

2010 Research Progress Report

Potato Breeding and Selection

Submitted by

David G. Holm and Caroline Gray
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."

Table of Contents

Mission Statement	ii
Table of Contents	iii
Preface	vi
Acknowledgments	vii
Introduction	1
Potato Breeding	2
Germplasm Accession and Introgression	2
Crossing	2
Seedling Selection and Clonal Development	3
Collaborative Studies	4
Tables	
1. Generalized potato breeding and selection scheme used at the San Luis Valley	
Research Center	5
2A-B. Preliminary Trial	6
3A-E. Intermediate Main Yield Trial	10
4A-E. Intermediate Specialty Yield Trial	15
5A-E. Advanced Yield Trial	20
6A-E. Advanced Fingerling Yield Trial	25
7A-E. Southwestern Regional Russet Trial	30
8A-E. Southwestern Regional Red Trial	35
9A-E. Southwestern Regional Specialty Trial	40
10A-E. Western Regional Main Trial	45
11A-E. Advanced and Western Regional Red Trial	50
12A-E. Advanced and Western Regional Specialty Trial	55
13A-E. Advanced and Western Regional Chipping Trial	60
14A-B. San Luis Valley Chipping Study	65
15. Summary comparison of advanced selections and named cultivars for yield, grade, maturity, specific gravity, and grade defects	67
16A-AN. Detailed data summaries for advanced selections and named cultivars:	
Russets	
AC99375-1RU	74
CO99053-3RU	75
CO99053-4RU	76
CO99100-1RU	77
Canela Russet	78
Centennial Russet	79
Mesa Russet	80

Rio Grande Russet	81
Russet Norkotah	82
Russet Nugget	83
Reds	
CO98012-5R	84
CO99076-6R	85
CO99256-2R	86
CO00277-2R	87
CO00291-5R	88
Colorado Rose	89
Rio Colorado	90
Sangre-S10	91
Specialties	
CO97226-2R/R	92
CO97232-1R/Y	93
CO97232-2R/Y	94
CO97233-3R/Y	95
CO97222-1R/R	96
CO97227-2P/PW	97
AC99329-7PW/Y	98
AC99330-1P/Y	99
CO99045-1W/Y	100
ATC00293-1W/Y	101
CO00405-1RF	102
CO00412-5W/Y	103
CO00415-1RF	104
CO01399-10P/Y	105
Mountain Rose	106
Purple Majesty	107
Yukon Gold	108
Chippers	
CO00188-4W	109
CO00197-3W	110
CO00270-7W	111
Atlantic	112
Chipeta	113

Figures

1. Photographs of advanced selections	69
---	----

Appendices

1. Cultural management information for the Potato Breeding and Selection Program's trials at the San Luis Valley Research Center	115
2. General procedures used for postharvest evaluations	116

Notes	117
--------------------	-----

Preface

We are pleased to provide this copy of the “**2010 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 with colleagues 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
- Colorado Certified Potato Growers' Association
- Southwest Regional Potato Breeding and Cultivar Development Cooperators (Colorado, Texas, and California). The overall objective of this research group 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 2011 production season!

Sincerely,

Dave Holm and Caroline Gray

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
 - *USDA - National Institute of Food and Agriculture* - Potato Research Award Number 2010-34141-21252
 - *United States Potato Board*
 - *Stone's Farm Supply* - in-kind support

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

- ✓ Technical Support

Fahrettin Goktepe	Marlee Canada	Mitzi Cisneros	Megan Duran
Sarah Ehrlich	Chantel Friedrich	Marshall McDaniel	Melissa Quintana
Lacy Shawcroft	Taylor Trujillo		

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 - San Luis Valley Research Center

Deanna Brown	Tim Poe	Ron Price	Stan Price
Sharon Yust			

- ✓ Potato Certification Service

Kent Sather	Rick Haslar	Andrew Houser	Carolyn Keller
Steve 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.

2010 Research Progress Report Potato Breeding and Selection

Submitted by

David G. Holm and Caroline Gray

San Luis Valley Research Center

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 five-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. Fourth, a basic seed source of selections is developed to facilitate further seed increase and commercial testing of advanced selections. 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.

The long-term process of cultivar development fosters collaborations among growers, shippers, processors, researchers, and extension personnel. The network must provide for a grower evaluation process to assist in the development of management guidelines, detect unforeseen problems, and determine the predictability of performance of each new cultivar.

Because the time line for cultivar development is lengthy, improved methods to speed up the breeding and selection process are continually evaluated. A new successful potato cultivar requires a combination of a multitude of traits. Thus alone, marker assisted selection has met with only limited usefulness other than for targeting a few specific traits in potato cultivar development and therefore, has not been used extensively in potato breeding. A priority of the cultivar development process should always be to provide a good solid foundation for the development and commercialization of new potato cultivars prior to the "formal" naming and release process. As such, potato cultivar development is a long-term process and is difficult to shorten significantly.

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.

Recently several seed families of a diploid hybrid population of diploid *Solanum phureja* x *Solanum stenotomum* adapted to long-day growing conditions by recurrent selection by Dr. Kathy Haynes, USDA-ARS, Beltsville, Maryland. This material was initially planted in 2009 and seedling tubers were planted in the field in 2010. Initial field selection occurred in the fall of 2010 for dark yellow flesh. This project dovetails with hybridization and selections efforts already underway for high carotenoid clones previously received from Dr. Chuck Brown, USDA-ARS, Prosser Washington, and will be part of an ongoing effort to enhance carotenoid levels in our breeding program.

Crossing. The Colorado Potato Breeding and Selection Program intercrossed 99 parental clones in 2010 in two separate crossing blocks. The emphasis of the first crossing block was russet, chipper, specialty cultivar development and PVY resistance. The second crossing block emphasized russet and specialty cultivar development and PVY resistance. Seed from 278 combinations was obtained.

Approximately 57,200 seedling tubers representing 218 families were produced from 2008 and 2009 crosses for initial field selection in 2011. 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 84,924 first-year seedlings representing 478 families in 2010, with 623 selected for subsequent planting, evaluation, and increase in future years. A portion of these seedlings were obtained from the USDA-ARS (Aberdeen, Idaho), Agriculture Canada, Texas A&M University, North Dakota State University, and Oregon State University. Another 1,166 clones were in 12-hill, preliminary, and intermediate stages of selection. At harvest, 370 were saved for further increase and evaluation. Fifty-five advanced selections were saved and will be increased in 2011 pending further evaluation. Another 281 selections and cultivars were maintained for germplasm development, breeding, and other experimental purposes including seed increase/maintenance.

Field trials conducted in 2010 included: Preliminary Trial, San Luis Valley Chipping Trial, Intermediate Yield Trial, Intermediate Specialty Yield Trial, Advanced Yield Trial, Advanced Fingerling Trial, Southwestern Regional Russet Trial, Southwestern Regional Red Trial, Southwestern Specialty Trial, Southwestern Regional Chip Trial, Western Regional Russet/Processing Trial, Western Regional Red Trial, Western Regional Specialty Trial, and Western Regional Chipping Trial. All trials are grown under "low input" conditions, primarily for reduced nitrogen and fungicide. Tables 2-14 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 2010.

A total of 201 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.

Advanced selections evaluated in the Southwest Regional Trials, Western Regional Trials, or by Colorado producers in 2010, included 6 russets (AC99375-1RU, CO97087-2RU, CO98067-7RU, CO99053-3RU, CO99053-4RU, and CO99100-1RU), 2 reds (CO99076-6R and CO99256-2R), 9 chippers (AC01151-5W, CO95051-7W, CO97043-14W, CO00188-4W, CO00197-3W, CO00270-7W, CO02024-9W, CO02033-1W, and CO02321-4W), and 8 specialties (AC97521-1R/Y, AC99329 -7PW/Y, ATC00293 -1 W/Y, CO97226-2R/R, CO97232-2R/Y, CO00412-5W/Y, CO01399-10P/Y, TC02072-3P/P). An additional 12 selections are being considered for exclusive release.

Since progressing through the various trials including the Western Regional Chip Trials, CO95051-7W has undergone extensive testing in the USPB/SFA Chip Trials and the USPB Fast Track program. This round white selection has excellent chip color after long term storage. This selection will be exclusively

released in 2011. Plant Variety Protection was granted to Rio Grande Russet in 2010. PVP certificates for Purple Majesty and Colorado Rose are expected soon in 2011. Applications for Canela Russet, Rio Colorado, and Mesa Russet are still pending.

Table 15 summarizes the performance of advanced selections that are available for growers to evaluate in 2011. Detailed data summaries for each of the advanced selections are presented in Tables 16A-AN. Figure 1 includes photographs of these selections. Data summaries for additional selections that are available for exclusive release are available upon request.

Collaborative Studies

The following collaborative studies were conducted in 2010:

- 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. Diseases included were bacterial ring rot (21 selections), potato leafroll virus (28 selections), PVY (28 selections), powdery scab (23 selections), and corky ringspot (8 selections) in Colorado.
- 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.
- Fourteen advanced selections were evaluated in cultural management trials in collaboration with Samuel Essah.
- Several selections were evaluated for various postharvest characteristics in collaboration with Sastry Jayanty.
- Thirty-six selections were provided for antioxidant activity screening in cooperation with Cecil Stushnoff. Included in this group were seven selections are being evaluated for a second year to determine the influence of developmental growth stage of the potato tubers on bioactives related to colon cancer.
- 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.
- Five selections were provided to Jennifer Bond for branding projects associated with a Colorado Department of Agriculture Specialty Block Grant.
- Preliminary studies were initiated with Drs. Dyakar Badri and Jorge Vivanco to developing a quick and reliable method to screen potato germplasm and advanced clones for resistance against pink rot.

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+	<p>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.</p> <p>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.</p>
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 9 th 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 - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
07S018	5.0	5.0	5.0	4.2	42	4.6
07S019	5.0	5.0	5.0	3.0	42	3.4
07S020	5.0	5.0	5.0	3.6	56	4.8
AC03346-1RU	5.0	5.0	5.0	1.9	130	3.6
AC05141-2RU	4.8	4.7	4.8	3.0	81	4.2
AC05175-3P/Y	4.6	4.1	4.4	3.1	95	4.0
AC05175-9PW/Y	4.7	4.7	4.7	3.2	102	2.2
AC05178-2RW/W	4.5	4.9	4.7	4.4	74	2.8
AC05282-2RU	4.3	3.6	4.0	3.2	102	4.2
CO05024-11RU	4.8	4.0	4.4	4.1	88	3.8
CO05037-2R/Y	4.6	4.2	4.4	2.7	81	4.6
CO05037-3W/Y	4.7	4.5	4.6	2.5	88	3.8
CO05040-1RU	5.0	5.0	5.0	2.8	102	3.6
CO05048-3RU	4.3	4.8	4.6	1.6	130	4.4
CO05062-2P/P	---	---	---	3.6	77	---
CO05068-1RU	4.5	3.7	4.1	2.6	84	2.0
CO05080-1P/PW	---	---	---	2.9	84	---
CO05110-6RU	4.4	3.4	3.9	1.7	140	3.4
CO05122-1W/Y	4.6	4.2	4.4	4.5	56	4.2
CO05132-2RU	4.8	4.8	4.8	2.7	112	4.8
CO05149-3RU	4.9	4.7	4.8	4.3	70	4.6
CO05152-5RU	5.0	4.5	4.8	3.1	91	4.2
CO05175-1RU	4.9	4.6	4.8	3.4	77	2.8
CO05189-2R	4.4	4.7	4.6	1.9	98	4.2
CO05189-3RU	5.0	5.0	5.0	3.0	140	4.4

Table 2A continued on next page

Table 2A (cont'd). Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Preliminary Trial entries - 2010.

Clone	Blackspot Index ¹			%	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average	Weight Loss ²		
CO05206-8RU	5.0	5.0	5.0	2.4	98	5.0
CO05211-4R	5.0	4.8	4.9	3.1	126	2.2
CO05228-4R	4.7	4.5	4.6	6.6	98	1.6
CO05228-7R	4.9	5.0	5.0	4.5	84	4.6
CO05245-1R	4.6	4.6	4.6	5.3	119	4.0
TC05276-7P/PW	4.6	4.4	4.5	3.3	84	---
Canela Russet	5.0	5.0	5.0	3.4	147	4.2
Centennial Russet	5.0	4.8	4.9	4.7	83	4.4
Purple Majesty	---	---	---	6.3	61	---
Rio Grande Russet	5.0	4.8	4.9	3.2	103	3.2
Russet Burbank	4.7	4.3	4.5	1.5	83	3.4
Russet Norkotah-S3	4.8	4.7	4.8	2.3	117	3.6
Russet Nugget	5.0	4.9	5.0	3.0	97	4.8
Sangre-S10	4.8	5.0	4.9	1.6	104	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 2B. Specific gravity, french fry color, and texture for Preliminary Trial clones - 2010

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
07S018	1.075	3	4	2	2
07S019	1.068	3	4	2	2
07S020	1.067	3	4	3	3
AC03346-1RU	1.077	3	3	3	3
AC05141-2RU	1.092	1	1	5	4
AC05175-3P/Y	1.072	1	1	5	4
AC05175-9PW/Y	1.076	2	3	4	3
AC05178-2RW/W	1.080	3	4	4	3
AC05282-2RU	1.083	3	3	3	3
CO05024-11RU	1.087	2	2	4	4
CO05037-2R/Y	1.083	1	1	4	4
CO05037-3W/Y	1.078	1	2	3	4
CO05040-1RU	1.077	1	1	5	4
CO05048-3RU	1.070	3	3	3	3
CO05062-2P/P	1.087	---	---	3	2
CO05068-1RU	1.094	1	1	3	3
CO05080-1P/PW	1.096	---	---	5	5
CO05110-6RU	1.086	1	1	4	5
CO05122-1W/Y	1.080	3	3	3	2
CO05132-2RU	1.089	2	1	4	4
CO05149-3RU	1.082	0	0	4	5
CO05152-5RU	1.080	2	4	3	3
CO05175-1RU	1.083	2	1	3	4
CO05189-2RU	1.077	3	4	3	3
CO05189-3RU	1.069	2	3	2	2

Table 2B continued on next page

Table 2B (cont'd). Specific gravity, french fry color, and texture for Preliminary Trial clones - 2010.

