2009 Research Progress Report

Potato Breeding and Selection

Submitted by

David G. Holm and Fahrettin Goktepe
San Luis Valley Research Center

to the

Colorado Potato Administrative Committee (Area II)
Research Committee

and the

Colorado Potato Administrative Committee (Area III)

Mission Statement

"The mission of the Colorado Potato Breeding and Selection Program is to develop cultivars that will help assure that the Colorado potato industry remains productive, competitive, and sustainable and to develop cultivars that provide the consumer with improved nutrition and quality."

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Preface

We are pleased to provide this copy of the "2009 Potato Breeding and Selection Research Progress Report." This report includes research funded by the Colorado potato industry (Area II and Area III), Colorado State University (Agricultural Experiment Station and the Department of Horticulture and Landscape Architecture), the National Institute of Food and Agriculture (NIFA, formerly CSREES), the US Potato Board and PVP royalties. These funds collectively continue to allow us to strengthen our overall collaborative research efforts at CSU and with other universities and agencies. All of these efforts are aimed at developing improved potato cultivars for Colorado.

Ongoing support by the Colorado potato industry is key to maintaining funds received from NIFA and other potential sources. NIFA and PVP funding have allowed us to significantly expand our breeding efforts to include resistance to the following: PVY, late blight (foliar and tuber), nematodes; pink rot; storage rots [dry rot (*Fusarium* and early blight) and bacterial soft rot], corky ringspot, and resistance to powdery scab.

The Colorado Potato Breeding and Selection Program relies on the invaluable cooperation of several growers, shippers, and research personnel to assess the production, adaptability, marketability, and other characteristics of advanced selections.

Collaborators and areas of collaboration are:

- Robert D. Davidson and Andrew J. Houser - Disease Screening and Evaluation
- Samuel Y. C. Essah - Cultivar Specific Production Management
- Sastry S. Jayanty - Cultivar Specific Postharvest Management and Physiology
- Cecil Stushnoff and Henry J. Thompson - Nutritional Characteristics and Health Attributes
- Jorge M. Vivanco - Molecular Studies - Nematode Resistance
- Kent P. Sather and Richard W. Haslar - Potato Certification Service
- Jennifer K. Bond - Marketing
- Jairam Vanamala and Lavanya Reddivari - Bioactive Compounds for Health Laboratory
- Marissa Bunning - Sensory Evaluations
- Colorado Potato Growers
- Southwest Regional Potato Group (Colorado, Texas, and California). The overall objective of this Group is to develop and evaluate improved potato cultivars to meet the production, marketing, and producer/consumer needs of the Southwest U.S.
- Other cooperating research/extension programs - several other "partners" throughout the United States and Canada provide breeding material and opportunities to screen our germplasm under various growing conditions and disease pressures not usually available in Colorado.

Best wishes for the 2010 production season.

Sincerely,

Dave Holm and Fahrettin Goktepe

Acknowledgments

We would like to express appreciation to the following individuals, groups, and organizations for their efforts on behalf of the Colorado Potato Breeding and Selection Program in 2010.

✔ Financial Support from the following is gratefully acknowledged:
- *Colorado Potato Industry* - Area II and III
- *Colorado State University* - Colorado Agricultural Experiment Station & the Department of Horticulture and Landscape Architecture
- *National Institute of Food and Agriculture* - Potato Research Award Number 2009-03074
- *United States Potato Board*
- *Stone's Farm Supply* - in-kind support

✓ Colorado Potato Administration Committee, Area II - Research Committee (Members and At-large Members)

✓ Technical Support.

Steve Keller, Melissa Quintana, Mitzi Cisneros, Megan Canada, Kirk Wilkinson

Numerous other temporary support personnel assisted the project particularly during seed cutting, planting, and harvest.

✔ Research Collaborators - Colorado State University

Rob Davidson, Samuel Essah, Sastry Jayanty, Cecil Stushnoff, Henry Thompson, Jorge Vivanco, Jennifer Bond, Marissa Bunning, Jairam Vanamala, Lavanya Reddivari

✔ Staff - Colorado State University

Deanna Brown, Ron Price, Stan Price, Sharon Yust

✔ Potato Certification Service

Kent Sather, Rick Haslar, Andrew Houser, Carolyn Keller, Rue Snell, Teresa Rivera

✔ The Colorado Potato Breeding and Selection Program relies on the cooperation of several growers, shippers, processors, and research personnel to assess the production, adaptability, marketability, and other characteristics of advanced selections from our program. We sincerely appreciate their support and the valuable feedback they provide. We thank many cooperating breeding and selection programs throughout the United States and Canada who have provided breeding material and opportunities to screen our germplasm under various growing conditions and disease pressures not usually available in Colorado.

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Introduction

The major objectives of the Colorado Potato Breeding and Selection Program are: (1) to develop new potato cultivars with increased yield, improved quality, improved nutritional and health characteristics, resistance to diseases and pests, and tolerance to environmental stresses; (2) to collaborate with growers, shippers, processors, and research/extension personnel to assess the production, adaptability, marketability, and other characteristics of advanced selections from the Colorado program; (3) to provide a basic seed source of selections to growers for seed increase and commercial testing; (4) to evaluate promising selections for possible export (interstate and international).

The primary emphasis is placed on the development of russet cultivars. The balance of the breeding effort is devoted to developing red, specialty, and chipping cultivars. This broad approach is important because it recognizes the diverse markets accessed by potato growers throughout Colorado.

Besides the major objectives outlined previously, specific breeding emphasis is being placed on identifying germplasm and developing cultivars that have: (1) early vine maturity and early tuber bulking; (2) immune to PVY; resistant to (3) late blight (foliar and tuber); (4) storage rots [dry rot (*Fusarium* and early blight) and bacterial soft rot]; (5) pink rot; (6) nematodes; (7) powdery scab; (8) corky ringspot, and (9) that have improved nutritional quality, health attributes, and other "consumer" characteristics such as improved red skin color retention and improved shelf life. Continued emphasis will be placed on breeding/selecting for "low input" cultivars, primarily for reduced nitrogen and fungicide input, for improved postharvest and processing qualities such as lengthened dormancy. Cultivars with these characteristics will help assure that the potato industry in Colorado will remain productive and in a competitive position.

Cultivar development is a four-step process, encompassing first, the generation of segregating populations followed by evaluation for visual agronomic traits. This involves identifying parents with desired characteristics for crossing to produce true (botanical) potato seed (TPS). TPS is planted to produce seedling tubers for field planting. Second, superior progeny are identified and these selections undergo additional evaluation for economically important characteristics. Third, a profile of cultivar specific management criteria - production and postharvest - are developed, which a grower, shipper, or processor, and/or marketer may fine tune for his/her operation. Finally, market development takes place to determine consumer acceptance and recognition in the market for the intended market. Each of these integrated steps is critical in the development and commercialization of new cultivars and provides the base for a successful cultivar release. Without all components, fruition is difficult to attain.

The process of cultivar development takes 14+ years. Years 1 and 2 are the potato breeding phase of the development process. As indicated earlier, parents are selected and crossed to produce true potato seed. Seedling tubers are then produced from the true seed in year 2. Subsequent years (3+) represent the selection phase of the development process. Each year represents another cycle of field selection. As each cycle is completed, fewer and fewer clones remain and the amount of seed per selection is increased. Clones remaining after eight cycles of field selection are released to growers for evaluations prior to official release as a named cultivar. Table 1 presents a detailed description of the steps involved in developing new potato cultivars.

Potato Breeding

Germplasm Accession and Introgression. Germplasm is continually being acquired from various sources with late blight resistance, virus resistance (PXY, PVY, and PLRV), nematode resistance and other characteristics of importance. Primary sources are the USDA-ARS in Aberdeen, Idaho; Prosser, Washington; Madison, Wisconsin and Oregon State University. Some material has also been acquired from Asia, Europe, and South America. All of these materials are being incorporated into our germplasm in the breeding program.

Crossing. The Colorado Potato Breeding and Selection Program intercrossed 109 parental clones in 2009 in two separate crossing blocks. The emphasis of the first crossing block was russet and specialty cultivar development. The second crossing block emphasized russet and specialty cultivar development and corky ringspot resistance. Seed from 399 combinations was obtained.

Approximately 55,960 seedling tubers representing 253 families were produced from 2007 and 2008 crosses for initial field selection in 2010. These seedlings represent crosses segregating primarily for russet, reds, specialty types, and resistance to late blight, PVY, corky ringspot, and nematodes. Second through fourth size seedling tubers will be distributed to Idaho (USDA-ARS), Minnesota, North Dakota, Oregon, Texas, Wisconsin, and Alberta, Canada (Agriculture Canada).

Seedling Selection and Clonal Development

Colorado grew 81,644 first-year seedlings representing 481 families in 2009, with 810 selected for subsequent planting, evaluation, and increase in future years. A portion of these seedlings were obtained from the USDA-ARS-Idaho, Agriculture Canada, Texas A&M University, and Oregon State University. Another 1,232 clones were in 12-hill, preliminary, and intermediate stages of selection. At harvest, 372 were saved for further increase and evaluation. Forty-eight advanced selections were saved and will be increased in 2010 pending further evaluation. Another 267 selections and cultivars were maintained for germplasm development, breeding, and other experimental purposes including seed increase/maintenance.

Field trials conducted in 2009 included: Preliminary Trial, Intermediate Yield Trial, Intermediate Specialty Yield Trial, Advanced Yield Trial, Southwestern Regional Russet Trial, Southwestern Regional Red Trial, Southwestern Specialty Trial, Western Regional Russet/Processing Trial, Western Regional Red Trial, Western Regional Specialty Trial, Western Regional Chipping Trial, and the San Luis Valley Chipping Trial. All trials are grown under "low input" conditions, primarily for reduced nitrogen and fungicide. Tables 2-13 present the data for the various trials. Appendix 1 summarizes the cultural information for the trials planted at the San Luis Valley Research Center in 2009.

A total of 212 samples were evaluated for two or more of the following postharvest characteristics: blackspot susceptibility, storage weight loss, dormancy, enzymatic browning, specific gravity, french fry color, french fry texture, and chip color. Appendix 2 lists the procedures used for the postharvest evaluations for the trials. Appendices 3-10 present additional information regarding the frequency distribution for the postharvest testing results for all selections and named cultivars included in the trials. Appendices 3-10 are useful in understanding how a given selection compares with the population of clones being evaluated.

Advanced selections evaluated in the Southwest Regional Trials, Western Regional Trials, or by producers in 2009, included 10 russets (AC96052-1RU, AC99375-1RU, CO94035-15RU, CO95172-3RU, CO97087-2RU, CO98067-7RU, CO98368-2RU, CO99053-3RU, CO99053-4RU, and CO99100-1RU), five reds (CO98012-5R, CO99076-6R, CO99256-2R, CO00277-2R, and CO00291-5R), seven chippers (CO95051-7W, CO96141-4W, CO97043-14W, CO97065-7W, CO00188-4W, CO00197-3W, and CO00270-7W), and 17 specialties (AC97521-1R/Y, AC99329-7PW/Y, AC99330-1P/Y, ATC00293 -1W/Y, CO97222-1R/R, CO97226-2R/R, CO97227-2P/PW, CO97232-1R/Y, CO97232-2R/Y, CO97233-3R/Y, CO99045-1W/Y, CO00379-2R/Y, CO00405-1RF, CO00412-5W/Y, CO00415-1RF, CO01399-10P/Y, and VC1009-1W/Y).

Advanced selection CO98368-2RU was discarded from further evaluation. The status of the other advanced selections will be finalized prior to planting.

Mesa Russet (CO94035-15RU) was named in 2009. Mesa Russet is a high yielding, dual-purpose russet. It has a medium maturity and a high percentage of US #1 tubers. It is resistant to second growth, blackspot bruise, shatter bruise, powdery scab (tuber and root galling) and verticillium wilt. Mesa Russet has also shown potential to fry after storage. Mesa Russet with have PVP applied for in 2010.

A chipping selection, CO95051-7W, has been recommended for release by the USPB Fast Track program. This program facilitates commercial evaluation of advanced chipping selections that have been evaluated in the USPB/SFA trial program.

Approval of PVP for Rio Grande Russet is expected soon in 2010. The PVP applications for Colorado Rose, Mountain Rose, and Purple Majesty should also be finalized in 2010 with the recent requests for additional information for these applications. Applications for Canela Russet and Rio Colorado are still pending.

Table 14 summarizes the performance of advanced selections that are available for growers to evaluate in 2010. Detailed data summaries for each of the advanced selections are presented in Tables 15A-AW. Figure 1 includes photographs of these selections.

Collaborative Studies

The following collaborative studies were conducted in 2009:

- Several advanced selections were evaluated for disease symptom expression screening trials in Colorado. These trials were conducted in cooperation with Rob Davidson, Andrew Houser, Kent Sather, and Rick Haslar. Included were bacterial ring rot (8 entries), potato leafroll virus (11 entries), PVY (13 entries), and powdery scab (26 entries) in Colorado.

- Twelve advanced selections/cultivars were screen for corky ringspot by Rob Davidson and Russ Ingham.

- Several advanced selections were distributed to state/USDA-ARS collaborators in Idaho, Michigan, Minnesota, North Dakota, Oregon, Pennsylvania, Texas, Washington, and Wisconsin for additional disease evaluations. These selections were screened for one or more of the following diseases: early blight, late blight, common scab, corky ringspot, nematodes, Fusarium dry rot, Pectobacterium soft rot, and *Verticillium* wilt.. In addition, selections were provided to the National Trials for late blight and common scab screening.

- Twenty-two advanced selections were evaluated in cultural management trials in collaboration with Samuel Essah.

- Thirty-three selections from the 2008 harvest were screened for antioxidant activity in cooperation with Cecil Stushnoff. An additional 13 clones were studied for storage effects on chlorogenic acid in tubers.

- Tubers of selected clones/cultivars were provided to Jairam Vanamala and Lavanya Reddivari to support grant research projects conducted by the Bioactive Compounds for Health Laboratory in the Department of Food Science and Human Nutrition at CSU.

Table 1. Generalized potato breeding and selection scheme used at the SLV Research Center.

Year	Comments
1	Select parents for crossing and true seed production in the greenhouse.
2	Produce seedling tubers from true seed in the greenhouse.
3	70,000-80,000 seedling tubers planted in the field as single hills. Several thousand tubers are obtained from other breeding programs. Initial selection of this material takes place at harvest. First cycle of field selection.
4	Twelve-hills of each single-hill selection are planted. Second cycle of field selection.
5	Preliminary Selections 1 (P1). Third cycle of field selection (48 plant tuber-unit seed increase). Initial evaluations for chipping qualities (chip color after various storage regimes and specific gravity) are conducted this year and subsequently.
6	Preliminary Selections 2 (P2). Fourth cycle of field selection (96 plant tuber-unit seed increase). Initial evaluations to characterize selections for blackspot bruise potential, storage weight loss, dormancy, and enzymatic browning. Initial evaluations for french fry potential (french fry color and specific gravity) are conducted this year and subsequently. Evaluations for chipping qualities are continued.
7	Intermediate Selections. Fifth cycle of field selection. Initial data collected on yield, grade, and growth characteristics. Plant a 144 plant tuber-unit seed increase and a 2 rep x 25 plants intermediate yield trial (IYT).
8-9, 14+	Advanced Selections: Includes selections that have advanced from the IYT. Additionally selections are included that have graduated from the Southwest Regional and Western Regional Trials. The advanced yield trials for reds, specialty types, and chippers are planted with entries in the Western Regional Red, Specialty and Chip Trials. Selections are in the 6th-7th and 12+ cycles of field selection. All advanced yield trials (AYT) have 4 reps x 25 plants. Sixth- and seventh- year field selections respectively have a 400/1,600 plant tuber-unit seed increase. Selections in the sixth cycle of selection are indexed for viruses and cleanup/micropropagation is initiated. Testing for ring rot and PLRV reaction is also initiated at this stage and continues as needed. Selections in the 7th cycle of field selection are entered into cultural management trials and postharvest disease reaction (dry rot and soft rot) evaluations.
10	All 8th year selections have a 1/2 acre tuber-unit seed increase planted. These selections are entered in the Southwestern Regional Trials (4 locations - CO, TX, two in CA). Cultural management trials and postharvest disease reaction evaluations continue as needed.
11-13	All 9th year or older selections generally have a 1 acre or greater seed increase. These selections are entered in the Western Regional Trials (4 trials): main (russets and long whites), red, specialty , and chip. The Western Coordinating Committee (WCC-27) directs these trials at 10+ locations in the Western United States each year. Cultural management trials and postharvest disease reaction evaluations continue as needed.
11+	Grower/industry evaluations. The Colorado Potato Breeding and Selection Project relies on the cooperation of several growers, shippers, and processors to evaluate advanced selections for adaptability and marketability.
14+	Release as a named cultivar.

