

2007 Research Progress Report
Potato Breeding and Selection

Submitted by

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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 with characteristics that will help to assure that the Colorado potato industry remains productive and competitive."

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Preface

We are pleased to provide this copy of the “2007 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 Cooperative State Research, Education, and Extension Service (CSREES), and PVP royalties. These funds collectively continue to allow us to strengthen our overall collaborative research efforts at CSU and with other universities and agencies. All of these efforts are aimed at developing improved potato cultivars for Colorado.

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

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 - Nematode Resistance and Molecular Studies
- Kent P. Sather and Richard W. Haslar - Potato Certification Service
- Jennifer K. Bond - Marketing
- Harrison G. Hughes - Genetic Studies
- Jorge Delgado, USDA-ARS - Nutrient-Use Efficiency

We continue to develop our collaborations with the Southwest Regional Potato Group which involves Colorado, Texas, and California. The overall objective of this Group is to develop and evaluate improved potato cultivars to meet the production, marketing, and producer/consumer needs of the Southwest U.S. Other “partners” throughout the United States are supportive in providing breeding material and opportunities to screen our germplasm under various growing conditions and disease pressures not usually available in Colorado.

Best wishes for the 2008 production season.

Sincerely,

Dave Holm and Fakrettin Goktepe

Acknowledgments

We would like to express appreciation to the following individuals, groups, and organizations for their efforts on behalf of the Colorado Potato Breeding and Selection Program in 2007.

- ✓ 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

Cooperative State Research, Education, and Extension Service

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

Art Holland	Ken Burback	Will Hathaway	Cary Hoffman
Doug Messick	Clay Mitchell	Russell Pratt	Kent Price
David Radtke	Sheldon Rockey	Dwayne Weyers	

- ✓ Research Collaborators - Colorado State University and the USDA-ARS

Rob Davidson	Samuel Essah	Harrison Hughes	Sastry Jayanty
Cecil Stushnoff	Henry Thompson	Jorge Vivanco	Jennifer Bond
Jorge Delgado			

- ✓ Staff and Graduate Students* - Colorado State University

Mohammed Al-Daej*	Deanna Brown	Steve Keller	Ron Price
Stan Price	Sharon Yust		

- ✓ Potato Certification Service

Kent Sather	Rick Haslar	Teresa Dobson	Rue Snell
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- ✓ Technical Support (including temporary support personnel)

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Pablo Mascarenas	Danel Ogden	Lukas Rael	James Selman
Nataara Tamada	Benjamin Vargas	David White	Kellie Wright

- ✓ 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 available in Colorado.

2007 Research Progress Report

Potato Breeding and Selection

Submitted by

David G. Holm and Fahrettin Goktepe

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 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.

In addition to 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; and (8) 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 and ability to process after cold storage. Cultivars with these characteristics will help assure that the potato industry in Colorado will remain productive and in a competitive position.

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

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

Cultivar Trends/Statistics

Tables 2A-B and Figure 1 present statistics on the primary cultivars grown in the San Luis Valley during 1983-2007. Figure 2 presents a comparison of the production levels of the primary potato cultivars from 1997-2007.

The top five cultivars grown in the San Luis Valley in 2007, based on acreage planted, were Russet Norkotah (including clonal selection), Centennial Russet, Rio Grande Russet, Russet Nugget, and Yukon Gold. Since 2001 total acreage of yellow fleshed cultivars has exceeded the combined acreage for reds and white cultivars.

Russet Nugget, released by Colorado in 1988, was the primary cultivar grown on fall planted acreage in Colorado in 1997. Russet Nugget acreage has continued to decline since the occurrence of late blight in 1998. This decline has leveled off. Much of this acreage has been replaced by Russet Norkotah (including the clonal selections). Of the Russet Norkotah 2007 fall potato acreage in Colorado, 53% was planted to Russet Norkotah Selections 3 and 8. Figure 3 shows the breakdown of the Russet Norkotah acreage in the San Luis Valley. On a nationwide basis, 41% of the total Russet Norkotah acreage was devoted to Russet Norkotah Selection 3 (26%) and 8 (15%).

Since 1975, there have been 19 potato cultivars released by Colorado State University or in cooperation with other agencies. Colorado State University releases accounted for 52% of the 59,200 acres planted to fall potatoes in Colorado in 2007. Colorado cultivars and clonal selections accounted for 58% of the 10,805 acres of Colorado certified seed accepted for certification in 2007. Advanced Colorado selections accounted for another 3% of the seed acreage. Seven of the top 20 grown russet cultivars for seed in the U.S. were developed by the Colorado Potato Breeding and Selection program (Russet Norkotah-S3, Rio Grande Russet, Russet Norkotah-S8, Canela Russet, Centennial Russet, Silverton Russet, and Russet Nugget).

Potato Breeding

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

Crossing. The Colorado Potato Breeding and Selection Program intercrossed ninety-three parental clones in 2007 in two separate crossing blocks. The emphasis of the first crossing block was russet, red, and specialty cultivar development. The second emphasized russet and red cultivar development, PVY immunity, and nematode resistance. Seed from 383 combinations was obtained.

Approximately 46,227 seedling tubers representing 249 families were produced from 2003, 2005, and 2006 crosses, for initial field selection in 2008. These seedlings represent crosses segregating primarily for russet, reds, specialty types, and disease resistance/immunity (late blight, PLRV, and PVY). Second through fourth size seedling tubers will be distributed to Idaho (USDA-ARS), Minnesota, North Dakota, Texas, Wisconsin, and Alberta, Canada (Agriculture Canada).

Additional seedling tubers for planting in 2008 will be obtained from Dr. Richard G. Novy, USDA-ARS, Aberdeen, Idaho; Dr. Benoit Bizimungu, Agriculture Canada, Lethbridge, Alberta; Dr. J. Creighton Miller, Texas A&M University, College Station, Texas; and Dr. Asunta L. Thompson, North Dakota State University, Fargo, North Dakota, and Dr. Felix Navarro, University of Wisconsin.

Seedling Selection and Clonal Development

Colorado grew 80,101 first-year seedlings in 2007, with 643 selected for subsequent planting, evaluation, and increase in future years. A portion of these seedlings were obtained from the USDA-ARS, Agriculture Canada, North Dakota State University, and Texas A&M University. Another 893 clones were in 12-hill, preliminary, and intermediate stages of selection. At harvest, 229 were saved for further observation. Forty-three advanced selections were saved and will be increased in 2008. Another 262 selections and cultivars were maintained for germplasm development, breeding, other experimental purposes, or seed increases for other programs.

Field trials conducted in 2007 included: Preliminary Trial, Intermediate Yield Trial, Advanced Yield Trial, Southwestern Regional Trial, Western Regional Russet/Processing Trial, Western Regional Red Trial, Western Regional Specialty Trial, San Luis Valley Chipping Study, and Western Regional Chipping Trial. All trials are grown under "low input" conditions, primarily for reduced nitrogen and fungicide. Tables 3-11 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 2007.

A total of 160 samples were evaluated for two or more of the following postharvest characteristics: blackspot susceptibility, storage weight loss, dormancy, enzymatic browning, specific gravity, french fry color, french fry texture, and chip color. Appendix 2 lists the procedures used for the postharvest evaluations for the trials. Appendices 3-10 present additional information regarding the frequency distribution for the postharvest testing results for all selections and named cultivars included in the trials. Appendices 3-10 are useful in understanding how a given selection compares with the population of clones being evaluated.

Advanced selections evaluated in the Southwest Regional Trials, Western Regional Trials, or by producers in 2007, included 8 russets (AC96052-1RU, CO94035-15, CO95172-3RU, CO97087-2RU, CO97138-3RU, CO97138-7RU, CO98067-7RU, and CO98368-2RU), 4 reds (CO98012-5R, CO99076-6R, CO99256-3R, and CO99256-2R), 5 chippers (AC97097-14W, AC99213-8W, CO96141-4W, CO97043-14W, and CO97065-7W), and 13 specialties (AC97521-1R/Y, AC99329-7PW/Y, AC99330-1P/Y, CO97215-2P/P, CO97222-1R/R, CO97226-2R/R, CO97227-2P/PW, CO97232-1R/Y, CO97232-2R/Y, CO97233-3R/Y, CO99045-1W/Y, CO99338-3RU/Y, and VC1009-W/Y).

Advanced selections discarded from further evaluation were CO97138-3RU, CO97138-7RU, and AC97097-14W.

Two cultivars were named in 2007 including Canela Russet (AC92009-4RU) and Rio Colorado (NDC5281-2R). Canela Russet is a fresh market selection with a medium-high total yield and excellent tuber type. It has a low level of external and internal grade defects. Tubers have a long dormancy minimizing the need for sprout inhibition in storage. Rio Colorado is an early maturing red developed for the B sized market. Rio Colorado has excellent tuber color and color retention in storage compared with many popular reds in the marketplace. Tubers have good storability with minimal external and internal grade defects.

PVP was granted for Keystone Russet and Silverton Russet. PVP is pending for Colorado Rose, Rio Grande Russet, Mountain Rose, Purple Majesty, Canela Russet, and Rio Colorado.

Table 12 summarizes the performance of advanced selections that will be evaluated by growers in 2008. Figure 4 includes photographs of these selections.

Collaborative Studies

The following collaborative studies were conducted in 2007:

- Several advanced selections were evaluated for disease symptom expression screening trials in Colorado. These trials were conducted in cooperation with Rob Davidson, Andrew Houser, Kent Sather, and Rick Haslar. Included were bacterial ring rot (23 entries), potato leafroll virus (19 entries), PVY (21 entries), and powdery scab (17 entries) in Colorado.
- Five 5th year selections were screened for late blight resistance by Oregon State University in 2007. Additionally, all of the Southwestern Regional Trial entries were also evaluated by Oregon State (Table 14).
- Several advanced selections were distributed to state/USDA-ARS collaborators in Idaho, Michigan, Oregon, Washington, and Wisconsin for additional disease evaluations. These selections were screened for one or more of the following diseases: late blight, early blight, scab (common and powdery), PVY, and *Verticillium* wilt.. In addition, selections were provided to the National Trials for late blight and scab (powdery and common) screening.
- Twenty-four advanced selections were evaluated in cultural management trials in collaboration with Samuel Essah.
- Thirty-six selections 2007 are being screened for antioxidant activity and vitamin C in cooperation with Cecil Stushnoff.
- A study was continued with Jorge Delgado, USDA-ARS, to examine the mineral element content of several advanced selections. Tubers will be analyzed for macro- and micro-nutrients to determine how this relates to nutrient-use efficiency. This may also have some bearing on human mineral nutrition.

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

Year	Comments
1	Select parents for crossing and true seed production in the greenhouse.
2	Produce seedling tubers from true seed in the greenhouse.
3	70,000-80,000 seedling tubers planted in the field as single hills. Several thousand tubers are obtained from other breeding programs. Initial selection of this material takes place at harvest. First cycle of field selection.
4	Twelve-hills of each single-hill selection are planted. Second cycle of field selection.
5	Preliminary Selections 1 (P1). Third cycle of field selection (48 plant tuber-unit seed increase). Initial evaluations for chipping qualities (chip color after various storage regimes and specific gravity) are conducted this year and subsequently.
6	Preliminary Selections 2 (P2). Fourth cycle of field selection (96 plant tuber-unit seed increase). Initial evaluations to characterize selections for blackspot bruise potential, storage weight loss, dormancy, and enzymatic browning. Initial evaluations for french fry potential (french fry color and specific gravity) are conducted this year and subsequently. Evaluations for chipping qualities are continued.
7	Intermediate Selections. Fifth cycle of field selection. Initial data collected on yield, grade, and growth characteristics. Plant a 144 plant tuber-unit seed increase and a 2 rep x 25 plants intermediate yield trial (IYT).
8-9, 14+	Advanced Selections: Includes selections that have advanced from the IYT. Additionally selections are included that have graduated from the Southwest Regional and Western Regional Trials. The advanced yield trials for reds, specialty types, and chippers are planted with entries in the Western Regional Red, Specialty and Chip Trials. Selections are in the 6th-7th and 12+ cycles of field selection. All advanced yield trials (AYT) have 4 reps x 25 plants. Sixth- and seventh- year field selections respectively have a 400/1,600 plant tuber-unit seed increase. Selections in the sixth cycle of selection are indexed for viruses and cleanup/micropropagation is initiated. Testing for ring rot and PLRV reaction is also initiated at this stage and continues as needed. Selections in the 7th cycle of field selection are entered into cultural management trials and postharvest disease reaction (dry rot and soft rot) evaluations.
10	All 8th year selections have a 1/2 acre tuber-unit seed increase planted. These selections are entered in the Southwestern Regional Trials (4 locations - CO, TX, two in CA). Cultural management trials and postharvest disease reaction evaluations continue as needed.
11-13	All 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. Colorado fall potatoes: Production of primary potato cultivars, 1983-1993¹

Cultivar	%/Acreage	Year										
		1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Centennial Russet	%	62.7	68.0	66.9	66.0	67.3	68.8	55.3	61.2	47.5	44.4	38.3
	Acreage	29,469	36,380	37,799	37,620	41,053	41,280	34,286	40,086	32,300	29,304	27,768
Red McClure	%	3.7	1.6	1.9	1.0	1.0	--	--	--	--	--	--
	Acreage	1,739	856	1,074	570	610	--	--	--	--	--	--
Russet Burbank	%	23.9	22.9	24.3	23.7	21.7	16.0	13.2	7.1	8.3	8.7	--
	Acreage	11,233	12,252	13,730	13,509	13,237	9,600	8,184	4,651	5,644	5,742	--
Russet Norkotah	%	--	--	--	--	--	2.2	9.9	14.0	20.1	26.1	23.5
	Acreage	--	--	--	--	--	1,320	6,138	9,170	13,668	17,226	17,038
Russet Nugget	%	--	--	--	--	--	--	--	--	9.6	10.1	13.7
	Acreage	--	--	--	--	--	--	--	--	6,528	6,666	9,933
Sangre	%	5.7	3.1	5.1	7.2	6.3	6.3	7.9	7.6	--	5.9	7.5
	Acreage	2,679	1,659	2,882	4,104	3,843	3,780	4,898	4,978	--	3,894	5,438
Total Fall Acreage Planted		47,000	53,500	56,500	57,000	61,000	60,000	62,000	65,000	68,000	66,000	72,500

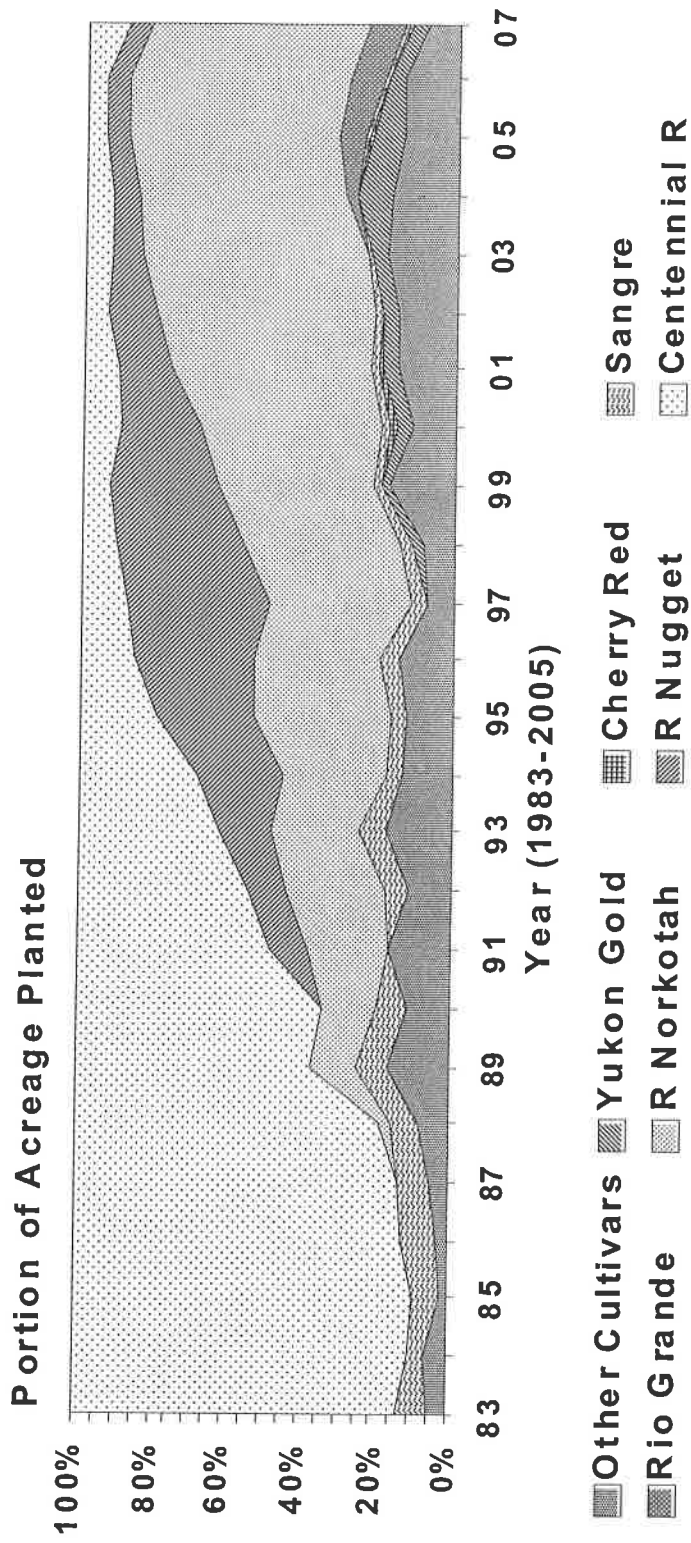
¹Data provided by the Colorado Agricultural Statistics Service.

Table 2B. Colorado fall potatoes: Production of primary potato cultivars, 1994-2007¹.