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
CO05206-8RU	1.084	1	0	2	3
CO05211-4R	1.086	1	1	3	3
CO05228-4R	1.084	1	1	2	3
CO05228-7R	1.081	3	3	2	2
CO05245-1R	1.082	3	3	2	2
TC05276-7P/PW	1.089	---	---	4	4
Canela Russet	1.075	2	2	3	3
Centennial Russet	1.079	3	4	2	2
Purple Majesty	1.076	---	---	2	3
Rio Grande Russet	1.091	2	2	3	3
Russet Burbank	1.075	1	3	3	4
Russet Norkotah-S3	1.083	2	3	3	2
Russet Nugget	1.084	1	2	4	4
Sangre-S10	1.068	4	4	2	2

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

²Fry 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 - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AC03300-1RU	398	234	59	226	8	160	Ob
AC03409-1RU	420	358	86	270	89	55	Ob
CO03177-2RU	309	266	86	212	54	43	L
CO03186-1RU	437	382	87	272	110	46	Ob
CO03186-2RU	401	355	88	274	82	44	Ob
CO04122-1RU	322	195	61	188	7	126	Ob
CO04123-2RU	407	296	73	272	26	109	L
CO04204-7RU	407	347	86	276	71	49	Ob
CO04211-4RU	342	308	90	226	82	29	Ob
CO04220-7RU	378	316	84	260	56	60	Ob
CO04233-1RU	319	283	89	243	40	34	Ob
Canela Russet	329	298	90	181	118	31	Ob
Russet Norkotah	418	382	92	135	247	16	L
Mean	376	309	82	233	76	62	---
LSD ² (0.05)	95	105	9	57	87	25	---

¹Tuber shape: Ob=oblong; L=long .

²LSD=least significant difference.

Table 3B. Grade defects for Intermediate Main Yield Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC03300-1RU	1.1	MS*, SG	0.0
AC03409-1RU	1.5	GC, GR*	0.0
CO03177-2RU	0.0		0.0
CO03186-1RU	2.4	MS*, GR*	0.0
CO03186-2RU	0.4	GC*	0.0
CO04122-1RU	0.4	MS*	0.0
CO04123-2RU	0.3	GR*	0.0
CO04204-7RU	1.0	MS*	0.0
CO04211-4RU	1.9	MS, GR*	0.0
CO04220-7RU	0.7	MS*	0.0
CO04233-1RU	0.6	MS*	0.0
Canela Russet	0.0		0.0
Russet Norkotah	5.0	MS*, SG, GR*	2.7

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

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

³Percent 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 - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC03300-1RU	100	3.5	4.0	3.7	5.0	3.5	4.0
AC03409-1RU	100	1.0	4.0	1.2	4.0	3.5	3.0
CO03177-2RU	100	2.5	3.0	2.5	3.0	3.0	2.0
CO03186-1RU	100	3.5	3.0	2.8	4.0	3.0	2.5
CO03186-2RU	100	3.5	2.5	3.6	2.5	2.5	2.5
CO04122-1RU	100	2.0	3.5	6.3	2.5	2.5	1.5
CO04123-2RU	100	3.5	3.5	4.7	3.0	2.5	3.0
CO04204-7RU	100	3.0	3.0	3.2	3.0	3.0	3.0
CO04211-4RU	100	3.0	3.0	3.9	2.5	3.0	2.0
CO04220-7RU	100	3.0	3.0	2.6	3.0	2.5	2.5
CO04233-1RU	100	2.0	2.5	1.8	3.0	3.0	3.0
Canela Russet	96	2.0	3.0	1.4	4.0	4.0	3.0
Russet Norkotah	100	3.0	3.0	2.8	3.0	2.5	1.5
Mean	100	2.7	3.2	3.1	3.3	3.0	2.6
LSD ⁶ (0.05)	NS	0.8	1.2	2.1	0.7	1.1	1.6

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; NS=not significant.

Table 3D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Intermediate Main Yield Trial entries - 2010.

Clone	Blackspot Index ¹			%	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average	Weight Loss ²		
AC03300-1RU	4.5	4.3	4.4	4.3	42	4.4
AC03409-1RU	4.9	4.8	4.9	1.4	126	5.0
CO03177-2RU	4.9	4.6	4.8	4.0	63	3.4
CO03186-1RU	4.9	4.8	4.9	2.3	63	5.0
CO03186-2RU	4.7	5.0	4.9	2.2	63	3.6
CO04122-1RU	5.0	5.0	5.0	5.4	63	4.2
CO04123-2RU	4.2	3.6	3.9	3.4	63	4.4
CO04204-7RU	5.0	4.7	4.9	2.8	70	4.6
CO04211-4RU	5.0	4.2	4.6	7.8	28	5.0
CO04220-7RU	4.9	4.8	4.9	2.5	70	3.8
CO04233-1RU	5.0	5.0	5.0	1.9	70	4.8
Canela Russet	5.0	4.2	4.6	3.3	133	4.8
Russet Norkotah	4.6	3.9	4.3	2.7	70	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 3E. Specific gravity, french fry color, and texture for Intermediate Main Yield Trial entries - 2010.

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
AC03300-1RU	1.103	0	0	5	5
AC03409-1RU	1.095	1	2	4	3
CO03177-2RU	1.098	0	0	5	4
CO03186-1RU	1.099	1	2	4	4
CO03186-2RU	1.086	2	2	3	3
CO04122-1RU	1.088	0	0	4	3
CO04123-2RU	1.097	1	0	4	3
CO04204-7RU	1.090	0	0	3	4
CO04211-4RU	1.085	1	2	4	3
CO04220-7RU	1.092	0	1	4	4
CO04233-1RU	1.087	0	2	5	4
Canela Russet	1.104	0	0	5	5
Russet Norkotah	1.083	1	1	2	3

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

²Fry 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 4A. Yield, grade and tuber shape for Intermediate Specialty Yield Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AC03534-2R/Y	530	440	83	349	91	89	Ov
CO04029-3RW/Y	282	128	44	125	2	148	R
CO04029-5W/Y	540	356	66	318	38	183	R
CO04056-3P/PW	421	184	44	179	5	236	Ov
CO04056-7P/PW	429	205	48	205	0	225	Ov
CO04058-3RW/RW	404	165	41	159	6	241	Ov
CO04063-4R/R	303	77	26	75	2	227	Ov
CO04067-8R/Y	504	372	74	327	46	122	Ov
CO04067-10W/Y	564	407	73	368	40	151	Ov
CO04099-3W/Y	430	247	58	235	12	183	Ov
CO04099-4W/Y	406	288	71	246	41	110	Ov
CO04159-1R	326	267	82	243	25	54	Ov
CO04159-3R/Y	441	332	76	311	21	98	Ov
CO04159-4R/Y	330	166	51	163	3	163	Ov
CO04188-4R/Y	540	409	76	360	49	128	Ov
CO04223-6R	345	270	78	230	40	73	Ov
CO04287-1R	307	228	74	221	7	70	R
CO04287-2R	340	304	90	233	71	32	Ov
Purple Majesty	527	298	57	272	27	224	Ov
Sangre-S10	426	378	89	233	146	38	Ov
Yukon Gold	361	338	94	189	149	23	Ov
Mean	417	279	66	240	39	134	---
LSD ² (0.05)	78	79	13	55	47	52	---

¹Tuber shape: R=round; Ov=oval.

²LSD=least significant difference.

Table 4B. Grade defects for Intermediate Specialty Yield Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC03534-2R/Y	0.4	MS*	0.0
CO04029-3RW/Y	2.4	GC*, GR	0.0
CO04029-5W/Y	0.2	GR*	0.0
CO04056-3P/PW	0.3	GR*	0.0
CO04056-7P/PW	0.0		0.0
CO04058-3RW/RW	0.0		0.5
CO04063-4R/R	0.0		0.0
CO04067-8R/Y	2.0	MS, GC*, GR	0.0
CO04067-10W/Y	1.3	GR*	0.0
CO04099-3W/Y	0.0		0.4
CO04099-4W/Y	2.2	GR*	0.0
CO04159-1R	1.6	MS*, GC*, GR	0.0
CO04159-3R/Y	2.8	MS*, GC,	0.0
CO04159-4R/Y	0.5	MS*	0.0
CO04188-4R/Y	0.7	MS*, GR	0.9
CO04223-6R	0.0		0.0
CO04287-1R	2.7	MS, GC*	0.0
CO04287-2R	1.1	GC*	0.0
Purple Majesty	1.0	MS*	1.4
Sangre-S10	2.4	MS, GC*, GR	1.1
Yukon Gold	0.3	GR*	0.0

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

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

³Percent 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 - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC03534-2R/Y	88	3.0	3.0	2.8	4.0	3.0	3.0
CO04029-3RW/Y	92	2.0	2.0	4.0	2.0	2.0	2.0
CO04029-5W/Y	92	3.5	3.0	3.7	4.0	2.5	3.0
CO04056-3P/PW	100	3.0	3.0	3.6	3.0	3.0	3.0
CO04056-7P/PW	100	4.0	3.0	3.5	3.0	2.5	3.0
CO04058-3RW/RW	100	3.0	2.5	3.9	4.0	3.0	3.0
CO04063-4R/R	100	1.5	3.0	4.4	2.5	3.0	2.5
CO04067-8R/Y	96	3.0	3.0	3.3	4.0	3.5	3.0
CO04067-10W/Y	100	4.0	3.0	4.0	4.5	3.0	3.5
CO04099-3W/Y	100	3.5	3.0	3.3	3.0	3.0	3.0
CO04099-4W/Y	100	4.0	3.0	4.4	4.5	3.0	2.5
CO04159-1R	100	2.5	3.0	2.6	3.5	3.5	3.0
CO04159-3R/Y	100	4.0	3.0	2.7	3.5	3.0	2.5
CO04159-4R/Y	96	2.5	3.0	2.2	2.5	2.5	1.5
CO04188-4R/Y	96	3.5	2.5	3.3	4.0	2.5	3.0
CO04223-6R	100	2.0	3.5	3.3	2.5	2.5	3.0
CO04287-1R	100	3.0	3.5	2.4	2.0	3.0	2.0
CO04287-2R	100	2.0	4.0	3.2	1.5	2.5	2.0
Purple Majesty	100	4.0	3.0	4.3	3.5	2.5	3.0
Sangre-S10	100	2.5	3.0	2.0	4.5	3.0	4.0
Yukon Gold	100	3.5	3.0	1.6	3.5	3.0	3.0
Mean	98	3.0	3.0	3.3	3.3	2.8	2.8
LSD ⁶ (0.05)	7	0.8	0.7	0.9	1.0	1.0	1.0

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

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

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

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

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

⁶LSD=least significant difference.

Table 4D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Intermediate Specialty Yield Trial entries - 2010.

Clone	Blackspot Index ¹			%	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average	Weight Loss ²		
AC03534-2R/Y	4.7	5.0	4.9	3.4	70	4.2
CO04029-3RW/Y	4.7	5.0	4.9	3.9	42	2.4
CO04029-5W/Y	4.4	2.6	3.5	6.0	28	2.4
CO04056-3P/PW	---	---	---	3.1	70	---
CO04056-7P/PW	---	---	---	4.2	42	---
CO04058-3RW/RW	---	---	---	1.8	70	---
CO04063-4R/R	---	---	---	5.5	63	---
CO04067-8R/Y	4.8	2.6	3.7	5.1	49	2.8
CO04067-10W/Y	4.2	3.1	3.7	7.9	49	4.4
CO04099-3W/Y	4.0	3.6	3.8	1.9	70	4.4
CO04099-4W/Y	4.4	3.8	4.1	2.7	42	4.8
CO04159-1R	4.8	4.5	4.7	6.0	84	1.6
CO04159-3R/Y	4.7	4.3	4.5	18.2	49	2.0
CO04159-4R/Y	4.9	4.6	4.8	4.0	70	5.0
CO04188-4R/Y	4.5	4.3	4.4	5.0	56	2.8
CO04223-6R	4.8	3.6	4.2	6.3	42	1.8
CO04287-1R	4.6	4.5	4.6	6.8	63	3.2
CO04287-2R	4.9	4.9	4.9	7.3	70	3.0
Purple Majesty	---	---	---	5.6	42	---
Sangre-S10	4.8	4.7	4.8	2.6	63	3.2
Yukon Gold	5.0	4.4	4.7	2.0	63	4.6

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 - 2010.

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
AC03534-2R/Y	1.074	2	4	2	2
CO04029-3RW/Y	1.077	2	2	1	1
CO04029-5W/Y	1.081	1	2	1	1
CO04056-3P/PW	1.092	---	---	3	4
CO04056-7P/PW	1.081	---	---	2	3
CO04058-3RW/RW	1.101	1	2	4	4
CO04063-4R/R	1.075	---	---	1	1
CO04067-8R/Y	1.089	1	1	2	2
CO04067-10W/Y	1.090	1	1	3	4
CO04099-3W/Y	1.093	1	1	4	5
CO04099-4W/Y	1.103	1	0	5	5
CO04159-1R	1.084	3	3	2	3
CO04159-3R/Y	1.082	2	2	2	2
CO04159-4R/Y	1.089	1	3	2	2
CO04188-4R/Y	1.092	2	1	3	3
CO04223-6R	1.087	0	1	3	2
CO04287-1R	1.088	0	2	3	3
CO04287-2R	1.081	2	3	3	3
Purple Majesty	1.094	---	---	3	3
Sangre-S10	1.086	2	4	3	3
Yukon Gold	1.093	1	2	3	4

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

²Fry 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 - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AC00395-2RU	453	393	87	283	110	59	Ob
CO03187-1RU	359	322	90	224	98	33	L
CO03202-1RU	434	385	89	273	112	47	L
CO03276-4RU	317	267	84	216	51	47	Ob
CO03276-5RU	416	313	75	275	38	103	L
CO03308-3RU	388	342	88	226	115	45	L
Canela Russet	353	328	93	174	154	23	Ob
Russet Norkotah	323	303	94	118	185	13	L
Mean	380	332	88	224	108	46	----
LSD ² (0.05)	57	54	6	57	21	45	----

¹Tuber shape: Ob=oblong; L=long.

²LSD=least significant difference.

Table 5B. Grade defects for Advanced Yield Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow ³ Heart
AC00395-2RU	0.3	GC*, GR*	1.2
CO03187-1RU	0.9	MS*, GR	0.0
CO03202-1RU	0.6	MS*, GR*	0.0
CO03276-4RU	0.8	MS*	0.0
CO03276-5RU	0.2	MS*	0.0
CO03308-3RU	0.4	MS*	1.6
Canela Russet	0.7	MS*, GR*	0.0
Russet Norkotah	2.3	MS, GR*	0.0

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

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

³Percent 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- 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC00395-2RU	100	2.8	2.8	1.9	4.5	4.0	4.0
CO03187-1RU	100	2.8	3.0	2.6	2.3	3.0	1.3
CO03202-1RU	100	2.5	3.0	2.0	3.5	3.0	3.0
CO03276-4RU	92	2.8	2.5	3.1	2.8	3.0	2.0
CO03276-5RU	92	3.3	3.0	2.5	3.0	3.0	2.0
CO03308-3RU	100	3.0	3.3	2.1	3.0	2.8	3.0
Canela Russet	96	1.5	2.8	1.4	3.5	4.0	3.0
Russet Norkotah	100	1.8	3.0	2.3	2.0	2.8	2.0
Mean	98	2.6	2.9	2.2	3.1	3.2	2.5
LSD ⁶ (0.05)	5	0.7	0.5	0.7	0.6	0.4	0.3

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

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

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

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

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

⁶LSD=least significant difference.