Table 2A. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Preliminary Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AC03300-1RU	3.7	3.2	3.5	3.0	74	4.8
AC03409-1RU	5.0	5.0	5.0	1.9	137	4.4
AC03534-2R/Y	4.7	4.6	4.7	2.8	130	4.8
CO03134-4R/RW	5.0	3.7	4.4	2.7	130	---
CO03177-2RU	4.7	4.6	4.7	3.4	95	4.8
CO03186-1RU	4.5	3.8	4.2	1.7	95	4.8
CO03186-2RU	4.5	3.7	4.1	1.7	109	3.6
CO04029-3RW/Y	2.6	2.9	2.8	4.6	67	3.6
CO04029-5W/Y	3.3	2.3	2.8	3.9	47	2.8
CO04056-3P/PW	---	---	---	1.7	102	---
CO04056-7P/PW	---	---	---	2.2	102	---
CO04058-3RW/RW	4.4	1.8	3.1	1.6	137	4.0
CO04063-4R/R	---	---	---	2.7	81	---
CO04067-8R/Y	4.7	2.7	3.7	2.9	74	4.6
CO04067-10W/Y	4.2	3.0	3.6	3.9	74	4.6
CO04099-3W/Y	4.3	2.3	3.3	1.7	116	4.6
CO04099-4W/Y	4.5	4.7	4.6	2.3	102	4.8
CO04122-1RU	4.1	3.6	3.9	3.5	102	4.0
CO04123-2RU	4.0	3.4	3.7	2.2	95	3.6
CO04159-1R	4.6	3.8	4.2	3.1	130	2.2
CO04159-3R/Y	3.9	3.5	3.7	4.5	102	4.0
CO04159-4R/Y	3.3	2.8	3.1	3.0	116	4.4
CO04188-4R/Y	4.0	3.4	3.7	4.0	109	3.8
CO04204-7RU	5.0	5.0	5.0	2.4	109	4.8
CO04211-4RU	4.8	3.8	4.3	2.7	74	4.8

Table 2A continued on next page

Table 2A (cont'd). Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Preliminary Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
CO04220-7RU	5.0	4.3	4.7	2.0	109	4.4
CO04223-6R	2.4	3.5	3.0	3.9	102	2.6
CO04233-1RU	5.0	5.0	5.0	1.9	116	5.0
CO04287-1R	4.3	2.3	3.3	3.9	109	2.6
CO04287-2R	4.8	3.6	4.2	3.9	116	2.4
Canela Russet	4.5	4.4	4.5	3.7	157	4.8
Centennial Russet	5.0	5.0	5.0	3.7	104	4.4
Purple Majesty	---	---	---	4.0	49	---
Rio Grande Russet	5.0	5.0	5.0	3.9	87	4.6
Russet Burbank	4.8	4.4	4.6	2.3	153	3.2
Russet Norkotah-S3	4.5	4.7	4.6	2.7	115	4.6
Russet Nugget	4.7	4.9	4.8	2.5	101	4.2
Sangre-S10	3.9	4.3	4.1	2.4	70	3.8

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 2B. Specific gravity, french fry color, and texture for Preliminary Trial clones - 2009

Clone	Specific Gravity	Fry Color[1] At Harvest	Fry Color[1] 3 wks 55F+ 9 wks 45F	Fry Texture[2] At Harvest	Fry Texture[2] 3 wks 55F+ 9 wks 45F
AC03300-1RU	1.085	3	2	3	3
AC03409-1RU	1.074	3	4	2	2
AC03534-2R/Y	1.064	2	4	1	1
CO03134-4R/RW	1.085	4	4	3	4
CO03177-2RU	1.088	1	1	3	3
CO03186-1RU	1.080	3	4	3	2
CO03186-2RU	1.074	4	4	3	3
CO04029-3RW/Y	1.068	4	3	2	1
CO04029-5W/Y	1.061	3	3	1	1
CO04056-3P/PW	1.077	---	---	3	3
CO04056-7P/PW	1.079	---	---	2	2
CO04058-3RW/RW	1.085	1	3	4	1
CO04063-4R/R	1.069	---	---	1	2
CO04067-8R/Y	1.079	2	1	2	2
CO04067-10W/Y	1.087	1	1	3	3
CO04099-3W/Y	1.085	1	1	4	3
CO04099-4W/Y	1.088	1	2	3	3
CO04122-1RU	1.087	1	2	3	3
CO04123-2RU	1.094	1	1	3	3
CO04159-1R	1.083	4	4	2	2
CO04159-3R/Y	1.089	3	3	2	2
CO04159-4R/Y	1.083	3	3	2	2
CO04188-4R/Y	1.069	3	3	1	1
CO04204-7RU	1.080	0	1	3	3
CO04211-4RU	1.080	2	3	3	3

Table 2B continued on next page

Table 2B (cont'd). Specific gravity, french fry color, and texture for Preliminary Trial clones - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
CO04220-7RU	1.084	1	3	3	4
CO04223-6R	1.075	1	1	2	2
CO04233-1RU	1.080	2	3	3	2
CO04287-1R	1.083	2	3	4	3
CO04287-2R	1.078	3	3	3	3
Canela Russet	1.095	2	3	4	4
Centennial Russet	1.076	4	4	3	3
Purple Majesty	1.089	---	---	3	3
Rio Grande Russet	1.082	3	3	3	3
Russet Burbank	1.076	2	2	3	4
Russet Norkotah-S3	1.082	3	3	2	2
Russet Nugget	1.093	1	2	4	5
Sangre-S10	1.079	4	4	1	1

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 3A. Yield, grade and tuber shape for Intermediate Main Yield Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
AC02090-1W	510	328	64	196	132	149	L
AC02154-1RU	456	321	70	205	116	128	L
AC02188-1RU	457	300	66	243	57	157	L
CO03187-1RU	419	247	60	198	49	169	L
CO03202-1RU	495	396	80	334	62	94	L
CO03267-4RU	371	271	73	225	46	99	Ob
CO03268-1RU	477	248	52	205	44	226	Ob
CO03276-4RU	416	295	71	228	68	118	Ob
CO03276-5RU	494	275	56	203	72	217	Ob
CO03308-3RU	390	307	79	199	108	84	Ob
CO03371-7RU	358	132	37	117	14	226	Ob
CO03374-3RU	457	325	71	244	81	128	Ob
CO03374-4RU	442	359	81	279	79	83	Ob
CO03375-2W	467	408	87	267	141	59	L
CO03380-2RU	523	386	74	295	91	137	Ob
Rio Grande Russet	509	412	81	300	112	92	Ob
Russet Norkotah	481	380	79	274	106	94	L
Mean	454	317	69	236	81	133	---
LSD[2] (0.05)	72	88	15	59	65	75	---

[1]Tuber shape: Ob=oblong; L=long .

[2]LSD=least significant difference.

Table 3B. Grade defects for Intermediate Main Yield Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
AC02090-1W	6.6	MS, GR*	0.6
AC02154-1RU	1.7	MS, GR*	0.0
AC02188-1RU	0.0		0.0
CO03187-1RU	0.6	GC*, GR	0.0
CO03202-1RU	0.8	GR*	0.0
CO03267-4RU	0.2	MS*	0.0
CO03268-1RU	0.5	GR*	0.0
CO03276-4RU	0.5	MS*	0.0
CO03276-5RU	0.4	GR*	0.0
CO03308-3RU	0.0		0.0
CO03371-7RU	0.0		0.0
CO03374-3RU	0.9	GC*	0.0
CO03374-4RU	0.1	GR*	2.3
CO03375-2W	0.0		0.0
CO03380-2RU	0.0		0.7
Rio Grande Russet	0.9	MS*, GR*	0.0
Russet Norkotah	1.5	MS, GR*	0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 3C. Growth characteristics of Intermediate Main Yield Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
AC02090-1W	98	3.0	2.5	2.3	4.0	3.0	2.5
AC02154-1RU	96	2.5	3.0	3.5	5.0	3.0	4.0
AC02188-1RU	98	3.5	3.5	3.2	3.5	3.0	3.0
CO03187-1RU	96	4.0	3.5	3.4	3.0	2.5	1.5
CO03202-1RU	96	2.5	2.5	2.7	4.5	3.0	4.0
CO03267-4RU	98	2.5	3.0	3.1	4.0	3.0	3.0
CO03268-1RU	98	3.5	3.5	4.5	4.0	2.5	3.0
CO03276-4RU	84	2.0	2.5	3.1	3.5	3.0	3.0
CO03276-5RU	100	3.5	4.0	4.6	3.5	3.0	2.5
CO03308-3RU	96	3.0	3.5	3.2	3.0	2.5	2.5
CO03371-7RU	98	4.0	2.0	3.5	2.0	2.5	3.0
CO03374-3RU	100	4.0	4.0	4.2	4.0	3.0	2.5
CO03374-4RU	100	4.0	4.0	3.7	4.5	2.5	3.5
CO03375-2W	98	3.0	4.0	3.6	3.0	2.0	3.0
CO03380-2RU	100	3.0	3.0	3.3	4.0	3.0	3.0
Rio Grande Russet	100	3.0	3.0	3.0	4.0	3.5	3.0
Russet Norkotah	100	3.0	3.5	4.5	3.0	3.0	3.0
Mean	97	3.2	3.2	3.5	3.7	2.8	2.9
LSD[6] (0.05)	NS	0.7	1.3	1.5	1.3	0.9	0.9

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference; NS=not significant.

Table 3D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Intermediate Main Yield Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AC02090-1W	4.6	4.6	4.6	4.4	110	4.2
AC02154-1RU	4.1	3.5	3.8	2.6	110	3.0
AC02188-1RU	4.3	3.6	4.0	4.0	82	4.8
CO03187-1RU	4.9	4.8	4.9	3.4	54	4.8
CO03202-1RU	4.3	4.2	4.3	4.1	110	4.2
CO03267-4RU	3.7	2.9	3.3	2.5	47	4.0
CO03268-1RU	5.0	4.3	4.7	2.7	68	4.4
CO03276-4RU	4.4	3.6	4.0	2.2	75	4.6
CO03276-5RU	3.4	4.3	3.9	2.2	89	3.6
CO03308-3RU	3.1	2.5	2.8	4.1	54	4.2
CO03371-7RU	3.6	3.7	3.7	3.3	47	4.6
CO03374-3RU	4.0	3.6	3.8	4.5	47	4.6
CO03374-4RU	4.4	3.2	3.8	4.4	68	4.8
CO03375-2W	4.6	3.5	4.1	4.4	82	4.0
CO03380-2RU	4.6	3.8	4.2	2.2	75	4.8
Rio Grande Russet	5.0	4.8	4.9	2.5	82	4.4
Russet Norkotah	4.9	4.3	4.6	2.7	96	3.4

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 3E. Specific gravity, french fry color, and texture for Intermediate Main Yield Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
AC02090-1W	1.094	2	3	3	3
AC02154-1RU	1.095	2	3	4	4
AC02188-1RU	1.092	3	4	3	3
CO03187-1RU	1.091	2	3	3	3
CO03202-1RU	1.089	3	3	3	3
CO03267-4RU	1.086	1	1	4	4
CO03268-1RU	1.090	2	2	4	4
CO03276-4RU	1.095	1	2	5	5
CO03276-5RU	1.088	3	3	4	4
CO03308-3RU	1.085	3	3	3	4
CO03371-7RU	1.091	2	3	4	4
CO03374-3RU	1.103	1	2	5	5
CO03374-4RU	1.107	1	1	4	5
CO03375-2W	1.101	0	0	5	4
CO03380-2RU	1.090	2	1	3	3
Rio Grande Russet	1.088	3	2	3	3
Russet Norkotah	1.083	3	3	4	4

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 1A. Yield, grade and tuber shape for Intermediate Specialty Yield Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
		US #1					
	Total	Total	%	4-10 oz	>10 oz	<4 oz	
AC03565-3W/Y	582	520	89	357	163	62	Ov
CO03017-2RU/Y	432	308	71	252	56	117	L
CO03027-2R/R	403	288	72	243	45	109	R
CO03341-1R/Y	424	339	80	285	55	79	Ob
CO04013-1W/Y	438	157	36	157	0	281	R
CO04021-2R/Y	585	490	84	360	130	86	Ob
CO04022-1R/Y	528	390	74	319	71	137	Ov
CO04023-3R/Y	558	330	59	313	17	221	R
CO04036-1W/Y	505	268	53	254	15	236	Ov
CO04045-4P/P	363	178	49	176	2	181	R
CO04061-1R/R	402	284	72	276	8	117	Ov
CO04070-5R/Y	699	536	77	452	84	160	R
CO04117-2PW/Y	572	151	26	151	0	420	Ov
CO04117-5PW/Y	358	156	43	156	0	202	Ob
Purple Majesty	517	298	57	272	26	220	Ov
Yukon Gold	421	397	94	228	169	25	Ov
Mean	487	318	65	266	52	166	---
LSD[2] (0.05)	101	82	11	88	26	57	---

[1]Tuber shape: R=round; Ov=oval; Ob=oblong; L=long .

[2]LSD=least significant difference.

Table 4B. Grade defects for Intermediate Specialty Yield Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
AC03565-3W/Y	0.0		0.0
CO03017-2RU/Y	1.8	MS, GR*	0.0
CO03027-2R/R	1.5	GC*, GR	0.0
CO03341-1R/Y	1.3	MS, GC, GR*	0.0
CO04013-1W/Y	0.0		0.0
CO04021-2R/Y	1.6	MS*, GC, GR*	0.0
CO04022-1R/Y	0.2	GR*	0.0
CO04023-3R/Y	1.3	MS*, GC*, GR	0.0
CO04036-1W/Y	0.2	GR*	0.0
CO04045-4P/P	1.1	MS*	0.8
CO04061-1R/R	0.4	MS*	0.0
CO04070-5R/Y	0.4	MS*, GR*	1.6
CO04117-2PW/Y	0.0		0.0
CO04117-5PW/Y	0.0		0.0
Purple Majesty	0.0		1.2
Yukon Gold	0.0		0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 4C. Growth characteristics of Intermediate Specialty Yield Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
AC03565-3W/Y	98	4.0	4.0	3.4	4.0	3.0	3.0
CO03017-2RU/Y	100	3.5	4.0	4.0	3.0	3.0	2.0
CO03027-2R/R	98	3.0	2.0	3.2	3.0	2.0	3.0
CO03341-1R/Y	92	3.0	3.0	4.2	3.0	3.0	2.5
CO04013-1W/Y	100	4.0	4.0	5.5	3.5	2.5	3.0
CO04021-2R/Y	96	3.0	4.5	5.7	4.0	3.0	3.0
CO04022-1R/Y	96	3.0	4.0	5.5	4.0	3.0	3.0
CO04023-3R/Y	96	4.0	5.0	7.2	3.0	2.0	3.0
CO04036-1W/Y	100	4.0	5.0	7.3	2.5	2.5	2.5
CO04045-4P/P	94	3.5	2.5	3.9	2.0	2.5	2.5
CO04061-1R/R	94	2.5	2.0	2.8	2.5	2.5	3.0
CO04070-5R/Y	100	3.5	4.5	5.3	5.0	4.0	4.0
CO04117-2PW/Y	100	3.0	4.0	8.4	4.0	3.0	3.0
CO04117-5PW/Y	94	3.0	3.0	5.3	2.0	2.0	1.5
Purple Majesty	98	3.5	4.5	4.3	3.0	2.5	1.5
Yukon Gold	96	3.0	4.0	3.4	3.0	3.0	1.5
Mean	97	3.3	3.8	4.9	3.2	2.7	2.6
LSD[6] (0.05)	7	0.9	0.7	1.6	0.7	0.9	0.9

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 4D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Intermediate Specialty Yield Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AC03565-3W/Y	4.8	4.4	4.6	2.9	47	4.2
CO03017-2RU/Y	2.4	2.4	2.4	3.6	35	3.8
CO03027-2R/R	---	---	---	6.8	89	---
CO03341-1R/Y	3.5	2.7	3.1	5.3	54	2.0
CO04013-1W/Y	2.9	3.4	3.2	5.9	47	4.0
CO04021-2R/Y	3.2	3.7	3.5	6.6	68	4.0
CO04022-1R/Y	2.7	3.3	3.0	3.3	54	3.0
CO04023-3R/Y	4.2	3.5	3.9	4.3	54	1.4
CO04036-1W/Y	2.4	1.5	2.0	4.2	27	1.4
CO04045-4P/P	---	---	---	5.0	68	---
CO04061-1R/R	---	---	---	9.8	89	---
CO04070-5R/Y	5.0	5.0	5.0	2.6	89	4.6
CO04117-2PW/Y	4.8	4.0	4.4	3.7	27	4.6
CO04117-5PW/Y	4.9	5.0	5.0	2.3	47	4.2
Purple Majesty	---	---	---	4.1	47	---
Yukon Gold	4.1	3.1	3.6	2.5	75	4.0

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 4E. Specific gravity, french fry color, and texture for Intermediate Specialty Yield Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1] At Harvest	Fry Color[1] 3 wks 55F+ 9 wks 45F	Fry Texture[2] At Harvest	Fry Texture[2] 3 wks 55F+ 9 wks 45F
AC03565-3W/Y	1.089	3	3	3	4
CO03017-2RU/Y	1.089	1	1	4	4
CO03027-2R/R	1.074	---	---	2	2
CO03341-1R/Y	1.091	1	2	3	3
CO04013-1W/Y	1.109	1	1	3	3
CO04021-2R/Y	1.091	2	2	3	3
CO04022-1R/Y	1.078	4	2	1	2
CO04023-3R/Y	1.084	4	4	2	2
CO04036-1W/Y	1.090	2	2	3	3
CO04045-4P/P	1.075	---	---	1	1
CO04061-1R/R	1.067	3	4	1	1
CO04070-5R/Y	1.082	1	3	3	2
CO04117-2PW/Y	1.077	2	4	3	2
CO04117-5PW/Y	1.069	3	4	1	2
Purple Majesty	1.091	---	---	3	3
Yukon Gold	1.092	1	2	4	4

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 5A. Yield, grade and tuber shape for Advanced Yield Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
		US #1					
	Total	Total	%	4-10 oz	>10 oz	<4 oz	
AC00395-2RU	515	411	80	315	97	94	Ob
AC96052-1RU	355	276	78	254	23	78	Ob
Rio Grande Russet	511	391	77	296	95	112	Ob
Russet Norkotah	451	315	69	251	64	129	L
Mean	458	348	76	279	70	103	----
LSD[2] (0.05)	70	71	8	41	43	35	----

[1]Tuber shape: Ob=oblong; L=long.

[2]LSD=least significant difference.

Table 5B. Grade defects for Advanced Yield Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
AC00395-2RU	1.8	MS*, GR	0.0
AC96052-1RU	0.1	GR*	0.0
Rio Grande Russet	1.5	MS, GR*	0.0
Russet Norkotah	1.7	MS, GR*	0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 5C. Growth characteristics of Advanced Yield Trial entries- 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
AC00395-2RU	98	3.8	3.8	3.1	4.5	3.0	3.8
AC96052-1RU	96	2.3	2.0	3.0	3.8	3.0	3.3
Rio Grande Russet	99	3.3	3.3	4.0	4.3	3.0	3.3
Russet Norkotah	96	3.3	3.3	5.3	3.0	3.0	2.3
Mean	97	3.1	3.1	3.8	3.9	3.0	3.1
LSD[6] (0.05)	9	0.8	0.7	1.2	0.6	NS	0.7

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference; NS=not significant.

Table 5D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced Yield Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AC00395-2RU	4.6	4.7	4.7	2.2	96	4.8
AC96052-1RU	4.3	4.0	4.2	2.1	75	4.0
Rio Grande Russet	5.0	4.7	4.9	2.6	68	4.0
Russet Norkotah	4.5	4.3	4.4	2.5	110	3.6

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 5E. Specific gravity, french fry color, and texture for Advanced Yield Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
AC00395-2RU	1.107	2	2	4	4
AC96052-1RU	1.085	1	1	3	4
Rio Grande Russet	1.088	2	3	4	3
Russet Norkotah	1.087	2	3	3	3

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 6A . Yield, grade and tuber shape for Southwest Regional Russet Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
		US #1					
	Total	Total	%	4-10 oz	>10 oz	<4 oz	
AOTX95265-1RU	533	453	85	224	229	62	Ob
AOTX96265-2RU	508	466	92	227	239	34	Ob
ATX9332-12RU	521	451	87	289	163	53	Ob
ATX97232-1RU	463	331	71	235	96	127	Ob
Rio Grande Russet	551	412	75	309	104	119	Ob
Russet Norkotah	505	373	74	247	126	131	L
Mean	514	415	81	255	160	87	---
LSD[2] (0.05)	54	48	5	39	36	19	---

[1]Tuber shape: Ob=oblong; L=long.

[2]LSD=least significant difference.

Table 6B. Grade defects for Southwest Regional Russet Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
AOTX95265-1RU	3.4	MS*, GC, GR	0.0
AOTX96265-2RU	1.5	MS*, GR*	5.9
ATX9332-12RU	3.3	GC, GR*	0.0
ATX97232-1RU	1.2	MS*, GR	0.6
Rio Grande Russet	3.8	MS*, GR*	0.0
Russet Norkotah	0.2	MS* GR*	0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 6C. Growth characteristics of Southwest Regional Russet Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
AOTX95265-1RU	98	3.3	3.8	5.2	3.0	2.5	2.5
AOTX96265-2RU	99	3.3	4.3	3.6	3.5	2.8	3.0
ATX9332-12RU	100	4.0	3.8	3.9	4.0	3.0	3.0
ATX97232-1RU	100	3.8	4.3	5.1	2.8	2.3	2.3
Rio Grande Russet	100	3.3	4.0	3.9	4.0	3.0	3.0
Russet Norkotah	97	3.5	3.8	5.7	3.0	2.5	2.8
Mean	99	3.5	4.0	4.6	3.4	2.7	2.8
LSD6 (0.05)	3	0.9	0.6	1.3	0.5	0.7	0.6

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 6D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Russet Trial entries - 2009

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AOTX95265-1RU	4.5	4.6	4.6	2.9	96	3.2
AOTX96265-2RU	3.9	3.0	3.5	2.6	61	3.8
ATX9332-12RU	2.9	1.7	2.3	3.7	89	2.2
ATX97232-1RU	3.9	4.2	4.1	3.0	96	4.2
Rio Grande Russet	4.7	4.4	4.6	2.8	89	3.2
Russet Norkotah	4.8	3.7	4.3	2.5	110	3.0

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 6E. Specific gravity, french fry color, and texture for Southwest Regional Russet Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
AOTX95265-1RU	1.086	3	4	3	3
AOTX96265-2RU	1.091	1	2	4	4
ATX9332-12RU	1.101	3	3	4	4
ATX97232-1RU	1.091	1	2	4	4
Rio Grande Russet	1.094	2	3	3	3
Russet Norkotah	1.088	3	3	3	3

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 7A . Yield, grade and tuber shape for Southwest Regional Red Trial entries - 2009.

