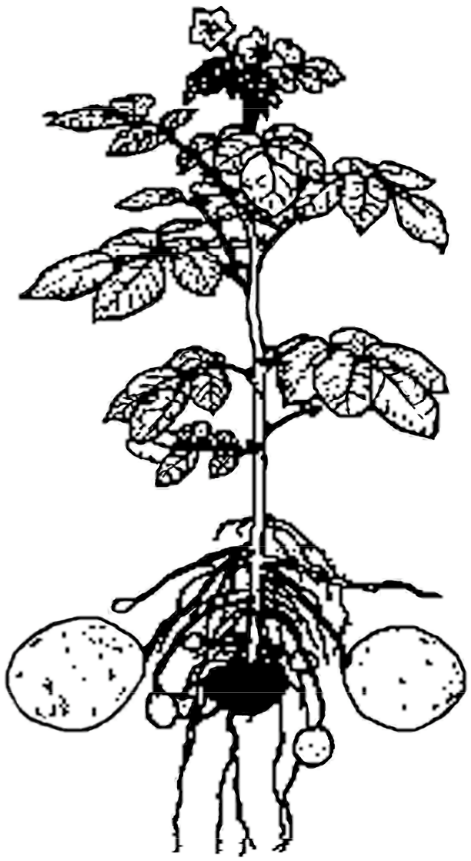
NC STATE UNIVERSITY

NORTH CAROLINA
POTATO VARIETY TRIAL AND BREEDING REPORT

2003



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I. OBJECTIVES:

Our research is conducted in collaboration with the USDA Cooperative States Research Extension and Education Service (CSREES) NE1014 Multi-state Potato Variety Development and Evaluation Project. The overall objective of the NE1014 Project is to develop high yielding, disease and insect resistant, table- and chip-stock potato varieties for potato growers in the eastern US. The objective of the NC State University variety development and breeding program is to evaluate germplasm, and select and develop adapted potato varieties that are suitable for use by North Carolina growers, and the southeastern US potato industry in general.

II. PROJECT SUMMARY

Our program focuses on two areas: the development of new potato germplasm and varieties through collaborative early-generation breeding and selection projects with the USDA-ARS, Cornell University and the University of Maine; and the evaluation of preliminary and advanced breeding clones for adaptation to NC from a wide range of potato breeding programs in the US and Canada. In 2003, we planted 8,364 single-hill plots derived from true potato seed obtained from USDA-ARS and NCSU crosses and made 236 selections. We also planted 202 four-hill plots from the University of Maine and the USDA, 167 six-hill plots from last years single-hill selections in NC, 48 12-hill plots from the University of Maine and Cornell University, and 63 20-hill plots from the USDA and the University of Maine were also planted. In addition, a total of 197 preliminary and advanced clones were evaluated in replicated yield trials either on-farm, or at the Tidewater Research Station (NCDA&CS)/Vernon G. James Research and Extension Center, (NCSU) in Plymouth, NC. The results of the yield trials are summarized later in this report, and in Tables 1-9. Each table has two parts, the first (a) being devoted to yield information, specific gravity measurements, and chip color scores, and the second (b) providing potato plant and tuber quality characteristics. This report can also be viewed and downloaded at our website http://www.ces.ncsu.edu/plymouth/hort/potato/index.html.

In 2003, the USDA clones with the most potential as chippers were: Harley Blackwell, and B0766-3. In all cases, yields were good and chip scores were 3 or better. The clone Harley Blackwell, formerly known as B0564-8, was released by the USDA-ARS this year. It is an attractive, round-white potato with a medium net skin and an average specific gravity in NC of 1.073 compared to 1.076 for Atlantic. Harley Blackwell is primarily intended for chipping, but its shallow eyes, relatively attractive appearance, and lower gravity compared to Atlantic may also make it suitable for table-stock purposes. In NC, it has produced marketable yields 108% of Atlantic. It does not suffer from internal heat necrosis (IHN), a common problem of Atlantic in the mid-Atlantic and SE US.

The table-stock clones from the USDA with the most potential were: B1806-8 a round, yellow-fleshed potato; B1758-4 a red-skinned, white-fleshed clone; and B1816-5 a purple-skinned, yellow-fleshed clone. In terms of internal defects B1806-8 and B1758-4 have expressed hollow heart, brown center and some soft rot but overall incidence has been less than 10%. However, it must be noted that these defects did show up this year in higher percentages. B1816-5 has been consistently free of major defects, and we believe that this clone has good potential as a specialty-type potato. We will continue testing it with the NCSU Specialty Crops Program and on-farm in 2004.

Clones from the University of Maine showing the most promise were: AF1424-7 and AF1569-2. In most trials the marketable yields for these were good, there were few internal defects, and chip scores for were either 2 or 3.

From Cornell University NY112 (recently released as Marcy), NY126, and NY129 performed well. Marcy (NY112) is an especially attractive, netted, chip-stock potato with good yield. However, it has suffered from susceptibility to IHN making it potentially unsuitable for NC. NY126 and NY129 have promise as table-stock varieties and we will continue intensive evaluations of these clones. NY126 is an attractive, round to oblong, pale yellow-fleshed potato with yields close to Atlantic. NY129 is a round, red-skinned, white-fleshed potato with few internal defects and yields similar to Chieftain.

Two clones from Michigan of note are: MSI005-20Y and Michigan Purple. MSI005-20Y is an attractive light yellow flesh, white skin potato with few internal defects though its yields were off. Michigan Purple is a high yielding purple skin, white flesh potato. We consistently rate this clone with a low appearance score but this is largely due to excessive skinning and its high susceptibility to scab. Growers (organic and conventional) who take special precautions to minimize skinning and do not have scab problems, and/or home gardeners who hand harvest potatoes might be the appropriate market for this unique potato in NC as it is flavorful, and it's smooth light purple skin and white flesh are very attractive.

III. RESEARCH STATION AND ON-FARM COOPERATOR LOCATIONS:

Tidewater Research Station (NCDA&CS)/Vernon G. James Research and Extension Center, (NCSU), Plymouth, NC (Washington Co.)
Cooper Farms, Gumneck, NC (Tyrrell Co.)
James Brothers Farms, Weeksville, NC (Pasquotank Co.)
Tull Hill Farms, Kinston, NC (Lenoir Co.)

COOPERATING COUNTY EXTENSION SPECIALISTS[1] AND EXTENSION ASSOCIATES[2]:

Tom Campbell[1], Elizabeth City, Pasquotank Co.
Bill Jester[2], Kinston, Greene, Lenoir, and Wayne Co's.
Richard Rhodes[1], Columbia, Tyrrell Co.

IV. PROCEDURES:

SITE, SOIL TYPE, PLANTING AND HARVEST DATES

Site	Soil Type	Planting Date	Harvest Date	Days to Harvest
Cooper's	Weeksville black silt loam	Mar 10	Jun 27	110
James Bros.'	Weeksville silt loam	Mar 12	Jun 26	107(100 vine kill)
Tull Hill	Lenoir loam	Mar 4	Jun 24	110(103 vine kill)
TRS/VGJREC	Portsmouth fine sandy loam	Mar 26, 27	Jul 1, 7-10, 14, 15	98, 104, 105, 107, 110

EXPERIMENTAL DESIGN: All yield trials were planted in a randomized complete block design with 4 replications except the preliminary evaluation trial, which had only one replication per clone. Sixteen clones were evaluated at Cooper's, while 13 and 24 clones, respectively, were

evaluated at the Tull Hill and James Brother's on-farm trials. Plots consisted of one row with 28 hills spaced 9 inches apart. Spacing between rows was 38 inches at all sites, with the exception of the James Brother's Trial, which was on a 40 inch row spacing. Weed and pest control practices for on-farm trials were in accordance with those practiced by the cooperators (Appendix 1).

The on-farm trials were dug using a single-row digger and hand harvested. The research station trials were harvested using a two-row harvester modified to dig one row at a time. All grower trials were graded using a portable Lockwood Grader which sorts to two grades: A+B's ≥ 1 7/8"; and C's < 1 7/8". The TRS/VGJREC trials were graded to five classes: 1's < 1 7/8"; 2's > 1 7/8 to 2 1/2"; 3's > 2 1/2 to 3 1/4"; 4's > 3 1/4 to 4"; 5's > 4". Culls were removed and weighed separately in all trials. Each clone was evaluated for tuber quality and appearance during grading using standardized NE-1014 rating codes. A description of the rating codes is provided in Appendix 2.

After grading and weighing, 40 marketable tubers (10 tubers/replication) were randomly sampled from each entry. The tubers were cut and scored for the presence of hollow heart, heat necrosis and any other internal defects. A second sub-sample of marketable tubers from each replication was taken and bulked by entry for specific gravity readings and chipping tests. Specific gravity was determined using the weight-in-air/weight-in-water method. Chip evaluations were conducted at the TRS/VGJREC and Wise Foods, Berwick, PA.

Chip evaluations were conducted by Wise Foods and at the TRS/VGJREC for all on farm trials, and at the TRS/VGJREC for all research station trials. Chipping at the TRS/VGJREC was done at least once within 48 hrs of harvest. To transport the potatoes to Wise Foods in Berwick, PA for chip samples the potatoes (5 tubers per sample) were placed in a plastic mesh bag and loaded on the back of a truck en-route to Wise. In most cases, chip evaluations were conducted within 72-96 hrs of digging.

V. RESULTS:

Environmental Summary (Appendix 3)

Our season started wet in most sites and our typically cool temperatures put us about a week behind at planting. The cold moist soils resulted in poor stands in several locations. Throughout the growing season and into harvest the season remained wet with mean temperatures remaining very close to the historical 30-year averages. Despite these conditions over all trials soft rot was not a major problem. Among other observations, we have noticed over the last two years that fire ants are tunneling into some of our potatoes. With their slow progression North, this may become a pest of concern in the future.

A. Yield Trials

1. On-Farm Trials

Cooper Variety Trial (Tables 1a and 1b)

Atlantic, our standard, had a marketable yield of 296 cwt/A and three clones had significantly greater marketable yields: B2135-163 (347 cwt/A); Marcy (357 cwt/A); and NY126 (381 cwt/A). Three clones (B0766-3, NY126 and Snowden) had a chip score rating of 2 or better at both the TRS and Wise. One clone, Harley Blackwell (B0564-8) received an overall

appearance score of 8. B1829-5 and Marcy also had good appearance scores. All clones had an IHN rating of 8 or better, which is not severe. Atlantic had 10% incidence of IHN and B1970-1 had 8%. All but four clones (B2029-1, MSH095-4, Snowden, and Superior) had some incidence of hollow heart. Those with greater than 10 percent were: Atlantic (28%); B1240-1 (23%); B0766-3 (18%); B2135-163 (13%); and MSF373-8 (13%). The primary external defects observed in the trial were misshapes, soft rot, and sunscald.

James Brother's Variety Trial (Tables 2a and 2b)

Atlantic had a marketable yield of 217 cwt/A. Two clones, Harley Blackwell (248 cwt/A) and Marcy (258 cwt/A), had significantly greater marketable yields than Atlantic. Three clones chipped with a score of 2 at both the TRS and Wise: Atlantic; Harley Blackwell; and B0766-3. In terms of overall appearance three clones received an 8: Harley Blackwell; Marcy; and NY129. Clones with an overall appearance score of 7 were: B2163-163; NorDonna; and Superior. Only one clone, Superior (20%), had an IHN incidence greater than 10% and none had an average IHN rating greater than 8. Culls were primarily due to misshapes, sunscald, and growth cracks.

Tull Hill Farms Red Variety Trial (Tables 3a and 3b)

Chieftain, our red standard, had a marketable yield of 339 cwt/A. None of the other clones in the trial exceeded the standard though many had statistically similar yields. The only clone with an overall appearance score of 8 was NY129, a round red from Cornell University. Clones with overall appearance scores of 7 were: B1758-4; B1952-2; and NorDonna. NorDonna, while being attractive, still has severe problems with secondary growth as is evidenced by the fact that roughly 25% of its total yield was culled for this condition. The only clone with percent IHN levels greater than 10% was Chieftain (25%), but the IHN severity rating was not exceptionally serious at 7.8. Clones with 10% incidence of brown center or greater were: B1758-4 (23%); Cherry Red (18%); and La Rouge (13%). The most common external defects were soft rot, misshapes, skin blemishes attributed to Rhizoctonia, and silver scurf.