Table 5D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced Yield Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight ² Loss	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AC00395-2RU	5.0	5.0	5.0	2.3	70	4.8
CO03187-1RU	5.0	5.0	5.0	4.4	63	4.8
CO03202-1RU	5.0	5.0	5.0	3.9	112	5.0
CO03276-4RU	4.8	4.7	4.8	2.8	63	4.6
CO03276-5RU	4.7	4.5	4.6	2.2	70	4.8
CO03308-3RU	4.5	4.4	4.5	5.9	42	4.8
Canela Russet	4.6	5.0	4.8	3.0	133	4.8
Russet Norkotah	5.0	5.0	5.0	3.0	84	4.4

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 - 2010.

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	1.106	1	2	4	4
CO03187-1RU	1.086	1	2	3	3
CO03202-1RU	1.092	1	2	3	3
CO03276-4RU	1.092	0	0	4	4
CO03276-5RU	1.087	1	1	3	3
CO03308-3RU	1.089	1	2	4	4
Canela Russet	1.100	1	1	5	5
Russet Norkotah	1.081	1	1	2	3

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

²Fry 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 Advanced Fingerling Yield Trial entries - 2010.

Clone	Total (Cwt/A)	Tuber Length				Tuber Shape ¹
		<2"	<2-4"	>4-6"	>6"	
CO00405-1RF	367	65	194	99	8	L
CO00415-1RF	431	72	255	77	22	L
CO03134-4RF/RW	285	45	180	46	4	L
Banana	362	36	212	89	5	L
Mean	361	55	210	78	10	----
LSD ² (0.05)	60	31	45	39	NS	----

¹Tuber shape: L=long.

²LSD=least significant difference; NS=not significant.

Table 6B. Grade defects for Advanced Fingerling Yield Trial entries - 2010.

Clone	% External		% Hollow Heart ³
	Defects ¹	Defects Observed ²	
CO00405-1RF	0.0		0.0
CO00415-1RF	1.1	MS*	0.0
CO03134-4RF/RW	2.4	MS*	0.0
Banana	5.4	MS*, GR	0.0

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

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

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

Table 6C. Growth characteristics of Advanced Fingerling Yield Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
CO00405-1RF	99	2.8	3.0	3.6	2.3	2.0	2.0
CO00415-1RF	98	3.0	3.0	3.2	2.5	2.3	1.8
CO03134-4RF/RW	100	3.0	3.5	4.7	4.0	3.0	3.5
Banana	99	3.5	3.3	4.4	5.0	3.0	3.0
Mean	99	3.1	3.2	4.0	3.5	2.6	2.6
LSD ⁶ (0.05)	NS	0.5	1.0	NS	0.5	0.4	0.9

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

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

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

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

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

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

Table 6D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced Fingerling Yield Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight ² Loss	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
CO00405-1RF	5.0	5.0	5.0	4.8	63	3.8
CO00415-1RF	5.0	5.0	5.0	3.0	70	4.8
CO03134-4RF/RW	----	----	----	5.2	77	----
Banana	5.0	5.0	5.0	3.5	70	4.6

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 Advanced Fingerling Yield Trial entries - 2010.

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
CO00405-1RF	1.081	1	1	3	3
CO00415-1RF	1.080	2	3	1	1
CO03134-4RF/RW	1.096	1	2	4	5
Banana	1.103	0	1	4	5

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

²Fry 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 Russet Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AOTX96084-1RU	516	470	91	179	291	29	L
AOTX98152-3RU	557	465	84	274	190	58	Ob
ATX9332-12RU	524	486	93	182	305	16	L
Canela Russet	395	368	93	207	162	26	Ob
Russet Norkotah	402	369	92	179	191	25	L
Mean	479	432	91	204	228	31	---
LSD ² (0.05)	73	69	4	55	86	9	---

¹Tuber shape: Ob=oblong; L=long.

²LSD=least significant difference.

Table 7B. Grade defects for Southwest Regional Russet Trial entries - 2010.

Clone	% External Defects		% Hollow Heart
	¹	Defects Observed ²	
AOTX96084-1RU	3.4	MS*, GC, GR	0.0
AOTX98152-3RU	6.1	MS, GC, GR*	0.8
ATX9332-12RU	4.2	GR*	0.0
Canela Russet	0.3	GR*	0.0
Russet Norkotah	2.0	MS, GR*	0.8

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

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

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

Table 7C. Growth characteristics of Southwest Regional Russet Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AOTX96084-1RU	100	4.0	3.0	2.8	3.0	2.8	2.0
AOTX98152-3RU	100	4.5	3.5	3.4	3.0	2.3	2.5
ATX9332-12RU	99	4.0	3.0	2.9	3.8	3.0	3.0
Canela Russet	98	2.3	2.5	1.3	4.0	3.3	3.5
Russet Norkotah	100	2.8	3.0	2.5	2.3	2.5	2.3
Mean	99	3.5	3.0	2.6	3.2	2.8	2.7
LSD6 (0.05)	2	0.5	0.6	1.1	0.5	0.7	0.6

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

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

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

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

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

⁶LSD=least significant difference.

Table 7D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Russet Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AOTX96084-1RU	5.0	5.0	5.0	3.1	84	4.0
AOTX98152-3RU	4.8	4.5	4.7	2.7	49	2.4
ATX9332-12RU	2.5	3.6	3.1	3.2	70	3.6
Canela Russet	5.0	4.7	4.9	3.5	133	4.8
Russet Norkotah	5.0	5.0	5.0	3.1	70	4.4

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 Russet Trial entries - 2010.

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
AOTX96084-1RU	1.082	1	1	3	3
AOTX98152-3RU	1.092	0	0	3	3
ATX9332-12RU	1.103	1	1	3	2
Canela Russet	1.105	1	1	5	5
Russet Norkotah	1.081	1	1	2	3

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

²Fry 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 Red Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AOTX91861-4R	484	453	94	221	231	29	R
ATTX98453-11BR	338	244	73	184	60	89	Ov
NDTX5003-2R	408	331	81	256	75	67	R
NDTX5438-11R	511	436	86	333	104	72	R
Norland (Dark Red)	466	422	91	264	159	41	Ov
Red LaSoda	617	539	87	251	288	32	Ov
Sangre-S10	518	468	90	223	245	37	Ov
Mean	477	413	86	247	166	52	---
LSD ² (0.05)	43	50	6	51	62	19	---

¹Tuber shape: R=round; Ov=oval.

²LSD=least significant difference.

Table 8B. Grade defects for Southwest Regional Red Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AOTX91861-4R	0.4	GC*	0.0
ATTX98453-11BR	1.3	GC*	0.0
NDTX5003-2R	2.8	MS, GC*	0.3
NDTX5438-11R	0.5	MS*, GC*	0.0
Norland (Dark Red)	0.6	MS*, GC*	0.0
Red LaSoda	1.0	MS, GC*, GR	15.9
Sangre-S10	2.7	GC*, GR	0.7

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

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

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

Table 8C. Growth characteristics of Southwest Regional Red Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AOTX91861-4R	100	3.3	3.3	2.2	2.3	2.0	1.8
ATTX98453-11BR	100	3.0	3.0	3.5	2.5	2.5	2.0
NDTX5003-2R	100	3.0	3.0	2.5	3.0	2.8	1.8
NDTX5438-11R	100	3.5	2.8	2.5	3.5	3.0	2.8
Norland (Dark Red)	96	3.5	3.0	2.8	2.3	2.0	1.5
Red LaSoda	96	4.0	3.5	2.6	4.3	3.0	3.0
Sangre-S10	96	2.5	2.5	2.2	4.3	3.0	3.3
Mean	98	3.3	3.0	2.6	3.2	2.6	2.3
LSD6 (0.05)	4	0.7	0.6	1.0	0.8	0.4	0.6

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

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

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

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

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

⁶LSD=least significant difference.

Table 8D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Red Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AOTX91861-4R	4.4	4.3	4.3	5.7	84	1.6
ATTX98453-11BR	4.8	4.6	4.7	6.1	112	4.0
NDTX5003-2R	4.7	4.3	4.5	11.8	42	1.4
NDTX5438-11R	4.7	4.0	4.4	6.6	70	2.2
Norland (Dark Red)	4.5	4.8	4.7	7.5	42	3.8
Red LaSoda	4.4	4.7	4.6	1.9	63	3.2
Sangre-S10	4.9	5.0	5.0	3.8	70	2.4

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 Red Trial entries - 2010.

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
AOTX91861-4R	1.072	1	2	1	1
ATTX98453-11BR	1.085	3	3	2	2
NDTX5003-2R	1.087	3	2	2	2
NDTX5438-11R	1.071	1	3	3	2
Norland (Dark Red)	1.071	1	2	1	2
Red LaSoda	1.084	4	4	2	2
Sangre-S10	1.083	1	2	3	2

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

²Fry 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 Southwest Regional Specialty Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	US #1						
	Total	Total	%	4-10 oz	>10 oz	<4 oz	
ATTX88654-2P/Y	576	510	89	228	283	53	Ov
ATTX98510-1R/Y	628	538	86	353	185	84	Ov
ATTX01180-1R/Y	451	309	69	272	37	135	Ob
BTX2103-1R/Y	532	463	87	328	135	53	R
CO01399-10P/Y	546	438	80	330	109	103	Ov
COTX01403-4R/Y	468	401	85	276	125	54	Ov
TC02072-3P/P	440	141	32	141	0	299	L
TX1674-1W/Y	345	298	87	228	70	44	Ob
Purple Majesty	528	276	52	240	36	248	Ov
Yukon Gold	439	402	92	186	216	33	Ov
Mean	495	378	76	258	120	111	---
LSD ² (0.05)	59	58	5	48	47	28	---

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

²LSD=least significant difference.

Table 9B. Grade defects for Southwest Regional Specialty Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
ATTX88654-2P/Y	2.3	MS, GC, GR*	22.5
ATTX98510-1R/Y	0.9	MS, GC, GR*	12.9
ATTX01180-1R/Y	1.6	GC*, GR*	0.0
BTX2103-1R/Y	2.8	GC*, GR	0.0
CO01399-10P/Y	1.0	MS, GC*	0.0
COTX01403-4R/Y	2.9	MS, GC*, GR	0.5
TC02072-3P/P	0.0		0.0
TX1674-1W/Y	0.7	MS*, GR	0.0
Purple Majesty	0.9	MS*, GR	0.2
Yukon Gold	0.9	GR*	0.4

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 Southwest Regional Specialty Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
ATTX88654-2P/Y	96	4.0	3.0	2.7	4.0	3.8	3.0
ATTX98510-1R/Y	96	4.0	3.0	3.6	3.8	3.0	2.3
ATTX01180-1R/Y	96	3.3	2.8	3.4	3.5	2.5	2.0
BTX2103-1R/Y	96	4.0	3.5	2.8	3.3	2.3	2.0
CO01399-10P/Y	100	3.0	3.0	2.4	4.3	3.0	3.3
COTX01403-4R/Y	96	3.5	2.8	2.9	3.0	3.0	2.0
TC02072-3P/P	100	3.3	2.8	4.0	3.3	2.5	1.8
TX1674-1W/Y	100	3.0	3.0	2.4	2.5	3.0	3.0
Purple Majesty	100	4.0	3.0	4.1	3.3	3.0	2.3
Yukon Gold	96	3.8	3.0	1.8	3.3	3.0	2.0
Mean	98	3.6	3.0	3.0	3.4	2.9	2.4
LSD6 (0.05)	4	0.5	0.5	1.2	0.7	0.5	0.4

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

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

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

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

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

⁶LSD=least significant difference.

Table 9D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Specialty Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
ATTX88654-2P/Y	4.7	4.4	4.6	4.2	84	4.2
ATTX98510-1R/Y	4.6	3.9	4.3	3.9	49	1.8
ATTX01180-1R/Y	3.3	3.9	3.6	4.0	70	4.0
BTX2103-1R/Y	3.8	3.2	3.5	3.7	84	1.8
CO01399-10P/Y	5.0	5.0	5.0	3.0	70	3.2
COTX01403-4R/Y	4.7	4.1	4.4	4.0	42	4.6
TC02072-3P/P	---	---	---	12.1	70	---
TX1674-1W/Y	5.0	5.0	5.0	3.2	70	3.8
Purple Majesty	---	---	---	5.6	49	---
Yukon Gold	5.0	5.0	5.0	1.9	63	4.4

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 Southwest Regional Specialty Trial entries - 2010.

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
ATTX88654-2P/Y	1.085	2	2	3	2
ATTX98510-1R/Y	1.083	1	1	3	3
ATTX01180-1R/Y	1.084	3	3	3	3
BTX2103-1R/Y	1.085	1	1	3	2
CO01399-10P/Y	1.085	1	0	3	4
COTX01403-4R/Y	1.071	2	3	2	2
TC02072-3P/P	1.088	---	---	2	3
TX1674-1W/Y	1.095	1	1	4	3
Purple Majesty	1.093	---	---	3	3
Yukon Gold	1.089	1	3	4	4

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

²Fry 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 Western Regional Main Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz		>10 oz	
A97066-42LB	370	292	79	230	62	73	Ob
A98345-1	544	504	93	280	224	37	Ob
A0008-1TE	397	353	89	236	117	31	Ob
A00324-1	504	454	90	226	228	26	Ob
A01010-1	489	434	88	315	119	47	Ob
AC99375-1RU	435	378	87	287	91	56	Ob
AO96305-3	426	382	90	230	153	35	L
AO00057-2	388	340	88	189	151	44	Ob
AOTX95265-1RU	474	444	94	183	261	22	Ob
AOTX96216-2RU	399	222	56	43	180	7	Ob
AOTX96265-2RU	437	407	93	243	164	23	Ob
CO98067-7RU	475	426	90	298	128	47	L
CO99053-3RU	474	432	91	133	299	26	Ob
CO99053-4RU	365	329	90	234	95	30	Ob
CO99100-1RU	329	297	91	199	99	25	Ob
PA99N2-1	427	353	83	207	146	36	Ob
PA99N82-4	407	351	86	231	121	38	Ob
PA00N14-2	452	330	73	317	13	122	L
Canela Russet	312	280	90	187	93	32	Ob
Ranger Russet	470	425	91	237	189	35	L
Russet Burbank	490	369	76	247	122	84	L
Russet Norkotah	382	351	92	161	189	16	L
Mean	429	371	86	223	147	41	----
LSD ² (0.05)	51	51	5	40	60	19	----

¹Tuber shape: Ob=oblong; L=long.

²LSD=least significant difference.