Clone	Yield (Cwt/A) Total	US #1 Total	%	4-10 oz	>10 oz	<4 oz	Tuber Shape[1]
ATTX98453-11BR	430	315	73	296	19	113	R
ATTX01178-1R	552	457	83	235	222	47	Ov
COTX00104-7R	490	408	83	198	211	21	Ov
NDTX5003-2R	375	310	82	234	75	63	R
Norland (Dark Red)	472	387	82	323	63	85	Ov
Red LaSoda	528	469	89	359	110	49	Ov
Sangre-S10	476	419	88	313	106	54	Ov
Mean	475	395	83	280	115	62	---
LSD[2] (0.05)	69	62	5	54	36	22	---

[1]Tuber shape: R=round; Ov=oval.

[2]LSD=least significant difference.

Table 7B. Grade defects for Southwest Regional Red Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
ATTX98453-11BR	0.6	GC*	0.0
ATTX01178-1R	8.5	MS, GC*, GR	0.9
COTX00104-7R	12.4	MS, GC*, GR	0.0
NDTX5003-2R	0.7	MS , GR*	0.0
Norland (Dark Red)	0.0		0.0
Red LaSoda	1.8	GC*, GR	10.7
Sangre-S10	0.5	GC*, GR*	0.3

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 7C. Growth characteristics of Southwest Regional Red Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
ATTX98453-11BR	99	3.3	3.3	3.7	3.0	3.0	2.0
ATTX01178-1R	95	2.8	3.0	2.5	3.0	3.0	3.0
COTX00104-7R	98	3.3	3.3	3.0	3.3	3.0	2.8
NDTX5003-2R	93	2.3	2.8	3.2	3.0	2.8	2.0
Norland (Dark Red)	98	4.0	3.8	4.0	2.3	2.0	1.3
Red LaSoda	98	3.3	3.8	2.9	3.8	3.0	2.8
Sangre-S10	98	3.0	2.8	2.8	4.0	3.0	3.0
Mean	97	3.1	3.2	3.1	3.2	2.8	2.4
LSD6 (0.05)	6	0.6	0.7	0.7	0.4	0.3	0.4

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 7D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Red Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
ATTX98453-11BR	4.0	3.8	3.9	6.5	117	3.6
ATTX01178-1R	4.4	2.6	3.5	5.2	82	4.2
COTX00104-7R	4.6	3.6	4.1	2.7	68	3.4
NDTX5003-2R	4.5	3.7	4.1	8.9	54	2.6
Norland (Dark Red)	4.1	4.3	4.2	4.6	54	3.4
Red LaSoda	4.1	3.7	3.9	3.4	89	2.0
Sangre-S10	3.3	4.0	3.7	2.0	75	2.6

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 7E. Specific gravity, french fry color, and texture for Southwest Regional Red Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
ATTX98453-11BR	1.091	2	4	3	3
ATTX01178-1R	1.077	4	4	2	2
COTX00104-7R	1.072	4	4	2	2
NDTX5003-2R	1.088	2	3	3	3
Norland (Dark Red)	1.076	1	3	2	2
Red LaSoda	1.087	2	3	2	3
Sangre-S10	1.089	4	4	2	3

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 8A . Yield, grade and tuber shape for Southwest Regional Specialty Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
		US #1					
	Total	Total	%	4-10 oz	>10 oz	<4 oz	
ATTX98493-1R/Y	493	362	73	226	136	117	Ov
ATTX98518-5PU/Y	458	421	92	281	140	33	Ob
ATX9132-2Y	460	162	35	155	8	294	R
BTX2103-1R/Y	539	425	79	340	85	103	Ov
CO01399-10P/Y	648	511	79	395	117	125	Ov
PORTX03PG25-2R/R	471	239	50	229	10	231	L
TXYG055	507	464	91	277	186	36	Ov
TXYG057	488	433	89	220	214	33	Ov
TXYG079	503	471	93	261	209	28	Ov
TXYG098	498	447	90	236	211	45	Ov
TXYG105	446	377	84	278	99	64	Ov
TXYG107	464	427	92	225	203	29	Ov
Purple Majesty	498	306	61	264	42	191	Ov
Yukon Gold	456	417	91	235	182	39	Ov
Mean	495	390	79	259	131	98	---
LSD[2] (0.05)	57	63	5	46	57	20	---

[1]Tuber shape: R=round; Ov=oval; Ob=oblong; L=long.

[2]LSD=least significant difference.

Table 8B. Grade defects for Southwest Regional Specialty Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
ATTX98493-1R/Y	3.0	MS, GC, GR*	0.0
ATTX98518-5PU/Y	0.9	MS*, GC*	0.0
ATX9132-2Y	0.7	MS*, GR*	0.0
BTX2103-1R/Y	2.2	MS , GC*, GR	1.0
CO01399-10P/Y	1.7	MS*, GC	0.0
PORTX03PG25-2R/R	0.2	MS*	0.0
TXYG055	1.6	MS*, GR	0.0
TXYG057	4.4	MS, GC*, GR	1.7
TXYG079	0.9	MS*, GR*	0.0
TXYG098	1.3	MS*, GC*	0.0
TXYG105	0.9	MS, GR*	0.0
TXYG107	1.6	MS, GC, GR*	0.7
Purple Majesty	0.2	MS*	0.2
Yukon Gold	0.0		0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 8C. Growth characteristics of Southwest Regional Specialty Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
ATTX98493-1R/Y	91	3.0	4.0	4.9	2.8	2.0	2.8
ATTX98518-5PU/Y	94	3.0	3.8	3.3	3.0	2.8	2.3
ATX9132-2Y	100	2.8	3.8	8.1	4.0	2.8	3.0
BTX2103-1R/Y	94	3.0	4.0	5.0	3.0	2.8	3.0
CO01399-10P/Y	96	3.0	3.5	4.2	4.0	3.0	4.0
PORTX03PG25-2R/R	100	3.3	3.0	6.5	2.8	2.3	3.0
TXYG055	97	3.5	4.0	3.2	3.0	2.3	2.8
TXYG057	99	3.5	4.0	2.8	3.0	2.0	2.5
TXYG079	97	3.8	4.0	3.0	3.0	2.3	2.5
TXYG098	98	3.5	4.3	3.3	3.0	2.3	2.5
TXYG105	99	3.5	4.0	3.8	3.0	2.3	2.0
TXYG107	99	4.0	4.0	2.8	3.3	2.3	2.5
Purple Majesty	95	3.0	4.0	3.7	3.0	3.0	2.8
Yukon Gold	93	3.0	4.0	2.7	3.0	2.0	2.3
Mean	97	3.3	3.9	4.1	3.1	2.4	2.7
LSD6 (0.05)	6	0.6	0.4	0.9	0.3	0.6	0.7

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 8D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Specialty Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
ATTX98493-1R/Y	4.7	4.0	4.4	6.5	61	2.0
ATTX98518-5PU/Y	5.0	4.9	5.0	6.9	68	4.8
ATX9132-2Y	4.0	4.2	4.1	7.7	27	3.4
BTX2103-1R/Y	3.0	3.0	3.0	4.7	89	1.8
CO01399-10P/Y	4.2	4.0	4.1	2.6	75	3.4
PORTX03PG25-2R/R	---	---	---	10.3	54	---
TXYG055	3.7	3.7	3.7	2.6	82	4.4
TXYG057	3.8	4.3	4.1	2.1	75	4.8
TXYG079	4.2	4.3	4.3	2.5	75	4.6
TXYG098	4.2	4.6	4.4	2.7	68	4.8
TXYG105	3.6	3.8	3.7	2.9	75	4.6
TXYG107	4.3	4.0	4.2	2.5	75	4.6
Purple Majesty	---	---	---	4.3	54	---
Yukon Gold	4.3	4.0	4.2	2.3	82	4.4

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 8E. Specific gravity, french fry color, and texture for Southwest Regional Specialty Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F + 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
ATTX98493-1R/Y	1.071	4	4	1	2
ATTX98518-5PU/Y	1.075	2	3	1	1
ATX9132-2Y	1.087	3	3	3	3
BTX2103-1R/Y	1.084	3	4	2	2
CO01399-10P/Y	1.081	2	2	2	3
PORTX03PG25-2R/R	1.072	---	---	2	2
TXYG055	1.089	2	3	4	4
TXYG057	1.091	2	2	4	4
TXYG079	1.085	2	3	4	4
TXYG098	1.093	2	3	4	4
TXYG105	1.086	3	3	4	4
TXYG107	1.095	2	3	4	4
Purple Majesty	1.087	---	---	3	3
Yukon Gold	1.087	2	3	4	4

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 9A. Yield, grade and tuber shape for Western Regional Main Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
A96814-65LB	446	381	85	249	132	58	Ob
A97066-42LB	448	357	79	220	137	84	Ob
A98345-1	484	374	77	316	58	105	Ob
A0008-1TE	407	339	83	284	55	65	Ob
AC99375-1RU	527	409	78	305	105	106	Ob
AO96305-3	415	320	77	254	67	91	Ob
AO96365-2	517	365	70	320	45	144	Ob
CO97087-2RU	454	367	81	291	75	83	Ob
CO98067-7RU	488	356	73	305	51	127	Ob
CO98368-2RU	425	275	65	238	37	147	L
CO99053-3RU	525	466	89	221	245	52	L
CO99053-4RU	373	291	78	217	74	80	Ob
CO99100-1RU	369	313	85	218	96	45	Ob
PA99N2-1	530	449	85	274	175	57	Ob
PA99N82-4	413	328	79	270	57	77	Ov
PA00N14-2	447	251	56	231	20	192	L
Ranger Russet	468	354	76	284	70	112	L
Rio Grande Russet	520	410	79	291	120	94	Ob
Russet Burbank	522	272	52	241	31	246	L
Russet Norkotah	482	348	72	266	82	119	L
Mean	463	351	76	265	87	104	----
LSD[2] (0.05)	56	55	6	41	40	26	----

[1]Tuber shape: Ov=oval; Ob=oblong; L=long.

[2]LSD=least significant difference.

Table 9B. Grade defects for Western Regional Main Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
A96814-65LB	1.5	GC*, GR	0.0
A97066-42LB	1.6	MS, GR*	0.0
A98345-1	1.0	MS*, GC	0.0
A0008-1TE	0.8	MS*, GR	0.0
AC99375-1RU	2.1	MS*, GR	0.0
AO96305-3	1.0	MS*, GC*, GR*	0.0
AO96365-2	1.8	MS*	0.0
CO97087-2RU	0.7	MS, GR*	0.3
CO98067-7RU	0.9	MS*	0.0
CO98368-2RU	0.8	MS*	0.0
CO99053-3RU	1.3	MS*, GC, GR	0.0
CO99053-4RU	0.6	GC*, GR	0.0
CO99100-1RU	2.7	GC*	0.0
PA99N2-1	4.5	MS, GC, GR*	0.0
PA99N82-4	2.2	MS, GC*, GR	0.0
PA00N14-2	1.0	MS*, GR	0.0
Ranger Russet	0.3	MS*	0.0
Rio Grande Russet	3.0	MS*, GR*	0.0
Russet Burbank	0.8	MS*, GR	0.6
Russet Norkotah	3.2	MS*, GR	0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 9C. Growth characteristics of Western Regional Main Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
A96814-65LB	96	2.8	3.5	2.9	3.3	2.5	3.0
A97066-42LB	99	2.0	2.0	2.0	4.3	3.0	3.8
A98345-1	99	3.5	3.8	3.5	3.3	2.5	3.0
A0008-1TE	97	3.0	3.3	3.8	3.0	2.0	2.5
AC99375-1RU	97	2.8	3.8	3.4	4.5	3.0	3.0
AO96305-3	100	2.8	3.0	4.6	3.0	2.3	3.0
AO96365-2	98	3.5	3.8	3.7	3.5	2.5	3.3
CO97087-2RU	99	3.5	4.0	4.0	3.3	3.0	3.0
CO98067-7RU	98	3.3	4.0	4.2	3.3	3.0	3.0
CO98368-2RU	98	3.8	4.0	4.4	3.0	2.0	2.3
CO99053-3RU	100	3.0	3.8	4.2	4.0	3.0	3.0
CO99053-4RU	100	3.3	2.8	4.0	2.8	3.0	2.8
CO99100-1RU	98	3.3	3.8	2.8	2.5	2.3	1.8
PA99N2-1	98	3.0	3.5	4.5	3.8	2.8	3.3
PA99N82-4	100	3.5	3.3	3.7	3.3	3.0	3.0
PA00N14-2	98	3.5	4.0	4.0	3.5	3.0	2.5
Ranger Russet	100	2.8	3.0	3.0	3.5	3.0	3.3
Rio Grande Russet	100	3.0	3.8	3.9	4.3	3.0	3.0
Russet Burbank	98	3.3	4.3	4.1	4.0	2.3	2.8
Russet Norkotah	99	3.5	3.8	5.4	3.0	2.5	2.3
Mean	99	3.1	3.5	3.8	3.4	2.7	2.9
LSD[6] (0.05)	3	0.9	0.6	0.8	0.7	0.5	0.6

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 9D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Western Regional Main Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
A96814-65LB	4.4	3.2	3.8	4.5	68	4.0
A97066-42LB	4.1	2.6	3.4	3.4	110	4.0
A98345-1	2.9	2.4	2.7	4.7	47	2.8
A0008-1TE	4.6	3.6	4.1	2.7	75	4.8
AC99375-1RU	3.8	3.9	3.9	2.3	82	4.6
AO96305-3	4.5	4.5	4.5	2.4	96	4.8
AO96365-2	4.2	3.1	3.7	2.5	47	4.6
CO97087-2RU	4.5	4.4	4.5	2.9	68	4.0
CO98067-7RU	4.4	4.6	4.5	3.6	61	4.6
CO98368-2RU	4.3	4.0	4.2	2.7	89	4.8
CO99053-3RU	4.3	2.8	3.6	2.2	54	4.6
CO99053-4RU	3.9	4.0	4.0	3.0	54	4.4
CO99100-1RU	3.8	4.6	4.2	4.0	54	4.6
PA99N2-1	4.5	4.2	4.4	2.1	89	4.6
PA99N82-4	4.1	3.8	4.0	3.1	75	4.6
PA00N14-2	4.2	3.8	4.0	3.2	110	4.2
Ranger Russet	2.8	2.9	2.9	2.8	68	3.8
Rio Grande Russet	4.4	4.2	4.3	2.9	75	4.0
Russet Burbank	4.0	3.6	3.8	1.9	138	3.4
Russet Norkotah	4.2	2.6	3.4	2.9	110	3.4

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 9E. Specific gravity, french fry color, and texture for Western Regional Main Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
A96814-65LB	1.107	1	2	5	5
A97066-42LB	1.096	3	4	4	4
A98345-1	1.096	1	2	4	4
A0008-1TE	1.089	2	3	4	3
AC99375-1RU	1.104	2	2	5	5
AO96305-3	1.096	2	1	4	4
AO96365-2	1.089	2	3	4	4
CO97087-2RU	1.097	0	2	4	4
CO98067-7RU	1.079	2	3	4	4
CO98368-2RU	1.081	3	3	3	4
CO99053-3RU	1.091	2	3	4	4
CO99053-4RU	1.085	3	3	4	4
CO99100-1RU	1.085	1	1	3	4
PA99N2-1	1.084	3	3	3	3
PA99N82-4	1.090	1	2	4	3
PA00N14-2	1.089	2	4	4	3
Ranger Russet	1.088	3	3	3	3
Rio Grande Russet	1.088	4	4	3	3
Russet Burbank	1.094	2	2	3	4
Russet Norkotah	1.084	3	3	2	3

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 10A. Yield, grade and tuber shape for Advanced and Western Regional Red Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
ATTX98453-6R	373	299	80	227	72	69	Ov
BTX2332-1R	526	474	90	281	193	42	Ov
CO98012-5R	509	395	77	325	69	111	R
CO99076-6R	379	311	82	245	65	62	R
CO99256-2R	510	337	66	303	35	168	Ov
CO00277-2R	422	332	78	264	68	85	R
CO00291-5R	343	263	77	237	26	77	Ov
CO03094-5R/RWF	460	380	83	204	175	11	L
COTX94216-1R	530	431	81	288	143	93	Ov
COTX94218-1R	563	420	74	307	113	95	Ov
NDTX4784-7R	462	388	84	295	93	64	R
Norland (Dark Red)	431	340	79	308	32	89	Ov
Red LaSoda	561	478	85	363	115	73	Ov
Sangre-S10	545	478	88	347	130	65	Ov
Mean	473	380	80	285	95	79	----
LSD[2] (0.05)	64	56	5	43	39	19	----

[1]Tuber shape: R=round; Ov=oval; L=long.

[2]LSD=least significant difference.