2. Research Station Yield Trials

Round White Trial (Tables 4a and 4b)

Of the twenty-eight clones in this trial, four had marketable yields greater than Atlantic, which yielded 181 cwt/A. None of the four (AF1424-7(195 cwt/A); B1808-6 (190 cwt/A); Marcy(194 cwt/A); and Yukon Gold (187 cwt/A)) were, however, significantly greater. Several clones in this trial had high gravities for NC. The highest was Atlantic (1.091), others were: AF2363-11 (1.088); AF2291-10 (1.087); and AF2242-10 (1.083). In terms of chipping, six clones (AF1455-20, AF2351-2, Atlantic, B0766-3, B2135-163, and Marcy) had a score of 1. Six clones (Harley Blackwell, B0766-3, B1806-8, MSI005-20Y, Marcy, and Yukon Gold) received an overall appearance rating score of 7 and one clone B2163-163 received a score of 8. Clones with 10% or more incidence of IHN were: AF2326-1 (15%); Atlantic (20%); and MSJ461-1 (25%). AF2326-1had the most severe average IHN severity rating was at 7.3. Three clones (Atlantic (28%), B2135-163 (18%), and Marcy (10%)) had 10% or greater incidence of hollow heart. Incidence of soft rot (10% or greater) was noted in six clones: AF2206-9 (10%); AF2242-10 (33%); Atlantic (10%); Harley Blackwell (10%); B0766-3 (13%); and B1806-8 (10%). Common defects were misshapes, soft rot, sunscald, growth cracks, and skin blemishes attributed to Rhizoctonia.

NE-1014 White Trial. (Tables 5a and 5b)

Of the twenty-four clones in this trial none had marketable yields significantly greater than Atlantic (200 cwt/A). However, NY125 (208 cwt/A) and Snowden (216 cwt/A) equaled Atlantic. Six clones received a chip rating of 1 (exceptionally bright): AF1938-3; AF2207-4; AF2222-2; Atlantic; B1806-8; and NY126. One clone, NY125 was rated an 8 for overall appearance and five clones (AF2222-2, B1240-1, Ivory Crisp, Katahdin, and NY126) were rated a 7. Only AF2115-1 had 10% incidence of IHN. Clones with 10% or greater incidence of hollow heart were: AF1753-16 (13%); AF2222-2 (18%); Atlantic (10%); ATX84706-2Ru (10%); and B1806-8 (20%). Ten percent or greater incidence of soft rot was noted in AF1455-20 (10%) and AF2215-1 (18%). Culls were commonly misshapes, sunscald, growth cracks, and skin blemishes attributed to Rhizoctonia.

NE-1014 Red Trial. (Tables 6a and 6b)

The standard, Chieftain, had a marketable yield of 168 cwt/A. Seven of the 12 clones in the trial had higher marketable yields than Chieftain but were not statistically different. NY129 was the only clone to have an overall appearance rating of 7. Overall, internal defects were slight and only one clone, B1758-4, had incidence of soft rot at 10%. Culls were due mostly to silver scurf, misshapes, growth cracks, and skin blemishes attributed to Rhizoctonia.

Unreplicated Trial. (Tables 7a and 7b)

Sixty-four clones were evaluated in this trial along with the standards Atlantic, Snowden and Superior. Each 28-hill plot was unreplicated. Clones with promising attributes such as high yield, high specific gravity, exceptional appearance and/or high disease resistance will be evaluated in following years in replicated trials.

B. Breeding and Early Generation Selection Efforts

1. NCSU/USDA-ARS Early Generation Project. (8a and 8b and 9a and 9b)

This project, conducted in cooperation with Dr. Kathleen Haynes, USDA-ARS and funded in part by the USDA-CSREES, is an on-going experiment focused on: 1) developing improved potato breeding and selection methods for the eastern US; and 2) developing improved varieties more suitable to the range of climates and photoperiods found in the Mid-Atlantic and Southeastern U.S. In 2003, 31 clones remaining from two potato populations composed of multiple parents, and subjected to three years of selection in ME and NC during a four year period, were evaluated for the second time in replicated trials in Virginia, North Carolina and for the first time in New Jersey. The data for the two NC trials are summarized in Tables 8 and 9. The data from NC, NJ and VA will be summarized and presented elsewhere at the conclusion of the study in 2004. No clones in these populations are producing significantly higher yields than Atlantic, though several have produced equal yields. Several also have SG values approaching that of Atlantic with chip scores that are better. Two clones, B2133-18 (SG 1.081) and B2133-75 (SG 1.073), with marketable yields at 86% and 75% of Atlantic were given overall appearance scores of 8 and 9, respectively. Both of these clones received chip scores of 2 and both had lower IHN levels compared to Atlantic. Following this year's study, the clones will be open for broader evaluation by other collaborators in 2004 if so desired.

USDA EG 20-Hill Plots

Our third year selections are made on 20-hill plots. After this stage, the clones are placed in multi-state yield trials as described above. This year, 34 clones were planted and we selected seven in NC, and seven in ME with two clones being selected in NC and ME for a total of twelve clones remaining. Of the seven selected in NC six were selected in NC in 2002 and of those four were selected in NC during the 2001 single-hill harvest. Of those selected in ME six were selected in ME last year and three were also selected in ME from the 2001 single hills. B2273-75 was selected in both locations this season as well as at the six-hill level in 2002.

USDA 4-Hill Plots

This trial is an extension of our collaborative breeding efforts with the USDA-ARS. First year selections were made on single hills in 2002 in ME, and a single large tuber is then sent to us and cut into four seed pieces. This year 118 clones were screened and 19 were selected.

2. NCSU/Univ. of Maine and Cornell Early Generation Selection Projects

UM EG 4-Hill, 12-Hill and 20-Hill Plots

Our collaboration with the University of Maine (UM) and Cornell University (CU) also supported by the USDA-CSREES, is similar to the USDA-ARS Early Generation project in that it is a in an attempt to develop more adapted clones for the mid-Atlantic and Southeastern regions of the US and mirrors that of the UDSA four-hill trial. For 2003, 84 UM four-hill plots were sent to NC from ME and planted, and we selected two for further evaluation. Out of the ten 12-hill plots and twelve 20-hill plots sent from ME, one each was selected. These will be evaluated next year at the 12- and 20-hill plot level, and in our unreplicated trial, respectively.

From CU, we screened 38 clones in 12-hill plots and selected seven. These will be evaluated in 2004 as 20-hill plots. Typically a four-hill plot is also established but due to the exceptionally dry conditions last year in NY seed was not available.

3. NCSU Potato Variety Development Efforts

In 2002, we decided to initiate a small project to determine if the breeding program could maintain it's own breeder's seed in eastern NC from year to year so we retained all first-year selections made in NC during July 2002 (167 clones in total) and planted them as six-hill plots in 2003. Eighteen clones were selected from this population and they will be planted as 20-hill plots in 2004. Results seem favorable to date as all clones tested for PVX, PVY, PVS, and PLRV have been negative. From the 8,364 single hills planted in 2003, 236 selections were made. They will be planted as six-hill plots in 2004.

V. ACKNOWLEDGMENTS

This work could not be conducted without the assistance of the growers, county extension agents and NCDA&CS TRS staff. We are grateful for their continued support and assistance. Wise Foods, Berwick, PA is also gratefully acknowledged for conducting chip tests. Seed for the trials was provided by: Dr. Dave Douches, Michigan State University; Dr. Kathleen Haynes, USDA/ARS, Beltsville, MD; Dr. Walter De Jong Cornell University; Dr. Zenaida Ganga, University of Maine, University of Maine. Also a special thanks goes to Mr. Todd Bradley and the staff at Maine Farmers Exchange, Presque Isle, ME for their efforts to procure small amounts of seed for shipment to NC. This project is funded in part by The North Carolina Potato Growers Association, the USDA-CSREES and the USDA-ARS. Their continuing support is much appreciated.

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Table 1a. Copper's Farm Variety Trial. Total and marketable yield, percentage of total yield by size class, specific gravity, and chip scores of potato clones harvested 110 DAP[1] at Copper's Farm, Gum Neck, Tyrrell Co., NC - 2003.

Clone	Total Yield cwt/A	Marketable Yield cwt/A	% Atl.	Size Distribution by Class[2] (% of total yield) A's + B's	C's	Culls	Specific Gravity[3]	Chip Color[4] TRS	Wise
Atlantic	353	296	100	84	9	6	1.079	2	3
Harley Blackwell	379	323	110	85	13	2	1.073	2	3
B0766-3	358	308	104	86	10	4	1.074	1	2
B1240-1	376	331	112	88	5	7	1.069	3	4
B1829-5	312	247	84	79	18	3	1.074	2	4
B1970-1	298	209	71	70	15	14	1.068	-	-
B2029-1	284	179	60	62	26	12	1.061	2	-
B2135-163	409	347	117	85	12	3	1.067	2	3
Ivory Crisp	355	283	95	80	11	10	1.077	3	3
MSF373-8	225	172	58	77	11	12	1.067	2	4
MSH095-4	295	236	80	80	12	8	1.077	2	3
Marcy	394	358	120	91	7	2	1.077	2	3
NY126	446	382	128	85	7	8	1.074	2	2
Snowden	270	205	69	76	22	2	1.069	1	2
Superior	309	242	82	78	8	14	1.063	3	4
Grand Mean	339	276							
CV (%)	11	13							
LSD (K=100)	50.5	48							

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: A's + B's > 1 7/8"; C's ≤ 1 7/8"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

[4] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 1b. Cooper's Farm Variety Trial. Plant vine type, disease and, air pollution scores, maturity at ca. 3 weeks prior to harvest, external and internal tuber attributes, of potato clones harvested 110 DAP[1] at Cooper's Farm, Gum Neck, Tyrrell Co., NC-2003

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
Atlantic	8	9	8	6	7	5	7	5	3	7	6	7	6	10	8.5	28	0	3	0	GC, SR, MS, SS
Harley Blackwell	9	8	7	4	7	6	7	7	2	7	5	7	8	0	9.0	3	3	0	0	SR, SS, MS, RZ, GC
B0766-3	6	9	6	5	8	7	5	6	3	7	6	7	5	5	8.8	18	0	3	0	SR, MS, GC, DSE
B1240-1	7	9	8	7	8	7	5	4	5	7	8	7	4	0	9.0	23	0	0	0	^EL, GC, MS, SR, SS
B1829-5	6	9	8	4	6	7	7	7	2	8	3	7	7	5	8.3	3	0	3	0	SR, EL, SS
B1970-1	7	9	8	4	6	7	5	5	5	8	3	7	2	7.5	7.5	5	0	0	0	^MS, SR, RZ, YF1
B2029-1	5	8	6	3	7	8	5	7	4	8	3	6	3	2.5	8.8	0	0	0	0	^^SR, SS, MS, AC, YF1
B2135-163	6	9	8	5	7	7	7	6	3	8	5	7	6	2.5	8.8	13	0	0	0	MS, SS, SR, GC, EL
Ivory Crisp	6	9	9	4	8	7	7	7	2	8	3	5	5	0	9.0	3	0	5	0	^^^SR, EL, MS, SS, AC
MSF373-8	8	9	8	6	8	7	5	4	4	7	7	6	4	0	9.0	13	0	3	3	MS, GC, SS, FS
MSH095-4	7	8	8	6	8	7	5	5	3	4	7	7	4	0	9.0	0	0	0	0	^EL, MS, SS, SG, DSE, DAE
Marcy	9	8	8	7	7	5	5	5	5	7	7	8	7	2.5	8.8	8	0	0	0	SS
NY126	6	9	7	5	7	7	5	5	5	7	6	6	5	2.5	8.5	10	0	0	0	^EL, SR, MS, SS, GC
Snowden	6	8	6	4	7	5	7	7	2	5	3	8	5	0	9.0	0	0	0	0	MS, SS, DSE, DAE
Superior	7	9	8	5	7	7	5	7	4	6	6	7	5	5	8.8	0	0	5	5	MS, EL, SS, SR

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in A and B size classes. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 2a. James Brother's Farm Variety Trial. Total and marketable yield, percentage of total yield by size class, and specific gravity of potato clones harvested 107 DAP[1] (100 DVK[1]) at James Brother's Farm, Weeksville, Pasquotank Co., NC - 2003.