Cultivar	%/Acreage	Year													
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Centennial Russet	%	30.3	20.5	15.0	12.3	9.3	7.6	9.9	9.6	6.5	6.6	7.1	4.6	5.5	9.0
	Acreage	22,422	15,785	11,700	9,471	7,049	5,687	7,484	6,538	4,654	4,376	4,615	2,677	3,294	5,328
Cherry Red	%	---	---	---	---	---	---	2.3	1.4	0.8	0.3	0.4	0.8	0.3	0.8
	Acreage	---	---	---	---	---	---	1,739	953	5,728	199	260	4,656	180	474
Chipeta	%	---	---	---	---	---	---	---	0.7	0.3	0.7	0.5	0.1	0.6	0.2
	Acreage	---	---	---	---	---	---	---	477	215	464	325	58	359	118
Durango Red	%	---	---	---	---	---	---	---	---	---	1.2	0.6	0.2	0.2	0.5
	Acreage	---	---	---	---	---	---	---	---	---	796	390	116	120	296
Keystone Russet	%	---	---	---	---	---	---	---	---	---	1.0	1.1	0.7	---	---
	Acreage	---	---	---	---	---	---	---	---	---	663	715	407	---	---
Purple Majesty	%	---	---	---	---	---	---	---	---	---	---	---	---	0.3	0.3
	Acreage	---	---	---	---	---	---	---	---	---	---	---	---	180	178
Rio Grande Russet	%	---	---	---	---	---	---	---	---	---	---	3.4	7.7	9.2	8.0
	Acreage	---	---	---	---	---	---	---	---	---	---	2,210	4,481	5,511	4,736
Russet Norkotah	%	26.6	36.2	35.6	37.6	41.6	42.0	49.3	53.8	59.1	60.7	57.6	56.1	60.3	50.0
	Acreage	19,684	27,874	27,768	28,952	31,533	32,424	37,271	36,638	42,316	40,244	37,440	32,650	36,120	29,600
Russet Nugget	%	23.1	27.0	34.0	38.8	35.1	29.0	21.4	13.8	12.7	9.0	7.8	6.4	5.9	5.6
	Acreage	17,094	20,790	26,520	29,876	26,606	22,388	16,178	9,398	9,093	5,967	5,070	3,725	3,534	3,315
Sangre	%	3.8	3.8	4.4	4.4	2.7	2.5	1.8	2.1	2.0	0.8	0.3	0.8	0.6	0.9
	Acreage	2,812	2,926	3,432	3,388	2,047	1,930	1,361	1,430	1,432	530	195	466	359	533
Silverton Russet	%	---	---	---	---	---	---	0.5	1.7	1.9	2.0	0.5	0.7	---	---
	Acreage	---	---	---	---	---	---	378	1,158	1,360	1,326	325	407	---	---
Yukon Gold	%	---	---	---	---	3.4	1.4	3.7	4.0	3.6	4.1	9.0	8.0	4.5	3.8
	Acreage	---	---	---	---	2,577	1,081	2,797	2,724	2,578	2,718	5,850	4,656	2,696	2,250
Total Fall Acreage Planted		74,000	77,000	78,000	77,000	75,800	77,200	75,600	68,100	71,600	66,300	65,000	58,200	59,900	59,200

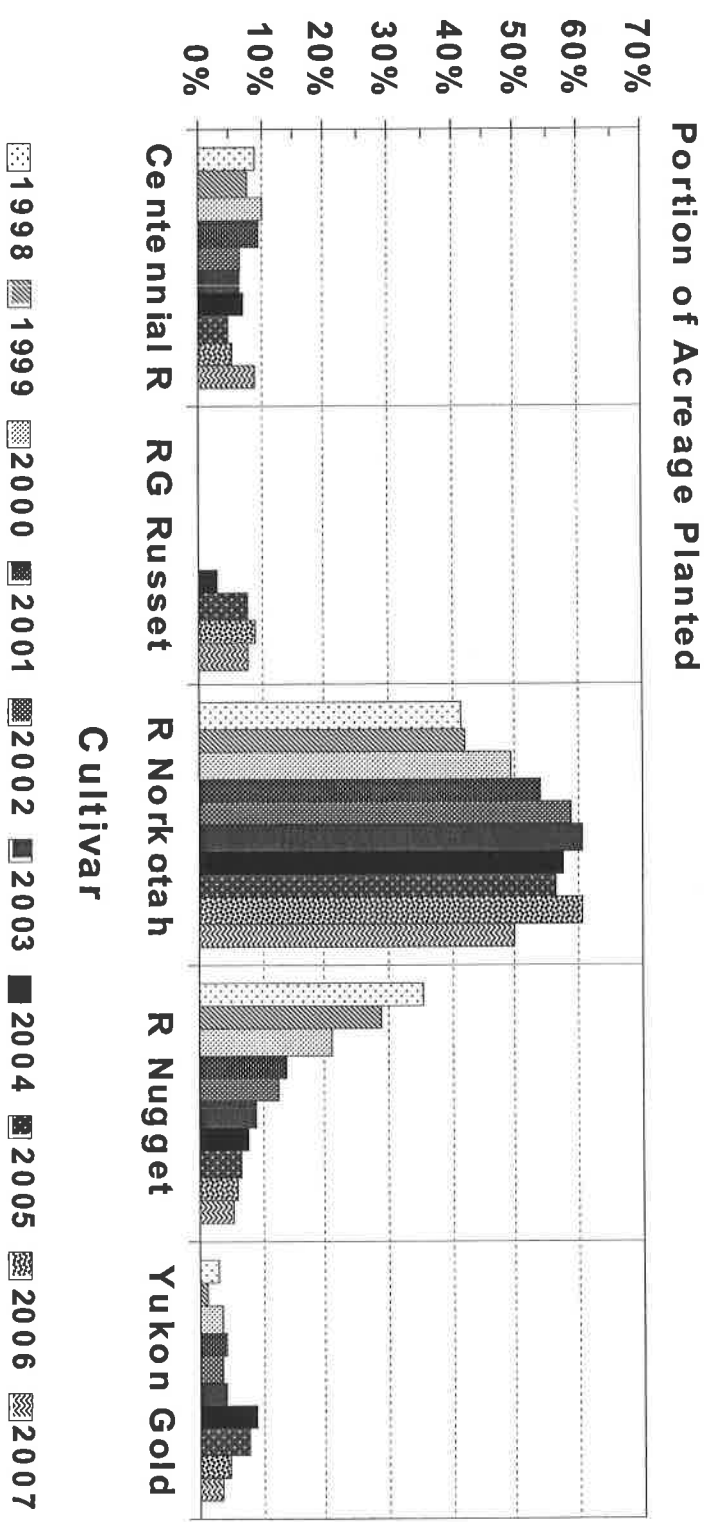
¹Data provided by the Colorado Agricultural Statistics Service. --- indicates that percentage is very minor or not available.

**Figure 1. Primary SLV Potato Cultivars Planted
1983-2007**



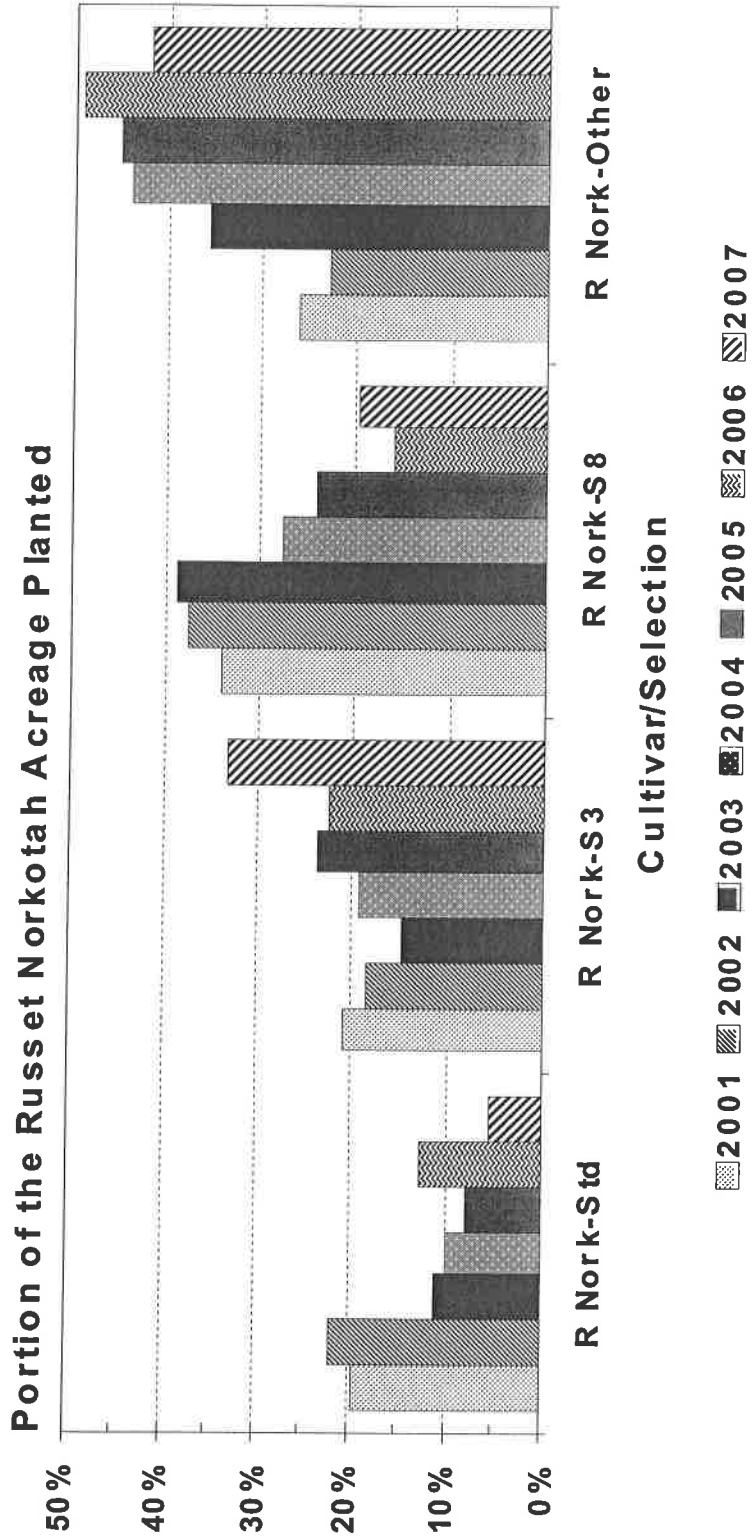
Data Source: Colorado Agricultural Statistics Service

Figure 2. Primary SLV Potato Cultivars 1998-2007 Comparison



Data Source: Colorado Agricultural Statistics Service

**Figure 3. Colorado Russet Norkotah
Acreage Breakdown (2001-2007)**



Data Source: Colorado Agricultural Statistics Service

Table 3A. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Preliminary Trial entries - 2007.

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	2.1	155	4.6
AC01050-4RU	5.0	4.0	4.5	5.1	106	3.8
CO94035-15RU	5.0	5.0	5.0	3.1	99	4.4
CO02037-1R	5.0	4.3	4.7	2.8	106	4.4
CO02098-3RU	5.0	4.6	4.8	2.2	85	3.4
TC02072-3P/P	---	---	---	2.8	113	---
All Blue	---	---	---	1.3	119	---
Centennial Russet	5.0	5.0	5.0	4.9	97	4.0
Rio Grande Russet	5.0	5.0	5.0	3.3	120	3.6
Russet Burbank	5.0	5.0	5.0	2.0	168	4.2
Russet Norkotah-S3	4.7	4.5	4.6	2.1	123	3.8
Russet Nugget	5.0	5.0	5.0	2.5	102	4.2
Sangre-S10	4.6	4.9	4.8	1.6	126	4.5

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

² Tubers were stored at 45F for 115 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 3B. Specific gravity, french fry color, and texture for Preliminary Trial clones - 2007

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	1.092	3	3	4	4
AC01050-4RU	1.079	2	2	4	4
CO94035-15RU	1.078	2	4	2	3
CO02037-1R	1.073	0	3	3	2
CO02098-3RU	1.084	0	2	3	4
TC02072-3P/P	1.082	---	---	3	4
All Blue	1.071	---	---	3	3
Centennial Russet	1.081	4	4	3	3
Rio Grande Russet	1.078	3	3	2	2
Russet Burbank	1.075	2	2	3	2
Russet Norkotah-S3	1.081	2	2	3	3
Russet Nugget	1.085	1	1	4	5
Sangre-S10	1.072	3	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 4A. Yield, grade and tuber shape for Intermediate Yield Trial entries - 2007.

Clone	Yield (Cwt/A)						Tuber ¹ Shape
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
CO01074-4RU	304	246	81	205	41	50	Ob
CO01430-1RU	310	256	83	222	34	45	Ob
Russet Norkotah	363	300	82	214	86	51	L
Russet Nugget	481	386	80	334	51	93	Ob
Mean	365	297	82	244	53	60	---
LSD ² (0.05)	104	97	10	77	37	32	---

¹Tuber shape: Ob=oblong; L=long .

²LSD=least significant difference.

Table 4B. Grade defects for Intermediate Yield Trial entries - 2007.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
CO01074-4RU	2.6	MS*	0.7
CO01430-1RU	3.0	MS*	4.4
Russet Norkotah	3.1	MS*	0.6
Russet Nugget	0.4	MS*	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 Yield Trial entries - 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
CO01074-4RU	100	3.5	3.5	3.7	3.0	3.0	2.0
CO01430-1RU	100	3.5	3.0	3.2	2.5	3.0	1.0
Russet Norkotah	100	3.5	3.5	4.5	3.0	3.0	1.5
Russet Nugget	100	3.0	4.0	3.2	4.5	3.0	4.0
Mean	100	3.4	3.5	3.6	3.3	3.0	2.1
LSD ⁶ (0.05)	NS	2.2	1.8	2.4	1.3	NS	1.1

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 4D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Intermediate Yield Trial entries - 2007.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
CO01074-4RU	4.4	4.5	4.5	3.1	79	3.2
CO01430-1RU	4.8	4.7	4.8	3.2	87	3.8
Russet Norkotah	4.6	4.7	4.7	3.1	108	4.0
Russet Nugget	5.0	4.7	4.9	2.2	108	4.6

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

²Tubers were stored at 45F for 115 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 Yield Trial clones - 2007.

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
		CO01074-4RU	1.074	1	1
CO01430-1RU	1.076	0	1	4	3
Russet Norkotah	1.081	1	2	2	2
Russet Nugget	1.099	1	1	5	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 5A. Yield, grade and tuber shape for Advanced Yield Trial entries - 2007.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1				<4 oz	
		Total	%	4-10 oz	>10 oz		
AC97306-1RU	309	256	83	198	58	51	L
AC99178-2RU	400	293	72	263	30	87	Ob
AC99375-1RU	496	404	82	326	79	86	Ob
AC00033-2RU	366	279	77	243	36	79	L
AC00322-7RU	417	271	65	255	16	140	Ob
CO99028-2RU	284	213	75	203	10	70	L
CO99053-3RU	456	415	91	220	194	22	Ob
CO99053-4RU	320	269	84	208	60	47	L
CO99100-1RU	338	272	81	222	50	35	L
VC1115-1RU/Y	323	193	60	188	5	123	Ov
Russet Norkotah	354	288	81	221	67	55	L
Russet Nugget	443	353	80	297	56	88	Ob
Mean	375	292	77	237	55	74	----
LSD ² (0.05)	63	70	8	53	32	24	----

¹Tuber shape: Ob=oblong; L=long.

²LSD=least significant difference.

Table 5B. Grade defects for Advanced Yield Trial entries - 2007.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC97306-1RU	0.5	MS*	0.0
AC99178-2RU	4.8	SG, GC*	0.0
AC99375-1RU	1.1	MS*, GR*	0.0
AC00033-2RU	1.9	MS*, GR*	2.2
AC00322-7RU	1.4	MS*, GR	0.0
CO99028-2RU	0.3	MS*	0.0
CO99053-3RU	4.2	MS*, GR	0.0
CO99053-4RU	1.3	MS, GC*,	0.0
CO99100-1RU	9.1	MS, SG, GC*, GR	0.5
VC1115-1RU/Y	2.3	MS*, GC,	0.0
Russet Norkotah	3.1	MS*, SG, GC, GR	1.1
Russet Nugget	0.5	MS*, SG*	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 5C. Growth characteristics of Advanced Yield Trial entries- 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC97306-1RU	99	2.8	3.0	3.6	3.3	3.0	3.0
AC99178-2RU	98	3.3	3.5	3.9	3.3	3.0	2.0
AC99375-1RU	99	3.3	4.0	4.5	4.3	3.0	3.0
AC00033-2RU	100	3.0	3.0	4.0	3.5	3.0	2.8
AC00322-7RU	100	3.3	2.0	4.0	3.5	2.8	3.3
CO99028-2RU	100	3.3	3.0	3.6	2.5	2.0	1.0
CO99053-3RU	99	3.0	3.3	4.7	4.3	3.8	3.5
CO99053-4RU	99	3.3	3.0	4.3	2.8	3.0	1.3
CO99100-1RU	99	3.0	3.8	3.7	2.3	2.0	1.0
VC1115-1RU/Y	100	3.0	3.3	4.7	2.3	2.8	1.0
Russet Norkotah	100	3.5	2.5	4.9	3.0	2.5	1.0
Russet Nugget	100	3.0	4.0	4.2	4.5	3.5	4.0
Mean	99	3.1	3.1	4.2	3.2	2.9	2.2
LSD ⁶ (0.05)	2	0.8	0.6	0.8	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 5D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced Yield Trial entries - 2007.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AC97306-1RU	4.7	2.5	3.6	2.4	157	2.0
AC99178-2RU	5.0	5.0	5.0	4.7	94	3.4
AC99375-1RU	4.4	4.4	4.4	2.8	87	4.0
AC00033-2RU	4.9	4.8	4.9	2.5	108	4.8
AC00322-7RU	4.8	4.9	4.9	3.2	79	4.2
CO99028-2RU	5.0	4.6	4.8	5.3	94	4.4
CO99053-3RU	5.0	4.3	4.7	2.5	87	4.4
CO99053-4RU	5.0	4.8	4.9	3.5	87	4.4
CO99100-1RU	4.7	5.0	4.9	4.0	73	3.6
VC1115-1RU/Y	5.0	5.0	5.0	6.0	101	4.8
Russet Norkotah	4.6	4.6	4.6	3.1	108	4.2
Russet Nugget	4.9	4.5	4.7	2.3	101	4.2

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

²Tubers were stored at 45F for 115 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 - 2007.

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
AC97306-1RU	1.103	1	1	4	5
AC99178-2RU	1.086	2	3	2	2
AC99375-1RU	1.100	1	1	3	3
AC00033-2RU	1.092	0	0	3	3
AC00322-7RU	1.082	2	2	2	3
CO99028-2RU	1.085	2	3	3	3
CO99053-3RU	1.091	1	2	4	4
CO99053-4RU	1.084	1	1	4	4
CO99100-1RU	1.086	0	2	3	3
VC1115-1RU/Y	1.072	0	2	2	2
Russet Norkotah	1.084	2	2	3	3
Russet Nugget	1.098	1	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 6A . Yield, grade and tuber shape for Southwest Regional Trial entries - 2007.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AC99213-8W	455	338	74	300	38	116	R
AC99329-7PW/Y	463	349	75	306	43	112	R
AC99330-1P/Y	490	290	58	278	11	200	R
AOTX96265-2RU	374	354	95	213	141	15	Ob
AOTX98137-1RU	317	276	87	220	56	31	L
ATTX98453-6R	358	284	79	234	51	72	R
ATTX98500-3PW/Y	488	352	72	279	73	126	L
ATX97147-4RU	463	417	90	287	130	35	L
ATX97232-1RU	335	232	69	219	13	100	Ob
CO98067-7RU	403	337	84	283	54	61	L
CO98368-2RU	351	241	69	232	10	106	L
CO99045-1W/Y	544	462	85	365	97	71	L
CO99076-6R	393	289	73	267	22	90	R
CO99256-2R	422	235	56	226	9	186	Ov
CO99256-3R	404	211	52	202	9	184	Ov
CO99338-3RU/Y	357	196	55	189	7	161	Ov
COTX94218-1R	435	291	66	240	51	140	R
COTX00104-7R	436	335	76	164	170	26	Ov
NDTX4784-7R	384	295	77	257	38	83	R
TX1475-3W	394	329	83	228	101	58	R
All Blue	464	217	47	208	8	246	Ob
Atlantic	425	349	82	261	88	73	Ov
Chipeta	521	467	89	313	154	39	Ov
Norland (Dark Red)	434	337	77	262	75	90	Ov
Red LaSoda	533	449	84	337	112	73	Ov
Russet Norkotah	365	313	86	230	83	43	L
Russet Norkotah-S3	498	461	93	250	211	23	L
Russet Norkotah-278	406	366	90	185	181	22	L
Russet Nugget	432	350	81	286	63	73	Ob
Sangre-S10	491	438	89	326	111	50	Ov
Yukon Gold	379	326	86	237	89	46	Ov
Mean	426	329	76	254	74	89	---
LSD ² (0.05)	59	66	8	50	47	27	---

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

²LSD=least significant difference.