Table 10B. Grade defects for Advanced and Western Regional Red Trial entries - 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
ATTX98453-6R	1.3	MS, GC*	0.3
BTX2332-1R	2.0	MS, GC*, GR*	0.0
CO98012-5R	0.7	MS, GC*	0.0
CO99076-6R	1.6	MS*, GC*	0.0
CO99256-2R	0.8	MS*, GC, GR	0.3
CO00277-2R	1.2	MS, GR*	0.0
CO00291-5R	0.9	GC*	0.0
CO03094-5R/RWF	3.7	MS*	0.0
COTX94216-1R	1.1	MS, GC*, GR	0.0
COTX94218-1R	8.6	GC*, GR	0.0
NDTX4784-7R	2.4	GC*, GR*	0.0
Norland (Dark Red)	0.7	MS, GC*	0.0
Red LaSoda	1.9	MS, GC*, GR	12.2
Sangre-S10	0.3	GR*	0.0

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 10C. Growth characteristics of Advanced and Western Regional Red Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
ATTX98453-6R	99	3.0	3.0	2.5	2.3	3.0	2.0
BTX2332-1R	98	3.3	4.5	4.4	3.0	2.0	2.0
CO98012-5R	98	2.8	3.5	3.5	3.8	3.0	3.0
CO99076-6R	92	2.8	3.0	3.6	3.0	2.3	2.0
CO99256-2R	99	2.8	3.5	4.0	4.3	3.0	3.0
CO00277-2R	93	2.5	3.0	4.9	3.0	2.3	2.0
CO00291-5R	97	2.3	3.0	3.1	4.3	3.5	3.3
CO03094-5R/RWF	100	3.3	4.0	4.8	3.0	2.5	3.0
COTX94216-1R	96	3.0	4.0	4.4	4.0	2.8	2.8
COTX94218-1R	97	3.0	3.5	5.8	4.0	3.0	3.0
NDTX4784-7R	97	3.0	3.3	3.2	3.0	3.0	2.3
Norland (Dark Red)	100	3.8	4.0	4.6	2.5	2.0	1.5
Red LaSoda	100	3.5	3.8	3.6	3.3	3.0	3.0
Sangre-S10	97	3.5	3.0	4.0	3.5	3.0	3.0
Mean	97	3.0	3.5	4.0	3.3	2.7	2.6
LSD[6] (0.05)	4	0.6	0.6	0.7	0.5	0.5	0.5

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 10D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Red Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
ATTX98453-6R	3.4	3.0	3.2	5.3	110	4.4
BTX2332-1R	4.0	3.4	3.7	4.1	75	3.8
CO98012-5R	3.0	2.4	2.7	3.4	54	2.4
CO99076-6R	3.4	2.5	3.0	7.4	68	2.0
CO99256-2R	3.7	3.1	3.4	5.8	89	2.4
CO00277-2R	3.9	3.7	3.8	5.1	47	4.6
CO00291-5R	2.1	2.0	2.1	11.1	61	1.4
CO03094-5R/RWF	4.9	4.6	4.8	4.1	75	---
COTX94216-1R	4.8	3.2	4.0	2.6	96	4.6
COTX94218-1R	2.7	2.9	2.8	5.9	117	3.6
NDTX4784-7R	3.6	3.4	3.5	7.2	75	3.4
Norland (Dark Red)	3.5	3.9	3.7	6.0	61	4.0
Red LaSoda	3.1	4.0	3.6	3.5	89	2.2
Sangre-S10	3.4	3.8	3.6	2.5	68	2.4

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 10E. Specific gravity, french fry color, and texture for Advanced and Western Regional Red Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
ATTX98453-6R	1.071	3	4	2	2
BTX2332-1R	1.074	2	3	2	2
CO98012-5R	1.082	3	4	3	2
CO99076-6R	1.086	3	3	3	2
CO99256-2R	1.090	2	2	3	3
CO00277-2R	1.084	3	4	3	3
CO00291-5R	1.085	2	4	2	2
CO03094-5R/RWF	1.071	---	---	2	2
COTX94216-1R	1.081	3	4	2	2
COTX94218-1R	1.086	2	3	3	3
NDTX4784-7R	1.074	2	3	1	2
Norland (Dark Red)	1.072	3	3	2	2
Red LaSoda	1.085	2	3	3	3
Sangre-S10	1.082	3	4	2	2

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 11A. Yield, grade and tuber shape for Advanced and Western Regional Specialty Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
A00286-3Y	533	374	70	319	55	157	Ov
AC97521-1R/Y	577	440	76	377	63	128	Ov
AC99329-7PW/Y	585	471	80	353	118	105	Ov
AC99330-1P/Y	523	302	58	291	11	220	R
ATC00293 -1W/Y	595	499	84	314	185	68	Ov
CO97215-2P/P	432	325	75	252	73	94	Ov
CO97222-1R/R	447	251	56	218	33	190	Ov
CO97226-2R/R	369	91	24	91	0	278	R
CO97227-2P/PW	445	88	20	88	0	355	Ov
CO97232-1R/Y	412	220	53	207	13	189	Ov
CO97232-2R/Y	420	318	76	269	49	100	Ov
CO97233-3R/Y	432	294	68	238	56	127	Ob
CO99045-1W/Y	537	397	74	286	111	136	Ob
CO00405-1RF	359	300	83	260	40	58	L
CO00412-5W/Y	485	396	81	288	108	75	Ov
CO00415-1RF	278	225	81	207	19	46	L
OR00068-11	474	239	50	212	28	235	R
PA96RR1-193	405	196	48	178	18	204	R
POR01PG45-5	480	338	70	289	48	129	Ob
POR02PG37-2	411	227	55	203	24	183	Ov
POR03PG23-1	323	157	48	151	6	167	Ov
TC02072-3P/P	366	38	10	38	0	328	Ob
Purple Majesty	491	246	50	211	35	244	Ov
Yukon Gold	383	348	91	221	127	34	Ov
Mean	448	282	62	232	51	160	----
LSD[2] (0.05)	59	56	8	47	30	39	----

[1]Tuber shape: R=round; Ov=oval; Ob=oblong; L=long.

[2]LSD=least significant difference.

Table 11B. Grade defects for Advanced and Western Regional Specialty Trial entries 2009.

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
A00286-3Y	0.3	MS*, GR*	0.0
AC97521-1R/Y	1.5	MS*, GC, GR	1.5
AC99329-7PW/Y	1.7	MS, GR*	0.0
AC99330-1P/Y	0.0		0.0
ATC00293 -1W/Y	4.6	MS, GC*, GR	3.8
CO97215-2P/P	3.0	GC*	0.0
CO97222-1R/R	1.2	GC*, GR	0.0
CO97226-2R/R	0.0		0.0
CO97227-2P/PW	0.6	GC*	0.0
CO97232-1R/Y	0.7	MS*, GC*,	0.0
CO97232-2R/Y	0.4	GR*	0.0
CO97233-3R/Y	2.5	MS*, GC, GR	0.3
CO99045-1W/Y	0.8	GR*	0.0
CO00405–1RF	0.2	MS*	0.0
CO00412-5W/Y	2.9	MS, GC*	0.0
CO00415-1RF	2.4	MS*	0.0
OR00068-11	0.0		0.0
PA96RR1-193	1.4	MS, GC*	0.0
POR01PG45-5	2.9	MS, GC*	0.0
POR02PG37-2	0.1	MS*	0.0
POR03PG23-1	0.0		0.0
TC02072-3P/P	0.1	MS*	0.0
Purple Majesty	0.0		0.6
Yukon Gold	0.3	GR*	0.8

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 11C. Growth characteristics of Advanced and Western Regional Specialty Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
A00286-3Y	97	3.3	4.0	4.2	4.5	3.0	3.0
AC97521-1R/Y	98	3.3	4.3	4.3	4.0	3.0	3.0
AC99329-7PW/Y	98	3.8	5.0	7.4	4.0	3.0	3.0
AC99330-1P/Y	98	3.0	4.5	6.7	2.8	2.3	2.0
ATC00293 -1W/Y	95	2.5	3.5	3.7	4.0	3.0	3.0
CO97215-2P/P	96	3.0	3.0	4.1	3.3	2.8	3.0
CO97222-1R/R	97	3.0	3.3	4.6	3.0	3.0	2.5
CO97226-2R/R	99	3.3	3.5	5.9	3.0	2.0	3.0
CO97227-2P/PW	78	2.8	3.8	8.0	3.8	3.0	3.0
CO97232-1R/Y	96	2.5	3.5	4.5	3.0	3.0	2.0
CO97232-2R/Y	90	3.3	3.3	3.3	2.8	2.0	2.5
CO97233-3R/Y	80	3.0	4.0	4.4	2.8	2.0	3.0
CO99045-1W/Y	99	3.5	4.3	4.0	3.5	3.0	3.0
CO00405-1RF	99	3.5	3.8	5.5	2.0	2.0	1.0
CO00412-5W/Y	98	3.0	4.3	4.7	3.0	3.0	2.8
CO00415-1RF	54	2.0	3.0	7.2	2.3	2.0	1.5
OR00068-11	99	3.3	4.8	6.0	4.0	3.0	2.3
PA96RR1-193	98	4.0	4.3	5.3	3.0	3.0	1.5
POR01PG45-5	98	3.3	3.3	4.8	3.8	3.0	3.0
POR02PG37-2	99	3.0	4.0	7.6	2.5	2.3	1.5
POR03PG23-1	97	3.3	2.0	3.7	2.5	2.5	2.5
TC02072-3P/P	100	2.8	3.0	7.0	3.0	2.0	1.5

Table 11C continued on next page

Table 11C (cont'd). Growth characteristics of Advanced and Western Regional Specialty Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
Purple Majesty	96	3.8	3.8	3.8	3.0	2.5	1.5
Yukon Gold	97	3.3	4.0	2.9	3.0	2.8	1.8
Mean	94	3.1	3.7	5.1	3.2	2.6	2.4
LSD[6] (0.05)	9	0.6	0.6	1.2	0.6	0.4	0.5

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 11D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Specialty Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
A00286-3Y	4.3	2.9	3.6	2.1	27	5.0
AC97521-1R/Y	3.4	2.7	3.1	3.8	89	2.8
AC99329-7PW/Y	4.1	2.6	3.4	5.1	27	4.0
AC99330-1P/Y	5.0	3.9	4.5	3.4	54	3.4
ATC00293 -1W/Y	4.4	3.8	4.1	2.1	110	4.4
CO97215-2P/P	---	---	---	6.4	89	---
CO97222-1R/R	---	---	---	4.3	68	---
CO97226-2R/R	---	---	---	10.6	54	---
CO97227-2P/PW	---	---	---	8.0	61	---
CO97232-1R/Y	4.4	3.1	3.8	6.0	54	3.4
CO97232-2R/Y	4.7	4.3	4.5	3.8	54	4.2
CO97233-3R/Y	4.7	3.4	4.1	3.4	61	4.2
CO99045-1W/Y	3.8	3.8	3.8	3.1	68	4.2
CO00405-1RF	4.7	4.4	4.6	4.1	61	4.4
CO00412-5W/Y	3.9	3.1	3.5	2.2	75	4.0
CO00415-1RF	5.0	4.7	4.9	2.8	89	4.6
OR00068-11	---	---	---	8.1	89	---
PA96RR1-193	---	---	---	7.8	47	---
POR01PG45-5	2.8	1.5	2.2	3.3	117	3.4
POR02PG37-2	4.5	4.1	4.3	5.2	47	4.4
POR03PG23-1	---	---	---	8.0	47	---
TC02072-3P/P	---	---	---	14.9	89	---
Purple Majesty	---	---	---	3.9	54	---
Yukon Gold	4.5	3.8	4.2	2.0	89	4.8

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 11E. Specific gravity, french fry color, and texture for Advanced and Western Regional Speciality Trial entries - 2009.

Clone	Specific Gravity	Fry Color[1]		Fry Texture[2]	
		At Harvest	3 wks 55F+ 9 wks 45F	At Harvest	3 wks 55F+ 9 wks 45F
A00286-3Y	1.089	2	3	3	3
AC97521-1R/Y	1.091	4	4	2	3
AC99329-7PW/Y	1.094	4	3	3	3
AC99330-1P/Y	1.083	4	4	3	3
ATC00293 -1W/Y	1.084	2	2	3	2
CO97215-2P/P	1.087	---	---	2	2
CO97222-1R/R	1.074	---	---	2	1
CO97226-2R/R	1.077	---	---	2	2
CO97227-2P/PW	1.088	---	---	4	4
CO97232-1R/Y	1.082	1	2	3	3
CO97232-2R/Y	1.075	1	2	2	2
CO97233-3R/Y	1.087	2	3	3	2
CO99045-1W/Y	1.090	3	4	3	3
CO00405-1RF	1.079	2	2	2	2
CO00412-5W/Y	1.090	3	4	3	3
CO00415-1RF	1.073	2	3	2	3
OR00068-11	1.093	---	---	2	2
PA96RR1-193	1.091	---	---	2	3
POR01PG45-5	1.101	2	2	3	3
POR02PG37-2	1.089	1	2	2	3
POR03PG23-1	1.070	---	---	1	1
TC02072-3P/P	1.082	---	---	1	1
Purple Majesty	1.084	---	---	3	3
Yukon Gold	1.092	2	3	3	3

[1]Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of ≤ 2 are acceptable.

[2]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

Table 12A. Yield, grade and tuber shape for Advanced and Western Regional Chipping Trial entries - 2009.

Clone	Yield (Cwt/A)						Tuber Shape[1]
		US #1					
	Total	Total	%	4-10 oz	>10 oz	<4 oz	
AC01151-5W	557	426	76	373	53	120	R
AC03433-1W	492	421	86	333	88	53	R
CO95051-7W	387	315	81	303	13	70	R
CO96141-4W	399	318	80	283	36	79	Ov
CO97043-14W	455	347	76	301	46	101	R
CO97065-7W	439	343	78	323	20	91	R
CO00188-4W	456	377	83	309	68	74	Ov
CO00197-3W	497	394	79	299	95	99	Ov
CO00270-7W	436	383	88	299	84	46	Ov
CO02024-9W	480	330	69	305	25	146	Ov
CO02033-1W	439	345	79	330	15	92	R
CO02321-4W	467	377	81	306	71	72	R
CO03197-3W	426	345	81	236	110	60	R
CO03243-3W	501	438	87	350	88	60	R
CO03273-7W	597	470	78	359	111	107	R
Atlantic	524	434	83	332	102	82	Ov
Chipeta	643	580	90	389	191	45	Ov
Mean	482	391	81	319	71	82	----
LSD[2] (0.05)	57	60	5	46	32	17	----

[1]Tuber shape: R=round; Ov=oval.

[2]LSD=least significant difference.

Table 12B. Grade defects for Advanced and Western Regional Chipping Trial entries - 2009

Clone	% External Defects[1]	External Defects Observed[2]	% Hollow Heart[3]
AC01151-5W	2.1	MS, GR*	0.0
AC03433-1W	3.7	GC, GR*	0.0
CO95051-7W	0.4	GR*	0.0
CO96141-4W	0.2	GR*	0.0
CO97043-14W	1.5	GR*	0.0
CO97065-7W	1.1	GR*	0.0
CO00188-4W	1.0	GC*, GR*	0.0
CO00197-3W	0.9	MS, GR*	0.0
CO00270-7W	1.6	MS, GR*	0.0
CO02024-9W	0.9	GR*	0.0
CO02033-1W	0.6	MS, GC*, GR	0.0
CO02321-4W	3.8	GR*	0.0
CO03197-3W	4.7	MS, GC*, GR	0.6
CO03243-3W	0.6	GC*, GR	0.7
CO03273-7W	3.3	GR*	0.0
Atlantic	1.6	GR*	2.9
Chipeta	2.8	MS, GC, GR*	0.0

[1] Percent external defects based on the proportion of the total sample weight with significant defects.

[2] MS=misshapen; SG=second growth; GC=growth crack; GR=green. Most prevalent defects for each clone are asterisked.

[3] Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

Table 12C. Growth characteristics of Advanced and Western Regional Chip Trial entries - 2009.

Clone	% Stand	Emergence Uniformity[1]	Vine Vigor[2]	Stems/ Plant	Vine Size[3]	Vine Type[4]	Vine Maturity[5]
AC01151-5W	99	4.0	3.5	4.1	3.0	3.0	3.0
AC03433-1W	98	3.0	3.0	3.6	4.0	3.0	4.0
CO95051-7W	87	3.0	3.0	3.8	3.3	3.0	3.3
CO96141-4W	100	3.3	3.0	3.4	2.8	2.8	3.0
CO97043-14W	94	3.3	3.5	3.1	3.0	2.8	3.0
CO97065-7W	96	3.0	3.8	4.4	3.3	3.0	3.0
CO00188-4W	99	3.3	4.3	4.8	3.0	2.8	3.0
CO00197-3W	95	3.5	4.3	3.8	3.0	2.8	3.0
CO00270-7W	94	3.5	4.0	3.8	3.0	2.0	2.5
CO02024-9W	98	3.5	4.0	4.9	3.0	3.0	3.0
CO02033-1W	96	3.0	3.8	4.3	3.3	3.0	3.0
CO02321-4W	96	3.8	4.5	4.1	3.3	2.8	3.0
CO03197-3W	98	3.3	3.5	4.0	3.0	2.8	3.0
CO03243-3W	99	3.8	4.0	3.5	4.0	3.0	3.0
CO03273-7W	96	3.0	4.3	4.0	3.8	3.0	3.0
Atlantic	98	3.5	4.3	3.8	3.3	3.0	3.0
Chipeta	98	3.8	4.5	4.7	4.3	3.0	3.0
Mean	97	3.4	3.8	4.0	3.3	2.9	3.0
LSD[6] (0.05)	5	0.7	0.6	0.8	0.5	0.4	0.3

[1]Emergence uniformity is rated on a 1 to 5 scale, with 5 indicating very uniform emergence.

[2]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[3]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[4]Vine type is rated on a 1 to 5 scale, with 5 indicating very upright vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]LSD=least significant difference.

Table 12D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Chip Trial entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AC01151-5W	3.2	1.7	2.5	3.3	96	2.6
AC03433-1W	4.3	2.5	3.4	5.3	75	4.4
CO95051-7W	3.3	1.5	2.4	5.4	75	3.6
CO96141-4W	4.2	2.7	3.5	4.1	68	4.0
CO97043-14W	3.5	2.0	2.8	5.3	96	4.4
CO97065-7W	4.7	4.0	4.4	4.0	110	5.0
CO00188-4W	4.7	1.5	3.1	3.7	89	4.4
CO00197-3W	2.9	1.1	2.0	4.3	75	3.2
CO00270-7W	4.1	3.3	3.7	3.9	54	3.8
CO02024-9W	4.2	1.6	2.9	3.9	96	3.6
CO02033-1W	3.6	2.0	3.8	5.2	110	4.0
CO02321-4W	4.6	3.2	3.9	4.5	75	4.4
CO03197-3W	4.0	2.5	3.3	5.0	54	4.4
CO03243-3W	3.4	2.9	3.2	4.3	75	3.4
CO03273-7W	3.7	3.6	3.7	6.8	82	4.8
Atlantic	3.2	2.0	2.6	4.4	75	4.8
Chipeta	3.5	3.1	3.3	2.6	96	4.2

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 12E. Chip color[1] after various storage regimes and specific gravity of Advanced and Western Regional Chip Trial entries - 2009.

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC01151-5W	1.094	5.0	3.5	3.0	3.5
AC03433-1W	1.088	3.0	2.5	2.5	2.5
CO95051-7W	1.104	4.5	4.0	2.0	2.5
CO96141-4W	1.091	4.5	3.5	3.0	3.5
CO97043-14W	1.092	3.5	3.5	2.0	1.0
CO97065-7W	1.099	4.5	4.0	2.0	2.0
CO00188-4W	1.095	4.0	2.5	1.0	1.5
CO00197-3W	1.083	4.5	4.0	3.5	3.5
CO00270-7W	1.097	3.0	3.0	1.0	1.0
CO02024-9W	1.092	4.0	3.0	1.5	1.0
CO02033-1W	1.097	3.0	3.0	2.5	2.0
CO02321-4W	1.104	2.5	2.0	1.0	1.0
CO03197-3W	1.097	4.0	3.5	1.5	2.5
CO03243-3W	1.095	4.0	3.0	1.5	2.5
CO03273-7W	1.086	4.5	4.0	3.0	4.0
Atlantic	1.102	4.5	4.0	3.5	4.0
Chipeta	1.096	5.0	4.5	3.0	3.0

[1]Chip color was rated using the Snack Food Association 1-5 scale. Ratings of $\leq$2.0 are acceptable.

Table 13A. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for San Luis Valley chipping study entries - 2009.

Clone	Blackspot Index[1]			% Weight Loss[2]	Dormancy (Days)[3]	Enzymatic Browning[4]
	Bud End	Stem End	Average			
AC00206-2W	4.2	3.3	3.8	3.4	95	5.0
AC01151-5W	4.9	3.3	4.1	1.7	118	2.4
AC03433-1W	5.0	4.0	4.5	2.6	101	4.8
AC03452-2W	5.0	4.8	4.9	1.8	95	4.8
CO00188-4W	4.8	3.2	4.0	3.3	89	5.0
CO00197-3W	3.7	1.9	2.8	2.9	82	3.8
CO00270-7W	4.4	3.7	4.1	2.8	75	3.4
CO02024-9W	4.5	2.2	3.4	2.8	125	4.6
CO02033-1W	2.7	2.9	2.8	3.2	167	4.6
CO02321-4W	4.5	4.4	4.5	3.0	104	4.8
CO03243-3W	4.0	3.5	3.8	2.8	101	4.2
CO03273-7W	3.8	3.8	3.8	3.8	108	5.0
CO95051-7W	3.8	2.5	3.2	6.0	77	3.4
CO96141-4W	3.9	3.3	3.6	3.8	77	4.6
CO97043-14W	4.3	3.0	3.7	4.0	91	4.8
CO97065-7W	4.6	3.7	4.2	2.6	105	4.8
VC05091-2W	3.0	3.1	3.1	2.9	123	2.4
Atlantic	3.6	2.2	2.9	2.7	104	5.0
Chipeta	2.8	3.6	3.2	2.4	98	5.0
Snowden	3.9	3.0	3.5	2.7	118	4.2

[1]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[2]Tubers were stored at 45F for 91 days.

