBMR]	160	299	53	39	52	1	7	1.078	N/A	10	20	0	0	2.9	1.8	1.8	3.5	-
MN04844-01[LBMR]	131	243	54	46	54	0	0	1.072	1.0	0	55	3	0	2.0	1.0	0.8	5.9	-
MEAN	245	331						1.072	1.2					2.5	1.3	1.3	18.0	
$HSD_{0.05}$	82	77						0.006						1.4	0.6	-	21.5	

* Two-Year Average

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*), **[LBMR]** lines showed moderate resistance, in inoculated field trials at the MSU Clarksville Research Center.

All the lines in the Round White Trial in 2008 were North Central Regional Trial entries.

[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, 2012; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

[6]BRUISE: Simulated blackspot bruise test average number of spots per tuber.

Table 3

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

RUSSET TRIAL
MONTCALM RESEARCH FARM
May 10 to September 17, 2012 (131 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[2]							LB RAUDPC	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]	BRUISE[5]	x100	CWT/A
W7449-1Rus	390	460	85	14	82	3	1	1.077	13	10	5	0	1.8	2.3	0.5	6.8	-
Silverton Russet	359	418	86	12	65	21	2	1.064	18	5	5	0	0.8	2.3	0.6	11.9	293
Dakota Trailblazer[LBR]	349	389	89	7	64	25	3	1.089	70	23	0	0	2.4	3.0	1.7	2.2	269*
AF3362-1Rus	328	354	93	3	52	41	4	1.067	0	40	3	0	1.3	1.5	0.2	21.9	295*
Teton Russet	325	398	82	14	63	19	4	1.064	45	15	3	0	0.4	1.0	0.7	21.5	-
W6234-4Rus	323	385	84	12	69	15	4	1.077	8	28	0	0	2.5	1.3	1.2	16.6	312*
A01124-3Rus	308	372	83	9	61	22	8	1.072	30	5	0	0	1.5	2.0	0.5	12.4	287
A02062-1TE	271	324	84	9	51	33	8	1.065	5	18	0	0	1	1.9	0.7	11.6	239*
Russet Norkotah	**224**	**291**	**77**	**23**	**65**	**12**	**0**	**1.065**	**45**	**18**	**3**	**0**	**1.9**	**1.1**	**0.6**	**8.4**	**189**
Russet Norkotah TX223	221	278	79	18	67	12	3	1.064	35	38	0	0	2.3	1.1	0.9	16.0	-
Russet Norkotah LT	202	264	77	21	67	9	3	1.066	73	20	0	0	2.1	1.9	0.8	4.2	-
GoldRush Russet	**181**	**282**	**64**	**27**	**60**	**4**	**9**	**1.061**	**0**	**35**	**0**	**0**	**0.8**	**1.3**	**0.9**	**15.6**	**198**
CO03276-5Rus	177	324	55	40	52	3	6	1.069	10	18	0	0	0.3	1.0	nd	21.6	169*
CO03276-4Rus	174	325	53	44	52	2	3	1.069	0	40	0	0	0.1	1.1	nd	12.5	136*
AND00618-2RussY	171	236	72	25	71	1	3	1.077	50	3	0	0	0.9	2.0	0.6	7.3	-
CO04233-1Rus[LBMR]	157	217	72	21	71	2	6	1.062	8	10	0	0	0.8	1.0	0.2	6.6	-
CO04159-1RY	149	220	68	31	68	0	1	1.056	0	23	0	0	2.1	1.0	0.1	20.1	-
CO03187-1Rus	143	294	49	49	47	2	2	1.072	0	18	0	5	0.6	1.3	2.1	26.5	137*
CO04211-4Rus	141	224	63	35	61	2	3	1.066	3	28	23	0	1.4	1.3	0.8	23.1	-
CO04220-7Rus	136	270	50	47	49	2	3	1.065	5	48	0	0	0.9	1.0	0.8	26.0	-
Russet Burbank	**125**	**265**	**47**	**32**	**45**	**2**	**21**	**1.067**	**5**	**13**	**8**	**0**	**2.1**	**2.0**	**0.5**	**7.2**	**109**
ND8068-5Rus	124	190	65	35	64	1	0	1.071	3	23	0	0	2.4	1.0	2.0	32.0	119*
MEAN	226	308						1.068					1.4	1.5	0.8	15.1	
$HSD_{0.05}$	104	112						0.007					1.4	0.7	-	21.5	

* Two-Year Average

LBR Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*), **LBMR** lines showed moderate resistance, in inoculated field trials at the MSU Clarksville Research Center.

[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, 2012; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

[5]BRUISE: Simulated blackspot bruise test average number of spots per tuber.

Table 4

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

ADAPTATION TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 10 to September 17, 2012 (131 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[2]							LB RAUDPC
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB[3]	MAT[4]	BRUISE[5]	x100
Reba	404	429	94	5	85	9	1	1.070	10	33	0	0	2.2	1.9	1.2	29.2
MSR216-AP	398	435	92	8	86	5	0	1.070	0	30	0	0	2.9	1.9	2.3	14.9
MSS576-05SPL	374	458	82	18	79	2	0	1.072	0	5	0	0	1.9	2.0	0.9	13.4
Onaway	**356**	**387**	**92**	**6**	**84**	**8**	**2**	**1.059**	**0**	**63**	**0**	**0**	**1.9**	**1.1**	**1.0**	**29.2**
NorWis	**348**	**381**	**91**	**5**	**78**	**13**	**4**	**1.066**	**3**	**35**	**0**	**0**	**2.3**	**1.6**	**0.7**	**-**
MSE149-5Y	333	375	89	11	79	10	0	1.066	0	25	0	0	2.0	1.5	1.6	-
MSR214-2P	302	373	81	19	81	0	0	1.064	0	0	0	0	1.9	2.5	0.3	7.1
Michigan Purple	297	343	87	7	71	15	7	1.067	8	28	0	0	2.1	1.0	0.9	-
MSM288-2Y	294	383	77	23	75	1	0	1.068	0	3	0	0	2.8	1.0	0.0	-
Red Norland	281	334	84	15	84	1	0	1.057	0	43	0	0	1.5	1.0	0.0	-
Purple Heart	271	331	82	18	81	1	0	1.058	0	0	0	0	2.6	1.4	1.4	21.8
MSL211-3	253	293	86	13	82	5	1	1.066	0	28	0	0	1.9	1.0	0.7	22.0
Purple Haze	249	279	89	9	77	12	2	1.070	3	40	0	0	1.9	1.4	0.8	-
MSQ176-5[LBR]	244	280	87	13	76	11	0	1.061	13	15	0	0	2.3	1.6	0.4	2.1
MSQ341-BY	221	258	86	14	83	3	0	1.071	0	20	0	3	1.4	2.0	1.0	-
Spartan Splash	206	294	70	30	70	0	0	1.068	0	18	0	0	1.8	1.0	0.8	-
MSS544-1R	174	312	56	44	56	0	0	1.057	0	13	0	0	1.4	1.0	0.5	-
MSR217-1R	163	214	76	22	76	0	2	1.053	0	8	0	0	2.8	1.3	0.8	7.7
Yukon Gold	**159**	**176**	**90**	**9**	**80**	**10**	**0**	**1.061**	**20**	**8**	**0**	**0**	**3.0**	**1.0**	**0.3**	**26.4**
MSS582-2SPL	114	237	48	52	48	0	0	1.090	0	28	0	0	0.8	1.3	0.5	18.1
NY150	22	211	10	90	10	0	0	1.071	0	10	0	0	2.3	1.1	0.0	10.7
MEAN	260	323						1.066					2.1	1.4	0.8	16.9
$HSD_{0.05}$	101	98						0.006					1.4	0.8	-	21.5

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*), **[LBMR]** lines showed moderate resistance, in inoculated field trials at the MSU Clarksville Research Center.

[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, 2012; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

[5]BRUISE: Simulated blackspot bruise test average number of spots per tuber.