Table 10B. Grade defects for Western Regional Main Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
A97066-42LB	1.1	MS, GC, GR*	0.0
A98345-1	0.5	MS*, GC	0.0
A0008-1TE	3.1	MS, GC*, GR	0.0
A00324-1	4.9	MS*, GR	0.3
A01010-1	1.6	MS*, GC	0.0
AC99375-1RU	0.3	MS*, GR*	0.0
AO96305-3	2.3	MS*, GC, GR	0.0
AO00057-2	0.8	MS*, GR*	0.6
AOTX95265-1RU	1.7	MS*, SG, GR*	0.6
AOTX96216-2RU	42.1	GC*	0.0
AOTX96265-2RU	1.5	MS*, GR	0.4
CO98067-7RU	0.7	MS*	0.0
CO99053-3RU	3.5	MS*, GR	0.5
CO99053-4RU	1.5	MS*, GC, GR	0.0
CO99100-1RU	2.0	GC*	0.0
PA99N2-1	8.7	MS, SG*, GC*, GR	0.6
PA99N82-4	4.4	MS*, GC, GR	0.0
PA00N14-2	0.1	GR*	0.0
Canela Russet	0.0		0.0
Ranger Russet	2.2	MS, SG, GC, GR*	0.0
Russet Burbank	7.4	MS, SG*, GC, GR	5.7
Russet Norkotah	4.1	MS*, SG, GC, GR*	0.0

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

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

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

Table 10C. Growth characteristics of Western Regional Main Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
A97066-42LB	100	2.8	2.3	1.7	4.3	3.3	3.0
A98345-1	100	4.0	3.3	2.2	3.5	2.0	3.0
A0008-1TE	100	3.3	3.0	3.3	2.8	2.5	2.5
A00324-1	100	3.8	3.0	2.4	3.8	2.8	3.0
A01010-1	100	4.0	3.5	3.0	4.3	3.5	3.0
AC99375-1RU	100	4.3	3.3	2.5	5.0	3.5	3.0
AO96305-3	100	3.5	3.3	3.1	3.0	2.3	3.0
AO00057-2	100	3.5	3.0	2.7	3.3	2.8	3.0
AOTX95265-1RU	100	3.8	3.0	2.8	3.8	2.5	2.8
AOTX96216-2RU	96	3.3	2.8	1.4	4.0	3.5	3.3
AOTX96265-2RU	100	4.0	3.3	2.9	4.3	2.8	2.8
CO98067-7RU	96	4.0	3.0	2.9	3.8	2.8	3.0
CO99053-3RU	100	4.0	2.8	2.5	3.8	2.8	3.0
CO99053-4RU	96	3.0	3.0	2.9	2.8	3.0	2.3
CO99100-1RU	96	3.3	2.8	2.6	2.3	2.3	1.5
PA99N2-1	100	3.5	2.5	2.7	3.8	3.0	3.0
PA99N82-4	100	3.3	3.3	3.0	3.8	3.0	2.5
PA00N14-2	100	3.5	3.3	3.0	3.8	3.0	1.8
Canela Russet	92	2.0	2.5	1.5	4.0	3.5	3.0
Ranger Russet	100	3.3	3.5	2.4	3.0	2.8	3.3
Russet Burbank	100	4.0	3.5	2.5	3.5	2.5	2.5
Russet Norkotah	100	3.0	2.8	2.5	2.5	2.0	2.3
Mean	99	3.5	3.0	2.6	3.6	2.8	2.8
LSD ⁶ (0.05)	3	0.7	0.7	0.7	0.8	0.7	0.6

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

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

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

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

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

⁶LSD=least significant difference.

Table 10D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Western Regional Main Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
A97066-42LB	4.9	4.7	4.8	3.6	70	3.2
A98345-1	4.7	4.1	4.4	6.4	42	2.2
A0008-1TE	5.0	5.0	5.0	2.9	70	4.6
A00324-1	5.0	4.6	4.8	3.2	56	3.6
A01010-1	5.0	5.0	5.0	2.9	70	4.2
AC99375-1RU	5.0	5.0	5.0	2.8	84	1.4
AO96305-3	5.0	5.0	5.0	2.1	126	4.4
AO00057-2	5.0	5.0	5.0	3.0	70	4.4
AOTX95265-1RU	5.0	5.0	5.0	3.3	98	3.2
AOTX96216-2RU	5.0	5.0	5.0	3.3	84	2.8
AOTX96265-2RU	4.6	4.1	4.4	3.6	63	1.6
CO98067-7RU	5.0	5.0	5.0	4.6	63	5.0
CO99053-3RU	5.0	5.0	5.0	7.6	63	4.0
CO99053-4RU	5.0	5.0	5.0	3.9	49	4.8
CO99100-1RU	5.0	5.0	5.0	5.7	49	3.8
PA99N2-1	5.0	4.6	4.8	2.2	84	2.6
PA99N82-4	5.0	4.6	4.8	3.0	70	3.8
PA00N14-2	5.0	5.0	5.0	3.5	98	3.4
Canela Russet	4.8	4.7	4.8	3.0	112	4.2
Ranger Russet	4.7	3.4	4.1	2.9	63	3.6
Russet Burbank	5.0	4.2	4.6	1.9	119	2.6
Russet Norkotah	5.0	5.0	5.0	3.3	70	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 10E. Specific gravity, french fry color, and texture for Western Regional Main Trial entries - 2010.

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
A97066-42LB	1.105	0	1	5	5
A98345-1	1.098	0	1	4	3
A0008-1TE	1.087	1	2	4	3
A00324-1	1.089	1	0	3	4
A01010-1	1.092	0	1	5	4
AC99375-1RU	1.090	0	0	4	5
AO96305-3	1.089	0	0	4	5
AO00057-2	1.113	0	1	3	4
AOTX95265-1RU	1.085	1	2	3	4
AOTX96216-2RU	1.091	2	2	4	4
AOTX96265-2RU	1.096	0	0	4	4
CO98067-7RU	1.079	1	1	4	3
CO99053-3RU	1.088	0	1	4	3
CO99053-4RU	1.088	1	1	4	4
CO99100-1RU	1.080	1	1	3	3
PA99N2-1	1.093	0	1	5	4
PA99N82-4	1.096	0	1	4	4
PA00N14-2	1.090	1	1	4	4
Canela Russet	1.106	1	0	5	5
Ranger Russet	1.089	1	1	3	3
Russet Burbank	1.091	1	1	4	4
Russet Norkotah	1.080	1	1	3	3

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

²Fry 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 Red Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz		>10 oz	
BTX2332-1R	533	475	90	259	217	35	R
CO98012-5R	487	405	83	303	102	80	R
CO99076-6R	390	340	87	255	85	45	R
CO99256-2R	526	413	79	339	74	113	Ov
CO00277-2R	405	338	83	229	110	65	R
CO00291-5R	446	329	74	310	19	117	R
COTX94216-1R	445	329	74	231	98	111	R
COTX94218-1R	493	381	77	269	112	89	R
Norland (Dark Red)	483	446	92	306	140	30	Ov
Red LaSoda	648	573	89	290	282	29	Ov
Sangre-S10	486	429	88	215	214	41	Ov
Mean	486	405	83	273	132	69	----
LSD ² (0.05)	71	64	5	51	56	14	----

¹Tuber shape: R=round; Ov=oval.

²LSD=least significant difference.

Table 11B. Grade defects for Advanced and Western Regional Red Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
BTX2332-1R	4.1	GC*, GR	0.8
CO98012-5R	0.5	GC*, GR*	0.0
CO99076-6R	1.3	GC*, GR*	0.3
CO99256-2R	0.1	GC*	0.0
CO00277-2R	0.2	GR*	0.0
CO00291-5R	0.0		0.0
COTX94216-1R	1.3	MS*	0.0
COTX94218-1R	2.0	GC*	0.0
Norland (Dark Red)	1.5	MS, GC*	0.0
Red LaSoda	7.2	GC*, GR*	16.8
Sangre-S10	3.4	MS, GC*	0.5

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

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

³Percent 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 Red Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
BTX2332-1R	100	4.0	3.0	3.0	2.8	2.8	3.0
CO98012-5R	100	3.0	3.3	2.1	4.0	3.0	3.0
CO99076-6R	96	3.5	3.3	2.4	3.0	2.8	2.3
CO99256-2R	96	2.8	3.3	3.3	3.8	3.0	3.0
CO00277-2R	96	3.0	3.0	3.3	2.3	2.0	2.0
CO00291-5R	100	3.0	3.0	3.4	4.5	3.3	3.0
COTX94216-1R	100	3.3	3.0	2.9	2.8	2.5	2.3
COTX94218-1R	100	2.8	3.0	3.3	3.8	3.0	3.0
Norland (Dark Red)	92	3.0	3.5	3.4	2.0	2.0	1.5
Red LaSoda	100	4.0	3.3	2.3	4.0	3.0	3.0
Sangre-S10	96	2.3	2.8	1.8	4.0	3.0	3.0
Mean	98	3.2	3.1	2.8	3.4	2.8	2.6
LSD ⁶ (0.05)	5	0.5	0.5	1.3	0.5	0.4	0.7

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

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

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

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

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

⁶LSD=least significant difference.

Table 11D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Red Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
BTX2332-1R	4.3	5.0	4.7	4.3	70	3.6
CO98012-5R	4.7	4.9	4.8	5.8	63	1.4
CO99076-6R	4.9	4.8	4.9	8.7	63	1.4
CO99256-2R	4.9	4.8	4.9	7.3	84	2.4
CO00277-2R	4.4	4.0	4.2	8.3	63	4.6
CO00291-5R	4.6	4.8	4.7	8.9	56	1.0
COTX94216-1R	5.0	4.8	4.9	3.4	92	4.0
COTX94218-1R	4.5	4.2	4.4	4.7	112	3.4
Norland (Dark Red)	4.8	5.0	4.9	7.6	56	4.4
Red LaSoda	4.4	5.0	4.7	2.3	63	3.2
Sangre-S10	5.0	5.0	5.0	3.4	70	3.0

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

²Tubers were stored at 45F for 91 days.

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

⁴Degree 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 Red Trial entries - 2010.

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
BTX2332-1R	1.069	2	3	2	2
CO98012-5R	1.085	2	2	2	2
CO99076-6R	1.085	2	2	3	3
CO99256-2R	1.087	1	1	3	3
CO00277-2R	1.077	2	3	2	2
CO00291-5R	1.090	2	3	2	2
COTX94216-1R	1.077	3	3	2	3
COTX94218-1R	1.085	0	2	2	2
Norland (Dark Red)	1.067	1	2	2	2
Red LaSoda	1.081	3	4	3	3
Sangre-S10	1.084	2	2	2	3

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

²Fry 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 Specialty Trial entries - 2010.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
A99326-1PY	476	434	91	227	208	38	Ov
A00286-3Y	595	512	86	398	114	75	Ov
AC99329-7PW/Y	521	435	84	297	138	82	Ov
AC99330-1P/Y	505	376	75	307	69	129	R
ATC00293 -1W/Y	573	520	91	264	256	40	Ob
CO97222-1R/R	407	309	76	253	56	91	Ov
CO97227-2P/PW	552	200	36	200	0	342	Ob
CO99045-1W/Y	595	519	87	279	240	61	Ob
CO00412-5W/Y	508	419	83	277	143	78	Ob
CO03017-2RU/Y	394	322	82	195	127	60	Ob
CO03027-2R/R	374	272	73	249	23	87	Ov
CO03094-5R/RW	541	372	69	186	186	30	L
CO04013-1W/Y	474	233	49	226	7	242	Ov
CO04021-2R/Y	533	495	93	265	230	27	Ob
CO04045-4P/P	412	295	71	259	36	117	Ov
CO04061-1R/RW	354	265	75	254	10	87	Ov
CO04117-5PW/Y	312	165	53	161	4	141	Ob
POR03PG80-2	546	515	94	222	294	18	Ob
Purple Majesty	515	296	57	268	28	215	Ov
Yukon Gold	426	389	91	164	225	29	Ov
Mean	481	367	76	248	120	99	----
LSD ² (0.05)	61	66	8	63	53	34	----

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

²LSD=least significant difference.

Table 12B. Grade defects for Advanced and Western Regional Specialty Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
A99326-1PY	0.9	MS*, GR	3.0
A00286-3Y	1.5	MS, GR*	0.0
AC99329-7PW/Y	0.8	GR*	0.0
AC99330-1P/Y	0.0		0.0
ATC00293 -1W/Y	2.2	GC*, GR	3.9
CO97222-1R/R	1.8	MS, GC*	0.0
CO97227-2P/PW	1.6	GC*	0.0
CO99045-1W/Y	2.6	MS*, GR*	0.0
CO00412-5W/Y	2.2	GR*	2.7
CO03017-2RU/Y	3.0	MS, GR*	0.0
CO03027-2R/R	4.2	GC*	0.0
CO03094-5R/RW	6.6	MS*, GR	0.0
CO04013-1W/Y	0.0		0.5
CO04021-2R/Y	2.1	MS, GC, GR*	0.0
CO04045-4P/P	0.0		0.0
CO04061-1R/RW	0.7	MS*, GC*	0.0
CO04117-5PW/Y	1.7	MS*, GR	0.0
POR03PG80-2	2.5	MS, GR*	0.0
Purple Majesty	0.7	MS*, GR	1.2
Yukon Gold	2.0	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 12C. Growth characteristics of Advanced and Western Regional Specialty Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
A99326-1PY	98	3.8	3.5	2.1	4.0	3.0	3.0
A00286-3Y	97	4.0	3.3	2.9	5.0	3.3	3.5
AC99329-7PW/Y	99	4.0	3.0	3.0	4.0	3.5	3.5
AC99330-1P/Y	97	2.8	3.0	3.0	3.3	3.0	3.0
ATC00293 -1W/Y	100	3.3	3.0	2.8	4.8	3.0	3.0
CO97222-1R/R	95	2.0	2.8	2.3	3.0	3.0	3.0
CO97227-2P/PW	99	3.8	3.3	4.2	3.8	3.0	3.0
CO99045-1W/Y	98	3.8	3.3	3.1	4.0	3.0	3.0
CO00412-5W/Y	97	4.0	3.0	2.8	3.3	3.0	3.0
CO03017-2RU/Y	98	3.0	3.3	2.3	3.0	2.8	2.0
CO03027-2R/R	98	2.3	3.0	2.0	3.0	3.0	3.0
CO03094-5R/RW	98	4.0	3.5	4.2	3.8	3.0	3.0
CO04013-1W/Y	99	3.0	3.3	3.9	4.5	3.5	3.0
CO04021-2R/Y	83	3.5	2.5	3.6	4.3	3.3	3.3
CO04045-4P/P	98	2.8	3.3	2.5	2.8	2.5	3.0
CO04061-1R/RW	97	2.0	3.5	2.0	3.0	2.3	3.0
CO04117-5PW/Y	91	2.3	3.3	3.3	2.3	2.5	2.5
POR03PG80-2	96	3.0	3.3	1.7	4.0	3.0	3.0
Purple Majesty	100	3.8	3.3	3.2	3.3	2.8	2.5
Yukon Gold	94	3.3	3.0	1.9	3.3	3.0	2.0
Mean	97	3.2	3.2	2.8	3.6	3.0	2.9
LSD ⁶ (0.05)	5	0.6	0.6	1.0	0.5	0.5	0.4

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

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

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

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

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

⁶LSD=least significant difference.

