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2013 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 2013, we tested over 100 varieties and breeding lines in the replicated variety trials, plus single observational plots of over 120 lines and 40 replicated lines in the National Chip Processing Trial. The variety evaluation also includes disease testing in the scab nursery (Montcalm Research Center) and foliar and tuber late blight evaluation (Clarksville Research Center). 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. Harrison, M. Alhashany, S. Mambetova, A. Sardarbekova) 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. Nutrient, weed, disease and insect management were similar to recommendations used by the commercial operations. 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 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.*

2013 was the fourth 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.

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 four years now. The 2013 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 2013. A summary of the 16 entries evaluated in the trial results is given in **Table 1**. Overall, the yields for the Advanced trial (139 days) were above average, however the Snowden and Atlantic yield was below average. The check varieties for this trial were Snowden, Atlantic, and FL1879. The highest yielding lines were MSP497-1, NY140, Lamoka, NY148 and MSR127-2. Vascular discoloration was the predominant internal defect. Specific gravity was high with all lines above 1.080. 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: MSL007-B, MSR127-2, MSR057-4, MSSS297-1 and Lamoka. MSP497-1 and MSQ494-2 showed resistance to late blight at the CRC trials. The promising chip-processing lines are Manistee (MSL292-A) (chip quality, high yield, good specific gravity, and shows potential as a long-term storage chipper), MSM246-B (good yield,

chip quality and shows potential as a long-term storage chipper) and 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. Twenty four entries were tested in Michigan in 2013. The results are presented in **Table 2**. The best performing line in the trial was MSS576-5SPL. It is high yielding with round white-fleshed tubers that have a splash of red pigment on the tuber skin. There are some promising red-skinned entries from Wisconsin, Minnesota, and North Dakota. W5955-1 was the only line classified as scab resistant and no lines were late blight resistant. W5015-5 was highly susceptible to blackspot bruising.

C. Russet Trial (Table 3)

We continue to increase our russet breeding efforts to reflect the growing interest in russet types in Michigan. In 2013, 29 lines were evaluated after 127 days. The results are summarized in **Table 3**. Russet Burbank, Russet Norkotah and Silverton Russet were the reference varieties used in the trial. In general, the yields were high for many russet lines while Russet Burbank and Russet Norkotah had low yields. The highest yielding lines were AF3362-1Rus, Silverton Russet, W6234-4Rus which were also high yielding in 2012. There was a moderate incidence of hollow heart with CO05175-1Rus and CO5068-1Rus having the highest incidence and a moderate level of vascular discoloration in the internal quality across most lines. Specific gravity measurements were high to above average to below average with Russet Norkotah at 1.079. In 2012 the reading was 1.065. Quite a difference in the years! Off type and cull tubers were found in nearly all lines tested, with the highest being Russet Burbank (22%) and A02507-2LB (18%). Scab resistance was common among the lines but high susceptibility was in a few lines. No late blight resistance was observed in the lines at the CRC trial.

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 128 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. Two reference cultivars (Reba and Red Norland) and 24 advanced breeding lines are reported in the tablestock trial. In general, the yields were above average and internal defects were low, but some lines had below average yields and three lines were noted for IBS (MSS176-1, MSS070-B and MSQ130-4). The highest yielding lines were MSS176-1, MSR216-AP, MSQ086-3, MSS206-2, MSS576-05SPL, MSQ176-5, MSS483-1 and MSS487-2. MSQ086-3 is also verticillium resistant in Wisconsin field experiments. The

promising and attractive yellow-fleshed table selection is MSM288-2Y. 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. Other late blight resistant lines are MSS176-1, MSS070-B, MSS206-2, MSS483-1, MSL211-3 and MSS487-2. Besides MSQ440-2 there was little scab resistance observed in these lines tested. We continue to evaluate breeding lines with specialty market potential (purple skin such as MSR216-AP; splashes of color such MSS576-05SPL, MP Sport 1 and Spartan Splash).

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 14 entries because many lines were tracked to the NCPT. The chip-processing trial was harvested after 132 days. Most lines chip-processed well from the field. Specific gravity values were above average with Atlantic at 1.095 and Snowden at 1.091. All selections had 1.079 or higher specific gravity reading except one line. Internal quality was good across all the lines in the trial. Promising MSU lines are MSV093-1, MST359-3, MST424-6, MSW509-5, QSMSU01-10 and MSS934-4 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 tablestock entries evaluated in the Preliminary Trial (Onaway, Yukon Gold and Reba were the check varieties). This tablestock trial was harvested and evaluated after 127 days. MST500-1, MSV179-2, MSW128-2 QSMSU08-04, QSMSU10-09, MST065-1 and MSQ131-A were the highest yielding lines. This trial also had a low incidence of internal defects. The number of tablestock selections with scab resistance (5) and late blight resistance (5) continue to increase.

F. Potato Common Scab Evaluation (Tables 7 and 8)

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 (336 lines), the scab variety trial (141 lines), the scab trial of a tetraploid mapping population (>200 progeny) and the national scab trial sponsored by USDA/ARS.

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 2011-2013 scab ratings are based upon the Montcalm Research Center site. **Table 7** categorizes

many of the varieties and advanced selections tested in 2013 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 – 1.5) 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 2013 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 36 lines, of the 141 tested, had a scab rating of 1.5 or lower in 2013. Most notable scab resistant MSU lines are McBride, MSL007-B,, MSP270-1, MSQ440-2, MSQ279-1, MSR061-1, MSR127-2 and MSR169-8Y; as well as some earlier generation lines MSS297-3, MSV179-1, QSMSU10-09, MST424-6, MST252-1Y, and MSV093-1. 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 336 early generation selections that were evaluated, over 131 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 9, 10 and 11)

In 2013, the late blight trial was planted again at the Clarksville Research Center rather than the Muck Soils Research Farm. The Muck Soils Research Farm is now closed. Over 250 entries were planted in early June for late blight evaluation. These include lines tested in a replicated manner from the agronomic variety trial (118 lines) and entries in the National Late Blight Variety Trial (37 lines) and about 110 entries in the early generation observation plots. The trials were inoculated in early August with a mixture of US-22 and US-23 genotypes 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. Like 2012, the disease reaction in the plots was not as aggressive as previous years when US-8 was predominant. In 2013, there were 3 lines from the national late blight trial that had strong late blight resistance to the isolates. For the replicated variety trial 23 lines had strong late blight resistance, while 55 lines in the early generation observation plots had 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). Please note that because of the lower level of

infection, our cutoff for resistance was a very low RAUDPC score so we did not include false positives.

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 12**. The bruise data are represented in two ways: percentage of bruise free potatoes and average number of bruises per tuber. A high percentage of bruise-free potatoes is the desired goal; however, the numbers of blackspot bruises per potato is also important. Cultivars which show blackspot incidence greater than Atlantic are approaching the bruise-susceptible rating. In addition, the data is grouped by trial, since the bruise levels can vary between trials.

In 2013, the bruise levels were comparable to previous years. The most bruise resistant MSU breeding lines this year from the trials were McBride (MSJ126-9Y), Manistee (MSL292-A), MSM288-2Y, MSQ440-2, MSQ089-1, MSS576-05SPL, MSS176-1, MSS927-1, MSQ131-A, MSV111-2, MSW125-3, MSW151-9, MSR061-1 and MSV093-1. The most susceptible lines from the Advanced trial were MSM246-B, W5015-5, Atlantic, MST020-2Y, MSR216-AP.

Table 1

ADVANCED and CHIP-PROCESSING TRIAL
MONTCALM RESEARCH FARM
May 07 to September 23, 2013 (139 days)

LINE	CWT/A		PERCENT OF TOTAL ¹				SP GR	CHIP SCORE ²	OTF SED ³	PERCENT (%) TUBER QUALITY ⁴				SCAB ⁵	MAT ⁶	BRUISE ⁷	LB ⁸	LB	3-YR AVG	
	US#1	TOTAL	US#1	Bs	As	OV				PO	HH	VD	IBS					BC	RAUDPC	US#1
MSP497-1	412	448	92	8	89	3	0	1.081	NA	NA	20	5	0	0	3.3	3.0	1.2	LBR	0.3	-
NY148	395	468	85	15	82	3	0	1.103	1.5	1.0	0	0	0	0	2.1	3.5	2.7	LBMR	-	378
NY140	395	464	85	15	85	0	0	1.087	1.5	2.0	0	18	3	0	3.0	3.0	1.6	LBMR	1.5	380
MSR127-2	389	438	89	9	81	8	2	1.095	1.0	1.0	3	8	0	0	1.0	3.3	2.6	LBS	-	349
Lamoka	317	353	90	10	87	3	0	1.093	1.0	1.0	0	8	0	0	1.5	2.5	1.7	LBS	6.4	225
FL1879	312	339	92	8	89	3	0	1.087	1.0	1.0	20	28	0	0	-	2.0	1.5	LBS	6.7	313
MSM246-B	304	329	92	8	83	10	0	1.097	1.0	1.0	3	8	0	0	3.3	3.0	3.1	LBS	-	-
MSQ492-2	298	399	74	26	74	0	0	1.088	1.5	2.0	0	18	5	0	2.4	3.5	1.8	LBR	0.2	301*
MSL007-B	297	371	80	20	79	1	0	1.093	1.0	2.0	5	3	0	0	1.5	3.0	2.3	LBS	-	292
Atlantic	289	343	84	16	83	1	0	1.101	1.0	2.0	5	5	3	0	3.2	2.0	2.8	LBS	7.2	286
MSR057-4	288	325	88	11	82	7	1	1.082	1.0	2.0	0	23	0	0	1.3	3.3	1.1	LBS	6.1	-
Manistee (MSL292-A)	260	349	74	26	74	0	0	1.094	1.0	1.0	0	10	0	0	3.3	1.8	1.0	LBS	-	293
Snowden	254	360	70	30	70	0	0	1.094	1.0	1.0	0	15	0	0	3.1	2.8	1.7	LBS	3.6	250
MSN190-2	253	362	70	30	69	1	0	1.103	1.0	1.0	10	5	3	0	2.0	1.5	1.1	LBS	-	265
MSS297-3	230	300	77	23	77	0	0	1.093	1.0	1.0	0	3	0	0	1.1	2.0	1.6	LBS	10.0	246
MSR061-1	217	351	62	38	62	0	0	1.091	1.0	1.0	0	40	0	0	2.0	2.3	1.4	LBMR	-	211
MEAN	307	375						1.093							2.3	2.6	1.8		4.7	291
HSD _{0.05}	91	86						0.004							1.5	1.4	-		9.4	

* Two-Year Average

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.³SED: Stem End Defect, Based on Paul Bethke's (USDA/UWisconsin - Madison) 0 - 5 scale. 0 = no SED; 3 = significant SED; 5 = severe SED⁴QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.⁵SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁶MATURITY RATING: August 19, 2013; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).⁷BRUISE: Simulated blackspot bruise test average number of spots per tuber.⁸2013 Late Blight: LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

Table 2

NORTH CENTRAL REGIONAL TRIAL
MONTCALM RESEARCH FARM
May 7 to September 12, 2013 (128 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	CHIP SCORE ²	OTF SED ³	PERCENT (%) TUBER QUALITY ⁴				SCAB ⁵	MAT ⁶	BRUISE ⁷	LB ⁸	LB RAUDPC x100	3-YR AVG US#1 CWT/A
	US#1	TOTAL	US#1	Bs	As	OV	PO				HH	VD	IBS	BC						
Red Pontiac	490	547	90	6	82	8	5	1.067	3.0	3.0	33	8	0	0	4.0	3.0	0.5	LBS	3.4	342
MSS576-5SPL	433	471	92	8	85	7	0	1.080	1.0	0.0	0	0	0	0	2.2	3.0	1.0	LBMS	2.6	404*
ND7132-1R	411	461	89	10	89	0	0	1.073	1.5	3.0	0	0	0	0	2.8	3.0	1.1	LBS	10.5	-
W8405-1R	406	488	83	16	81	2	0	1.070	2.5	2.0	0	0	0	0	1.9	2.8	1.1	LBS	6.5	369*
MN10020PLWR-08R	404	448	90	7	85	5	3	1.068	2.0	2.0	0	10	0	0	3.3	2.0	0.5	LBS	5.8	-
W6002-1R	382	439	87	13	82	5	0	1.064	3.5	4.0	0	0	0	0	2.1	2.0	0.3	LBS	6.6	273
W5015-5	381	457	83	17	83	0	0	1.095	1.0	0.0	0	0	20	0	1.9	3.3	3.8	LBMS	1.6	-
MSQ089-1	369	419	88	12	87	1	0	1.083	1.0	0.0	0	3	0	0	2.5	3.0	0.8	LBR	0.3	350
W5955-1	357	412	86	13	80	6	0	1.093	1.0	0.0	15	0	0	0	1.5	3.0	0.6	LBS	5.5	-
Atlantic	355	408	87	13	87	0	0	1.095	1.5	0.0	5	0	0	3	3.2	2.8	1.9	LBS	7.2	304
Snowden	344	398	86	14	82	4	0	1.089	1.0	0.0	8	3	0	0	3.1	3.3	1.6	LBS	3.6	315
ND6002-1R	338	373	91	9	90	0	0	1.068	2.5	2.0	3	0	0	0	2.1	2.7	0.6	LBS	8.1	-
Elkton	322	371	87	13	81	6	0	1.088	1.0	0.0	18	0	3	0	1.6	3.0	1.7	LBS	4.2	-
MSS165-2Y	299	446	67	33	66	1	0	1.094	1.5	0.0	0	3	0	0	1.9	3.3	2.0	LBMS	3.8	306
NY 153	294	353	83	16	82	1	1	1.095	1.0	0.0	13	0	0	0	2.1	3.3	1.6	LBS	6.7	-
ND7799c-1	287	347	83	17	82	1	0	1.079	1.0	0.0	0	3	0	0	1.9	2.3	0.1	LBS	6.1	-
Red Norland	281	353	79	20	79	0	0	1.064	2.5	2.0	3	3	0	0	2.0	1.3	0.6	LBS	7.4	255
McBride (MSJ126-9Y)	276	343	80	20	80	0	0	1.086	1.0	0.0	0	0	0	0	0.8	2.8	0.4	LBS	6.5	240
NorValley	272	381	71	22	71	0	6	1.080	1.0	0.0	0	0	0	0	3.1	2.8	1.1	LBS	6.2	288
MN10001PLWR-01R	222	294	76	23	76	0	1	1.069	2.5	2.0	0	0	0	0	2.8	1.0	0.4	LBS	7.7	-
MN10003PLWR-03R	202	327	60	38	60	0	1	1.057	2.5	3.0	0	0	0	0	3.3	1.0	0.1	-	-	-
ND7982-1R	192	378	50	50	50	0	0	1.076	1.5	2.0	0	0	0	0	2.3	1.7	0.5	LBS	9.7	-
MN10003PLWR-07R	161	286	56	43	56	0	1	1.064	2.0	4.0	0	0	0	0	3.5	1.5	0.4	-	-	-
MN10013PLWR-04	74	219	33	67	33	0	0	1.077	1.5	0.0	13	3	0	0	3.4	1.0	0.6	LBS	14.3	-
MEAN	315	392						1.078	1.7						2.5	2.4	1.0		6.1	297
HSD _{0.05}	126	124						0.006							1.5	1.3	-		9.4	