Table 6B. Grade defects for Southwest Regional Trial entries - 2007.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC99213-8W	0.3	MS*	0.0
AC99329-7PW/Y	0.5	MS, GR*	0.0
AC99330-1P/Y	0.0		0.0
AOTX96265-2RU	1.4	MS*, GR	1.0
AOTX98137-1RU	3.2	MS*	0.3
ATTX98453-6R	0.6	GC*	0.0
ATTX98500-3PW/Y	2.1	MS*, GR	0.0
ATX97147-4RU	2.3	MS*, GC*, GR	0.0
ATX97232-1RU	1.0	MS*, GR*	0.0
CO98067-7RU	1.4	MS*	0.0
CO98368-2RU	1.1	MS*, GR	0.0
CO99045-1W/Y	2.0	MS*, GR	0.0
CO99076-6R	3.6	MS, GC*, GR	0.0
CO99256-2R	0.3	GR*	0.0
CO99256-3R	2.2	MS*, GR	0.0
CO99338-3RU/Y	0.0		0.0
COTX94218-1R	1.0	MS, GC*	0.0
COTX00104-7R	17.3	MS, GC*	0.0
NDTX4784-7R	1.4	MS, GC*	0.0
TX1475-3W	1.8	MS*, GC*, GR	7.1
All Blue	0.3	MS*	0.0
Atlantic	0.6	GC*, GR*	0.7
Chipeta	2.9	GC*, GR	0.3
Norland (Dark Red)	1.6	MS*, GC, GR	0.0
Red LaSoda	2.1	MS, GC*, GR	7.6
Russet Norkotah	2.7	MS*, GR	1.0
Russet Norkotah-S3	2.7	MS*, SG, GR	2.1
Russet Norkotah-278	4.5	MS*	0.0
Russet Nugget	2.3	MS*, GR	0.0
Sangre-S10	0.6	GC*, GR	0.9
Yukon Gold	1.9	MS*, GC*	0.0

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

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

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

Table 6C. Growth characteristics of Southwest Regional Trial entries - 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC99213-8W	100	3.3	3.5	6.0	4.3	3.0	3.0
AC99329-7PW/Y	99	3.0	3.8	4.6	4.3	3.5	2.8
AC99330-1P/Y	99	3.3	3.5	5.0	3.5	2.0	3.0
AOTX96265-2RU	100	3.0	3.3	4.1	3.5	3.0	3.0
AOTX98137-1RU	100	3.0	2.8	3.9	2.3	2.8	1.0
ATX98453-6R	100	3.3	2.0	2.7	1.8	3.0	1.3
ATX98500-3PW/Y	96	3.3	4.0	4.0	3.8	4.3	3.0
ATX97147-4RU	98	2.5	3.0	3.5	4.0	3.0	3.0
ATX97232-1RU	98	3.0	3.0	4.2	2.8	2.5	2.0
CO98067-7RU	99	3.0	2.8	3.6	3.0	3.0	2.0
CO98368-2RU	99	3.0	3.5	4.2	3.0	2.0	1.8
CO99045-1W/Y	100	3.0	3.3	4.1	4.0	3.0	3.3
CO99076-6R	99	3.0	3.5	4.8	3.3	2.5	1.0
CO99256-2R	99	2.8	2.8	4.1	3.8	3.3	2.5
CO99256-3R	99	3.8	3.0	4.4	3.0	3.3	1.5
CO99338-3RU/Y	99	3.3	3.0	4.7	2.8	2.5	1.5
COTX94218-1R	99	3.0	2.3	5.5	3.8	3.0	3.3
COTX00104-7R	95	3.0	2.5	3.5	2.8	2.8	2.0
NDTX4784-7R	94	3.0	2.8	3.3	2.5	3.0	1.3
TX1475-3W	97	2.8	3.3	4.1	3.0	2.5	1.8
All Blue	100	3.0	3.5	5.2	4.8	2.8	3.0
Atlantic	99	3.3	3.3	4.9	3.0	3.0	3.0
Chipeta	100	3.3	3.8	4.3	4.5	3.0	3.3
Norland (Dark Red)	100	3.3	3.5	4.2	2.5	2.0	1.8

Table 6C continued on next page

Table 6C (cont'd). Growth characteristics of Southwest Regional Trial entries - 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
Red LaSoda	98	3.5	3.5	4.7	3.8	3.0	2.0
Russet Norkotah	100	3.0	3.0	4.6	2.8	3.0	1.0
Russet Norkotah-S3	99	2.8	3.3	4.5	4.3	3.0	3.0
Russet Norkotah-278	99	2.5	3.3	4.1	3.3	3.0	1.8
Russet Nugget	100	3.3	3.8	4.5	5.0	3.0	3.8
Sangre-S10	100	3.0	3.0	4.2	4.5	3.0	3.0
Yukon Gold	98	3.0	3.8	3.8	3.0	2.8	1.3
Mean	99	3.1	3.2	4.3	3.4	2.9	2.3
LSD6 (0.05)	3	0.7	0.6	0.7	0.7	0.5	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 6D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Trial entries - 2007.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AC99213-8W	4.8	4.2	4.5	2.4	79	2.8
AC99329-7PW/Y	4.2	3.0	3.6	4.6	52	3.0
AC99330-1P/Y	4.6	4.7	4.7	3.2	66	2.6
AOTX96265-2RU	4.9	3.5	4.2	3.4	79	2.4
AOTX98137-1RU	5.0	4.4	4.7	2.6	108	3.0
ATTX98453-6R	4.8	4.6	4.7	4.5	136	3.8
ATTX98500-3PW/Y	4.6	3.2	3.9	2.1	94	3.2
ATX97147-4RU	4.9	3.9	4.4	3.7	108	4.0
ATX97232-1RU	5.0	4.9	5.0	2.7	108	4.4
CO98067-7RU	5.0	4.8	4.9	3.8	87	4.4
CO98368-2RU	4.9	4.5	4.7	2.9	108	3.8
CO99045-1W/Y	4.5	4.1	4.3	2.6	87	4.0
CO99076-6R	4.5	3.6	4.1	7.4	79	1.0
CO99256-2R	3.7	3.3	3.5	5.9	94	2.4
CO99256-3R	5.0	4.0	4.5	5.6	87	2.8
CO99338-3RU/Y	4.5	3.7	4.1	2.1	66	3.4
COTX94218-1R	4.6	3.3	4.0	4.1	129	3.6
COTX00104-7R	5.0	4.9	5.0	3.1	79	3.0
NDTX4784-7R	2.5	2.1	2.3	6.6	79	2.2
TX1475-3W	4.4	2.7	3.6	3.9	136	2.6
All Blue	---	---	---	1.8	101	---
Atlantic	3.3	1.9	2.6	3.8	87	4.6
Chipeta	4.5	3.2	3.9	2.5	122	4.2
Norland (Dark Red)	3.9	4.6	4.3	6.3	66	2.8
Red LaSoda	4.9	4.0	4.5	3.3	94	1.2
Russet Norkotah	4.7	3.5	4.1	3.2	108	2.8
Russet Norkotah-S3	4.7	3.7	4.2	3.6	129	3.8
Russet Norkotah-278	4.7	4.2	4.5	3.3	115	3.4

Table 6D continued on next page

Table 6D (cont'd). Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Southwest Regional Trial entries - 2006.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
Russet Nugget	4.9	4.3	4.6	2.2	94	4.0
Sangre-S10	4.0	4.2	4.1	2.4	101	3.2
Yukon Gold	4.8	4.6	4.7	1.8	108	4.4

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

²Tubers were stored at 45F for 115 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 Southwest Regional Trial entries - 2007.

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
AC99329-7PW/Y	1.094	1	2	3	3
AC99330-1P/Y	1.082	1	3	4	3
AOTX96265-2RU	1.093	0	0	4	3
AOTX98137-1RU	1.080	2	2	4	4
ATTX98453-6R	1.077	3	3	2	2
ATTX98500-3PW/Y	1.086	0	1	3	3
ATX97147-4RU	1.083	3	3	3	3
ATX97232-1RU	1.092	1	2	4	4
CO98067-7RU	1.080	1	2	3	4
CO98368-2RU	1.081	1	2	3	3
CO99045-1W/Y	1.093	2	3	2	3
CO99076-6R	1.086	1	3	2	2
CO99256-2R	1.085	1	2	3	3
CO99256-3R	1.084	0	1	3	3
CO99338-3RU/Y	1.080	2	2	2	3
COTX94218-1R	1.090	1	3	1	1
COTX00104-7R	1.065	3	4	1	1
NDTX4784-7R	1.075	3	4	1	1
All Blue	1.089	---	---	3	3
Norland (Dark Red)	1.072	2	3	2	3
Red LaSoda	1.083	2	3	2	3
Russet Norkotah	1.084	1	1	3	2
Russet Norkotah-S3	1.089	1	2	3	3
Russet Norkotah-278	1.086	1	2	3	2
Russet Nugget	1.102	1	1	5	5
Sangre-S10	1.082	3	4	2	2
Yukon Gold	1.090	2	3	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 6F. Chip color¹ after various storage regimes and specific gravity of Southwest Regional Trial entries - 2007.

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC99213-8W	1.101	1.0	2.0	1.5	1.0
TX1475-3W	1.093	4.5	4.5	3.0	3.0
Atlantic	1.102	3.5	3.5	2.5	2.5
Chipeta	1.097	4.0	4.0	2.5	2.5

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

Table 7A. Yield, grade and tuber shape for Western Regional Main Trial entries - 2007.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz		>10 oz	
A95409-1	499	468	94	309	159	20	Ob
A96104-2	505	468	93	379	89	32	Ob
AC96052-1RU	410	378	92	312	66	30	Ob
AO96141-3	455	418	92	222	196	23	L
AO96164-1	455	419	92	224	195	25	L
AOA95154-1	456	377	83	322	54	68	Ob
AOA95155-7	376	317	84	287	29	53	Ob
AOTX95265-2ARU	417	393	94	231	162	19	Ob
AOTX95265-3RU	397	370	93	200	170	17	Ob
AOTX95265-4RU	435	407	94	218	189	18	Ob
CO95172-3RU	451	379	84	303	75	69	Ob
CO97087-2RU	417	365	87	297	67	44	Ob
CO97138-3RU	380	354	93	247	107	22	L
CO97138-7RU	489	448	92	252	196	37	L
TXA549-1RU	458	385	84	283	103	61	Ob
Ranger Russet	418	380	91	271	110	33	L
Rio Grande Russet	510	463	91	328	135	46	Ob
Russet Burbank	506	393	77	330	63	107	L
Russet Norkotah	374	325	87	186	139	32	L
Russet Nugget	468	399	85	302	97	63	Ob
Shepody	403	275	68	224	51	104	L
Mean	442	390	88	273	117	44	----
LSD ² (0.05)	51	57	6	52	45	20	----

¹Tuber shape: Ob=oblong; L=long.

²LSD=least significant difference.

Table 7B. Grade defects for Western Regional Main Trial entries - 2007.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
A95409-1	2.0	MS*, SG, GC, GR*	0.0
A96104-2	1.0	MS*, GC, GR	1.0
AC96052-1RU	0.6	MS*, GR	0.0
AO96141-3	3.0	MS*, GC, GR	3.5
AO96164-1	2.5	MS*, GC, GR	0.0
AOA95154-1	2.5	MS*, GR*	0.0
AOA95155-7	1.7	MS*	0.0
AOTX95265-2ARU	1.1	MS*	2.7
AOTX95265-3RU	2.5	MS*, GR	0.3
AOTX95265-4RU	2.4	MS*, GR	0.5
CO95172-3RU	0.7	MS*, GR	0.3
CO97087-2RU	2.1	MS*, GR*	0.0
CO97138-3RU	1.1	MS*, GC*	0.0
CO97138-7RU	0.8	MS*	0.0
TXA549-1RU	2.7	MS*, GC, GR	0.0
Ranger Russet	1.1	MS*, SG*	0.4
Rio Grande Russet	0.1	MS*	0.0
Russet Burbank	1.3	MS, SG*, GR	4.6
Russet Norkotah	4.5	MS*, GR	0.0
Russet Nugget	1.1	MS*, SG	0.0
Shepody	6.0	MS*, SG, 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 7C. Growth characteristics of Western Regional Main Trial entries - 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
A95409-1	99	3.0	3.5	3.3	3.8	3.0	3.0
A96104-2	99	3.5	3.0	3.3	4.0	3.0	3.0
AC96052-1RU	99	2.8	3.0	2.8	3.8	3.0	3.0
AO96141-3	100	3.0	3.0	3.5	4.0	3.0	3.8
AO96164-1	99	3.0	3.5	3.7	3.8	3.0	2.8
AOA95154-1	94	3.3	3.5	3.2	3.8	2.8	3.0
AOA95155-7	99	3.5	2.3	2.2	4.0	3.3	3.0
AOTX95265-2ARU	99	3.5	3.0	3.4	3.3	3.0	2.0
AOTX95265-3RU	98	3.3	3.0	3.5	3.3	3.0	2.0
AOTX95265-4RU	100	3.5	3.3	3.4	3.0	3.0	2.0
CO95172-3RU	100	3.5	3.0	4.1	4.0	3.0	3.0
CO97087-2RU	99	3.0	4.0	3.2	3.8	3.0	3.0
CO97138-3RU	97	3.0	3.5	2.8	3.5	3.0	2.0
CO97138-7RU	99	3.0	3.8	2.8	3.0	2.3	2.5
TXA549-1RU	100	3.3	4.0	4.2	3.5	2.8	2.8
Ranger Russet	98	3.0	3.0	3.9	3.8	3.0	3.0
Rio Grande Russet	99	3.0	3.5	3.6	4.5	3.0	3.0
Russet Burbank	100	3.8	4.0	4.4	4.0	3.0	3.0
Russet Norkotah	100	3.3	3.0	4.0	3.0	2.8	1.3
Russet Nugget	99	3.3	3.8	3.5	4.3	3.8	4.0
Shepody	100	3.0	3.0	3.5	3.3	3.0	2.0
Mean	99	3.2	3.3	3.4	3.7	3.0	2.7
LSD ⁶ (0.05)	3	0.6	0.5	0.9	0.6	0.4	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; NS=not significant.

Table 7D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Western Regional Main Trial entries - 2006.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
A95409-1	4.4	3.0	3.7	2.4	101	3.0
A96104-2	4.7	4.8	4.8	2.2	115	4.0
AC96052-1RU	4.8	3.1	4.0	2.6	94	3.2
AO96141-3	4.8	3.6	4.2	3.5	87	5.0
AO96164-1	4.6	3.6	4.1	2.7	94	3.8
AOA95154-1	4.7	3.4	4.1	3.3	66	4.6
AOA95155-7	5.0	4.6	4.8	3.2	101	5.0
AOTX95265-2ARU	5.0	4.5	4.8	2.9	115	3.0
AOTX95265-3RU	4.9	3.7	4.3	3.1	108	3.4
AOTX95265-4RU	4.8	3.8	4.3	2.7	108	3.6
CO95172-3RU	3.9	3.9	3.9	3.5	101	4.2
CO97087-2RU	4.6	4.2	4.4	3.3	101	4.0
CO97138-3RU	4.7	4.5	4.6	2.9	94	4.0
CO97138-7RU	5.0	4.6	4.8	2.8	122	3.6
TXA549-1RU	4.7	3.7	4.2	2.5	87	3.2
Ranger Russet	4.7	3.1	3.9	2.7	87	3.2
Rio Grande Russet	4.8	4.5	4.7	3.6	108	4.2
Russet Burbank	4.5	4.0	4.3	2.0	143	2.8
Russet Norkotah	4.4	3.8	4.1	3.1	108	3.2
Russet Nugget	4.6	3.9	4.3	2.4	101	3.8
Shepody	5.0	5.0	5.0	3.0	79	4.2

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

²Tubers were stored at 45F for 115 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 Western Regional Main Trial entries - 2007.

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
A95409-1	1.095	0	2	3	4
A96104-2	1.087	1	1	3	4
AC96052-1RU	1.095	0	1	4	4
AO96141-3	1.101	1	2	5	5
AO96164-1	1.081	1	2	3	3
AOA95154-1	1.093	0	1	4	3
AOA95155-7	1.083	0	1	3	3
AOTX95265-2ARU	1.085	1	3	4	4
AOTX95265-3RU	1.082	1	2	4	3
AOTX95265-4RU	1.082	2	2	3	3
CO95172-3RU	1.093	1	1	4	4
CO97087-2RU	1.097	0	1	4	5
CO97138-3RU	1.083	1	3	3	3
CO97138-7RU	1.072	0	2	3	3
TXA549-1RU	1.091	0	1	4	4
Ranger Russet	1.095	1	2	5	5
Rio Grande Russet	1.092	1	2	3	3
Russet Burbank	1.089	2	2	4	4
Russet Norkotah	1.081	1	2	3	4
Russet Nugget	1.099	1	2	5	5
Shepody	1.084	2	3	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 8A. Yield, grade and tuber shape for Advanced and Western Regional Red Trial entries - 2007.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
AC00271-1R	356	245	69	236	9	109	Ob
CO98012-5R	437	366	84	350	16	66	R
CO00277-2R	380	326	85	282	44	54	R
CO00278-4R	376	268	71	248	20	106	Ov
CO00291-5R	356	310	87	283	27	45	R
CO00339-4R	326	252	77	205	47	68	Ov
CO01288-2R	442	404	91	292	112	38	R
Norland (Dark Red)	372	309	83	262	47	56	Ov
Red LaSoda	537	472	88	323	149	40	Ov
Sangre-S10	503	456	90	317	139	46	Ov
Mean	408	341	83	280	61	63	----
LSD ² (0.05)	58	63	6	42	35	18	----

¹Tuber shape: Ob=Oblong; R=round; Ov=oval.

²LSD=least significant difference.

Table 8B. Grade defects for Advanced and Western Regional Red Trial entries - 2005.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC00271-1R	0.6	MS*	0.0
CO98012-5R	1.2	GC*, GR	0.0
CO00277-2R	0.0		0.0
CO00278-4R	0.5	MS, GC*	0.0
CO00291-5R	0.2	GC*	0.0
CO00339-4R	1.9	MS, GC*	0.0
CO01288-2R	0.2	MS*, GC*	0.0
Norland (Dark Red)	1.9	MS*, GC*	0.0
Red LaSoda	4.7	MS, GC*	4.8
Sangre-S10	0.5	GC*	1.3

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 Advanced and Western Regional Red Trial entries - 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC00271-1R	100	3.3	3.0	2.9	3.0	2.5	1.5
CO98012-5R	100	3.0	3.0	3.5	3.5	3.0	3.0
CO00277-2R	99	3.0	2.8	3.8	2.5	2.3	1.3
CO00278-4R	95	2.5	3.0	3.9	3.0	2.8	1.5
CO00291-5R	99	3.3	2.5	2.4	3.5	4.0	3.5
CO00339-4R	97	3.0	2.8	3.8	3.0	2.0	1.3
CO01288-2R	97	3.0	2.8	3.6	3.0	3.3	3.0
Norland (Dark Red)	95	3.0	3.0	4.7	2.3	2.0	1.0
Red LaSoda	100	3.3	3.5	3.4	3.5	3.0	2.3
Sangre-S10	98	3.3	3.3	3.6	4.0	3.0	3.0
Mean	98	3.1	3.0	3.6	3.1	2.8	2.1
LSD ⁶ (0.05)	5	0.5	0.6	0.8	0.5	0.5	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 Advanced and Western Regional Red Trial entries - 2007.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AC00271-1R	3.8	3.5	3.7	7.5	108	2.6
CO98012-5R	4.6	3.7	4.2	3.4	66	1.8
CO00277-2R	4.4	3.8	4.1	5.9	66	3.6
CO00278-4R	4.7	3.9	4.3	6.0	66	3.6
CO00291-5R	3.2	3.4	3.3	7.7	87	2.0
CO00339-4R	4.0	3.0	3.5	7.2	66	3.0
CO01288-2R	2.1	2.5	2.3	5.7	66	3.8
Norland (Dark Red)	3.8	4.0	3.9	5.2	66	4.0
Red LaSoda	3.8	4.2	4.0	3.0	108	3.2
Sangre-S10	3.7	4.0	3.9	2.3	94	3.6

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

²Tubers were stored at 45F for 115 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 Advanced and Western Regional Red Trial entries - 2007.