Table 5

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 10 to September 19, 2012 (133 days)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	PERCENT (%) TUBER QUALITY[3]							LB RAUDPC
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]	BRUISE[6]	x100
MSS934-4[LBMR]	448	513	87	13	77	10	0	1.081	1.5	5	35	0	0	2.9	2.5	0.5	4.4
MSW485-2[LBR]	422	489	86	13	82	4	1	1.089	1.5	0	20	0	0	2.0	3.0	0.4	1.4
MSW509-5	412	457	90	8	80	10	1	1.073	1.5	20	15	0	0	0.5	2.0	2.6	-
MSW259-6	394	439	90	10	81	9	0	1.081	1.0	35	0	0	0	2.0	3.0	0.9	8.6
MSW140-3	390	447	87	12	85	2	1	1.085	1.0	0	10	0	0	1.0	1.8	2.5	7.3
MSW360-18[LBR]	390	468	83	16	81	2	1	1.075	1.0	5	25	0	0	3.0	2.0	0.5	1.5
MSS927-1	364	414	88	12	76	12	0	1.077	1.0	0	10	0	0	1.9	2.5	-	16.2
MSW168-2[LBR]	353	374	94	6	71	23	0	1.082	2.0	45	15	0	0	1.5	3.0	1.2	1.3
MST424-3	344	367	94	5	83	10	1	1.074	1.0	5	40	0	0	1.4	1.8	2.1	-
MST412-3	343	372	92	5	78	14	2	1.076	2.5	35	30	0	0	1.6	2.3	0.8	6.4
Atlantic	**322**	**367**	**88**	**10**	**85**	**3**	**2**	**1.081**	**1.5**	**20**	**20**	**0**	**0**	**2.8**	**1.3**	**1.9**	**24.1**
MST178-2	320	353	91	9	89	1	0	1.068	-	0	20	0	0	1.1	2.0	-	-
MSW075-1	310	375	83	17	80	3	0	1.076	1.0	5	15	0	0	1.5	2.8	0.7	-
MSQ492-2[LBMR]	305	400	76	24	74	2	0	1.073	1.0	0	20	0	0	1.6	3.0	0.4	3.4
MSW464-3[LBR]	302	332	91	8	75	16	1	1.080	1.5	25	20	0	0	2.0	3.0	0.3	1.4
MSW138-2	296	346	86	14	84	2	0	1.077	1.0	0	35	0	0	2.0	1.0	0.5	-
MSW474-1[LBMR]	294	391	75	25	75	1	0	1.081	1.0	0	10	0	0	0.0	2.8	3.3	3.3
MSW437-9	291	309	94	6	79	15	0	1.064	1.0	5	15	0	0	2.0	1.0	0.4	9.9
MSS297-3	284	358	79	21	79	1	0	1.075	1.0	0	0	0	0	0.8	1.0	0.6	-
MST096-2Y	278	324	86	14	85	1	0	1.068	1.0	0	10	0	0	0.9	1.3	0.2	-
Snowden	**277**	**340**	**82**	**18**	**79**	**3**	**0**	**1.075**	**1.0**	**0**	**15**	**0**	**0**	**2.6**	**1.3**	**0.7**	**15.8**
MSR054-7	264	335	79	21	78	1	0	1.072	-	0	15	0	0	1.4	1.8	0.2	7.8
Pike	**226**	**313**	**72**	**28**	**72**	**0**	**0**	**1.075**	**1.0**	**0**	**30**	**5**	**0**	**1.1**	**2.3**	**0.6**	**22.9**
MSW078-1[LBR]	224	306	73	27	73	0	0	1.087	-	0	0	0	0	2.0	1.5	-	1.3
MST184-3	223	272	82	18	79	3	0	1.078	1.0	10	25	0	0	1.6	1.5	0.7	-
MST096-4	220	310	71	29	71	0	0	1.068	1.5	0	5	0	0	0.4	1.3	0.8	-

Table 5

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 10 to September 19, 2012 (133 days)

	CWT/A		PERCENT OF TOTAL[1]						CHIP	PERCENT (%) TUBER QUALITY[3]							LB RAUDPC
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	SCORE[2]	HH	VD	IBS	BC	SCAB[4]	MAT[5]	BRUISE[6]	x100
MSW068-4	217	269	81	19	79	2	0	1.070	1.0	0	45	0	0	1.4	1.0	-	-
MST441-1	212	310	68	32	68	0	0	1.077	2.5	0	5	0	0	0.6	1.3	0.8	-
MSW443-3	212	334	63	37	63	0	0	1.079	1.0	5	15	0	0	2.0	1.5	2.4	-
MEAN	308	368						1.076						1.6	2.0	1.0	8.1
$HSD_{0.05}$	207	212						0.011						1.4	1.3	-	21.5

LBR Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*), **LBMR** lines showed moderate resistance, in inoculated field trials at the MSU Clarksville Research Center.

[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, 2012; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

[6]BRUISE: Simulated blackspot bruise test average number of spots per tuber.

Table 6

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

PRELIMINARY TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 10 to September 19, 2012 (133 days)

	CWT/A		PERCENT OF TOTAL[1]						PERCENT (%) TUBER QUALITY[3]							LB RAUDPC
LINE	US#1	TOTAL	US#1	Bs	As	OV	PO	SP GR	HH	VD	IBS	BC	SCAB[4]	MAT[5]	BRUISE[6]	x100
MSW123-3	470	490	96	4	72	24	0	1.065	0	20	0	0	2.0	1.3	1.6	28.9
CF7523-1	437	515	85	14	84	1	1	1.070	0	20	0	0	3.1	1.8	2.4	-
Reba	402	423	95	4	79	16	1	1.067	35	15	0	0	2.2	2.0	1.2	29.2
MSW125-3	388	435	89	8	80	9	3	1.054	5	25	5	0	1.0	1.0	0.7	25.1
MSS487-2[LBR]	386	454	85	15	85	0	0	1.078	0	0	0	0	2.1	2.5	1.8	1.5
Onaway	**382**	**414**	**92**	**8**	**76**	**16**	**0**	**1.056**	**0**	**45**	**5**	**0**	**1.9**	**1.0**	**1.2**	**29.2**
MST065-1	355	429	83	17	79	3	0	1.075	0	10	0	5	2.6	2.5	1.0	10.2
MSW128-2[LBR]	338	367	92	7	68	24	1	1.062	20	5	0	0	3.0	2.5	0.4	1.7
W6703-5Y	319	382	84	9	81	3	7	1.070	0	25	5	0	1.1	3.3	0.9	4.5
MSW239-3	312	376	83	14	83	0	3	1.047	0	25	0	0	1.5	1.0	0.3	-
MSW151-9[LBR]	310	394	79	17	75	4	5	1.071	20	15	0	0	2.5	2.5	0.8	2.2
MSW273-3R	308	363	85	11	84	1	4	1.063	10	15	0	0	2.0	1.0	0.5	18.7
MSW121-5R	283	349	81	18	81	0	1	1.051	0	0	0	0	1.0	1.0	0.6	12.1
MSW122-9	278	324	86	11	76	10	4	1.062	0	5	0	0	2.0	1.3	0.7	18.3
W6703-1Y	274	330	83	15	83	0	1	1.076	0	5	0	0	1.1	2.5	1.0	4.2
MSW027-1	259	306	84	16	84	0	0	1.062	0	15	0	0	2.0	1.0	1.0	19.8
MSW153-1[LBMR]	248	300	83	17	83	0	0	1.074	0	25	15	0	1.0	1.8	1.9	3.1
MSW500-4[LBMR]	211	235	90	9	90	0	1	1.075	0	0	0	0	2.0	1.8	1.5	3.3
MSR226-ARR	199	291	68	28	62	7	3	1.070	0	15	20	0	1.4	2.5	1.2	-
MSW148-1P	194	405	48	51	48	0	1	1.080	0	25	0	0	2.0	2.0	2.7	7.9
MSW298-4Y	168	278	60	40	60	0	0	1.068	0	10	0	0	2.5	1.0	0.5	21.7
MSW182-1Y	109	264	41	58	41	0	1	1.078	5	25	10	0	2.0	1.5	1.8	-
MEAN	301	369						1.067					1.9	1.8	1.2	13.4
$HSD_{0.05}$	250	244						0.013					1.4	2.3	-	21.5

[LBR] Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*), **[LBMR]** lines showed moderate resistance, in inoculated field trials at the MSU Clarksville Research Center.

[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, 2012; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).

[6]BRUISE: Simulated blackspot bruise test average number of spots per tuber.

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2010-2012 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	*3-YR* AVG.*	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N	2010 RATING	2010 WORST	2010 N
Sorted by ascending 2012 Rating;										
CO03276-4Rus	***.8****	0.1	1	4	1.5	3	4	-	-	-
CO03276-5Rus	***.7****	0.3	1	4	1.1	2	4	-	-	-
MST096-4	-	0.4	1	4	-	-	-	-	-	-
Teton Russet	-	0.4	1	4	-	-	-	-	-	-
CO03187-1Rus	***.4****	0.6	1	4	0.1	1	4	-	-	-
MST441-1	***0.9****	0.6	1	4	-	-	-	1.3	2	2
CO04233-1Rus[LBMR]	-	0.8	2	4	-	-	-	-	-	-
Goldrush Russet	***0.8***	**0.8**	**2**	**4**	**0.5**	**1**	**4**	**1.0**	**1**	**2**
MSJ126-9Y	***0.8***	0.8	2	4	0.8	2	4	1.0	1	2
MSP270-1	***0.8***	0.8	1	4	0.6	1	4	1.0	1	2
MSR131-2	***0.9****	0.8	1	4	-	-	-	1.0	1	2
MSR169-8Y	***0.8***	0.8	2	4	0.6	1	4	1.0	1	2
MSS297-3	***0.8***	0.8	1	4	0.9	1	4	0.9	1	4
MSS582-1SPL	***1.6***	0.8	1	4	2.0	3	4	2.0	2	2
Silverton Russet	***0.8***	0.8	2	4	0.5	1	4	1.0	1	2
AND00618-2RUS	-	0.9	2	4	-	-	-	-	-	-
CO04220-7RUS	-	0.9	2	4	-	-	-	-	-	-
MST096-2Y	-	0.9	2	4	-	-	-	-	-	-
MSW509-5	-	0.9	2	4	-	-	-	-	-	-
A02062-1TE	***.8****	1.0	2	4	0.6	1	4	-	-	-
MSW125-3	-	1.0	1	4	-	-	-	-	-	-
MSJ042-3	-	1.1	2	4	-	-	-	-	-	-
MST178-2	-	1.1	2	4	-	-	-	-	-	-
MSW140-3	-	1.1	2	4	-	-	-	-	-	-
MSW326-6	-	1.1	2	4	-	-	-	-	-	-
MSW474-1	-	1.1	2	4	-	-	-	-	-	-
Pike	***1.2***	**1.1**	**2**	**8**	**1.5**	**3**	**4**	**1.1**	**2**	**8**
W6703-1Y	-	1.1	2	4	-	-	-	-	-	-
W6703-5Y	-	1.1	2	4	-	-	-	-	-	-
AF3362-1Rus	***1.2****	1.3	2	4	1.1	2	4	-	-	-
MSQ279-1	***1.2***	1.3	2	4	1.0	2	4	1.3	2	2
MSW100-1	-	1.3	2	4	-	-	-	-	-	-
MSW502-4	-	1.3	2	4	-	-	-	-	-	-
CO02411-4RUS	-	1.4	2	4	-	-	-	-	-	-
Dark Red Norland	***1.5***	**1.4**	**2**	**4**	**1.3**	**2**	**4**	**2.0**	**2**	**2**
MSP516-A[LBR]	-	1.4	2	4	-	-	-	-	-	-
MSQ035-3[LBR]	***1.4***	1.4	2	4	1.8	3	4	1.0	1	2
MSQ341-BY	***1.4***	1.4	2	4	1.3	2	4	1.5	2	2
MSR054-7	-	1.4	2	4	-	-	-	-	-	-
MSR058-1	***1.3***	1.4	2	4	1.0	2	4	1.5	2	2
MSR226-ARR	-	1.4	2	4	-	-	-	-	-	-
MSS544-1R	***1.4***	1.4	2	4	1.9	2	4	1.0	1	2
MST424-3	***1.6****	1.4	2	4	-	-	-	1.8	2	2
MSW068-4	-	1.4	3	4	-	-	-	-	-	-
A01124-3RUS	***1.4***	1.5	2	4	1.3	2	4	1.5	2	2
Lamoka (NY139)	***1.6***	1.5	2	4	1.4	2	4	2.0	2	2