Table 12D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Specialty Trial entries - 2010.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
A99326-1PY	5.0	5.0	5.0	2.8	98	4.4
A00286-3Y	4.9	4.6	4.8	2.7	42	4.6
AC99329-7PW/Y	4.7	2.9	3.8	5.9	42	3.4
AC99330-1P/Y	5.0	4.8	4.9	4.7	63	2.2
ATC00293 -1W/Y	4.7	4.1	4.4	2.8	98	4.6
CO97222-1R/R	---	---	---	4.0	63	---
CO97227-2P/PW	---	---	---	8.4	63	---
CO99045-1W/Y	4.8	5.0	4.9	3.9	70	3.8
CO00412-5W/Y	4.4	4.7	4.6	4.6	63	3.6
CO03017-2RU/Y	4.5	4.2	4.4	5.8	42	3.4
CO03027-2R/R	---	---	---	4.4	98	---
CO03094-5R/RW	5.0	5.0	5.0	4.9	77	---
CO04013-1W/Y	3.5	2.8	3.2	8.7	56	2.6
CO04021-2R/Y	5.0	5.0	5.0	5.9	49	2.8
CO04045-4P/P	---	---	---	4.5	63	---
CO04061-1R/RW	---	---	---	10.3	70	---
CO04117-5PW/Y	5.0	5.0	5.0	2.8	42	4.4
POR03PG80-2	5.0	5.0	5.0	3.6	84	3.8
Purple Majesty	---	---	---	6.0	63	---
Yukon Gold	5.0	4.9	5.0	2.5	63	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 12E. Specific gravity, french fry color, and texture for Advanced and Western Regional Speciality Trial entries - 2010.

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
A99326-1PY	1.086	1	1	2	3
A00286-3Y	1.089	2	1	3	3
AC99329-7PW/Y	1.093	1	3	3	3
AC99330-1P/Y	1.077	1	3	3	3
ATC00293 -1W/Y	1.081	2	2	3	3
CO97222-1R/R	1.080	---	---	3	3
CO97227-2P/PW	1.095	---	---	4	4
CO99045-1W/Y	1.093	2	3	3	3
CO00412-5W/Y	1.091	2	2	3	3
CO03017-2RU/Y	1.084	1	1	3	4
CO03027-2R/R	1.077	---	---	2	2
CO03094-5R/RW	1.080	---	---	3	3
CO04013-1W/Y	1.103	1	1	3	3
CO04021-2R/Y	1.089	1	1	3	3
CO04045-4P/P	1.073	---	---	3	2
CO04061-1R/RW	1.071	---	---	3	2
CO04117-5PW/Y	1.069	2	4	1	1
POR03PG80-2	1.084	2	3	2	2
Purple Majesty	1.092	---	---	3	3
Yukon Gold	1.088	2	2	3	3

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

²Fry 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 13A. Yield, grade and tuber shape for Advanced and Western Regional Chipping Trial entries - 2010.

Clone	Yield (Cw/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AC00206-2W	340	281	83	236	45	57	R
AC03433-1W	447	371	83	276	95	43	R
AC03452-2W	489	419	86	328	91	62	R
CO00188-4W	411	355	86	303	52	39	Ov
CO00197-3W	484	396	82	325	71	85	Ov
CO00270-7W	378	348	93	209	140	24	Ov
CO03243-3W	449	396	88	292	103	48	R
Atlantic	502	459	92	242	217	28	Ov
Chipeta	584	523	90	272	250	39	Ov
Mean	454	394	87	276	118	47	----
LSD ² (0.05)	59	56	5	49	49	18	----

¹Tuber shape: R=round; Ov=oval.

²LSD=least significant difference.

Table 13B. Grade defects for Advanced and Western Regional Chipping Trial entries - 2010.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC00206-2W	0.8	GR*	1.9
AC03433-1W	7.6	GC*, GR	0.0
AC03452-2W	1.7	MS, GR*	0.2
CO00188-4W	4.3	MS, GC*, GR	0.0
CO00197-3W	0.5	MS*, GR*	0.0
CO00270-7W	1.5	GR*	0.0
CO03243-3W	1.4	GC*, GR	0.0
Atlantic	2.8	GC*, GR*	5.1
Chipeta	3.9	GC*, GR	0.0

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

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

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

Table 13C. Growth characteristics of Advanced and Western Regional Chip Trial entries - 2010.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC00206-2W	100	2.3	3.0	2.3	2.0	2.5	3.0
AC03433-1W	96	3.3	3.0	2.5	3.8	3.0	3.3
AC03452-2W	100	4.3	3.5	2.7	3.3	2.8	3.0
CO00188-4W	100	4.0	3.5	2.1	2.8	3.0	3.0
CO00197-3W	96	4.0	3.3	2.5	2.8	2.8	2.3
CO00270-7W	96	3.3	3.0	2.3	2.3	2.5	2.8
CO03243-3W	96	3.5	2.8	2.5	4.3	3.0	3.0
Atlantic	92	4.0	3.5	2.5	3.3	3.0	3.0
Chipeta	100	4.8	3.0	2.0	4.8	3.0	3.0
Mean	97	3.7	3.2	2.4	23.3	2.8	2.9
LSD ⁶ (0.05)	5	0.6	0.6	0.6	0.5	0.5	0.4

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

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

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

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

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

⁶LSD=least significant difference.

Table 13D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Chip Trial entries - 2010.

Clone	Blackspot Index ¹			%	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average	Weight Loss ²		
AC00206-2W	4.5	3.5	4.0	4.9	63	4.6
AC03433-1W	4.9	3.7	4.3	3.9	70	4.8
AC03452-2W	4.7	5.0	4.9	2.0	63	5.0
CO00188-4W	4.8	4.4	4.6	4.6	84	4.6
CO00197-3W	4.2	2.0	3.1	3.1	70	1.4
CO00270-7W	4.5	4.1	4.3	4.5	56	3.0
CO03243-3W	4.1	3.3	3.7	4.2	63	2.8
Atlantic	3.3	2.3	2.8	4.7	56	4.0
Chipeta	4.4	3.8	4.1	2.1	70	4.2

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

²Tubers were stored at 45F for 91 days.

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

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

Table 13E. Chip color¹ after various storage regimes and specific gravity of Advanced and Western Regional Chip Trial entries - 2010.

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC00206-2W	1.088	3.5	2.0	2.0	1.5
AC03433-1W	1.092	3.0	2.0	3.0	2.5
AC03452-2W	1.087	2.5	2.5	1.5	1.0
CO00188-4W	1.090	3.5	2.0	2.0	1.5
CO00197-3W	1.088	3.5	1.5	2.5	2.0
CO00270-7W	1.078	4.0	1.0	3.0	2.0
CO03243-3W	1.090	3.0	2.5	1.5	2.0
Atlantic	1.103	4.5	4.0	3.0	2.5
Chipeta	1.097	4.5	4.0	3.0	1.5

¹ Chip color was rated using the Snack Food Association 1-5 scale. Ratings of ≤ 2.0 are acceptable.

Table 14A. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for San Luis Valley chipping study entries - 2010.

Clone	Blackspot Index ¹			%	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average	Weight Loss ²		
AC00180-2W	4.3	3.6	4.0	3.4	88	4.6
AC00206-2W	4.1	3.7	3.9	3.7	77	5.0
AC01151-5W	4.0	1.8	2.9	2.1	73	1.2
AC03433-1W	4.8	4.1	4.5	2.3	88	3.5
AC03452-2W	4.6	3.6	4.1	2.3	77	5.0
AC05153-1W	4.2	3.3	3.8	3.5	88	4.4
CO95051-7W	4.6	2.8	3.7	6.9	73	3.4
CO00188-4W	4.8	3.3	4.1	3.6	104	3.6
CO00197-3W	4.3	2.7	3.5	2.8	69	1.4
CO00270-7W	4.6	4.4	4.5	5.4	48	2.4
CO02024-9W	4.4	2.8	3.6	2.9	94	2.4
CO02033-1W	3.1	2.2	2.7	3.0	122	3.4
CO02321-4W	4.3	3.8	4.1	3.6	73	4.2
CO03243-3W	4.4	3.0	3.7	2.7	74	2.4
CO05061-2P	4.7	4.1	4.4	4.2	81	2.8
CO05061-6W	4.6	4.4	4.5	2.6	102	4.2
CO05061-7W	4.6	3.9	4.3	6.2	60	4.6
COTX90046-1W	4.0	3.1	3.6	5.5	61	3.0
Atlantic	3.4	3.2	3.3	3.0	83	4.2
Chipeta	4.8	4.7	4.8	2.5	109	4.2
Snowden	3.8	3.3	3.6	2.6	90	3.2

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

²Tubers were stored at 45F for 91 days.

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

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

Table 14B. Chip color¹ after various storage regimes and specific gravity of San Luis Valley chipping study entries - 2010.

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC00180-2W	1.091	4.5	4.0	1.0	1.0
AC00206-2W	1.083	3.5	2.5	2.0	1.5
AC01151-5W	1.082	4.0	4.0	2.5	1.0
AC03433-1W	1.083	3.0	3.5	2.0	1.0
AC03452-2W	1.076	3.5	2.5	1.5	1.5
AC05153-1W	1.099	4.5	3.5	2.0	1.5
AC06198-4W	1.073	5.0	4.5	3.0	2.0
CO95051-7W	1.090	4.5	3.5	1.0	1.5
CO00188-4W	1.092	4.5	3.0	1.5	2.0
CO00197-3W	1.084	3.0	4.5	2.5	2.5
CO00270-7W	1.083	3.5	4.0	1.0	2.5
CO02024-9W	1.088	4.5	1.5	1.5	1.5
CO02033-1W	1.095	4.0	3.0	2.5	2.5
CO02321-4W	1.098	4.5	2.5	2.0	3.0
CO03243-3W	1.090	4.5	4.0	2.5	3.0
CO05061-2P	1.089	2.5	2.0	1.0	1.0
CO05061-6W	1.091	3.0	2.5	1.5	1.5
CO05061-7W	1.089	3.5	2.0	2.0	1.5
CO05071-1W	1.076	5.0	4.5	3.5	3.0
COTX90046-1W	1.078	5.0	5.0	4.0	4.0
Atlantic	1.097	4.0	4.0	2.5	2.5
Chipeta	7.082	5.0	4.5	3.0	2.5
Snowden	1.094	5.0	2.5	2.5	2.0

¹ Chip color was rated using the Snack Food Association 1-5 scale. Ratings of ≤ 2.0 are acceptable.

Table 15. 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								
AC99375-1RU	Dual	6	499	83	3.1	1.098	1.5	0.0
CO99053-3RU	Dual	6	509	90	3.4	1.089	2.7	0.7
CO99053-4RU	Dual	6	362	85	2.1	1.090	1.4	0.0
CO99100-1RU	Dual	6	366	85	1.4	1.083	4.2	0.1
Canela Russet	FM	15	376	90	3.1	1.096	1.0	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	82	385	85	1.9	1.079	2.2	0.4
Russet Nugget	Dual	64	441	81	3.8	1.093	1.5	0.2
Reds								
CO98012-5R	FM	7	469	78	3.0	1.080	0.6	0.3
CO99076-6R	FM	6	400	78	1.6	1.086	2.1	0.0
CO99256-2R	FM	6	515	67	2.9	1.088	0.4	0.1
CO00277-2R	FM	5	416	77	1.7	1.080	0.8	0.4
CO00291-5R	FM	5	396	78	3.3	1.084	0.4	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	27	535	88	3.3	1.076	1.9	1.6
Specialties								
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	7	396	58	2.5	1.076	1.5	0.0
CO97227-2P/PW	Spec	7	493	26	2.8	1.088	1.1	0.0

Table 15 continued on next page

Table 15 (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 (continued)								
AC99329-7PW/Y	Spec	6	534	78	3.1	1.091	1.5	0.3
AC99330-1P/Y	Spec	6	504	57	2.8	1.082	0.0	0.2
CO99045-1W/Y	Spec	6	562	79	3.1	1.089	2.8	0.0
ATC00293-1W/Y	Spec	5	576	85	3.0	1.082	4.0	3.3
CO00405-1RF	Spec	5	352	76	1.4	1.081	2.2	0.0
CO00412-5W/Y	Spec	5	492	74	2.9	1.089	2.6	1.3
CO00415-1RF	Spec	5	372	73	1.4	1.076	3.7	0.0
CO01399-10P/Y	Spec	4	566	76	3.3	1.080	1.1	0.0
Mountain Rose	Spec	8	383	68	2.2	1.081	1.1	0.0
Purple Majesty	Spec	15	502	57	2.2	1.086	0.6	1.2
Yukon Gold	Spec	29	413	89	1.9	1.086	1.6	0.5
Chippers								
CO00188-4W	Chip	5	437	76	2.7	1.091	1.7	0.1
CO00197-3W	Chip	5	482	74	2.3	1.086	0.7	0.8
CO00270-7W	Chip	5	419	85	2.6	1.087	1.2	0.0
Atlantic	Chip	39	463	87	3.2	1.098	2.5	5.1
Chipeta	Chip	36	542	85	3.3	1.090	5.1	0.5

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

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

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

⁴Based 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.

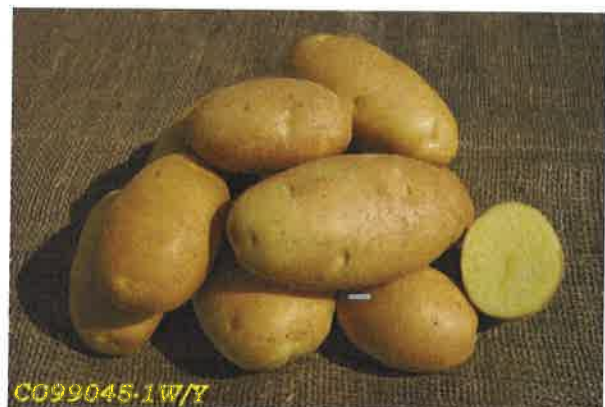


Figure 1 (cont'd). Photographs of advanced selections.