	Total Yield	Marketable Yield		Size Distribution by Class[2] (% of total yield)			Specific	Chip Color[4]	
Clone	cwt/A	cwt/A	% Atl.	A's + B's	C's	Culls	Gravity[3]	TRS	Wise
AF1424-7	224	192	90	86	10	4	1.075	2	3
AF1455-20	217	186	87	86	7	7	1.071	4	3
Atlantic	257	217	100	84	8	8	1.081	2	2
Harley Blackwell	281	248	111	88	11	1	1.073	2	2
B0766-3	239	198	93	83	8	9	1.075	2	2
B1240-1	228	189	89	83	7	10	1.067	4	4
B1758-4	236	168	79	71	21	8	1.061	-	-
B1806-8	241	191	89	79	15	5	1.068	-	-
B1816-5	215	163	76	76	15	9	1.069	-	-
B2135-163	248	209	97	84	12	4	1.072	3	2
Cherry Red	255	214	100	84	10	6	1.067	-	-
Chieftain	243	202	95	82	8	10	1.060	-	-
Dark Red Norland	167	127	60	76	18	6	1.060	-	-
Ivory Crisp	228	191	89	84	12	4	1.077	4	4
Marcy	286	258	121	90	8	2	1.071	4	4
Michigan Purple	265	183	85	70	5	26	1.067	-	-
MSH031-5	209	164	76	78	14	8	1.071	-	-
NorDonna	227	167	79	73	18	9	1.057	-	-
NY126	265	216	101	82	5	14	1.073	-	-
NY129	228	204	94	89	7	4	1.056	-	-
Snowden	197	137	64	70	26	4	1.068	3	2
Superior	242	215	100	89	6	5	1.067	3	4
Yukon Gold	243	209	97	86	9	5	1.069	-	-
Grand Mean	237	194							
CV (%)	8	11							
LSD (K= 100)	27.2	27.7							

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: A's + B's > 1 7/8"; C's ≤ 1 7/8"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

[4] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 2b. James Brother's Farm Variety Trial. Plant vine type, disease and air pollution scores, maturity at ca. 3 weeks prior to harvest, external and internal tuber attributes, of potato clones harvested 107 DAP[1] (100 DVK[1]) at James Bros. Farm, Weeksville, Pasquotank Co., NC-2003

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
AF1424-7	7	8	8	7	8	7	4	3	4	6	6	8	4	0	9.0	0	0	0	0	SS, MS
AF1455-20	8	9	8	8	7	7	5	7	3	7	7	7	5	0	9.0	0	0	0	5	MS, GC, DSE, v. lumpy
Atlantic	8	8	8	6	7	6	7	6	2	6	7	8	6	3	8.5	3	0	0	0	MS, SS, DAE, DSE, SR
Harley Blackwell	9	9	8	6	7	5	7	8	2	7	3	8	8	0	9.0	0	0	0	5	MS, SS
B0766-3	6	8	8	6	6	7	5	7	3	7	6	8	4	3	8.8	0	0	0	0	MS, GC
B1240-1	7	7	8	7	6	7	5	4	3	7	7	8	5	0	9.0	3	0	0	0	SS, GC, MS, DSE
B1758-4	9	7	7	7	2	9	7	7	2	8	3	6	5	8	8.5	3	0	3	0	MS, SR, SS
B1806-8	9	9	7	5	7	7	5	4	3	7	5	8	5	0	9.0	0	0	0	0	MS, SS, YF2
B1816-5	9	9	7	4	1	8	5	5	3	7	3	8	5	0	9.0	0	0	0	0	MS, GC
B2135-163	8	9	8	5	7	7	7	7	2	8	5	8	7	3	8.8	3	0	0	0	^GC, MS, SR, SS
Cherry Red	9	9	8	6	2	7	5	7	4	6	5	7	5	0	9.0	3	0	0	0	MS, SS, SR, GC
Chieftain	8	9	8	6	2	7	5	3	4	5	7	6	4	3	8.8	0	0	3	0	MS, GC, RZ
Dark Red Norland	5	8	5	2	2	8	5	7	3	6	3	7	5	0	9.0	0	0	0	0	MS, SS, GC
Ivory Crisp	6	8	8	5	8	7	7	5	2	6	4	8	6	0	9.0	0	0	0	0	SS, MS, GC
Marcy	6	8	8	7	7	5	7	6	3	7	5	8	8	0	9.0	0	0	0	0	MS, SS
Michigan Purple	6	8	7	4	1	8	5	3	5	6	7	3	4	0	9.0	0	0	0	3	^^SCB, MS, GC, SG, RZ
MSH031-5	6	7	8	6	6	8	3	4	5	8	5	7	4	0	9.0	0	0	0	0	^SS, MS
NorDonna	9	9	8	5	2	8	7	7	2	5	5	6	7	0	9.0	0	0	0	0	RZ, MS
NY126	7	8	8	7	7	6	5	6	4	6	9	8	5	0	9.0	0	0	0	0	MS, SS, EL, YF1
NY129	8	9	8	7	2	7	9	6	1	8	6	8	8	3	8.3	3	0	5	0	MS, SS, RZ, SR
Snowden	8	8	7	5	6	5	7	7	2	4	3	8	5	0	9.0	0	0	0	0	MS, ^DSE, GC
Superior	6	8	8	4	6	7	7	7	3	6	5	8	7	20	8.3	0	0	3	0	MS, SS, RZ, GC
Yukon Gold	9	9	7	6	7	8	5	7	4	7	6	6	6	0	9.0	0	0	0	0	MS, PTS, GC, SR, YF2

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in A and B size classes. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 3a. Tull Hill Farms Red Variety Trial. Total and Marketable yield, percentage of total yield by size class, and specific gravity of potato clones harvested 112 DAP[1] (106 DVK[1]) at Tull Hill Farms, Kinston, Lenoir Co., NC - 2003

Clone	Total Yield cwt/A	Marketable Yield cwt/A	% Chieftain	Size Distribution by Class[2] (% of total yield) A's + B's	C's	Culls	2° Growth	Specific[3] Gravity
B1523-4	331	263	77	79	18	3	0	1.069
B1758-3	290	199	57	63	32	5	0	1.065
B1758-4	350	274	82	78	17	4	0	1.063
B1763-4	293	268	80	92	6	2	0	1.076
B1816-5	326	279	83	85	12	3	0	1.068
B1952-2	266	243	71	91	5	4	0	1.080
Cherry Red	309	279	83	90	7	3	0	1.075
Chieftain	360	339	100	94	5	1	0.2	1.066
Dark Red Norland	255	212	63	82	14	4	0.4	1.062
La Rouge	350	306	90	87	9	4	0	1.069
Michigan Purple	361	306	90	85	2	13	0	1.075
NorDonna	301	210	62	69	5	27	25	1.060
NY129	313	288	86	92	9	1	0	1.062
Grand Mean	316	266						
CV (%)	14	17						
LSD (K= 100)	75.5	72.2						

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: A's + B's > 1 7/8"; C's ≤ 1 7/8"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

Table 3b. Tull Hill Farms Red Variety Trial. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, external and internal tuber attributes of potato clones harvested 112 DAP[1] (106 DVK[1]) at Tull Hill Farms, Kinston, Lenoir Co., NC-2003

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
B1523-4	6	8	9	4	3	6	5	6	2	7	3	8	6	0	9.0	0	5	0	5	MS, FDR
B1758-3	5	7	7	5	2	8	5	6	4	8	2	7	6	5	8.8	3	5	5	10	MS, SR, m PTS
B1758-4	9	8	8	7	2	7	5	7	2	8	3	7	7	8	8.5	0	0	23	5	^MS, SR
B1763-4	6	8	8	5	1	5	7	7	2	5	6	8	5	0	9.0	0	0	8	0	MS
B1816-5	6	8	9	4	1	6	5	6	4	6	5	7	6	0	9.0	0	0	0	0	MS, SCB, SiSc, RZ, YF2
B1952-2	7	9	9	5	1	8	5	7	3	6	5	8	7	0	9.0	3	23	0	0	MS, SR, GC, RZ
Cherry Red	8	9	9	8	2	6	5	7	4	7	5	7	6	0	9.0	18	5	18	0	MS, RZ, SiSc
Chieftain	7	8	8	7	3	7	6	5	2	5	6	8	5	25	7.8	0	5	8	5	MS
Dark Red Norland	5	7	7	4	3	7	7	7	3	6	4	3	2	5	8.8	0	0	0	0	^SiSc, MS
La Rouge	6	8	8	6	3	8	7	6	2	3	5	8	4	0	9.0	3	13	13	0	^MS, SS
Michigan Purple	3	8	9	5	1	8	5	6	5	6	7	3	4	8	8.3	0	0	0	0	^SCB, ^SiSc
NorDonna	7	8	8	7	2	8	7	7	2	6	5	7	7	0	9.0	3	5	3	0	^SG, RZ
NY129	7	8	9	6	2	6	9	7	1	7	5	7	8	0	9.0	0		3	0	RZ, IL

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in A and B size classes. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 4a. Round White Trial One. Total and marketable yield, percentage of total yield by size class, specific gravity, and chip scores of potato clones harvested 98 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	% Atl.	Size Distribution by Class[2] (% of total yield) 1's	2's	3's	4's	5's	Culls	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]	Chip Color[4]
AF1424-7	227	195	117	8	42	43	0	0	7	85	43	1.078	2
AF1455-20	168	125	70	17	43	31	0	0	10	73	31	1.081	1
AF1569-2	236	177	103	10	41	33	1	0	16	75	34	1.073	2
AF1753-16	176	61	34	8	34	1	0	0	57	35	1	1.081	-
AF2206-9	171	110	65	12	51	12	1	0	25	63	12	1.080	2
AF2242-10	153	107	60	13	46	21	1	0	19	68	22	1.083	3
AF2291-10	155	113	65	9	45	28	0	0	18	73	28	1.087	2
AF2314-2	168	108	65	8	50	14	0	0	29	64	14	1.065	3
AF2321-5	182	122	67	8	35	29	1	0	28	64	30	1.065	4
AF2326-1	168	136	80	7	47	33	0	0	14	80	33	1.077	2
AF2329-1	211	165	97	3	24	47	5	0	21	76	52	1.055	4
AF2351-2	203	94	56	7	28	17	1	0	47	46	18	1.075	1
AF2351-3	176	134	79	14	50	26	0	0	11	75	26	1.082	3
AF2351-4	157	105	64	12	40	25	0	0	23	65	25	1.075	2
AF2363-11	163	84	49	6	28	20	1	0	44	49	21	1.088	2
Atlantic	221	181	100	7	35	45	1	0	12	82	46	1.091	1
Harley Blackwell	241	173	96	13	51	22	0	0	15	72	22	1.073	3
B0766-3	226	170	97	5	28	46	1	0	20	75	47	1.074	1
B1240-1	205	153	86	7	29	45	1	0	19	75	46	1.080	2
B1806-8	246	190	108	19	58	20	0	0	4	77	20	1.078	2
B2135-163	206	161	91	13	48	29	0	0	10	77	29	1.075	1
MSH031-5	186	117	64	14	49	15	0	0	22	64	15	1.080	3

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's 1 7/8 to 2 1/2"; 3's 2 1/2 to 3 1/4"; 4's 3 1/4 to 4"; 5's ≥ 4"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