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2010-2012 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	*3-YR* AVG.*	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N	2010 RATING	2010 WORST	2010 N
Sorted by ascending 2012 Rating;										
MN02467	-	1.5	2	4	-	-	-	-	-	-
MSL007-B	***1.2***	1.5	2	4	1.1	2	4	1.0	1	2
MSN190-2	***1.7****	1.5	2	4	1.9	3	4	-	-	-
MSQ440-2	***1.5***	1.5	2	4	1.3	2	8	1.8	2	2
MSR127-2	***1.5***	1.5	2	4	2.0	3	4	1.0	1	2
MSR128-4Y	***1.4****	1.5	2	4	1.4	2	4	-	-	-
MSQ492-2[LBR]	-	1.6	2	4	-	-	-	-	-	-
MSS206-2	***2.1****	1.6	2	4	-	-	-	2.5	3	2
MST184-3	-	1.6	2	4	-	-	-	-	-	-
MST412-3	-	1.6	2	4	-	-	-	-	-	-
MSW343-2R	-	1.6	2	4	-	-	-	-	-	-
MSW410-12Y	-	1.6	2	4	-	-	-	-	-	-
MSW436-2Y	-	1.6	2	4	-	-	-	-	-	-
MSW501-5	-	1.6	2	4	-	-	-	-	-	-
MSW153-1	-	1.8	2	4	-	-	-	-	-	-
MSW270-1	-	1.8	3	4	-	-	-	-	-	-
NY148	***1.6****	1.8	2	4	1.4	2	4	-	-	-
Spartan Splash (MSQ425-4YSPL)	***2.2***	1.8	2	4	2.3	3	4	2.5	3	4
W6511-1R	***2.1****	1.8	3	4	2.5	3	4	-	-	-
W7449-1RUS	-	1.8	2	4	-	-	-	-	-	-
Kerrs Pink	-	1.9	3	4	-	-	-	-	-	-
MSL211-3	***1.9***	1.9	2	4	1.8	2	4	2.2	3	6
MSQ086-3[LBR]	***2.0***	1.9	2	4	2.0	3	4	2.3	3	4
MSQ089-1	***2.0****	1.9	2	4	2.1	3	4	-	-	-
MSQ131-A[LBR]	***1.9****	1.9	3	4	2.0	2	4	-	-	-
MSR061-1[LBMR,PVYR]	***1.3***	1.9	2	4	0.9	2	4	1.3	2	2
MSR214-2P	***2.0***	1.9	2	4	1.6	3	4	2.5	3	2
MSS165-2Y[LBR]	***1.8****	1.9	2	4	1.6	2	4	-	-	-
MSS576-05SPL	***1.9****	1.9	2	4	-	-	-	2.0	2	2
MSS927-1	***1.8****	1.9	2	4	1.6	3	4	-	-	-
MSW128-2	-	1.9	3	4	-	-	-	-	-	-
MSW4980-1	-	1.9	3	4	-	-	-	-	-	-
Onaway	***2.0***	**1.9**	**2**	**8**	**2.0**	**3**	**8**	**2.1**	**3**	**6**
Purple Haze	***1.8***	1.9	2	4	1.9	2	4	1.8	2	2
Russet Norkotah	***2.2***	**1.9**	**3**	**4**	**2.5**	**3**	**4**	**2.3**	**3**	**4**
MN04844-1	-	2.0	3	4	-	-	-	-	-	-
MSE149-5Y	-	2.0	2	4	-	-	-	-	-	-
MSW075-1	-	2.0	2	4	-	-	-	-	-	-
MSW168-2	-	2.0	3	4	-	-	-	-	-	-
MSW500-4	-	2.0	2	4	-	-	-	-	-	-
CO04159-1R	-	2.1	3	4	-	-	-	-	-	-
Michigan Purple	***2.4****	2.1	3	4	2.8	3	4	-	-	-
MSS487-2	-	2.1	3	4	-	-	-	-	-	-
MST235-5SPL	-	2.1	3	4	-	-	-	-	-	-
MSW121-5R	-	2.1	3	4	-	-	-	-	-	-

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2010-2012 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	*3-YR* AVG.*	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N	2010 RATING	2010 WORST	2010 N
Sorted by ascending 2012 Rating;										
MSW138-2	-	2.1	3	4	-	-	-	-	-	-
MSW148-1P	-	2.1	3	4	-	-	-	-	-	-
MSW229-5P	-	2.1	3	4	-	-	-	-	-	-
MSW437-9	-	2.1	3	4	-	-	-	-	-	-
Russet Burbank	***2.2***	**2.1**	**3**	**4**	**2.4**	**3**	**4**	**2.0**	**2**	**2**
Russet Norkotah LT	-	2.1	3	4	-	-	-	-	-	-
Reba	***2.1***	2.2	3	8	1.6	2	4	2.5	3	2
FL1879	***2.7***	2.3	3	4	2.4	3	4	3.5	4	2
Lucky Joe	-	2.3	3	4	-	-	-	-	-	-
MSK049-1	-	2.3	3	4	-	-	-	-	-	-
MSQ176-5[LBR]	***2.5***	2.3	3	4	2.4	3	4	3.0	3	2
MSR148-4Y	***2.2***	2.3	3	4	1.8	2	4	2.5	3	2
MSS434-2	-	2.3	3	4	-	-	-	-	-	-
MST117-3Y	-	2.3	3	4	-	-	-	-	-	-
MSW027-1	-	2.3	3	4	-	-	-	-	-	-
MSW123-3	-	2.3	3	4	-	-	-	-	-	-
MSW252-2	-	2.3	3	4	-	-	-	-	-	-
MSW259-6	-	2.3	3	4	-	-	-	-	-	-
MSW273-3R	-	2.3	3	4	-	-	-	-	-	-
MSW464-3	-	2.3	3	4	-	-	-	-	-	-
MSW476-4R	-	2.3	3	4	-	-	-	-	-	-
NorWis	-	2.3	3	4	-	-	-	-	-	-
NY150	-	2.3	3	4	-	-	-	-	-	-
Russet Norkotah TX 223	-	2.3	3	4	-	-	-	-	-	-
W6002-1R	***2.1****	2.3	3	4	1.9	3	4	-	-	-
Dakota Trailblazer[LBR]	***2.6****	2.4	3	4	2.8	3	4	-	-	-
Kufri Jeevan	***2.3****	2.4	3	4	2.3	3	4	-	-	-
MN18747	-	2.4	3	4	-	-	-	-	-	-
MSR109-1	***2.3****	2.4	3	4	2.1	3	4	-	-	-
MSW122-9	-	2.4	3	4	-	-	-	-	-	-
MSW298-4Y	-	2.4	3	4	-	-	-	-	-	-
ND7519-1	-	2.4	4	4	-	-	-	-	-	-
ND8068-5RUS	-	2.4	3	4	-	-	-	-	-	-
AC03452-2W	-	2.5	3	4	-	-	-	-	-	-
MSE250-2	-	2.5	3	4	-	-	-	-	-	-
MSL292-A	***2.6***	2.5	3	4	2.8	4	4	2.5	3	2
MSS483-1	***2.8****	2.5	3	4	3.1	4	4	-	-	-
MSW151-9	-	2.5	3	4	-	-	-	-	-	-
MSW239-3	-	2.5	3	4	-	-	-	-	-	-
MSW324-1	-	2.5	3	4	-	-	-	-	-	-
MSW360-18	-	2.5	3	4	-	-	-	-	-	-
MSW443-3	-	2.5	3	4	-	-	-	-	-	-
W6234-4RUS	***3.0****	2.5	3	4	-	-	-	3.5	4	2
W8405-1R	-	2.5	3	4	-	-	-	-	-	-
MST065-1	-	2.6	3	4	-	-	-	-	-	-
MSW078-1	-	2.6	3	4	-	-	-	-	-	-