* Two-Year Average

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.³SED: Stem End Defect, Based on Paul Bethke's (USDA/UWisconsin - Madison) 0 - 5 scale. 0 = no SED; 3 = significant SED; 5 = severe SED⁴QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.⁵SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁶MATURITY RATING: August 19, 2013; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).⁷BRUISE: Simulated blackspot bruise test average number of spots per tuber.⁸2013 Late Blight: LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

Table 3

RUSSET TRIAL
MONTCALM RESEARCH FARM
May 7 to September 11, 2013 (127 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	PERCENT (%) TUBER QUALITY ²				SCAB ³	MAT ⁴	BRUISE ⁵	LB ⁶	LB RAUDPC x100	3-YR AVG US#1 CWT/A
	US#1	TOTAL	US#1	Bs	As	OV	PO		HH	VD	IBS	BC						
	AF3362-1Rus	445	479	93	6	72	21		1	1.086	0	35						
Silverton Russet	441	489	90	9	73	17	1	1.080	20	5	0	0	1.1	3.5	1.4	LBS	4.9	328
W6234-4Rus	415	491	84	11	77	7	5	1.085	3	23	0	0	2.9	3.0	0.4	LBS	3.5	369*
A03158-2TERus	388	476	82	16	71	10	3	1.088	13	5	0	0	0.6	3.3	1.8	LBS	4.2	-
A02062-1TERus	378	458	82	9	64	18	9	1.081	0	17	0	0	0.3	3.0	0.3	LBS	5.8	285
A07103-1T	369	461	80	20	78	2	0	1.099	15	0	0	0	2.1	3.0	0.2	LBS	3.6	-
A01010-1	346	446	77	20	73	4	3	1.089	0	13	0	0	1.8	3.5	0.8	LBS	5.4	-
CO05175-1Rus	342	434	79	11	65	14	10	1.082	40	15	0	0	1.1	3.3	1.8	LBMS	2.6	-
CO05068-1Rus	324	408	79	15	68	12	5	1.097	50	0	0	0	1.3	4.0	2.7	LBMS	2.4	-
A0701012-4BF	303	437	69	31	66	3	0	1.100	30	25	0	0	2.6	4.0	2.2	LBS	4.9	-
W8152-1Rus	286	375	76	21	74	2	2	1.094	23	0	0	0	2.1	3.3	0.8	LBS	3.4	-
A02507-2LB	284	389	73	9	59	14	18	1.090	8	15	0	0	1.0	4.0	1.6	LBMS	2.5	-
CO05110-6Rus	273	347	79	18	74	5	3	1.088	5	3	0	0	2.0	2.5	3.0	LBS	8.6	-
CO05132-2Rus	270	328	82	13	65	17	4	1.081	18	8	23	0	0.5	2.5	0.7	LBS	21.2	-
CO05024-11Rus	265	378	70	29	69	1	1	1.084	0	20	0	0	0.5	2.0	1.6	LBMS	3.2	-
W9133-1Rus	262	328	80	19	71	9	1	1.074	0	3	0	0	2.0	1.5	0.9	LBS	6.2	-
CO05152-5Rus	246	397	61	36	58	3	4	1.086	3	18	0	0	0.4	3.0	1.0	LBS	4.7	-
CO05189-3Rus	242	283	86	14	70	16	0	1.076	0	13	0	0	1.8	1.3	1.9	LBS	5.4	-
CO04233-1Rus	239	298	80	19	73	6	2	1.075	10	15	0	0	0.5	1.0	0.5	LBS	6.5	198*
AF4445-3Rus	222	276	80	14	73	6	6	1.075	0	23	0	0	-	2.0	1.0	-	-	-
CO04220-7Rus	220	310	70	27	64	6	3	1.072	30	25	0	0	1.5	1.0	0.9	LBS	6.5	178*
CO05149-3Rus	218	329	62	34	56	5	4	1.085	18	5	0	0	2.0	2.0	1.0	LBS	8.2	-
A99029-3E	214	307	69	31	65	4	1	1.080	0	15	0	0	1.8	2.5	0.2	LBMS	3.9	-
CO05189-2Rus	201	347	57	40	54	4	2	1.078	0	8	0	0	4.1	1.3	0.3	LBS	8.3	-
AF4532-8Rus	175	235	76	23	71	5	1	1.074	30	20	0	0	-	1.5	1.0	-	-	-
Russet Norkotah	174	303	57	42	57	0	1	1.079	5	17	0	0	2.5	2.0	0.1	LBS	7.0	195
Russet Burbank	160	324	49	29	47	2	22	1.078	15	8	0	0	1.3	3.0	0.9	LBS	4.9	121
A07008-4T	149	310	48	50	48	0	2	1.097	0	20	0	0	2.9	3.0	1.6	LBS	4.3	-
CO05040-1Rus	80	288	28	58	28	0	15	1.075	0	10	0	0	0.6	3.0	1.6	LBS	6.1	-
MEAN	274	370						1.084					1.6	2.6	1.2		5.7	255
HSD _{0.05}	166	176						0.012					1.5	2.4	-		9.4	

* Two-Year Average

¹SIZE: B: < 4 oz.; A: 4-10 oz.; OV: > 10 oz.; PO: Pickouts.²QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.³SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁴MATURITY RATING: August 19, 2013; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).⁵BRUISE: Simulated blackspot bruise test average number of spots per tuber.⁶2013 Late Blight: LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

Table 4

ADAPTATION TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 7 to September 12, 2013 (128 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	CHIP SCORE ²	OTF SED ³	PERCENT (%) TUBER QUALITY ⁴				SCAB ⁵	MAT ⁶	BRUISE ⁷	LB ⁸	LB RAUDPC x100
	US#1	TOTAL	US#1	Bs	As	OV	PO				HH	VD	IBS	BC					
MSS176-1	597	621	96	4	79	17	0	1.087	1.5	3.0	28	3	25	3	1.8	4.0	0.6	LBR	0.4
CV00088-3	490	528	93	7	88	4	0	1.072	-	-	3	0	0	0	2.9	2.3	0.4	LBS	5.1
MSR216-AP	484	527	92	8	91	1	0	1.080	-	-	0	0	0	0	2.8	3.3	4.0	LBS	3.9
MSQ086-3	482	558	86	14	85	1	0	1.085	1.0	0.0	0	3	0	0	2.4	4.0	1.4	LBS	4.9
MSS070-B	479	506	95	4	84	11	2	1.088	1.0	4.0	0	11	19	0	2.9	3.5	1.2	LBR	0.3
MSS206-2	457	471	97	3	70	27	0	1.075	1.5	2.0	0	8	0	0	2.3	3.8	1.2	LBR	1.1
MSR214-2P	441	482	92	7	88	4	1	1.072	-	-	3	0	0	0	2.3	4.0	1.2	LBS	3.9
MSR186-3P	431	469	92	7	85	6	2	1.076	-	-	0	5	0	0	2.0	3.3	1.9	LBS	2.7
MSS576-5SPL	425	454	93	6	85	8	0	1.081	-	-	5	5	0	0	2.2	3.0	1.1	LBMS	2.6
MSQ176-5	407	441	92	8	81	11	0	1.070	-	-	8	0	0	3	3.0	2.8	1.1	LBR	0.2
MSS483-1	404	483	84	16	83	0	0	1.081	3.0	2.0	5	0	0	0	3.0	2.8	3.2	LBR	0.3
MSS487-2	391	437	89	10	87	2	0	1.086	2.5	3.0	0	0	0	0	2.3	3.5	2.8	LBR	0.2
Michigan Purple Sport I	387	430	89	6	84	6	5	1.075	-	-	0	10	0	0	2.6	1.8	0.9	LBS	-
Michigan Purple	357	402	89	8	85	4	3	1.075	-	-	3	10	0	0	2.8	1.8	1.2	LBS	-
Reba	352	373	95	5	87	8	0	1.078	1.5	0.0	13	5	0	0	2.6	2.5	1.8	LBS	-
MSM288-2Y	347	442	78	22	77	1	0	1.083	-	-	0	0	0	0	3.1	1.8	0.2	LBS	-
MSR226-ARR	319	399	80	20	76	3	0	1.076	1.5	3.0	0	0	0	0	1.9	3.0	1.2	-	-
MSS927-1	291	358	81	19	80	1	0	1.086	1.0	0.0	0	0	0	0	2.1	2.3	0.7	LBS	5.4
Red Norland	289	365	79	20	78	0	1	1.063	-	-	0	8	0	0	2.0	1.0	0.5	LBS	7.4
MSL211-3	284	339	83	16	78	5	0	1.074	-	-	3	10	3	0	2.3	1.3	1.2	LBR	0.2
MSQ130-4	264	311	85	15	77	8	0	1.082	1.0	0.0	20	0	35	0	2.0	3.0	1.3	LBR	0.7
Spartan Splash	260	370	70	30	70	0	0	1.083	-	-	15	0	8	0	2.4	2.3	1.2	-	-
MSQ440-2	255	284	89	11	86	3	0	1.058	-	-	0	0	0	0	1.0	2.5	0.6	LBR	0.1
MSR128-4Y	246	310	79	20	79	0	1	1.093	1.0	0.0	0	0	0	0	1.4	3.8	1.8	LBS	4.3
MSR157-1Y	234	304	77	23	77	0	0	1.085	1.0	0.0	5	5	0	0	1.3	2.8	1.6	LBS	3.8
CV02321-1	219	289	76	24	76	0	0	1.077	1.0	0.0	3	5	3	0	3.0	2.0	0.9	LBS	7.8
MEAN	369	421						1.078							2.3	2.8	1.4		2.8
HSD _{0.05}	133	123						0.009							1.5	1.5	-		9.4

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.³SED: Stem End Defect, Based on Paul Bethke's (USDA/UWisconsin - Madison) 0 - 5 scale. 0 = no SED; 3 = significant SED; 5 = severe SED⁴QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.⁵SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁶MATURITY RATING: August 19, 2013; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).⁷BRUISE: Simulated blackspot bruise test average number of spots per tuber.⁸2013 Late Blight: LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

Table 5

PRELIMINARY TRIAL, CHIP-PROCESSING LINES
MONTCALM RESEARCH FARM
May 8 to September 16, 2013 (132 days)

LINE	CWT/A		PERCENT OF TOTAL ¹					SP GR	CHIP SCORE ²	OTF SED ³	PERCENT (%) TUBER QUALITY ⁴				SCAB ⁵	MAT ⁶	BRUISE ⁷	LB ⁸	LB RAUDPC x100
	US#1	TOTAL	US#1	Bs	As	OV	PO				HH	VD	IBS	BC					
MSV093-1	447	490	91	7	84	7	3	1.080	1.0	0.0	0	0	0	0	1.3	4.0	0.4	LBMS	3.5
QSMSU01-10	406	455	89	11	87	3	0	1.089	1.0	1.0	15	0	0	0	2.6	2.5	1.9	-	-
MST359-3	401	416	96	4	87	9	0	1.084	1.0	0.0	0	0	0	0	2.6	3.0	1.6	LBR	0.3
MST424-6	393	432	91	9	91	0	0	1.083	1.0	0.0	0	0	0	0	1.3	1.5	1.4	-	-
MSW509-5	372	428	87	12	83	3	1	1.086	1.0	0.0	10	0	0	0	0.8	3.0	2.7	-	-
MST178-2	327	361	90	10	89	1	0	1.069	2.5	3.0	0	0	0	0	1.5	1.5	1.1	-	-
Snowden	314	398	79	21	78	1	0	1.091	1.0	0.0	5	5	0	0	3.1	2.5	1.6	LBS	3.6
MSP516-A	293	350	84	16	78	7	0	1.079	1.5	1.0	15	5	0	0	1.6	3.0	2.6	LBR	0.5
Atlantic	287	327	88	12	85	3	0	1.095	1.5	1.0	15	0	0	0	3.2	2.5	2.9	LBS	7.2
MST458-4	278	289	96	4	61	35	0	1.080	1.0	1.0	5	0	0	0	1.9	3.0	1.3	LBS	5.1
Pike	264	315	84	16	84	0	0	1.090	1.0	0.0	0	0	0	0	1.4	2.0	1.6	LBS	-
MSS934-4	262	300	86	14	86	0	0	1.083	1.0	1.0	0	5	0	0	-	3.0	1.6	LBMS	3.1
MST184-3	257	284	90	9	90	0	1	1.089	1.0	0.0	0	0	0	0	2.0	3.0	2.6	LBS	-
MSK061-4	246	315	77	23	77	0	0	1.095	1.0	0.0	0	60	0	0	1.9	3.0	2.0	LBS	-
MEAN	325	369						1.085							1.9	2.7	1.8		3.3
HSD _{0.05}	NS	NS						0.010							1.5	1.9	-		9.4

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.³SED: Stem End Defect, Based on Paul Bethke's (USDA/UWisconsin - Madison) 0 - 5 scale. 0 = no SED; 3 = significant SED; 5 = severe SED⁴QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.⁵SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁶MATURITY RATING: August 19, 2013; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).⁷BRUISE: Simulated blackspot bruise test average number of spots per tuber.⁸2013 Late Blight: LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