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



Table 16A. Detailed data summary for AC99375-1RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	499	435-545	
Yield US #1 (Cwt/A)	6	413	377-457	
% US #1	6	83	77-91	
Yield >10 oz (Cwt/A)	6	104	74-148	
Yield <4 oz (Cwt/A)	6	79	32-118	
% External Defects ¹	6	1.5	0.3-2.3	
% Hollow Heart ²	6	0.0	0.0-0.0	
% Stand	6	97	94-100	
Emergence Uniformity	6	3.3	2.8-4.3	
Vine Vigor ³	6	3.5	2.5-4.0	
Stems/Plant	6	3.6	2.1-6.3	
Vine Size ⁴	6	4.3	3.0-5.0	
Vine Maturity ⁵	6	3.1	3.0-3.5	
Blackspot ⁶	Bud End	7	4.7	3.8-5.0
	Stem End	7	4.4	3.7-5.0
	Average	7	4.6	
Weight Loss ⁷	7	2.4	1.4-2.8	
Dormancy ⁸	7	95	82-132	
Enzymatic Browning ⁹	7	2.9	1.4-4.6	
Specific Gravity	7	1.098	1.090-1.104	
Fry Color ¹⁰	Harvest	7	0.9	0.0-2.0
	Storage	7	1.1	0.0-2.0
Fry Texture ¹¹	Harvest	7	3.9	3.0-5.0
	Storage	7	4.0	3.0-5.0

Refer to footnotes on page 114.

Table 16B. Detailed data summary for CO99053-3RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	509	456-559	
Yield US #1 (Cwt/A)	6	458	415-517	
% US #1	6	90	88-93	
Yield >10 oz (Cwt/A)	6	231	159-299	
Yield <4 oz (Cwt/A)	6	38	22-58	
% External Defects ¹	6	2.7	0.7-4.2	
% Hollow Heart ²	6	0.7	0.0-2.9	
% Stand	6	99	95-100	
Emergence Uniformity	6	3.2	3.0-4.0	
Vine Vigor ³	6	3.3	2.8-3.8	
Stems/Plant	6	3.8	2.5-5.2	
Vine Size ⁴	6	4.0	3.8-4.3	
Vine Maturity ⁵	6	3.4	3.0-4.0	
Blackspot ⁶	Bud End	7	4.8	4.3-5.0
	Stem End	7	4.3	2.8-5.0
	Average	7	4.5	
Weight Loss ⁷	7	2.8	1.2-7.6	
Dormancy ⁸	7	84	54-132	
Enzymatic Browning ⁹	7	4.1	3.2-4.6	
Specific Gravity	7	1.089	1.077-1.096	
Fry Color ¹⁰	Harvest	7	0.9	0.0-2.0
	Storage	7	1.9	1.0-3.0
Fry Texture ¹¹	Harvest	7	3.4	3.0-4.0
	Storage	7	3.3	2.0-4.0

Refer to footnotes on page 114.

Table 16C. Detailed data summary for CO99053-4RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	362	320-403	
Yield US #1 (Cwt/A)	6	307	269-329	
% US #1	6	85	78-91	
Yield >10 oz (Cwt/A)	6	80	60-95	
Yield <4 oz (Cwt/A)	6	50	30-80	
% External Defects ¹	6	1.4	0.0-3.4	
% Hollow Heart ²	6	0.0	0.0-0.0	
% Stand	6	98	96-100	
Emergence Uniformity	6	3.1	3.0-3.3	
Vine Vigor ³	6	2.9	2.5-3.0	
Stems/Plant	6	3.8	2.9-4.6	
Vine Size ⁴	6	2.8	2.5-3.3	
Vine Maturity ⁵	6	2.1	1.3-2.8	
Blackspot ⁶	Bud End	7	4.7	3.9-5.0
	Stem End	7	4.6	4.0-5.0
	Average	7	4.7	
Weight Loss ⁷	7	2.9	1.5-3.9	
Dormancy ⁸	7	68	49-87	
Enzymatic Browning ⁹	7	4.5	4.4-4.8	
Specific Gravity	7	1.090	1.080-1.090	
Fry Color ¹⁰	Harvest	7	1.1	0.0-3.0
	Storage	7	1.9	1.0-3.0
Fry Texture ¹¹	Harvest	7	3.6	2.0-4.0
	Storage	7	3.4	2.0-4.0

Refer to footnotes on page 114.

Table 16D. Detailed data summary for CO99100-1RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	366	329-409	
Yield US #1 (Cwt/A)	6	310	272-377	
% US #1	6	85	76-92	
Yield >10 oz (Cwt/A)	6	80	48-121	
Yield <4 oz (Cwt/A)	6	41	25-82	
% External Defects ¹	6	4.2	0.0-9.1	
% Hollow Heart ²	6	0.1	0.0-0.5	
% Stand	6	99	97-100	
Emergence Uniformity	6	3.2	3.0-3.5	
Vine Vigor ³	6	3.5	2.8-4.0	
Stems/Plant	6	3.3	2.6-4.2	
Vine Size ⁴	6	2.4	2.3-2.5	
Vine Maturity ⁵	6	1.4	1.0-2.0	
Blackspot ⁶	Bud End	7	4.6	3.8-5.0
	Stem End	7	4.8	4.5-5.0
	Average	7	4.7	
Weight Loss ⁷	7	3.7	1.4-5.7	
Dormancy ⁸	7	61	49-77	
Enzymatic Browning ⁹	7	3.8	3.4-4.6	
Specific Gravity	7	1.083	1.078-1.087	
Fry Color ¹⁰	Harvest	7	0.4	0.0-1.0
	Storage	7	1.4	1.0-2.0
Fry Texture ¹¹	Harvest	7	2.9	2.0-3.0
	Storage	7	3.1	3.0-4.0

Refer to footnotes on page 114.

Table 16E. Detailed data summary for Canela Russet.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	15	376	312-468	
Yield US #1 (Cwt/A)	15	339	280-421	
% US #1	15	90	86-94	
Yield >10 oz (Cwt/A)	15	112	63-162	
Yield <4 oz (Cwt/A)	15	33	20-49	
% External Defects ¹	15	1.0	0.0-2.4	
% Hollow Heart ²	15	0.1	0.0-0.9	
% Stand	14	97	88-99	
Emergence Uniformity	14	2.8	1.5-3.5	
Vine Vigor ³	14	2.5	2.0-3.0	
Stems/Plant	14	1.8	1.3-2.6	
Vine Size ⁴	14	3.8	3.0-4.3	
Vine Maturity ⁵	14	3.1	2.8-3.8	
Blackspot ⁶	Bud End	19	4.6	3.7-5.0
	Stem End	19	4.1	2.5-5.0
	Average	19	4.4	
Weight Loss ⁷	19	3.6	1.3-7.0	
Dormancy ⁸	19	143	112-195	
Enzymatic Browning ⁹	19	4.5	3.4-5.0	
Specific Gravity	19	1.096	1.075-1.106	
Fry Color ¹⁰	Harvest	19	1.7	0.0-3.0
	Storage	19	1.8	0.0-3.0
Fry Texture ¹¹	Harvest	19	3.7	3.0-5.0
	Storage	19	3.8	3.0-5.0

Refer to footnotes on page 114.

Table 16F. 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	62-89	
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	43	4.8	3.7-5.0
	Stem End	43	4.8	4.2-5.0
	Average	46	4.8	
Weight Loss ⁷	46	6.2	1.6-9.0	
Dormancy ⁸	39	88	57-123	
Enzymatic Browning ⁹	41	4.0	3.2-5.0	
Specific Gravity	53	1.080	1.069-1.092	
Fry Color ¹⁰	Harvest	45	3.7	3.0-4.0
	Storage	45	3.9	3.0-5.0
Fry Texture ¹¹	Harvest	45	2.3	1.0-4.0
	Storage	45	2.2	1.0-3.0

Refer to footnotes on page 114.

Table 16G. 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 114.

Table 16H. 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	123	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	28	4.8	4.1-5.0
	Stem End	28	4.6	3.0-5.0
	Average	28	4.7	
Weight Loss ⁷	28	3.9	1.5-7.1	
Dormancy ⁸	28	91	68-120	
Enzymatic Browning ⁹	28	4.0	3.0-5.0	
Specific Gravity	28	1.087	1.078-1.094	
Fry Color ¹⁰	Harvest	28	2.2	1.0-4.0
	Storage	28	2.9	2.0-4.0
Fry Texture ¹¹	Harvest	28	3.1	2.0-4.0
	Storage	28	3.0	2.0-4.0

Refer to footnotes on page 114.

Table 16I. Detailed data summary for Russet Norkotah.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	82	385	174-557	
Yield US #1 (Cwt/A)	82	325	144-480	
% US #1	82	85	69-94	
Yield >10 oz (Cwt/A)	82	111	23-247	
Yield <4 oz (Cwt/A)	82	51	13-131	
% External Defects ¹	82	2.2	0.0-5.3	
% Hollow Heart ²	82	0.4	0.0-2.8	
% Stand	81	98	88-100	
Emergence Uniformity	72	3.2	1.0-4.0	
Vine Vigor ³	72	2.9	1.0-4.0	
Stems/Plant	77	3.7	2.3-5.7	
Vine Size ⁴	72	2.4	1.0-4.0	
Vine Maturity ⁵	81	1.9	1.0-3.0	
Blackspot ⁶	Bud End	81	4.7	2.9-5.0
	Stem End	81	4.3	2.6-5.0
	Average	82	4.5	
Weight Loss	82	3.7	1.0-7.1	
Dormancy ⁸	81	98	70-140	
Enzymatic Browning ⁹	81	3.4	2.2-4.8	
Specific Gravity	85	1.079	1.066-1.091	
Fry Color ¹⁰	Harvest	82	2.1	1.0-4.0
	Storage	82	2.5	1.0-4.0
Fry Texture ¹¹	Harvest	82	2.7	1.0-4.0
	Storage	82	2.7	1.0-4.0

Refer to footnotes on page 114.

Table 16J. 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	77	4.7	3.0-5.0
	Stem End	77	4.5	2.1-5.0
	Average	80	4.6	
Weight Loss ⁷	80	3.1	1.1-5.5	
Dormancy ⁸	75	95	57-144	
Enzymatic Browning ⁹	76	4.0	2.8-4.8	
Specific Gravity	82	1.093	1.072-1.110	
Fry Color ¹⁰	Harvest	80	1.4	0.0-3.0
	Storage	80	2.0	1.0-3.0
Fry Texture ¹¹	Harvest	80	4.1	2.0-5.0
	Storage	80	4.0	2.0-5.0

Refer to footnotes on page 114.

Table 16K. Detailed data summary for CO98012-5R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	7	469	368-546	
Yield US #1 (Cwt/A)	7	364	290-426	
% US #1	7	78	66-86	
Yield >10 oz (Cwt/A)	7	58	16-105	
Yield <4 oz (Cwt/A)	7	102	65-170	
% External Defects ¹	7	0.6	0.0-1.3	
% Hollow Heart ²	7	0.3	0.0-1.1	
% Stand	7	98	95-100	
Emergence Uniformity	7	3.1	2.8-3.8	
Vine Vigor ³	7	3.1	2.8-3.5	
Stems/Plant	7	3.2	2.1-4.4	
Vine Size ⁴	7	3.5	3.0-4.0	
Vine Maturity ⁵	7	3.0	3.0-3.0	
Blackspot ⁶	Bud End	8	4.0	3.0-4.8
	Stem End	8	3.5	2.4-4.9
	Average	8	3.8	
Weight Loss ⁷	8	3.6	1.6-5.8	
Dormancy ⁸	8	63	54-77	
Enzymatic Browning ⁹	8	2.0	1.2-3.0	
Specific Gravity	8	1.080	1.073-1.085	
Fry Color ¹⁰	Harvest	8	1.9	1.0-3.0
	Storage	8	3.0	2.0-4.0
Fry Texture ¹¹	Harvest	8	2.3	2.0-3.0
	Storage	8	2.1	2.0-3.0

Refer to footnotes on page 114.

Table 16L. Detailed data summary for CO99076-6R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	400	379-448	
Yield US #1 (Cwt/A)	6	312	262-344	
% US #1	6	78	68-87	
Yield >10 oz (Cwt/A)	6	54	17-85	
Yield <4 oz (Cwt/A)	6	80	45-102	
% External Defects ¹	6	2.1	0.5-4.8	
% Hollow Heart ²	6	0.0	0.0-0.3	
% Stand	6	96	92-99	
Emergence Uniformity	6	3.3	2.8-4.0	
Vine Vigor ³	6	3.5	3.0-4.0	
Stems/Plant	6	3.9	2.4-4.8	
Vine Size ⁴	6	3.1	3.0-3.3	
Vine Maturity ⁵	6	1.6	1.0-2.3	
Blackspot ⁶	Bud End	7	3.9	3.1-4.9
	Stem End	7	3.2	2.3-4.8
	Average	7	3.6	
Weight Loss ⁷	7	6.5	1.7-8.7	
Dormancy ⁸	7	68	56-79	
Enzymatic Browning ⁹	7	1.6	1.0-2.0	
Specific Gravity	7	1.086	1.082-1.089	
Fry Color ¹⁰	Harvest	7	2.1	1.0-3.0
	Storage	7	2.7	2.0-3.0
Fry Texture ¹¹	Harvest	7	2.4	2.0-3.0
	Storage	7	2.0	1.0-3.0

Refer to footnotes on page 114.

Table 16M. Detailed data summary for CO99256-2R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	515	422-571	
Yield US #1 (Cwt/A)	6	350	235-413	
% US #1	6	67	56-78	
Yield >10 oz (Cwt/A)	6	47	9-81	
Yield <4 oz (Cwt/A)	6	163	113-200	
% External Defects ¹	6	0.4	0.1-0.8	
% Hollow Heart ²	6	0.1	0.0-0.3	
% Stand	6	98	96-100	
Emergence Uniformity	6	3.0	2.8-3.8	
Vine Vigor ³	6	3.1	2.8-3.5	
Stems/Plant	6	3.7	2.9-4.8	
Vine Size ⁴	6	4.1	3.8-4.5	
Vine Maturity ⁵	6	2.9	2.5-3.0	
Blackspot ⁶	Bud End	7	4.0	2.6-5.0
	Stem End	7	3.7	2.6-4.8
	Average	7	3.8	
Weight Loss ⁷	7	5.3	1.6-7.3	
Dormancy ⁸	7	94	84-118	
Enzymatic Browning ⁹	7	2.7	1.8-3.4	
Specific Gravity	7	1.088	1.080-1.095	
Fry Color ¹⁰	Harvest	7	1.1	1.0-2.0
	Storage	7	1.9	1.0-2.0
Fry Texture ¹¹	Harvest	7	2.9	2.0-3.0
	Storage	7	2.7	2.0-3.0

Refer to footnotes on page 114.

