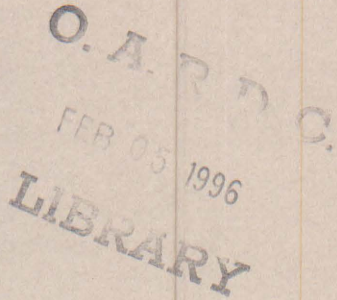


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1995

OHIO POTATO CULTIVAR TRIALS

**Richard L. Hassell, David M. Kelly, E.C. Wittmeyer,
Elaine M. Grassbaugh, Darvin L. Biederstedt, John Y. Elliott, and Gary L. Wenneker**



**The Ohio Agricultural Research & Development Center
The Ohio State University
Wooster, Ohio 44691**

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ACKNOWLEDGMENTS

The 1995 Ohio Potato Cultivar Trials were sponsored by the Ohio Agricultural Research and Development Center, The Ohio State University, the Ohio State University Extension, the Ohio Potato Growers Association, the Ohio Vegetable and Small Fruits Research and Development Program. In addition, plots were established at Michael Farms, Urbana, Ohio, and the Campbell Research and Development Center, Campbell Soup Co., Napoleon, Ohio. A special plot to evaluate early cultivars was established at the Vegetable Crops Branch, Ohio Agricultural Research and Development Center, Fremont, Ohio.

Many people assisted with the planting, culture and harvesting of these plots. Special credit and thanks to John Elliott, Manager-Department Farm, OARDC Department of Horticulture and Crop Science, and his associate, Bruce Williams; Ken Scaife, Manager-Fremont Vegetable Branch OARDC, Fremont, and his associate, Shan Mueller; and Danny and Tim Hall, David Caudil, technicians and Dr. William Evans, Manager-Muck Crops Branch, OARDC, Willard; An integral part of this program was the chipping evaluations at the OSU Pilot Plant, Food Industry Center, OSU. Thanks to Gary Wenneker and Winston Bash, Director, Food Industries Center, OSU.

We appreciate the assistance of M.E. Cravens and David R. Miskell, Professors Emeritus, The Ohio State University; Todd Michael, Jeff Logan, Don Ramseyer, Mark Jameson, Todd Kranendoink, Tom R. Rieder, for their assistance in the cutting, planting, harvesting, and grading of the test plots.

Our special thanks to Ciba, DuPont, Bayer (Miles), Rhone-Poulenc Ag., and Rohm and Haas for their continued support.

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OHIO STATEWIDE TRIALS - 1995

INTRODUCTION

The purpose of these statewide potato variety trials is to evaluate new varieties which may benefit Ohio growers, buyers of fresh and processing potatoes when seed becomes available. These varieties are grown under various farm conditions in different regions to determine the potential for a given variety under different environmental and soil conditions.

Cultural practices and pest control measures in each case are those used by the cooperating grower. Plant stands are recorded. At harvest, the tubers are evaluated, weighed and graded with samples taken for chipping and other quality determinations.

The varieties for these statewide trials were selected on the basis of promising varieties in previous statewide trials at these cooperating farms, or were selected from the extensive variety evaluation plots at the Ohio Agricultural Research and Development Center (OARDC), Wooster, Ohio.

In addition to the statewide trials, Ohio cooperates with other states in establishing trials of cultivars and breeding lines in the Northeast Regional Potato Variety Trials (NE107) and the North Central Potato Variety Trials. These plots are located at the OARDC, Wooster, Ohio.

Farm Locations:

- Farm 1 (M) Michael Farms, Urbana (Champaign County)
- Farm 2 (W) Ohio Agricultural Research and Development Center (OARDC), Wooster (Wayne County)
- Farm 3 (F) Vegetable Crops Branch, OARDC, Fremont (Sandusky County)

See Table 1 for a summary of cultural practices followed on these cooperating farms--planting dates, harvest dates, plant spacing and related information.

Procedures

The Over-the-State trials at Michael Farms, Urbana, and OARDC, Wooster included twenty cultivars which were planted in three replicates on each farm. See Table 1 for additional information on planting dates, spacing, fertilizer practices and related information. See page for similar data for plots at Campbell Soup Co., Napoleon.

Thirty seed pieces were planted in each replicate. The seed potatoes were received at OARDC and stored under similar conditions. The seed potatoes were cut and treated with Mancozeb on May 1 and 2, 1995. The seed was cured under recommended temperature and humidity conditions. Thirty seed pieces were planted in each replicate. Adequate space was left

between each replicate so that little change for error would exist at harvest. Same practices were followed for the Northeast Regional Trials and the North Central Trials.

The plots were harvested with conventional equipment. Harvest dates ranged from September 25 and 26 for the OARDC plots to October 12 for the plots on Michael Farms. All plots were dead at harvest. Approximately 50 pounds was collected from each replicate for grading and additional samples of each variety were collected for quality evaluations in the Pilot Plant, The Ohio State University. Grading was done immediately following harvest at the Michael Farm. At OARDC, the grading was done October 24 and 26. At grading, ten tubers from each replicate were cut for internal defects. At Fremont, observations and grading was done at harvesting.