Table 6

PRELIMINARY TRIAL, TABLESTOCK LINES
MONTCALM RESEARCH FARM
May 7 to September 11, 2013 (127 days)

LINE	CWT/A		PERCENT OF TOTAL ¹				SP GR	CHIP SCORE ²	OTF SED ³	PERCENT (%) TUBER QUALITY ⁴				SCAB ⁵	MAT ⁶	BRUISE ⁷	LB ⁸	LB RAUDPC x100	
	US#1	TOTAL	US#1	Bs	As	OV				PO	HH	VD	IBS						BC
MST500-1	684	726	94	6	83	12	0	1.083	1.5	2.0	10	0	0	0	3.1	4.0	1.4	LBMR	0.8
MSV179-1	503	517	97	3	90	7	0	1.076	1.0	1.0	5	0	0	0	1.1	4.0	1.4	LBS	5.9
MSW128-2	495	513	96	4	67	30	0	1.069	2.5	2.0	25	0	0	0	1.8	3.0	0.7	LBMS	2.1
QSMSU08-04	483	523	92	7	92	1	0	1.085	1.0	2.0	0	0	5	0	2.0	4.0	0.4	LBS	8.3
QSMSU10-09	481	511	94	6	85	9	0	1.096	1.5	2.0	0	0	5	0	1.1	3.0	1.3	LBS	10.3
MST065-1	453	518	87	13	86	2	0	1.094	1.0	2.0	10	10	0	0	2.4	3.5	2.8	LBMR	1.0
MSQ131-A	453	457	99	1	59	40	0	1.073	1.0	0.0	0	0	0	0	1.8	3.0	0.5	LBMS	1.5
Reba	423	444	95	5	87	8	0	1.081	1.0	1.0	0	0	0	0	2.6	3.0	0.8	LBS	-
MSW151-9	376	433	87	13	79	7	0	1.080	1.5	2.0	10	0	0	0	2.5	3.5	0.5	LBS	4.2
MSV111-2	376	445	84	16	83	1	0	1.080	1.0	0.0	0	0	10	0	1.9	4.0	0.1	LBR	0.4
MSW182-1Y	363	363	100	0	100	0	0	1.091	1.0	1.0	0	0	20	0	2.6	4.0	1.7	-	-
MSW343-2R	343	396	86	14	86	0	0	1.058	-	-	0	0	0	0	2.1	1.0	0.4	LBR	0.6
MSW125-3	341	392	87	13	84	3	0	1.061	2.0	2.0	0	10	0	0	1.4	1.5	0.2	LBS	4.6
Onaway	338	370	91	8	89	2	1	1.070	3.0	3.0	0	5	0	0	2.3	1.0	2.2	LBS	-
MST020-2Y	318	339	94	6	86	8	0	1.075	1.0	1.0	0	0	0	0	2.6	3.0	2.5	LBR	0.2
MST252-1Y	291	386	75	25	74	1	0	1.072	1.0	1.0	0	0	0	0	1.5	1.0	0.8	LBS	3.8
MSV292-1Y	286	311	89	11	80	8	0	1.074	1.0	1.0	0	0	0	0	1.5	3.0	0.4	-	-
Purple Heart	284	341	83	17	83	0	0	1.065	-	-	0	0	0	0	3.2	2.0	0.7	LBS	-
MSV235-2PY	280	280	100	0	100	0	0	1.078	-	-	0	0	0	0	-	1.0	0.7	LBS	6.4
W6703-1Y	254	345	74	26	74	0	0	1.085	1.0	2.0	0	0	0	0	-	2.5	0.4	-	-
CV98173-4	247	314	78	22	78	0	0	1.081	1.0	2.0	5	5	0	15	3.0	1.0	0.4	LBS	4.8
QSMSU10-15	223	300	74	26	73	1	0	1.097	1.0	0.0	0	0	0	0	1.1	3.0	1.1	LBS	4.6
Yukon Gold	181	194	94	6	89	5	0	1.076	1.0	1.0	0	5	5	5	-	1.0	0.04	LBS	
MEAN	368	410						1.078							2.1	2.6	0.9		3.7
HSD _{0.05}	310	317						0.008							1.5	1.3	-		9.4

¹SIZE: B: < 2 in.; A: 2-3.25 in.; OV: > 3.25 in.; PO: Pickouts.²CHIP SCORE: Snack Food Association Scale (Out of the field); Ratings: 1-5; 1: Excellent, 5: Poor.³SED: Stem End Defect, Based on Paul Bethke's (USDA/UWisconsin - Madison) 0 - 5 scale. 0 = no SED; 3 = significant SED; 5 = severe SED⁴QUALITY: HH: Hollow Heart; BC: Brown Center; VD: Vascular Discoloration; IBS: Internal Brown Spot. Percent of 40 Oversize and/or A-size tubers cut.⁵SCAB DISEASE RATING: MSU Scab Nursery; 0: No Infection; 1: Low Infection <5%; 3: Intermediate; 5: Highly Susceptible.⁶MATURITY RATING: August 19, 2013; Ratings 1-5; 1: Early (vines completely dead); 5: Late (vigorous vine, some flowering).⁷BRUISE: Simulated blackspot bruise test average number of spots per tuber.⁸2013 Late Blight: LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2011-2013 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER, MI

LINE	3-YR* AVG.	2013 RATING	2013 WORST	2013 N	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N
<i>Sorted by ascending Average Rating;</i>										
CO05152-5Rus	0.4	0.4	1.5	4	-	-	-	-	-	-
CO05024-11Rus ^{LBMS}	0.5	0.5	1	4	-	-	-	-	-	-
CO05132-2Rus	0.5	0.5	0.5	4	-	-	-	-	-	-
A02062-1TE	0.6	0.3	1	4	1.0	2	4	0.6	1	4
A03158-2TE	0.6	0.6	1	4	-	-	-	-	-	-
CO05040-1Rus	0.6	0.6	1	4	-	-	-	-	-	-
MSP270-1	0.7	0.6	1	4	0.8	1	4	0.6	1	4
McBride (MSJ126-9Y)	0.8	0.8	1.5	4	0.8	2	4	0.8	2	4
Silverton Russet	0.8	1.1	2	4	0.8	2	4	0.5	1	4
MSR169-8Y	0.9	1.4	2	4	0.8	2	4	0.6	1	4
MSS297-3	0.9	1.1	1.5	4	0.8	1	4	0.9	1	4
A02507-2LB ^{LBMS}	1.0	1.0	1.5	4	-	-	-	-	-	-
CO05175-1Rus ^{LBMS}	1.1	1.1	1.5	4	-	-	-	-	-	-
MSV179-1	1.1	1.1	1.5	4	-	-	-	-	-	-
QSMSU10-09	1.1	1.1	1.5	4	-	-	-	-	-	-
QSMSU10-15	1.1	1.1	2	4	-	-	-	-	-	-
CO05068-1Rus ^{LBMS}	1.3	1.3	1.5	4	-	-	-	-	-	-
MSQ440-2 ^{LBR}	1.3	1.0	1	4	1.5	2	4	1.3	2	8
MSR157-1Y	1.3	1.3	2	4	-	-	-	-	-	-
MST424-6	1.3	1.3	1.5	4	-	-	-	-	-	-
MSV093-1 ^{LBMR}	1.3	1.3	2	4	-	-	-	-	-	-
MSS582-1SPL	1.3	1.3	1.5	4	0.8	1	4	2.0	3	4
Pike	1.3	1.4	2	4	1.1	2	8	1.5	3	4
MSL007-B	1.4	1.5	2	4	1.5	2	4	1.1	2	4
Dark Red Norland	1.4	1.6	2.5	4	1.4	2	4	1.3	2	4
MSR128-4Y	1.4	1.4	2	4	1.5	2	4	1.4	2	4
Lamoka	1.5	1.5	2	4	1.5	2	4	1.4	2	4
MSR127-2	1.5	1.0	1.5	4	1.5	2	4	2.0	3	4
MST252-1Y	1.5	1.5	2	4	-	-	-	-	-	-
MSV292-1Y	1.5	1.5	2.5	4	-	-	-	-	-	-
W5955-1	1.5	1.5	2	4	-	-	-	-	-	-
MSR061-1 ^{LBMR,PVYR}	1.6	2.0	2	4	1.9	2	4	0.9	2	4
Elkton	1.6	1.6	2	4	-	-	-	-	-	-
A01010-1	1.8	1.8	2.5	4	-	-	-	-	-	-
A99029-3E ^{LBMS}	1.8	1.8	2.5	4	-	-	-	-	-	-
CO05189-3Rus	1.8	1.8	3	4	-	-	-	-	-	-
MSQ443-1RR	1.8	1.8	2.5	4	-	-	-	-	-	-
MSS176-1 ^{LBR}	1.8	1.8	2	4	-	-	-	-	-	-
NY148 ^{LBMR}	1.8	2.1	2.5	4	1.8	2	4	1.4	2	4
MSN190-2	1.8	2.0	2	4	1.5	2	4	1.9	3	4
MSS165-2Y ^{LBR}	1.8	1.9	2	4	1.9	2	4	1.6	2	4
MSK061-4	1.9	1.9	2	4	-	-	-	-	-	-
MSS927-1	1.9	2.1	2.5	4	1.9	2	4	1.6	3	4
MST458-4	1.9	1.9	2	4	-	-	-	-	-	-
MSV111-2 ^{LBR}	1.9	1.9	2	4	-	-	-	-	-	-
ND7799c-1	1.9	1.9	2.5	4	-	-	-	-	-	-
W5015-5 ^{LBMS}	1.9	1.9	2.5	4	-	-	-	-	-	-
MSQ131-A ^{LBMS}	1.9	1.8	2.5	3	1.9	3	4	2.0	2	4
MSR214-2P	1.9	2.3	3	4	1.9	2	4	1.6	3	4
Russet Burbank	1.9	1.3	2	4	2.1	3	4	2.4	3	4
MSL211-3 ^{LBR}	2.0	2.3	2.5	4	1.9	2	4	1.8	2	4
CO05110-6Rus	2.0	2.0	2.5	4	-	-	-	-	-	-
CO05149-3Rus	2.0	2.0	2.5	4	-	-	-	-	-	-
MSQ130-4 ^{LBR}	2.0	2.0	2	4	-	-	-	-	-	-
MSR186-3P ^{LBMS}	2.0	2.0	2.5	4	-	-	-	-	-	-
MSS108-1 ^{LBMR}	2.0	2.0	2.5	4	-	-	-	-	-	-

Table 7

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2011-2013 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER, MI

LINE	3-YR* AVG.	2013 RATING	2013 WORST	2013 N	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N
<i>Sorted by ascending Average Rating;</i>										
QSMSU08-04	2.0	2.0	2.5	4	-	-	-	-	-	-
Red Norland	2.0	2.0	2.5	4	-	-	-	-	-	-
W9133-1Rus	2.0	2.0	2.5	4	-	-	-	-	-	-
MSR148-4 ^{LBM}	2.0	2.1	2.5	4	2.3	3	4	1.8	2	4
Onaway	2.0	2.3	2.5	4	1.9	2	8	2.0	3	8
MSQ086-3	2.1	2.4	3	4	1.9	2	4	2.0	3	4
W6002-1R	2.1	2.1	2.5	4	2.3	3	4	1.9	3	4
A07103-IT	2.1	2.1	2.5	4	-	-	-	-	-	-
ND6002-1R	2.1	2.1	2.5	4	-	-	-	-	-	-
NY 153	2.1	2.1	2.5	4	-	-	-	-	-	-
Spartan Splash	2.1	2.4	3	4	1.8	2	4	2.3	3	4
W8152-1Rus	2.1	2.1	2.5	4	-	-	-	-	-	-
Reba	2.1	2.6	3	4	2.2	3	8	1.6	2	4
MSQ089-1 ^{LBR}	2.2	2.5	3	4	1.9	2	4	2.1	3	4
MSN109-6RR ^{LBM}	2.3	2.3	2.5	4	-	-	-	-	-	-
MSQ558-2RR	2.3	2.3	2.5	4	-	-	-	-	-	-
Russet Norkotah	2.3	2.5	3	4	1.9	3	4	2.5	3	4
ND7982-1R	2.3	2.3	2.5	3	-	-	-	-	-	-
MSR161-2 ^{LBM}	2.5	2.5	3	4	-	-	-	-	-	-
Michigan Purple	2.5	2.8	3.5	4	2.1	3	4	2.8	3	4
MSQ176-5 ^{LBR}	2.5	3.0	3.5	4	2.3	3	4	2.4	3	4
A071012-4BF	2.6	2.6	3.5	4	-	-	-	-	-	-
Michigan Purple Sport I	2.6	2.6	3	4	-	-	-	-	-	-
MSM182-1 ^{LBR}	2.6	2.6	3	4	-	-	-	-	-	-
MST148-3	2.6	2.6	4	4	-	-	-	-	-	-
MST359-3 ^{LBR}	2.6	2.6	3.5	4	-	-	-	-	-	-
QSMSU01-10	2.6	2.6	3	4	-	-	-	-	-	-
Purple Heart	2.6	3.2	3.5	3	2.6	3	4	2.1	3	4
Snowden	2.7	3.1	3.5	12	2.6	3	8	2.4	3	4
MNC0001PLWR-01R	2.8	2.8	3.5	4	-	-	-	-	-	-
ND7132-1R	2.8	2.8	3.5	4	-	-	-	-	-	-
NY140 ^{LMB}	2.8	3.0	3.5	4	2.8	3	4	2.5	3	4
NorValley	2.8	3.1	3.5	4	3.0	4	4	2.3	3	4
Manistee (MSL292-A)	2.8	3.3	3.5	4	2.5	3	4	2.8	4	4
A07008-4T	2.9	2.9	3.5	4	-	-	-	-	-	-
CV00088-3	2.9	2.9	3	4	-	-	-	-	-	-
MSS070-B ^{LBR}	2.9	2.9	3.5	4	-	-	-	-	-	-
MSS483-1 ^{LBR}	2.9	3.0	4	4	2.5	3	4	3.1	4	4
MSM288-2Y	3.0	3.1	3.5	4	2.8	3	4	3.0	3	4
Atlantic	3.0	3.2	3.5	12	2.8	4	12	3.0	4	11
CV02321-1	3.0	3.0	3.5	3	-	-	-	-	-	-
CV98173-4	3.0	3.0	3.5	4	-	-	-	-	-	-
MSM180-3	3.0	3.0	3	4	-	-	-	-	-	-
Yukon Gold	3.0	3.0	3.5	4	3.0	3	4	3.0	4	4
MST123-1RY	3.1	3.1	3.5	4	-	-	-	-	-	-
MST500-1 ^{LBM}	3.1	3.1	3.5	4	-	-	-	-	-	-
MSU616	3.1	3.1	3.5	4	-	-	-	-	-	-
MSV235-2PY	3.1	3.1	3.5	4	-	-	-	-	-	-
MN10003PLWR-03R	3.3	3.3	3.5	4	-	-	-	-	-	-
MN10020PLWR-08R	3.3	3.3	3.5	4	-	-	-	-	-	-
MSM246-B	3.3	3.3	3.5	4	-	-	-	-	-	-
MSP497-1 ^{LBR}	3.3	3.3	3.5	4	-	-	-	-	-	-
MN10013PLWR-04	3.4	3.4	4	4	-	-	-	-	-	-
MN10003PLWR-07B	3.5	3.5	4	4	-	-	-	-	-	-
Red Pontiac	3.6	4.0	4	2	3.4	4	4	3.4	4	4
CO05189-2Rus	4.1	4.1	4.5	4	-	-	-	-	-	-
CO04233-1Rus	0.6*	0.5	0.5	4	0.8	2	4	-	-	-