Table 16N. Detailed data summary for CO00277-2R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	416	380-458	
Yield US #1 (Cwt/A)	5	321	287-339	
% US #1	5	77	69-85	
Yield >10 oz (Cwt/A)	5	63	39-110	
Yield <4 oz (Cwt/A)	5	91	54-127	
% External Defects ¹	5	0.8	0.0-1.8	
% Hollow Heart ²	5	0.4	0.0-1.8	
% Stand	5	98	93-100	
Emergence Uniformity	5	2.9	2.5-3.3	
Vine Vigor ³	5	3.0	2.8-3.3	
Stems/Plant	5	4.5	3.3-5.7	
Vine Size ⁴	5	2.8	2.3-3.0	
Vine Maturity ⁵	5	1.7	1.3-2.0	
Blackspot ⁶	Bud End	6	4.4	3.9-5.0
	Stem End	6	4.2	3.7-5.0
	Average	6	4.3	
Weight Loss ⁷	6	5.4	2.7-8.3	
Dormancy ⁸	6	60	47-77	
Enzymatic Browning ⁹	6	4.3	3.6-4.6	
Specific Gravity	6	1.080	1.075-1.084	
Fry Color ¹⁰	Harvest	6	3.0	2.0-4.0
	Storage	6	3.8	3.0-4.0
Fry Texture ¹¹	Harvest	6	2.5	2.0-3.0
	Storage	6	2.3	2.0-3.0

Refer to footnotes on page 114.

Table 16O. Detailed data summary for CO00291-5R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	396	343-446	
Yield US #1 (Cwt/A)	5	309	263-329	
% US #1	5	78	74-87	
Yield >10 oz (Cwt/A)	5	24	17-30	
Yield <4 oz (Cwt/A)	5	86	45-117	
% External Defects ¹	5	0.4	0.0-0.9	
% Hollow Heart ²	5	0.0	0.0-0.0	
% Stand	5	98	97-99	
Emergence Uniformity	5	2.9	2.3-3.5	
Vine Vigor ³	5	2.8	2.3-3.3	
Stems/Plant	5	3.2	2.4-3.8	
Vine Size ⁴	5	4.2	3.5-4.5	
Vine Maturity ⁵	5	3.3	3.0-3.8	
Blackspot ⁶	Bud End	6	3.0	2.0-4.6
	Stem End	6	3.4	2.0-4.8
	Average	6	3.2	
Weight Loss ⁷	6	7.8	4.6-11.1	
Dormancy ⁸	6	73	56-87	
Enzymatic Browning ⁹	6	1.7	1.0-2.2	
Specific Gravity	6	1.084	1.072-1.090	
Fry Color ¹⁰	Harvest	6	2.2	2.0-3.0
	Storage	6	3.0	2.0-4.0
Fry Texture ¹¹	Harvest	6	2.3	1.0-3.0
	Storage	6	2.2	1.0-3.0

Refer to footnotes on page 114.

Table 16P. 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 114.

Table 16Q. Detailed data summary for Rio Colorado.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	11	405	321-474	
Yield US #1 (Cwt/A)	11	226	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	96	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	1.2-10.2	
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 114.

Table 16R. Detailed data summary for Sangre-S10.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	27	535	410-636	
Yield US #1 (Cwt/A)	27	471	358-566	
% US #1	27	88	82-93	
Yield >10 oz (Cwt/A)	27	184	101-319	
Yield <4 oz (Cwt/A)	27	54	34-90	
% External Defects ¹	27	1.9	0.3-5.7	
% Hollow Heart ²	27	1.6	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	39	3.8	2.0-5.0
	Stem End	39	4.1	2.5-5.0
	Average	39	3.9	
Weight Loss ⁷	39	2.8	1.0-4.5	
Dormancy ⁸	39	87	56-126	
Enzymatic Browning ⁹	39	3.3	2.4-4.8	
Specific Gravity	39	1.076	1.060-1.089	
Fry Color ¹⁰	Harvest	39	3.6	2.0-4.0
	Storage	39	3.9	3.0-4.0
Fry Texture ¹¹	Harvest	39	2.2	1.0-4.0
	Storage	39	2.3	1.0-3.0

Refer to footnotes on page 114.

Table 16S. 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	1	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 114.

Table 16T. 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 114.

Table 16U. 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 114.

Table 16V. 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 114.

Table 16W. Detailed data summary for CO97222-1R/R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	7	396	349-447	
Yield US #1 (Cwt/A)	7	231	151-309	
% US #1	7	58	42-76	
Yield >10 oz (Cwt/A)	7	27	7-56	
Yield <4 oz (Cwt/A)	7	159	91 -223	
% External Defects ¹	7	1.5	0.0-3.0	
% Hollow Heart ²	7	0.0	0.0-0.0	
% Stand	7	96	94-99	
Emergence Uniformity	7	2.9	2.0-3.5	
Vine Vigor ³	7	2.8	2.3-3.3	
Stems/Plant	7	3.7	2.3-5.1	
Vine Size ⁴	7	3.0	2.8-3.0	
Vine Maturity ⁵	7	2.5	2.0-3.0	
Blackspot ⁶	Bud End	--	-- --	
	Stem End	--	-- --	
	Average	--	--	
Weight Loss ⁷	8	3.3	1.4-4.3	
Dormancy ⁸	8	81	56-132	
Enzymatic Browning ⁹	--	--	-- --	
Specific Gravity	8	1.076	1.073-1.080	
Fry Color ¹⁰	Harvest	--	-- --	
	Storage	--	-- --	
Fry Texture ¹¹	Harvest	7	2.1	1.0-3.0
	Storage	7	2.0	1.0-3.0

Refer to footnotes on page 114.

Table 16X. Detailed data summary for CO97227-2P/PW.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	7	493	385-561	
Yield US #1 (Cwt/A)	7	127	79-200	
% US #1	7	26	20-36	
Yield >10 oz (Cwt/A)	7	0	0-2.0	
Yield <4 oz (Cwt/A)	7	360	288-444	
% External Defects ¹	7	1.1	0.2-2.4	
% Hollow Heart ²	7	0.0	0.0-0.0	
% Stand	7	95	78-100	
Emergence Uniformity	7	3.4	2.8-4.0	
Vine Vigor ³	7	3.6	3.0-4.0	
Stems/Plant	7	5.3	4.0-8.0	
Vine Size ⁴	7	3.9	3.8-4.3	
Vine Maturity ⁵	7	2.8	2.0-3.0	
Blackspot ⁶	Bud End	--	-- --	
	Stem End	--	-- --	
	Average	--	-- --	
Weight Loss ⁷	9	4.9	2.0-8.4	
Dormancy ⁸	9	91	61-153	
Enzymatic Browning ⁹	--	--	-- --	
Specific Gravity	9	1.088	1.082-1.095	
Fry Color ¹⁰	Harvest	--	-- --	
	Storage	--	-- --	
Fry Texture ¹¹	Harvest	7	4.0	3.0-5.0
	Storage	7	3.9	3.0-5.0

Refer to footnotes on page 114.

Table 16Y. Detailed data summary for AC99329-7PW/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	534	463-585	
Yield US #1 (Cwt/A)	6	415	349-471	
% US #1	6	78	71-84	
Yield >10 oz (Cwt/A)	6	92	43-141	
Yield <4 oz (Cwt/A)	6	111	82-149	
% External Defects ¹	6	1.5	0.5-3.7	
% Hollow Heart ²	6	0.3	0.0-1.6	
% Stand	6	99	98-100	
Emergence Uniformity	6	3.7	3.0-4.0	
Vine Vigor ³	6	4.1	3.0-5.0	
Stems/Plant	6	5.1	3.0-7.4	
Vine Size ⁴	6	4.3	4.0-4.8	
Vine Maturity ⁵	6	3.1	2.8-3.5	
Blackspot ⁶	Bud End	7	4.3	3.1-4.9
	Stem End	7	3.2	2.6-4.5
	Average	7	3.7	
Weight Loss ⁷	7	4.4	2.0-5.9	
Dormancy ⁸	7	38	23-52	
Enzymatic Browning ⁹	7	4.0	3.0-4.6	
Specific Gravity	7	1.091	1.081-1.094	
Fry Color ¹⁰	Harvest	7	2.4	1.0-4.0
	Storage	7	2.7	2.0-3.0
Fry Texture ¹¹	Harvest	7	2.9	2.0-3.0
	Storage	7	3.3	3.0-4.0

Refer to footnotes on page 114.

Table 16Z. Detailed data summary for AC99330-1P/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	504	480-531	
Yield US #1 (Cwt/A)	6	288	208-376	
% US #1	6	57	43-74	
Yield >10 oz (Cwt/A)	6	23	3-69	
Yield <4 oz (Cwt/A)	6	216	129-271	
% External Defects ¹	6	0.0	0.0-0.2	
% Hollow Heart ²	6	0.2	0.0-0.6	
% Stand	6	98	96-99	
Emergence Uniformity	6	3.1	2.8-3.8	
Vine Vigor ³	6	3.8	3.0-4.5	
Stems/Plant	6	4.9	3.0-6.7	
Vine Size ⁴	6	3.5	2.8-4.0	
Vine Maturity ⁵	6	2.8	2.0-3.0	
Blackspot ⁶	Bud End	7	4.7	4.0-5.0
	Stem End	7	4.3	3.7-4.8
	Average	7	4.5	
Weight Loss ⁷	7	3.4	1.4-5.0	
Dormancy ⁸	7	60	49-66	
Enzymatic Browning ⁹	7	3.0	2.2-3.6	
Specific Gravity	7	1.082	1.075-1.090	
Fry Color ¹⁰	Harvest	7	1.9	1.0-4.0
	Storage	7	3.1	3.0-4.0
Fry Texture ¹¹	Harvest	7	2.9	2.0-4.0
	Storage	7	3.1	3.0-4.0

Refer to footnotes on page 114.

Table 16AA. Detailed data summary for CO99045-1W/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	562	503-634	
Yield US #1 (Cwt/A)	6	446	397-519	
% US #1	6	79	73-87	
Yield >10 oz (Cwt/A)	6	137	97-240	
Yield <4 oz (Cwt/A)	6	101	61-160	
% External Defects ¹	6	2.8	0.8-5.2	
% Hollow Heart ²	6	0.0	0.0-0.2	
% Stand	6	100	98-101	
Emergence Uniformity	6	3.4	3.0-3.8	
Vine Vigor ³	6	3.6	3.0-4.3	
Stems/Plant	6	4.1	3.1-6.0	
Vine Size ⁴	6	4.0	3.5-4.5	
Vine Maturity ⁵	6	3.1	3.0-3.5	
Blackspot ⁶	Bud End	7	4.6	3.8-5.0
	Stem End	7	4.5	3.8-5.0
	Average	7	4.5	
Weight Loss ⁷	7	2.7	1.4-3.9	
Dormancy ⁸	7	70	55-87	
Enzymatic Browning ⁹	7	4.5	3.8-5.0	
Specific Gravity	7	1.089	1.080-1.093	
Fry Color ¹⁰	Harvest	7	2.7	2.0-3.0
	Storage	7	3.1	2.0-4.0
Fry Texture ¹¹	Harvest	7	2.9	2.0-3.0
	Storage	7	2.9	2.0-3.0

Refer to footnotes on page 114.

Table 16AB. Detailed data summary for ATC00293-1W/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	576	505-621	
Yield US #1 (Cwt/A)	5	491	449-520	
% US #1	5	85	80-91	
Yield >10 oz (Cwt/A)	5	155	80-256	
Yield <4 oz (Cwt/A)	5	62	40-78	
% External Defects ¹	5	4.0	1.7-6.8	
% Hollow Heart ²	5	3.3	1.2-3.9	
% Stand	5	98	95-100	
Emergence Uniformity	5	3.0	2.5-3.3	
Vine Vigor ³	5	3.4	3.0-4.0	
Stems/Plant	5	3.3	2.8-3.7	
Vine Size ⁴	5	4.2	4.0-4.8	
Vine Maturity ⁵	5	3.0	3.0-3.0	
Blackspot ⁶	Bud End	6	4.2	2.6-5.0
	Stem End	6	4.1	2.8-5.0
	Average	6	4.2	
Weight Loss ⁷	6	2.1	1.6-2.8	
Dormancy ⁸	6	115	98 -129	
Enzymatic Browning ⁹	6	4.5	4.4-4.8	
Specific Gravity	6	1.082	1.075-1.085	
Fry Color ¹⁰	Harvest	6	1.0	0.0-2.0
	Storage	6	1.8	1.0-3.0
Fry Texture ¹¹	Harvest	6	2.3	1.0-3.0
	Storage	6	2.3	2.0-3.0

Refer to footnotes on page 114.

Table 16AC. Detailed data summary for CO00405-1RF.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	352	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	5	2.2	0.0-4.7	
% Hollow Heart ²	5	0.0	0.0-0.0	
% Stand	5	99	98-100	
Emergence Uniformity	5	3.2	2.8-3.5	
Vine Vigor ³	5	2.9	2.0-3.8	
Stems/Plant	5	4.1	3.6-5.5	
Vine Size ⁴	5	2.2	1.8-2.8	
Vine Maturity ⁵	5	1.4	1.0-2.0	
Blackspot ⁶	Bud End	6	4.8	3.9-5.0
	Stem End	6	4.7	3.9-5.0
	Average	6	4.7	
Weight Loss ⁷	6	3.8	3.1-4.8	
Dormancy ⁸	6	73	61-87	
Enzymatic Browning ⁹	6	4.2	3.6-5.0	
Specific Gravity	6	1.081	1.077-1.086	
Fry Color ¹⁰	Harvest	6	1.3	1.0-2.0
	Storage	6	1.8	2.0-2.0
Fry Texture ¹¹	Harvest	6	3.0	2.0-5.0
	Storage	6	3.0	2.0-5.0

Refer to footnotes on page 114.

Table 16AD. Detailed data summary for CO00412-5W/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	492	421-579	
Yield US #1 (Cwt/A)	5	366	283-448	
% US #1	5	74	61-82	
Yield >10 oz (Cwt/A)	5	82	29-143	
Yield <4 oz (Cwt/A)	5	113	75-167	
% External Defects ¹	5	2.6	0.7-3.8	
% Hollow Heart ²	5	1.3	0.0-2.7	
% Stand	5	99	98-100	
Emergence Uniformity	5	3.5	3.0-4.0	
Vine Vigor ³	5	3.8	3.0-4.3	
Stems/Plant	5	4.5	2.8-5.7	
Vine Size ⁴	5	3.6	3.0-4.0	
Vine Maturity ⁵	5	2.9	2.5-3.0	
Blackspot ⁶	Bud End	6	4.1	2.0-5.0
	Stem End	6	3.7	1.9-4.7
	Average	6	3.9	
Weight Loss ⁷	6	2.5	1.7-4.6	
Dormancy ⁸	6	75	63-87	
Enzymatic Browning ⁹	6	3.7	3.2-4.0	
Specific Gravity	6	1.089	1.077-1.094	
Fry Color ¹⁰	Harvest	6	1.7	1.0-3.0
	Storage	6	2.5	2.0-4.0
Fry Texture ¹¹	Harvest	6	2.7	2.0-3.0
	Storage	6	3.0	2.0-4.0

Refer to footnotes on page 114.