Evaluating Cultivars for Chipping

Since many Ohio growers sell potatoes to potato chip processors, we have continued the evaluation of promising cultivars for chipping characteristics. Most cultivars in the over-the-state trials, North Central Trials, and Northeast Trials are evaluated. In the observational trials, only promising cultivars are evaluated.

Following 1995 harvest, samples were transported immediately to the Food Industries Center Pilot Plant, OSU, where the samples were held continuously at ambient (70°F) temperatures for approximately 20 days.

Specific gravity was determined by using the hydrometer method developed by the Potato Chip/Snack Food Association (PC/SFA). Exactly eight pounds of potatoes were placed in a previously calibrated basket and immersed in water (approximately 70°F). Following specific gravity determination, a sample (usually four or five tubers) was placed in an abrasive peeler and then sliced to an approximately thickness of 0.063 inch (approximately 16 slices per inch).

The sliced chips were rinsed in water and then fried in a continuous fryer containing clear liquid shortening (soybean oil) which maintained a fry temperature of 196°C (385°F). Following frying, a representative sample was taken for visual color evaluation by the standards contained in the manual published by the PC/SFA where chips with light color would be scored "1" and very dark chips would have a score of "5". This sample was also evaluated for blistering. Any chip with blister(s) greater than 1 cm (0.39") was recorded and reported on a percentage basis in the Tables.

Weather and Growing Conditions

See Table 1 for rainfall data for the three farms. Additional data for the OARDC plots are contained in the North Central Regional Potato Trial Report, page . Soil physical conditions were excellent at the locations.

Field Observations

The average percent stand of the 20 cultivars on Michael Farm was 78%, very similar to 1994 (69%). The average stand on the OARDC plot was 80% compared with 85% in 1994.

At harvest, observations of tuber characteristics are made and recorded. These observations include tuber shape, color and surface texture, eye depth, general appearance, along with uniformity and apparent yielding ability. These observations, along with the yield data and quality evaluations, help determine which cultivars warrant further testing under Ohio conditions.

Weather and soil conditions have great effect on performance of individual cultivars. The following data from plots at the Ohio Agricultural Research and Development Center, Wooster, illustrate the effect of seasonal conditions on the yield of potatoes.

Variety	Wooster - U.S. No. 1 (Cwt/A)					
	1990	1991	1992	1993	1994	1995
Norchip	285	124	276	140	257	194
Katahdin	208	121	311	138	312	207
Atlantic	278	163	343	213	267	214
LaBelle	226	122	177	172	255	223
Monona	243	---	271	---	258	----
Superior	307	199	317	170	267	184
Gemchip	268	111	337	217	276	169
Rainfall (July-Aug.)	10.8	3.93	12.32	2.81	7.08	6.85

Table 1. Cultural and pest control practices and rainfall totals for Ohio statewide potato trials - 1995

	Michael Farms	OARDC Wooster	Vegetable Crops Fremont
Date Planted	5/8/95	5/22/95	5/5/95
Date Harvested	10/12/95	9/24-25/95	7/18/95 (1st) 7/27/95 (2nd) 8/16/95 (3rd)
1994 crop	Sweet Corn	Alfalfa	Sugar Beets
Cover crop	None	Winter Wheat	None
Fertilizer	1100 lbs 13-20-20	600 lbs 10-20-20 (disk) 600 lbs 10-20-20 (planting)	900 lbs 10-20-20 (plowed)
Herbicide	Sencor (Post)	Sencor/Dual/)	Dual/Sencor
Spacing	8" x 36"	12" x 36"	
Soil Type	Silt Loam	Wooster Silt Loam	
Soil conditions at planting	Excellent	Excellent	Excellent
Irrigation	Yes	No	No
Monthly Rainfall Totals (inches)			
May	8.1	4.54	4.78
June	9.4	3.05	3.05
July	4.8*	3.57	3.50
August	11.1	3.28	3.44
September	<u>4.1</u>	<u>1.06</u>	<u>1.14</u>
Season Total	37.5	15.5	15.9

*1" by irrigation

Table 2.

SOIL ANALYSES OF STATEWIDE TRIAL PLOTS - 1995

Test Results	Michael Farms	OARDC Wooster	OARDC Fremont
pH	5.8	6.2	5.8
P (lb/A)	682	132	170
K (lb/A)	403	190	250
Ca (lb/A)	3130	1880	3600
Mg (lb/A)	473	470	440
CEC (meg/100 g)	16	8	15
Ca (% base sat.)	48	60	61
Mg (% base sat.)	12	25	12
K (% base sat.)	3.2	4.1	2.14

Soil analyses conducted at Research-Extension Analytical Lab, The Ohio Agricultural Research and Development Center, Wooster.

Table 3. Total yields, percent U.S. No.1 and marketable yields for main trial potato cultivars, Ohio Statewide Trial, 1995.