Table 7

2011-2013 SCAB DISEASE TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER, MI

LINE	3-YR* AVG.	2013 RATING	2013 WORST	2013 N	2012 RATING	2012 WORST	2012 N	2011 RATING	2011 WORST	2011 N
<i>Sorted by ascending Average Rating;</i>										
MSW509-5	0.8*	0.8	1.5	4	0.9	2	4	-	-	-
W6703-1Y	1.1*	1.0	1.5	4	1.1	2	4	-	-	-
CO04220-7Rus	1.2*	1.5	2.5	4	0.9	2	4	-	-	-
MSW125-3	1.2*	1.4	1.5	4	1.0	1	4	-	-	-
MSR057-4	1.3*	1.3	1.5	4	1.4	2	4	-	-	-
MST178-2	1.3*	1.5	2	4	1.1	2	4	-	-	-
MSP516-A ^{LBR}	1.5*	1.6	2	4	1.4	2	4	-	-	-
MSR226-ARR	1.6*	1.9	2.5	4	1.4	2	4	-	-	-
MST184-3	1.8*	2.0	2.5	4	1.6	2	4	-	-	-
MSW128-2 ^{LBMS}	1.8*	1.8	2	4	1.9	3	4	-	-	-
MSS206-2 ^{LBR}	1.9*	2.3	3	4	1.6	2	4	-	-	-
MSW343-2R ^{LBR}	1.9*	2.1	2.5	4	1.6	2	4	-	-	-
MSQ492-2 ^{LBR}	2.0*	2.4	2.5	4	1.6	2	4	-	-	-
MSS576-05SPL ^{LBMS}	2.0*	2.2	2.5	8	1.9	2	4	-	-	-
MST117-3Y	2.1*	2.0	2.5	4	2.3	3	4	-	-	-
W8405-1R	2.2*	1.9	2.5	4	2.5	3	4	-	-	-
MSS434-2	2.3*	2.3	2.5	4	2.3	3	4	-	-	-
MSW122-9 ^{LBR}	2.4*	2.4	3	4	2.4	3	4	-	-	-
MSW239-3SPL	2.4*	2.3	3	4	2.5	3	4	-	-	-
MSW437-9	2.4*	2.8	3	4	2.1	3	4	-	-	-
MST065-1 ^{LBMR}	2.5*	2.4	3	4	2.6	3	4	-	-	-
MSW151-9	2.5*	2.5	3	4	2.5	3	4	-	-	-
MSS487-2 ^{LBR}	2.7*	3.3	3.5	4	2.1	3	4	-	-	-
MST020-2Y ^{LBR}	2.7*	2.6	3	4	2.8	4	4	-	-	-
W6234-4Rus	2.7*	2.9	3.5	4	2.5	3	4	-	-	-
MSR216-AP	2.8*	2.8	3.5	4	2.9	3	4	-	-	-
MSW182-1Y	2.8*	2.6	3	4	2.9	4	4	-	-	-
MSS934-4 ^{LBMS}	2.9*	2.9	3	4	2.9	4	4	-	-	-
HSD_{0.05} =		1.5			1.4			1.5		

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

N = Number of replications.

*2-Year Average.

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	2013 RATING	2013 N	FEMALE	MALE
<i>Sorted by ascending 2013 Rating:</i>				
MSV383-1	0.5	1	Pike	MSN238-A
MSV498-1	0.5	1	Snowden	MSQ283-2
MSW474-1	0.5	1	MSN190-2	MSP516-A
MSW536-2P	0.5	1	MI Purple Red Sport	MSN105-1
MSX345-4	0.5	1	MSN191-2Y	McBride
MSY046-3	0.5	1	Manistee	MSS026-2Y
MSY485-1R	0.5	1	MSL211-3	MSS544-1R
MSY558-1Rus	0.5	1	Silverton Russet	Russet Norkotah
MSY573-3Rus	0.5	1	Canela	Goldrush Russet
MST202-5	1.0	1	MSJ147-1	McBride
MST386-1P	1.0	1	Michigan Purple	Liberator
MSU616-2PP	1.0	1	MSQ016-3PP	MSQ016-3PP
MSV310-2	1.0	1	MSN238-A	Marcy
MSV313-2	1.0	1	MSN238-A	OP
MSV397-2	1.0	1	MSQ070-1	MSJ147-1
MSV434-4	1.0	1	MSQ283-2	McBride
MSW044-1	1.0	1	Kalkaska	NY139
MSW069-5	1.0	1	MSK061-4	Marcy
MSW119-2	1.0	1	MSM171-A	MSR036-5
MSW123-3	1.0	1	MSM171-A	Dakota Diamond
MSW502-4	1.0	1	CO9505051-7W	Kalkaska
MSW509-5	1.0	1	Kalkaska	Marcy
MSX035-1WP	1.0	1	Beacon Chipper	ARS10091WP
MSX225-2	1.0	1	MSK061-4	W2133-1
MSX245-2Y	1.0	1	Manistee	McBride
MSX345-6Y	1.0	1	MSN191-2Y	McBride
MSX351-3P	1.0	1	Colonial Purple	MSL211-3
MSX389-2	1.0	1	NY139	MSL268-D
MSX472-2	1.0	1	MSQ070-1	MSP292-7
MSX495-2	1.0	1	Q131-A	Kalkaska
MSX501-5	1.0	1	MSQ176-5	McBride
MSX503-5	1.0	1	MSQ176-5	MSL268-D
MSX526-2	1.0	1	MSR036-5	NY139
MSX920-3	1.0	1	MSK061-4	Atlantic Newleaf
MSY007-10Y	1.0	1	MSP515-2	McBride
MSY007-11	1.0	1	MSP515-2	McBride
MSY022-2	1.0	1	MSS176-1	MST096-2Y
MSY027-2	1.0	1	MST096-2Y	Pike
MSY041-1	1.0	1	Dakota Diamond	MSP368-1
MSY042-1	1.0	1	MSJ147-1	W2133-1
MSY044-1	1.0	1	MSK061-4	MST096-2Y
MSY049-3	1.0	1	MSP270-1	MSQ089-1
MSY077-5	1.0	1	MST220-08	MSR169-8Y
MSY111-1	1.0	1	MSQ086-3	McBride
MSY118-1	1.0	1	MSQ070-1	MSH228-6
MSY136-5	1.0	1	NYL235-4	Snowden
MSY156-2	1.0	1	MSK061-4	Kalkaska
MSY157-1	1.0	1	Kalkaska	MSN191-2Y
MSY167-6	1.0	1	CO95051-7W	MSR102-3
MSY168-4	1.0	1	Boulder	MSS165-2Y
MSY169-4	1.0	1	Boulder	MSR102-3
MSY190-1	1.0	1	MSR058-1	Dakota Diamond
MSY256-B	1.0	1	Kalkaska	Manistee
MSY410-2	1.0	1	MSQ086-3	MSL211-3

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	2013 RATING	2013 N	FEMALE	MALE
<i>Sorted by ascending 2013 Rating:</i>				
MSY436-1	1.0	1	Stirling	MSS544-1R
MSY445-3R	1.0	1	MSS544-1R	Colonial Purple
MSY462-1	1.0	1	MSN230-1RY	MSQ440-2
MSY468-16	1.0	1	NYL235-4	MSL211-3
MSY489-1	1.0	1	MSL211-3	MSQ279-1
MSY517-8YSPL	1.0	1	Spartan Splash	Bison
MSY520-1	1.0	1	MSQ440-2	MSN105-1
MSY527-1R	1.0	1	Colonial Purple	Bison
MSY534-1	1.0	1	MSM171-A	Sherriff
MSY555-1	1.0	1	Silverton Russet	Goldrush Russet
NDU044-1	1.0	1	Ebt 6-5-5	ND 8331Cb-2
QSMSU10-05	1.0	1	MSN106-2	MSL211-3
MSM269-1Y	1.5	1	84SD22	USDA8380-1
MSU379-1	1.5	1	MSP238-1	Missaukee
MSV092-2	1.5	1	McBride	MSP239-1
MSV266-3P	1.5	1	MSQ426-2RR	MSM148-A
MSV307-2	1.5	1	MSN238-A	McBride
MSV393-1	1.5	1	MSQ070-1	MSG227-2
MSW075-7	1.5	1	MSK061-4	W2133-1
MSW100-1	1.5	1	LBR9	MSP292-7
MSW122-3	1.5	1	MSM185-1	MSP085-2
MSW128-2	1.5	1	MSM171-A	MSQ176-5
MSW134-1	1.5	1	Marcy	Dakota Diamond
MSW158-1	1.5	1	Atlantic	MSH228-6
MSW163-3	1.5	1	Atlantic	MSR036-5
MSW206-2P	1.5	1	LBR9	Colonial Purple
MSW450-1	1.5	1	MSK061-4	MSH228-6
MSW509-1	1.5	1	Kalkaska	Marcy
MSW537-6	1.5	1	MSM070-1	MSP516-A
MSX018-2	1.5	1	ARS10342-4	Pike
MSX042-3	1.5	1	Beacon Chipper	NY121
MSX105-1	1.5	1	Dakota Crisp	McBride
MSX142-2	1.5	1	Eva	MSQ176-5
MSX172-7	1.5	1	McBride	W2133-1
MSX199-3	1.5	1	Missaukee	W2133-1
MSX241-2	1.5	1	Kalkaska	W2310-3
MSX255-1	1.5	1	MSM171-A	ARS10342-4
MSX324-1P	1.5	1	MSN105-1	Colonial Purple
MSX324-2R	1.5	1	MSN105-1	Colonial Purple
MSX417-1	1.5	1	MSJ147-1	OP
MSX426-1RR	1.5	1	OPRRC	Q558-2RR
MSX506-3	1.5	1	MSQ176-5	MSR169-8Y
MSX526-1	1.5	1	MSR036-5	NY139
MSX569-1R	1.5	1	MSS002-2R	MSS544-1R
MSY006-2	1.5	1	MSM037-3	MSN191-2Y
MSY007-4Y	1.5	1	MSP515-2	McBride
MSY008-3	1.5	1	MSP515-2	Manistee
MSY026-2	1.5	1	MST096-2Y	MSN191-2Y
MSY032-6	1.5	1	W5015-12	MSN191-2Y
MSY078-1	1.5	1	MST220-08	MSP368-1
MSY087-4	1.5	1	MSS176-1	MSR161-2
MSY117-A	1.5	1	MSQ070-1	MSH228-6
MSY136-4	1.5	1	NYL235-4	Snowden
MSY137-7	1.5	1	MSP270-1	MSR102-3

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	2013 RATING	2013 N	FEMALE	MALE
<i>Sorted by ascending 2013 Rating:</i>				
MSY145-1	1.5	1	Manistee	MSN191-2Y
MSY157-11Y	1.5	1	Kalkaska	MSN191-2Y
MSY160-3	1.5	1	Dakota Diamond	CO97065-7W
MSY192-2PP	1.5	1	Q405-1PP	MSQ461-2PP
MSY193-1	1.5	1	MSQ279-1	B2731-2
MSY225-1Y	1.5	1	ND01496S1-B	McBride
MSY240-1	1.5	1	MSL505-3	P459-5
MSY408-1RY	1.5	1	MSN230-1RY	MN96013-1RY
MSY431-2PY	1.5	1	Spartan Splash	MSN230-1RY
MSY432-1	1.5	1	MSR157-1Y	MSN105-1
MSY452-1	1.5	1	MSQ176-5	MSL211-3
MSY452-5	1.5	1	MSQ176-5	MSL211-3
MSY474-11	1.5	1	MSM182-1	Haig Ind 98
MSY480-3RY	1.5	1	MN96013-1RY	MSS544-1R
MSY487-2	1.5	1	MSL211-3	MSQ440-2
MSY515-1	1.5	1	Reba	Haig Ind 98
MSY532-1	1.5	1	MSM182-1	MSQ086-3
MSY536-2RY	1.5	1	MN96013-1RY	MSN230-1RY
MSY557-2Y	1.5	1	Torridon	Silverton Russet
ND4044-2	1.5	1		
QSMSU10-15	1.5	1	MSN106-2	MSL211-3
MSW153-1	1.6	1	1989-86061	MSI152-A
MSW263-5	1.6	1	MSN105-1	Picasso
MSL505-3	2.0	1	B3692-4	8380-1 chc, 4x
MSL512-6	2.0	1	B9335-3	8380-1 chc, 4x
MSM269-HORG	2.0	1	84SD22	USDA8380-1
MSM270-BY	2.0	1	84SD22	W5337.3
MSU016-2	2.0	1	Boulder	MSN105-1
MSU200-5PP	2.0	1	MSN111-4PP	NDTX4271-5R
MSU202-1P	2.0	1	Colonial Purple	MSL211-3
MSV146-1	2.0	1	Keuka Gold	Malinche
MSV179-6	2.0	1	LBR8	MSL211-3
MSV283-2P	2.0	1	Montserrat	Colonial Purple
MSV284-1	2.0	1	Montserrat	MSP239-1
MSV289-2P	2.0	1	Montanosa	Colonial Purple
MSV305-1PP	2.0	1	Colonial Purple	MSQ480-7RR
MSV434-1Y	2.0	1	MSQ283-2	McBride
MSW068-4	2.0	1	MSK061-4	MSM246-B
MSW111-1	2.0	1	MSL505-3	MSR061-1
MSW125-3	2.0	1	MSM171-A	MSL211-3
MSW138-2	2.0	1	MegaChip	Eva
MSW151-5	2.0	1	Montanosa	MSL211-3
MSW151-9	2.0	1	Montanosa	MSL211-3
MSW154-4	2.0	1	1989-86061	MSL211-3
MSW159-3	2.0	1	Atlantic	Kalkaska
MSW239-3	2.0	1	NDTX4271-5R	Picasso
MSW252-2	2.0	1	MSP516-A	OP
MSW299-2	2.0	1	MSP516-A	MSR061-1
MSW343-2R	2.0	1	MSQ440-2	NDTX4271-5R
MSW394-1	2.0	1	W2133-1	MSJ319-1
MSW410-12Y	2.0	1	E69-6	MSN105-1
MSW418-1	2.0	1	RB G227-2	MSJ319-1
MSW418-2	2.0	1	RB G227-2	MSJ319-1
MSW476-4R	2.0	1	N230-6RY	NDTX4271-5R