Table 16AE. Detailed data summary for CO00415-1RF.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	372	278-431	
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	5	3.7	1.1-7.8	
% Hollow Heart ²	5	0.0	0.0-0.0	
% Stand	5	89	54-100	
Emergence Uniformity	5	3.1	2.0-3.5	
Vine Vigor ³	5	2.9	2.5-3.3	
Stems/Plant	5	4.6	3.2-7.2	
Vine Size ⁴	5	2.5	2.0-3.3	
Vine Maturity ⁵	5	1.4	1.0-1.8	
Blackspot ⁶	Bud End	6	4.9	4.5-5.0
	Stem End	6	4.6	3.1-5.0
	Average	6	4.8	
Weight Loss ⁷	6	2.9	2.2-4.1	
Dormancy ⁸	6	90	70-105	
Enzymatic Browning ⁹	6	4.5	4.0-4.8	
Specific Gravity	6	1.076	1.071-1.080	
Fry Color ¹⁰	Harvest	6	1.8	1.0-2.0
	Storage	6	3.0	3.0-3.0
Fry Texture ¹¹	Harvest	6	2.3	1.0-4.0
	Storage	6	2.3	1.0-3.0

Refer to footnotes on page 114.

Table 16AF. Detailed data summary for CO01399-10P/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	4	566	478-648	
Yield US #1 (Cwt/A)	4	428	368-511	
% US #1	4	76	66-80	
Yield >10 oz (Cwt/A)	4	75	27-117	
Yield <4 oz (Cwt/A)	4	131	103-192	
% External Defects ¹	4	1.1	0.7-1.7	
% Hollow Heart ²	4	0.0	0.0-0.2	
% Stand	4	99	96-100	
Emergence Uniformity	4	3.0	3.0-3.0	
Vine Vigor ³	4	3.1	2.5-3.5	
Stems/Plant	4	3.6	2.4-4.2	
Vine Size ⁴	4	4.3	4.0-4.8	
Vine Maturity ⁵	4	3.3	3.0-4.0	
Blackspot ⁶	Bud End	5	4.5	4.2-5.0
	Stem End	5	4.4	4.0-5.0
	Average	5	4.5	
Weight Loss ⁷	5	2.4	1.4-3.0	
Dormancy ⁸	5	88	70-111	
Enzymatic Browning ⁹	5	3.6	3.2-4.4	
Specific Gravity	5	1.080	1.077-1.085	
Fry Color ¹⁰	Harvest	5	0.8	0.0-2.0
	Storage	5	1.0	0.0-2.0
Fry Texture ¹¹	Harvest	5	3.0	2.0-4.0
	Storage	5	3.4	3.0-4.0

Refer to footnotes on page 114.

Table 16AG. 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
	Storage	6	2.7

Refer to footnotes on page 114.

Table 16AH. Detailed data summary for Purple Majesty.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	15	502	404-606
Yield US #1 (Cwt/A)	15	289	203-401
% US #1	15	57	40-72
Yield >10 oz (Cwt/A)	15	30	14-61
Yield <4 oz (Cwt/A)	15	210	122-326
% External Defects ¹	15	0.6	0.0-1.7
% Hollow Heart ²	15	1.2	0.2-3.4
% Stand	15	98	94-100
Emergence Uniformity	15	3.6	3.0-4.0
Vine Vigor ³	15	3.6	2.8-4.5
Stems/Plant	15	4.2	3.2-6.1
Vine Size ⁴	15	3.0	2.3-3.5
Vine Maturity ⁵	15	2.2	1.5-3.0
Blackspot ⁶	Bud End	---	---
	Stem End	---	---
	Average	---	---
Weight Loss ⁷	21	3.9	1.1-6.8
Dormancy ⁸	21	62	42-85
Enzymatic Browning ⁹	---	---	---
Specific Gravity	21	1.086	1.076-1.094
Fry Color ¹⁰	Harvest	---	---
	Storage	---	---
Fry Texture ¹¹	Harvest	16	2.6
	Storage	16	2.7

Refer to footnotes on page 114.

Table 16AI. Detailed data summary for Yukon Gold.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	29	413	321-513	
Yield US #1 (Cwt/A)	29	369	293-444	
% US #1	29	89	82-94	
Yield >10 oz (Cwt/A)	29	165	89-248	
Yield <4 oz (Cwt/A)	29	37	22-66	
% External Defects ¹	29	1.6	0.0-4.4	
% Hollow Heart ²	29	0.5	0.0-2.2	
% Stand	29	96	90-100	
Emergence Uniformity	29	3.3	2.5-3.8	
Vine Vigor ³	29	3.7	3.0-4.3	
Stems/Plant	29	2.4	1.6-3.8	
Vine Size ⁴	29	3.0	2.5-3.5	
Vine Maturity ⁵	29	1.9	1.0-3.0	
Blackspot ⁶	Bud End	36	4.1	2.0-5.0
	Stem End	36	3.9	2.4-5.0
	Average	36	4.0	
Weight Loss ⁷	36	2.3	1.0-4.3	
Dormancy ⁸	36	88	63-132	
Enzymatic Browning ⁹	36	4.4	3.8-5.0	
Specific Gravity	36	1.086	1.079-1.093	
Fry Color ¹⁰	Harvest	36	1.7	1.0-3.0
	Storage	36	2.7	1.0-4.0
Fry Texture ¹¹	Harvest	36	3.0	1.0-4.0
	Storage	36	3.0	1.0-4.0

Refer to footnotes on page 114.

Table 16AJ. Detailed data summary for CO00188-4W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	437	385-483	
Yield US #1 (Cwt/A)	5	334	270-377	
% US #1	5	76	70-86	
Yield >10 oz (Cwt/A)	5	36	12-68	
Yield <4 oz (Cwt/A)	5	96	39-133	
% External Defects ¹	5	1.7	0.5-4.3	
% Hollow Heart ²	5	0.1	0.0-0.3	
% Stand	5	99	98-100	
Emergence Uniformity	5	3.5	3.3-4.0	
Vine Vigor ³	5	3.8	3.3-4.3	
Stems/Plant	5	4.1	2.1-4.8	
Vine Size ⁴	5	3.0	2.8-3.3	
Vine Maturity ⁵	5	2.7	2.3-3.0	
Blackspot ⁶	Bud End	11	4.6	3.8-5.0
	Stem End	11	3.2	1.4-4.4
	Average	11	3.9	
Weight Loss ⁷	11	3.1	2.1-4.6	
Dormancy ⁸	11	99	84-123	
Enzymatic Browning ⁹	11	4.4	3.6-5.0	
Specific Gravity	12	1.091	1.085-1.095	
Chip Color ¹⁰	40	12	3.4	2.0-4.5
	40R	12	2.8	1.5-4.0
	50	12	1.6	1.0-2.5
	50R	12	1.7	1.0-2.5

Refer to footnotes on page 114.

Table 16AK. Detailed data summary for CO00197-3W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	482	456-511	
Yield US #1 (Cwt/A)	5	356	270-396	
% US #1	5	74	59-82	
Yield >10 oz (Cwt/A)	5	61	35-95	
Yield <4 oz (Cwt/A)	5	123	85-183	
% External Defects ¹	5	0.7	0.1-1.6	
% Hollow Heart ²	5	0.8	0.0-3.2	
% Stand	5	96	93-100	
Emergence Uniformity	5	3.5	3.0-4.0	
Vine Vigor ³	5	3.7	3.3-4.3	
Stems/Plant	5	3.5	2.5-3.9	
Vine Size ⁴	5	3.2	2.8-3.5	
Vine Maturity ⁵	5	2.3	2.0-3.0	
Blackspot ⁶	Bud End	11	3.7	2.4-4.6
	Stem End	11	2.5	1.1-3.8
	Average	11	3.1	
Weight Loss ⁷	11	2.6	1.6-4.3	
Dormancy ⁸	11	84	69-109	
Enzymatic Browning ⁹	11	2.9	1.4-3.8	
Specific Gravity	12	1.086	1.079-1.090	
Chip Color ¹⁰	40	12	4.0	3.0-5.0
	40R	12	3.5	1.5-4.5
	50	12	2.3	1.0-3.5
	50R	12	2.4	1.0-4.0

Refer to footnotes on page 114.

Table 16AL. Detailed data summary for CO00270-7W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	419	378-456	
Yield US #1 (Cwt/A)	5	355	326-383	
% US #1	5	85	80-92	
Yield >10 oz (Cwt/A)	5	88	68-140	
Yield <4 oz (Cwt/A)	5	59	24-76	
% External Defects ¹	5	1.2	0.4-1.7	
% Hollow Heart ²	5	0.0	0.0-0.0	
% Stand	5	95	93-99	
Emergence Uniformity	5	3.3	3.0-3.5	
Vine Vigor ³	5	3.7	3.0-4.0	
Stems/Plant	5	3.4	2.3-4.2	
Vine Size ⁴	5	3.0	2.3-3.3	
Vine Maturity ⁵	5	2.6	2.3-3.0	
Blackspot ⁶	Bud End	11	4.3	3.1-4.8
	Stem End	11	3.7	2.6-4.4
	Average	11	4.0	
Weight Loss ⁷	11	3.1	2.0-5.4	
Dormancy ⁸	11	65	48-94	
Enzymatic Browning ⁹	11	3.5	2.4-4.0	
Specific Gravity	12	1.087	1.078-1.097	
Chip Color ¹⁰	40	12	3.3	1.5-4.5
	40R	12	2.5	1.0-4.0
	50	12	1.7	1.0-3.0
	50R	12	1.6	1.0-2.5

Refer to footnotes on page 114.

Table 16AM. Detailed data summary for Atlantic.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	39	463	307-597	
Yield US #1 (Cwt/A)	39	401	265-512	
% US #1	39	87	76-93	
Yield >10 oz (Cwt/A)	39	152	58-290	
Yield <4 oz (Cwt/A)	39	49	19-109	
% External Defects ¹	39	2.5	0.1-9.1	
% Hollow Heart ²	39	5.1	0.3-16.4	
% Stand	39	96	88-100	
Emergence Uniformity	33	3.6	3.0-4.3	
Vine Vigor ³	33	3.5	2.8-4.3	
Stems/Plant	39	3.1	2.2-4.9	
Vine Size ⁴	33	3.1	2.2-4.0	
Vine Maturity ⁵	39	3.2	2.8-4.0	
Blackspot ⁶	Bud End	56	3.2	1.8-5.0
	Stem End	56	2.7	1.4-4.3
	Average	57	2.9	
Weight Loss ⁷	57	4.5	1.1-7.9	
Dormancy ⁸	54	84	56-119	
Enzymatic Browning ⁹	55	4.5	3.8-5.0	
Specific Gravity	58	1.098	1.083-1.120	
Chip Color ¹⁰	40	58	4.0	2.0-5.0
	40R	58	3.5	1.5-5.0
	50	58	2.6	1.0-4.0
	50R	58	2.6	1.0-5.5

Refer to footnotes on page 114.

Table 16AN. Detailed data summary for Chipeta.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	36	542	399-757	
Yield US #1 (Cwt/A)	36	460	306-606	
% US #1	36	85	71-90	
Yield >10 oz (Cwt/A)	36	169	52-388	
Yield <4 oz (Cwt/A)	36	55	22-119	
% External Defects ¹	36	5.1	1.1-13.0	
% Hollow Heart ²	36	0.5	0.0-4.0	
% Stand	36	98	94-100	
Emergence Uniformity	29	3.6	3.0-4.8	
Vine Vigor ³	29	4.0	3.0-5.0	
Stems/Plant	35	3.5	2.0-4.9	
Vine Size ⁴	29	4.3	4.0-5.0	
Vine Maturity ⁵	36	3.3	3.0-4.0	
Blackspot ⁶	Bud End	52	3.8	2.2-5.0
	Stem End	52	3.6	1.4-4.9
	Average	54	3.7	
Weight Loss ⁷	54	3.2	1.0-8.0	
Dormancy ⁸	50	103	70-153	
Enzymatic Browning ⁹	51	4.0	2.8-5.0	
Specific Gravity	54	1.090	1.073-1.107	
Chip Color ¹⁰	40	54	4.5	3.0-5.0
	40R	54	3.8	1.5-5.0
	50	54	2.6	1.0-4.0
	50R	54	2.3	1.0-4.0

Refer to footnotes on page 114.

Footnotes for Tables 16A-16AN:

- ¹Percent external defects based on the proportion of the total sample weight with significant defects.
- ²Percent hollow heart calculated as follows: (Weight of tubers >10 ounces with defects/total sample weight) x 100.
- ³Vine vigor is rated on a 1 to 5 scale, with 5 indicating very vigorous vines.
- ⁴Vine size is rated on a 1 to 5 scale, with 5 indicating very large vines.
- ⁵Vine maturity is rated on the following basis: 1=very early; 2=early; 3=medium; 4=late; and 5=very late.
- ⁶Blackspot was rated on a 1 to 5 scale, with 5 indicating no discoloration.
- ⁷Tubers were stored at 45F for approximately 3 months.
- ⁸Days from harvest to first visible growth. Tubers were stored at 45F.
- ⁹Degree of darkening rated at 60 minutes after slicing fresh lengthwise. Rated on a 1 to 5 scale, with 5 indicating no discoloration.
- ¹⁰Chip color was rated using the Snack Food Association 1-5 scale. Ratings of ≤ 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 ≤ 2.0 are acceptable.
- ¹¹Fry 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 - 2010.

LOCATION: San Luis Valley Research Center

SOIL TYPE: Sandy Loam (Dunul cobbly sandy loam)

DATE:

Planted - 5/14/10

Hilled - 5/26/10

Vines Killed - 9/01/10 (sulfuric acid - 25 gal/A) - 110 days after planting

Harvested - 9/27-28/10

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 except 2 for Intermediate Yield Trials)

METHOD OF HARVEST:

Machine (Grimme 1-row)

FERTILIZER:

5/14/10 - 80 lbs N + 60 lbs P₂O₅ + 40 lbs K₂O + 2.5 lb Zn/A (dual band in-row liquid application)

7/02/10 - 15 lbs N (fertigated)

7/14/10 - 15 lbs N (fertigated)

7/26/10 - 10 lbs N (fertigated)

Total fertilizer applied: 120 lbs N + 60 lbs P₂O₅ + 40 lbs K₂O + 2.5 lb Zn/A

IRRIGATION:

Center Pivot - 17.00" gross application (application frequency and amount based on ET)

Rainfall - 1.34" (5/14/10-9/28/10)

INSECTICIDES APPLIED:

7/22/10 - Fulfill (1.375 lb a.i./A)

8/08/10 - Endigo ZC (0.037 lb a.i./A thiamethoxam + 0.028 lb a.i./A lambda-cyhalothrin)

FUNGICIDES APPLIED:

7/15/10 - Quadris (0.202 lb a.i./A)

8/02/10 - Bravo Weather Stik (1.125 lb a.i./A)

HERBICIDES APPLIED:

5/27/10 -Dual Magnum (1.432 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 and warmed up for 24 hours prior to bruising. After bruising, tubers are stored at room temperature for two 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 ≤ 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 ≤ 2.0 are acceptable.

Notes