Cultivar	% Stand			Total Yield		U.S. No. 1		No. 1 Yields		% Culls		% B	
	OARDC Michael		Mean	cwt/a		OARDC Michael		cwt/a		OARDC Michael		OARDC Michael	
	OARDC	Michael		OARDC	Michael	OARDC	Michael	OARDC	Michael	OARDC	Michael	OARDC	Michael
Langlade	80	55	67.5	294	175	70.88	77.77	208	136	20.12	11.09	9.00	11.40
Labelle	70	73	71.5	298	194	75.62	80.40	223	156	5.25	9.12	19.13	10.47
Gemchip	72	62	67.0	262	186	64.49	79.80	169	148	7.13	12.53	28.38	7.67
S-3	62	85	73.5	298	273	69.50	75.33	207	206	5.50	20.60	25.00	4.07
Snowden	95	78	86.5	236	256	74.88	80.87	177	207	3.46	4.40	15.67	14.73
Coastal Chip	53	81	67.0	159	223	70.63	63.40	112	142	10.12	24.60	19.25	12.00
NY 84	80	79	79.5	269	188	66.25	79.23	178	149	10.88	6.70	22.87	14.07
AF1426-1	90	82	86.0	322	203	54.00	57.50	174	117	41.00	36.00	5.00	6.50
ND2417-6	90	84	87.0	328	232	80.00	72.06	262	167	11.00	13.27	9.00	14.67
Atlantic	81	87	84.0	285	253	75.00	80.80	214	204	15.00	8.70	10.00	10.50
St. Johns	82	79	80.5	243	245	66.00	73.70	160	181	29.00	18.87	5.00	7.43
Superior	88	90	89.0	239	254	77.00	73.80	184	187	15.00	15.67	8.00	10.53
AF1060-2 (Mainstay)	93	77	85.0	346	260	61.00	74.54	211	194	30.00	5.93	9.00	19.53
NYE11-45	65	63	64.0	233	177	88.68	87.30	157	155	8.62	5.50	27.00	7.20
Mainchip	93	82	87.5	270	257	73.00	86.00	197	221	18.00	4.27	9.00	9.73
NYE5535	85	84	84.5	235	238	74.38	83.03	175	198	10.87	2.80	14.75	14.17
Mean	80	78		270	226	71	77	188	173	15.06	12.50	14.75	10.90

Table 4. Percent culls, percent B's and internal defects for main trial potato cultivars, Ohio Statewide Trials, 1995.

Cultivar	Vascular											
	% Hollow Heart		Necrosis		Discoloration		Specific Gravity		Chip Color		% Blisters	
	OARDC	Michael	OARDC	Michael	OARDC	Michael	OARDC	Michael	OARDC	Michael	OARDC	Michael
Langlade	0	0	0	0	0	0	1.066	<1.060	1.5	2.5	10	30
Labelle	0	0	0	0	0	0	1.085	1.064	1.0	1.5	10	0
Gemchip	0	0	0	0	0	0	1.084	1.063	1.0	1.5	0	0
S-3	0	0	0	0	5	0	1.079	<1.060	1.5	1.0	20	10
Snowden	0	20	0	0	0	0	1.094	1.071	1.0	1.0	10	0
Coastal Chip	0	30	0	0	0	0	1.073	1.069	1.0	1.5	0	0
NY84	0	0	0	0	0	0	1.065	<1.060	1.5	2.5	10	0
AF1426-1	0	3.3	0	0	0	0	1.073	<1.060	1.0	1.0	0	0
ND2417-6	0	0	0	0	0	0	1.079	1.061	1.0	1.0	0	0
Atlantic	7.5	6.7	0	0	0	0	1.099	1.076	1.0	1.0	10	0
St. Johns	0	0	0	0	0	0	1.077	1.067	1.0	1.5	0	0
Superior	0	0	0	0	0	0	1.079	1.065	1.0	1.5	10	0
AF1060-2 (Manestay)	0	0	0	0	0	0	1.074	1.062	2.5	1.0	20	0
NYE11-45	0	0	0	0	0	0	1.068	<1.060	1.0	1.0	0	0
Mainchip	5	0	0	0	0	0	1.093	1.077	1.0	1.0	20	0
NYE55-35	0	0	0	0	0	0	1.091	1.076	1.0	1.0	10	0

Table 5. Mean U.S. No. 1 yields in cwt. per acre for major entries in the Ohio statewide potato trials of all farms each year grown in the last ten years and grown more than one year.