[4] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 4b. Round White Trial One. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, tuber external and internal attributes of potato clones harvested 98 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
AF1424-7	6	9	8	5	8	7	5	5	3	8	6	7	5	0	9.0	8	0	0	0	^MS, GC, SS
AF1455-20	7	9	8	6	6	7	6	5	3	7	5	7	4	0	9.0	0	0	0	0	RZ, ^MS, EL
AF1569-2	7	9	9	5	7	6	7	5	2	7	7	6	4	0	9.0	3	0	0	3	^GC, RZ, MS
AF1753-16	9	9	8	8	5	4	7	4	7	7	7	7	1	0	9.0	8	0	0	3	^^MS, SR
AF2206-9	6	9	7	4	8	8	7	6	3	6	4	6	4	0	9.0	0	0	0	10	^SS, SCB, GC, MS, IL
AF2242-10	6	9	8	5	6	6	7	5	3	6	7	7	5	0	9.0	3	0	0	33	MS, SS, SR, GC, RZ
AF2291-10	8	9	8	7	6	6	7	5	4	7	7	7	4	0	9.0	0	0	0	3	SS, MS, SG, SR, GC
AF2314-2	5	9	7	5	5	6	7	6	5	8	7	7	6	0	9.0	0	0	3	5	MS, ^GC
AF2321-5	7	9	8	5	8	6	7	5	4	7	7	5	4	0	9.0	0	0	3	8	SR, RZ, GC, IL, SS, MS
AF2326-1	6	9	8	5	8	7	7	6	4	7	7	8	6	15	7.3	0	0	0	8	MS, SS, RZ
AF2329-1	6	9	8	5	8	7	7	5	3	6	9	7	4	0	9.0	0	0	0	3	MS, GC, SS, IL, RZ, DAE, DSE
AF2351-2	7	9	8	5	8	8	7	7	2	7	7	6	3	0	9.0	5	0	5	5	^^GC, SS, MS, SR
AF2351-3	8	9	9	6	8	8	7	6	2	7	5	7	5	0	9.0	3	0	13	0	MS, MS, SR, SS
AF2351-4	7	9	8	5	6	7	5	5	3	7	5	7	5	0	9.0	0	0	0	8	GC, MS, RZ, SR, SS
AF2363-11	9	9	8	6	8	7	7	4	3	7	5	7	4	5	8.5	5	0	10	3	MS, GC, RZ, DSE, DAE, SR, SS, IL
Atlantic	7	9	9	6	7	5	7	6	2	6	6	7	6	20	8.0	28	0	3	10	MS, SS, RZ, SR, GC, IL
Harley Blackwell	5	9	7	5	7	5	7	7	1	7	3	7	7	0	9.0	3	0	0	10	RZ, GC, SR
B0766-3	6	9	8	4	6	6	7	5	2	6	6	7	7	0	9.0	5	0	0	13	SR, IL, DSE, MS, GC
B1240-1	6	9	7	6	6	6	7	5	3	7	8	7	6	0	9.0	8	0	0	0	GC, SS, SR, RZ
B1806-8	6	9	8	5	8	6	6	5	3	8	6	8	7	0	9.0	5	0	0	10	SS, MS, SR, GC, YF1
B2135-163	5	9	9	5	6	6	7	7	3	8	5	8	8	3	8.8	18	0	0	5	MS, RZ, GC, SS, IL, SR
MSH031-5	6	9	7	5	8	8	4	6	4	8	5	5	6	0	8.5	0	0	0	5	SS, MS, RZ, IL

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 4a. Continued.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	% Atl.	Size Distribution by Class[2] (% of total yield) 1's	2's	3's	4's	5's	Culls	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]	Chip Color[4]
MSI005-20Y	180	121	67	17	43	24	1	0	16	68	24	1.065	-
MSJ461-1	156	109	66	22	42	26	0	0	9	68	26	1.072	2
Marcy	214	194	103	6	43	47	1	0	4	91	48	1.078	1
Snowden	210	156	91	20	61	14	0	0	5	74	14	1.073	2
Superior	228	180	103	7	32	46	1	0	15	78	47	1.073	2
Yukon Gold	229	187	109	6	40	42	0	0	12	82	42	1.075	-
Grand Mean	195	140											
CV (%)	23	28											
LSD (K=100)	70	59											

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's 1 7/8 to 2 1/2"; 3's 2 1/2 to 3 1/4"; 4's 3 1/4 to 4"; 5's ≥ 4"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

[4] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 4b. Continued.

Clone	Plant Data[2] TYPE	DIS	POLL	MAT	Tuber Data[2] CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	% Internal Defects[3] HN	HNR	HH	VR	BC	SR	Comments[4]
MSI005-20Y	5	9	8	5	7	6	7	7	2	8	5	7	7	0	9.0	0	0	0	0	MS, RZ, SCB SR
MSJ461-1	5	9	7	6	6	6	6	6	3	8	5	7	5	25	7.8	0	0	0	5	MS, RZ, SCB SR
Marcy	6	9	9	6	7	5	7	5	3	8	6	7	7	3	8.8	10	0	0	3	MS, GC, IL
Snowden	6	8	6	5	6	5	7	7	2	5	3	7	4	0	9.0	0	0	0	5	MS, GC, SR, SS, DAE, DSE
Superior	6	9	8	4	6	5	5	7	5	5	7	7	5	3	8.8	0	0	10	3	MS, SS, RZ, SR
Yukon Gold	9	9	7	5	7	7	6	7	4	8	5	7	7	5	8.5					
	5	0	3	0	MS, RZ, SR, SCB, GC, SS															

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

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Table 5a. NE-1014 Trial. Total and marketable yield, percentage of total yield by size class, specific gravity, and chip scores of potato clones harvested 98 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	% Atl.	Size Distribution by Class[2] (% of total yield) 1's	2's	3's	4's	5's	Culls	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]	Chip Color[4]
AC Sunbury	204	176	95	6	47	40	0	0	8	86	40	1.071	4
AF1455-20	169	126	69	14	45	27	2	0	12	74	30	1.073	2
AF1569-2	235	166	90	11	39	31	1	0	18	71	32	1.067	2
AF1753-16	221	95	53	4	36	8	0	0	53	43	8	1.077	-
AF1938-3	211	158	83	6	32	42	1	0	19	75	42	1.071	1
AF2115-1	214	168	85	10	40	37	1	0	13	77	38	1.067	2
AF2207-4	171	112	62	21	51	14	0	0	14	65	14	1.084	1
AF2215-1	203	144	75	5	29	39	1	0	26	69	40	1.081	3
AF2222-2	179	128	69	21	51	20	0	0	7	72	20	1.074	1
Atlantic	240	200	100	10	44	38	0	0	8	82	38	1.082	1
ATX84706-2Ru	227	163	87	6	40	30	1	0	23	71	30	1.068	-
B1240-1	216	173	90	7	34	45	1	0	13	80	47	1.081	3
B1806-8	246	185	94	24	55	19	0	0	3	73	19	1.077	1
Ivory Crisp	198	158	83	13	42	37	0	0	8	80	37	1.078	3
Katahdin	198	166	89	9	48	34	1	0	7	84	35	1.062	-
Kennebec	216	142	76	8	48	18	0	0	26	66	18	1.066	-
NY120	229	154	82	21	52	16	0	0	12	67	16	1.075	2
NY125	239	208	109	11	64	23	0	0	3	87	23	1.070	2
NY126	236	189	108	5	31	50	0	0	13	82	50	1.073	1
NY127	252	198	109	10	41	38	0	0	11	79	38	1.064	3
NY128	239	186	104	20	60	18	0	0	2	78	18	1.080	2
Snowden	259	216	113	15	57	26	0	0	2	83	26	1.078	2
Superior	215	178	92	7	46	36	0	0	10	82	36	1.072	4
Yukon Gold	225	189	97	7	39	45	0	0	10	83	45	1.072	-
Grand Mean	218	166											
CV (%)	17	21											
LSD (K=100)	58.1	55.8											

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's > 1 7/8 to 2 1/2"; 3's > 2 1/2 to 3 1/4"; 4's > 3 1/4 to 4"; 5's > 4" Culls = all defective potatoes.

[3] Determined by weight in air/water method.

[4] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 5b. NE-1014 Trial. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, tuber external and internal attributes of potato clones harvested 98 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

	Plant Data[2]				Tuber Data[2]										% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP		HN	HNR	HH	VR	BC	SR	Comments[4]
AC Sunbury	8	9	6	4	9	8	5	7	3	7	7	7	6		0	9.0	3	0	3	0	SR, GC, RZ
AF1455-20	8	9	8	5	6	7	5	6	2	8	5	7	4		0	9.0	5	0	5	10	MS, GC, SR, RZ
AF1569-2	8	9	9	5	6	7	7	6	2	8	6	7	5		0	9.0	0	0	0	3	GC, RZ, SS, MS
AF1753-16	9	9	8	8	5	4	7	4	8	8	7	8	1		0	9.0	13	0	3	8	^^MS, ^GC
AF1938-3	6	9	7	5	6	7	7	6	3	7	7	7	5		0	9.0	0	0	3	5	RZ, ^GC, SR, ^IL, SS, MS
AF2115-1	7	9	9	5	8	8	7	5	5	6	8	6	4		10	8.3	0	0	3	3	MS, GC, IL, RZ, DAE, SR
AF2207-4	8	9	8	6	6	8	5	6	4	8	5	6	5		0	9.0	0	0	3	8	IL, MS, GC, RZ, SR, SS
AF2215-1	8	9	7	5	8	7	7	7	2	7	5	7	4		0	9.0	0	0	0	18	^GC, SS, SR, MS
AF2222-2	9	9	7	4	8	7	7	7	2	8	3	8	7		3	8.8	18	0	8	0	SR, MS, GC, RZ
Atlantic	9	9	8	5	7	5	7	6	2	6	6	8	6		5	8.3	10	0	3	5	MS, GC, SS, m DAE, m DSE
ATX84706-2Ru	8	9	8	6	6	6	5	4	6	8	7	7	4		0	9.0	10	0	0	5	^GC, MS, SR
B1240-1	6	9	8	6	6	6	7	5	3	7	7	8	7		0	9.0	8	0	0	3	GC, MS, RZ, SS
B1806-8	7	9	8	5	7	8	7	6	2	8	4	8	6		0	9.0	20	0	3	0	SS, MS, SR, RZ, YF1
Ivory Crisp	6	9	9	5	8	8	7	5	2	7	6	8	7		0	9.0	5	0	0	0	MS, SS, GC
Katahdin	6	8	7	5	8	8	5	5	4	7	7	8	7		3	8.8	5	0	3	3	RZ, GC, SS
Kennebec	9	9	8	7	8	7	7	4	5	6	7	7	3		3	8.8	3	0	0	3	^GC, ^MS, SS, RZ
NY120	6	8	7	5	6	6	7	7	2	7	8	6	6		0	9.0	3	0	0	0	RZ*, SS, SR, GC
NY125	9	9	9	5	6	6	5	7	4	7	7	8	8		0	9.0	0	0	0	0	MS, SS, RZ
NY126	9	9	9	6	7	6	5	5	3	7	7	8	7		0	9.0	0	0	0	8	GC, RZ, SS
NY127	7	9	8	5	8	7	7	7	2	6	3	7	5		0	9.0	0	0	0	0	DAE, DSE, GC, MS, SS, IL, RZ
NY128	8	9	9	6	7	6	7	5	2	6	5	7	5		0	9.0	8	0	3	0	SS, MS, GC, DAE, DSE
Snowden	8	8	6	6	7	5	7	6	2	5	3	8	5		0	9.0	0	0	0	3	DSE, DAE, GC, SS, SR, MS
Superior	8	9	8	5	6	6	7	6	3	6	6	7	6		3	8.8	0	0	10	0	SR, SS, RZ, MS, GC
Yukon Gold	9	9	8	6	7	8	5	5	3	8	6	8	6		5	8.3	0	0	3	0	GC, MS

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 6a. NE-1014 Red-Skinned Potato Variety Trial. Total and marketable yield, percentage of total yield by size class, and specific gravity of potato clones harvested 98 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	% Chieftain	Size Dist. by Class (%)[2] (% of total yield) 1's	2's	3's	4's	5's	Cull's	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]
AC Red Island	245	177	107	9	35	34	2	0	20	71	36	1.067
B1523-4	210	164	105	14	44	33	1	0	8	78	33	1.067
B1758-3	224	163	99	15	51	21	0	0	13	72	21	1.064
B1758-4	290	225	142	13	48	29	0	0	11	77	29	1.067
B1816-5	232	177	113	9	39	38	0	0	14	77	38	1.070
Cherry Red	213	169	105	6	29	49	2	0	15	79	51	1.063
Chieftain	217	168	100	13	43	33	1	0	11	77	34	1.060
Dark Red Norland	207	135	87	7	30	34	0	0	29	65	34	1.052
Michigan Purple	258	213	137	5	26	53	4	0	12	83	57	1.065
NDTX731-1R	261	217	134	7	38	45	0	0	10	83	45	1.052
NorDonna	186	134	84	16	37	34	1	0	12	72	35	1.056
NY129	247	206	130	9	39	44	1	0	7	84	45	1.063
Grand Mean	232	179										
CV (%)	18	24										
LSD (K=100)	56	66										

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's 1 7/8 to 2 1/2"; 3's 2 1/2 to 3 1/4"; 4's 3 1/4 to 4"; 5's ≥ 4"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

Table 6b. NE-1014 Trial Red-Skinned Potato Variety Trial. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, tuber external and internal attributes of potato clones harvested 98 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