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	2013	2013	FEMALE	MALE
	RATING	N		
<i>Sorted by ascending 2013 Rating:</i>				
MSW485-2	2.0	1	MSQ070-1	MSR156-7
MSW501-5	2.0	1	Boulder	White Pearl
MSX001-4WP	2.0	1	ARS10091WP	MSL211-3
MSX001-9WP	2.0	1	ARS10091WP	MSL211-3
MSX007-4RR	2.0	1	ARS10117RR	Raspberry
MSX009-2	2.0	1	ARS10241-2	Missaukee
MSX010-3	2.0	1	ARS10241-2	MSL211-3
MSX011-4	2.0	1	ARS10241-2	MSN105-1
MSX050-1	2.0	1	Beacon Chipper	W2133-1
MSX120-5Y	2.0	1	Dakota Diamond	McBride
MSX129-1	2.0	1	Dakota Diamond	MSN191-2Y
MSX137-6	2.0	1	Eva	MSL211-3
MSX150-1	2.0	1	MSH228-6	MSM246-B
MSX196-1	2.0	1	Missaukee	Manistee
MSX198-5	2.0	1	Missaukee	OP
MSX221-1	2.0	1	MSK061-4	MSR036-5
MSX239-8	2.0	1	Kalkaska	MSS026-2Y
MSX293-1Y	2.0	1	MSM288-2Y	MSQ176-5
MSX295-1Y	2.0	1	MSM288-2Y	MSR160-2Y
MSX304-2	2.0	1	MegaChip	Manistee
MSX411-4	2.0	1	MSP292-7	OP
MSX420-2Y	2.0	1	MSN191-2Y	OP
MSX469-2	2.0	1	MSQ070-1	OP
MSX496-2	2.0	1	Q131-A	MSL211-3
MSX517-3SPL	2.0	1	Spartan Splash	MSQ176-5
MSX540-4	2.0	1	MSR061-1	NY139
MSX542-2	2.0	1	MSR102-3	Megachip
MSX618-1P	2.0	1	MSS544-1R	Colonial Purple
MSX654-2	2.0	1	Torridon	MSL211-3
MSXUNK-3P	2.0	1	Unknown Purple	
MSY001-3	2.0	1	Boulder	Manistee
MSY001-4	2.0	1	Boulder	Manistee
MSY001-8	2.0	1	Boulder	Manistee
MSY012-2	2.0	1	MSQ070-1	ND8304-2
MSY015-1	2.0	1	MSQ070-1	MSS934-4
MSY017-3	2.0	1	MSQ086-3	Pike
MSY018-3PP	2.0	1	MSQ461-2PP	MSN191-2Y
MSY028-4Y	2.0	1	MST096-2Y	MSR169-8Y
MSY038-1	2.0	1	Boulder	Atlantic
MSY059-1Y	2.0	1	MSQ089-1	MSS165-2Y
MSY061-1	2.0	1	MSQ134-5	MSR102-3
MSY079-2	2.0	1	MST220-08	MSK476-1
MSY089-2	2.0	1	MSS176-1	B2731-2
MSY090-1	2.0	1	MSS165-2Y	MSS026-2Y
MSY091-2	2.0	1	MSS165-2Y	ND7519-1
MSY093-4	2.0	1	MSS026-2Y	MSR102-3
MSY095-2	2.0	1	Superior	MSN191-2Y
MSY100-2	2.0	1	MSR157-1Y	MSR102-3
MSY108-4	2.0	1	MSR058-1	Pike
MSY135-2	2.0	1	MSN148-A	MSR102-3
MSY137-2	2.0	1	MSP270-1	MSR102-3
MSY157-5	2.0	1	Kalkaska	MSN191-2Y
MSY159-1	2.0	1	MSH228-6	CO97065-7W
MSY164-1	2.0	1	CO97065-7W	Manistee

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	2013 RATING	2013 N	FEMALE	MALE
<i>Sorted by ascending 2013 Rating:</i>				
MSY164-4	2.0	1	CO97065-7W	Manistee
MSY168-1	2.0	1	Boulder	MSS165-2Y
MSY168-2Y	2.0	1	Boulder	MSS165-2Y
MSY175-1	2.0	1	Atlantic	MSQ089-1
MSY188-1	2.0	1	MSR169-8Y	MegaChip
MSY188-2	2.0	1	MSR169-8Y	MegaChip
MSY193-2	2.0	1	MSQ279-1	B2731-2
MSY225-7	2.0	1	ND01496S1-B	McBride
MSY229-1	2.0	1	M137-2	Sherriff
MSY237-3	2.0	1	MegaChip	McBride
MSY269-1Y	2.0	1	McBride	ND7519-1
MSY271-13	2.0	1	McBride	CO97065-7W
MSY271-15	2.0	1	McBride	CO97065-7W
MSY413-4	2.0	1	Reba	MSL211-3
MSY413-5	2.0	1	Reba	MSL211-3
MSY414-3Y	2.0	1	Reba	Penta
MSY426-4	2.0	1	NDTX4271-5R	Colonial Purple
MSY437-1	2.0	1	Torridon	MSQ440-2
MSY450-1	2.0	1	Spartan Splash	MSS544-1R
MSY456-1	2.0	1	MSQ070-1	MSL211-3
MSY466-3	2.0	1	MSN105-1	MSQ440-2
MSY468-13	2.0	1	NYL235-4	MSL211-3
MSY474-08	2.0	1	MSM182-1	Haig Ind 98
MSY483-11	2.0	1	MSL505-3	MSN105-1
MSY491-2Y	2.0	1	MSL183-AY	MSL211-3
MSY498-1	2.0	1	MST033-2	MSN105-1
MSY507-2	2.0	1	Superior	MSL211-3
MSY511-9	2.0	1	MSR157-1Y	MSQ440-2
MSY517-6SPL	2.0	1	Spartan Splash	Bison
MSY520-3	2.0	1	MSQ440-2	MSN105-1
MSY529-1SPL	2.0	1	NDTX4271-5R	Picasso
MSY544-5R	2.0	1	Bison	MSS544-1R
MSY617-2	2.0	1	RBE69.6	Sb-Rpi 2122
MSY628-1	2.0	1	RB G227-2	MSQ440-2
MSV158-2	2.5	1	King Harry	Missaukee
MSV234-1	2.5	1	Malinche	MSN105-1
MSW027-1	2.5	1	Eva	MSQ176-5
MSW042-1	2.5	1	MSMSI152-A	MSL211-3
MSW097-5Y	2.5	1	LBR9	MSM288-2Y
MSW122-9	2.5	1	MSM185-1	MSP085-2
MSW164-2	2.5	1	Atlantic	MSR061-1
MSW182-1Y	2.5	1	MSI005-20Y	POR02PG7-5
MSW198-1Y	2.5	1	MSK498-1	Malinche
MSW259-6	2.5	1	N073-2	MSR159-2
MSW294-1	2.5	1	MSP292-7	MSH228-6
MSW298-4Y	2.5	1	MSP408-10Y	MSL211-3
MSW432-13	2.5	1	Boulder	MSI152-A
MSW437-9	2.5	1	Boulder	MSR036-5
MSW443-3	2.5	1	Kalkaska	OP
MSW500-4	2.5	1	Boulder	MSP516-A
MSW501-2	2.5	1	Boulder	White Pearl
MSW556-1	2.5	1	MSP102-5	MSL505-3
MSX021-1	2.5	1	Atlantic	MSH228-6
MSX104-2Rus	2.5	1	Canela Rus.	Goldrush Russet

Table 8

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI

LINE	2013 RATING	2013 N	FEMALE	MALE
<i>Sorted by ascending 2013 Rating:</i>				
MSX111-3	2.5	1	Dakota Crisp	MSN191-2Y
MSX156-1Y	2.5	1	MSI005-20Y	Boulder
MSX240-3	2.5	1	Kalkaska	W2133-1
MSX245-1	2.5	1	Manistee	McBride
MSX277-1	2.5	1	MSM246-B	MSJ147-1
MSX292-4Y	2.5	1	MSM288-2Y	MSQ134-5
MSX497-6	2.5	1	Q131-A	MSL268-D
MSX517-5Y	2.5	1	Spartan Splash	MSQ176-5
MSX921-1	2.5	1	MSK409-1	Atlantic Newleaf
MSX929-2	2.5	1	MegaChip	Atlantic Newleaf
MSY012-1	2.5	1	MSQ070-1	ND8304-2
MSY047-1	2.5	1	MSN170-A	Manistee
MSY055-4	2.5	1	MSQ035-3	MegaChip
MSY058-2	2.5	1	MSQ089-1	MSR102-3
MSY071-1	2.5	1	MST220-08	MSR102-3
MSY084-1	2.5	1	MSS927-1	MSR102-3
MSY149-1	2.5	1	MSK061-4	MSR102-3
MSY155-4	2.5	1	MSK061-4	MSL211-3
MSY159-8	2.5	1	MSH228-6	CO97065-7W
MSY192-4PP	2.5	1	Q405-1PP	MSQ461-2PP
MSY235-5	2.5	1	MSM037-3	CO97065-7W
MSY237-A	2.5	1	MegaChip	McBride
MSY239-1	2.5	1	MSL505-3	Reba
MSY256-A	2.5	1	Kalkaska	Manistee
MSY269-3	2.5	1	McBride	ND7519-1
MSY435-2R	2.5	1	MSS544-1R	Bison
MSY468-07	2.5	1	NYL235-4	MSL211-3
MSY468-09	2.5	1	NYL235-4	MSL211-3
MSY487-1	2.5	1	MSL211-3	MSQ440-2
MSY487-10	2.5	1	MSL211-3	MSQ440-2
NY121	2.5	1		
QSND5407-1R	2.5	1		
MSV165-1	3.0	1	Kufri Jeevan	MSL211-3
MSW122-12	3.0	1	MSM185-1	MSP085-2
MSW148-1P	3.0	1	Michigan Purple	MSP516-A
MSW273-3R	3.0	1	NDTX4271-5R	MSN105-1
MSW326-6	3.0	1	MSQ070-1	MSN190-2
MSW360-18	3.0	1	MSR061-1	MSN238-A
MSW360-18	3.0	1	MSR061-1	MSN238-A
MSW424-5Y	3.0	1	RH	MSS187-02
MSX157-4Y	3.0	1	MSI005-20Y	MSMSM288-2Y
MSX208-2	3.0	1	MSK061-4	MSM246-B
MSX269-4Y	3.0	1	MSM182-1	MSL268-D
MSX271-6R	3.0	1	MSM182-1	NDTX4271-5R scab
MSX292-1	3.0	1	MSM288-2Y	MSQ134-5
MSX432-1	3.0	1	MSP292-7	MSM246-B
MSX467-1	3.0	1	MSQ070-1	NY139
MSX507-1R	3.0	1	MSQ176-5	MSR219-2R
MSX520-1PP	3.0	1	MSQ461-2PP	Colonial Purple
MSY034-5	3.0	1	Atlantic	NY121
MSY096-1	3.0	1	Snowden	MSN191-2Y
MSY104-1	3.0	1	MSR061-1	Boulder
MSY158-6	3.0	1	Kalkaska	MSM246-B
MSY160-2	3.0	1	Dakota Diamond	CO97065-7W

Table 8

**2013 SCAB DISEASE EARLY GENERATION TRIAL SUMMARY
SCAB NURSERY, MONTCALM RESEARCH CENTER , MI**

LINE	2013	2013	FEMALE	MALE
	RATING	N		
<i>Sorted by ascending 2013 Rating:</i>				
MSY164-2	3.0	1	CO97065-7W	Manistee
MSY431-3RY	3.0	1	Spartan Splash	MSN230-1RY
MSY494-6	3.0	1	Dakota Diamond	MSL211-3
MSY505-1	3.0	1	MSS483-1	MSQ440-2
MSY535-1	3.0	1	MSM137-2	Stirling
MSY536-5RY	3.0	1	MN96013-1RY	MSN230-1RY
MSY569-1RUSY	3.0	1	Torridon	CO99053-3RUS
MSY174-3	3.5	1	Atlantic	MSS026-2Y
MSY242-2	3.5	1	Manistee	CO97065-7W
MSY483-02	3.5	1	MSL505-3	MSN105-1
MSW276-2	4.0	1	MSP084-3	MSL505-3
MSY438-2	4.0	1	Torridon	MSN105-1