[3]Days from harvest to first visible growth. Tubers were stored at 45F.

[4]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

Table 13B. Chip color[1] after various storage regimes and specific gravity of San Luis Valley chipping study entries - 2009..

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC00180-2W	1.083	4.5	4.0	2.0	2.5
AC00180-4W	1.079	4.5	4.0	2.5	3.0
AC00206-2W	1.084	2.0	1.5	1.0	1.5
AC01151-5W	1.079	4.5	4.5	3.0	3.0
AC03433-1W	1.085	4.0	3.0	1.5	1.0
AC03452-2W	1.075	3.5	3.5	1.0	1.0
AC03472-2W	1.091	5.0	4.5	2.5	3.0
AC05153-1W	1.089	4.5	3.5	2.0	2.0
CO00188-4W	1.090	3.5	3.5	2.5	2.5
CO00197-3W	1.079	5.0	4.0	3.5	4.0
CO00270-7W	1.084	4.5	2.5	2.0	1.5
CO02024-9W	1.083	4.0	4.0	2.0	1.5
CO02033-1W	1.090	4.0	3.5	2.0	2.5
CO02321-4W	1.094	4.5	3.0	1.0	1.0
CO03243-3W	1.084	4.0	3.0	1.5	1.0
CO03273-7W	1.078	5.0	4.5	2.5	3.0
CO05061-2P	1.097	2.0	2.5	1.0	1.5
CO05061-6W	1.091	3.5	3.5	1.0	2.0
CO05061-7W	1.100	3.0	2.0	1.5	1.5
CO05062-2P/P	1.095	---	---	---	---
CO95051-7W	1.098	3.5	3.0	2.5	2.0
CO96141-4W	1.091	4.5	3.5	2.5	3.0
CO97043-14W	1.090	4.0	3.5	2.0	2.0
CO97065-7W	1.102	4.0	3.5	1.5	2.0
VC05091-2W	1.082	5.0	4.0	1.5	1.5
Atlantic	1.097	5.0	4.5	3.0	3.0
Chipeta	1.090	5.0	3.5	3.0	3.0
Snowden	1.091	5.0	2.5	3.0	1.5

[1]Chip color was rated using the Snack Food Association 1-5 scale. Ratings of $\leq$2.0 are acceptable.

Table 14. Summary comparison of advanced selections and named cultivars for yield, grade, maturity, specific gravity, and grade defects.

Clone	Usage[1]	# Trials	Total Yield (Cwt/A)	% US #1	Vine Maturity[2]	Specific Gravity	% External Defects[3]	% Hollow Heart[4]
Russets								
CO95172-3RU	FM	9	500	79	3.2	1.089	1.0	0.5
AC96052-1RU	Dual	8	441	86	3.2	1.090	0.8	0.2
CO97087-2RU	Dual	7	433	85	3.0	1.096	1.7	0.3
CO98067-7RU	Dual	6	476	84	2.5	1.078	0.8	0.0
CO98368-2RU	FM	6	405	70	2.3	1.083	0.9	0.0
AC99375-1RU	Dual	5	512	82	3.1	1.100	1.7	0.0
CO99053-3RU	Dual	5	516	90	3.5	1.089	2.5	0.7
CO99053-4RU	Dual	5	362	84	2.1	1.085	1.4	0.0
CO99100-1RU	Dual	5	373	83	1.4	1.084	4.6	0.1
Canela Russet	FM	11	386	90	3.1	1.096	1.3	0.1
Centennial Russet	FM	35	294	77	3.0	1.080	0.8	0.3
Mesa Russet	Dual	10	419	86	2.9	1.082	1.8	2.5
Rio Grande Russet	FM	22	533	80	3.0	1.087	2.8	0.4
Russet Norkotah	FM	78	385	84	1.8	1.079	2.2	0.4
Russet Nugget	Dual	64	441	81	3.8	1.093	1.5	0.2
Reds								
CO98012-5R	FM	6	466	77	3.0	1.080	0.7	0.3
CO99076-6R	FM	5	402	76	1.5	1.086	2.2	0.0
CO99256-2R	FM	5	512	65	2.9	1.088	0.4	0.1
CO00277-2R	FM	4	419	76	1.6	1.080	0.9	0.5
CO00291-5R	FM	4	384	79	3.4	1.083	0.5	0.0
Colorado Rose	FM	14	517	85	2.7	1.082	2.7	0.3
Rio Colorado	FM	11	405	56	1.7	1.087	0.9	0.0
Sangre-S10	FM	24	542	88	3.3	1.077	1.8	1.7

Table 14 continued on next page

Table 14 (cont'd). Summary comparison of advanced selections and named cultivars for yield, grade, maturity, specific gravity, and grade defects.

Clone	Usage[1]	# Trials	Total Yield (Cwt/A)	% US #1	Vine Maturity[2]	Specific Gravity	% External Defects[3]	% Hollow Heart[4]
Specialties								
AC97521-1R/Y	Spec	7	578	78	2.9	1.090	0.8	1.2
CO97226-2R/R	Spec	7	364	34	2.3	1.080	0.2	0.0
CO97232-1R/Y	Spec	7	420	67	2.0	1.081	0.8	0.0
CO97232-2R/Y	Spec	7	440	84	2.6	1.071	0.8	1.0
CO97233-3R/Y	Spec	7	477	73	3.3	1.082	4.0	2.3
CO97222-1R/R	Spec	6	394	55	2.4	1.076	1.5	0.0
CO97227-2P/PW	Spec	6	483	24	2.8	1.087	1.0	0.0
AC99329-7PW/Y	Spec	5	537	76	3.0	1.091	1.6	0.4
AC99330-1P/Y	Spec	5	503	53	2.8	1.082	0.0	0.2
CO99045-1W/Y	Spec	5	556	78	3.2	1.088	2.9	0.0
ATC00293-1W/Y	Spec	4	577	84	3.0	1.082	4.5	3.1
CO00405-1RF	Spec	4	262		1.3	1.080	2.8	0.0
CO00412-5W/Y	Spec	4	489	72	2.8	1.088	2.7	0.9
CO00415-1RF	Spec	4	357		1.3	1.075	4.3	0.0
Mountain Rose	Spec	8	383	68	2.2	1.081	1.1	0.0
Purple Majesty	Spec	12	496	58	2.1	1.085	0.6	1.3
Yukon Gold	Spec	22	413	89	1.8	1.086	1.6	0.6
Chippers								
CO95051-7W	Chip	8	413	86	3.3	1.100	1.0	0.4
CO96141-4W	Chip	8	416	87	2.6	1.087	1.1	0.0
CO97043-14W	Chip	7	431	81	2.9	1.089	1.4	0.3
CO97065-7W	Chip	7	424	83	2.6	1.099	0.9	0.2

Table 14 continued on next page

Table 14 (cont'd). Summary comparison of advanced selections and named cultivars for yield, grade, maturity, specific gravity, and grade defects.

Clone	Usage[1]	# Trials	Total Yield (Cwt/A)	% US #1	Vine Maturity[2]	Specific Gravity	% External Defects[3]	% Hollow Heart[4]
CO00188-4W	Chip	4	446	74	2.6	1.091	1.1	0.1
CO00197-3W	Chip	4	481	72	2.3	1.086	0.8	1.0
CO00270-7W	Chip	4	429	83	2.6	1.088	1.1	0.0
Atlantic	Chip	36	460	86	3.2	1.098	2.6	5.0
Chipeta	Chip	34	541	84	3.3	1.090	5.1	0.5

[1]FM=fresh market; Dual= fresh market and processing potential; SPEC=specialty.

[2]Vine maturity: 1=very early; 2=early; 3=medium; 4=late; 5=very late.

[3]Includes defects such as second growth, growth crack, misshapen, and green.

[4]Based on tubers greater than 10 ounces.

Figure 1. Photographs of advanced selections.

Figure 1 (cont'd). Photographs of advanced selections.

Figure 1 (cont'd). Photographs of advanced selections.

Figure 1 (cont'd). Photographs of advanced selections.

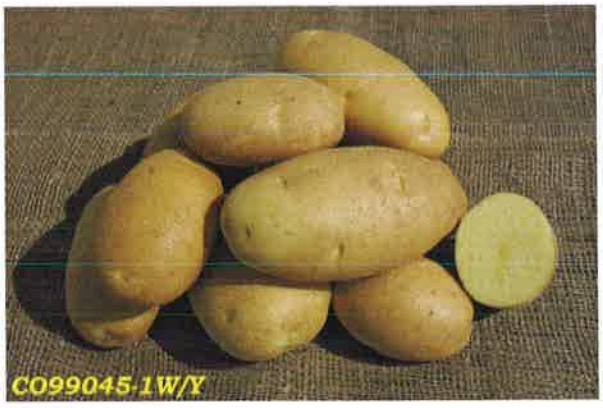

Figure 1 (cont'd). Photographs of advanced selections.

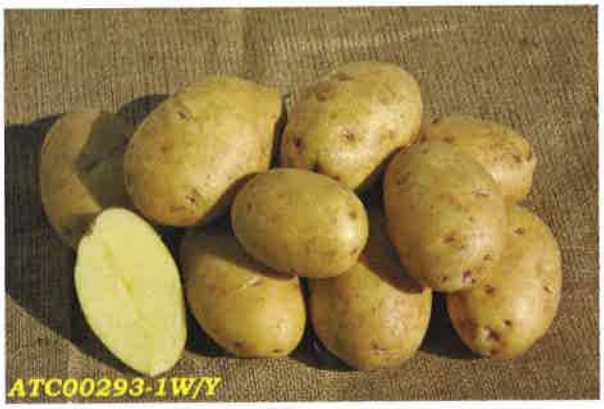

Figure 1 (cont'd). Photographs of advanced selections.

Table 15A. Detailed data summary for CO95172-3RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		9	500	415-547
Yield US #1 (Cwt/A)		9	396	327-450
% US #1		9	79	69-84
Yield >10 oz (Cwt/A)		9	89	42-138
Yield <4 oz (Cwt/A)		9	99	69-160
% External Defects[1]		9	1.0	0.2-2.2
% Hollow Heart[2]		9	0.5	0.0-2.1
% Stand		9	98	94-100
Emergence Uniformity		9	3.3	2.8-3.8
Vine Vigor[3]		9	3.1	2.5-3.8
Stems/Plant		9	3.2	2.3-4.2
Vine Size[4]		9	3.8	3.5-4.0
Vine Maturity[5]		9	3.2	3.0-3.5
Blackspot[6]	Bud End	10	4.5	3.9-5.0
	Stem End	10	4.2	3.5-5.0
	Average	10	4.3	
Weight Loss[7]		10	3.5	1.1-6.2
Dormancy[8]		10	86	76-101
Enzymatic Browning[9]		10	3.3	2.4-4.2
Specific Gravity		10	1.089	1.075-1.096
Fry Color[10]	Harvest	10	2.1	1.0-4.0
	Storage	10	2.0	1.0-4.0
Fry Texture[11]	Harvest	10	3.0	1.0-4.0
	Storage	10	3.1	1.0-4.0

Refer to footnotes on page 121.

Table 15B. Detailed data summary for AC96052-1RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		8	441	355-530
Yield US #1 (Cwt/A)		8	377	276-457
% US #1		8	86	78-92
Yield >10 oz (Cwt/A)		8	84	23-117
Yield <4 oz (Cwt/A)		8	60	30-100
% External Defects[1]		8	0.8	0.1-1.9
% Hollow Heart[2]		8	0.2	0.0-0.7
% Stand		8	94	68-99
Emergence Uniformity		8	2.7	1.5-3.5
Vine Vigor[3]		8	2.9	2.0-3.3
Stems/Plant		8	2.9	2.3-3.9
Vine Size[4]		8	3.9	3.8-4.5
Vine Maturity[5]		8	3.2	2.8-3.8
Blackspot[6]	Bud End	9	4.0	2.7-4.8
	Stem End	9	3.0	1.4-4.0
	Average	9	3.5	
Weight Loss[7]		9	2.5	1.0-4.9
Dormancy[8]		9	83	70-104
Enzymatic Browning[9]		9	3.8	3.2-4.2
Specific Gravity		9	1.090	1.080-1.096
Fry Color[10]	Harvest	9	0.3	0.0-1.0
	Storage	9	0.9	0.0-2.0
Fry Texture[11]	Harvest	9	3.6	2.0-5.0
	Storage	9	3.6	3.0-4.0

Refer to footnotes on page 121.

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Table 15E. Detailed data summary for CO98368-2RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		6	405	351-426
Yield US #1 (Cwt/A)		6	283	212-335
% US #1		6	70	52-83
Yield >10 oz (Cwt/A)		6	44	10-82
Yield <4 oz (Cwt/A)		6	119	63-196
% External Defects[1]		6	0.9	0.2-1.8
% Hollow Heart[2]		6	0.0	0.0-0.0
% Stand		6	96	88-99
Emergence Uniformity		6	3.1	2.5-3.8
Vine Vigor[3]		6	3.3	3.0-4.0
Stems/Plant		6	3.8	2.7-5.0
Vine Size[4]		6	3.0	2.8-3.0
Vine Maturity[5]		6	2.3	1.8-2.5
Blackspot[6]	Bud End	7	4.4	3.6-5.0
	Stem End	7	4.2	3.6-5.0
	Average	7	4.3	
Weight Loss[7]		7	2.7	1.2-3.3
Dormancy[8]		7	105	89-146
Enzymatic Browning[9]		7	4.3	3.8-4.8
Specific Gravity		7	1.083	1.081-1.087
Fry Color[10]	Harvest	7	1.7	1.0-3.0
	Storage	7	2.7	2.0-4.0
Fry Texture[11]	Harvest	7	3.6	3.0-4.0
	Storage	7	3.6	3.0-5.0

Refer to footnotes on page 121.

Table 15F. Detailed data summary for AC99375-1RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	512	451-545
Yield US #1 (Cwt/A)		5	420	404-457
% US #1		5	82	77-91
Yield >10 oz (Cwt/A)		5	106	74-148
Yield <4 oz (Cwt/A)		5	83	32-118
% External Defects[1]		5	1.7	0.6-2.3
% Hollow Heart[2]		5	0.0	0.0-0.0
% Stand		5	97	94-100
Emergence Uniformity		5	3.2	2.8-3.8
Vine Vigor[3]		5	3.6	2.5-4.0
Stems/Plant		5	3.8	2.1-6.3
Vine Size[4]		5	4.2	3.0-5.0
Vine Maturity[5]		5	3.1	3.0-3.5
Blackspot[6]	Bud End	6	4.7	3.8-5.0
	Stem End	6	4.3	3.7-4.8
	Average	6	4.5	
Weight Loss[7]		6	2.3	1.4-2.8
Dormancy[8]		6	97	82-132
Enzymatic Browning[9]		6	3.2	1.8-4.6
Specific Gravity		6	1.100	1.095-1.104
Fry Color[10]	Harvest	6	1.0	0.0-2.0
	Storage	6	1.3	1.0-2.0
Fry Texture[11]	Harvest	6	3.8	3.0-5.0
	Storage	6	3.8	3.0-5.0

Refer to footnotes on page 121.

Table 15G. Detailed data summary for CO99053-3RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	516	456-559
Yield US #1 (Cwt/A)		5	463	415-517
% US #1		5	90	88-93
Yield >10 oz (Cwt/A)		5	217	159-259
Yield <4 oz (Cwt/A)		5	40	22-58
% External Defects[1]		5	2.5	0.7-4.2
% Hollow Heart[2]		5	0.7	0.0-2.9
% Stand		5	98	95-100
Emergence Uniformity		5	3.1	3.0-3.3
Vine Vigor[3]		5	3.4	3.0-3.8
Stems/Plant		5	4.0	2.5-5.2
Vine Size[4]		5	4.1	4.0-4.3
Vine Maturity[5]		5	3.5	3.0-4.0
Blackspot[6]	Bud End	6	4.8	4.3-5.0
	Stem End	6	4.1	2.8-4.9
	Average	6	4.4	
Weight Loss[7]		6	2.0	1.2-2.5
Dormancy[8]		6	88	54-132
Enzymatic Browning[9]		6	4.1	3.2-4.6
Specific Gravity		6	1.089	1.077-1.096
Fry Color[10]	Harvest	6	1.0	0.0-2.0
	Storage	6	2.0	1.0-3.0
Fry Texture[11]	Harvest	6	3.3	3.0-4.0
	Storage	6	3.3	2.0-4.0

Refer to footnotes on page 121.

Table 15H. Detailed data summary for CO99053-4RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	362	320-403
Yield US #1 (Cwt/A)		5	302	269-325
% US #1		5	84	78-91
Yield >10 oz (Cwt/A)		5	77	60-93
Yield <4 oz (Cwt/A)		5	54	30-80
% External Defects[1]		5	1.4	0.0-3.4
% Hollow Heart[2]		5	0.0	0.0-0.0
% Stand		5	98	96-100
Emergence Uniformity		5	3.2	3.0-3.3
Vine Vigor[3]		5	2.9	2.5-3.0
Stems/Plant		5	4.0	3.1-4.6
Vine Size[4]		5	2.9	2.5-3.3
Vine Maturity[5]		5	2.1	1.3-2.8
Blackspot[6]	Bud End	6	4.7	3.9-5.0
	Stem End	6	4.5	4.0-5.0
	Average	6	4.6	
Weight Loss[7]		6	2.8	1.5-3.5
Dormancy[8]		6	71	54-87
Enzymatic Browning[9]		6	4.5	4.4-4.6
Specific Gravity		6	1.085	1.083-1.087
Fry Color[10]	Harvest	6	1.2	0.0-3.0
	Storage	6	2.0	1.0-3.0
Fry Texture[11]	Harvest	6	3.5	2.0-4.0
	Storage	6	3.3	2.0-4.0

Refer to footnotes on page 121.

Table 15I. Detailed data summary for CO99100-1RU.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	373	338-409
Yield US #1 (Cwt/A)		5	312	272-377
% US #1		5	83	76-92
Yield >10 oz (Cwt/A)		5	76	48-121
Yield <4 oz (Cwt/A)		5	45	29-82
% External Defects[1]		5	4.6	0.0-9.1
% Hollow Heart[2]		5	0.1	0.0-0.5
% Stand		5	99	98-100
Emergence Uniformity		5	3.2	3.0-3.5
Vine Vigor[3]		5	3.6	3.0-4.0
Stems/Plant		5	3.4	2.8-4.2
Vine Size[4]		5	2.4	2.3-2.5
Vine Maturity[5]		5	1.4	1.0-2.0
Blackspot[6]	Bud End	6	4.5	3.8-5.0
	Stem End	6	4.8	4.5-5.0
	Average	6	4.6	
Weight Loss[7]		6	3.3	1.4-4.3
Dormancy[8]		6	63	54-77
Enzymatic Browning[9]		6	3.8	3.4-4.6
Specific Gravity		6	1.084	1.078-1.087
Fry Color[10]	Harvest	6	0.3	0.0-1.0
	Storage	6	1.5	1.0-2.0
Fry Texture[11]	Harvest	6	2.8	2.0-3.0
	Storage	6	3.2	3.0-4.0

Refer to footnotes on page 121.