Cultivar	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Early & Med. Early											
Superior	---	---	---	131	---	207	224	278	183	267	185
Conestoga	266	321	225	---	---	---	---	---	---	----	---
Rus. Norkotah	---	302	272	105	---	---	---	---	---	---	---
Early Midseason											
Langlade (W718)	---	---	---	181	188	---	---	---	216	----	234
Norchip	228	301	236	160	161	235	---	---	---	----	194
Midseason											
Snowden (W855)	---	---	---	---	167	---	231	373	202	283	246
LA01-38 (LaBelle)	359	413	330	233	211	272	---	344	217	255	244
Katahdin	335	363	276	187	178	246	251	373	---	312	207
Atlantic	---	---	---	---	193	260	260	269	276	267	269
Late											
Castile (B7592-1)	---	---	---	---	191	280	238	338	---	300	----
Allegheny (NY72)	---	---	---	213	184	---	192	---	---	----	----
Denali	---	---	---	---	---	---	---	---	---	----	----
Elba (NY59)	---	393	---	---	---	---	---	---	---	----	----
Neb.A129-69-1	---	---	---	---	---	---	---	---	---	----	----
WCN521-12	325	344	---	---	---	---	---	---	---	----	----
MS700-70	---	378	281	232	187	230	263	---	---	298	----
Gemchip (BR7093-24)	---	---	---	---	---	268	230	344	218	---	169
Steuben (NY81)	---	---	---	235	215	---	---	---	---	----	----

Some of the cultivars grown in Ohio for which the characteristics are well known after several years of testing have been omitted in later years. Some cultivars were included in the trials prior to the last ten years. Among these are Surchip, Monona, Kennebec, Atlantic, Crystal, Sebago, Red Pontiac, Red LaSoda, etc. Katahdin, Norchip and Superior are well known and used as standards for comparison.

CAMPBELL SOUP CO. POTATO CULTIVAR TRIAL NAPOLEON, OHIO 1995

Darvin Biederstedt

Title: Potato Cultivar Trial

Objective: Identify new potato varieties which are superior to standard varieties.

History

The problem of translucency or development of grey colors in canned potato products has received a lot of research attention over many years. This problem is the most important in cream of potato and clam chowder soups. To enable quality assurance staff to select the whitest potatoes for the soup, a quantitative method for measuring color of potatoes was submitted for visual in 1987. A subjective method involves blending whole milk with cooked potatoes (1:2 by weight) and reading "L" and "B" value on a colorimeter. Specification calls for a minimum of L = 82 and a maximum of B = 17.

Also, the variety Mainstay (AF1060) has looked good in CR&D trials in 1993 and 1994. An effort was made to run semi-commercial trials in locally grown fields in Ohio and Michigan. This trial was conducted jointly with The Ohio State University and the Ohio Potato Grower's Association. Without their continued support, this project would not be possible.

Conclusions

There were three trials of potato varieties in Napoleon, Ohio this year. The first trial was a replicated trial and the next two were observation A and observation B which were not replicated, and had small seed amounts. Hot and dry weather in 1995 resulted in mediocre yields (See Tables 1, 3 and 5). All of the varieties in the three trials were analyzed for color and cube evaluation as indicated in Tables 2, 4 and 6. Plants did not have a chance to develop very good canopies before flowering began, due to the hot weather.

Replicated Trial

The standards in the replicated trial were Atlantic, Conestoga, Onaway, Superior and Gem Chip. Promising varieties in the replicated trial that performed well in yields and cube evaluation were St. John, with respectable results from Mainstay, Snowden, Coastal Chip, AF1426-1, AF1060-2, LaBelle, and Atlantic. Scab was observed in all of our potato trials this year, possibly enhanced by the extreme weather conditions.

Two main varieties used in the Midwest are Gem Chip and Onaway, which ranked low in yield and cube evaluations in the 1995 replicated trial.

Measurement of "L" value in cooked dice revealed that several varieties were acceptable for the level of white in our potatoes. I did not observe any excessive yellow coloration in the replicated trial, so the value of the "B" reading does not appear to be as important as the "L" value in evaluating quality.

Observation A Trial

The varieties BO257-12, AF1379-3, BO585-5, Norchip, Red Pontiac, and BO245-15 should be considered for advancement in the replicated trial for 1996.

Observation B Trial

As indicated in Tables 5 and 6, AF1425-1, Chieftain, and AF875-15 should have future consideration.

Note: The new potato handling system that was implemented at the Napoleon Plant in 1995 will reduce dramatically the percent of bruising of the potato during unloading and handling.

Recommendations

The potato variety trials should be continued with the joint effort of the Ohio Potato Grower's Association, The Ohio State University and the Ohio Agricultural Research and Development Center.

PROCEDURES

- A. Type of experiment - Potato Variety Trial
- B. Location - Napoleon Research Farm
- C. Planting Date - May 15, 1995
- D. Harvest Date - September 13, 1995
- E. Experiment Design - Randomized Block
- F. Number of Treatments - 25
- G. Number of Replications - 4
- H. Row Spacing - 34"
- I. Plot Size - 20' x 34"
- J. Fertilizer - 45-90-250 Broadcast, 600 lbs. of 15-15-15 at planting
- K. Insect Control - 3 applications - Provado, M-Track, Sevin
- L. Fungicide Control - 7 applications - Bravo 720 - 2 pt/acre
- M. Herbicide - Lorox and Dual
- N. Tuber Data - See Table 1
- O. Harvest Data - See Table 1
- P. Lab Data - See Table 2