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

Table 9

2013 MSU LATE BLIGHT VARIETY TRIAL
CLARKSVILLE RESEARCH CENTER, MI

<i>Line Sort:</i>				<i>RAUDPC Sort:</i>				
LINE	N	RAUDPC ¹ MEAN	*	LINE	N	RAUDPC ¹ MEAN	Female	Male
A01010-1	3	5.4	LBS	MSQ440-2	3	0.1	LBR K214-1R	Missaukee
A02062-ITE	3	5.8	LBS	MSL211-3	3	0.2	LBR G301-9	G274-3
A02507-2LB	3	2.5	LBMS	MSQ176-5	3	0.2	LBR I152-A	Missaukee
A03158-2TE	3	4.2	LBS	MST020-2Y	2	0.2	LBR ARS4070-16Y	G004-3
A07008-4T	3	4.3	LBS	MSW324-1	3	0.2	LBR Q070-1	Marcy
A071012-4BF	3	4.9	LBS	MSQ492-2	3	0.2	LBR Pike	Missaukee
A07103-IT	3	3.6	LBS	MSS487-2	3	0.2	LBR Stirling	Missaukee
A99029-3E (RVS)	3	3.9	LBMS	MSS070-B	3	0.3	LBR MN-E65	L211-3
Atlantic	3	7.2	LBS	MSS483-1	3	0.3	LBR M171-A	Missaukee
C004220-7RUS	3	6.5	LBS	MSW122-9	3	0.3	LBR M185-1	P085-2
C004233-1RUS	3	6.5	LBS	MSP497-1	3	0.3	LBR J456-4	NY120
C005024-11RUS	3	3.2	LBMS	MSQ089-1	3	0.3	LBR A91790-13	Missaukee
C005040-1RUS	3	6.1	LBS	MST359-3	3	0.3	LBR M185-1	Missaukee
C005068-1RUS	3	2.4	LBMS	MSS176-1	3	0.4	LBR ND5822C-7	L211-3
C005110-6RUS	3	8.6	LBS	MSV111-2	3	0.4	LBR J316-A	N105-1
C005132-2RUS	3	21.2	LBS	MSP516-A	3	0.5	LBR Pike	Missaukee
C005149-1RUS	3	8.2	LBS	LBR8	3	0.6	LBR	
C005152-5RUS	3	4.7	LBS	MSM182-1	3	0.6	LBR Stirling	NY121
C005175-1RU	3	2.6	LBMS	MSW343-2R	3	0.6	LBR Q440-2	NDTX4271-5R
C005189-2RUS	3	8.3	LBS	MSQ130-4	3	0.7	LBR Boulder	J456-4Y
C005189-3RUS	3	5.4	LBS	MSW078-1	1	0.8	LBR K409-1	Malinche
CV00088-3	3	5.1	LBS	MST500-1	3	0.8	LBMR Stirling	Boulder
CV02321-1	3	7.8	LBS	MSR148-4	3	1.0	LBMR I152-A	Dakota Pearl
CV98173-4	3	4.8	LBS	MST065-1	3	1.0	LBMR Boulder	L211-3
Elkton	3	4.2	LBS	MSS206-2	3	1.1	LBR Beacon Chipper	Missaukee
FL1879	3	6.7	LBS	MSN109-6RR	3	1.2	LBMR G147-3P	I201-2PY
Lamoka	3	6.4	LBS	NY140	6	1.5	LBMR	
LBR8	3	0.6	LBR	MSQ131-A	3	1.5	LBMS F373-8	Missaukee
McBride	3	6.5	LBS	MSW100-1	3	1.5	LBR LBR9	P292-7
MN100013PLWR-04	3	7.4	LBS	MSW153-1	3	1.6	LBMS 1989-86061	I152-A
MN10001PLWR-01R	3	7.7	LBS	W5015-5	3	1.6	LBMS	
MN10003PLWR-04	6	14.3	LBS	MSS108-1	3	1.9	LBMR McBride	Stirling
MN10020PLWR-08R	3	5.8	LBS	MSW128-2	6	2.1	LBMS M171-A	Q176-5
MSL211-3	3	0.2	LBR	C005068-1RUS	3	2.4	LBMS	
MSM182-1	3	0.6	LBR	MSW360-18	3	2.4	LBMS R061-1	N238-A
MSN109-6RR	3	1.2	LBMR	A02507-2LB	3	2.5	LBMS	
MSP497-1	3	0.3	LBR	MSS576-05SPL	3	2.6	LBMS I005-20Y	L211-3
MSP516-A	3	0.5	LBR	C005175-1RU	3	2.6	LBMS	
MSQ086-3	3	4.9	LBS	MSR186-3P	3	2.7	LBMS MN19525R	K034-1
MSQ089-1	3	0.3	LBR	MSS934-4	3	3.1	LBMS ND6095-1	ND7377Cb-1
MSQ130-4	3	0.7	LBR	MSR161-2	3	3.2	LBMS Stirling	McBride
MSQ131-A	3	1.5	LBMS	C005024-11RUS	3	3.2	LBMS	
MSQ176-5	3	0.2	LBR	W8152-1RUS	3	3.4	LBS	
MSQ440-2	3	0.1	LBR	Red Pontiac	3	3.4	LBS	
MSQ492-2	3	0.2	LBR	MSV093-1	3	3.5	LBMS McBride	P408-14Y
MSR057-4	3	6.1	LBS	W6234-4RUS	3	3.5	LBS	
MSR128-4Y	3	4.3	LBS	A07103-IT	3	3.6	LBS	
MSR148-4	3	1.0	LBMR	Snowden	6	3.6	LBS	
MSR157-1Y	3	3.8	LBS	MSS165-2Y	3	3.8	LBMS M188-1	L159-AY
MSR161-2	3	3.2	LBMS	MST252-1Y	3	3.8	LBS L024-AY	L211-3
MSR186-3P	3	2.7	LBMS	MSR157-1Y	3	3.8	LBS Jacqueline Lee	J316-A
MSR214-2P	3	3.9	LBS	A99029-3E (RVS)	3	3.9	LBMS	
MSR216-AP	6	3.9	LBS	MSR214-2P	3	3.9	LBS ND5084-3R	J317-1
MSS070-B	3	0.3	LBR	MSR216-AP	6	3.9	LBS NDC5281-2R	J317-1
MSS108-1	3	1.9	LBMR	Elkton	3	4.2	LBS	
MSS165-2Y	3	3.8	LBMS	MSW151-9	3	4.2	LBS	
MSS176-1	3	0.4	LBR	A03158-2TE	3	4.2	LBS	
MSS206-2	3	1.1	LBR	A07008-4T	3	4.3	LBS	
MSS297-3	3	10.0	LBS	MSR128-4Y	3	4.3	LBS J167-1	McBride

**2013 MSU LATE BLIGHT VARIETY TRIAL
CLARKSVILLE RESEARCH CENTER, MI**

Line Sort:

RAUDPC Sort:

LINE	N	RAUDPC ¹		LINE	N	RAUDPC ¹		Female	Male
		MEAN	*			MEAN			
MSS434-2	3	9.0	LBS	MSW125-3	3	4.6	LBS	M171-A	L211-3
MSS483-1	3	0.3	LBR	QSMSU10-15	3	4.6	LBS		
MSS487-2	3	0.2	LBR	C005152-5RUS	3	4.7	LBS		
MSS576-05SPL	3	2.6	LBMS	CV98173-4	3	4.8	LBS		
MSS582-2SPL	6	7.0	LBS	Russet Burbank	3	4.9	LBS		
MSS927-1	3	5.4	LBS	A071012-4BF	3	4.9	LBS		
MSS934-4	3	3.1	LBMS	MSQ086-3	3	4.9	LBS	Onaway	Missaukee
MST020-2Y	2	0.2	LBR	Silverton Russet	3	4.9	LBS		
MST065-1	3	1.0	LBMR	MST458-4	3	5.1	LBS	Pike	Missaukee
MST148-3	3	5.3	LBS	CV00088-3	3	5.1	LBS		
MST252-1Y	3	3.8	LBS	MST148-3	3	5.3	LBS	I152-A	Yukon Gold
MST359-3	3	0.3	LBR	A01010-1	3	5.4	LBS		
MST458-4	3	5.1	LBS	C005189-3RUS	3	5.4	LBS		
MST500-1	3	0.8	LBMR	MSS927-1	3	5.4	LBS	ND4350-3	ND7799C-1
MSV093-1	3	3.5	LBMS	WS955-1	3	5.5	LBS		
MSV111-2	3	0.4	LBR	A02062-ITE	3	5.8	LBS		
MSV179-1	3	5.9	LBS	MN10020PLWR-08R	3	5.8	LBS		
MSV235-2PY	3	6.4	LBS	MSV179-1	3	5.9	LBS	LBR8	L211-3
MSW078-1	1	0.8	LBR	ND7799C-1	2	6.1	LBS		
MSW100-1	3	1.5	LBR	MSR057-4	3	6.1	LBS	Stirling	Liberator (A091-1)
MSW122-9	3	0.3	LBR	C005040-1RUS	3	6.1	LBS		
MSW125-3	3	4.6	LBS	W9133-1RUS	3	6.2	LBS		
MSW128-2	6	2.1	LBMS	Norvalley	3	6.2	LBS		
MSW151-9	3	4.2	LBS	MSV235-2PY	3	6.4	LBS	Malinche	Colonial Purple
MSW153-1	3	1.6	LBMS	Lamoka	3	6.4	LBS		
MSW324-1	3	0.2	LBR	C004233-1RUS	3	6.5	LBS		
MSW343-2R	3	0.6	LBR	C004220-7RU	3	6.5	LBS		
MSW360-18	3	2.4	LBMS	McBride	3	6.5	LBS	Penta	OP
ND6002-1R	3	8.1	LBS	W8405-1R	3	6.5	LBS		
ND7132-1R	3	10.5	LBS	W6002-1R	3	6.6	LBS		
ND7799C-1	2	6.1	LBS	FL1879	3	6.7	LBS		
ND7982-1R	3	9.7	LBS	NY153	3	6.7	LBS		
Norvalley	3	6.2	LBS	MSS582-2SPL	6	7.0	LBS	Purple Haze	L211-3
NY140	6	1.5	LBMR	Russet Norkotah	3	7.0	LBS		
NY153	3	6.7	LBS	Atlantic	3	7.2	LBS		
QSMSU08-04	3	8.3	LBS	Red Norland	3	7.4	LBS		
QSMSU10-09	3	10.3	LBS	MN100013PLWR-04	3	7.4	LBS		
QSMSU10-15	3	4.6	LBS	MN10001PLWR-01R	3	7.7	LBS		
Red Norland	3	7.4	LBS	CV02321-1	3	7.8	LBS		
Red Pontiac	3	3.4	LBS	ND6002-1R	3	8.1	LBS		
Russet Burbank	3	4.9	LBS	C005149-1RUS	3	8.2	LBS		
Russet Norkotah	3	7.0	LBS	QSMSU08-04	3	8.3	LBS		
Silverton Russet	3	4.9	LBS	C005189-2RUS	3	8.3	LBS		
Snowden	6	3.6	LBS	C005110-6RUS	3	8.6	LBS		
W5015-5	3	1.6	LBMS	MSS434-2	3	9.0	LBS	MS716-15	NY123
W5955-1	3	5.5	LBS	ND7982-1R	3	9.7	LBS		
W6002-1R	3	6.6	LBS	MSS297-3	3	10.0	LBS	J147-1	M066-4
W6234-4RUS	3	3.5	LBS	QSMSU10-09	3	10.3	LBS		
W8152-1RUS	3	3.4	LBS	ND7132-1R	3	10.5	LBS		
W8405-1R	3	6.5	LBS	MN10003PLWR-04	6	14.3	LBS		
W9133-1RUS	3	6.2	LBS	C005132-2RUS	3	21.2	LBS		

HSD_{0.05}

9.4

9.4

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

*LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible

LB Isolates used: US-22 & US-23

Table 10

2013 NATIONAL LATE BLIGHT VARIETY TRIAL
CLARKSVILLE RESEARCH CENTER, MI

<i>Line Sort:</i>				<i>RAUDPC Sort:</i>					
LINE	N	RAUDPC ¹ MEAN	*	LINE	N	RAUDPC ¹ MEAN		Female	Male
A02138-2	3	6.4	LBS	MSS487-2	3	0.0	LBR	Stirling	Missaukee
A02424-83LB	3	1.8	LBMS	B0692-4	3	0.3	LBR		
A02507-2LB	3	2.9	LBMS	AF4696-1	3	0.4	LBR		
A03158-2TE	3	5.2	LBS	B0718-3	2	1.1	LBMR		
A07426-8LB	3	4.6	LBS	AF4692-1	3	1.6	LBMR		
AC01151-5W	3	5.6	LBS	A02424-83LB	3	1.8	LBMS		
AC03433-1W	3	2.8	LBMS	AF4573-2	3	1.8	LBMR		
AF4573-2	3	1.8	LBMR	AF4615-5	3	2.1	LBMS		
AF4615-5	3	2.1	LBMS	MSS934-4	3	2.3	LBMS	ND6095-1	ND7377Cb-1
AF4677-1	3	3.3	LBS	MSS165-2Y	2	2.3	LBMS	MSM188-1	MSL159-AY
AF4692-1	3	1.6	LBMR	MSR058-1	3	2.3	LBMS	W1201	MSJ319-1
AF4696-1	3	0.4	LBR	AC03433-1W	3	2.8	LBMS		
ATX91137-1RU	3	4.8	LBS	A02507-2LB	3	2.9	LBMS		
B0692-4	3	0.3	LBR	AF4677-1	3	3.3	LBS		
B0718-3	2	1.1	LBMR	A07426-8LB	3	4.6	LBS		
B2827-13	3	5.3	LBS	MSQ086-3	3	4.7	LBS	Onaway	Missaukee
B2834-8	3	5.7	LBS	CO03276-5RU	3	4.8	LBS		
BNC182-5	3	4.9	LBS	ATX91137-1RU	3	4.8	LBS		
CO03276-5RU	3	4.8	LBS	BNC182-5	3	4.9	LBS		
CO04067-8R/Y	3	5.3	LBS	A03158-2TE	3	5.2	LBS		
MSQ086-3	3	4.7	LBS	B2827-13	3	5.3	LBS		
MSR058-1	3	2.3	LBMS	CO04067-8R/Y	3	5.3	LBS		
MSS165-2Y	2	2.3	LBMS	AC01151-5W	3	5.6	LBS		
MSS487-2	3	0.0	LBR	B2834-8	3	5.7	LBS		
MSS934-4	3	2.3	LBMS	Sierra Rose	3	6.0	LBS		
Sierra Rose	3	6.0	LBS	A02138-2	3	6.4	LBS		
HSD _{0.05}		3.1				3.1			