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
AC00271-1R	1.081	2	3	3	2
CO98012-5R	1.081	1	4	2	2
CO00277-2R	1.081	4	4	3	2
CO00278-4R	1.085	1	2	3	3
CO00291-5R	1.085	2	3	3	2
CO00339-4R	1.083	1	3	3	3
CO01288-2R	1.086	1	2	2	2
Norland (Dark Red)	1.073	1	3	3	3
Red LaSoda	1.080	2	3	3	3
Sangre-S10	1.079	3	4	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 9A. Yield, grade and tuber shape for Advanced and Western Regional Specialty Trial entries - 2007.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz			
A96510-4Y	435	407	93	210	197	23	L
AC97521-1R/Y	420	319	75	297	22	101	Ov
ATC00293 -1W/Y	505	449	89	336	113	47	R
ATTX961014-1R/Y	349	275	78	252	22	75	Ov
ATTX98500-2P/Y	479	407	85	305	102	73	R
CO97215-2P/P	373	279	75	221	58	83	Ov
CO97222-1R/R	359	218	61	201	18	132	Ov
CO97226-2R/R	338	93	27	91	1	245	R
CO97227-2P/PW	385	79	21	79	0	305	Ov
CO97232-1R/Y	352	234	66	224	10	112	Ov
CO97232-2R/Y	425	369	87	283	86	54	Ov
CO97233-3R/Y	409	311	76	269	42	81	L
CO00379-2R/Y	318	221	69	208	13	90	Ob
CO00405-1R	290	251	87	166	86	25	L
CO00412-5W/Y	421	283	67	255	29	134	Ov
CO00415-1R	325	287	88	237	50	13	L
CO01399-10P/Y	478	368	77	341	27	105	R
POR01PG20-12	454	323	71	290	32	127	L
POR01PG22-1	403	393	98	310	83	4	L
POR02PG5-1	554	512	92	336	176	42	R
VC1009-1W/Y	530	425	80	340	85	90	Ov
All Blue	438	245	56	240	4	193	Ov
Yukon Gold	383	348	90	234	114	32	Ov
Mean	410	308	74	249	59	95	----
LSD ² (0.05)	57	57	6	43	33	22	----

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

²LSD=least significant difference.

Table 9B. Grade defects for Advanced and Western Regional Specialty Trial entries - 200.

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
A96510-4Y	1.2	MS, GR*	0.0
AC97521-1R/Y	0.0		0.8
ATC00293 -1W/Y	1.7	MS, GC*, GR	3.7
ATTX961014-1R/Y	0.0		0.0
ATTX98500-2P/Y	0.0		0.0
CO97215-2P/P	3.1	MS, SG, GC*,	0.0
CO97222-1R/R	2.3	MS, GC*	0.0
CO97226-2R/R	0.2	MS*	0.0
CO97227-2P/PW	0.2	MS*, GC*	0.0
CO97232-1R/Y	0.8	MS*	0.0
CO97232-2R/Y	0.6	MS*, GC*	0.9
CO97233-3R/Y	4.1	MS, GC*, GR	1.1
CO00379-2R/Y	2.1	MS*	0.0
CO00405-1R	4.7	MS*	0.0
CO00412-5W/Y	0.7	MS*	0.4
CO00415-1R	7.8	MS*	0.0
CO01399-10P/Y	1.0	MS*, GC	0.0
POR01PG20-12	1.0	MS, GR*	0.0
POR01PG22-1	1.4	MS*	0.0
POR02PG5-1	0.0		0.0
VC1009-1W/Y	3.0	MS, SG, GC*, GR	0.9
All Blue	0.0		0.0
Yukon Gold	1.0	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 9C. Growth characteristics of Advanced and Western Regional Specialty Trial entries - 2007.

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/ Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
A96510-4Y	99	3.3	2.8	2.6	4.3	3.0	4.0
AC97521-1R/Y	96	3.0	3.3	4.0	3.8	3.0	2.5
ATC00293 -1W/Y	99	3.3	3.0	3.0	4.0	3.0	3.0
ATTX961014-1R/Y	97	2.8	3.0	3.6	2.5	2.0	1.0
ATTX98500-2P/Y	99	3.0	3.3	3.4	4.8	3.5	3.5
CO97215-2P/P	96	2.8	3.0	3.3	3.8	2.8	3.0
CO97222-1R/R	97	2.8	3.0	3.5	3.0	2.8	2.0
CO97226-2R/R	99	3.3	3.0	3.6	3.0	3.0	2.0
CO97227-2P/PW	100	3.3	3.3	5.0	3.8	3.0	2.8
CO97232-1R/Y	90	2.8	3.0	3.1	2.3	3.3	1.5
CO97232-2R/Y	99	3.0	3.3	3.7	2.5	2.0	2.0
CO97233-3R/Y	95	3.0	3.3	3.7	3.0	2.0	2.8
CO00379-2R/Y	100	3.0	3.3	3.4	2.3	2.3	1.5
CO00405-1R	99	3.3	2.0	3.9	1.8	1.3	1.0
CO00412-5W/Y	100	3.3	3.5	4.6	3.8	3.0	2.5
CO00415-1R	100	3.5	2.5	4.3	2.3	2.0	1.0
CO01399-10P/Y	100	3.0	2.5	4.0	4.0	3.0	3.0
POR01PG20-12	100	3.3	2.8	3.5	4.0	3.0	3.3
POR01PG22-1	100	3.0	2.5	3.8	4.5	3.3	3.0
POR02PG5-1	96	3.0	3.5	3.3	4.5	3.3	4.0
VC1009-1W/Y	99	3.3	4.0	3.9	4.5	3.0	3.3
All Blue	100	3.0	3.3	4.9	4.5	3.0	3.0
Yukon Gold	100	3.3	4.0	3.2	3.0	3.0	1.5
Mean	98	3.1	3.1	3.7	3.5	2.8	2.5
LSD ⁶ (0.05)	3	0.7	0.6	0.6	0.6	0.4	0.5

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 Advanced and Western Regional Specialty Trial entries - 2007.

Clone	Blackspot Index ¹			% Weight ² Loss	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
A96510-4Y	4.6	4.5	4.6	2.6	79	5.0
AC97521-1R/Y	3.1	3.3	3.2	2.8	94	3.6
ATC00293 -1W/Y	4.2	4.1	4.2	2.2	129	4.4
ATTX961014-1R/Y	4.7	3.9	4.3	3.8	59	5.0
ATTX98500-2P/Y	4.9	3.8	4.4	3.4	59	3.2
CO97215-2P/P	---	---	---	5.2	87	---
CO97222-1R/R	---	---	---	3.9	94	---
CO97226-2R/R	---	---	---	4.8	79	---
CO97227-2P/PW	---	---	---	4.0	87	---
CO97232-1R/Y	5.0	3.3	4.2	5.4	66	3.6
CO97232-2R/Y	5.0	4.9	5.0	5.6	79	4.0
CO97233-3R/Y	5.0	4.0	4.5	2.6	87	3.6
CO00379-2R/Y	5.0	3.5	4.3	3.4	66	3.4
CO00405-1R	5.0	5.0	5.0	4.0	87	3.6
CO00412-5W/Y	4.5	3.7	4.1	2.6	87	3.2
CO00415-1R	5.0	4.9	5.0	2.8	94	4.6
CO01399-10P/Y	4.2	4.0	4.1	2.5	94	3.2
POR01PG20-12	---	---	---	3.7	94	---
POR01PG22-1	---	---	---	2.7	115	---
POR02PG5-1	4.5	3.7	4.1	2.5	122	---
VC1009-1W/Y	4.1	4.4	4.3	2.4	108	4.2
All Blue	---	---	---	1.6	101	---
Yukon Gold	4.6	4.4	4.5	1.8	101	4.2

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

²Tubers were stored at 45F for 115 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 Advanced and Western Regional Speciality Trial entries - 2007.

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
A96510-4Y	1.089	2	3	3	4
AC97521-1R/Y	1.088	4	4	3	3
ATC00293 -1W/Y	1.083	0	1	2	2
ATTX961014-1R/Y	1.082	1	1	2	2
ATTX98500-2P/Y	1.084	0	3	3	3
CO97215-2P/P	1.089	---	---	2	2
CO97222-1R/R	1.076	---	---	2	2
CO97226-2R/R	1.080	---	---	4	4
CO97227-2P/PW	1.086	---	---	5	5
CO97232-1R/Y	1.080	0	1	4	3
CO97232-2R/Y	1.072	1	2	2	3
CO97233-3R/Y	1.081	0	1	2	2
CO00379-2R/Y	1.075	1	2	2	2
CO00405-1R	1.086	1	2	5	5
CO00412-5W/Y	1.090	1	3	3	4
CO00415-1R	1.075	2	3	4	3
CO01399-10P/Y	1.078	0	1	4	3
POR01PG20-12	1.095	---	---	3	4
POR01PG22-1	1.081	---	---	4	4
POR02PG5-1	1.095	---	---	4	4
VC1009-1W/Y	1.091	1	1	3	4
All Blue	1.090	---	---	4	4
Yukon Gold	1.092	2	3	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 10A. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for San Luis Valley chipping study entries - 2007.

Clone	Blackspot Index ¹			% Weight Loss ²	Dormancy (Days) ³	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AC99213-8W	4.7	4.8	4.8	1.6	108	4.2
AC00170-2W	5.0	4.8	4.9	2.2	109	4.4
AC00232-4W	4.6	4.3	4.4	2.2	127	4.4
AC01151-5W	5.0	3.6	4.3	1.6	127	3.2
CO95051-7W	4.3	2.5	3.4	3.9	100	3.4
CO96141-4W	4.6	3.7	4.2	3.2	91	4.0
CO97043-14W	3.5	4.1	3.8	3.7	129	4.2
CO97065-7W	5.0	4.1	4.6	2.1	144	4.4
CO00188-4W	4.6	4.2	4.4	2.1	123	4.8
CO00189-2W	5.0	5.0	5.0	2.2	88	4.4
CO00197-3W	4.6	3.7	4.2	1.6	109	3.8
CO00270-7W	4.6	4.3	4.5	2.3	94	3.4
CO02024-9W	4.2	3.4	3.8	2.3	134	4.2
CO02033-1W	2.7	2.7	2.7	2.3	148	4.2
CO02033-5W	3.5	2.9	3.2	2.4	106	3.4
CO02321-4W	5.0	4.3	4.7	2.5	106	4.8
AC Glacier Chip	4.6	4.0	4.3	2.0	84	4.6
Atlantic	3.0	2.9	3.0	2.8	119	4.2
Chipeta	4.9	4.2	4.6	2.6	129	4.4

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

²Tubers were stored at 45F for 115 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 10B. Chip color¹ after various storage regimes and specific gravity of San Luis Valley chipping study entries - 2007.

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC99213-8W	1.090	2.0	2.5	1.0	2.0
AC00170-2W	1.087	3.0	2.5	1.5	1.5
AC00232-4W	1.091	3.0	3.0	1.5	2.5
AC01151-5W	1.088	4.0	4.0	1.0	2.0
AC03429-1W	1.095	3.5	4.5	1.0	2.5
AC03429-3W	1.088	5.0	5.0	2.5	3.0
AC03433-1W	1.089	2.5	2.5	1.5	1.0
CO95051-7W	1.100	3.5	4.0	2.0	1.5
CO96141-4W	1.084	4.0	4.0	2.0	2.5
CO97043-14W	1.087	3.5	4.0	2.0	1.5
CO97065-7W	1.097	3.0	4.0	1.5	1.5
CO00188-4W	1.085	2.0	2.5	1.0	1.5
CO00189-2W	1.062	2.5	3.0	1.0	2.0
CO00197-3W	1.086	3.0	3.5	1.5	2.5
CO00270-7W	1.080	2.0	1.5	1.0	1.0
CO02024-9W	1.085	3.0	4.0	1.0	1.0
CO02033-1W	1.100	3.0	3.5	1.5	1.0
CO02033-5W	1.084	4.5	4.5	2.0	1.0
CO02321-4W	1.096	3.0	2.5	1.0	1.5
CO03197-3W	1.091	3.5	3.5	2.0	2.0
CO03237-6W	1.088	2.5	4.5	2.0	2.0
CO03243-3W	1.086	2.5	2.5	1.0	1.0
CO03273-7W	1.076	3.0	4.5	2.0	1.5
CO03273-8W	1.093	3.0	4.0	1.5	2.5
CO03293-6W	1.088	3.5	3.0	2.0	1.0
CO03311-3W	1.075	4.5	4.5	2.0	1.5
AC Glacier Chip	1.095	4.0	4.5	1.5	1.5
Atlantic	1.094	4.0	5.0	2.5	2.5
Chipeta	1.084	5.0	5.0	3.0	3.0

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

Table 11A. Yield, grade and tuber shape for Advanced and Western Regional Chipping Trial entries - 2006.

Clone	Yield (Cwt/A)						Tuber Shape ¹
	Total	US #1			<4 oz		
		Total	%	4-10 oz		>10 oz	
AC97097-14W	452	351	77	311	40	101	Ov
AC00170-2W	400	226	57	218	8	172	R
CO96141-4W	390	338	87	273	65	51	Ov
CO97043-14W	438	343	78	296	48	93	R
CO97065-7W	426	341	80	310	32	82	R
CO00188-4W	385	270	70	251	18	114	R
CO00189-2W	386	286	74	236	50	92	R
CO00197-3W	462	329	71	282	47	133	R
CO00270-7W	400	326	81	251	75	73	R
Atlantic	468	394	84	325	69	71	Ov
Chipeta	563	506	90	335	170	36	Ov
Ivory Crisp	424	307	72	268	40	116	R
Mean	433	335	77	280	55	94	----
LSD ² (0.05)	55	61	6	48	31	23	----

¹Tuber shape: R=round; Ov=oval.

²LSD=least significant difference.

Table 11B. Grade defects for Advanced and Western Regional Chipping Trial entries - 2007

Clone	% External Defects ¹	External Defects Observed ²	% Hollow Heart ³
AC97097-14W	0.1	MS*	0.7
AC00170-2W	0.4	MS*	0.0
CO96141-4W	0.2	GR*	0.0
CO97043-14W	0.3	GC*, GR*	0.0
CO97065-7W	0.8	MS*	0.0
CO00188-4W	0.5	GC*, GR*	0.0
CO00189-2W	2.1	MS*, GC	0.5
CO00197-3W	0.1	MS*	0.3
CO00270-7W	0.4	GC*	0.0
Atlantic	0.8	MS, GC*, GR*	0.4
Chipeta	3.8	GC*, GR	0.7
Ivory Crisp	0.1	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 11C. Growth characteristics of Advanced and Western Regional Chip Trial entries - 2007

Clone	% Stand	Emergence Uniformity ¹	Vine Vigor ²	Stems/Plant	Vine Size ³	Vine Type ⁴	Vine Maturity ⁵
AC97097-14W	100	3.0	3.5	3.3	3.3	3.3	3.0
AC00170-2W	100	3.0	3.5	4.1	3.0	2.0	1.8
CO96141-4W	98	3.3	3.0	3.1	3.0	2.5	2.0
CO97043-14W	100	3.3	3.5	3.9	3.0	2.8	3.0
CO97065-7W	99	3.3	4.0	4.0	3.5	3.0	2.5
CO00188-4W	98	3.3	4.0	4.6	3.0	2.8	2.5
CO00189-2W	96	3.3	3.8	4.1	2.3	2.0	1.0
CO00197-3W	100	3.0	4.0	3.9	3.3	3.0	2.0
CO00270-7W	95	3.0	4.0	3.8	3.3	2.5	2.3
Atlantic	100	3.8	4.0	4.1	3.5	3.0	3.0
Chipeta	99	3.3	3.8	3.0	4.8	3.0	3.8
Ivory Crisp	99	3.5	4.0	4.2	3.0	2.8	2.8
Mean	99	3.2	3.8	3.8	3.2	2.7	2.5
LSD ⁶ (0.05)	3	0.6	0.5	0.9	0.5	0.6	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; NS=not significant.

Table 11D. Blackspot, storage weight loss, dormancy, and enzymatic browning evaluations for Advanced and Western Regional Chip Trial entries - 2007

Clone	Blackspot Index ¹			% Weight ² Loss	Dormancy ³ (Days)	Enzymatic Browning ⁴
	Bud End	Stem End	Average			
AC97097-14W	4.1	3.6	3.9	2.5	94	4.2
AC00170-2W	5.0	5.0	5.0	4.9	87	5.0
CO96141-4W	4.0	3.2	3.6	3.7	101	3.4
CO97043-14W	4.5	3.8	4.2	5.0	115	4.6
CO97065-7W	4.6	3.5	4.1	3.4	115	4.6
CO00188-4W	4.7	4.3	4.5	3.3	101	3.8
CO00189-2W	4.8	5.0	4.9	3.7	79	4.4
CO00197-3W	4.2	2.5	3.4	2.7	94	3.4
CO00270-7W	4.8	3.9	4.4	2.6	66	3.4
Atlantic	2.5	2.2	2.4	3.6	87	4.6
Chipeta	4.4	3.8	4.1	2.3	115	4.6
Ivory Crisp	4.0	3.1	3.6	4.0	101	2.6

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

²Tubers were stored at 45F for 115 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. Chip color¹ after various storage regimes and specific gravity of Advanced and Western Regional Chip Trial entries - 2007

Clone	Specific Gravity	6 wks 40F	6 wks/40F +3 wks/60F	6 wks 50F	6 wks/50F +3 wks/60F
AC97097-14W	1.097	3.5	3.0	1.5	2.0
AC00170-2W	1.082	4.0	3.5	1.0	2.0
CO96141-4W	1.088	4.0	3.5	2.5	1.5
CO97043-14W	1.091	4.5	2.5	2.5	2.0
CO97065-7W	1.101	4.5	2.5	1.0	1.5
CO00188-4W	1.094	3.0	2.5	1.0	1.5
CO00189-2W	1.065	4.0	4.0	1.5	1.0
CO00197-3W	1.090	4.5	4.0	1.5	1.0
CO00270-7W	1.083	3.5	2.0	1.0	1.0
Atlantic	1.102	4.5	4.0	2.5	2.0
Chipeta	1.093	5.0	5.0	2.5	3.0
Ivory Crisp	1.096	3.0	3.0	1.0	2.5

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

Table 12. 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								
CO94035-15RU	Dual	8	415	86	2.9	1.081	2.1	3.0
CO95172-3RU	FM	7	497	82	3.2	1.089	1.2	0.6
AC96052-1RU	Dual	6	450	88	3.3	1.090	1.0	0.2
CO97087-2RU	Dual	5	425	86	3.0	1.096	2.2	0.1
CO98067-7RU	Dual	4	457	88	2.4	1.078	1.0	0.0
CO98368-2RU	FM	4	400	75	2.3	1.084	1.2	0.0
Canela Russet	FM	11	386	90	3.1	1.096	1.3	0.1
Centennial Russet	FM	35	294	77	3.0	1.080	0.8	0.3
Rio Grande Russet	FM	14	521	83	3.1	1.086	3.4	0.7
Russet Norkotah	FM	68	367	85	1.8	1.079	2.3	0.4
Russet Nugget	Dual	64	440	81	3.8	1.093	1.5	0.2
Reds								
CO98012-5R	FM	4	436	79	3.0	1.079	0.7	0.5
Colorado Rose	FM	13	514	84	2.7	1.082	2.9	0.3
Rio Colorado	FM	11	405	56	1.7	1.087	0.9	0.0
Sangre-S10	FM	20	536	88	3.4	1.075	2.1	2.0
Specialties								
VC1009-1W/Y	Spec	7	595	72	3.3	1.085	2.1	1.1
AC97521-1R/Y	Spec	5	572	79	2.9	1.089	0.4	1.1
CO97226-2R/R	Spec	5	367	38	2.2	1.080	0.2	0.0
CO97232-1R/Y	Spec	5	419	71	2.0	1.081	0.7	0.0
CO97232-2R/Y	Spec	5	443	87	2.6	1.071	0.8	1.0
CO97233-3R/Y	Spec	5	489	75	3.4	1.081	4.5	3.0
CO97215-2P/P	Spec	4	435	74	3.1	1.088	1.9	0.6
CO97222-1R/R	Spec	4	379	57	2.4	1.076	1.9	0.0
CO97227-2P/PW	Spec	4	473	26	2.7	1.082	1.1	0.0

Table 12 continued on next page.

Table 12 (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
All Blue	Spec	12	518	61	3.0	1.085	0.6	0.2
Mountain Rose	Spec	7	382	68	2.1	1.081	1.3	0.0
Purple Majesty	Spec	7	485	64	2.0	1.083	0.8	1.7
Yukon Gold	Spec	20	404	88	1.8	1.085	1.9	0.6
Chippers								
CO95051-7W	Chip	6	418	87	3.4	1.099	1.1	0.3
CO96141-4W	Chip	6	416	89	2.6	1.087	1.2	0.0
CO97043-14W	Chip	5	422	84	3.0	1.089	1.5	0.4
CO97065-7W	Chip	5	419	86	2.6	1.098	0.9	0.2
Atlantic	Chip	33	455	87	3.2	1.097	2.7	5.3
Chipeta	Chip	31	534	84	3.3	1.090	5.4	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 4. Photographs of advanced selections.