Table 1C. Campbell Soup Cultivar Trial
1995 Replicated Potato Variety Trial
Napoleon, Ohio

Variety	Total	Marketable	% Stand	% Marketable	% Small	Specific Gravity	% Hollow Heart	% Vascular Discoloration	% Internal Brown rot	Eye depth	Scab	Black scurf
Atlantic	399.7	367.5	96.0	91.9	4.7	1.072	1.3	-	23.8	S	-	-
S-3	327.7	297.3	95.3	90.9	5.2	1.072	-	3.8	-	S-M	VVL	-
LaBelle	313.5	280.3	96.3	89.1	7.0	1.067	-	2.0	-	S	VL	-
AF1060-2	313.5	228.3	96.0	7.18	11.8	-1.059	-	2.6	-	S	L-M	-
ND2147-6	313.3	267.5	95.6	84.7	11.8	1.066	1.3	10.0	-	S-M	VVL	-
Kennebec	301.0	234.8	98.0	76.9	9.5	1.067	-	16.5	-	S	VL	-
Mainstay	293.5	202.0	97.3	67.9	8.3	-1.059	-	6.3	-	S	L-M	-
Coastal Chip	293.0	231.5	80.8	78.9	8.3	1.063	-	10.0	1.3	M	-	VVL
Snowden	283.8	294.0	96.0	87.6	11.8	1.070	-	20.0	-	S-M	-	-
NYE 55-35	283.3	252.3	98.0	88.4	7.7	1.075	-	7.5	-	S-M	-	VVL
Langlade	279.8	226.5	97.3	81.4	15.0	-1.059	-	7.5	2.6	S	VVL	-
St. Johns	278.8	239.3	97.0	85.3	11.8	1.060	-	6.3	-	S-M	L-M	-
Main Chip	255.0	209.3	99.0	82.4	12.1	1.081	-	8.8	-	S-M	VVL	-
AF1426-1	227.3	172.8	90.8	70.8	2.4	1.062	-	3.8	-	S	VL	-
PT	221.0	188.8	95.3	85.3	8.5	-1.059	2.6	30.0	-	S	VVL	-
AF1424-7	214.5	179.5	97.3	83.5	14.8	1.074	-	-	-	S	VVL	-
Conestoga	196.8	155.5	91.8	79.7	15.6	1.064	-	6.3	-	S	-	-
Onaway	193.3	154.3	97.0	80.0	9.3	-1.059	-	2.6	2.6	S-M	VL	-
NY11-45	187.5	146.3	93.8	77.5	18.9	-1.059	0	18.8	-	S	VL	VVL
Superior	172.0	150.8	96.3	86.8	7.1	1.061	-	18.8	2.6	S	VVL	VVL
Carlton	162.3	135.8	92.3	82.5	3.9	-1.059	-	-	7.5	S-M	-	VL
Gemchip	156.8	123.8	86.0	75.9	16.3	1.064	-	10.0	-	S	VL	-
NY-84	145.8	98.5	89.8	67.2	20.9	-1.059	-	27.5	3.8	S	-	VL
G-8525-3P	137.8	76.8	94.5	55.3	34.4	1.059	-	5.0	-	S	-	-
Norkota	99.3	46.0	89.8	45.6	49.5	-	-	-	-	S	-	VVL
LSD	57.1	56.7	-	9.3	5.5							

*Tuber Data Rating System:

- Sample size was 20 tubers/plot.

- Eye Depth - S = Small, M = Medium, D = Deep

- Scab & Black Scurf - VVL - Very Very Light, VL = Very Light, L = Light, M = Medium, S = Severe

Table 2C. Campbell Soup Company Cultivar Trial
 1995 Replicated Potato Variety Trial
 Evaluation of Processed Potato Samples
 Napoleon, Ohio

Treatments	Color		Presence of Starch Gel**	# of Grey/ Translucent Dice/34***	Rating****
	L	B			
Atlantic	83.9	14.6	++	0.3	5.0
Conestoga	83.9	16.0	-	2.0	5.0
AF1424-7	83.7	15.7	+	3.0	5.0
St. Johns	83.4	14.5	+	0.8	5.0
NYE55-35	83.3	16.6	++	1.3	5.0
Snowden	83.2	15.2	++	2.8	5.0
AF1426-1	83.2	16.0	+	0.5	5.0
Main Chip	83.2	15.2	++	2.0	4.5
NY 11-45	82.9	14.9	+	6.5	3.3
NY-84	82.9	15.7	-	7.8	2.5
Carlton	82.6	14.6	+	8.3	3.0
Coastal Chip	82.5	15.2	+	4.5	4.8
PT	82.5	15.7	-	9.8	2.8
Norkota	82.4	15.0	++	4.3	3.0
Superior	82.3	15.7	+	3.0	4.5
LaBelle	82.1	15.6	+	2.8	5.0
Mainstay	82.0	15.2	-	7.0	3.0
Langlade	81.8	14.9	+	4.3	3.5
ND2417-6	81.6	15.9	-	6.8	3.3
G-8525-3P	81.6	14.8	+	3.8	5.0
AF1060-2	81.5	15.2	-	7.3	2.8
Kennebec	81.4	15.6	+	3.3	3.3
S-3	81.2	15.5	++	5.3	3.5
Gem Chip	80.8	16.8	-	8.0	3.3
Onaway	80.6	14.8	-	18.0	2.8
LSD 5%	1.33	0.9		NSD	NSD

*This method involved blending whole milk with cooked potatoes (1:2 by weight) and reading "L" and "B" values on a colorimeter.