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

*LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible
LB Isolates used: US-22 & US-23

Table 11

2013 LATE BLIGHT EARLY GENERATION TRIALS
CLARKSVILLE RESEARCH CENTER, MI

<i>Line Sort:</i>				<i>RAUDPC Sort:</i>					
LINE	N	RAUDPC ¹ MEAN	*	LINE	N	RAUDPC ¹ MEAN	Female	Male	
NY121	EG	0.1	LBR	MSV146-1	EG	0.0	LBR Keuka Gold (NY 101)	Malinche	
MSU379-1	EG	1.4	LBMR	MSV283-2P	EG	0.0	LBR Monserrat	Colonial Purple	
MSV146-1	EG	0.0	LBR	MSW151-5	EG	0.0	LBR Montanosa	MSL211-3	
MSV158-2	EG	1.9	LBMS	MSW418-1	EG	0.0	LBR RB G227-2	MSJ319-1	
MSV165-1	EG	1.3	LBMR	MSX142-2	EG	0.0	LBR Eva	MSQ176-5	
MSV179-6	EG	0.6	LBMR	MSX198-5	EG	0.0	LBR Missaukee	OP	
MSV283-2P	EG	0.0	LBR	MSX269-4Y	EG	0.0	LBR MSM182-1	MSN105-1	
MSV284-1	EG	0.1	LBR	MSX293-1Y	EG	0.0	LBR MSM288-2Y	MSQ176-5	
MSV289-2P	EG	3.4	LBS	MSX324-2R	EG	0.0	LBR MSN105-1	Colonial Purple	
MSW042-1	EG	0.9	LBMR	MSX389-2	EG	0.0	LBR Lamoka	MSL268-D	
MSW097-5Y	EG	0.2	LBR	MSX495-2	EG	0.0	LBR MSQ131-A	Kalkaska	
MSW100-1	EG	0.5	LBR	MSX497-6	EG	0.0	LBR MSQ131-A	MSL268-D	
MSW111-1	EG	1.1	LBMR	MSX507-1R	EG	0.0	LBR MSQ176-5	MSR219-2R	
MSW119-2	EG	0.4	LBR	MSX517-3SPL	EG	0.0	LBR Spartan Splash	MSQ176-5	
MSW123-3	EG	3.6	LBS	MSY491-2Y	EG	0.0	LBR MSL183-AY	MSL211-3	
MSW125-3	EG	2.8	LBMS	MSY501-1Y	EG	0.0	LBR Torridon	MSL268-D	
MSW151-5	EG	0.0	LBR	MSY535-1	EG	0.0	LBR MSM137-2	Stirling	
MSW151-9	EG	1.6	LBMR	MSY543-2	EG	0.0	LBR Dakota Diamond	MSL211-3	
MSW154-4	EG	0.1	LBR	MSY628-1	EG	0.0	LBR RB G227-2	MSQ440-2	
MSW182-1Y	EG	1.4	LBMR	MSV284-1	EG	0.1	LBR Monserrat	MSP239-1	
MSW198-1Y	EG	2.7	LBMS	MSX496-2	EG	0.1	LBR MSQ131-A	MSL211-3	
MSW206-2P	EG	1.3	LBR	MSY118-1	EG	0.1	LBR MSQ070-1	MSH228-6	
MSW252-2	EG	1.9	LBMS	NY121	EG	0.1	LBR		
MSW343-2R	EG	1.0	LBR	MSW154-4	EG	0.1	LBR 1989-86061	MSL211-3	
MSW418-1	EG	0.0	LBR	MSX542-2	EG	0.1	LBR MSR102-3	Megachip	
MSW418-2	EG	0.6	LVMR	MSY534-1	EG	0.2	LBR MSM171-A	Sherriff	
MSW443-3	EG	4.4	LBS	MSW097-5Y	EG	0.2	LBR LBR9	MSM288-2Y	
MSX001-4WP	EG	2.0	LBMS	MSY474-11	EG	0.2	LBR MSM182-1	Haig Ind 98	
MSX009-2	EG	1.3	LBMR	MSY507-2	EG	0.2	LBR Superior	MSL211-3	
MSX010-3	EG	2.8	LBMS	MSX324-1P	EG	0.3	LBR MSN105-1	Colonial Purple	
MSX137-6	EG	4.7	LBS	MSY527-1R	EG	0.3	LBR Colonial Purple	Bison	
MSX142-2	EG	0.0	LBR	MSY452-1	EG	0.3	LBR MSQ176-5	MSL211-3	
MSX196-1	EG	1.3	LBMR	MSY515-1	EG	0.3	LBR Reba	Haig Ind 98	
MSX198-5	EG	0.0	LBR	MSW119-2	EG	0.4	LBR MSM171-A	MSR036-5	
MSX199-3	EG	1.3	LBMR	MSW100-1	EG	0.5	LBR LBR9	MSP292-7	
MSX221-1	EG	1.3	LBMR	MSV179-6	EG	0.6	LBMR LBR8	MSL211-3	
MSX255-1	EG	1.6	LBMR	MSW418-2	EG	0.6	LBMR RB G227-2	MSJ319-1	
MSX269-4Y	EG	0.0	LBR	MSX271-6R	EG	0.6	LBMR MSM182-1	NDTX4271-5R	
MSX271-6R	EG	0.6	LBMR	MSY436-1	EG	0.6	LBMR Stirling	MSS544-1R	
MSX292-1	EG	2.7	LBMS	MSY437-1	EG	0.6	LBMR Torridon	MSQ440-2	
MSX293-1Y	EG	0.0	LBR	MSY489-1	EG	0.6	LBMR MSL211-3	MSQ279-1	
MSX295-1Y	EG	2.2	LBMS	MSX540-4	EG	0.8	LBMR MSR061-1	Lamoka	
MSX324-1P	EG	0.3	LBR	MSW042-1	EG	0.9	LBMR MSI152-A	MSL211-3	
MSX324-2R	EG	0.0	LBR	MSX501-5	EG	0.9	LBMR MSQ176-5	McBride	
MSX351-3P	EG	2.8	LBMS	MSY474-08	EG	0.9	LBMR MSM182-1	Haig Ind 98	
MSX389-2	EG	0.0	LBR	MSW343-2R	EG	1.0	LBMR MSQ440-2	NDTX4271-5R	
MSX467-1	EG	3.5	LBS	MSW111-1	EG	1.1	LBMR MSL505-3	MSR061-1	
MSX469-2	EG	3.1	LBS	MSV165-1	EG	1.3	LBMR Kufri Jeevan	MSL211-3	
MSX472-2	EG	3.5	LBS	MSW206-2P	EG	1.3	LBMR LBR9	Colonial Purple	
MSX495-2	EG	0.0	LBR	MSX009-2	EG	1.3	LBMR ARS10241-2	Missaukee	
MSX496-2	EG	0.1	LBR	MSX196-1	EG	1.3	LBMR Missaukee	Manistee	
MSX497-6	EG	0.0	LBR	MSX199-3	EG	1.3	LBMR Missaukee	W2133-1	
MSX501-5	EG	0.9	LBMR	MSX221-1	EG	1.3	LBMR MSK061-4	MSR036-5	
MSX503-5	EG	4.1	LBS	MSU379-1	EG	1.4	LBMR MSP238-1	Missaukee	
MSX506-3	EG	3.1	LBS	MSW182-1Y	EG	1.4	LBMR MSI005-20Y	POR02PG7-5	
MSX507-1R	EG	0.0	LBR	MSX255-1	EG	1.6	LBMR MSM171-A	ARS10342-4	
MSX517-3SPL	EG	0.0	LBR	MSW151-9	EG	1.6	LBMR Montanosa	MSL211-3	
MSX517-5Y	EG	2.7	LBMS	MSV158-2	EG	1.9	LBMS King Harry (NY131)	Missaukee	
MSX526-1	EG	3.6	LBS	MSW252-2	EG	1.9	LBMS MSP516-A	OP	
MSX526-2	EG	2.5	LBMS	MSY569-1RUSY	EG	1.9	LBMS Torridon	CO99053-3RUS	

**2013 LATE BLIGHT EARLY GENERATION TRIALS
CLARKSVILLE RESEARCH CENTER, MI**

Line Sort:

RAUDPC Sort:

LINE	N	RAUDPC ¹		LINE	N	RAUDPC ¹		Female	Male
		MEAN	*			MEAN			
MSX540-4	EG	0.8	LBMR	MSY071-1	EG	1.9	LBMS	MST220-08	MSR102-3
MSX542-2	EG	0.1	LBR	MSX001-4WP	EG	2.0	LBMS	ARS10091WP	MSL211-3
MSX654-2	EG	2.7	LBMS	MSY012-2	EG	2.1	LBMS	MSQ070-1	ND8304-2
MSY012-1	EG	5.2	LBS	MSY532-1	EG	2.1	LBMS	MSM182-1	MSQ086-3
MSY012-2	EG	2.1	LBMS	MSX295-1Y	EG	2.2	LBMS	MSM288-2Y	MSR160-2Y
MSY015-1	EG	4.2	LBS	MSX526-2	EG	2.5	LBMS	MSR036-5	Lamoka
MSY022-2	EG	3.8	LBS	MSY485-1R	EG	2.5	LBMS	MSL211-3	MSS544-1R
MSY034-5	EG	5.3	LBS	MSW198-1Y	EG	2.7	LBMS	MSK498-1	Malinche
MSY058-2	EG	4.7	LBS	MSX292-1	EG	2.7	LBMS	MSM288-2Y	MSQ134-5
MSY059-1Y	EG	5.3	LBS	MSX517-5Y	EG	2.7	LBMS	Spartan Splash	MSQ176-5
MSY061-1	EG	3.3	LBS	MSX654-2	EG	2.7	LBMS	Torridon	MSL211-3
MSY071-1	EG	1.9	LBMS	MSY557-2Y	EG	2.7	LBMS	Torridon	Silverton Russet
MSY084-1	EG	6.1	LBS	MSY093-4	EG	2.8	LBMS	MSS026-2Y	MSR102-3
MSY087-4	EG	4.6	LBS	MSW125-3	EG	2.8	LBMS	MSM171-A	MSL211-3
MSY089-2	EG	5.4	LBS	MSX010-3	EG	2.8	LBMS	ARS10241-2	MSL211-3
MSY090-1	EG	3.5	LBS	MSX351-3P	EG	2.8	LBMS	Colonial Purple	MSL211-3
MSY091-2	EG	5.5	LBS	MSY104-1	EG	2.8	LBMS	MSR061-1	Boulder
MSY093-4	EG	2.8	LBMS	MSX469-2	EG	3.1	LBS	MSQ070-1	OP
MSY100-2	EG	5.7	LBS	MSX506-3	EG	3.1	LBS	MSQ176-5	MSR169-8Y
MSY104-1	EG	2.8	LBMS	MSY061-1	EG	3.3	LBS	MSQ134-5	MSR102-3
MSY108-4	EG	5.8	LBS	MSV289-2P	EG	3.4	LBS	Montanosa	Colonial Purple
MSY118-1	EG	0.1	LBR	MSX467-1	EG	3.5	LBS	MSQ070-1	Lamoka
MSY135-2	EG	5.6	LBS	MSX472-2	EG	3.5	LBS	MSQ070-1	MSP292-7
MSY137-2	EG	6.0	LBS	MSY090-1	EG	3.5	LBS	MSS165-2Y	MSS026-2Y
MSY137-7	EG	3.9	LBS	MSY229-1	EG	3.5	LBS	MSM137-2	Sherriff
MSY149-1	EG	6.1	LBS	MSY517-8YSPL	EG	3.5	LBS	Spartan Splash	Bison
MSY167-6	EG	6.0	LBS	MSY169-4	EG	3.5	LBS	Boulder	MSR102-3
MSY168-1	EG	5.0	LBS	MSW123-3	EG	3.6	LBS	MSM171-A	Dakota Diamond
MSY168-2Y	EG	4.7	LBS	MSX526-1	EG	3.6	LBS	MSR036-5	Lamoka
MSY168-4	EG	5.7	LBS	MSY022-2	EG	3.8	LBS	MSS176-1	MST096-2Y
MSY169-4	EG	3.5	LBS	MSY137-7	EG	3.9	LBS	MSP270-1	MSR102-3
MSY190-1	EG	4.7	LBS	MSX503-5	EG	4.1	LBS	MSQ176-5	MSL268-D
MSY229-1	EG	3.5	LBS	MSY015-1	EG	4.2	LBS	MSQ070-1	MSS934-4
MSY436-1	EG	0.6	LBMR	MSY494-6	EG	4.2	LBS	Dakota Diamond	MSL211-3
MSY437-1	EG	0.6	LBMR	MSW443-3	EG	4.4	LBS	Kalkaska	OP
MSY438-2	EG	5.0	LBS	MSY087-4	EG	4.6	LBS	MSM176-1	MSR161-2
MSY452-1	EG	0.3	LBR	MSX137-6	EG	4.7	LBS	Eva	MSL211-3
MSY452-5	EG	5.3	LBS	MSY058-2	EG	4.7	LBS	MSQ089-1	MSR102-3
MSY474-08	EG	0.9	LBMR	MSY168-2Y	EG	4.7	LBS	Boulder	MSS165-2Y
MSY474-11	EG	0.2	LBR	MSY190-1	EG	4.7	LBS	MSR058-1	Dakota Diamond
MSY485-1R	EG	2.5	LBMS	MSY511-9	EG	4.9	LBS	MSR157-1Y	MSQ440-2
MSY489-1	EG	0.6	LBMR	MSY438-2	EG	5.0	LBS	Torridon	MSN105-1
MSY491-2Y	EG	0.0	LBR	MSY168-1	EG	5.0	LBS	Boulder	MSS165-2Y
MSY494-6	EG	4.2	LBS	MSY012-1	EG	5.2	LBS	MSQ070-1	ND8304-2
MSY501-1Y	EG	0.0	LBR	MSY544-5R	EG	5.3	LBS	Bison	MSS544-1R
MSY507-2	EG	0.2	LBR	MSY034-5	EG	5.3	LBS	Atlantic	NY121
MSY511-9	EG	4.9	LBS	MSY059-1Y	EG	5.3	LBS	MSQ089-1	MSS165-2Y
MSY515-1	EG	0.3	LBR	MSY452-5	EG	5.3	LBS	MSQ176-5	MSL211-3
MSY517-8YSPL	EG	3.5	LBS	MSY089-2	EG	5.4	LBS	MSS176-1	B2731-2
MSY527-1R	EG	0.3	LBR	MSY091-2	EG	5.5	LBS	MSS165-2Y	ND7519-1
MSY532-1	EG	2.1	LBMS	MSY135-2	EG	5.6	LBS	MSN148-A	MSR102-3
MSY534-1	EG	0.2	LBR	MSY100-2	EG	5.7	LBS	MSR157-1Y	MSR102-3
MSY535-1	EG	0.0	LBR	MSY168-4	EG	5.7	LBS	Boulder	MSS165-2Y
MSY543-2	EG	0.0	LBR	MSY108-4	EG	5.8	LBS	MSR058-1	Pike
MSY544-5R	EG	5.3	LBS	MSY137-2	EG	6.0	LBS	MSP270-1	MSR102-3
MSY557-2Y	EG	2.7	LBMS	MSY167-6	EG	6.0	LBS	CO95051-7W	MSR102-3
MSY569-1RUSY	EG	1.9	LBMS	MSY084-1	EG	6.1	LBS	MSS927-1	MSR102-3
MSY628-1	EG	0.0	LBR	MSY149-1	EG	6.1	LBS	MSK061-4	MSR102-3