Table 15J. Detailed data summary for Canela Russet.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		11	386	332-468
Yield US #1 (Cwt/A)		11	347	290-421
% US #1		11	90	86-94
Yield >10 oz (Cwt/A)		11	105	63-156
Yield <4 oz (Cwt/A)		11	35	20-49
% External Defects[1]		11	1.3	0.0-2.4
% Hollow Heart[2]		11	0.1	0.0-0.9
% Stand		11	97	88-99
Emergence Uniformity		11	3.1	2.5-3.5
Vine Vigor[3]		11	2.5	2.0-3.0
Stems/Plant		11	1.9	1.4-2.6
Vine Size[4]		11	3.8	3.0-4.3
Vine Maturity[5]		11	3.1	2.8-3.8
Blackspot[6]	Bud End	14	4.6	3.7-5.0
	Stem End	14	3.9	2.5-5.0
	Average	14	4.3	
Weight Loss[7]		14	3.8	1.3-7.0
Dormancy[8]		14	147	113-195
Enzymatic Browning[9]		14	4.4	3.4-5.0
Specific Gravity		14	1.096	1.081-1.105
Fry Color[10]	Harvest	14	1.9	1.0-3.0
	Storage	14	2.2	1.0-3.0
Fry Texture[11]	Harvest	14	3.4	3.0-5.0
	Storage	14	3.6	3.0-5.0

Refer to footnotes on page 121.

Table 15K. Detailed data summary for Centennial Russet.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		35	294	177-392
Yield US #1 (Cwt/A)		35	229	129-320
% US #1		35	77.4	61.9-89.0
Yield >10 oz (Cwt/A)		35	26	4-72
Yield <4 oz (Cwt/A)		35	62	32-102
% External Defects[1]		35	0.8	0.0-3.3
% Hollow Heart[2]		35	0.3	0.0-3.3
% Stand		35	97	90-99
Emergence Uniformity		15	3.2	3.0-3.5
Vine Vigor[3]		15	2.2	1.0-3.0
Stems/Plant		27	3.0	2.2-3.6
Vine Size[4]		15	2.6	2.0-3.0
Vine Maturity[5]		35	3.0	2.5-3.5
Blackspot[6]	Bud End	42	4.8	3.7-5.0
	Stem End	42	4.8	4.2-5.0
	Average	45	4.8	
Weight Loss[7]		45	6.2	1.6-9.0
Dormancy[8]		38	88	57-123
Enzymatic Browning[9]		40	4.0	3.2-5.0
Specific Gravity		52	1.080	1.069-1.092
Fry Color[10]	Harvest	44	3.7	3.0-4.0
	Storage	44	3.9	3.0-5.0
Fry Texture[11]	Harvest	44	2.3	1.0-4.0
	Storage	44	2.2	1.0-3.0

Refer to footnotes on page 121.

Table 15L. Detailed data summary for Mesa Russet.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		10	419	345 - 478
Yield US #1 (Cwt/A)		10	360	279 - 406
% US #1		10	86	81 - 92
Yield >10 oz (Cwt/A)		10	97	54 - 144
Yield <4 oz (Cwt/A)		10	51	23 - 61
% External Defects[1]		10	1.8	0.2 - 2.3
% Hollow Heart[2]		10	2.5	0.0 - 5.4
% Stand		10	96	91 - 99
Emergence Uniformity		10	3.3	3.0 - 3.8
Vine Vigor[3]		10	3.7	2.8 - 4.0
Stems/Plant		10	3.0	2.2 - 3.7
Vine Size[4]		10	3.5	3.0 - 4.0
Vine Maturity[5]		10	2.9	2.8 - 3.0
Blackspot[6]	Bud End	12	4.0	2.9 - 5.0
	Stem End	12	3.8	2.7- 5.0
	Average	12	3.9	
Weight Loss[7]		12	3.6	1.2 - 6.8
Dormancy[8]		12	94	83 - 105
Enzymatic Browning[9]		12	4.6	4.0 - 5.0
Specific Gravity		12	1.082	1.074 - 1.090
Fry Color[10]	Harvest	12	1.3	0.0 - 2.0
	Storage	12	1.8	1.0 - 4.0
Fry Texture[11]	Harvest	12	2.9	2.0 - 4.0
	Storage	12	3.1	3.0 - 4.0

Refer to footnotes on page 121.

Table 15M. Detailed data summary for Rio Grande Russet.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		22	533	367-683
Yield US #1 (Cwt/A)		22	426	255-603
% US #1		22	80	65-91
Yield >10 oz (Cwt/A)		22	122	14-275
Yield <4 oz (Cwt/A)		22	92	33-202
% External Defects[1]		22	2.8	0.1-8.7
% Hollow Heart[2]		22	0.4	0.0-4.1
% Stand		22	99	96-100
Emergence Uniformity		22	3.5	3.0-4.0
Vine Vigor[3]		22	3.6	2.0-4.5
Stems/Plant		22	3.4	2.0-4.8
Vine Size[4]		22	4.1	3.5-5.0
Vine Maturity[5]		22	3.0	2.5 -3.5
Blackspot[6]	Bud End	27	4.8	4.1-5.0
	Stem End	27	4.6	3.0-5.0
	Average	27	4.7	
Weight Loss[7]		27	3.9	1.5-7.1
Dormancy[8]		27	91	68-120
Enzymatic Browning[9]		27	4.0	3.0-5.0
Specific Gravity		27	1.087	1.078-1.094
Fry Color[10]	Harvest	27	2.2	1.0-4.0
	Storage	27	2.9	2.0-4.0
Fry Texture[11]	Harvest	27	3.1	2.0-4.0
	Storage	27	3.0	2.0-4.0

Refer to footnotes on page 121.

Table 15N. Detailed data summary for Russet Norkotah.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		78	385	174-557
Yield US #1 (Cwt/A)		78	324	144-480
% US #1		78	84	69-92
Yield >10 oz (Cwt/A)		78	107	23-242
Yield <4 oz (Cwt/A)		78	52	22-131
% External Defects[1]		78	2.2	0.0-5.3
% Hollow Heart[2]		78	0.4	0.0-2.8
% Stand		78	98	88-100
Emergence Uniformity		69	3.3	1.0-4.0
Vine Vigor[3]		69	2.9	1.0-4.0
Stems/Plant		74	3.7	2.4-5.7
Vine Size[4]		69	2.4	1.0-4.0
Vine Maturity[5]		78	1.8	1.0-3.0
Blackspot[6]	Bud End	77	4.6	2.9-5.0
	Stem End	77	4.3	2.6-5.0
	Average	78	4.5	
Weight Loss		78	3.7	1.0-7.1
Dormancy[8]		77	100	78-140
Enzymatic Browning[9]		77	3.3	2.2-4.8
Specific Gravity		81	1.079	1.066-1.091
Fry Color[10]	Harvest	78	2.2	1.0-4.0
	Storage	78	2.5	1.0-4.0
Fry Texture[11]	Harvest	78	2.7	1.0-4.0
	Storage	78	2.7	1.0-4.0

Refer to footnotes on page 121.

Table 15O. Detailed data summary for Russet Nugget.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		64	441	284-585
Yield US #1 (Cwt/A)		64	360	225-518
% US #1		64	81	68-93
Yield >10 oz (Cwt/A)		64	91	11-258
Yield <4 oz (Cwt/A)		64	73	30-133
% External Defects[1]		64	1.5	0.1-4.3
% Hollow Heart[2]		64	0.2	0.0-1.9
% Stand		64	98	96-100
Emergence Uniformity		54	3.3	2.8-4.0
Vine Vigor[3]		54	3.4	2.5-4.0
Stems/Plant		60	3.4	2.1-5.7
Vine Size[4]		54	4.2	3.8-5.0
Vine Maturity[5]		64	3.8	3.0-4.3
Blackspot[6]	Bud End	76	4.7	3.0-5.0
	Stem End	76	4.5	2.1-5.0
	Average	79	4.6	
Weight Loss[7]		79	3.1	1.1-5.5
Dormancy[8]		74	95	57-144
Enzymatic Browning[9]		75	4.0	2.8-4.8
Specific Gravity		81	1.093	1.072-1.110
Fry Color[10]	Harvest	79	1.4	0.0-3.0
	Storage	79	1.9	1.0-3.0
Fry Texture[11]	Harvest	79	4.1	2.0-5.0
	Storage	79	4.0	2.0-5.0

Refer to footnotes on page 121.

Table 15P. Detailed data summary for CO98012-5R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		6	466	368-546
Yield US #1 (Cwt/A)		6	358	290-426
% US #1		6	77	66-86
Yield >10 oz (Cwt/A)		6	50	16-105
Yield <4 oz (Cwt/A)		6	106	65-170
% External Defects[1]		6	0.7	0.0-1.3
% Hollow Heart[2]		6	0.3	0.0-1.1
% Stand		6	98	95-100
Emergence Uniformity		6	3.2	2.8-3.8
Vine Vigor[3]		6	3.1	2.8-3.5
Stems/Plant		6	3.3	2.6-4.4
Vine Size[4]		6	3.4	3.0-3.8
Vine Maturity[5]		6	3.0	3.0-3.0
Blackspot[6]	Bud End	7	3.9	3.0-4.8
	Stem End	7	3.3	2.4-4.5
	Average	7	3.6	
Weight Loss[7]		7	3.3	1.6-5.5
Dormancy[8]		7	63	53-77
Enzymatic Browning[9]		7	2.1	1.2-3.0
Specific Gravity		7	1.080	1.073-1.082
Fry Color[10]	Harvest	7	1.9	1.0-3.0
	Storage	7	3.1	2.0-4.0
Fry Texture[11]	Harvest	7	2.3	2.0-3.0
	Storage	7	2.1	2.0-3.0

Refer to footnotes on page 121.

Table 15Q. Detailed data summary for CO99076-6R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	402	379-448
Yield US #1 (Cwt/A)		5	306	262-344
% US #1		5	76	68-82
Yield >10 oz (Cwt/A)		5	47	17-77
Yield <4 oz (Cwt/A)		5	87	62-102
% External Defects[1]		5	2.2	0.5-4.8
% Hollow Heart[2]		5	0.0	0.0-0.0
% Stand		5	97	92-99
Emergence Uniformity		5	3.3	2.8-4.0
Vine Vigor[3]		5	3.5	3.0-4.0
Stems/Plant		5	4.2	3.6-4.8
Vine Size[4]		5	3.2	3.0-3.3
Vine Maturity[5]		5	1.5	1.0-2.0
Blackspot[6]	Bud End	6	3.8	3.1-4.5
	Stem End	6	2.9	2.3-3.7
	Average	6	3.3	
Weight Loss[7]		6	6.2	1.7-7.4
Dormancy[8]		6	69	56-79
Enzymatic Browning[9]		6	1.7	1.0-2.0
Specific Gravity		6	1.086	1.082-1.089
Fry Color[10]	Harvest	6	2.2	1.0-3.0
	Storage	6	2.8	2.0-3.0
Fry Texture[11]	Harvest	6	2.3	2.0-3.0
	Storage	6	1.8	1.0-2.0

Refer to footnotes on page 121.

Table 15R. Detailed data summary for CO99256-2R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	512	422-571
Yield US #1 (Cwt/A)		5	337	235-397
% US #1		5	65	56-70
Yield >10 oz (Cwt/A)		5	42	9-81
Yield <4 oz (Cwt/A)		5	173	145-200
% External Defects[1]		5	0.4	0.2-0.8
% Hollow Heart[2]		5	0.1	0.0-0.3
% Stand		5	98	96-100
Emergence Uniformity		5	3.1	2.8-3.8
Vine Vigor[3]		5	3.1	2.8-3.5
Stems/Plant		5	3.8	2.9-4.8
Vine Size[4]		5	4.2	3.8-4.5
Vine Maturity5		5	2.9	2.5-3.0
Blackspot[6]	Bud End	6	3.8	2.6-5.0
	Stem End	6	3.5	2.6-4.3
	Average	6	3.6	
Weight Loss[7]		6	4.9	1.6-7.1
Dormancy[8]		6	96	84-118
Enzymatic Browning[9]		6	2.7	1.8-3.4
Specific Gravity		6	1.088	1.080-1.095
Fry Color[10]	Harvest	6	1.2	1.0-2.0
	Storage	6	2.0	2.0-2.0
Fry Texture[11]	Harvest	6	2.8	2.0-3.0
	Storage	6	2.7	2.0-3.0

Refer to footnotes on page 121.

Table 15S. Detailed data summary for CO00277-2R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	419	380-458
Yield US #1 (Cwt/A)		4	317	287-332
% US #1		4	76	69-85
Yield >10 oz (Cwt/A)		4	52	39-68
Yield <4 oz (Cwt/A)		4	98	54-127
% External Defects[1]		4	0.9	0.0-1.8
% Hollow Heart[2]		4	0.5	0.0-1.8
% Stand		4	98	93-100
Emergence Uniformity		4	2.9	2.5-3.3
Vine Vigor[3]		4	3.0	2.8-3.3
Stems/Plant		4	4.8	3.8-5.7
Vine Size[4]		4	2.9	2.5-3.0
Vine Maturity5		4	1.6	1.3-2.0
Blackspot[6]	Bud End	5	4.4	3.9-5.0
	Stem End	5	4.3	3.7-5.0
	Average	5	4.3	
Weight Loss[7]		5	4.8	2.7-5.9
Dormancy[8]		5	60	47-77
Enzymatic Browning[9]		5	4.2	3.6-4.6
Specific Gravity		5	1.080	1.075-1.084
Fry Color[10]	Harvest	5	3.2	3.0-4.0
	Storage	5	4.0	4.0-4.0
Fry Texture[11]	Harvest	5	2.6	2.0-3.0
	Storage	5	2.4	2.0-3.0

Refer to footnotes on page 121.

Table 15T. Detailed data summary for CO00291-5R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	384	343-422
Yield US #1 (Cwt/A)		4	304	263-325
% US #1		4	79	75-87
Yield >10 oz (Cwt/A)		4	25	17-30
Yield <4 oz (Cwt/A)		4	79	45-105
% External Defects[1]		4	0.5	0.2-0.9
% Hollow Heart[2]		4	0.0	0.0-0.0
% Stand		4	98	97-99
Emergence Uniformity		4	2.9	2.3-3.5
Vine Vigor[3]		4	2.8	2.3-3.3
Stems/Plant		4	3.2	2.4-3.8
Vine Size[4]		4	4.1	3.5-4.3
Vine Maturity5		4	3.4	3.0-3.8
Blackspot[6]	Bud End	5	2.6	2.0-3.2
	Stem End	5	3.2	2.0-4.3
	Average	5	2.9	
Weight Loss[7]		5	7.6	4.6-11.1
Dormancy[8]		5	76	61-87
Enzymatic Browning[9]		5	1.8	1.4-2.2
Specific Gravity		5	1.083	1.072-1.089
Fry Color[10]	Harvest	5	2.2	2.0-3.0
	Storage	5	3.0	2.0-4.0
Fry Texture[11]	Harvest	5	2.1	1.0-3.0
	Storage	5	2.2	1.0-3.0

Refer to footnotes on page 121.

Table 15U. Detailed data summary for Colorado Rose.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		14	517	390-641
Yield US #1 (Cwt/A)		14	439	310-530
% US #1		14	85	76-91
Yield >10 oz (Cwt/A)		14	153	69-249
Yield <4 oz (Cwt/A)		14	63	43-98
% External Defects[1]		14	2.7	0.2-6.5
% Hollow Heart[2]		14	0.3	0.0-0.8
% Stand		14	96	90-100
Emergence Uniformity		14	3.0	2.5-3.5
Vine Vigor[3]		14	3.0	2.2-3.8
Stems/Plant		14	3.5	2.3-4.5
Vine Size[4]		14	3.4	3.0-4.0
Vine Maturity[5]		14	2.7	2.0-3.8
Blackspot[6]	Bud End	15	3.8	2.1-4.8
	Stem End	15	3.8	2.4-5.0
	Average	15	3.8	
Weight Loss[7]		15	5.8	1.4-8.2
Dormancy[8]		15	62	54-78
Enzymatic Browning[9]		15	4.3	3.4-5.0
Specific Gravity		15	1.082	1.071-1.086
Fry Color[10]	Harvest	15	2.3	1.0-3.0
	Storage	14	2.9	2.0-3.0
Fry Texture[11]	Harvest	15	2.8	2.0-4.0
	Storage	14	2.9	2.0-3.0

Refer to footnotes on page 121.

Table 15V. Detailed data summary for Rio Colorado.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		11	405	321-474
Yield US #1 (Cwt/A)		11	227	115-298
% US #1		11	56	28-72
Yield >10 oz (Cwt/A)		11	10	0-22
Yield <4 oz (Cwt/A)		11	175	110-289
% External Defects[1]		11	0.9	0.0-2.2
% Hollow Heart[2]		11	0.0	0.0-0.0
% Stand		11	97	92-99
Emergence Uniformity		11	3.4	3.0-4.0
Vine Vigor[3]		11	3.1	2.8-4.0
Stems/Plant		11	4.2	2.9-6.4
Vine Size[4]		11	3.1	2.5-3.8
Vine Maturity[5]		11	1.7	1.0-3.0
Blackspot[6]	Bud End	12	3.6	2.1-4.8
	Stem End	12	3.0	1.8-4.2
	Average	12	3.3	
Weight Loss[7]		12	6.6	1.2-10.0
Dormancy[8]		12	86	70-118
Enzymatic Browning[9]		12	1.4	1.0-2.4
Specific Gravity		12	1.087	1.080-1.096
Fry Color[10]	Harvest	12	1.4	1.0-3.0
	Storage	12	1.8	1.0-4.0
Fry Texture[11]	Harvest	12	2.8	2.0-4.0
	Storage	12	2.7	1.0-3.0

Refer to footnotes on page 121.

Table 15W. Detailed data summary for Sangre-S10.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		24	542	410-636
Yield US #1 (Cwt/A)		24	476	358-566
% US #1		24	88	82-93
Yield >10 oz (Cwt/A)		24	182	101-319
Yield <4 oz (Cwt/A)		24	56	34-90
% External Defects[1]		24	1.8	0.3-5.7
% Hollow Heart[2]		24	1.7	0.0-8.2
% Stand		24	97	91-100
Emergence Uniformity		24	3.1	2.5-3.5
Vine Vigor[3]		24	2.8	1.8-3.5
Stems/Plant		24	3.0	1.9-4.3
Vine Size[4]		24	4.0	3.5-4.5
Vine Maturity[5]		24	3.3	3.0-4.0
Blackspot[6]	Bud End	38	3.8	2.0-5.0
	Stem End	38	4.1	2.5-5.0
	Average	38	3.9	
Weight Loss[7]		38	2.8	1.0-4.5
Dormancy[8]		38	87	56-126
Enzymatic Browning[9]		38	3.3	2.4-4.8
Specific Gravity		38	1.077	1.060-1.089
Fry Color[10]	Harvest	38	3.6	2.0-4.0
	Storage	38	3.9	3.0-4.0
Fry Texture[11]	Harvest	38	2.2	1.0-4.0
	Storage	38	2.3	1.0-3.0

Refer to footnotes on page 121.

Table 15X. Detailed data summary for AC97521-1R/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	577	420-666
Yield US #1 (Cwt/A)		7	449	319-548
% US #1		7	78	71-89
Yield >10 oz (Cwt/A)		7	73	22-129
Yield <4 oz (Cwt/A)		7	123	62-167
% External Defects[1]		7	0.8	0.0-1.7
% Hollow Heart[2]		7	1.2	0.4-1.9
% Stand		7	97	93-100
Emergence Uniformity		7	3.3	2.8-3.8
Vine Vigor[3]		7	3.9	3.3-4.3
Stems/Plant		7	4.2	3.5-5.3
Vine Size[4]		7	4.1	3.8-4.5
Vine Maturity[5]		7	2.9	2.5-3.0
Blackspot[6]	Bud End	8	3.5	3.0-4.0
	Stem End	8	3.4	2.3-4.6
	Average	8	3.4	
Weight Loss[7]		8	3.1	1.5-6.4
Dormancy[8]		8	90	62-108
Enzymatic Browning[9]		8	3.3	2.8-4.0
Specific Gravity		8	1.090	1.085-1.096
Fry Color[10]	Harvest	8	4.0	4.0-4.0
	Storage	8	3.9	3.0-4.0
Fry Texture[11]	Harvest	8	2.5	2.0-3.0
	Storage	8	2.8	2.0-3.0

Refer to footnotes on page 121.