Specifications call for a minimum L = 82 and a maximum B = 17. White tile calibration was

L = 93.8 and B = 1.8. Whole milk test was L = 93.8 and B = 10.4

**Presence of starch gel in canned potato is subjective: - = none, + = present, ++ = thick gel formed.

***Number of grey/translucent potato dice in a 34 cube sample.

****Rating: 5 = whitest dice or least variation between milk background and dice; 1 = most grey and most translucent dice

Procedures

- A. Type of Experiment - Potato Variety Observation Trials
- B. Location - Napoleon Research Farm
- C. Planting Date - May 15, 1995
- D. Harvest Date - September 13, 1995
- E. Number of Treatments - Observation A - 26
Observation - 9
- F. Number of Replications - 1 observation
- G. Row Spacing - 34"
- H. Plot Size - 20' x 34"
- I. Fertilizer - 45-90-250 Broadcast, 600 lbs. 15-15-15 at planting
- J. Insect Control - 3 applications - Provado, M-Track, Sevin
- K. Fungicide Control - 7 applications - Bravo 720 - 2 pt/acre
- L. Herbicide - Lorox and Dual
- M. Tuber Data - Observation A - Table 3
Observation B - Table 5
- N. Harvest Data - Observation A - Table 3
Observation B - Table 5
- O. Lab Data - Observation A - Table 4
Observation B - Table 6

Table 3C Campbell Soup Cultivar Trial
1995 Observation A Potato Variety Trial
Napoleon, Ohio

Variety	Total	Marketable	% Stand	% marketable	% Small	Specific Gravity	% Hollow Heart	% Vascular discoloration	% Internal Browna Rot	Eye Depth	Scab	Black Scurf
BO257-12	313.5	297.0	93	94.8	4.2	1.068	-	-	-	S	VVL	-
AF1379-3	293.3	230.3	96	78.5	16.7	1.068	-	-	10	S	VL	-
BO 172-22	293.3	273.0	96	93.1	2.7	1.073	-	15	-	S	-	-
BO 405-4	283.1	171.8	96	62.1	16.5	1.070	5	20	50	S	VVL	-
AF1433-4	264.5	236.5	93	89.4	7.7	1.060	-	-	10	S	VL	-
BO 585-5	264.5	224.2	96	86.8	.6	1.067	5	5	10	S	-	L
BO 613-2	257.5	240.4	100	93.4	3.3	1.068	10	10	-	S-M	-	-
W1149	239.6	208.5	96	87.0	12.7	1.073	-	35	-	S	-	-
W 1242	237.3	209.3	100	88.2	10.2	1.069	-	15	-	M	-	-
Norchip	236.5	178.1	89	75.3	19.4	1.068	-	25	-	M	VVL	VL
P84-13-12	226.4	187.5	89	82.8	12.4	1.075	-	5	5	S	-	VL
ND2225-1R	224.0	159.5	96	71.2	28.8	-1.059	-	15	-	S	-	VL
MSA091-1	219.4	182.8	93	83.3	14.2	1.073	-	20	15	S-M	VVL	-
NP2471-8	211.6	185.0	96	87.5	12.5	1.074	-	10	-	S-M	VL	VL
Red Pontiac	203.8	161.8	100	79.4	6.1	-1.059	-	15	5	S-M	-	-
W1189	192.1	120.6	100	62.8	28.8	1.065	-	-	35	M	L	-
AF1475-16	192.0	174.0	96	90.7	4.5	1.065	-	5	-	S	L	-
BO 245-15	188.2	166.0	96	88.0	4.1	1.068	-	10	5	M	VL	-
Yukon Gold	171.9	146.0	96	85.1	12.7	1.062	-	-	5	S-M	VVL	-
MSBO 76-2	166.5	138.5	96	83.2	15.0	1.077	-	5	-	S	-	VL
NY95	147.0	113.0	100	76.7	23.3	1.079	-	30	-	S	-	-
AF1438-1	146.2	120.6	96	82.5	17.6	-1.059	-	15	5	S	L-M	-
Dk. Red Norland	143.1	93.4	96	65.2	32.6	-1.059	-	-	-	S	-	VL
AF 1481-4	122.1	84.8	96	69.4	26.1	1.060	-	-	20	S	-	-
AF 1455-9	119.0	36.6	96	30.7	63.4	-	-	10	-	S	L	-
MSB007-1	57.6	21.8	89	37.8	51.4	-	-	10	-	S	VL	VL