	Plant Data[2]				Tuber Data[2]										% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP		HN	HNR	HH	VR	BC	SR	Comments[4]
AC Red Island	7	9	8	6	2	6	7	7	4	7	7	6	6		3	8.8	0	0	3	3	GC, RZ, MS, YF1
B1523-4	7	9	8	6	2	6	5	4	2	7	5	7	4		0	9.0	0	0	3	3	RZ, SR, MS, SiSc, FDR
B1758-3	9	6	7	5	2	7	7	7	2	6	3	6	5		5	8.5	0	0	0	0	SiSc, MS, RZ, GC, SS
B1758-4	8	7	6	5	2	7	7	5	2	6	5	7	6		3	8.8	0	0	0	10	RZ, MS, GC, SiSc, SR
B1816-5	6	8	8	5	1	7	7	4	4	6	6	7	6		0	9.0	0	0	3	5	GC, MS, SiSc, RZ, YF1, FDR
Cherry Red	7	9	8	4	2	6	7	6	4	5	6	7	6		0	9.0	3	0	0	5	MS, SR, SiSc, FDR
Chieftain	8	9	8	5	3	7	7	3	4	6	6	7	5		0	9.0	0	0	0	5	MS, RZ, GC, FDR
Dark Red Norland	6	8	7	2	2	8	6	7	4	7	5	4	5		0	9.0	3	0	0	0	^^SiSc, MS, SR
Michigan Purple	7	9	8	6	1	8	5	4	5	3	9	4	4		3	8.8	0	0	0	0	^SCB, MS, FDR
NDTX731-1R	7	8	4	3	2	6	7	6	2	5	6	8	6		0	9.0	0	0	3	3	MS, GC, RZ, DAE, FDR
NorDonna	8	8	9	5	2	8	7	7	2	7	4	6	6		0	9.0	0	0	0	0	SG, RZ, SR, MS
NY129	8	9	9	6	2	6	7	4	1	7	6	7	7		0	9.0	0	0	0	0	RZ, SR

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 7a. UNR Trial. Total and marketable yield, percentage of total yield by size class, and specific gravity of potato clones harvested 105 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	Marketable Yield % Atlantic	Size Dist. by Class (%)[2] (% of total yield) 1's	2's	3's	4's	5's	Cull's	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]
AF2375-1	261	224	105	11	30	56	0	0	3	86	56	1.067
AF2376-3	83	57	27	6	13	56	0	0	25	69	56	1.072
AF2376-4	243	166	78	8	40	28	0	0	24	68	28	1.072
AF2376-5	215	198	93	7	31	61	0	0	1	92	61	1.093
AF2378-2	251	224	105	5	19	70	0	0	6	89	70	1.057
AF2386-2	115	86	40	19	69	6	0	0	6	75	6	1.064
AF2393-3	187	119	84	29	59	5	0	0	7	64	5	1.067
AF2393-5	324	244	173	12	47	29	0	0	12	76	29	1.062
AF2393-7	126	86	40	28	57	11	0	0	4	68	11	1.064
AF2393-9	157	126	59	15	68	13	0	0	5	80	13	1.068
AF2402-1	209	172	80	3	31	51	0	0	15	82	51	1.069
AF2407-1	243	91	43	13	37	0	0	0	50	37	0	1.069
AF2412-2	242	147	69	23	58	3	0	0	17	61	3	1.063
AF2412-6	200	95	44	5	47	0	0	0	47	47	0	1.064
AF2413-1	230	168	79	5	41	32	0	0	22	73	32	1.067
AF2413-4	206	128	60	11	37	25	0	0	27	62	25	1.053
AF2426-1	271	166	105	16	46	15	0	0	22	61	15	1.058
AF2427-1	121	62	39	16	42	9	0	0	33	51	9	1.078
AF2431-2	255	171	107	20	64	3	0	0	13	67	3	1.082
AF2432-1	204	164	103	9	69	11	0	0	10	80	11	1.077
AF2440-1	170	96	60	10	28	28	0	0	33	56	28	1.069
AF2486-5	27	18	12	22	51	17	0	0	10	68	17	1.063

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's 1 7/8 to 2 1/2"; 3's 2 1/2 to 3 1/4"; 4's 3 1/4 to 4"; 5's ≥ 4"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

Table 7b. UNR Trial. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, tuber external and internal attributes of potato clones harvested 105 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
AF2375-1	6	9	8	7	9	7	7	7	2	5	7	8	5	0	9.0	0	0	0	0	MS, SR
AF2376-3	6	8	8	8	6	6	7	4	2	8	7	6	3	0	9.0	0	0	0	0	^RZ, MS
AF2376-4	5	9	7	5	6	6	5	6	5	6	6	8	4	0	9.0	0	0	0	0	SG, MS, RZ
AF2376-5	6	9	9	6	9	8	6	7	3	6	6	8	7	0	9.0	0	0	0	0	MS
AF2378-2	5	8	9	5	9	7	7	6	4	7	7	8	5	0	9.0	0	0	0	0	MS, GC, DAE
AF2386-2	8	9	8	4	9	8	7	7	6	8	4	8	6	0	9.0	0	0	0	0	MS, SS
AF2393-3	5	6	3	2	3	8	5	7	5	8	5	7	6	0	9.0	10	0	0	10	MS, GC
AF2393-5	5	9	7	4	2	7	7	6	3	6	5	7	6	0	9.0	0	0	0	0	GC, MS, RZ
AF2393-7	5	8	6	2	2	7	5	7	3	7	3	8	7	0	9.0	0	0	0	0	RZ
AF2393-9	5	9	7	4	3	7	7	6	4	8	5	8	7	0	9.0	0	0	0	0	RZ, MS, IL, YF1
AF2402-1	8	9	7	6	9	8	5	7	5	8	6	8	5	0	9.0	0	0	0	0	SS, RZ, GC, MS
AF2407-1	6	9	7	3	6	7	5	6	8	7	6	7	2	0	9.0	0	0	0	20	^MS, GC, SS, SR
AF2412-2	6	9	9	5	4	2	7	6	6	8	5	7	5	0	9.0	40	0	0	0	MS, SS, GC, SG
AF2412-6	9	9	9	5	4	2	5	5	7	7	7	7	3	0	9.0	0	0	0	10	MS, GC, SS
AF2413-1	6	9	8	4	4	4	5	5	8	8	7	7	4	0	9.0	0	0	0	0	GC, MS, SR
AF2413-4	6	9	9	5	6	6	6	7	5	8	6	7	5	20	8.0	10	0	0	10	MS, RZ, SG
AF2426-1	6	9	9	7	6	6	5	6	6	8	7	7	3	10	8.0	10	0	0	0	RZ, MS
AF2427-1	8	9	8	5	4	2	7	4	6	8	5	8	5	0	9.0	0	0	0	0	MS, GC
AF2431-2	9	9	8	5	6	1	7	5	6	8	3	6	3	0	9.0	0	0	0	0	RZ, SR, MS, GC, SS
AF2432-1	6	9	9	6	4	2	5	7	7	8	5	8	5	10	8.0	0	0	0	10	MS
AF2440-1	6	9	8	6	5	1	4	4	6	8	5	5	4	0	9.0	0	0	0	0	^RZ, MS, GC
AF2486-5	4	8	6	3	4	3	6	7	8	8	3	8	6	0	9.0	40	0	0	0	MS

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 7a. Continued.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	% Atlantic	Size Dist. by Class (%)[2] (% of total yield) 1's	2's	3's	4's	5's	Cull's	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]
AF2489-1	224	155	98	5	52	18	0	0	26	69	18	1.073
AF2492-2	176	133	84	13	46	29	0	0	12	75	29	1.080
AF2493-1	192	115	72	16	57	3	0	0	24	60	3	1.064
AF2497-2	212	188	118	4	30	59	0	0	7	89	59	1.075
AF2498-1	195	149	94	18	54	23	0	0	6	77	23	1.067
AF2498-3	259	231	145	7	51	38	0	0	4	89	38	1.067
AF2498-6	192	159	100	9	34	43	6	0	9	83	49	1.057
AF2499-1	104	43	27	28	42	0	0	0	31	42	0	1.061
AF2500-4	212	130	92	3	27	35	0	0	35	62	35	1.063
AF2500-6	314	247	175	5	27	51	0	0	16	79	51	1.060
AF2500-7	208	103	73	14	20	29	0	0	36	50	29	1.064
AF2502-13	141	111	79	11	54	25	0	0	10	79	25	1.075
AF2502-16	193	159	113	10	38	45	0	0	8	83	45	1.074
AF2502-4	187	148	105	11	38	42	0	0	9	79	42	1.073
AF2502-6	218	150	106	3	20	49	0	0	29	69	49	1.080
AF2508-8	198	159	113	11	43	37	0	0	9	80	37	1.070
AF2525-1	160	134	94	6	39	45	0	0	10	84	45	1.055
AF2217-3	159	118	83	5	33	41	0	0	20	74	41	1.075
AF2269-8	178	132	59	10	42	32	0	0	15	74	32	1.062
AF2271-5	216	153	69	11	54	17	0	0	18	71	17	1.076
AF2321-3	295	253	113	3	23	60	4	0	11	86	63	1.060
AF2321-4	250	216	96	3	36	48	2	0	10	86	51	1.066

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's 1 7/8 to 2 1/2"; 3's 2 1/2 to 3 1/4"; 4's 3 1/4 to 4"; 5's ≥ 4"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

Table 7b. Continued.

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
AF2489-1	9	9	8	5	4	2	6	4	8	8	7	7	4	0	9.0	10	0	0	0	SG, MS, SS, GC
AF2492-2	6	9	9	6	9	7	7	7	3	5	6	8	6	0	9.0	0	0	0	10	MS, SS, RZ
AF2493-1	6	7	8	6	9	7	7	6	5	7	7	7	4	0	9.0	0	0	0	0	MS, RZ
AF2497-2	8	9	9	6	9	8	5	6	5	7	7	7	7	20	6.0	0	0	0	0	GC, MS
AF2498-1	6	9	8	4	9	8	6	7	2	5	5	7	5	0	9.0	0	0	0	0	MS, SS, DAE, DSE
AF2498-3	6	9	8	3	6	8	7	7	2	6	5	8	7	30	7.0	0	0	0	0	MS, GC, RZ
AF2498-6	5	8	6	3	9	8	6	7	2	4	5	7	4	0	9.0	0	0	0	0	SS, MS, DAE, DSE, RZ
AF2499-1	6	8	6	6	6	8	5	7	5	7	5	7	4	10	8.0	0	0	0	0	SR, MS, SG
AF2500-4	6	9	7	6	6	6	5	5	4	7	6	7	3	0	9.0	10	0	0	0	MS, ^GC
AF2500-6	6	9	7	7	6	6	6	6	4	5	7	8	6	0	9.0	0	0	0	0	^MS, DAE
AF2500-7	5	9	9	5	6	6	7	5	5	7	6	7	4	0	9.0	0	0	0	0	GC, MS, SS, SR
AF2502-13	5	9	9	5	6	7	5	6	5	7	5	7	5	0	9.0	0	0	0	0	SR, MS,
AF2502-16	6	9	9	5	6	6	6	7	3	7	6	7	6	0	9.0	0	0	0	0	MS, SS, RZ
AF2502-4	6	9	8	4	9	8	6	7	3	7	6	8	6	0	9.0	0	0	0	0	RZ, GC, SS
AF2502-6	5	9	8	5	9	6	7	7	5	7	7	7	5	0	9.0	0	0	0	0	GC, MS, SR, SS
AF2508-8	5	9	8	5	9	7	7	6	2	4	6	8	4	0	9.0	0	0	0	0	MS, SS, RZ, GC, DAE, DSE
AF2525-1	8	9	8	5	6	7	6	5	3	7	6	7	6	0	9.0	0	0	0	0	MS, RZ
AF2217-3	8	9	8	5	6	6	7	5	4	7	6	7	5	0	9.0	0	0	0	0	MS, GC, RZ
AF2269-8	9	9	8	5	9	7	6	6	5	8	6	7	6	0	9.0	0	0	0	0	MS, RZ, GC
AF2271-5	9	9	9	6	6	7	4	4	5	8	6	7	4	0	9.0	0	0	20	0	MS, GC
AF2321-3	6	9	7	5	6	6	7	6	3	7	7	8	7	0	9.0	0	0	0	0	GC, MS, SR, RZ
AF2321-4	6	9	7	5	6	6	7	6	5	8	7	7	7	0	9.0	0	0	0	0	RZ, MS

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 7a. Continued.