Table 15Y. Detailed data summary for CO97226-2R/R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	364	336-406
Yield US #1 (Cwt/A)		7	126	83-224
% US #1		7	34	24-55
Yield >10 oz (Cwt/A)		7	0.6	0.0-1.0
Yield <4 oz (Cwt/A)		7	238	179-278
% External Defects[1]		7	0.2	0.0-0.7
% Hollow Heart[2]		7	0.0	0.0-0.0
% Stand		7	98	96-99
Emergence Uniformity		7	3.1	3.0-3.3
Vine Vigor[3]		7	3.1	3.0-3.5
Stems/Plant		7	4.2	3.0-5.9
Vine Size[4]		7	3.1	3.0-3.8
Vine Maturity[5]		7	2.3	1.3-3.0
Blackspot[6]	Bud End	--	--	-- --
	Stem End	--	--	-- --
	Average	--	--	
Weight Loss[7]		8	4.9	1.9-10.6
Dormancy[8]		8	68	48-94
Enzymatic Browning[9]		--	--	-- --
Specific Gravity		8	1.080	1.076-1.084
Fry Color[10]	Harvest	--	--	-- --
	Storage	--	--	-- --
Fry Texture[11]	Harvest	8	2.9	2.0-4.0
	Storage	8	2.6	2.0-4.0

Refer to footnotes on page 121.

Table 15Z. Detailed data summary for CO97232-1R/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	420	352-481
Yield US #1 (Cwt/A)		7	282	220-366
% US #1		7	67	53-75
Yield >10 oz (Cwt/A)		7	18	8-33
Yield <4 oz (Cwt/A)		7	135	105-189
% External Defects[1]		7	0.8	0.1-1.3
% Hollow Heart[2]		7	0.0	0.0-0.0
% Stand		7	95	90-99
Emergence Uniformity		7	3.0	2.5-3.5
Vine Vigor[3]		7	3.3	3.0-4.0
Stems/Plant		7	3.9	2.9-4.7
Vine Size[4]		7	3.0	2.3-3.3
Vine Maturity[5]		7	2.0	1.3-2.8
Blackspot[6]	Bud End	8	4.4	2.9-5.0
	Stem End	8	3.4	2.6-4.2
	Average	8	3.9	
Weight Loss[7]		8	5.0	1.6-8.1
Dormancy[8]		8	60	49-80
Enzymatic Browning[9]		8	3.8	3.4-4.4
Specific Gravity		8	1.081	1.077-1.084
Fry Color[10]	Harvest	7	0.9	0.0-1.0
	Storage	8	1.5	1.0-2.0
Fry Texture[11]	Harvest	8	3.0	2.0-4.0
	Storage	8	2.8	2.0-3.0

Refer to footnotes on page 121.

Table 15AA. Detailed data summary for CO97232-2R/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	440	416-471
Yield US #1 (Cwt/A)		7	371	318-420
% US #1		7	84	76-91
Yield >10 oz (Cwt/A)		7	89	43-148
Yield <4 oz (Cwt/A)		7	66	36-100
% External Defects[1]		7	0.8	0.3-1.7
% Hollow Heart[2]		7	1.0	0.0-2.7
% Stand		7	93	85-99
Emergence Uniformity		7	3.1	2.8-3.5
Vine Vigor[3]		7	3.3	3.0- 4.0
Stems/Plant		7	3.3	2.6-4.0
Vine Size[4]		7	2.6	2.0-3.0
Vine Maturity[5]		7	2.6	2.0-3.0
Blackspot[6]	Bud End	8	4.7	4.1-5.0
	Stem End	8	4.4	3.5-5.0
	Average	8	4.5	
Weight Loss[7]		8	4.2	1.5-8.8
Dormancy[8]		8	69	49-94
Enzymatic Browning[9]		8	4.4	4.0-5.0
Specific Gravity		8	1.071	1.069-1.075
Fry Color[10]	Harvest	8	1.1	0.0-2.0
	Storage	8	1.8	1.0-2.0
Fry Texture[11]	Harvest	8	2.1	1.0-3.0
	Storage	8	2.4	2.0-3.0

Refer to footnotes on page 121.

Table 15AB. Detailed data summary for CO97233-3R/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	477	409-524
Yield US #1 (Cwt/A)		7	351	294-425
% US #1		7	73	61-82
Yield >10 oz (Cwt/A)		7	83	42-133
Yield <4 oz (Cwt/A)		7	108	67-162
% External Defects[1]		7	4.0	2.5-6.1
% Hollow Heart[2]		7	2.3	0.3-5.2
% Stand		7	90	80-95
Emergence Uniformity		7	3.1	3.0-3.5
Vine Vigor[3]		7	3.6	3.3- 4.0
Stems/Plant		7	3.8	2.6-4.6
Vine Size[4]		7	3.0	2.8-3.3
Vine Maturity[5]		7	3.3	2.8-4.0
Blackspot[6]	Bud End	8	4.7	4.2-5.0
	Stem End	8	4.0	3.2-5.0
	Average	8	4.4	
Weight Loss[7]		8	3.1	1.6-6.0
Dormancy[8]		8	74	61-94
Enzymatic Browning[9]		8	4.1	3.6-4.6
Specific Gravity		8	1.082	1.077-1.090
Fry Color[10]	Harvest	8	1.3	0.0-2.0
	Storage	8	2.0	1.0-3.0
Fry Texture[11]	Harvest	8	2.8	2.0-3.0
	Storage	8	2.6	2.0-3.0

Refer to footnotes on page 121.

Table 15AC. Detailed data summary for CO97222-1R/R.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		6	394	349-447
Yield US #1 (Cwt/A)		6	218	151-272
% US #1		6	55	42-63
Yield >10 oz (Cwt/A)		6	22	7-37
Yield <4 oz (Cwt/A)		6	171	132-223
% External Defects[1]		6	1.5	0.0-3.0
% Hollow Heart[2]		6	0.0	0.0-0.0
% Stand		6	97	94-99
Emergence Uniformity		6	3.1	2.8-3.5
Vine Vigor[3]		6	2.8	2.3-3.3
Stems/Plant		6	4.0	2.9-5.1
Vine Size[4]		6	3.0	2.8-3.0
Vine Maturity[5]		6	2.4	2.0-3.0
Blackspot[6]	Bud End	--	--	-- --
	Stem End	--	--	-- --
	Average	--	--	
Weight Loss[7]		7	3.2	1.4-4.3
Dormancy[8]		7	84	56-132
Enzymatic Browning[9]		--	--	-- --
Specific Gravity		7	1.076	1.073-1.078
Fry Color[10]	Harvest	--	--	-- --
	Storage	--	--	-- --
Fry Texture[11]	Harvest	6	2.0	1.0-3.0
	Storage	6	1.8	1.0-3.0

Refer to footnotes on page 121.

Table 15AD. Detailed data summary for CO97227-2P/PW.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		6	483	385-561
Yield US #1 (Cwt/A)		6	115	79-163
% US #1		6	24	20-36
Yield >10 oz (Cwt/A)		6	1	0-2.0
Yield <4 oz (Cwt/A)		6	363	288-444
% External Defects[1]		6	1.0	0.2-2.4
% Hollow Heart[2]		6	0.0	0.0-0.0
% Stand		6	95	78-100
Emergence Uniformity		6	3.3	2.8-4.0
Vine Vigor[3]		6	3.7	3.0-4.0
Stems/Plant		6	5.5	4.0-8.0
Vine Size[4]		6	4.0	3.8-4.3
Vine Maturity[5]		6	2.8	2.0-3.0
Blackspot[6]	Bud End	--	--	-- --
	Stem End	--	--	-- --
	Average	--	--	
Weight Loss[7]		8	4.5	2.0-8.0
Dormancy[8]		8	94	61-153
Enzymatic Browning[9]		--	--	-- --
Specific Gravity		8	1.087	1.082-1.093
Fry Color[10]	Harvest	--	--	-- --
	Storage	--	--	-- --
Fry Texture[11]	Harvest	6	4.0	3.0-5.0
	Storage	6	3.8	3.0-5.0

Refer to footnotes on page 121.

Table 15AE. Detailed data summary for AC99329-7PW/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	537	463-585
Yield US #1 (Cwt/A)		5	411	349-471
% US #1		5	76	71-80
Yield >10 oz (Cwt/A)		5	83	43-141
Yield <4 oz (Cwt/A)		5	116	95-149
% External Defects[1]		5	1.6	0.5-3.7
% Hollow Heart[2]		5	0.4	0.0-1.6
% Stand		5	99	98-100
Emergence Uniformity		5	3.6	3.0-4.0
Vine Vigor[3]		5	4.4	3.8-5.0
Stems/Plant		5	5.5	3.7-7.4
Vine Size[4]		5	4.3	4.0-4.8
Vine Maturity[5]		5	3.0	2.8-3.3
Blackspot[6]	Bud End	6	4.2	3.1-4.9
	Stem End	6	3.3	2.6-4.5
	Average	6	3.7	
Weight Loss[7]		6	4.1	2.0-5.1
Dormancy[8]		6	38	23-52
Enzymatic Browning[9]		6	4.1	3.0-4.6
Specific Gravity		6	1.091	1.081-1.094
Fry Color[10]	Harvest	6	2.7	1.0-4.0
	Storage	6	2.7	2.0-3.0
Fry Texture[11]	Harvest	6	2.8	2.0-3.0
	Storage	6	3.3	3.0-4.0

Refer to footnotes on page 121.

Table 15AF. Detailed data summary for AC99330-1P/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	503	480-531
Yield US #1 (Cwt/A)		5	270	208-302
% US #1		5	53	43-58
Yield >10 oz (Cwt/A)		5	14	3-32
Yield <4 oz (Cwt/A)		5	233	200-271
% External Defects[1]		5	0.0	0.0-0.2
% Hollow Heart[2]		5	0.2	0.0-0.6
% Stand		5	98	96-99
Emergence Uniformity		5	3.2	3.0-3.8
Vine Vigor[3]		5	3.9	3.5-4.5
Stems/Plant		5	5.3	4.2-6.6
Vine Size[4]		5	3.6	2.8-4.0
Vine Maturity[5]		5	2.8	2.0-3.0
Blackspot[6]	Bud End	6	4.7	4.0-5.0
	Stem End	6	4.2	3.7-4.8
	Average	6	4.4	
Weight Loss[7]		6	3.2	1.4-5.0
Dormancy[8]		6	60	49-66
Enzymatic Browning[9]		6	3.2	2.4-3.6
Specific Gravity		6	1.082	1.075-1.090
Fry Color[10]	Harvest	6	2.0	1.0-4.0
	Storage	6	3.2	3.0-4.0
Fry Texture[11]	Harvest	6	2.8	2.0-4.0
	Storage	6	3.2	3.0-4.0

Refer to footnotes on page 121.

Table 15AG. Detailed data summary for CO99045-1W/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		5	556	503-634
Yield US #1 (Cwt/A)		5	431	397-465
% US #1		5	78	73-85
Yield >10 oz (Cwt/A)		5	116	97-169
Yield <4 oz (Cwt/A)		5	109	71-160
% External Defects[1]		5	2.9	0.8-5.2
% Hollow Heart[2]		5	0.0	0.0-0.2
% Stand		5	100	99-100
Emergence Uniformity		5	3.4	3.0-3.5
Vine Vigor[3]		5	3.7	3.0-4.3
Stems/Plant		5	4.3	3.7-6.0
Vine Size[4]		5	4.1	3.5-4.5
Vine Maturity[5]		5	3.2	3.0-3.5
Blackspot[6]	Bud End	6	4.6	3.8-5.0
	Stem End	6	4.4	3.8-5.0
	Average	6	4.5	
Weight Loss[7]		6	2.4	1.4-3.1
Dormancy[8]		6	70	55-87
Enzymatic Browning[9]		6	4.6	4.0-5.0
Specific Gravity		6	1.088	1.080-1.093
Fry Color[10]	Harvest	6	2.8	2.0-3.0
	Storage	6	3.2	2.0-4.0
Fry Texture[11]	Harvest	6	2.8	2.0-3.0
	Storage	6	2.8	2.0-3.0

Refer to footnotes on page 121.

Table 15AH. Detailed data summary for ATC00293-1W/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	577	505-621
Yield US #1 (Cwt/A)		4	484	449-517
% US #1		4	84	80-89
Yield >10 oz (Cwt/A)		4	130	80-185
Yield <4 oz (Cwt/A)		4	67	47-78
% External Defects[1]		4	4.5	1.7-6.8
% Hollow Heart[2]		4	3.1	1.2-3.8
% Stand		4	98	95-100
Emergence Uniformity		4	2.9	2.5-3.3
Vine Vigor[3]		4	3.4	3.0-4.0
Stems/Plant		4	3.4	3.0-3.7
Vine Size[4]		4	4.1	4.0-4.3
Vine Maturity[5]		4	3.0	3.0-3.0
Blackspot[6]	Bud End	5	4.1	2.6-5.0
	Stem End	5	4.1	2.8-5.0
	Average	5	4.1	
Weight Loss[7]		5	2.0	1.6-2.2
Dormancy[8]		5	118	110-129
Enzymatic Browning[9]		5	4.5	4.4-4.8
Specific Gravity		5	1.082	1.075-1.085
Fry Color[10]	Harvest	5	0.8	0.0-2.0
	Storage	5	1.8	1.0-3.0
Fry Texture[11]	Harvest	5	2.2	1.0-3.0
	Storage	5	2.2	2.0-3.0

Refer to footnotes on page 121.

Table 15AI. Detailed data summary for CO00405-1RF.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	348	290-373
Length: <2"		2	43	27-58
Length: 2-4"		2	244	228-260
Length: >4"-6"		2	70	40-101
Length: >6"		2	3	0-6
% External Defects[1]		4	2.8	0.2-4.7
% Hollow Heart[2]		4	0.0	0.0-0.0
% Stand		4	99	98-100
Emergence Uniformity		4	3.3	3.0-3.5
Vine Vigor[3]		4	2.8	2.0-3.8
Stems/Plant		4	4.2	3.6-5.5
Vine Size[4]		4	2.2	1.8-2.8
Vine Maturity[5]		4	1.3	1.0-2.0
Blackspot[6]	Bud End	5	4.7	3.9-5.0
	Stem End	5	4.6	3.9-5.0
	Average	5	4.7	
Weight Loss[7]		5	3.6	3.1-4.1
Dormancy[8]		5	74	61-87
Enzymatic Browning[9]		5	4.3	3.6-5.0
Specific Gravity		5	1.080	1.077-1.086
Fry Color[10]	Harvest	5	1.4	1.0-2.0
	Storage	5	2.0	2.0-2.0
Fry Texture[11]	Harvest	5	3.0	2.0-5.0
	Storage	5	3.0	2.0-5.0

Refer to footnotes on page 121.

Table 15AJ. Detailed data summary for CO00412-5W/Y.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	489	421-579
Yield US #1 (Cwt/A)		4	353	283-448
% US #1		4	72	61-82
Yield >10 oz (Cwt/A)		4	66	29-108
Yield <4 oz (Cwt/A)		4	122	75-167
% External Defects[1]		4	2.7	0.7-3.8
% Hollow Heart[2]		4	0.9	0.0-1.9
% Stand		4	99	98-100
Emergence Uniformity		4	3.4	3.0-4.0
Vine Vigor[3]		4	3.9	3.5-4.3
Stems/Plant		4	4.9	4.6-5.7
Vine Size[4]		4	3.6	3.0-4.0
Vine Maturity[5]		4	2.8	2.5-3.0
Blackspot[6]	Bud End	5	4.0	2.0-5.0
	Stem End	5	3.5	1.9-4.4
	Average	5	3.7	
Weight Loss[7]		5	2.1	1.7-2.6
Dormancy[8]		5	77	70-87
Enzymatic Browning[9]		5	3.7	3.2-4.0
Specific Gravity		5	1.088	1.077-1.094
Fry Color[10]	Harvest	5	1.6	1.0-3.0
	Storage	5	2.6	2.0-4.0
Fry Texture[11]	Harvest	5	2.6	2.0-3.0
	Storage	5	3.0	2.0-4.0

Refer to footnotes on page 121.

Table 15AK. Detailed data summary for CO00415-1RF.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	357	278-420
Length: <2"		2	36	26-46
Length: 2-4"		2	246	207-285
Length: >4"-6"		2	56	19-93
Length: >6"		2	3	0-6
% External Defects[1]		4	4.3	2.4-7.8
% Hollow Heart[2]		4	0.0	0.0-0.0
% Stand		4	87	54-100
Emergence Uniformity		4	3.1	2.0-3.5
Vine Vigor[3]		4	2.9	2.5-3.3
Stems/Plant		4	5.0	4.1-7.2
Vine Size[4]		4	2.4	2.0-3.3
Vine Maturity[5]		4	1.3	1.0-1.8
Blackspot[6]	Bud End	5	4.9	4.5-5.0
	Stem End	5	4.5	3.1-5.0
	Average	5	4.7	
Weight Loss[7]		5	2.8	2.2-4.1
Dormancy[8]		5	94	84-105
Enzymatic Browning[9]		5	4.5	4.0-4.6
Specific Gravity		5	1.075	1.071-1.078
Fry Color[10]	Harvest	5	1.8	1.0-2.0
	Storage	5	3.0	3.0-3.0
Fry Texture[11]	Harvest	5	2.6	2.0-4.0
	Storage	5	2.6	2.0-3.0

Refer to footnotes on page 121.

Table 15AL. Detailed data summary for Mountain Rose.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		8	383	288-449
Yield US #1 (Cwt/A)		8	262	150-354
% US #1		8	68	52-79
Yield >10 oz (Cwt/A)		8	23	4-63
Yield <4 oz (Cwt/A)		8	116	91-148
% External Defects[1]		8	1.1	0.0-2.4
% Hollow Heart[2]		8	0.0	0.0-0.0
% Stand		8	98	94-100
Emergence Uniformity		8	3.6	3.0-4.3
Vine Vigor[3]		8	2.7	2.0-3.0
Stems/Plant		8	3.7	2.9-4.9
Vine Size[4]		8	2.7	2.3-3.0
Vine Maturity[5]		8	2.2	1.5-3.0
Blackspot[6]	Bud End	---	---	--- ---
	Stem End	---	---	--- ---
	Average	---		
Weight Loss[7]		11	4.1	1.3-6.3
Dormancy[8]		11	102	77-153
Enzymatic Browning[9]		---	---	--- ---
Specific Gravity		11	1.081	1.074-1.086
Fry Color[10]	Harvest	---	---	--- ---
	Storage	---	---	--- ---
Fry Texture[11]	Harvest	6	2.5	1.0-3.0
	Storage	6	2.7	2.0-3.0

Refer to footnotes on page 121.