Figure 4 (cont'd). Photographs of advanced selections.



Figure 4 (cont'd). Photographs of advanced selections.



Figure 4 (cont'd). Photographs of advanced selections.



Table 13A. Detailed data summary for CO94035-15RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	8	415	345-478	
Yield US #1 (Cwt/A)	8	356	279-406	
% US #1	8	86	81-92	
Yield >10 oz (Cwt/A)	8	104	54-144	
Yield <4 oz (Cwt/A)	8	50	23-61	
% External Defects ¹	8	2.1	1.7-2.3	
% Hollow Heart ²	8	3.0	1.0-5.4	
% Stand	8	96	91-99	
Emergence Uniformity	8	3.3	3.0-3.8	
Vine Vigor ³	8	3.6	2.8-4.0	
Stems/Plant	8	2.8	2.2-3.5	
Vine Size ⁴	8	3.4	3.0-3.8	
Vine Maturity ⁵	8	2.9	2.8-3.0	
Blackspot ⁶	Bud End	10	4.0	2.9-5.0
	Stem End	10	3.7	2.7-5.0
	Average	10	3.9	
Weight Loss ⁷	10	3.7	1.2-6.8	
Dormancy ⁸	10	95	83-105	
Enzymatic Browning ⁹	10	4.6	4.0-5.0	
Specific Gravity	10	1.081	1.073-1.090	
Fry Color ¹⁰	Harvest	10	1.3	0.0-2.0
	Storage	10	1.8	1.0-4.0
Fry Texture ¹¹	Harvest	10	2.8	2.0-3.0
	Storage	10	3.1	3.0-4.0

Refer to footnotes on page 94.

Table 13B. Detailed data summary for CO95172-3RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	7	497	415-547	
Yield US #1 (Cwt/A)	7	406	327-450	
% US #1	7	82	78-84	
Yield >10 oz (Cwt/A)	7	95	58-138	
Yield <4 oz (Cwt/A)	7	84	69-103	
% External Defects ¹	7	1.2	0.2-2.2	
% Hollow Heart ²	7	0.6	0.0-2.1	
% Stand	7	98	94-100	
Emergence Uniformity	7	3.3	2.8-3.8	
Vine Vigor ³	7	3.0	2.5-3.5	
Stems/Plant	7	3.1	2.3-4.1	
Vine Size ⁴	7	3.9	3.5-4.0	
Vine Maturity ⁵	7	3.2	3.0-3.5	
Blackspot ⁶	Bud End	8	4.5	3.9-5.0
	Stem End	8	4.2	3.5-5.0
	Average	8	4.4	
Weight Loss ⁷	8	3.5	1.1-6.2	
Dormancy ⁸	8	85	76-101	
Enzymatic Browning ⁹	8	3.3	2.4-4.2	
Specific Gravity	8	1.089	1.075-1.096	
Fry Color ¹⁰	Harvest	8	2.1	1.0-4.0
	Storage	8	1.9	1.0-4.0
Fry Texture ¹¹	Harvest	8	2.9	1.0-4.0
	Storage	8	3.0	1.0-4.0

Refer to footnotes on page 94.

Table 13C. Detailed data summary for AC96052-1RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	450	398-530	
Yield US #1 (Cwt/A)	6	395	357-457	
% US #1	6	88	84-92	
Yield >10 oz (Cwt/A)	6	95	66-117	
Yield <4 oz (Cwt/A)	6	50	30-69	
% External Defects ¹	6	1.0	0.6-1.9	
% Hollow Heart ²	6	0.2	0.0-0.6	
% Stand	6	93	68-99	
Emergence Uniformity	6	2.8	1.5-3.5	
Vine Vigor ³	6	3.0	3.0-3.3	
Stems/Plant	6	2.9	2.3-3.9	
Vine Size ⁴	6	3.9	3.8-4.5	
Vine Maturity ⁵	6	3.3	3.0-3.8	
Blackspot ⁶	Bud End	7	4.1	2.7-4.8
	Stem End	7	3.0	1.4-3.8
	Average	7	3.5	
Weight Loss ⁷	7	2.5	1.0-4.9	
Dormancy ⁸	7	84	70-104	
Enzymatic Browning ⁹	7	3.7	3.2-4.2	
Specific Gravity	7	1.090	1.080-1.096	
Fry Color ¹⁰	Harvest	7	0.3	0.0-1.0
	Storage	7	1.0	0.0-2.0
Fry Texture ¹¹	Harvest	7	3.7	2.0-5.0
	Storage	7	3.6	3.0-4.0

Refer to footnotes on page 94.

Table 13D. Detailed data summary for CO97087-2RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	425	404-446	
Yield US #1 (Cwt/A)	5	367	334-390	
% US #1	5	86	83-88	
Yield >10 oz (Cwt/A)	5	92	67-149	
Yield <4 oz (Cwt/A)	5	49	43-60	
% External Defects ¹	5	2.2	1.7-2.6	
% Hollow Heart ²	5	0.1	0.0-0.7	
% Stand	5	98	97-99	
Emergence Uniformity	5	3.3	3.0-3.8	
Vine Vigor ³	5	3.5	3.0-4.0	
Stems/Plant	5	3.8	3.1-5.4	
Vine Size ⁴	5	3.5	3.3-3.8	
Vine Maturity ⁵	5	3.0	2.8-3.0	
Blackspot ⁶	Bud End	6	4.7	4.2-5.0
	Stem End	6	4.3	2.9-5.0
	Average	6	4.5	
Weight Loss ⁷	6	2.8	1.1-5.8	
Dormancy ⁸	6	93	76-111	
Enzymatic Browning ⁹	6	4.0	3.8-4.4	
Specific Gravity	6	1.096	1.088-1.102	
Fry Color ¹⁰	Harvest	6	0.3	0.0-1.0
	Storage	6	0.8	0.0-2.0
Fry Texture ¹¹	Harvest	6	3.3	2.0-4.0
	Storage	6	3.8	3.0-5.0

Refer to footnotes on page 94.

Table 13E. Detailed data summary for CO98067-7RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	4	457	403-560	
Yield US #1 (Cwt/A)	4	402	337-500	
% US #1	4	88	84-89	
Yield >10 oz (Cwt/A)	4	83	54-102	
Yield <4 oz (Cwt/A)	4	52	41-61	
% External Defects ¹	4	1.0	0.3-1.6	
% Hollow Heart ²	4	0.0	0.0-0.0	
% Stand	4	97	95-99	
Emergence Uniformity	4	3.3	3.0-3.8	
Vine Vigor ³	4	3.0	2.8-3.5	
Stems/Plant	4	3.3	2.0-4.4	
Vine Size ⁴	4	3.1	3.0-3.5	
Vine Maturity ⁵	4	2.4	2.0-2.5	
Blackspot ⁶	Bud End	5	5.0	5.0-5.0
	Stem End	5	5.0	4.8-5.0
	Average	5	5.0	
Weight Loss ⁷	5	3.4	1.4-4.9	
Dormancy ⁸	5	70	56-87	
Enzymatic Browning ⁹	5	4.5	4.0-4.8	
Specific Gravity	5	1.078	1.075-1.080	
Fry Color ¹⁰	Harvest	5	1.0	0.0-2.0
	Storage	5	2.0	1.0-3.0
Fry Texture ¹¹	Harvest	5	3.4	3.0-4.0
	Storage	5	3.2	3.0-4.0

Refer to footnotes on page 94.

Table 13F. Detailed data summary for CO98368-2RU.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	4	400	351-426	
Yield US #1 (Cwt/A)	4	303	241-335	
% US #1	4	75	69-83	
Yield >10 oz (Cwt/A)	4	52	10-82	
Yield <4 oz (Cwt/A)	4	92	63-116	
% External Defects ¹	4	1.2	0.5-1.8	
% Hollow Heart ²	4	0.0	0.0-0.0	
% Stand	4	95	88-99	
Emergence Uniformity	4	3.0	2.5-3.5	
Vine Vigor ³	4	3.2	3.0-3.5	
Stems/Plant	4	3.7	2.7-5.0	
Vine Size ⁴	4	3.0	3.0-3.0	
Vine Maturity ⁵	4	2.3	1.8-2.5	
Blackspot ⁶	Bud End	5	4.5	3.6-5.0
	Stem End	5	4.3	3.6-5.0
	Average	5	4.4	
Weight Loss ⁷	5	2.6	1.2-3.3	
Dormancy ⁸	5	108	90-146	
Enzymatic Browning ⁹	5	4.3	3.8-4.8	
Specific Gravity	5	1.084	1.081-1.086	
Fry Color ¹⁰	Harvest	5	1.4	1.0-2.0
	Storage	5	2.6	2.0-4.0
Fry Texture ¹¹	Harvest	5	3.6	3.0-4.0
	Storage	5	3.2	3.0-4.0

Refer to footnotes on page 94.

Table 13G. Detailed data summary for Canela Russet.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	11	386	332-468	
Yield US #1 (Cwt/A)	11	347	290-421	
% US #1	11	90	86-94	
Yield >10 oz (Cwt/A)	11	105	63-156	
Yield <4 oz (Cwt/A)	11	35	20-49	
% External Defects ¹	11	1.3	0.0-2.4	
% Hollow Heart ²	11	0.1	0.0-0.9	
% Stand	11	97	88-99	
Emergence Uniformity	11	3.1	2.5-3.5	
Vine Vigor ³	11	2.5	2.0-3.0	
Stems/Plant	11	1.9	1.4-2.6	
Vine Size ⁴	11	3.8	3.0-4.3	
Vine Maturity ⁵	11	3.1	2.8-3.8	
Blackspot ⁶	Bud End	12	4.5	3.7-5.0
	Stem End	12	3.8	2.5-5.0
	Average	12	4.2	
Weight Loss ⁷	12	3.8	1.3-7.0	
Dormancy ⁸	12	147	113-195	
Enzymatic Browning ⁹	12	4.4	3.4-5.0	
Specific Gravity	12	1.096	1.081-1.106	
Fry Color ¹⁰	Harvest	12	1.9	1.0-3.0
	Storage	12	2.2	1.0-3.0
Fry Texture ¹¹	Harvest	12	3.4	3.0-5.0
	Storage	12	3.6	3.0-5.0

Refer to footnotes on page 94.

Table 13H. 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	40	4.8	3.7-5.0
	Stem End	40	4.8	4.2-5.0
	Average	43	4.8	
Weight Loss ⁷	43	6.3	1.6-9.0	
Dormancy ⁸	36	88	57-123	
Enzymatic Browning ⁹	38	4.0	3.2-5.0	
Specific Gravity	50	1.080	1.069-1.092	
Fry Color ¹⁰	Harvest	42	3.7	3.0-4.0
	Storage	42	4.0	3.0-5.0
Fry Texture ¹¹	Harvest	42	2.3	1.0-4.0
	Storage	42	2.2	1.0-3.0

Refer to footnotes on page 94.

Table 13I. Detailed data summary for Rio Grande Russet.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	14	521	367-683	
Yield US #1 (Cwt/A)	14	437	255-603	
% US #1	14	83	69-91	
Yield >10 oz (Cwt/A)	14	142	14-275	
Yield <4 oz (Cwt/A)	14	67	33-111	
% External Defects ¹	14	3.4	0.1-8.7	
% Hollow Heart ²	14	0.7	0.0-4.1	
% Stand	14	99	96-100	
Emergence Uniformity	14	3.5	3.0-4.0	
Vine Vigor ³	14	3.6	2.0-4.5	
Stems/Plant	14	3.1	2.0-4.4	
Vine Size ⁴	14	4.0	3.5-4.5	
Vine Maturity ⁵	14	3.1	2.5 -3.5	
Blackspot ⁶	Bud End	17	4.7	4.1-5.0
	Stem End	17	4.5	3.0-5.0
	Average	17	4.6	
Weight Loss ⁷	17	4.5	1.5-7.1	
Dormancy ⁸	17	91	73-120	
Enzymatic Browning ⁹	17	3.9	3.0-5.0	
Specific Gravity	17	1.086	1.078-1.094	
Fry Color ¹⁰	Harvest	17	2.1	1.0-4.0
	Storage	17	2.9	2.0-4.0
Fry Texture ¹¹	Harvest	17	3.1	2.0-4.0
	Storage	17	2.9	2.0-4.0

Refer to footnotes on page 94.

Table 13J. Detailed data summary for Russet Norkotah.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	68	367	174-557	
Yield US #1 (Cwt/A)	68	311	144-444	
% US #1	68	85	78-92	
Yield >10 oz (Cwt/A)	68	99	23-212	
Yield <4 oz (Cwt/A)	68	48	22-88	
% External Defects ¹	68	2.3	0.0-5.3	
% Hollow Heart ²	68	0.4	0.0-2.8	
% Stand	68	98	88-100	
Emergence Uniformity	59	3.3	1.0-4.0	
Vine Vigor ³	59	2.8	1.0-4.0	
Stems/Plant	64	3.6	2.4-4.9	
Vine Size ⁴	59	2.3	1.0-3.3	
Vine Maturity ⁵	68	1.8	1.0-3.0	
Blackspot ⁶	Bud End	67	4.6	2.9-5.0
	Stem End	67	4.3	3.1-5.0
	Average	68	4.5	
Weight Loss ⁷	71	3.9	1.0-7.1	
Dormancy ⁸	67	99	78-132	
Enzymatic Browning ⁹	67	3.3	2.2-4.8	
Specific Gravity	68	1.079	1.066-1.091	
Fry Color ¹⁰	Harvest	68	2.1	1.0-4.0
	Storage	68	2.5	1.0-4.0
Fry Texture ¹¹	Harvest	68	2.6	1.0-4.0
	Storage	68	2.6	1.0-4.0

Refer to footnotes on page 94.

Table 13K. 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	51	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	74	4.7	3.0-5.0
	Stem End	74	4.5	2.1-5.0
	Average	77	4.6	
Weight Loss ⁷	77	3.1	1.1-5.5	
Dormancy ⁸	72	95	57-144	
Enzymatic Browning ⁹	73	4.0	2.8-4.8	
Specific Gravity	79	1.093	1.072-1.110	
Fry Color ¹⁰	Harvest	77	1.5	0.0-3.0
	Storage	77	2.0	1.0-3.0
Fry Texture ¹¹	Harvest	77	4.1	2.0-5.0
	Storage	77	4.0	2.0-5.0

Refer to footnotes on page 94.

Table 13L. Detailed data summary for CO98012-5R.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	4	436	368-494	
Yield US #1 (Cwt/A)	4	344	290-426	
% US #1	4	79	66-86	
Yield >10 oz (Cwt/A)	4	49	16-105	
Yield <4 oz (Cwt/A)	4	88	65-148	
% External Defects ¹	4	0.7	0.0-1.3	
% Hollow Heart ²	4	0.5	0.0-1.1	
% Stand	4	98	95-100	
Emergence Uniformity	4	3.1	3.0-3.3	
Vine Vigor ³	4	3.0	2.8-3.3	
Stems/Plant	4	3.3	2.6-4.4	
Vine Size ⁴	4	3.2	3.0-3.3	
Vine Maturity ⁵	4	3.0	3.0-3.0	
Blackspot ⁶	Bud End	5	4.2	3.4-4.8
	Stem End	5	3.6	2.4-4.5
	Average	5	3.9	
Weight Loss ⁷	5	3.1	1.6-5.5	
Dormancy ⁸	5	62	56-69	
Enzymatic Browning ⁹	5	1.9	1.2-3.0	
Specific Gravity	5	1.079	1.073-1.082	
Fry Color ¹⁰	Harvest	5	1.6	1.0-2.0
	Storage	5	3.0	2.0-4.0
Fry Texture ¹¹	Harvest	5	2.2	2.0-3.0
	Storage	5	2.2	2.0-3.0

Refer to footnotes on page 94.

Table 13M. Detailed data summary for Colorado Rose.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	13	514	390-641	
Yield US #1 (Cwt/A)	13	434	310-530	
% US #1	13	84	76-91	
Yield >10 oz (Cwt/A)	13	150	69-249	
Yield <4 oz (Cwt/A)	13	65	43-98	
% External Defects ¹	13	2.9	0.2-6.5	
% Hollow Heart ²	13	0.3	0.0-0.8	
% Stand	13	97	92-100	
Emergence Uniformity	13	3.0	2.5-3.5	
Vine Vigor ³	13	3.0	2.2-3.8	
Stems/Plant	13	3.5	2.3-4.5	
Vine Size ⁴	13	3.4	3.0-4.0	
Vine Maturity ⁵	13	2.7	2.0-3.8	
Blackspot ⁶	Bud End	14	3.8	2.1-4.8
	Stem End	14	3.8	2.4-5.0
	Average	14	3.8	
Weight Loss ⁷	14	6.0	1.4-8.2	
Dormancy ⁸	14	63	54-78	
Enzymatic Browning ⁹	14	4.2	3.4-4.8	
Specific Gravity	14	1.082	1.071-1.086	
Fry Color ¹⁰	Harvest	14	2.2	1.0-3.0
	Storage	13	2.8	2.0-3.0
Fry Texture ¹¹	Harvest	14	2.8	2.0-4.0
	Storage	13	2.8	2.0-3.0

Refer to footnotes on page 94.

Table 13N. Detailed data summary for Rio Colorado.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	11	405	321-474	
Yield US #1 (Cwt/A)	11	227	115-298	
% US #1	11	56	28-72	
Yield >10 oz (Cwt/A)	11	10	0-22	
Yield <4 oz (Cwt/A)	11	175	110-289	
% External Defects ¹	11	0.9	0.0-2.2	
% Hollow Heart ²	11	0.0	0.0-0.0	
% Stand	11	97	92-99	
Emergence Uniformity	11	3.4	3.0-4.0	
Vine Vigor ³	11	3.1	2.8-4.0	
Stems/Plant	11	4.2	2.9-6.4	
Vine Size ⁴	11	3.1	2.5-3.8	
Vine Maturity ⁵	11	1.7	1.0-3.0	
Blackspot ⁶	Bud End	12	3.6	2.1-4.8
	Stem End	12	3.0	1.8-4.2
	Average	12	3.3	
Weight Loss ⁷	12	6.6	1.2-10.2	
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 94.

Table 130. Detailed data summary for Sangre-S10.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	20	536	410-616	
Yield US #1 (Cwt/A)	20	471	358-548	
% US #1	20	88	82-93	
Yield >10 oz (Cwt/A)	20	187	101-319	
Yield <4 oz (Cwt/A)	20	55	34-90	
% External Defects ¹	20	2.1	0.3-5.7	
% Hollow Heart ²	20	2.0	0.0-8.2	
% Stand	20	97	91-100	
Emergence Uniformity	20	3.0	2.5-3.5	
Vine Vigor ³	20	2.8	1.8-3.5	
Stems/Plant	20	3.0	1.9-4.3	
Vine Size ⁴	20	4.0	3.5-4.5	
Vine Maturity ⁵	20	3.4	3.0-4.0	
Blackspot ⁶	Bud End	32	3.9	2.0-5.0
	Stem End	32	4.1	2.5-5.0
	Average	32	4.0	
Weight Loss ⁷	32	2.9	1.0-4.5	
Dormancy ⁸	32	89	56-126	
Enzymatic Browning ⁹	32	3.3	2.6-4.8	
Specific Gravity	32	1.075	1.060-1.087	
Fry Color ¹⁰	Harvest	32	3.6	2.0-4.0
	Storage	32	3.9	3.0-4.0
Fry Texture ¹¹	Harvest	32	2.3	1.0-4.0
	Storage	32	2.3	1.0-3.0

Refer to footnotes on page 94.