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2010-2012 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	*3-YR* AVG.*	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N	2010 RATING	2010 WORST	2010 N
Sorted by ascending 2012 Rating;										
MSW2717-5	-	2.6	4	4	-	-	-	-	-	-
Purple Heart	***2.4****	2.6	3	4	2.1	3	4	-	-	-
Snowden	***2.6***	**2.6**	**3**	**8**	**2.4**	**3**	**4**	**2.9**	**4**	**10**
W5015-12	***2.8****	2.6	3	4	-	-	-	3.0	4	2
CO02321-4W	***2.9****	2.8	3	4	-	-	-	3.0	3	2
MN02586	***3.0****	2.8	3	4	3.3	4	2	-	-	-
MSM288-2Y	***2.9***	2.8	3	4	3.0	3	4	3.0	3	2
MSR217-1R	***2.5***	2.8	4	4	2.8	3	4	2.0	2	1
MST020-2Y	-	2.8	4	4	-	-	-	-	-	-
NY140	***2.6****	2.8	3	4	2.5	3	4	-	-	-
Atlantic	***2.9***	**2.8**	**4**	**12**	**3.0**	**4**	**11**	**2.9**	**3**	**10**
MN02419	-	2.9	4	4	-	-	-	-	-	-
MSR216-AP	-	2.9	3	4	-	-	-	-	-	-
MSS934-4	-	2.9	4	4	-	-	-	-	-	-
MSW182-1Y	-	2.9	4	4	-	-	-	-	-	-
MSW316-3PY	-	2.9	4	4	-	-	-	-	-	-
NorValley	***2.5***	3.0	4	4	2.3	3	4	2.3	3	2
Yukon Gold	***3.0****	**3.0**	**3**	**4**	**3.0**	**4**	**4**	**-**	**-**	**-**
CF7523-1	-	3.1	4	4	-	-	-	-	-	-
MSW453-1P	-	3.1	4	4	-	-	-	-	-	-
ND08305-1	-	3.1	4	4	-	-	-	-	-	-
Red Pontiac	***3.8***	**3.4**	**4**	**4**	**3.4**	**4**	**4**	**4.5**	**5**	**2**
MSM409-2Y	-	3.5	5	4	-	-	-	-	-	-
AC00206-2W	-	3.8	5	4	-	-	-	-	-	-
$HSD_{0.05}$ =		**1.4**			**1.5**			**2.3**		

SCAB DISEASE RATING: MSU Scab Nursery plot rating of 0-5; 0: No Infection; 1: Low Infection <5%, no pitted leisions; 3: Intermediate >20%, some pitted leisions (Susceptible, as commonly seen on Atlantic); 5: Highly Susceptible, >75% coverage and severe pitted leisions.

LBR Line(s) demonstrated foliar resistance to Late Blight (*Phytopthora infestans*) in inoculated field trials at the MSU Clarkston Research Center.

N = Number of replications.

*2-Year Average.

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2012 MSU LATE BLIGHT VARIETY TRIAL
CLARKSVILLE RESEARCH CENTER, MI

Line Sort:

LINE	N	RAUDPC[1] MEAN
2XLB-017	4	1.9
2XLB-031	2	0.4
2XLB-060	3	1.8
2XLB-075	3	0.4
2XLB-090	3	3.7
2XLB-119	3	0.4
A01124-3RUS	2	12.4
A02062-ITE	2	11.6
AF3362-1RUS	3	21.9
AND00618-2RUS	3	7.3
ARS10215-1	3	1.9
Atlantic	15	24.1
BER141	3	4.8
BER63	3	4.7
BER83	3	0.9
BP79.9	3	4.5
C002321-4W	3	33.4
C003187-1RUS	3	26.5
C003276-4RUS	3	12.5
C003276-5RUS	3	21.6
C004159-1R	3	20.1
C004211-4RUS	3	23.1
C004220-7RUS	3	26.0
C004233-1RUS	3	6.6
Dakotah Trailblazer	3	2.2
Dk Red Norland	3	32.7
FL1879	3	19.7
Goldrush	3	15.6
HS66	3	31.0
J138-K6A22	3	2.7
Jacqueline Lee	3	7.1
Kerrs Pink	3	1.3
Kufri Jeevan	3	5.0
Lamoka	3	13.5
LBR9	3	13.7
Lucky Joe	3	3.5
MCR125	3	9.7
MCR140	3	2.2
Missaukee	3	3.7
MN02419	3	3.5
MN02467	3	5.2
MN02586	3	17.6
MN04844-01	3	5.9
MN18747	3	27.3
MSJ042-3	3	8.1
MSK049-1	3	1.7

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
VSB18386056.17	2	0.4		
2XLB-031	2	0.4		
2XLB-075	3	0.4		
2XLB-119	3	0.4		
VSB19389349.1	3	0.5		
VSB16LBR8	4	0.8		
Stirling	3	0.8		
MSM182-2	4	0.8	Stirling	NY121
BER83	3	0.9		
MSK136-2	3	0.9		
MSS810-23	3	1.0	JacLee	Mcr1-205
MSS806-7	3	1.0	Atlantic	Mcr1-205
MSR093-4	2	1.1	Torridon	OP
MSS818-4	3	1.2	Stirling	Mcr1-205
Kerrs Pink	3	1.3		
NY148	3	1.4		
MSS487-2	3	1.5	STIRLING	J461-1
MSK049-1	3	1.7	Brodick	H192-2
MSM183-1	2	1.8	Torridon	Jac Lee
2XLB-060	3	1.8		
VSB2186F-302-8	3	1.8		
2XLB-017	4	1.9		
ARS10215-1	3	1.9		
MSQ176-5	6	2.1	I152-A	Missuakee
Dakotah Trailblazer	3	2.2		
MCR140	3	2.2		
MSW168-2	3	2.5	Beacon Chipper	R159-2
NY140	3	2.6		
J138-K6A22	3	2.7	S. blb	
ND039036-2R	3	2.7		
MSS826-4	3	2.8	Mcr1-140	Ber2-83
MSW229-5P	3	3.0	MI Purple	N105-1
Torridon	3	3.3		
MSQ492-2	3	3.4	Pike	J461-1
Lucky Joe	3	3.5		
MN02419	3	3.5		
MSW100-1	3	3.5	LBR9	P292-7
MSW464-3	3	3.5	M246-B	R102-3
2XLB-090	3	3.7		
Missaukee	3	3.7		
MSW324-1	3	3.7	Q070-1	Marcy
MSW360-18	3	3.7	R061-1	N238-A
MSL268-D	3	4.0	Eva	J. Lee
MSW485-2	3	4.1	Q070-1	R156-7
MSW259-6	3	4.1	N073-2	R159-2
Russet Norkotah LT	3	4.2		

2012 MSU LATE BLIGHT VARIETY TRIAL
CLARKSVILLE RESEARCH CENTER, MI

Line Sort:

LINE	N	RAUDPC[1] MEAN
MSK136-2	3	0.9
MSL211-3	6	22.0
MSL268-D	3	4.0
MSM171-A	3	10.4
MSM182-2	4	0.8
MSM183-1	2	1.8
MSM409-2Y	2	5.5
MSP516-A	3	5.9
MSQ035-3	2	13.6
MSQ086-3	3	18.9
MSQ089-1	3	10.0
MSQ131-A	3	13.4
MSQ176-5	6	2.1
MSQ440-2	3	15.8
MSQ492-2	3	3.4
MSR054-7	4	7.8
MSR058-1	3	5.2
MSR061-1	3	5.7
MSR093-4	2	1.1
MSR161-2	3	4.4
MSR214-2P	3	15.7
MSR216-AP	3	14.9
MSR217-1R	3	7.7
MSS165-2Y	3	6.1
MSS206-2	3	9.1
MSS483-1	3	8.1
MSS487-2	3	1.5
MSS576-05SPL	3	13.4
MSS582-2SPL	3	18.1
MSS805-8	3	4.6
MSS806-7	3	1.0
MSS810-23	3	1.0
MSS818-4	3	1.2
MSS826-4	3	2.8
MSS827-2	3	13.5
MSS927-1	3	16.2
MSS934-4	3	4.4
MST020-2Y	3	8.5
MST065-1	3	10.2
MST235-5SPL	5	5.4
MST412-3	3	6.4
MST611-1	3	7.6
MSW027-1	3	7.9
MSW078-1	3	7.7
MSW100-1	3	3.5
MSW121-5R	3	18.9
MSW122-9	3	25.5
MSW123-3	3	19.5

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
W6703-1Y	3	4.2		
MSS934-4	3	4.4	ND6095-1	ND7377Cb-1
MSR161-2	3	4.4	Stirling	J126-9Y
W6703-5Y	3	4.5		
BP79.9	3	4.5		
MSS805-8	3	4.6	Atlantic	Mcr1-150
BER63	3	4.7		
BER141	3	4.8		
MSW437-9	3	5.0	Boulder	R036-5
Kufri Jeevan	3	5.0		
MSW151-9	3	5.2	Montanosa	L211-3
MN02467	3	5.2		
MSR058-1	3	5.2	W1201	J319-1
Norwis	3	5.3		
MST235-5SPL	5	5.4	K128-A	N188-1
MSM409-2Y	2	5.5	J456-4	J365-6
MSR061-1	3	5.7	W1201	NY121
MN04844-01	3	5.9		
MSP516-A	3	5.9	Pike	Missaukee
MSS165-2Y	3	6.1	M188-1	L159-AY
MST412-3	3	6.4	N105-1	M051-3
C004233-1RUS	3	6.6		
W7449-1RUS	3	6.8		
MSW153-1	3	6.8	1989-86061	I152-A
MSW140-3	3	6.9	MegaChip	J461-1
Jacqueline Lee	3	7.1	Tollocan	Chaleur
Rus Burbank	3	7.2		
AND00618-2RUS	3	7.3		
MST611-1	3	7.6		
MSW078-1	3	7.7	K409-1	Malinche
MSR217-1R	3	7.7	NDTX4271-5R	J461-1
MSR054-7	4	7.8	Pike	J461-1
MSW027-1	3	7.9	Eva	Q176-5
MSW410-12Y	3	8.0	E69.6	N105-1
MSJ042-3	3	8.1	BRODICK	ZAREVO
MSS483-1	3	8.1	M171-A	J461-1
MSW453-1P	3	8.2	Kenya Baraka	N215-2P
Rus Norkotah	3	8.4		
MST020-2Y	3	8.5	ARS4070-16Y	G004-3
MSS206-2	3	9.1	UEC	J461-1
MCR125	3	9.7		
Red Pontiac	3	9.9		
MSQ089-1	3	10.0	A91790-13	Missuakee
MST065-1	3	10.2	Boulder	L211-3
MSM171-A	3	10.4	Stirling	MSE221-1
MSW500-4	3	10.5	Boulder	P516-A
NY150	3	10.7		
MSW316-3PY	3	11.0		