CLONE	Total Yield cwt/A	Marketable Yield cwt/A	% Atlantic	Size Dist. by Class (%)[2] (% of total yield) 1's	2's	3's	4's	5's	Cull's	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[3]
AF2330-2	274	210	94	8	24	50	2	0	16	77	53	1.065
AF2351-7	193	128	57	2	23	35	9	0	31	67	44	1.073
ARSW99-4120-1	229	210	149	5	32	60	0	0	3	92	60	1.078
ARSW99-4122-3	159	132	94	13	51	32	0	0	3	83	32	1.069
Atlantic	217	184	100	8	31	53	2	0	7	85	54	1.084
B2078-1	139	106	48	19	56	20	0	0	5	76	20	1.063
B2079-6	38	10	4	22	26	0	0	0	52	26	0	1.046
B2100-13	113	81	36	2	18	53	0	0	27	71	53	1.055
B2152-17	273	175	82	20	45	19	0	0	16	64	19	1.066
B2199-50	240	195	122	6	29	51	0	0	13	81	51	1.066
B2246-14	221	166	118	14	46	29	0	0	11	75	29	1.065
B2253-4	341	281	126	12	44	38	0	0	6	82	38	1.061
B2254-3	202	156	70	16	48	29	0	0	7	77	29	1.068
B2257-11	307	246	110	7	37	43	0	0	13	80	43	1.073
B2258-3	257	195	87	19	67	8	0	0	5	76	8	1.075
B2259-3	272	215	96	9	27	52	0	0	12	79	52	1.070
Snowden	190	144	88	20	55	21	0	0	4	76	21	1.073
Stampede	212	131	61	7	45	17	0	0	31	62	17	1.055
Superior	214	175	97	4	28	54	0	0	14	81	54	1.070
Winston	230	66	29	3	13	15	0	0	68	28	15	1.046
Grand Mean	205	150										

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] Size classes: 1's < 1 7/8"; 2's 1 7/8 to 2 1/2"; 3's 2 1/2 to 3 1/4"; 4's 3 1/4 to 4"; 5's ≥ 4"; Culls = all defective potatoes.

[3] Determined by weight in air/water method.

Table 7b. Continued.

	Plant Data[2]				Tuber Data[2]									% Internal Defects[3]						
Clone	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
AF2330-2	6	8	8	6	6	6	7	6	3	7	7	7	6	0	9.0	0	0	0	0	GC, MS, RZ
AF2351-7	6	9	9	7	6	5	6	5	3	7	7	7	5	80	5.0	0	0	0	0	RZ, ^GC, SS
ARSW99-4120-1	6	9	7	5	6	6	5	7	3	6	6	7	5	10	8.0	0	0	0	0	MS
ARSW99-4122-3	5	9	8	4	6	5	7	7	2	7	5	7	5	10	8.0	0	0	0	0	MS, SR
Atlantic	7.5	8.8	8	5.5	7	5	6	6.5	2	6	7	7.5	6	15	7.8	13	0	0	5	MS, GC, SR, SS
B2078-1	5	6	8	2	2	8	7	7	2	7	4	8	7	0	9.0	0	0	30	0	GC, MS, DAE
B2079-6	5	7	4	2	2	7	7	7	2	6	2	6	4	0	9.0	0	0	0	0	only cut 7 potatoes, RZ, SR
B2100-13	8	7	7	3	2	8	7	7	5	7	7	8	5	0	9.0	0	0	40	0	MS, SR, ^GC
B2152-17	6	9	9	3	2	8	4	6	2	7	5	7	6	0	9.0	0	0	0	0	MS, SS, GC, RZ, YF1
B2199-50	8	9	8	6	9	7	7	6	3	8	6	7	6	0	9.0	10	0	0	0	MS, RZ, GC
B2246-14	6	9	9	4	6	6	6	7	3	8	5	7	6	0	9.0	0	0	0	0	SR, SG, MS, RZ, SS
B2253-4	6	8	8	6	6	7	7	7	3	7	5	7	6	0	9.0	0	0	0	0	MS, GC, SR
B2254-3	6	9	8	3	6	6	6	7	4	7	5	8	6	0	9.0	0	0	0	0	^SR, SS, MS
B2257-11	6	9	8	6	9	7	6	6	5	7	6	7	6	0	9.0	0	0	0	0	SR, MS
B2258-3	6	9	8	4	6	6	6	7	2	6	3	8	6	0	9.0	0	0	0	10	RZ, MS
B2259-3	6	9	7	5	6	7	5	7	2	7	6	7	8	10	8.0	0	0	10	0	GC, SS, MS, SR
Snowden	5.7	7.7	6.7	5.3	6	5	7	7	2	5	4	7	4.5	0	9.0	0	0	0	0	MS, SS, DAE, DSE
Stampede	5	9	8	4	4	2	7	7	7	8	5	8	4	0	9.0	0	0	0	0	GC, MS
Superior	6.25	9	8.5	4.5	6	6	5.3	6.7	3	5.7	6	7	4.8	5	8.5	0	0	2.5	2.5	MS, RZ, SS, SR
Winston	5	9	7	5	7	7	5	6	5	8	6	7	2	0	9.0	0	0	0	0	^^SG, RZ, GC, MS, YF1

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 8a. Early Generation Yield Trial One. Total and marketable yield, percentage of total yield by size class, specific gravity, and chip scores of potato clones harvested 104 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

CLONE	Selection Location & Year[2] 1998	1999	2000	Total Yield cwt/A	Marketable Yield cwt/A	% Atl.	Size Distribution by Class[3] (% of total yield) 1's	2's	3's	4's	5's	Culls	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[4]	Chip Color[5]
Atlantic	N/A	N/A	N/A	308	278	100	7	38	51	1	0	3	90	52	1.086	3
B1990-17	NC	N/M	ME	229	175	64	14	38	39	0	0	10	76	39	1.063	2
B1990-3	NC	N/M	N/M	311	271	99	7	27	58	2	0	6	87	60	1.078	3
B1990-4	ME	ME	N/M	277	239	88	7	34	50	3	0	7	86	53	1.079	3
B1992-106	ME	ME	NC	230	197	74	8	44	41	0	0	6	86	41	1.084	1
B1992-125	ME	ME	ME	256	197	73	19	60	17	0	0	4	77	17	1.075	2
B1992-160	ME	ME	NC	240	195	70	6	29	45	6	0	14	81	51	1.078	1
B1992-166	ME	ME	ME	223	204	76	5	27	59	5	0	3	91	64	1.075	3
B1992-66	ME	N/M	NC	169	128	47	12	41	34	1	0	12	76	35	1.063	1
B1992-72	ME	ME	ME	218	156	56	20	47	23	0	0	9	70	23	1.074	2
B1999-175	ME	ME	NC	255	209	76	13	52	29	0	0	6	82	29	1.078	1
B2000-81	ME	ME	ME	340	279	102	4	24	52	5	0	14	82	58	1.081	4
B2001-146	ME	ME	ME	221	193	73	9	37	46	4	0	5	87	50	1.070	3
B2001-184	ME	N/M	N/M	213	183	67	10	34	51	2	0	4	86	52	1.069	3
B2001-29	NC	NC	ME	226	214	78	5	29	61	4	0	7	95	65	1.072	3
B2001-6	ME	ME	NC	152	139	53	9	48	44	0	0	6	91	44	1.068	2
B2008-34	ME	NC	NC	229	185	70	20	63	17	0	0	2	80	17	1.070	3
B2016-31	ME	N/M	NC	189	175	66	8	35	54	3	1	3	92	58	1.066	3
Snowden	N/A	N/A	N/A	197	160	60	19	58	23	0	0	3	81	23	1.072	3
Superior	N/A	N/A	N/A	193	182	66	6	34	58	2	0	15	94	60	1.069	3
Grand Mean				234	198											
CV(%)				16	19											
LSD (K= 100)				50.9	52.7											

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] NC = North Carolina; ME = Maine; N/M = Selected at both locations

[3] Size classes: 1's < 1 7/8"; 2's > 1 7/8 to 2 1/2"; 3's > 2 1/2 to 3 1/4"; 4's > 3 1/4 to 4"; 5's > 4" Culls = all defective potatoes.

[4] Determined by weight in air/water method.

[5] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 8b. Early Generation Yield Trial One. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, tuber external and internal attributes of potato clones harvested 104 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

	Plant Data[2]				Tuber Data[2]										% Internal Defects[3]						
CLONE	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
Atlantic	7	8	9	5	7	5	7	7	2	5	7	7	7	18	8.0	10	0	0	0	GC, MS, SS, SR, DAE, DSE
B1990-17	6	9	6	5	8	7	7	7	3	8	5	7	6	0	9.0	0	0	0	0	GC, RZ, SS, ^SR
B1990-3	6	9	8	6	6	7	6	6	4	7	7	6	4	3	8.8	5	0	0	0	^RZ, GC, SCB, SR, FS
B1990-4	6	9	8	7	6	6	6	6	4	8	7	6	4	0	9.0	0	0	0	0	FS, RZ, GC. MS
B1992-106	6	8	7	6	7	5	5	6	5	8	6	6	4	0	9.0	5	0	0	0	RZ, MS, GC
B1992-125	6	9	8	6	6	6	6	7	3	7	4	7	6	0	9.0	73	0	0	0	MS, SS, RZ, SR, FS
B1992-160	7	9	9	5	6	6	6	4	5	8	9	7	3	0	9.0	63	0	0	0	GC, MS, SG, SR
B1992-166	8	9	9	7	7	6	6	5	4	7	7	8	6	0	9.0	13	0	0	3	MS, GC, RZ
B1992-66	7	9	8	6	6	6	5	6	4	7	5	7	5	0	9.0	93	0	0	0	MS, GC, SS, RZ
B1992-72	6	9	8	5	6	6	7	7	2	8	3	8	6	3	8.8	45	0	0	3	SG, SR, RZ, MS
B1999-175	6	9	8	5	9	9	5	7	4	7	6	8	8	0	9.0	5	0	0	5	MS, GC, RZ
B2000-81	8	9	8	6	6	7	7	7	5	8	8	7	7	0	9.0	5	0	3	13	SS, GC, MS, RZ, LE's
B2001-146	5	9	7	4	9	7	7	7	4	8	7	7	6	3	8.8	5	0	3	5	SR, SS
B2001-184	6	8	8	5	6	7	7	5	3	8	7	7	5	0	9.0	5	0	0	3	SS, MS, SR
B2001-29	6	9	8	5	8	8	7	7	2	7	6	8	4	0	9.0	58	0	0	3	MS, SG, RZ, ^DAE
B2001-6	8	9	8	5	6	7	5	6	5	8	7	8	5	0	9.0	10	0	0	0	GC, MS, SS
B2008-34	6	9	8	4	6	7	7	7	2	7	4	7	6	0	9.0	0	0	0	13	GC, MS, SR, FS, DAE
B2016-31	5	9	7	4	9	7	7	7	2	6	8	8	6	0	9.0	0	0	0	5	GC, MS, DAE, DSE, SR
Snowden	6	9	7	5	6	5	7	7	2	5	5	8	4	0	9.0	0	0	0	3	SS, MS, DSE, SR
Superior	5	9	8	5	6	7	6	7	4	5	7	8	5	0	9.0	0	0	8	3	^MS, SR, SS, RZ, GC

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Table 9a. Early Generation Yield Trial Two. Total and marketable yield, percentage of total yield by size class, specific gravity, and chip scores of potato clones harvested 104 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

CLONE	Selection Location & Year[2] 1999	2000	2001	Total Yield cwt/A	Marketable Yield cwt/A	% Atl.	Size Distribution by Class[3] (% of total yield) 1's	2's	3's	4's	5's	Culls	1 7/8 to 4"	2 1/2 to 4"	Specific Gravity[4]	Chip Color[5]
Atlantic	N/A	N/A	N/A	265	235	100	5	31	54	4	0	6	89	58	1.084	3
B2111-80	NC	N/M	NC	207	177	74	9	44	41	1	0	5	86	41	1.077	2
B2117-218	ME	ME	ME	190	154	66	10	32	47	2	0	9	81	49	1.068	3
B2122-55	ME	NC	NC	199	165	71	6	25	51	6	0	12	82	57	1.077	3
B2122-72	ME	NC	NC	261	223	97	10	53	31	1	0	5	85	32	1.082	1
B2128-13	ME	ME	ME	269	221	94	8	33	47	2	0	10	82	49	1.075	3
B2128-133	ME	ME	ME	185	143	61	17	49	27	0	0	7	76	27	1.068	4
B2128-85	ME	NC	NC	278	241	104	9	46	40	0	0	5	87	40	1.074	2
B2130-136	NC	N/M	ME	236	198	86	12	52	32	0	0	5	84	32	1.074	3
B2131-112	ME	ME	NC	278	248	106	6	34	51	4	0	4	89	56	1.071	3
B2133-18	ME	ME	ME	235	203	86	12	41	45	0	0	3	86	45	1.081	2
B2133-46	NC	ME	NC	242	216	93	6	30	58	1	0	4	90	60	1.071	3
B2133-70	ME	N/M	ME	168	158	69	4	23	62	10	0	2	94	71	1.074	4
B2133-75	N/M	NC	N/M	199	174	75	9	26	61	1	0	4	87	62	1.073	2
B2133-81	ME	N/M	NC	200	172	73	9	50	37	0	0	5	87	37	1.077	1
Snowden	N/A	N/A	N/A	205	160	70	16	54	24	0	0	6	78	24	1.064	4
Superior	N/A	N/A	N/A	220	189	82	6	29	54	3	0	9	86	57	1.065	4
Grand Mean				226	193											
CV (%)				16	18											
LSD (K= 100)				56.7	53.9											

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] NC = North Carolina; ME = Maine; N/M = Selected at both locations

[3] Size classes: 1's < 1 7/8"; 2's > 1 7/8 to 2 1/2"; 3's > 2 1/2 to 3 1/4"; 4's > 3 1/4 to 4"; 5's > 4" Culls = all defective potatoes.