Table 13P. Detailed data summary for VC1009-1W/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	7	595	530-641	
Yield US #1 (Cwt/A)	7	433	327-508	
% US #1	7	72	58-80	
Yield >10 oz (Cwt/A)	7	93	42-142	
Yield <4 oz (Cwt/A)	7	150	90-216	
% External Defects ¹	7	2.1	0.6-4.3	
% Hollow Heart ²	7	1.1	0.0-2.6	
% Stand	7	98	96-99	
Emergence Uniformity	7	3.4	3.0-3.8	
Vine Vigor ³	7	4.2	3.8-4.8	
Stems/Plant	7	4.2	3.1-5.4	
Vine Size ⁴	7	4.6	4.0-5.0	
Vine Maturity ⁵	7	3.3	3.0-3.5	
Blackspot ⁶	Bud End	9	4.0	3.0-4.9
	Stem End	9	3.8	2.6-5.0
	Average	9	3.9	
Weight Loss ⁷	9	2.9	1.0-6.8	
Dormancy ⁸	9	100	84-132	
Enzymatic Browning ⁹	9	4.0	3.2-4.8	
Specific Gravity	10	1.085	1.072-1.092	
Fry Color ¹⁰	Harvest	8	1.1	0.0-2.0
	Storage	8	1.6	1.0-3.0
Fry Texture ¹¹	Harvest	8	3.0	3.0-3.0
	Storage	8	3.1	2.0-4.0

Refer to footnotes on page 94.

Table 13Q. Detailed data summary for AC97521-1R/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	572	420-666	
Yield US #1 (Cwt/A)	5	456	319-548	
% US #1	5	79	75-89	
Yield >10 oz (Cwt/A)	5	78	22-129	
Yield <4 oz (Cwt/A)	5	113	62-166	
% External Defects ¹	5	0.4	0.0-1.2	
% Hollow Heart ²	5	1.1	0.4-1.9	
% Stand	5	97	93-100	
Emergence Uniformity	5	3.3	2.8-3.8	
Vine Vigor ³	5	3.8	3.3-4.0	
Stems/Plant	5	4.2	3.5-5.3	
Vine Size ⁴	5	4.1	3.8-4.5	
Vine Maturity ⁵	5	2.9	2.5-3.0	
Blackspot ⁶	Bud End	6	3.5	3.1-4.0
	Stem End	6	3.5	2.3-4.6
	Average	6	3.5	
Weight Loss ⁷	6	3.0	1.5-6.4	
Dormancy ⁸	6	89	62-108	
Enzymatic Browning ⁹	6	3.5	2.8-4.0	
Specific Gravity	6	1.089	1.085-1.096	
Fry Color ¹⁰	Harvest	6	4.0	4.0-4.0
	Storage	6	3.8	3.0-4.0
Fry Texture ¹¹	Harvest	6	2.5	2.0-3.0
	Storage	6	2.7	2.0-3.0

Refer to footnotes on page 94.

Table 13R. Detailed data summary for CO97226-2R/R.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	5	367	336-406
Yield US #1 (Cwt/A)	5	141	90-224
% US #1	5	38	27-55
Yield >10 oz (Cwt/A)	5	1	0-1
Yield <4 oz (Cwt/A)	5	225	179-253
% External Defects ¹	5	0.2	0.0-0.7
% Hollow Heart ²	5	0.0	0.0-0.0
% Stand	5	98	96-99
Emergence Uniformity	5	3.1	3.0-3.3
Vine Vigor ³	5	3.1	3.0-3.5
Stems/Plant	5	3.8	3.0-4.6
Vine Size ⁴	5	3.2	3.0-3.8
Vine Maturity ⁵	5	2.2	1.3-3.0
Blackspot ⁶	Bud End	---	---
	Stem End	---	---
	Average	---	---
Weight Loss ⁷	6	4.1	1.9-7.8
Dormancy ⁸	6	68	48-94
Enzymatic Browning ⁹	--	--	-- --
Specific Gravity	6	1.080	1.076-1.084
Fry Color ¹⁰	Harvest	--	-- --
	Storage	--	-- --
Fry Texture ¹¹	Harvest	6	3.2
	Storage	6	2.8

Refer to footnotes on page 94.

Table 13S. Detailed data summary for CO97232-1R/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	419	352-481	
Yield US #1 (Cwt/A)	5	300	234-366	
% US #1	5	71	67-75	
Yield >10 oz (Cwt/A)	5	21	10-33	
Yield <4 oz (Cwt/A)	5	116	105-131	
% External Defects ¹	5	0.7	0.1-1.0	
% Hollow Heart ²	5	0.0	0.0-0.0	
% Stand	5	94	90-99	
Emergence Uniformity	5	3.1	2.8-3.5	
Vine Vigor ³	5	3.3	3.0-4.0	
Stems/Plant	5	3.8	2.9-4.7	
Vine Size ⁴	5	2.9	2.3-3.3	
Vine Maturity ⁵	5	2.0	1.3-2.8	
Blackspot ⁶	Bud End	6	4.3	2.9-5.0
	Stem End	6	3.4	2.6-4.2
	Average	6	3.9	
Weight Loss ⁷	6	4.8	1.6-8.1	
Dormancy ⁸	6	60	49-80	
Enzymatic Browning ⁹	6	3.8	3.4-4.4	
Specific Gravity	6	1.081	1.077-1.084	
Fry Color ¹⁰	Harvest	5	0.8	0.0-1.0
	Storage	6	1.3	1.0-2.0
Fry Texture ¹¹	Harvest	6	3.2	2.0-4.0
	Storage	6	2.8	2.0-3.0

Refer to footnotes on page 94.

Table 13T. Detailed data summary for CO97232-2R/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	443	416-471	
Yield US #1 (Cwt/A)	5	386	354-420	
% US #1	5	87	83-91	
Yield >10 oz (Cwt/A)	5	106	72-148	
Yield <4 oz (Cwt/A)	5	54	36-70	
% External Defects ¹	5	0.8	0.3-1.7	
% Hollow Heart ²	5	1.0	0.0-2.7	
% Stand	5	93	85-99	
Emergence Uniformity	5	3.1	2.8-3.5	
Vine Vigor ³	5	3.2	3.0-3.5	
Stems/Plant	5	3.3	2.6-4.0	
Vine Size ⁴	5	2.8	2.5-3.0	
Vine Maturity ⁵	5	2.6	2.0-3.0	
Blackspot ⁶	Bud End	6	4.6	4.1-5.0
	Stem End	6	4.4	3.5-5.0
	Average	6	4.5	
Weight Loss ⁷	6	4.0	1.5-8.8	
Dormancy ⁸	6	71	49-94	
Enzymatic Browning ⁹	6	4.4	4.0-5.0	
Specific Gravity	6	1.071	1.069-1.072	
Fry Color ¹⁰	Harvest	6	1.3	1.0-2.0
	Storage	6	1.8	1.0-2.0
Fry Texture ¹¹	Harvest	6	2.2	1.0-3.0
	Storage	6	2.5	2.0-3.0

Refer to footnotes on page 94.

Table 13U. Detailed data summary for CO97233-3R/Y.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	489	409-524	
Yield US #1 (Cwt/A)	5	368	301-425	
% US #1	5	75	61-82	
Yield >10 oz (Cwt/A)	5	92	42-133	
Yield <4 oz (Cwt/A)	5	100	67-162	
% External Defects ¹	5	4.5	3.2-6.1	
% Hollow Heart ²	5	3.0	1.0-5.2	
% Stand	5	91	84-95	
Emergence Uniformity	5	3.2	3.0-3.5	
Vine Vigor ³	5	3.6	3.3- 4.0	
Stems/Plant	5	3.7	2.6-4.6	
Vine Size ⁴	5	3.1	3.0-3.3	
Vine Maturity ⁵	5	3.4	2.8-4.0	
Blackspot ⁶	Bud End	6	4.7	4.2-5.0
	Stem End	6	4.0	3.2-5.0
	Average	6	4.4	
Weight Loss ⁷	6	3.1	1.6-6.0	
Dormancy ⁸	6	74	62-94	
Enzymatic Browning ⁹	6	4.1	3.6-4.6	
Specific Gravity	6	1.081	1.077-1.090	
Fry Color ¹⁰	Harvest	6	1.2	0.0-2.0
	Storage	6	2.0	1.0-3.0
Fry Texture ¹¹	Harvest	6	2.7	2.0-3.0
	Storage	6	2.7	2.0-3.0

Refer to footnotes on page 94.

Table 13V. Detailed data summary for CO97215-2P/P.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	4	435	373-506
Yield US #1 (Cwt/A)	4	323	268-392
% US #1	4	74	61-83
Yield >10 oz (Cwt/A)	4	64	30-85
Yield <4 oz (Cwt/A)	4	105	64-168
% External Defects ¹	4	1.9	0.6-3.1
% Hollow Heart ²	4	0.6	0.0-1.5
% Stand	4	94	87-98
Emergence Uniformity	4	2.8	2.5-3.0
Vine Vigor ³	4	3.1	3.0-3.3
Stems/Plant	4	3.5	2.4-5.6
Vine Size ⁴	4	3.7	3.5-3.8
Vine Maturity ⁵	4	3.1	3.0-3.3
Blackspot ⁶	Bud End	--	--
	Stem End	--	--
	Average	--	--
Weight Loss ⁷	6	3.7	1.4-5.6
Dormancy ⁸	6	104	83-139
Enzymatic Browning ⁹	--	--	--
Specific Gravity	6	1.088	1.085-1.091
Fry Color ¹⁰	Harvest	--	--
	Storage	--	--
Fry Texture ¹¹	Harvest	4	1.5
	Storage	4	1.8

Refer to footnotes on page 94.

Table 13W. Detailed data summary for CO97222-1R/R.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	4	379	349-427
Yield US #1 (Cwt/A)	4	219	151-272
% US #1	4	57	42-63
Yield >10 oz (Cwt/A)	4	23	12-37
Yield <4 oz (Cwt/A)	4	153	132-195
% External Defects ¹	4	1.9	0.9-3.0
% Hollow Heart ²	4	0.0	0.0-0.0
% Stand	4	97	94-99
Emergence Uniformity	4	3.2	2.8-3.5
Vine Vigor ³	4	2.8	2.3-3.0
Stems/Plant	4	3.7	2.9-5.1
Vine Size ⁴	4	2.9	2.8-3.0
Vine Maturity ⁵	4	2.4	2.0-3.0
Blackspot ⁶	Bud End	--	-- --
	Stem End	--	-- --
	Average	--	--
Weight Loss ⁷	5	2.9	1.4-4.0
Dormancy ⁸	5	88	56-132
Enzymatic Browning ⁹	--	--	-- --
Specific Gravity	5	1.076	1.073-1.078
Fry Color ¹⁰	Harvest	--	-- --
	Storage	--	-- --
Fry Texture ¹¹	Harvest	4	1.8
	Storage	4	2.0
			1.0-2.0
			1.0-3.0

Refer to footnotes on page 94.

Table 13X. Detailed data summary for CO97227-2P/PW.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	4	473	385-561
Yield US #1 (Cwt/A)	4	123	79-163
% US #1	4	26	21-36
Yield >10 oz (Cwt/A)	4	1	0-2
Yield <4 oz (Cwt/A)	4	345	288-434
% External Defects ¹	4	1.1	0.2-2.4
% Hollow Heart ²	4	0.0	0.0-0.0
% Stand	4	98	96-100
Emergence Uniformity	4	3.5	3.3-4.0
Vine Vigor ³	4	3.6	3.0-4.0
Stems/Plant	4	4.9	4.0-6.7
Vine Size ⁴	4	3.9	3.8-4.0
Vine Maturity ⁵	4	2.7	2.0-3.0
Blackspot ⁶	Bud End	--	-- --
	Stem End	--	-- --
	Average	--	--
Weight Loss ⁷	6	3.8	2.0-5.0
Dormancy ⁸	6	99	77-153
Enzymatic Browning ⁹	--	--	-- --
Specific Gravity	6	1.086	1.082-1.092
Fry Color ¹⁰	Harvest	--	-- --
	Storage	--	-- --
Fry Texture ¹¹	Harvest	4	4.0 3.0-5.0
	Storage	4	3.5 3.0-5.0

Refer to footnotes on page 94.

Table 13Y. Detailed data summary for All Blue.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	12	518	438-639
Yield US #1 (Cwt/A)	12	319	217-422
% US #1	12	61	47-75
Yield >10 oz (Cwt/A)	12	44	4-90
Yield <4 oz (Cwt/A)	12	196	139-280
% External Defects ¹	12	0.6	0.0-1.8
% Hollow Heart ²	12	0.2	0.0-1.5
% Stand	12	99	97-100
Emergence Uniformity	12	3.3	2.8-3.8
Vine Vigor ³	12	3.6	2.8-4.0
Stems/Plant	12	4.5	3.0-6.5
Vine Size ⁴	12	3.9	3.0-4.8
Vine Maturity ⁵	12	3.0	2.2-3.3
Blackspot ⁶	Bud End	---	---
	Stem End	---	---
	Average	---	---
Weight Loss ⁷	13	2.2	1.1-4.8
Dormancy ⁸	13	104	82-167
Enzymatic Browning ⁹	---	---	---
Specific Gravity	13	1.085	1.071-1.091
Fry Color ¹⁰	Harvest	---	---
	Storage	---	---
Fry Texture ¹¹	Harvest	13	2.8
	Storage	13	2.8

Refer to footnotes on page 94.

Table 13Z. Detailed data summary for Mountain Rose.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	7	382	288-449
Yield US #1 (Cwt/A)	7	265	150-354
% US #1	7	68	52-79
Yield >10 oz (Cwt/A)	7	25	4-63
Yield <4 oz (Cwt/A)	7	112	91-136
% External Defects ¹	7	1.3	0.7-2.4
% Hollow Heart ²	7	0.0	0.0-0.0
% Stand	7	98	94-100
Emergence Uniformity	7	3.6	3.0-4.3
Vine Vigor ³	7	2.7	2.0-3.0
Stems/Plant	7	3.6	2.9-4.9
Vine Size ⁴	7	2.6	2.3-3.0
Vine Maturity ⁵	7	2.1	1.5-3.0
Blackspot ⁶	Bud End	---	---
	Stem End	---	---
	Average	---	---
Weight Loss ⁷	10	4.1	1.3-6.3
Dormancy ⁸	10	103	77-153
Enzymatic Browning ⁹	---	---	---
Specific Gravity	10	1.081	1.074-1.086
Fry Color ¹⁰	Harvest	---	---
	Storage	---	---
Fry Texture ¹¹	Harvest	5	2.4
	Storage	5	2.6

Refer to footnotes on page 94.

Table 13AA. Detailed data summary for Purple Majesty.

Variable	# Trials	Mean	Range
Total Yield (Cwt/A)	7	485	404-606
Yield US #1 (Cwt/A)	7	313	203-401
% US #1	7	64	44-72
Yield >10 oz (Cwt/A)	7	31	14-61
Yield <4 oz (Cwt/A)	7	168	122-244
% External Defects ¹	7	0.8	0.0-1.7
% Hollow Heart ²	7	1.7	0.5-3.4
% Stand	7	98	94-99
Emergence Uniformity	7	3.4	3.0-4.0
Vine Vigor ³	7	3.5	2.8-4.0
Stems/Plant	7	4.3	3.5-6.1
Vine Size ⁴	7	2.8	2.3-3.0
Vine Maturity ⁵	7	2.0	1.5-2.8
Blackspot ⁶	Bud End	---	---
	Stem End	---	---
	Average	---	---
Weight Loss ⁷	10	3.6	1.1-6.8
Dormancy ⁸	10	67	48-85
Enzymatic Browning ⁹	---	---	---
Specific Gravity	10	1.083	1.076-1.088
Fry Color ¹⁰	Harvest	---	---
	Storage	---	---
Fry Texture ¹¹	Harvest	5	1.0-3.0
	Storage	5	2.0-3.0

Refer to footnotes on page 94.

Table 13AB. Detailed data summary for Yukon Gold.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	20	404	321-513	
Yield US #1 (Cwt/A)	20	357	293-439	
% US #1	20	88	82-94	
Yield >10 oz (Cwt/A)	20	157	89-248	
Yield <4 oz (Cwt/A)	20	39	22-66	
% External Defects ¹	20	1.9	0.6-4.4	
% Hollow Heart ²	20	0.6	0.0-2.2	
% Stand	20	96	90-100	
Emergence Uniformity	20	3.3	2.5-3.8	
Vine Vigor ³	20	3.7	3.0-4.0	
Stems/Plant	20	2.4	1.6-3.8	
Vine Size ⁴	20	3.0	2.5-3.5	
Vine Maturity ⁵	20	1.8	1.0-2.8	
Blackspot ⁶	Bud End	27	4.0	2.0-5.0
	Stem End	27	3.8	2.4-5.0
	Average	27	3.9	
Weight Loss ⁷	27	2.4	1.0-4.3	
Dormancy ⁸	27	91	69-132	
Enzymatic Browning ⁹	27	4.4	3.8-5.0	
Specific Gravity	27	1.085	1.079-1.092	
Fry Color ¹⁰	Harvest	27	1.7	1.0-3.0
	Storage	27	2.8	1.0-4.0
Fry Texture ¹¹	Harvest	27	3.0	1.0-4.0
	Storage	27	2.9	1.0-4.0

Refer to footnotes on page 94.

Table 13AC. Detailed data summary for CO95051-7W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	418	372-469	
Yield US #1 (Cwt/A)	6	362	295-411	
% US #1	6	87	79-90	
Yield >10 oz (Cwt/A)	6	85	28-145	
Yield <4 oz (Cwt/A)	6	51	37-75	
% External Defects ¹	6	1.1	0.6-1.6	
% Hollow Heart ²	6	0.3	0.0-0.9	
% Stand	6	94	82-99	
Emergence Uniformity	6	3.1	3.0-3.5	
Vine Vigor ³	6	3.0	3.0-3.3	
Stems/Plant	6	3.0	2.6-3.9	
Vine Size ⁴	6	3.5	3.0-4.0	
Vine Maturity ⁵	6	3.4	3.0 4.0	
Blackspot ⁶	Bud End	14	4.2	3.1-4.9
	Stem End	14	2.8	1.6-4.2
	Average	14	3.5	
Weight Loss ⁷	14	5.1	1.7-11.0	
Dormancy ⁸	14	76	62-100	
Enzymatic Browning ⁹	14	3.6	1.8-4.4	
Specific Gravity	15	1.099	1.089-1.110	
Chip Color ¹⁰	40	15	3.4	2.5-4.5
	40R	15	2.8	1.0-4.0
	50	15	2.2	1.0-4.0
	50R	15	1.9	1.0-3.5

Refer to footnotes on page 94.

Table 13AD. Detailed data summary for CO96141-4W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	6	416	390-460	
Yield US #1 (Cwt/A)	6	369	338-398	
% US #1	6	89	81-95	
Yield >10 oz (Cwt/A)	6	120	65-176	
Yield <4 oz (Cwt/A)	6	41	15-78	
% External Defects ¹	6	1.2	0.2-2.0	
% Hollow Heart ²	6	0.0	0.0-0.0	
% Stand	6	97	93-99	
Emergence Uniformity	6	3.2	3.0-3.5	
Vine Vigor ³	6	2.7	2.3-3.0	
Stems/Plant	6	2.7	2.1-3.2	
Vine Size ⁴	6	2.7	2.3-3.0	
Vine Maturity ⁵	6	2.6	2.0-3.0	
Blackspot ⁶	Bud End	13	4.3	2.6-5.0
	Stem End	13	3.5	2.3-5.0
	Average	13	3.9	
Weight Loss ⁷	13	3.6	1.2-7.3	
Dormancy ⁸	13	89	69-105	
Enzymatic Browning ⁹	13	4.0	2.8-5.0	
Specific Gravity	14	1.087	1.081-1.092	
Chip Color ¹⁰	40	14	4.0	2.5-4.5
	40R	14	3.4	2.5-4.0
	50	14	2.3	2.0-3.0
	50R	14	2.2	1.0-3.0

Refer to footnotes on page 94.

Table 13AE. Detailed data summary for CO97043-14W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	422	351-483	
Yield US #1 (Cwt/A)	5	356	297-428	
% US #1	5	84	78-89	
Yield >10 oz (Cwt/A)	5	113	48-187	
Yield <4 oz (Cwt/A)	5	60	44-93	
% External Defects ¹	5	1.5	0.3-2.4	
% Hollow Heart ²	5	0.4	0.0-1.3	
% Stand	5	86	69-100	
Emergence Uniformity	5	2.8	1.0-3.5	
Vine Vigor ³	5	3.1	2.8-3.5	
Stems/Plant	5	3.0	2.5-3.9	
Vine Size ⁴	5	3.0	2.8-3.0	
Vine Maturity ⁵	5	3.0	2.5-3.3	
Blackspot ⁶	Bud End	11	4.0	3.2-4.6
	Stem End	11	3.5	2.4-4.4
	Average	11	3.8	
Weight Loss ⁷	11	4.0	1.3-7.7	
Dormancy ⁸	11	108	84-160	
Enzymatic Browning ⁹	11	4.3	3.8-4.8	
Specific Gravity	12	1.089	1.083-1.093	
Chip Color ¹⁰	40	12	3.9	3.5-4.5
	40R	12	3.3	2.5-4.0
	50	12	2.0	1.0-2.5
	50R	12	1.9	1.5-2.5

Refer to footnotes on page 94.