2012 MSU LATE BLIGHT VARIETY TRIAL
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Line Sort:

LINE	N	RAUDPC[1] MEAN
MSW125-3	3	19.6
MSW128-2	3	14.4
MSW140-3	3	6.9
MSW148-1P	3	20.0
MSW151-9	3	5.2
MSW153-1	3	6.8
MSW168-2	3	2.5
MSW229-5P	3	3.0
MSW252-2	3	14.4
MSW259-6	3	4.1
MSW270-1	3	16.8
MSW2717-5	3	22.2
MSW273-3R	3	21.1
MSW298-4Y	3	19.6
MSW316-3PY	3	11.0
MSW324-1	3	3.7
MSW326-6	3	11.7
MSW343-2R	3	18.1
MSW360-18	3	3.7
MSW410-12Y	3	8.0
MSW437-9	3	5.0
MSW453-1P	3	8.2
MSW464-3	3	3.5
MSW474-1	3	12.0
MSW476-4R	3	15.3
MSW485-2	3	4.1
MSW500-4	3	10.5
ND039036-2R	3	2.7
ND08305-1	3	20.7
ND7519-1	3	21.2
ND8068-5RUS	2	32.0
NorValley	3	26.1
Norwis	3	5.3
NY140	3	2.6
NY148	3	1.4
NY150	3	10.7
Onaway	6	29.2
Pike	6	22.9
Purple Heart	3	21.8
Reba	2	29.2
Red Pontiac	3	9.9
Rus Burbank	3	7.2
Rus Norkotah	3	8.4
Russet Norkotah LT	3	4.2
Russet Norkotah TX22	3	16.0
Silverton	3	11.9
Snowden	11	15.8
Stirling	3	0.8

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
A02062-ITE	2	11.6		
MSW326-6	3	11.7	Q070-1	N190-2
W5015-12	3	11.9		
Silverton	3	11.9		
MSW474-1	3	12.0	N190-2	P516-A
A01124-3RUS	2	12.4		
C003276-4RUS	3	12.5		
MSS576-05SPL	3	13.4	I005-20Y	L211-3
MSQ131-A	3	13.4	Boulder	Missuakee
Lamoka	3	13.5		
MSS827-2	3	13.5	Mcr1-140	Ber2-141
MSQ035-3	2	13.6	G227-2	Missaukee
LBR9	3	13.7		
W6511-1R	3	14.2		
MSW128-2	3	14.4	M171-A	Q176-5
MSW252-2	3	14.4	P516-A	OP
WV4298-1	3	14.7		
MSR216-AP	3	14.9	NDC5281-2R	J317-1
MSW476-4R	3	15.3	N230-6RY	NDTX4271-5R
Goldrush	3	15.6		
MSR214-2P	3	15.7	ND5084-3R	J317-1
Snowden	11	15.8		
MSQ440-2	3	15.8	K214-1R	Missaukee
Russet Norkotah TX22	3	16.0		
MSS927-1	3	16.2	ND4350-3	ND7799C-1
W6234-4RUS	3	16.6		
MSW270-1	3	16.8		
MN02586	3	17.6		
V1115-3	3	18.0		
MSW343-2R	3	18.1	Q440-2	NDTX4271-5R
MSS582-2SPL	3	18.1	L228-1	L211-3
V1588-1	3	18.1		
MSQ086-3	3	18.9	Onaway	Missuakee
MSW121-5R	3	18.9	M182-1	NDTX4271-5R
MSW123-3	3	19.5	M171-A	Dakota Diamond
MSW298-4Y	3	19.6	P408-10Y	L211-3
MSW125-3	3	19.6	M171-A	L211-3
FL1879	3	19.7		
MSW148-1P	3	20.0	MI Purple	P516-A
C004159-1R	3	20.1		
ND08305-1	3	20.7		
MSW273-3R	3	21.1	NDTX4271-5R	N105-1
ND7519-1	3	21.2		
Teton	2	21.5		
C003276-5RUS	3	21.6		
Purple Heart	3	21.8		
AF3362-1RUS	3	21.9		
MSL211-3	6	22.0	G301-9	J.Lee

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Line Sort:

LINE	N	RAUDPC[1] MEAN
Teton	2	21.5
Torridon	3	3.3
V1115-3	3	18.0
V1588-1	3	18.1
VSB16LBR8	4	0.8
VSB18386056.17	2	0.4
VSB19389349.1	3	0.5
VSB2186F-302-8	3	1.8
W4980-1	3	24.6
W5015-12	3	11.9
W6002-1R	3	25.1
W6234-4RUS	3	16.6
W6511-1R	3	14.2
W6703-1Y	3	4.2
W6703-5Y	3	4.5
W7449-1RUS	3	6.8
W8405-1R	3	22.6
WV4298-1	3	14.7
WV4993-1	2	30.8
Yukon Gold	3	26.4

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
MSW2717-5	3	22.2		
W8405-1R	3	22.6		
Pike	6	22.9		
C004211-4RUS	3	23.1		
Atlantic	15	24.1		
W4980-1	3	24.6		
W6002-1R	3	25.1		
MSW122-9	3	25.5	M185-1	P085-2
C004220-7RUS	3	26.0		
NorValley	3	26.1		
Yukon Gold	3	26.4		
C003187-1RUS	3	26.5		
MN18747	3	27.3		
Onaway	6	29.2		
Reba	2	29.2		
WV4993-1	2	30.8		
HS66	3	31.0		
ND8068-5RUS	2	32.0		
Dk Red Norland	3	32.7		
C002321-4W	3	33.4		

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

Table 9

MICHIGAN STATE UNIVERSITY

POTATO BREEDING and GENETICS

2012 NATIONAL LATE BLIGHT VARIETY TRIAL
CLARKSVILLE RESEARCH CENTER, MI

Line Sort:

LINE	N	RAUDPC[1] MEAN
A01010-1	3	4.1
A02138-2	3	11.7
A02424-83LB	3	1.8
A02507-2LB	2	0.6
A03158-2TE	3	5.4
AC00395-2RU	3	0.8
AF3317-15	3	0.6
AF4122-3	3	0.7
AF4191-2	3	1.1
AF4329-7	3	10.0
AF4677-1	3	4.5
AND993G2B-1RUS	3	2.2
AWN86514-2	3	0.6
B0692-4	3	2.1
B0718-3	3	0.6
B2874-1	3	20.9
B2942-5	3	6.0
B2954-11	2	3.1
B2958-2	3	8.6
B2971-2	3	20.5
C002024-9W	3	5.6
C002033-1W	3	4.4
C002321-4W	3	19.6
LBR1	3	1.6
LBR2	3	5.0
LBR3	3	1.9
LBR4	3	3.3
LBR5	3	2.9
LBR7	3	2.1
MSP516-A	3	2.3
MSQ086-3	3	4.4
MSQ131-A	3	12.0
MSR061-1	3	1.1
MSR214-2P	3	7.1
ND071302B-2RUSS	3	30.9
ND071421CB-1RUS	3	20.2
ND081476B-1RUSS	3	10.2

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN
A02507-2LB	2	0.6
AF3317-15	3	0.6
B0718-3	3	0.6
AWN86514-2	3	0.6
AF4122-3	3	0.7
AC00395-2RU	3	0.8
AF4191-2	3	1.1
MSR061-1	3	1.1
LBR1	3	1.6
A02424-83LB	3	1.8
LBR3	3	1.9
B0692-4	3	2.1
LBR7	3	2.1
AND993G2B-1RUS	3	2.2
MSP516-A	3	2.3
LBR5	3	2.9
B2954-11	2	3.1
LBR4	3	3.3
A01010-1	3	4.1
C002033-1W	3	4.4
MSQ086-3	3	4.4
AF4677-1	3	4.5
LBR2	3	5.0
A03158-2TE	3	5.4
C002024-9W	3	5.6
B2942-5	3	6.0
MSR214-2P	3	7.1
B2958-2	3	8.6
AF4329-7	3	10.0
ND081476B-1RUSS	3	10.2
A02138-2	3	11.7
MSQ131-A	3	12.0
C002321-4W	3	19.6
ND071421CB-1RUS	3	20.2
B2971-2	3	20.5
B2874-1	3	20.9
ND071302B-2RUSS	3	30.9

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

Table 10

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS

2012 LATE BLIGHT EARLY GENERATION TRIALS
CLARKSVILLE RESEARCH CENTER, MI

Line Sort:

LINE	N	RAUDPC[1] MEAN
MSV179-6	EG	5.7
MSW027-1	EG	19.8
MSW078-1	EG	1.3
MSW100-1	EG	0.7
MSW119-2	EG	5.1
MSW121-5R	EG	12.1
MSW122-9	EG	18.3
MSW123-3	EG	28.9
MSW125-3	EG	25.1
MSW128-2	EG	1.7
MSW140-3	EG	7.3
MSW148-1P	EG	7.9
MSW151-9	EG	2.2
MSW153-1	EG	3.1
MSW154-4	EG	7.4
MSW163-3	EG	9.3
MSW168-2	EG	1.3
MSW206-2P	EG	2.2
MSW229-5P	EG	0.5
MSW252-2	EG	11.5
MSW259-5	EG	15.1
MSW259-6	EG	8.6
MSW273-3R	EG	18.7
MSW298-4Y	EG	21.7
MSW324-1	EG	3.0
MSW326-6	EG	14.6
MSW343-2R	EG	25.7
MSW360-18	EG	1.5
MSW410-12Y	EG	14.8
MSW418-1	EG	6.9
MSW432-13	EG	17.9
MSW437-9	EG	9.9
MSW453-1P	EG	6.2
MSW455-3	EG	4.7
MSW464-3	EG	1.4
MSW474-1	EG	3.3
MSW476-4R	EG	11.8
MSW485-2	EG	1.4
MSW500-4	EG	3.3
MSW536-2P	EG	1.6
MSW537-6	EG	0.7
MSX001-4WP	EG	0.4
MSX001-7WP	EG	1.5
MSX001-9	EG	ND
MSX009-2	EG	6.5
MSX010-3	EG	23.8
MSX016-4	EG	6.2

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
MSX452-1	EG	0.0	Q070-1	Atlantic
MSX502-2	EG	0.0	Q176-5	L211-3
MSX510-1	EG	0.1	Q289-1	J461-1
MSX361-1	EG	0.2	N251-1Y	Q134-5
MSX517-3	EG	0.2	Q425-4YSPL	Q176-5
MSX496-2	EG	0.3	Q131-A	L211-3
MSX001-4WP	EG	0.4	ARS10091WP	L211-3
MSX375-4R	EG	0.4	NDTX4271-5R	R160-2Y
MSX271-6R	EG	0.4	M182-1	NDTX4271-5R
MSX295-1Y	EG	0.4	M288-2Y	R160-2Y
MSX278-2	EG	0.4	M246-B	J461-1
MSX198-5	EG	0.5	J461-1	OP
MSW229-5P	EG	0.5	MI Purple	N105-1
MSX199-1	EG	0.5	J461-1	W2133-1
MSX221-1	EG	0.5	K061-4	R036-5
MSX311-1	EG	0.5	MegaChip	R036-5
MSX354-1P	EG	0.5	N215-2P	NY121
MSX367-2	EG	0.5	ND8307C-3	R061-1
MSX373-9R	EG	0.5	NDTX4271-5R	NY121
MSX540-4	EG	0.5	R061-1	NY139
MSX489-2	EG	0.6	Q070-1	W2133-1
MSX517-1Y	EG	0.6	Q425-4YSPL	Q176-5
MSW100-1	EG	0.7	LBR9	P292-7
MSW537-6	EG	0.7	M070-1	P516-A
MSX538-1	EG	0.7	R061-1	J461-1
MSX669-2	EG	0.7	W2310-3	R041-3
MSX270-2P	EG	0.8	M182-1	N215-2P
MSX075-3	EG	0.8	Boulder	Stirling
MSX507-1R	EG	0.8	Q176-5	R219-2R
MSX654-2	EG	0.8	Torridon	L211-3
MSX542-2	EG	0.8	R102-3	Megachip
MSX506-3Y	EG	0.9	Q176-5	R169-8Y
MSX566-1	EG	0.9	Reba	Q176-5
MSX650-3	EG	1.0	Stirling	L211-3
MSX271-5R	EG	1.0	M182-1	NDTX4271-5R
MSX196-3	EG	1.0	J461-1	L292-A
MSX628-1	EG	1.1	S927-1	L211-3
MSX136-1	EG	1.1	Eva	J461-1
MSX398-2	EG	1.1	NY139	Stirling
MSX472-1	EG	1.2	Q070-1	P292-7
MSX493-5	EG	1.2	Q089-1	S026-2Y
MSW078-1	EG	1.3	K409-1	Malinche
MSW168-2	EG	1.3	Beacon Chipper	R159-2
MSW464-3	EG	1.4	M246-B	R102-3
MSW485-2	EG	1.4	Q070-1	R156-7
MSX142-2	EG	1.5	Eva	Q176-5
MSX292-4Y	EG	1.5	M288-2Y	Q134-5

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Line Sort:

LINE	N	RAUDPC[1] MEAN
MSX016-9	EG	1.7
MSX028-2	EG	1.8
MSX033-1	EG	9.8
MSX048-1	EG	2.6
MSX066-3	EG	1.5
MSX071-1	EG	3.3
MSX075-3	EG	0.8
MSX136-1	EG	1.1
MSX137-3	EG	4.8
MSX137-6	EG	13.8
MSX142-2	EG	1.5
MSX159-1Y	EG	8.8
MSX189-2	EG	6.3
MSX194-3	EG	2.1
MSX196-1	EG	7.9
MSX196-3	EG	1.0
MSX196-4	EG	1.9
MSX196-5	EG	9.0
MSX198-5	EG	0.5
MSX199-1	EG	0.5
MSX199-3	EG	6.5
MSX220-2	EG	ND
MSX221-1	EG	0.5
MSX255-1	EG	4.1
MSX261-1	EG	11.0
MSX263-1R	EG	37.4
MSX267-1	EG	3.9
MSX268-3Y	EG	13.3
MSX270-2P	EG	0.8
MSX271-1R	EG	2.0
MSX271-5R	EG	1.0
MSX271-6R	EG	0.4
MSX273-1	EG	2.6
MSX278-1	EG	7.3
MSX278-2	EG	0.4
MSX286-5Y	EG	13.1
MSX292-4Y	EG	1.5
MSX293-1Y	EG	ND
MSX295-1Y	EG	0.4
MSX296-1Y	EG	15.9
MSX306-1	EG	1.8
MSX311-1	EG	0.5
MSX319-1	EG	12.0
MSX322-1Y	EG	9.9
MSX322-3Y	EG	ND
MSX324-1P	EG	2.9
MSX326-3	EG	3.1
MSX327-1	EG	9.9
MSX342-2	EG	14.8
MSX351-3P	EG	14.7

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
MSX066-3	EG	1.5	Boulder	Q086-3
MSW360-18	EG	1.5	R061-1	N238-A
MSX001-7WP	EG	1.5	ARS10091WP	L211-3
MSW536-2P	EG	1.6	MI Purple Red Sport	N105-1
MSW128-2	EG	1.7	M171-A	Q176-5
MSX413-2	EG	1.7	Q086-3	OP
MSX016-9	EG	1.7	ARS10342-4	L211-3
MSX028-2	EG	1.8	Atlantic	R036-5
MSX306-1	EG	1.8	MegaChip	NY121
MSX196-4	EG	1.9	J461-1	L292-A
MSX271-1R	EG	2.0	M182-1	NDTX4271-5R
MSX194-3	EG	2.1	J461-1	C095051-7W
MSX534-2	EG	2.1	R041-3	NY139
MSW151-9	EG	2.2	Montanosa	L211-3
MSW206-2P	EG	2.2	LBR9	N215-2P
MSX491-1	EG	2.2	Q089-1	J126-9Y
MSX466-1	EG	2.2	Q070-1	NY121
MSX273-1	EG	2.6	M182-1	Q134-5
MSX389-2	EG	2.6	NY139	L268-D
MSX048-1	EG	2.6	Beacon Chipper	R036-5
MSX547-3	EG	2.7	R160-2Y	Megachip
MSX467-1	EG	2.9	Q070-1	NY139
MSX324-1P	EG	2.9	N105-1	N215-2P
MSX629-3	EG	3.0	S927-1	Q176-5
MSX509-4	EG	3.0	Q279-1	L211-3
MSW324-1	EG	3.0	Q070-1	Marcy
MSW153-1	EG	3.1	1989-86061	I152-A
MSX326-3	EG	3.1	N105-1	NY121
MSW474-1	EG	3.3	N190-2	P516-A
MSW500-4	EG	3.3	Boulder	P516-A
MSX071-1	EG	3.3	Boulder	R036-5
MSX469-2	EG	3.8	Q070-1	OP
MSX649-1	EG	3.8	Stirling	J126-9Y
MSX267-1	EG	3.9	M182-1	L211-3
MSX354-2	EG	4.0	N215-2P	NY121
MSX255-1	EG	4.1	M171-A	ARS10342-4
MSX596-1	EG	4.3	S097-3	NY139
MSX458-1	EG	4.5	Q070-1	Kalkaska
MSW455-3	EG	4.7	L183-AY	P516-A
MSX137-3	EG	4.8	Eva	L211-3
MSW119-2	EG	5.1	M171-A	R036-5
MSX592-2	EG	5.4	S097-3	CO95051-7W
MSV179-6	EG	5.7	LBR8	L211-3
MSW453-1P	EG	6.2	Kenya Baraka	N215-2P
MSX016-4	EG	6.2	ARS10342-4	L211-3
MSX189-2	EG	6.3	J147-1	R036-5
MSX199-3	EG	6.5	J461-1	W2133-1
MSX009-2	EG	6.5	ARS10241-2	J461-1
MSW418-1	EG	6.9	RB G227-2	J319-1
MSX278-1	EG	7.3	M246-B	J461-1