[4] Determined by weight in air/water method.

[5] Chip Color Ratings conducted by Wise Foods Inc. and the NCSU potato breeding program at the TRS/VGJREC:
1 = no defects, exceptionally bright; 2 = excellent, bright; 3 = good, light or golden; 4 = dark defects, marginal; 5 = not acceptable.

Table 9b. Early Generation Yield Trial Two. Plant vine type, disease and air pollution scores, maturity at ca. 3weeks prior to harvest, tuber external and internal attributes of potato clones harvested 104 DAP[1] at the NCSU VGJREC/NCDA TRS, Plymouth, Washington Co., NC - 2003.

	Plant Data[2]				Tuber Data[2]										% Internal Defects[3]						
CLONE	TYPE	DIS	POLL	MAT	CLR	TXT	TCX	TSS	SHP	EYE	SIZE	DIS	APP	HN	HNR	HH	VR	BC	SR	Comments[4]
Atlantic	8	9	9	6	7	5	7	5	2	5	8	8	6	33	7.0	8	0	5	0	MS, SS, GC, DAE, DSE
B2111-80	5	8	7	4	7	5	7	7	2	6	6	7	6	0	9.0	8	0	0	3	RZ, SS, MS, DAE, DSE, IL
B2117-218	6	9	8	7	8	6	7	6	2	7	6	7	6	0	9.0	0	0	0	0	MS, SS, RZ, GC, bumpy
B2122-55	8	9	7	5	6	6	7	6	2	7	6	7	7	8	8.3	3	0	3	0	RZ, MS, DAE, SS, GC, SCB
B2122-72	7	9	9	6	7	5	4	5	3	8	5	7	6	13	8.3	0	0	0	0	MS, RZ, SS, SR, GC
B2128-13	6	9	8	6	6	6	7	4	4	8	7	7	5	0	9.0	5	0	0	3	GC, SS, SG, RZ, MS
B2128-133	6	9	8	6	9	7	5	7	4	8	6	8	7	5	8.5	0	0	0	0	SG, MS
B2128-85	6	9	8	5	6	6	5	7	4	8	6	6	7	5	8.8	0	0	0	0	^SS, GC, RZ
B2130-136	6	9	8	5	9	6	6	6	3	8	6	7	7	0	9.0	23	0	0	3	RZ, GC, SS, FS,
B2131-112	8	9	9	6	7	6	7	6	2	5	7	8	7	15	8.0	5	0	0	0	SG, SS, MS, SR
B2133-18	6	9	8	5	7	6	7	6	2	8	6	8	8	3	8.8	13	0	0	0	SS, MS, RZ, SR, VN
B2133-46	6	9	8	6	7	5	7	6	4	8	7	7	6	0	9.0	5	0	0	0	RZ, GC, MS, SS
B2133-70	7	9	8	5	6	6	7	4	3	7	8	8	7	0	9.0	8	0	3	0	MS, SS
B2133-75	6	9	8	6	6	6	9	6	1	8	5	8	9	3	8.3	5	0	0	0	SS, MS, GC
B2133-81	7	9	8	6	6	5	5	6	5	7	6	8	7	0	9.0	8	0	0	0	SS, MS, GC, RZ
Snowden	6	8	6	5	6	5	7	6	3	5	5	8	5	0	9.0	0	0	0	0	MS, SS, RZ, DSE, DAE, SR
Superior	5	9	9	5	6	6	6	7	4	5	6	7	4	3	8.8	0	0	5	0	SR, MS, SS, RZ, GC

[1] DAP = Days After Planting; DVK = Days to Vine Kill

[2] See NE184 Standard Potato Rating System for key to scores in Appendix 2.

[3] Percentage determined from 10 randomly selected potatoes /rep (40 total) in size classes 3 and 4. HN=heat necrosis; HNR=average heat necrosis rating (Rating Scale: 1= very severe to 9 = absent); HH=hollow heart; VR=vascular ring discoloration; BC=brown center; SR=soft rot

[4] See Appendix 4 for Comment Codes

Appendix 1: LAND MANAGEMENT CONDITIONS

Location: Durwood Cooper Farms, Gum Neck, Tyrrell Co., NC

Trial Design: Randomized complete block, four replications
Plot Dimensions: Sixteen 21' rows at 38' row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1 1/2 pts./A
Fertilizer:	850 lbs, 23-10-19 broadcast
Insect Control:	N/A
Disease Control:	None
Irrigation:	None
Vine Kill:	None

Location: James Brother's Farms, Weeksville, Pasquotank Co., NC

Trial Design: Randomized complete block, four replications
Plot Dimensions: Twenty-four 21' rows at 40' row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1/2 to 3/4 lbs/A, Poast 6-8" 1 1/2 pts/A Select 1 lb/A
Fertilizer:	200 lbs N 75-75 broadcast
Insect Control:	Provado
Disease Control:	N/A
Irrigation:	None
Vine Kill:	Paraquat

Location: Tull Hill Farms, Kinston, Lenoir Co., NC

Trial Design: Randomized complete block, four replications
Plot Dimensions: Thirteen 21' rows at 40' row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	1/3 lb metribuzin, Dual 1.5pt/A pre-emergence
Fertilizer:	1400lbs, 14-4-14 broadcast
Insect Control:	N/A
Disease Control:	N/A
Irrigation:	None
Vine Kill:	Paraquat

Appendix 1: LAND MANAGEMENT CONDITIONS (Cont'd.)

Location: Tidewater Research Station, Plymouth, Washington Co., NC
Trial Title: Round White Variety Trial
Trial Design: Randomized complete block, four replications
Plot Dimensions: Twenty-eight 21' rows at 38' row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1lb/A Dual 2pt/A
Fertilizer:	750 lbs, 17-17-17 broadcast; 25 gal, 34-0-0 broadcast
Insect Control:	Admire 2F 17 oz/A Sevin XLR 1 qt/A
Disease Control:	Bravo 1.5 pt/A
Irrigation:	None
Vine Kill:	None

Location: Tidewater Research Station, Plymouth, Washington Co., NC
Trial Title: NE 10-14 White Variety Trial
Trial Design: Randomized complete block, four replications
Plot Dimensions: Twenty-four21' rows at 38' row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1lb/A Dual 2pt/A
Fertilizer:	750 lbs, 17-17-17 broadcast; 25 gal, 34-0-0 broadcast
Insect Control:	Admire 2F 17 oz/A Sevin XLR 1 qt/A
Disease Control:	Bravo 1.5 pt/A
Irrigation:	None
Vine Kill:	None

Location: Tidewater Research Station, Plymouth, Washington Co., NC
Trial Title: NE 10-14 Red Variety Trial
Trial Design: Randomized complete block, four replications
Plot Dimensions: Twelve 21' rows at 38' row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1lb/A Dual 2pt/A
Fertilizer:	750 lbs, 17-17-17 broadcast; 25 gal, 34-0-0 broadcast
Insect Control:	Admire 2F 17 oz/A Sevin XLR 1 qt/A
Disease Control:	Bravo 1.5 pt/A
Irrigation:	None
Vine Kill:	None

Appendix 1: LAND MANAGEMENT CONDITIONS (Cont'd.)

Location: Tidewater Research Station, Plymouth, Washington Co., NC
Trial Title: Unreplicated Variety Trial
Trial Design: Randomized complete block
Plot Dimensions: Sixteen 21' rows at 38" row spacing, 28 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1lb/A Dual 2pt/A
Fertilizer:	750 lbs, 17-17-17 broadcast;
	25 gal, 34-0-0 broadcast
Insect Control:	Admire 2F 17 oz/A
	Sevin XLR 1 qt/A
Disease Control:	Bravo 1.5 pt/A
Irrigation:	None
Vine Kill:	None

Location: Tidewater Research Station, Plymouth, Washington Co., NC
Trial Title: Early Generation Yield Trial One
Trial Design: Randomized complete block, four replications
Plot Dimensions: Twenty 18.75' rows at 38" row spacing, 25 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1lb/A Dual 2pt/A
Fertilizer:	750 lbs, 17-17-17 broadcast;
	25 gal, 34-0-0 broadcast
Insect Control:	Admire 2F 17 oz/A
	Sevin XLR 1 qt/A
Disease Control:	Bravo 1.5 pt/A
Irrigation:	None
Vine Kill:	None

Location: Tidewater Research Station, Plymouth, Washington Co., NC
Trial Title: Early Generation Yield Trial Two
Trial Design: Randomized complete block, four replications
Plot Dimensions: Seventeen 18.75' rows at 38" row spacing, 25 hills per row

Seed piece Treatment:	None
Weed Control:	Sencor 1lb/A Dual 2pt/A
Fertilizer:	750 lbs, 17-17-17 broadcast;
	25 gal, 34-0-0 broadcast
Insect Control:	Admire 2F 17 oz/A
	Sevin XLR 1 qt/A
Disease Control:	Bravo 1.5 pt/A
Irrigation:	None
Vine Kill:	None

Appendix 2: STANDARDIZED NE184 RATING CODES FOR PLANT AND TUBER CHARACTERISTICS

Tuber Color

1. purple
2. red
3. pink
4. dark brown
5. brown
6. tan/light brown
7. buff
8. white
9. cream

Tuber Texture

1. partial russet
2. heavy russet
3. moderate russet
4. light russet
5. netted
6. slight net
7. moderately smooth
8. smooth
9. very smooth

Tuber Cross-section

1. very flat
2. --
3. flat
4. --
5. intermediate/oval
6. --
7. mostly round
8. --
9. very round

Tuber Skin Set

1. very poor
2 --
3. poor
4 --
5. fair
6 --
7. good
8 --
9. excellent

Tuber Shape

1. very round
2. mostly round
3. round to oblong
4. mostly oblong
5. oblong
6. oblong to long
7. mostly long
8. long
9. cylindrical

Tuber Eye Depth

1. -
2. deep
3. +
4. -
5. medium
6. +
7. -
8. shallow
9. +

Tuber Size (GCY Scale)

1. small
2. --
3. small-medium
4. --
5. medium
6. --
7. medium-large
8. --
9. large

Tuber Appearance

1. very poor
2. --
3. poor
4. --
5. fair
6. --
7. good
8. --
9. excellent

Tuber Disease Rating

1. very severe
2. --
3. severe
4. --
5. moderate
6. borderline
7. slight
8. very slight
9. none

Plant Type

1. decumbent-poor canopy
2. decumbent-fair canopy
3. decumbent-good canopy
4. spreading-poor canopy
5. spreading-fair canopy
6. spreading-good canopy
7. upright-poor canopy
8. upright-fair canopy
9. upright-good canopy