Table 13AF. Detailed data summary for CO97065-7W.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	5	419	389-443	
Yield US #1 (Cwt/A)	5	362	337-393	
% US #1	5	86	80-89	
Yield >10 oz (Cwt/A)	5	91	32-123	
Yield <4 oz (Cwt/A)	5	53	41-82	
% External Defects ¹	5	0.9	0.2-1.6	
% Hollow Heart ²	5	0.2	0.0-0.8	
% Stand	5	96	95-99	
Emergence Uniformity	5	3.2	3.0-3.5	
Vine Vigor ³	5	3.6	3.3-4.0	
Stems/Plant	5	3.3	2.5-4.2	
Vine Size ⁴	5	3.2	3.0-3.5	
Vine Maturity ⁵	5	2.6	2.0-3.0	
Blackspot ⁶	Bud End	11	4.5	3.9-5.0
	Stem End	11	3.5	1.9-4.6
	Average	11	4.0	
Weight Loss ⁷	11	2.9	1.3-6.4	
Dormancy ⁸	11	125	90-160	
Enzymatic Browning ⁹	11	4.5	4.0-5.0	
Specific Gravity	12	1.098	1.093-1.103	
Chip Color ¹⁰	40	12	4.0	3.0-5.0
	40R	12	3.4	2.5-4.0
	50	12	1.9	1.0-3.0
	50R	12	2.0	1.5-3.0

Refer to footnotes on page 94.

Table 13AG. Detailed data summary for Atlantic.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	33	455	307-597	
Yield US #1 (Cwt/A)	33	395	265-512	
% US #1	33	87	79-93	
Yield >10 oz (Cwt/A)	33	154	58-290	
Yield <4 oz (Cwt/A)	33	47	19-96	
% External Defects ¹	33	2.7	0.1-9.1	
% Hollow Heart ²	33	5.3	0.3-16.4	
% Stand	33	96	88-100	
Emergence Uniformity	27	3.6	3.0-4.3	
Vine Vigor ³	27	3.5	2.8-4.3	
Stems/Plant	33	3.1	2.2-4.9	
Vine Size ⁴	27	3.1	2.2-4.0	
Vine Maturity ⁵	33	3.2	2.8-4.0	
Blackspot ⁶	Bud End	47	3.1	1.8-5.0
	Stem End	47	2.7	1.4-4.3
	Average	48	2.9	
Weight Loss ⁷	48	4.7	1.1-7.9	
Dormancy ⁸	45	85	62-119	
Enzymatic Browning ⁹	46	4.5	3.8-5.0	
Specific Gravity	49	1.097	1.088-1.120	
Chip Color ¹⁰	40	49	3.9	2.0-5.0
	40R	49	3.4	1.5-5.0
	50	49	2.6	1.0-4.0
	50R	49	2.4	1.0-4.0

Refer to footnotes on page 94.

Table 13AH. Detailed data summary for Chipeta.

Variable	# Trials	Mean	Range	
Total Yield (Cwt/A)	31	534	399-757	
Yield US #1 (Cwt/A)	31	451	306-606	
% US #1	31	84	71-90	
Yield >10 oz (Cwt/A)	31	169	52-388	
Yield <4 oz (Cwt/A)	31	54	22-119	
% External Defects ¹	31	5.4	1.1-13.0	
% Hollow Heart ²	31	0.5	0.0-4.0	
% Stand	31	98	94-100	
Emergence Uniformity	24	3.5	3.0-4.3	
Vine Vigor ³	24	4.0	3.2-5.0	
Stems/Plant	30	3.5	2.5-4.9	
Vine Size ⁴	24	4.2	4.0-5.0	
Vine Maturity ⁵	31	3.3	3.0-4.0	
Blackspot ⁶	Bud End	44	3.9	2.2-5.0
	Stem End	44	3.6	1.4-4.9
	Average	46	3.8	
Weight Loss ⁷	46	3.4	1.0-8.0	
Dormancy ⁸	42	104	77-153	
Enzymatic Browning ⁹	43	4.0	2.8-5.0	
Specific Gravity	46	1.090	1.073-1.102	
Chip Color ¹⁰	40	46	4.4	3.0-5.0
	40R	46	3.7	1.5-5.0
	50	46	2.5	1.0-4.0
	50R	46	2.3	1.0-4.0

Refer to footnotes on page 94.

Footnotes for Tables 13A-13AH:

- 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.

Table 14. Late blight foliar and tuber infection levels for Colorado selections planted in twelve-hill plots replicated twice in Corvallis, Oregon - 2007.

Clone	Foliar Infection ¹	AUDPC ²	% Tuber Infection ³	Parentage	
				Female	Male
AC00487-1RU	5	504	0	AWN86514-2	Stirling
AC00487-2RU	5	494	10	AWN86514-2	Stirling
AC00550-4RU	9	1492	0	Torridon	A84118-3
AC00550-5RU	6	888	0	Torridon	A84118-3
AC00594-4RU	7	868	0	Bannock Russet	PI583331
Russet Burbank	9	1587	0		

¹Foliar infection was rated on October 8, 2007. The following scale was used: 1=no foliar injury; 2=1-5% injury; 3=5-10% injury; 4=10-20%; 5=20-40%; 6=40-60%; 7=60-75%; 8= 75-90%; 9=90-100% injury.

²Percent of late blight infected tubers based on 10 randomly selected tubers.

³AUDPC=Area Under the Disease Progress Curve.

APPENDIX 1. Cultural management information for the Potato Breeding and Selection Program's trials at the San Luis Valley Research Center - 2007.

LOCATION: San Luis Valley Research Center

SOIL TYPE: Sandy Loam (Dunul cobbly sandy loam)

DATE:

Planted - 5/10/07

Hilled - 6/6/07

Vines Killed - 8/31/07 (sulfuric acid - 28 gal/A) - 113 days after planting

Harvested - 9/25/07

PLOT INFORMATION:

Size of Plots - 1 row x 25'

Spacing Between Hills - 12"

Spacing Between Rows - 34"

Hills Per Plot - 25

Number of Reps - 4 (2 - Intermediate Yield Trial)

METHOD OF HARVEST:

Machine (Grimme 1-row)

FERTILIZER:

5/10/07 - 80 lbs N + 60 lbs P₂O₅ + 40 lbs K₂O +25 lbs S + 2.5 lb Zn/A (liquid applied in-row)

7/15/07 - 8 lbs N (fertigated)

7/18/07 - 8 lbs N (fertigated)

8/03/07 - 24 lbs N (fertigated)

Total fertilizer applied: 120 lbs N + 60 lbs P₂O₅ + 40 lbs K₂O +25 lbs S + 2.5 lb Zn/A

IRRIGATION:

Center Pivot - 16.43" gross application (application frequency and amount based on ET)

Rainfall - 4.32" (5/10/07-8/31/07)

INSECTICIDES APPLIED:

7/27/07 - Leverage 2.7 (0.033 lb a.i./A cyfluthrin + 0.047 lb a.i./A imidacloprid)

8/09/07 - Actara (0.047 lb a.i./A)

FUNGICIDES APPLIED:

7/05/07 - Bravo Weather Stik (1.125 lb a.i./A)

7/20/07 - Quadris (0.195 lb a.i./A)

HERBICIDES APPLIED:

6/07/07 - Dual Magnum (1.4 lb a.i./A)

APPENDIX 2. General procedures used for postharvest evaluations.

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

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

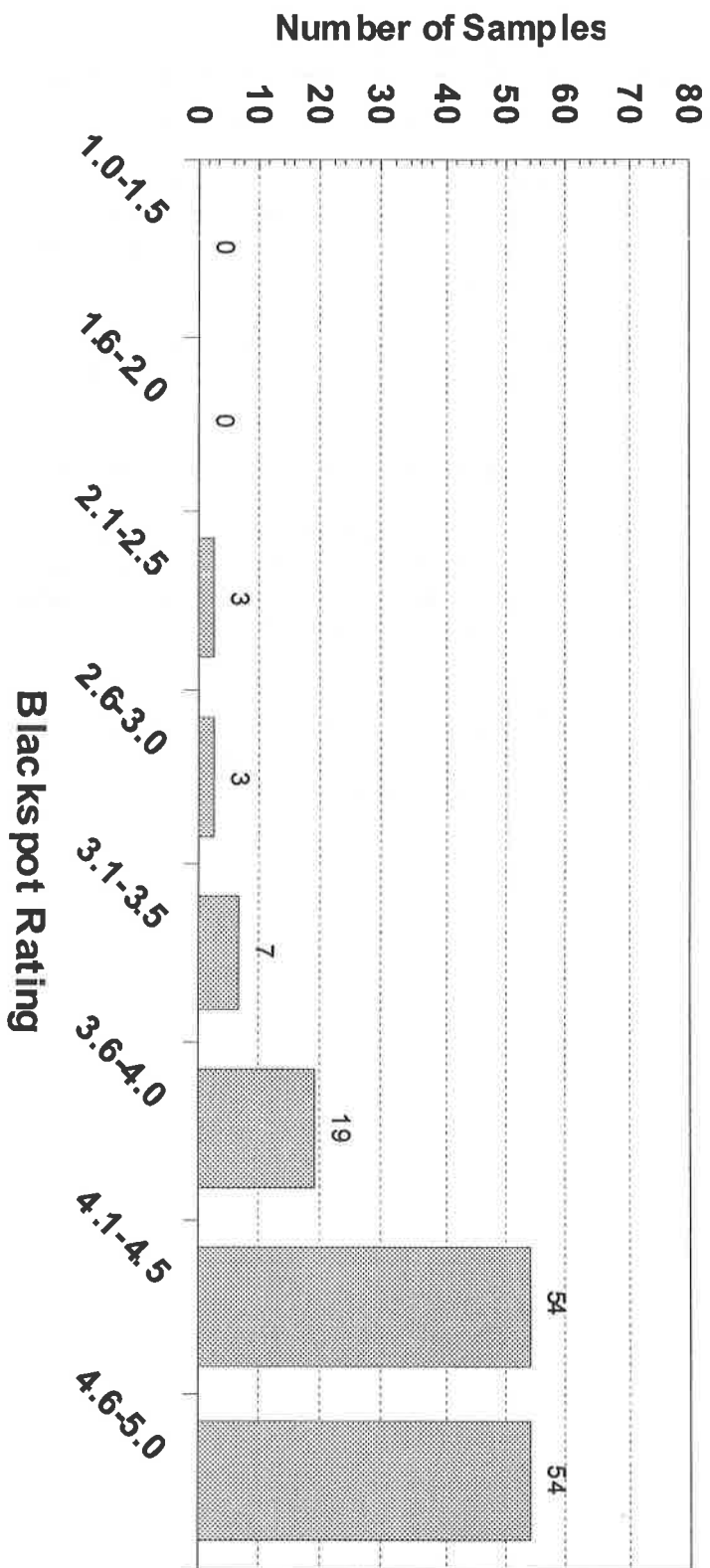
Enzymatic Browning. Five tubers of each clone are cut in half lengthwise and rated for degree of darkening 60 minutes later. Degree of darkening is rated on a 1 to 5 scale, with 5 indicating no discoloration.

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

Fry Color and Texture. Fry color and texture is determined at or shortly after harvest and after a minimum of eight weeks of storage at 45F. Fries are cooked for 3 ½ minutes at 375F. Fry color is rated on a 0-4 scale using the USDA color standards. Color ratings ≤ 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.

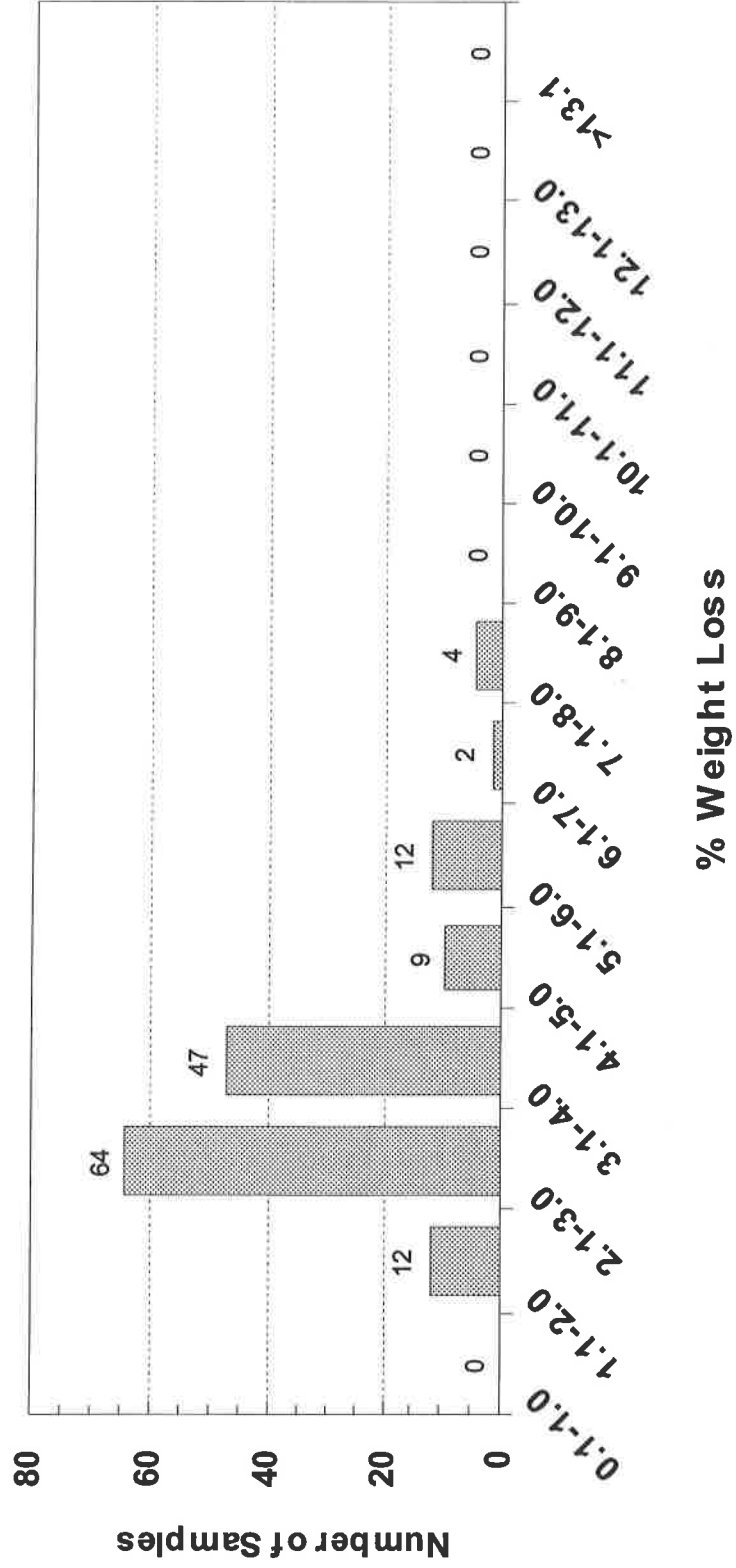
Chip Color. Chip color is determined after an interval of storage at 40 and 50F and after reconditioning for three weeks at 60F. Chips are cooked at 365F until bubbling slows. Chip color is rated using the Snack Food Association 1-5 scale. Ratings ≤ 2.0 are acceptable.

Appendix 3. Blackspot Distribution (140 Samples) - 2007

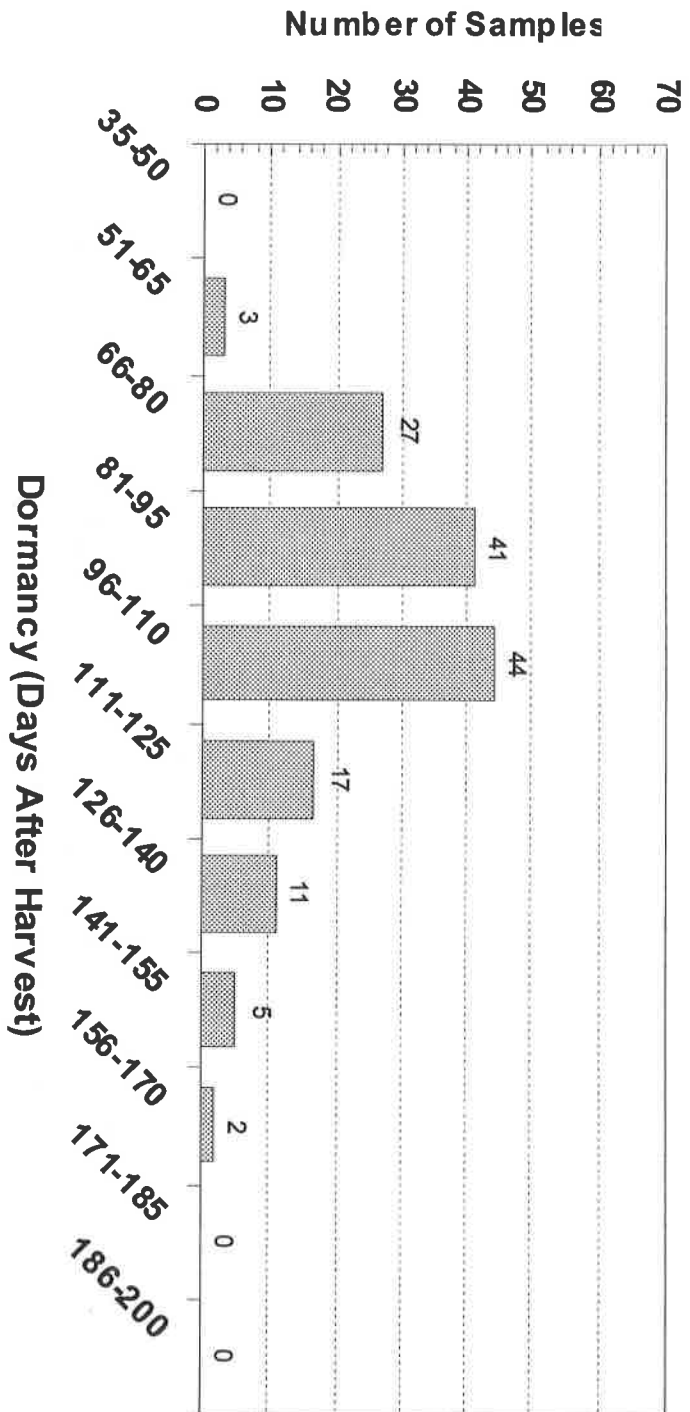


5=No Discoloration

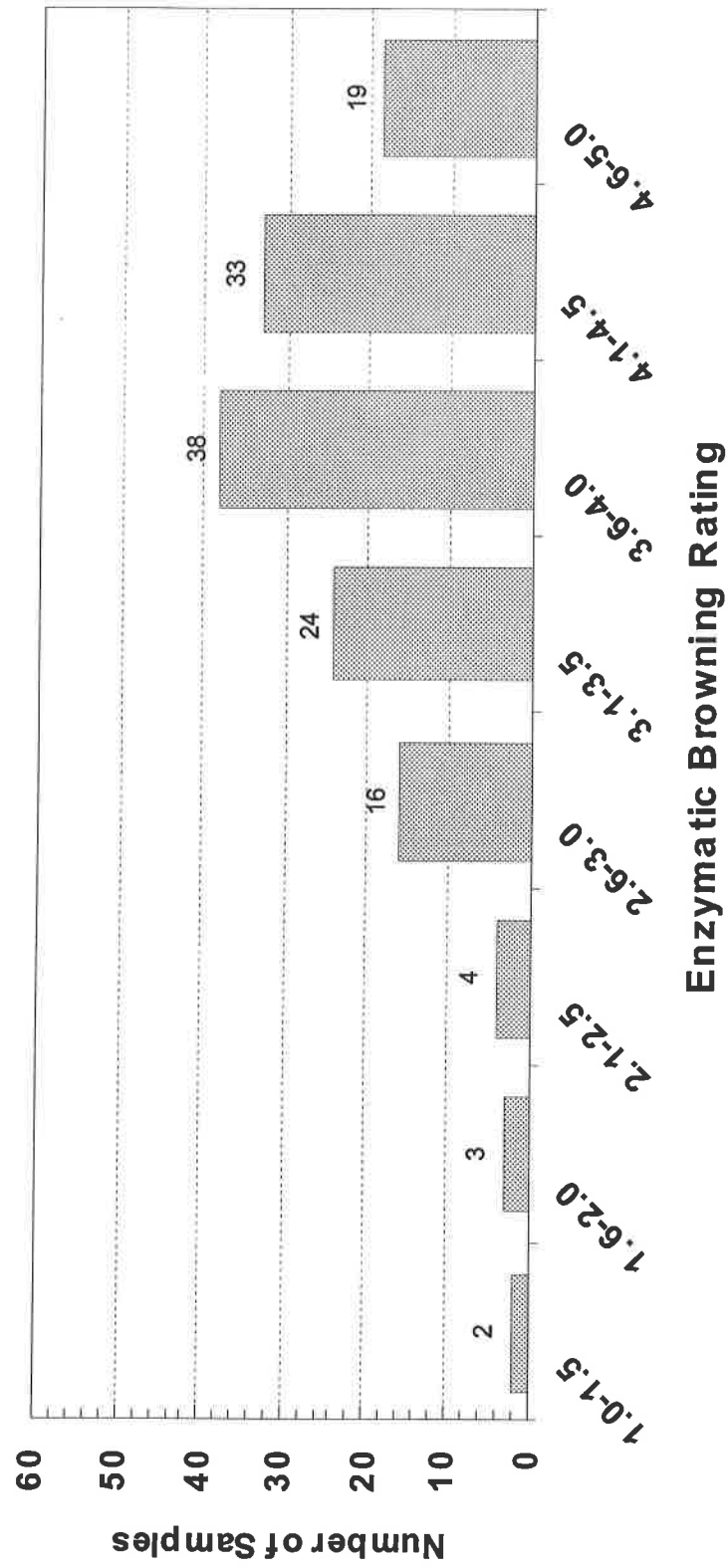
Appendix 4. % Weight Loss Distribution (150 Samples) - 2007