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Line Sort:

LINE	N	RAUDPC[1] MEAN
MSX351-4P	EG	11.3
MSX354-1P	EG	0.5
MSX354-2	EG	4.0
MSX361-1	EG	0.2
MSX365-2	EG	8.5
MSX367-2	EG	0.5
MSX373-6R	EG	ND
MSX373-9R	EG	0.5
MSX375-2R	EG	ND
MSX375-4R	EG	0.4
MSX380-3	EG	12.4
MSX389-2	EG	2.6
MSX393-1	EG	20.6
MSX398-2	EG	1.1
MSX413-2	EG	1.7
MSX452-1	EG	0.0
MSX458-1	EG	4.5
MSX466-1	EG	2.2
MSX467-1	EG	2.9
MSX469-2	EG	3.8
MSX472-1	EG	1.2
MSX472-2	EG	9.6
MSX473-3	EG	9.6
MSX489-2	EG	0.6
MSX491-1	EG	2.2
MSX493-5	EG	1.2
MSX495-2	EG	ND
MSX496-2	EG	0.3
MSX497-8	EG	7.3
MSX502-2	EG	0.0
MSX503-5	EG	9.7
MSX506-3Y	EG	0.9
MSX507-1R	EG	0.8
MSX509-4	EG	3.0
MSX510-1	EG	0.1
MSX517-1Y	EG	0.6
MSX517-3	EG	0.2
MSX517-5Y	EG	14.7
MSX526-1	EG	ND
MSX534-2	EG	2.1
MSX538-1	EG	0.7
MSX540-4	EG	0.5
MSX542-2	EG	0.8
MSX547-3	EG	2.7
MSX566-1	EG	0.9
MSX592-2	EG	5.4
MSX596-1	EG	4.3
MSX615-1	EG	8.4
MSX620-5	EG	ND
MSX628-1	EG	1.1

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
MSX497-8	EG	7.3	Q131-A	L268-D
MSW140-3	EG	7.3	MegaChip	J461-1
MSW154-4	EG	7.4	1989-86061	L211-3
MSW148-1P	EG	7.9	MI Purple	P516-A
MSX196-1	EG	7.9	J461-1	L292-A
MSX615-1	EG	8.4	S419-8	Pike
MSX365-2	EG	8.5	ND8307C-3	J461-1
MSW259-6	EG	8.6	N073-2	R159-2
MSX159-1Y	EG	8.8	I005-20Y	NY121
MSX196-5	EG	9.0	J461-1	L292-A
MSW163-3	EG	9.3	Atlantic	R036-5
MSX472-2	EG	9.6	Q070-1	P292-7
MSX473-3	EG	9.6	Q070-1	P459-5
MSX503-5	EG	9.7	Q176-5	L268-D
MSX033-1	EG	9.8	Atlantic	S176-1
MSX327-1	EG	9.9	N105-1	Q134-5
MSW437-9	EG	9.9	Boulder	R036-5
MSX322-1Y	EG	9.9	N105-1	M288-2Y
MSX261-1	EG	11.0	M171-A	Q176-5
MSX351-4P	EG	11.3	N215-2P	L211-3
MSW252-2	EG	11.5	P516-A	OP
MSW476-4R	EG	11.8	N230-6RY	NDTX4271-5R
MSX319-1	EG	12.0	N105-1	ARS10241-2
MSW121-5R	EG	12.1	M182-1	NDTX4271-5R
MSX380-3	EG	12.4	NY121	M246-B
MSX286-5Y	EG	13.1	M288-2Y	L211-3
MSX268-3Y	EG	13.3	M182-1	L268-D
MSX137-6	EG	13.8	Eva	L211-3
MSW326-6	EG	14.6	Q070-1	N190-2
MSX517-5Y	EG	14.7	Q425-4YSPL	Q176-5
MSX351-3P	EG	14.7	N215-2P	L211-3
MSX342-2	EG	14.8	N170-A	R036-5
MSW410-12Y	EG	14.8	E69.6	N105-1
MSW259-5	EG	15.1	N073-2	R159-2
MSX296-1Y	EG	15.9	M288-2Y	S165-2Y
MSW432-13	EG	17.9	Boulder	I152-A
MSW122-9	EG	18.3	M185-1	P085-2
MSW273-3R	EG	18.7	NDTX4271-5R	N105-1
MSW027-1	EG	19.8	Eva	Q176-5
MSX393-1	EG	20.6	NY139	N191-2Y
MSW298-4Y	EG	21.7	P408-10Y	L211-3
MSX010-3	EG	23.8	ARS10241-2	L211-3
MSW125-3	EG	25.1	M171-A	L211-3
MSW343-2R	EG	25.7	Q440-2	NDTX4271-5R
MSW123-3	EG	28.9	M171-A	Dakota Diamond
MSX263-1R	EG	37.4	M171-A	R219-2R
MSX001-9	EG	ND	ARS10091WP	L211-3
MSX220-2	EG	ND	K061-4	Q176-5
MSX293-1Y	EG	ND	M288-2Y	Q176-5
MSX322-3Y	EG	ND	N105-1	M288-2Y

2012 LATE BLIGHT EARLY GENERATION TRIALS
CLARKSVILLE RESEARCH CENTER, MI

Line Sort:

LINE	N	RAUDPC[1] MEAN
MSX629-3	EG	3.0
MSX649-1	EG	3.8
MSX650-3	EG	1.0
MSX654-2	EG	0.8
MSX669-2	EG	0.7

RAUDPC Sort:

LINE	N	RAUDPC[1] MEAN	Female	Male
MSX373-6R	EG	ND	NDTX4271-5R	NY121
MSX375-2R	EG	ND	NDTX4271-5R	R160-2Y
MSX495-2	EG	ND	Q131-A	Kalkaska
MSX526-1	EG	ND	R036-5	NY139
MSX620-5	EG	ND	S582-1SPL	NDTX4271-5R

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

Table 11

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2012 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	SP GR	NUMBER OF SPOTS PER TUBER						PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
		0	1	2	3	4	5+		
ADVANCED and CHIP-PROCESSING TRIAL									
MSR148-4	1.065	21	4					84	0.2
Pike	**1.079**	**15**	**7**	**3**				**60**	**0.5**
MSJ126-9Y	1.075	12	11	2				48	0.6
MSQ131-A	1.067	14	7	4				56	0.6
MSQ440-2	1.057	13	9	3				52	0.6
MSS206-2	1.063	15	6	3	1			60	0.6
AC00206-2W	1.074	13	6	6				52	0.7
MSQ089-1	1.070	11	10	4				44	0.7
MSR128-4Y	1.083	10	11	3	1			40	0.8
AC03452-2W	1.068	5	15	3	2			20	1.1
MSL292-A	1.077	10	7	5	2	1		40	1.1
MSQ279-1	1.072	7	12	3	2	1		28	1.1
MSR061-1	1.076	8	9	4	2		2	32	1.3
CO02321-4W	1.078	4	12	6	2		1	16	1.4
Snowden	**1.080**	**1**	**14**	**8**	**2**			**4**	**1.4**
MSR169-8Y	1.077	6	6	6	7			24	1.6
MSL007-B	1.078	5	8	5	5	1	1	20	1.7
FL1879	**1.074**	**6**	**3**	**10**	**5**		**1**	**24**	**1.7**
Atlantic	**1.084**	**6**	**5**	**7**	**4**	**2**	**1**	**24**	**1.8**
MSQ086-3	1.074	4	9	5	3	4		16	1.8
NY140	1.077	2	12	5	2	2	2	8	1.8
MSP270-1	1.069	1	8	10	7			4	1.9
Lamoka	1.080	4	5	8	4	1	2	17	2.0
MSN190-2	1.090	3	4	9	5	2	1	13	2.1
MSS165-2Y	1.085	2	3	13	2	4	1	8	2.2
MSR127-2	1.084	2	6	6	5	3	2	8	2.3
W4980-1	1.077	1	5	8	2	5	4	4	2.7
NY148	1.093	0	2	4	10	4	5	0	3.2
MSQ035-3	1.078	0	1	1	5	6	12	0	4.1
MSP516-A	1.074	1		1	2	4	16	4	4.3
RUSSET TRIAL									
CO04159-1RY	1.056	21	2					91	0.1
CO04233-1Rus	1.062	20	5					80	0.2
AF3362-1Rus	1.067	19	5					79	0.2
A01124-3Rus	1.072	15	8	2				60	0.5
Russet Burbank	**1.067**	**15**	**7**	**1**		**1**		**63**	**0.5**
W7449-1Rus	1.077	13	7	1	1			59	0.5