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* Tuber Data Rating System:
 - Sample size was 20 tubers/plot.
 - Eye Depth - S = Small, M = Medium, D = Deep
 - Scab & Black Scurf - VVL = Very Very Light, VL = Very Light, L = Light, M = Medium, S = Severe

Table 4C. Campbell Soup Cultivar Trial
 Potato Color Observation A
 Napoleon, Ohio

Treatments	<u>Color</u> L	<u>Color</u> B	Presence of Starch Gel**	# of Grey/ Translucent Dice/34***	Rating****
BO257-12	83.5	15.9	-	3	5
MSA091-1	83.1	15.9	++	1	5
Bold 3-2	82.7	16.1	+	7	3
AF1379-3	82.5	15.9	+	0	5
MSB007-1	82.4	16.5	+	1	5
BO585-5	82.3	15.9	+	3	5
MSB076-2	82.1	15.6	+	12	3
BO245-15	82.0	15.8	+	4	5
NY95	81.9	15.8	-	0	5
AF1475-16	81.9	16.3	+	11	4
W1242	81.8	15.6	+	4	5
ND2471-8	81.6	17.0	+	2	5
AF1438-1	81.6	17.5	+	4	3
AF1481-4	81.6	15.6	+	3	1
Norchip	81.5	16.8	-	4	5
AF1433-4	81.1	15.9	+	5	3
Dk Red Norland	81.0	16.9	+	6	3
Red Pontiac	81.0	16.4	-	3	5
BO172-22	81.0	16.3	+	5	3
ND2471-8	80.7	16.6	++	3	4
Yukon Gold	80.7	23.8	-	1	3
P84-13-12	80.6	17.6	+	19	1
W1189	80.5	20.2	-	5	3
BO405-4	79.7	15.5	+	9	3
AF1455-9	79.3	15.8	+	5	4
W1149	79.1	15.5	-	7	3
ND2225-1R	78.5	16.2	+	14	1

*This method involved blending whole milk with cooked potatoes (1:2 by weight) and reading "L" and "B" values on a colorimeter.

Specifications call for a minimum L = 82 and a maximum B = 17. White tile calibration was

L = 92.4 and B = 1.8. Whole milk test was L = 93.8 and B = 10.4

**Presence of starch gel in canned potato is subjective: - = none, + = present, ++ = thick gel formed.

***Number of grey/translucent potato dice in a 34 cube sample.

****Rating: 5 = whitest dice or least variation between milk background and dice; 1 = most grey and most translucent dice

Table 5C Campbell Soup Cultivar Trial
 1995 Observation B Potato Variety Trial
 Napoleon, Ohio

Variety	Total	Marketable	% Stand	% Marketable	% Small	% Hollow Heart	% Vascular Discoloration	% Internal Brown Rot	Eye Depth	Scab	Black Scurf	
AF1425-1	276.6	243.5	96.0	88.3	10.4	1.061	-	10	-	S	L	-
Chieftain	260.9	208.4	100.0	79.9	15.1	-1.059	-	-	-	S	VVL	-
AF875-15	240.7	180.8	100.0	75.1	3.6	1.067	-	25	-	M	VVL	-
Red Ribu	197.2	92.0	100.0	46.7	28.6	-	-	15	-	S	-	-
NY87	191.9	181.5	92.0	94.6	5.4	1.061	-	20	-	S-M	-	L
Cherry Red	178.0	155.6	92.0	87.4	12.6	1.067	-	-	-	S	-	-
BO 564-9	161.8	129.5	100.0	80.0	20.0	-	-	15	-	S	-	-
BO 564-8	154.6	92.4	91.0	59.8	37.2	-1.059	-	10	-	S	-	-
ND1871-3R	110.1	50.4	89.0	45.8	39.6	-	-	15	-	S	-	-

* Tuber Data Rating System:

- Sample size was 20 tubers/plot.

- Eye Depth - S = Small, M = Medium, D = Deep

- Scab & Black Scurf - VVL = Very Very Light, VL = Very Light, L = Light, M = Medium, S = Severe

Table 6C. Campbell Soup Cultivar Trial
 Potato Color Observation B
 Napoleon, Ohio

Treatments	Color		Presence of Starch Gel**	# of Grey/ Translucent Dice/34***	Rating ****
	L	B			
BO5648	82.9	17.2	-	2	5
AF875.15	82.4	16.5	-	0	5
AF1425-1	81.7	16.0	+	3	4
BO564-9	81.6	17.9	-	7	4
NY87	81.5	17.2	+	6	1
Cherry Red	81.2	16.8	+	10	1
Chieftain	80.1	14.9	-	9	5
Red Ruby	79.5	16.5	-	19	1
ND1871-3R	79.4	16.6	-	12	1

*This method involved blending whole milk with cooked potatoes (1:2 by weight) and reading "L" and "B" values on a colorimeter. Specifications call for a minimum L = 82 and a maximum B = 17. White tile calibration was

L = 92.4 and B = 1.8. Whole milk test was L = 93.8 and B = 10.4

**Presence of starch gel in canned potato is subjective: - = none, + = present, ++ = thick gel formed.

***Number of grey/translucent potato dice in a 34 cube sample.

****Rating: 5 = whitest dice or least variation between milk background and dice; 1 = most grey and most translucent dice

Potato Variety Grower Trials

Objectives:

To evaluate new potato varieties that evolved from the replicated trials and observation trials to be tested at the commercial field level.