Appendix 5. Dormancy Distribution (150 Samples) - 2007

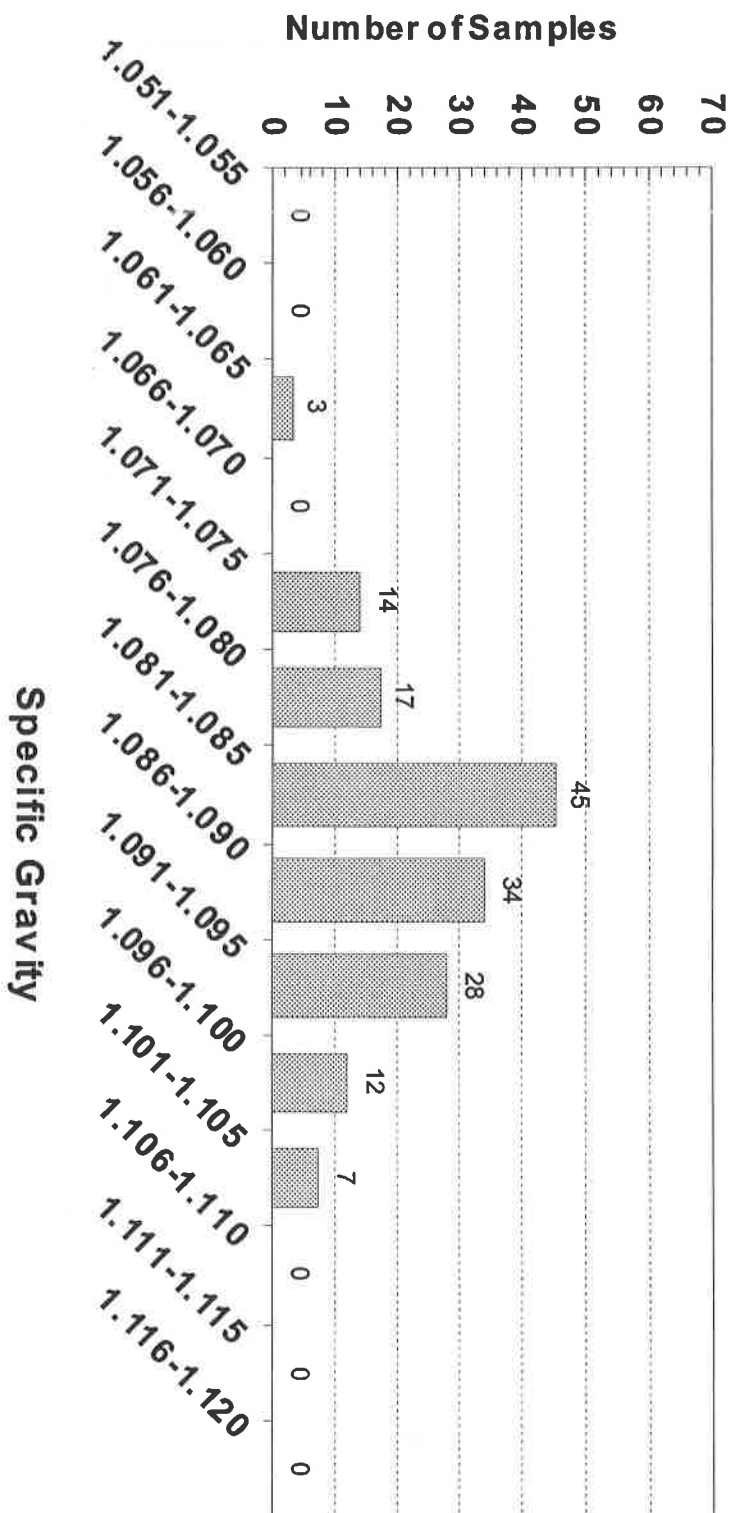


Appendix 6. Enzymatic Browning Distribution (139 Samples) - 2007

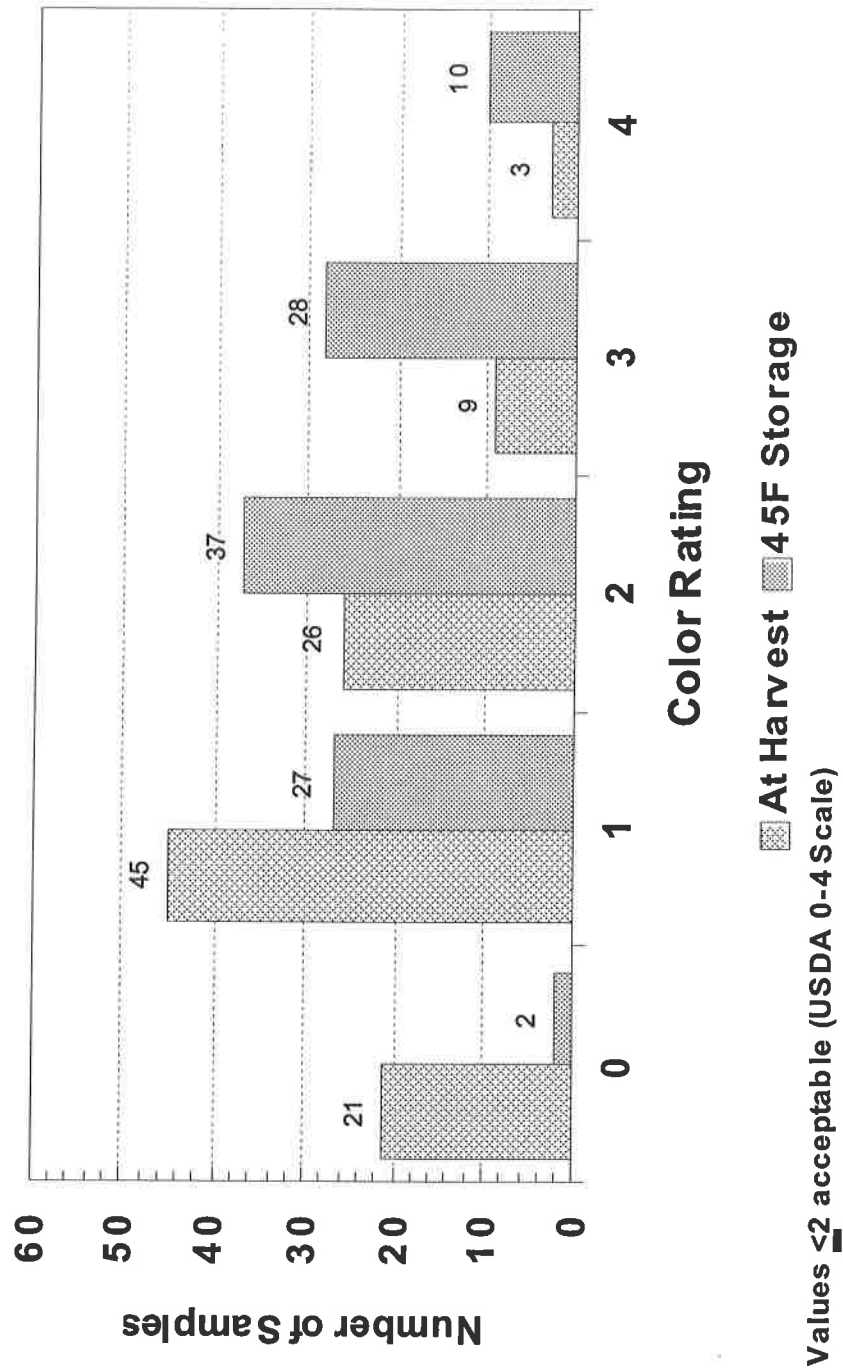


5= No Discoloration

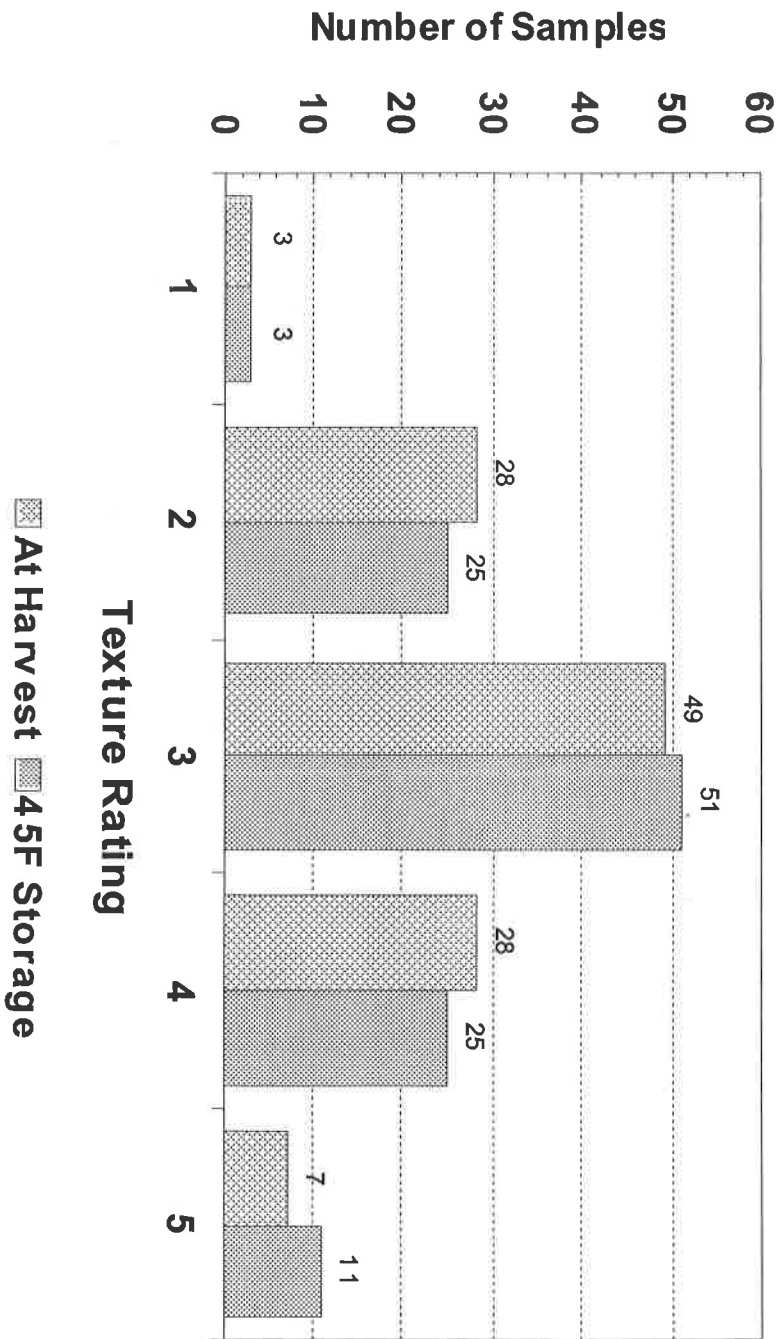
Appendix 7. Specific Gravity Distribution (160 Samples) - 2007



Appendix 8. Fry Color Distribution (104 Samples) - 2007

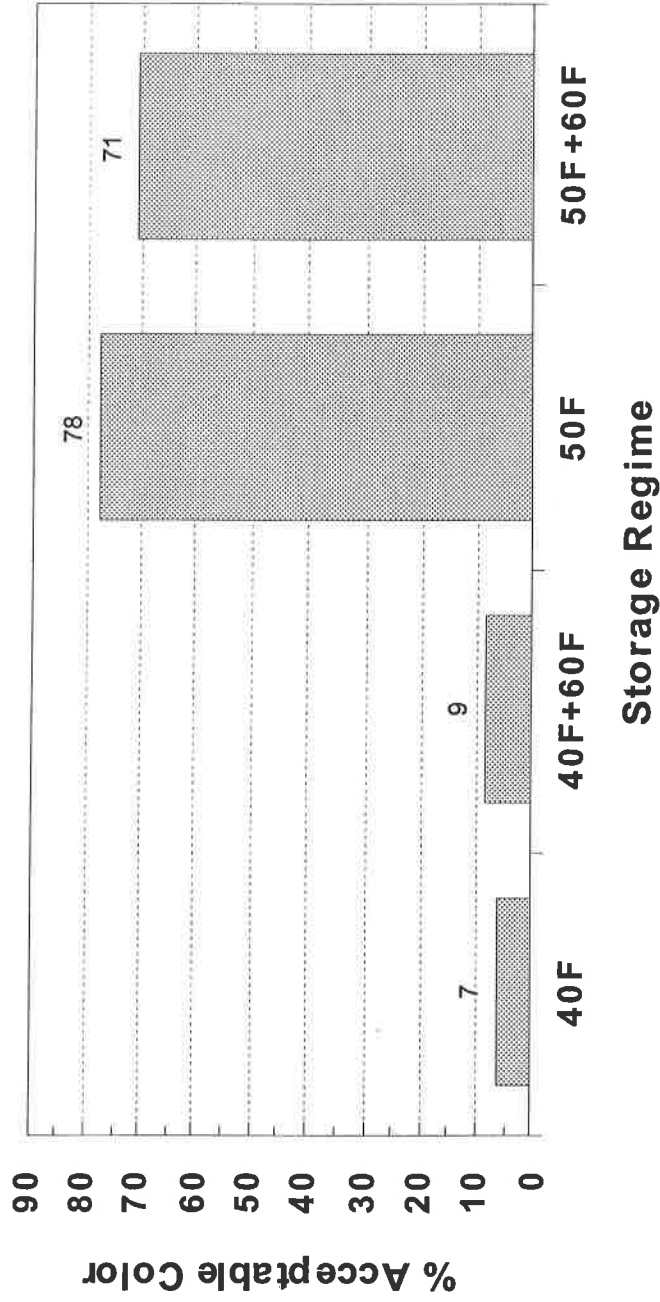


Appendix 9. Fry Texture Distribution (115 Samples) - 2007



5=Dry Texture

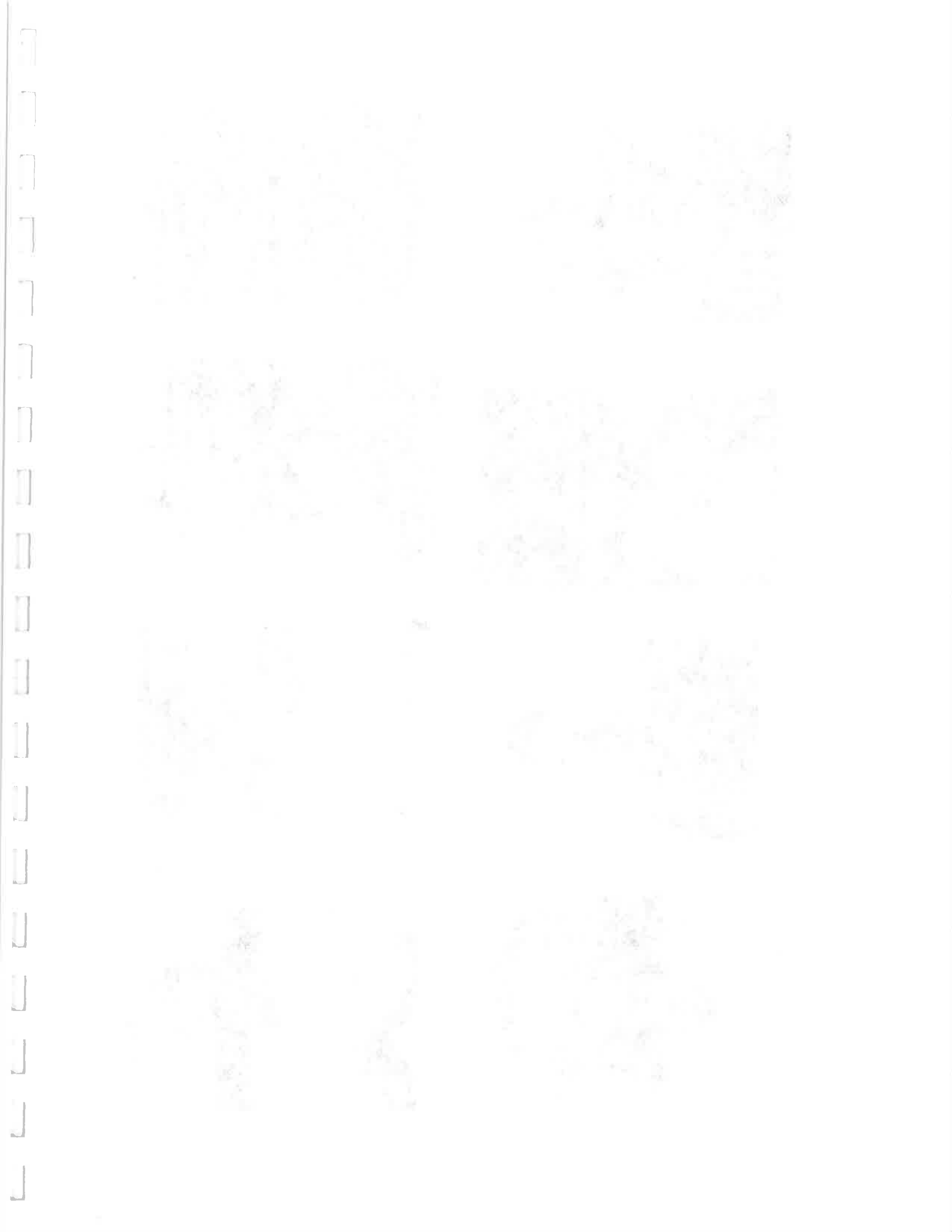
Appendix 10. % Acceptable Chip Color (45 Samples) - 2007



Values ≤ 2 acceptable (SFA 1-5 Scale)

Notes







Summer - 2007