Plant Disease and Pollution Reaction

1. Dead
2. -
3. severe
4. +
5. moderate
6. -
7. +
8. slight
9. none

Maturity

1. -
2. early
3. +
4. -
5. medium
6. +
7. -
8. late
9. +

Appendix 3: WEEKLY WEATHER DATA

Tyrrell Co. [1]

week	Max Temp	Min Temp	Mean Temp	30yr Mean Temp	Temp Dev	Precip (in)	30 yr Precip	Precip Dev
1/1 - 1/4	69	47	58	43	15	0.96	0.5	0.46
1/5 - 1/11	54	36	45	43	2	0.07	0.93	-0.86
1/12 - 1/18	38	25	32	43	-11	-	0.98	-
1/19 - 1/25	34	19	26	42	-16	0.04	0.96	-0.92
1/26 - 2/1	-	-	-	42	-	-	0.9	-
2/2 - 2/8	-	-	-	42	-	-	0.82	-
2/9 - 2/15	54	30	42	43	- 1	0.08	0.77	-0.69
2/16 - 2/22	47	33	40	44	- 4	0.56	0.77	-0.21
2/23 - 3/1	58	32	45	46	- 1	0.03	0.83	-0.8
3/2 - 3/8	56	35	46	48	- 2	0.49	0.9	-0.41
3/9 - 3/15	59	38	49	50	- 1	0.29	0.95	-0.66
3/16 - 3/22	65	45	55	52	3	1.5	0.98	0.52
3/23 - 3/29	71	45	58	54	4	0	0.92	-0.92
3/30 - 4/5	68	43	56	56	0	0.77	0.87	-0.1
4/6 - 4/12	58	45	52	58	- 6	2.03	0.8	1.23
4/13 - 4/19	73	45	59	60	- 1	0	0.77	-0.77
4/20 - 4/26	69	47	58	61	- 3	0.05	0.72	-0.67
4/27 - 5/3	78	48	63	63	0	0	0.7	-0.7
5/4 - 5/10	75	55	65	65	0	0.37	0.76	-0.39
5/11 - 5/17	78	55	68	67	1	0.01	0.77	-0.76
5/18 - 5/24	69	55	62	68	- 6	2.07	0.83	1.24
5/25 - 5/31	74	56	65	70	- 5	1.35	0.89	0.46
6/1 - 6/7	80	61	70	73	- 3	0.15	0.97	-0.82
6/8 - 6/14	82	73	78	74	4	0.02	1.07	-1.05
6/15 - 6/21	83	69	76	76	0	1.37	1.15	0.22
6/22 - 6/28	85	65	75	77	- 2	0	1.23	-1.23
6/29 - 7/5	88	44	66	78	-12	1.06	1.3	-0.24
7/6 - 7/12	91	74	83	79	4	0.15	1.37	-1.22
7/13 - 7/19	88	70	79	79	0	1.45	1.4	0.05
7/20 - 7/26	-	-	-	80	-	-	1.43	-
7/27 - 8/2	73	73	73	79	- 6	2.2	1.04	1.16
				Total		17.07	29.28	-8.08

Appendix 3: WEEKLY WEATHER DATA (cont'd)

Pasquotank Co.

week	Max Temp	Min Temp	Mean Temp	30yr Mean Temp	Temp Dev	Precip (in)	30 yr Precip	Precip Dev
1/1 - 1/4	61	46	54	43	11	0.59	0.54	0.05
1/5 - 1/11	53	35	44	43	1	0.25	1.04	-0.79
1/12 - 1/18	41	28	34	42	- 8	0.34	1.12	-0.78
1/19 - 1/25	39	22	30	42	-12	0	1.03	-1.03
1/26 - 2/1	43	31	36	42	- 6	1.36	0.95	0.41
2/2 - 2/8	52	33	42	43	- 1	1.14	0.80	0.34
2/9 - 2/15	49	32	41	43	- 2	0.24	0.70	-0.46
2/16 - 2/22	50	37	43	45	- 2	2.60	0.74	1.86
2/23 - 3/1	57	40	48	46	2	1.12	0.86	0.26
3/2 - 3/8	57	41	49	48	1	2.08	1.03	1.05
3/9 - 3/15	59	40	50	50	0	0.15	1.12	-0.97
3/16 - 3/22	62	52	57	52	5	1.85	1.12	0.73
3/23 - 3/29	68	50	59	54	5	0	1.02	-1.02
3/30 - 4/5	72	48	60	55	5	0.73	0.84	-0.11
4/6 - 4/12	56	46	51	57	- 6	4.66	0.69	3.97
4/13 - 4/19	69	49	59	59	0	0.53	0.63	-0.10
4/20 - 4/26	68	52	60	61	- 1	1.48	0.67	0.81
4/27 - 5/3	77	58	68	63	5	1.64	0.80	0.84
5/4 - 5/10	76	59	67	65	2	1.30	0.95	0.35
5/11 - 5/17	80	62	71	67	4	0	1.05	-1.05
5/18 - 5/24	67	57	62	68	- 6	2.39	1.05	1.34
5/25 - 5/31	75	60	68	71	- 3	0.87	1.01	-0.14
6/1 - 6/7	78	63	70	72	- 2	0.05	0.89	-0.84
6/8 - 6/14	86	72	79	74	5	3.41	0.84	2.57
6/15 - 6/21	82	68	75	76	- 1	1.8	0.84	0.96
6/22 - 6/28	87	67	77	77	0	0	0.88	-0.88
6/29 - 7/5	86	71	79	78	1	0.72	1.01	-0.29
7/6 - 7/12	91	75	83	79	4	0.59	1.11	-0.52
7/13 - 7/19	85	71	78	79	- 1	1.37	1.16	0.21
7/20 - 7/26	86	72	79	80	-	1.30	1.15	0.15
7/27 - 8/2	87	75	81	79	2	0.39	0.80	-0.41
				Total		34.95	28.44	6.51

Appendix 3: WEEKLY WEATHER DATA (cont'd)

Lenoir Co.

week	Max Temp	Min Temp	Mean Temp	30yr Mean Temp	Temp Dev	Precip (in)	30 yr Precip	Precip Dev
1/1 - 1/4	67	43	55	45	10	0.81	0.52	0.29
1/5 - 1/11	58	31	45	45	0	0	0.98	-0.98
1/12 - 1/18	45	23	34	44	-10	0.23	0.99	-0.76
1/19 - 1/25	41	20	31	44	-13	0.18	0.98	-0.80
1/26 - 2/1	47	27	37	45	- 8	0.39	0.96	-0.57
2/2 - 2/8	56	32	44	46	- 2	0.95	0.90	0.05
2/9 - 2/15	53	27	40	47	- 7	0.51	0.84	-0.33
2/16 - 2/22	54	31	42	48	- 6	2.15	0.87	1.28
2/23 - 3/1	58	33	46	50	- 4	1.91	0.93	0.98
3/2 - 3/8	59	37	48	51	- 3	0.98	0.98	0
3/9 - 3/15	64	38	51	53	- 2	0.75	1.05	-0.30
3/16 - 3/22	69	51	60	55	5	2.72	1.02	1.70
3/23 - 3/29	75	46	61	57	4	0.01	0.95	-0.94
3/30 - 4/5	75	48	61	58	3	0.37	0.86	-0.49
4/6 - 4/12	59	45	52	60	- 8	4.69	0.76	3.93
4/13 - 4/19	75	47	61	62	- 1	0.09	0.70	-0.61
4/20 - 4/26	72	46	59	64	- 5	0.40	0.70	-0.30
4/27 - 5/3	80	57	68	66	2	0.50	0.76	-0.26
5/4 - 5/10	79	59	69	68	1	0.54	0.81	-0.27
5/11 - 5/17	82	58	70	70	0	0.08	0.87	-0.79
5/18 - 5/24	74	56	65	72	- 7	4.45	0.91	3.54
5/25 - 5/31	78	57	68	73	- 5	2.38	0.96	1.42
6/1 - 6/7	79	60	69	75	- 6	0.74	0.98	-0.24
6/8 - 6/14	87	72	79	76	3	2.05	1.02	1.03
6/15 - 6/21	86	69	78	78	0	1.39	1.05	0.34
6/22 - 6/28	88	63	76	79	- 3	0	1.11	-1.11
6/29 - 7/5	86	69	78	80	- 2	3.17	1.17	2.00
7/6 - 7/12	92	73	82	81	1	0.50	1.19	-0.69
7/13 - 7/19	88	70	79	81	- 2	4.63	1.19	3.44
7/20 - 7/26	86	70	78	81	-	1.15	1.20	-0.05
7/27 - 8/2	88	72	80	81	- 1	0.52	0.85	-0.33
				Total		39.24	29.06	10.18

Appendix 3: WEEKLY WEATHER DATA (cont'd)

Washington Co.[1]

week	Max Temp	Min Temp	Mean Temp	30yr Mean Temp	Temp Dev	Precip (in)	30 yr Precip	Precip Dev
1/1 - 1/4	59	46	53	44	9	0.56	0.54	0.02
1/5 - 1/11	56	34	45	44	1	0.11	1.03	-0.92
1/12 - 1/18	40	25	33	43	-10	0.25	1.06	-0.81
1/19 - 1/25	40	20	30	43	-13	0.03	1.05	-1.02
1/26 - 2/1	45	29	37	44	- 7	0.69	0.99	-0.30
2/2 - 2/8	55	33	44	44	0	1.20	0.86	0.34
2/9 - 2/15	51	31	41	45	- 4	1.20	0.84	0.36
2/16 - 2/22	53	35	44	47	- 3	2.71	0.84	1.87
2/23 - 3/1	54	37	45	48	- 3	0.95	0.92	0.03
3/2 - 3/8	62	41	51	50	1	2.00	1.03	0.97
3/9 - 3/15	65	40	52	52	0	0.42	1.11	-0.69
3/16 - 3/22	67	54	60	54	6	1.88	1.12	0.76
3/23 - 3/29	74	49	61	56	5	0.02	1.04	-1.02
3/30 - 4/5	74	43	58	57	1	0.83	0.93	-0.10
4/6 - 4/12	55	46	50	59	- 9	4.20	0.82	3.38
4/13 - 4/19	73	48	60	61	- 1	0.74	0.77	-0.03
4/20 - 4/26	74	52	63	63	0	1.68	0.77	0.91
4/27 - 5/3	79	57	68	65	3	0.99	0.85	0.14
5/4 - 5/10	80	60	69	66	3	2.06	0.94	1.12
5/11 - 5/17	81	61	71	68	3	0.02	1.01	-0.99
5/18 - 5/24	71	58	64	70	- 6	3.75	1.06	2.69
5/25 - 5/31	77	60	69	72	- 3	1.83	1.12	0.71
6/1 - 6/7	81	64	72	74	- 2	0.17	1.12	-0.95
6/8 - 6/14	88	72	80	75	5	0.56	1.19	-0.63
6/15 - 6/21	83	68	76	77	1	0.74	1.19	-0.45
6/22 - 6/28	90	66	78	78	0	0	1.19	-1.19
6/29 - 7/5	91	71	81	79	2	0	1.19	-1.19
7/6 - 7/12	-	-	-	80	-	-	1.19	-
7/13 - 7/19	-	-	-	80	-	-	1.19	-
7/20 - 7/26	-	-	-	80	-	-	1.19	-
7/27 - 8/2	-	-	-	80	-	-	0.89	-
				Total		29.59	31.04	3.01

[1] **Note:** Totals for Tyrrell and Washington counties may be inaccurate because of missing data
SOURCE: NCDA via National Climate Center, National Oceanic and Atmospheric Administration.

Appendix 4: COMMENT CODES FOR TABLE B

AC=air cracks
BR=bruise
CPB=colorado potato beetle
CS=common scab
CT=chain tubers
DAE=deep apical eyes
DSA=deep stolen end
EB=early blight
ECB= European corn borer
EL= enlarged lenticels
FS=fusarium wilt
GC=growth cracks
HI= herbicide injury
HS=heat sprouts;
IL=infected lenticels
LB=late blight
LHD=leaf hopper damage
MS=misshaped tubers
PE=pink eye
PR=pink rot
PLRV=potato leaf roll virus
PTS=very pointed tubers
PS=powdery scab
PVA, PVX, PVY=potato viruses A, X, Y
RF=red flesh (RF scale: 1=light red to 3=dark red)
RZ=Rhizoctonia
SEB=stem end browning
SG=secondary growth
SIS=silver scurf
SKN=skins
SS=sun scald
SR=soft rot
STST=sticky stolens
TSWV=Tomato Spotted Wilt Virus
VW=Verticillium wilt
WSTD=weak stand
WW=wire worm
YF=yellow flesh (YF scale: 1=light yellow to 3=dark yellow)

Note: ^ before code indicates high levels, ^^ indicates very high