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

*LBR = Late Blight Resistant; LBMR = Late Blight Moderately Resistant; LBMS = Late Blight Moderately Susceptible; LBS = Late Blight Susceptible
LB Isolates used: US-22 & US-23

Table 12

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 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									
Manistee (MSL292-A)	1.094	8	9	7	1			32	1.0
MSN190-2	1.103	5	14	5	1			20	1.1
MSR057-4	1.082	9	8	5	3			36	1.1
MSP497-1	1.081	6	9	10				24	1.2
MSR061-1	1.083	1	15	8	1			4	1.4
FL1879	1.087	4	8	10	2	1		16	1.5
MSS297-3	1.093	3	10	7	4	1		12	1.6
NY140	1.087	4	6	10	5			16	1.6
Snowden	1.094	4	5	11	5			16	1.7
Lamoka	1.093	1	9	11	4			4	1.7
MSQ492-2	1.088	2	8	10	4	1		8	1.8
MSL007-B	1.093		7	9	5	3	1	0	2.3
MSR127-2	1.095	1	2	11	5	4	2	4	2.6
NY148	1.103	1	5	5	6	6	2	4	2.7
Atlantic	1.101		4	7	6	5	3	0	2.8
MSM246-B	1.097			8	9	5	3	0	3.1
RUSSET TRIAL									
Russet Norkotah	1.079	22	3					88	0.1
A07103-1T (2 Rep)	1.099	24	3		1			86	0.2
A99029-3E (2 Rep)	1.080	20	4	1				80	0.2
A02062-1TERus	1.081	18	7					72	0.3
CO05189-2Rus	1.078	18	7					72	0.3
W6234-4rus	1.085	16	9					64	0.4
CO04233-1Rus (2 Rep)	1.075	15	8	2				60	0.5
CO05132-2Rus	1.081	9	15	1				36	0.7
A01010-1	1.089	12	9	2	2			48	0.8
W8152-1Rus	1.094	10	12	2		1		40	0.8
CO04220-7Rus (2 Rep)	1.072	16	2	4	1	1	1	64	0.9
W9133-1rus	1.074	8	12	5				32	0.9
Russet Burbank	1.078	11	7	5	2			44	0.92
CO05149-3Rus	1.085	10	7	7	1			40	1.0
CO05152-5Rus	1.086	9	10	4	2			36	1.0
AF4532-8Rus	1.074	10	8	6			1	40	1.0
AF4445-3Rus	1.075	8	10	5	2			32	1.0
AF3362-1Rus	1.086	7	8	7	3			28	1.2
Silverton Russet	1.080	7	6	7	4	1		28	1.44
CO05040-1Rus (2 Rep)	1.075	5	7	8	4	1		20	1.6
CO05024-11Rus (2 Rep)	1.084	4	7	10	3	1		16	1.6
A02507-2LB (2 Rep)	1.090	7	5	6	4	3		28	1.6
A07008-4T (2 Rep)	1.097	1	13	6	4	1		4	1.6
A03158-2TERus	1.088	5	4	10	5		1	20	1.8
CO05175-1Rus	1.082	6	3	9	4	3		24	1.8
CO05189-3Rus	1.076	3	5	8	9			12	1.9
A0701012-4BF (2 Rep)	1.100	1	3	12	8	1		4	2.2
CO05068-1Rus (2 Rep)	1.097		4	9	5	4	3	0	2.7
CO05110-6Rus	1.088	2	2	5	5	6	5	8	3.0
NORTH CENTRAL REGIONAL TRIAL									
ND7799c-1	1.079	23	2					92	0.1
MN10003PLWR-03R	1.057	22	3					88	0.1
W6002-1R	1.064	18	6	1				72	0.3
MN10001PLWR-01R	1.069	16	9					64	0.4
MN10003PLWR-07R	1.064	16	8	1				64	0.4
McBride (MSJ126-9Y)	1.086	17	6	1	1			68	0.4

Table 12

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 BLACKSPOT BRUISE SUSCEPTIBILITY TEST
SIMULATED BRUISE SAMPLES*

ENTRY	SP GR	NUMBER OF SPOTS PER TUBER						PERCENT (%)	AVERAGE SPOTS/TUBER
		0	1	2	3	4	5+	BRUISE FREE	
MN10020PLWR-08R	1.068	15	7	3				60	0.5
ND7982-1R	1.076	14	10		1			56	0.5
Red Pontiac	1.067	14	9	2				56	0.5
MN10013PLWR-04	1.077	12	12	1				48	0.6
ND6002-1R	1.068	15	6	3	1			60	0.6
Red Norland	1.064	12	10	3				48	0.6
W5955-1	1.093	13	8	4				52	0.6
MSQ089-1	1.083	11	11	1	2			44	0.8
MSS576-5SPL	1.080	10	8	4	3			40	1.0
NorValley	1.080	7	11	5	2			28	1.1
ND7132-1R	1.073	6	11	7	1			24	1.1
W8405-1R	1.070	8	9	5	3			32	1.1
Snowden	1.089	6	6	8	4		1	24	1.6
NY 153	1.095	4	7	9	4	1		16	1.6
Elkton	1.088	4	8	7	4	2		16	1.7
Atlantic	1.095		10	8	6	1		0	1.9
MSS165-2Y	1.094	4	6	6	5	3	1	16	2.0
W5015-5	1.095		1	3	6	4	11	0	3.8
ADAPTATION TRIAL, TABLESTOCK LINES									
MSM288-2Y	1.083	19	6					76	0.2
CV00088-3	1.072	16	8	1				64	0.4
Red Norland	1.063	15	7	3				60	0.5
MSQ440-2	1.058	13	10	2				52	0.6
MSS176-1	1.087	14	8	2	1			56	0.6
MSS927-1	1.086	12	10	2	1			48	0.7
MP Sport I	1.075	8	13	3	1			32	0.9
CV02321-1	1.077	8	12	4	1			32	0.9
MSQ176-5	1.070	8	10	4	3			32	1.1
MSS576-5SPL	1.081	9	8	5	2	1		36	1.1
MSL211-3	1.074	8	8	6	3			32	1.2
MSS206-2	1.075	8	8	6	3			32	1.2
Spartan Splash	1.083	8	9	6	1		1	32	1.2
MSR214-2P	1.072	7	11	3	3	1		28	1.2
MSS070-B	1.088	9	7	5	3	1		36	1.2
Michigan Purple	1.075	7	8	8	1	1		28	1.2
MSR226-ARR	1.076	4	11	10				16	1.2
MSQ130-4	1.082	6	9	7	3			24	1.3
MSQ086-3	1.085	3	12	7	3			12	1.4
MSR157-1Y	1.085	4	9	8	1	3		16	1.6
MSR128-4Y (significant shatter bruise)	1.093	4	6	9	4	2		16	1.8
Reba	1.078	3	9	8	1	3	1	12	1.8
MSR186-3P	1.076	4	7	6	5	2	1	16	1.9
MSS487-2	1.086	3	4	5	3	4	6	12	2.8
MSS483-1	1.081		2	6	8	4	5	0	3.2
MSR216-AP	1.080		1		7	7	10	0	4.0
PRELIMINARY TRIAL, CHIP-PROCESSING LINES									
MSV093-1	1.080	17	6	2				68	0.4
MST178-2	1.069	11	9		3	1	1	44	1.1
MSW437-9	1.071	7	6	11	1			28	1.2
MST458-4	1.080	5	11	6	2	1		20	1.3
MSM180-3	na	3	12	8	2			12	1.4
MST424-6	na	13		4	5	3		52	1.4
MST359-3	1.084	5	7	9	2	2		20	1.6
MSW122-9	1.073	2	13	5	4	1		8	1.6

Table 12

MICHIGAN STATE UNIVERSITY
POTATO BREEDING and GENETICS2013 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+		
Pike	1.090	6	8	5	4	1	1	24	1.6
MSS934-4	1.083	5	7	8	3	2		20	1.6
Snowden	1.091	3	8	9	5			12	1.6
MSR161-2	1.087	3	7	9	4	1	1	12	1.8
QSMSU01-10	1.089	3	7	7	5	3		12	1.9
MSK061-4	1.095	1	6	11	7			4	2.0
MST117-3Y	1.079	1	3	11	7	3		4	2.3
MST184-3	1.089	2	4	6	6	5	2	8	2.6
MSP516-A	1.079		5	8	7	2	3	0	2.6
MSW509-5	1.086	1	4	8	5	2	5	4	2.7
Atlantic	1.095	4	5	7	7	2		0	2.9
PRELIMINARY TRIAL, TABLESTOCK LINES									
Yukon Gold	1.076	24	1					96	0.04
MSV111-2	1.080	23	2					92	0.1
MSU616	1.080	19	6					76	0.2
MSW125-3	1.061	19	6					76	0.2
CV98173-4	1.081	18	5	2				72	0.4
MSV292-1Y	1.074	18	5	2				72	0.4
MSW343-2R	1.058	18	5	2				72	0.4
W6703-1Y	1.085	17	6	2				68	0.4
QSMSU08-04	1.085	14	11					56	0.4
MSQ131-A	1.073	14	10		1			56	0.5
MSW151-9	1.080	13	11	1				52	0.5
MSW128-2	1.069	10	12	3				40	0.7
Purple Heart (significant shatter bruise)	1.065	10	12	3				40	0.7
MSV235-2PY (2 PP mix)	1.078	13	5	3	2			57	0.7
MST252-1Y	1.072	12	8	3	2			48	0.8
Reba	1.081	12	7	5	1			48	0.8
QSMSU10-15	1.096	9	7	7	2			36	1.1
QSMSU10-9	1.097	4	11	9	1			16	1.3
MST500-1	1.083	6	9	6	3	1		24	1.4
MSV179-1	1.076	5	9	8	2	1		20	1.4
MSW182-1Y	1.091	4	9	6	2	4		16	1.7
Onaway	1.070	1	6	8	7	2	1	4	2.2
MST020-2Y	1.075	2	6	6	5	1	5	8	2.5
MST065-1 (13 tubers)	1.094	1	1	1	6	4		8	2.8
USPB/SFA TRIAL CHECK SAMPLES (Not bruised)									
W5955-1	1.080	25						100	0.0
W6483-5	1.064	25						100	0.0
CO02321-4W	1.081	23	2					92	0.1
A00188-3C	1.079	22	3					88	0.1
AF4157-6	1.074	21	4					84	0.2
MSL292-A	1.075	22	2	1				88	0.2
Snowden	1.078	21	4					84	0.2
W6609-3	1.080	20	5					80	0.2
A01143-3C	1.076	20	4	1				80	0.2
Atlantic	1.084	18	5	2				72	0.4
MSL007-B	1.081	15	10					60	0.4
MSR061-1	1.076	17	6	2				68	0.4
NY140	1.076	13	11	1				52	0.5
NY148	1.082	13	11	1				52	0.5
W4980-1	1.077	15	7	3				60	0.5
CO03243-3W	1.078	14	7	3	1			56	0.6
AC01151-5W	1.067	11	10	4				44	0.7

Table 12

2013 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+		
CO00197-3W	1.073	8	6	7	3	1	32	1.3	
USPB/SFA TRIAL BRUISE SAMPLES									
W6483-5	1.064	20	5				80	0.2	
CO02321-4W	1.081	17	7	1			68	0.4	
MSR061-1	1.076	16	9				64	0.4	
W6609-3	1.080	16	8	1			64	0.4	
AC01151-5W	1.067	13	12				52	0.5	
A00188-3C	1.079	14	10		1		56	0.5	
W5955-1	1.080	16	6	2	1		64	0.5	
Atlantic	1.084	12	8	5			48	0.7	
Snowden	1.078	8	14	2	1		32	0.8	
NY140	1.076	9	9	7			36	0.9	
CO03243-3W	1.078	8	6	7	4		32	1.3	
AF4157-6	1.074	6	9	7	2	1	24	1.3	
A01143-3C	1.076	2	8	13	2		8	1.6	
MSL292-A	1.075	6	5	8	5	1	24	1.6	
NY148	1.082	3	5	11	3	1	2	12	2.0
MSL007-B	1.081	4	4	8	3	5	1	16	2.2
CO00197-3W	1.073		6	9	7	2	1	0	2.3
W4980-1	1.077			6	4	6	9	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 10/25/2013. The table is presented in ascending order of average number of spots per tuber.