Table 15AM. Detailed data summary for Purple Majesty.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		12	496	404-606
Yield US #1 (Cwt/A)		12	289	203-401
% US #1		12	58	40-72
Yield >10 oz (Cwt/A)		12	30	14-61
Yield <4 oz (Cwt/A)		12	205	122-326
% External Defects[1]		12	0.6	0.0-1.7
% Hollow Heart[2]		12	1.3	0.2-3.4
% Stand		12	97	94-99
Emergence Uniformity		12	3.5	3.0-4.0
Vine Vigor[3]		12	3.7	2.8-4.5
Stems/Plant		12	4.3	3.5-6.1
Vine Size[4]		12	2.9	2.3-3.0
Vine Maturity[5]		12	2.1	1.5-3.0
Blackspot[6]	Bud End	---	---	--- ---
	Stem End	---	---	--- ---
	Average	---	---	
Weight Loss[7]		17	3.5	1.1-6.8
Dormancy[8]		17	64	47-85
Enzymatic Browning[9]		---	---	--- ---
Specific Gravity		17	1.085	1.076-1.091
Fry Color[10]	Harvest	---	---	--- ---
	Storage	---	---	--- ---
Fry Texture[11]	Harvest	12	2.6	1.0-4.0
	Storage	12	2.6	2.0-3.0

Refer to footnotes on page 121.

Table 15AN. Detailed data summary for Yukon Gold.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		26	413	321-513
Yield US #1 (Cwt/A)		26	368	293-444
% US #1		26	89	82-94
Yield >10 oz (Cwt/A)		26	162	89-248
Yield <4 oz (Cwt/A)		26	38	22-66
% External Defects[1]		26	1.6	0.0-4.4
% Hollow Heart[2]		26	0.6	0.0-2.2
% Stand		26	96	90-100
Emergence Uniformity		26	3.2	2.5-3.8
Vine Vigor[3]		26	3.8	3.0-4.3
Stems/Plant		26	2.5	1.6-3.8
Vine Size[4]		26	3.0	2.5-3.5
Vine Maturity[5]		26	1.8	1.0-2.8
Blackspot[6]	Bud End	33	4.1	2.0-5.0
	Stem End	33	3.8	2.4-5.0
	Average	33	3.9	
Weight Loss[7]		33	2.3	1.0-4.3
Dormancy[8]		33	91	69-132
Enzymatic Browning[9]		33	4.4	3.8-5.0
Specific Gravity		33	1.086	1.079-1.092
Fry Color[10]	Harvest	33	1.7	1.0-3.0
	Storage	33	2.8	1.0-4.0
Fry Texture[11]	Harvest	33	3.0	1.0-4.0
	Storage	33	3.0	1.0-4.0

Refer to footnotes on page 121.

Table 15AO. Detailed data summary for CO95051-7W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		8	413	372-469
Yield US #1 (Cwt/A)		8	355	295-411
% US #1		8	86	79-90
Yield >10 oz (Cwt/A)		8	69	13-145
Yield <4 oz (Cwt/A)		8	54	37-75
% External Defects[1]		8	1.0	0.4-1.6
% Hollow Heart[2]		8	0.4	0.0-1.3
% Stand		8	93	82-99
Emergence Uniformity		8	3.0	2.8-3.5
Vine Vigor[3]		8	3.0	3.0-3.3
Stems/Plant		8	3.1	2.6-3.9
Vine Size[4]		8	3.6	3.0-4.0
Vine Maturity[5]		8	3.3	3.0-4.0
Blackspot[6]	Bud End	18	4.0	3.1-4.9
	Stem End	18	2.6	1.5-4.2
	Average	18	3.3	
Weight Loss[7]		18	5.1	1.7-11.0
Dormancy[8]		18	77	62-100
Enzymatic Browning[9]		18	3.5	1.8-4.4
Specific Gravity		19	1.100	1.089-1.110
Chip Color[10]	40	19	3.5	2.5-4.5
	40R	19	2.8	1.0-4.0
	50	19	2.2	1.0-4.0
	50R	19	1.9	1.0-3.5

Refer to footnotes on page 121.

Table 15AP. Detailed data summary for CO96141-4W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		8	416	390-460
Yield US #1 (Cwt/A)		8	363	318-398
% US #1		8	87	80-95
Yield >10 oz (Cwt/A)		8	102	36-176
Yield <4 oz (Cwt/A)		8	48	15-79
% External Defects[1]		8	1.1	0.2-2.0
% Hollow Heart[2]		8	0.0	0.0-0.0
% Stand		8	98	93-100
Emergence Uniformity		8	3.2	3.0-3.5
Vine Vigor[3]		8	2.8	2.3-3.0
Stems/Plant		8	2.8	2.1-3.4
Vine Size[4]		8	2.8	2.3-3.0
Vine Maturity[5]		8	2.6	2.0-3.0
Blackspot[6]	Bud End	17	4.3	2.6-5.0
	Stem End	17	3.4	2.3-5.0
	Average	17	3.8	
Weight Loss[7]		17	3.6	1.2-7.3
Dormancy[8]		17	85	68-105
Enzymatic Browning[9]		17	4.0	2.8-5.0
Specific Gravity		18	1.087	1.081-1.092
Chip Color[10]	40	18	4.1	2.5-5.0
	40R	18	3.4	2.5-4.0
	50	18	2.4	2.0-3.0
	50R	18	2.3	1.0-3.5

Refer to footnotes on page 121.

Table 15AQ. Detailed data summary for CO97043-14W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	431	351-483
Yield US #1 (Cwt/A)		7	349	297-428
% US #1		7	81	69-89
Yield >10 oz (Cwt/A)		7	92	34-187
Yield <4 oz (Cwt/A)		7	77	44-138
% External Defects[1]		7	1.4	0.3-2.4
% Hollow Heart[2]		7	0.3	0.0-1.3
% Stand		7	89	69-100
Emergence Uniformity		7	2.9	1.0-3.5
Vine Vigor[3]		7	3.2	2.8-3.5
Stems/Plant		7	3.1	2.5-3.9
Vine Size[4]		7	3.0	2.8-3.0
Vine Maturity[5]		7	2.9	2.5-3.3
Blackspot[6]	Bud End	15	3.9	3.0-4.6
	Stem End	15	3.3	2.0-4.4
	Average	15	3.6	
Weight Loss[7]		15	4.1	1.3-7.7
Dormancy[8]		15	106	84-160
Enzymatic Browning[9]		15	4.4	3.8-4.8
Specific Gravity		16	1.089	1.083-1.094
Chip Color[10]	40	16	3.9	3.5-4.5
	40R	16	3.3	2.5-4.0
	50	16	1.9	1.0-2.5
	50R	16	1.8	1.0-2.5

Refer to footnotes on page 121.

Table 15AR. Detailed data summary for CO97065-7W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		7	424	389-443
Yield US #1 (Cwt/A)		7	351	302-393
% US #1		7	83	70-89
Yield >10 oz (Cwt/A)		7	70	16-123
Yield <4 oz (Cwt/A)		7	70	41-130
% External Defects[1]		7	0.9	0.2-1.6
% Hollow Heart[2]		7	0.2	0.0-0.9
% Stand		7	96	95-99
Emergence Uniformity		7	3.1	3.0-3.5
Vine Vigor[3]		7	3.6	3.3-4.0
Stems/Plant		7	3.5	2.5-4.4
Vine Size[4]		7	3.2	3.0-3.5
Vine Maturity[5]		7	2.6	2.0-3.0
Blackspot[6]	Bud End	15	4.5	3.9-5.0
	Stem End	15	3.4	1.9-4.6
	Average	15	4.0	
Weight Loss[7]		15	2.9	1.3-6.4
Dormancy[8]		15	122	90-160
Enzymatic Browning[9]		15	4.6	4.0-5.0
Specific Gravity		16	1.099	1.093-1.107
Chip Color[10]	40	16	4.1	3.0-5.0
	40R	16	3.4	2.5-4.0
	50	16	1.9	1.0-3.0
	50R	16	2.0	1.5-3.0

Refer to footnotes on page 121.

Table 15AS. Detailed data summary for CO00188-4W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	444	385-483
Yield US #1 (Cwt/A)		4	329	270-377
% US #1		4	74	70-83
Yield >10 oz (Cwt/A)		4	32	12-68
Yield <4 oz (Cwt/A)		4	110	74-133
% External Defects[1]		4	1.1	0.5-1.9
% Hollow Heart[2]		4	0.1	0.0-0.3
% Stand		4	99	98-100
Emergence Uniformity		4	3.4	3.3-3.8
Vine Vigor[3]		4	3.9	3.3-4.3
Stems/Plant		4	4.6	4.4-4.8
Vine Size[4]		4	3.1	3.0-3.3
Vine Maturity[5]		4	2.6	2.3-3.0
Blackspot[6]	Bud End	9	4.6	3.8-5.0
	Stem End	9	3.0	1.4-4.3
	Average	9	3.8	
Weight Loss[7]		9	2.9	2.1-3.7
Dormancy[8]		9	100	84-123
Enzymatic Browning[9]		9	4.4	3.8-5.0
Specific Gravity		10	1.091	1.085-1.095
Chip Color[10]	40	10	3.3	2.0-4.0
	40R	10	2.8	1.5-4.0
	50	10	1.6	1.0-2.5
	50R	10	1.7	1.0-2.5

Refer to footnotes on page 121.

Table 15AT. Detailed data summary for CO00197-3W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	482	456-511
Yield US #1 (Cwt/A)		4	346	270-394
% US #1		4	72	59-79
Yield >10 oz (Cwt/A)		4	59	35-95
Yield <4 oz (Cwt/A)		4	132	99-183
% External Defects[1]		4	0.8	0.1-1.6
% Hollow Heart[2]		4	1.0	0.0-3.2
% Stand		4	96	93-100
Emergence Uniformity		4	3.3	3.0-3.5
Vine Vigor[3]		4	3.8	3.3-4.3
Stems/Plant		4	3.8	3.7-3.9
Vine Size[4]		4	3.3	3.0-3.5
Vine Maturity[5]		4	2.3	2.0-3.0
Blackspot[6]	Bud End	9	3.6	2.4-4.6
	Stem End	9	2.5	1.1-3.8
	Average	9	3.1	
Weight Loss[7]		9	2.5	1.6-4.3
Dormancy[8]		9	87	70-109
Enzymatic Browning[9]		9	3.2	2.2-3.8
Specific Gravity		10	1.086	1.079-1.090
Chip Color[10]	40	10	4.2	3.0-5.0
	40R	10	3.6	2.5-4.5
	50	10	2.3	1.0-3.5
	50R	10	2.4	1.0-4.0

Refer to footnotes on page 121.

Table AU. Detailed data summary for CO00270-7W.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		4	429	400-456
Yield US #1 (Cwt/A)		4	357	326-383
% US #1		4	83	80-88
Yield >10 oz (Cwt/A)		4	75	68-84
Yield <4 oz (Cwt/A)		4	68	46-76
% External Defects[1]		4	1.1	0.4-1.7
% Hollow Heart[2]		4	0.0	0.0-0.0
% Stand		4	95	93-99
Emergence Uniformity		4	3.3	3.0-3.5
Vine Vigor[3]		4	3.8	3.5-4.0
Stems/Plant		4	3.7	3.2-4.2
Vine Size[4]		4	3.1	3.0-3.3
Vine Maturity[5]		4	2.6	2.3-3.0
Blackspot[6]	Bud End	9	4.2	3.1-4.8
	Stem End	9	3.6	2.6-4.3
	Average	9	3.9	
Weight Loss[7]		9	2.7	2.0-3.9
Dormancy[8]		9	68	54-94
Enzymatic Browning[9]		9	3.6	3.4-4.0
Specific Gravity		10	1.088	1.080-1.097
Chip Color[10]	40	10	3.3	1.5-4.5
	40R	10	2.5	1.5-3.5
	50	10	1.6	1.0-3.0
	50R	10	1.5	1.0-2.0

Refer to footnotes on page 121.

Table 15AV. Detailed data summary for Atlantic.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		36	460	307-597
Yield US #1 (Cwt/A)		36	397	265-512
% US #1		36	86	76-93
Yield >10 oz (Cwt/A)		36	148	58-290
Yield <4 oz (Cwt/A)		36	50	19-109
% External Defects[1]		36	2.6	0.1-9.1
% Hollow Heart[2]		36	5.0	0.3-16.4
% Stand		36	96	88-100
Emergence Uniformity		30	3.6	3.0-4.3
Vine Vigor[3]		30	3.5	2.8-4.3
Stems/Plant		36	3.1	2.2-4.9
Vine Size[4]		30	3.1	2.2-4.0
Vine Maturity[5]		36	3.2	2.8-4.0
Blackspot[6]	Bud End	52	3.1	1.8-5.0
	Stem End	52	2.6	1.4-4.3
	Average	53	2.9	
Weight Loss[7]		53	4.5	1.1-7.9
Dormancy[8]		51	86	62-119
Enzymatic Browning[9]		51	4.5	3.8-5.0
Specific Gravity		54	1.098	1.083-1.120
Chip Color[10]	40	54	4.0	2.0-5.0
	40R	54	3.5	1.5-5.0
	50	54	2.6	1.0-4.0
	50R	54	2.5	1.0-4.0

Refer to footnotes on page 121.

Table 15AW. Detailed data summary for Chipeta.

Variable		# Trials	Mean	Range
Total Yield (Cwt/A)		34	541	399-757
Yield US #1 (Cwt/A)		34	458	306-606
% US #1		34	84	71-90
Yield >10 oz (Cwt/A)		34	166	52-388
Yield <4 oz (Cwt/A)		34	56	22-119
% External Defects[1]		34	5.1	1.1-13.0
% Hollow Heart[2]		34	0.5	0.0-4.0
% Stand		34	98	94-100
Emergence Uniformity		27	3.5	3.0-4.3
Vine Vigor[3]		27	4.0	3.2-5.0
Stems/Plant		33	3.5	2.5-4.9
Vine Size[4]		27	4.3	4.0-5.0
Vine Maturity[5]		34	3.3	3.0-4.0
Blackspot[6]	Bud End	49	3.8	2.2-5.0
	Stem End	49	3.6	1.4-4.9
	Average	51	3.7	
Weight Loss[7]		51	3.3	1.0-8.0
Dormancy[8]		47	104	77-153
Enzymatic Browning[9]		48	4.0	2.8-5.0
Specific Gravity		51	1.090	1.073-1.104
Chip Color[10]	40	51	4.5	3.0-5.0
	40R	51	3.8	1.5-5.0
	50	51	2.5	1.0-4.0
	50R	51	2.3	1.0-4.0

Refer to footnotes on page 121.

Footnotes for Tables 15A-15AW:

[1]Percent external defects based on the proportion of the total sample weight with significant defects.

[2]Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.

[3]Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.

[4]Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.

[5]Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.

[6]Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.

[7]Tubers were stored at 45F for approximately 3 months.

[8]Days from harvest to first visible growth. Tubers were stored at 45F.

[9]Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.

[10]Chip color was rated using the Snack Food Association 1-5 scale. Ratings of $\leq$2.0 are acceptable. Reconditioned samples were stored at 60F for three weeks. Fry color was rated on a 0 to 4 scale, with 0 being the lightest or best color. Color ratings of $\leq$2.0 are acceptable.

[11]Fry texture was rated on a 1 to 5 scale, with 5 indicating the cooked flesh was dry and mealy and 1 representing a soggy, wet texture.

APPENDIX 1. Cultural management information for the Potato Breeding and Selection Program's trials at the San Luis Valley Research Center - 2009.

LOCATION: San Luis Valley Research Center

SOIL TYPE: Sandy Loam (Dunul cobbly sandy loam)

DATE:

Planted - 5/19/09
Hilled - 6/12/09
Vines Killed - 9/09/09 (sulfuric acid - 28 gal/A) - 113 days after planting
Harvested - 9/30/09

PLOT INFORMATION:

Size of Plots - 1 row x 25'
Spacing Between Hills - 12"
Spacing Between Rows - 34"
Hills Per Plot - 25
Number of Reps - 4 (2 - Intermediate Yield Trials)

METHOD OF HARVEST:

Machine (Grimme 1-row)

FERTILIZER:

5/19/09 - 80 lbs N + 60 lbs P_2O_5 + 40 lbs K_20 +25 lbs S + 2.5 lb Zn/A
(dual band in-row liquid application)
7/07/09 - 10 lbs N (fertigated)
7/13/09 - 15 lbs N (fertigated)
7/22/09 - 15 lbs N (fertigated)
Total fertilizer applied: 120 lbs N + 60 lbs P_2O_5 + 40 lbs K_20 +25 lbs S + 2.5 lb Zn/A

IRRIGATION:

Center Pivot - 17.80" gross application (application frequency and amount based on ET)
Rainfall - 4.94" (5/21/09-9/30/09)

INSECTICIDES APPLIED:

7/27/09 - Fulfill (0.047 lb a.i./A)
8/11/09 - Endigo 2.7 (0.033 lb a.i./A cyfluthrin + 0.047 lb a.i./A imidacloprid)
8/21/09 - Endigo 2.7 (0.033 lb a.i./A cyfluthrin + 0.047 lb a.i./A imidacloprid)

FUNGICIDES APPLIED:

7/07/09 - Quadris (0.195 lb a.i./A)
7/24/09 - Bravo Weather Stik (1.125 lb a.i./A)

HERBICIDES APPLIED:

6/13/09 -Dual Magnum (1.4 lb a.i./A)

APPENDIX 2. General procedures used for postharvest evaluations.

Blackspot. Ten randomly selected tubers for each clone tested are bruised on the stem and bud ends with a 150 g weight dropped from a height of 60 cm. Tubers are stored at 40F prior to bruising. After bruising, tubers are stored at room temperature for two or three days prior to evaluation. Blackspot susceptibility is evaluated by cutting the tubers in half longitudinally and rating the extent of damage. Blackspot is rated on a 1 to 5 scale, with 5 indicating no discoloration.

Storage Weight Loss and Dormancy. Ten randomly selected tubers are weighed and stored at 45F for approximately a three month period under low relative humidity conditions to evaluate storage weight loss potential. These tubers are also observed weekly for sprout growth. Dormancy is reported as days after harvest to first visible sprout growth.

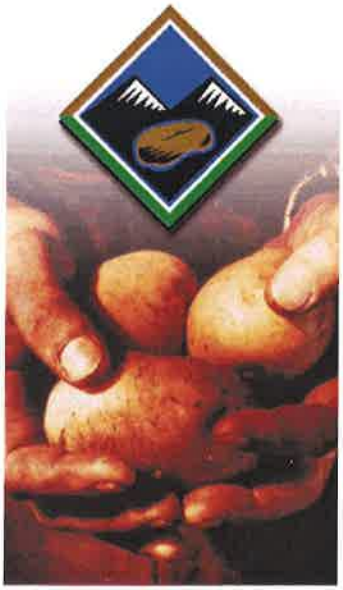
Enzymatic Browning. Five tubers of each clone are cut in half lengthwise and rated for degree of darkening 60 minutes later. Degree of darkening is rated on a 1 to 5 scale, with 5 indicating no discoloration.

Specific Gravity. Specific gravity is determined using the air/water method.

Fry Color and Texture. Fry color and texture is determined at or shortly after harvest and after a minimum of eight weeks of storage at 45F. Fries are cooked for 3 ½ minutes at 375F. Fry color is rated on a 0-4 scale using the USDA color standards. Color ratings $\leq$2 are acceptable. Fry texture is rated on a 1 to 5 scale, with 5 indicating that the cooked flesh was dry and mealy, with 1 representing a soggy, wet texture.

Chip Color. Chip color is determined after an interval of storage at 40 and 50F and after reconditioning for three weeks at 60F. Chips are cooked at 365F until bubbling slows. Chip color is rated using the Snack Food Association 1-5 scale. Ratings $\leq$2.0 are acceptable.

Notes



COLORADO POTATOES
QUALITY AT ITS PEAK