Table 11

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2012 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	SP GR	NUMBER OF SPOTS PER TUBER 0	1	2	3	4	5+	PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
Russet Norkotah	**1.065**	**13**	**9**	**3**				**52**	**0.6**
AND00618-2RussY	1.077	13	8	4				52	0.6
Silverton Russet	1.064	12	11	1	1			48	0.6
A02062-1TE	1.065	13	7	5				52	0.7
Teton Russet	1.064	11	9	4				46	0.7
CO04220-7Rus	1.065	11	9	5				44	0.8
CO04211-4Rus	1.066	12	12		3			44	0.8
Russet Norkotah LT	1.066	13	7	2	3			52	0.8
GoldRush Russet	**1.061**	**10**	**9**	**5**	**1**			**40**	**0.9**
Russet Norkotah TX223	1.064	10	9	4	2			40	0.9
W6234-4Rus	1.077	4	15	4	2			16	1.2
Dakota Trailblazer	1.089	4	9	3	4	2	1	17	1.7
ND8068-5Rus	1.071	4	6	7	4	3	1	16	2.0
CO03187-1Rus	1.072	5	4	5	8	1	2	20	2.1
CO03276-4Rus	1.069							nd	nd
CO03276-5Rus	1.069							nd	nd
NORTH CENTRAL REGIONAL TRIAL									
W6002-1R	1.052	21	4					84	0.2
Dk. Red Norland	**1.083**	**18**	**5**	**1**				**75**	**0.3**
MN18747	1.058	18	5	1				75	0.3
MN02586	1.066	15	5	2	2	1		60	0.8
MN04844-01	1.072	11	10	3	1			44	0.8
W2717-5 (Lelah)	1.084	8	10	6	1			32	1.0
W8405-1R	1.056	9	10	2	2	1		38	1.0
Red Pontiac	**1.055**	**7**	**9**	**5**	**4**			**28**	**1.2**
Snowden	**1.077**	**5**	**9**	**9**	**1**	**1**		**20**	**1.4**
ND7519-1	1.079	5	6	6	2	1		25	1.4
W5015-12	1.081	5	6	7	5	1		21	1.6
MN02419	1.078	4	4	11	4	2		16	1.8
MN02467 (19 tubers)	1.076	4	5	5	2	1	2	21	1.8
Atlantic	**1.082**	**3**	**6**	**8**	**5**	**1**	**2**	**12**	**2.0**
NorValley	1.070	1	3	8	8	1	3	4	2.6
ND8305-1	1.082	1	2	8	6		5	5	2.8
ADAPTATION TRIAL, TABLESTOCK LINES									
MSM288-2Y	1.068	25						100	0.0
NY150 (very small tubers)	1.071	24	1					96	0.0
Red Norland	**1.057**	**21**	**1**					**95**	**0.0**

Table 11

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POTATO BREEDING and GENETICS

2012 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	SP GR	NUMBER OF SPOTS PER TUBER						PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
		0	1	2	3	4	5+		
Yukon Gold	**1.061**	**20**	**1**				**1**	**91**	**0.3**
MSR214-2P	1.064	19	5	1				76	0.3
MSQ176-5	1.061	17	7	1				68	0.4
MSS582-2SPL	1.090	16	5	1		1		70	0.5
MSS544-1R	1.057	15	9		1			60	0.5
NorWis	1.066	13	9	2		1		52	0.7
MSL211-3	1.066	13	8	2	2			52	0.7
Purple Haze	1.070	12	7	4	1			50	0.8
Spartan Splash	1.068	13	7	4			1	52	0.8
MSR217-1R	1.053	9	12	3	1			36	0.8
MSS576-05SPL	1.072	9	12	2	2			36	0.9
Michigan Purple	1.067	9	11	3	2			36	0.9
Onaway	**1.059**	**7**	**13**	**3**		**1**		**29**	**1.0**
MSQ341-BY	1.071	13	4	3	2	2		54	1.0
Reba	**1.070**	**10**	**7**	**4**	**2**	**1**	**1**	**40**	**1.2**
Purple Heart	1.058	4	10	6	2		1	17	1.4
MSE149-5Y	1.066	4	9	7	1	2	1	17	1.6
MSR216-AP	1.070	3	6	7	2	3	4	12	2.3
PRELIMINARY TRIAL, CHIP-PROCESSING LINES									
MSW436-24	1.076	22	1	1				92	0.1
MSR054-7	1.072	20	5					80	0.2
MST096-2Y	1.068	22	2		1			88	0.2
MSW464-3	1.080	20	4		1			80	0.3
MSW485-2	1.089	18	5	2				72	0.4
MSQ492-2	1.073	18	6	2				69	0.4
MSW437-9	1.064	16	8	1				64	0.4
MSW138-2	1.077	16	8	2				62	0.5
MSS934-4	1.081	16	7	1	1			64	0.5
MSW360-18	1.075	14	10	1				56	0.5
MSS297-3	1.075	14	8	3				56	0.6
Pike	**1.075**	**12**	**11**	**2**				**48**	**0.6**
MST184-3	1.078	12	10	2	1			48	0.7
MSW075-1	1.076	8	16	1				32	0.7
MST096-4	1.068	14	5	4	2			56	0.8
MST412-3	1.076	14	6	4	1	1		54	0.8
MST441-1	1.077	13	7	2	2	1		52	0.8
MSW259-6	1.081	11	9	2	2	1		44	0.9
Snowden	**1.075**	**9**	**9**	**6**	**1**			**36**	**1.0**

Table 11

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POTATO BREEDING and GENETICS

2012 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	SP GR	NUMBER OF SPOTS PER TUBER 0	1	2	3	4	5+	PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
Atlantic	**1.081**	**9**	**9**	**3**	**1**	**3**		**36**	**1.2**
MSW168-2	1.082	9	5	8	3			36	1.2
MST424-3	1.074	2	5	9	6	1	1	8	2.1
MSW443-3	1.079	3	7	3	4	4	4	12	2.4
MSW140-3	1.085	1	8	5	3	2	5	4	2.5
MSW509-5	1.073	2	4	8	3	3	5	8	2.6
MSW474-1	1.081	1	1	8	5	4	8	4	3.3
PRELIMINARY TRIAL, TABLESTOCK LINES									
MSW239-3	1.047	17	8					68	0.3
MSW128-2	1.062	18	5	1	1			72	0.4
MSW273-3R	1.063	16	6	4				62	0.5
MSW298-4Y	1.068	16	6		1	1		67	0.5
MSW121-5R	1.051	14	8	3				56	0.6
MSW125-3	1.054	11	10	3				46	0.7
MSW122-9	1.062	10	12	3				40	0.7
MSW151-9	1.071	11	9	3	2			44	0.8
W6703-5Y	1.070	8	12	4	1			32	0.9
MSW027-1	1.062	9	11	2	3			36	1.0
W6703-1Y	1.076	8	12	3	2			32	1.0
MST065-1	1.075	10	7	3	2	1		43	1.0
Onaway	**1.056**	**7**	**9**	**7**	**2**			**28**	**1.2**
MSR226-ARR	1.070	5	12	5	2			21	1.2
MST611-1 (19 tubers)	1.072	6	5	6	2			32	1.2
Reba	**1.067**	**8**	**7**	**6**	**4**			**32**	**1.2**
MSW500-4	1.075	4	13	3	3	1	1	16	1.5
MSW123-3	1.065	4	10	4	3	3		17	1.6
MSW182-1Y	1.078	4	7	6	5	2		17	1.8
MSS487-2	1.078	5	9	4	2	2	3	20	1.8
MSW153-1	1.074	6	6	4	4	3	2	24	1.9
CF7523-1	1.070	3	2	9	5	3	2	13	2.4
MSW148-1P	1.080	1	6	3	8	3	4	4	2.7
USPB/SFA TRIAL CHECK SAMPLES (Not bruised)									
AF4157-6	1.064	23	2					92	0.1
MSR061-1	1.071	23	2					92	0.1
W2978-3	1.059	23	2					92	0.1
W6483-5	1.059	23	2					92	0.1
CO00188-4W	1.062	22	3					88	0.1

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2012 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	SP GR	NUMBER OF SPOTS PER TUBER 0	1	2	3	4	5+	PERCENT (%) BRUISE FREE	AVERAGE SPOTS/TUBER
MN99380-1Y	1.065	20	5					80	0.2
ND8304-2	1.058	20	5					80	0.2
W4980-1	1.064	20	5					80	0.2
MSL292-A	1.068	19	6					76	0.2
A01143-3C	1.075	20	3	2				80	0.3
CO00197-3W	1.067	19	5	1				76	0.3
CO02321-4W	1.073	18	6	1				72	0.3
Snowden	**1.070**	**17**	**7**	**1**				**68**	**0.4**
NY140	1.072	16	8	1				64	0.4
W5015-12	1.076	19	3	1	1	1		76	0.5
ND8305-1	1.075	12	12	1				48	0.6
Atlantic	**1.077**	**11**	**12**	**2**				**44**	**0.6**
NY148	1.083	8	7	5	5			32	1.3
USPB/SFA TRIAL BRUISE SAMPLES									
AF4157-6	1.064	20	5					80	0.2
CO00188-4W	1.062	21	2	2				84	0.2
W6483-5	1.059	19	5	1				76	0.3
CO00197-3W	1.067	15	10					60	0.4
W2978-3	1.059	16	8	1				64	0.4
A01143-3C	1.075	17	5	3				68	0.4
MSL292-A	1.068	14	10	1				56	0.5
CO02321-4W	1.073	16	5	4				64	0.5
ND8304-2	1.058	16	4	5				64	0.6
MSR061-1	1.071	12	11	1	1			48	0.6
MN99380-1Y	1.065	13	10		1	1		52	0.7
Snowden	**1.070**	**12**	**10**	**1**	**2**			**48**	**0.7**
W4980-1	1.064	8	15	1	1			32	0.8
NY140	1.072	5	6	7	5		2	20	1.8
Atlantic	**1.077**	**2**	**8**	**8**	**5**	**1**	**1**	**8**	1.9
W5015-12	1.076	1	8	3	10	2	1	4	2.3
ND8305-1	1.075	0	2	6	7	7	3	0	3.1
NY148	1.083	0	3	4	1	6	11	0	3.7

* Twenty to 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 10/30/2012.

The table is presented in ascending order of average number of spots per tuber.