Materials:

The varieties for the trials were supplied by the Ohio Potato Growers' Association and the Campbell Soup Company.

Conclusions:

There were six commercial potato grower trials this year; four in Ohio and two in Michigan. Mainstay was the variety the company was interested in. It was identified in the past two years variety trials as AF1060-2. The variety is being compared against the grower's standards and some additional research varieties. The variety performed very well in Growers 5 and 6 locations. Irrigation was used on both of these locations, and growers commented that there was a heavy set and the tubers were large. Tuber characteristics were not available for growers 5 and 6.

The variety performed very well for growers 3 and 4. Both of the growers indicated that they would like to try the variety again next year. Location 3 was in muck soil, very dry conditions, and was not irrigated. It still had the highest yield in the trial. Grower 4's trial was the first harvested, Mainstay performed very well in this trial, also. There was no hollow heart indicated in any of the trials, and scab was very light in this trial.

Grower 1 and 2 trials were located on sandy loam soil, the soil condition was on the dry side, and yields were fair at best. There was no hollow heart found in this location, and tuber characteristics were good.

In conclusion, I believe the new potato variety Mainstay performed very well on muck soil, and the heavy set indicates irrigation is needed to reach the variety's potential. The writer believes that on sandy loam soil with extremely dry conditions, resulted in poor yields at grower 1 and 2 locations. Under normal weather conditions and with adequate rainfall, I believe Mainstay will be a positive addition to our potato variety lines.

Recommendation:

The Mainstay variety should be looked at for one more year.

Table 7C Campbell Soup Cultivar Trial
1995 Grower Potato Variety Trials
Napoleon, Ohio

Variety	Grower	Planted	Harvested	Soil Type	Rain Data	Total	Marketable	% Marketable	Specific Gravity	% Hollow Heart	Eye Depth	Scab	Comments
Gemchip	#1	5/5/95	9/18/95	Sandy Loam	Dry	344.8	333.4	96.7	1.069	-	S-M	-	
Mainestay	#1	5/5/95	9/18/95	Sandy Loam	Dry	260.8	203.9	78.2	1.061	-	S	VL	
Katahdin	#2	5/20/95	9/16/95	Sandy Loam	Dry	215.4	131.2	60.9	-1.059	-	S	-	
Mainestay	#2	5/20/95	9/16/95	Sandy Loam	Dry	197.5	124.0	62.8	-1.059	-	S	-	Small tuber scab
Onaway	#2	5/20/95	9/16/95	Sandy Loam	Dry	211.7	120.2	56.8	-1.059	-	S	-	Blo-shape
Superior	#3	4/20/95	9/28/95	Muck	V.Dry	227.2	225.4	99.2	1.078	-	S-M	-	Soil very dry
Mainestay	#3	4/20/95	9/28/95	Muck	V.Dry	371.3	357.6	96.3	1.074	-	S	-	
LaBelle	#3	4/20/95	9/28/95	Muck	V.Dry	292.6	280.3	95.8	1.082	-	S	-	
NYE11-45	#3	4/20/95	9/28/95	Muck	V.Dry	267.9	267.1	99.7	1.062	-	S	-	
Superior	#4	4/20/95	8/25/95	Sandy Loam	Normal	356.0	301.2	84.6	1.076	-	S-M	-	Soil very hard (cloddy)
Carlton	#4	4/20/95	8/25/95	Sandy Loam	Normal	298.0	221.1	74.2	1.068	-	S	-VVL	at harvest time.
Mainestay	#4	4/20/95	8/25/95	Sandy Loam	Normal	462.0	378.8	82.0	1.069	-	S	VL	
NY11-45	#4	4/20/95	8/25/95	Sandy Loam	Normal	314.0	214.8	68.4	1.069	-	S	-	
Atlantic	#4	4/20/95	8/25/95	Sandy Loam	Normal		400.0	90.0*					
Mainestay	#5			Muck	Irrigated	600.0	597.0	99.5					
Onaway	#5			Muck	Irrigated	350.0	337.8	96.5					
Mainestay	#6			Muck	Normal		400.0+						Large tuber. Heavy set
Superior	#6			Muck	Irrigated		375.0						
Katahdin	#6			Muck	Irrigated		300.0						

* Tuber Data Rating System:

- Sample size was 20 tubers/plot.

- Eye Depth - S = Small, M = Medium, D = Deep

- Scab & Black Scurf - VVL = Very Very Light, VL = Very Light, L = Light, M = Medium, S = Severe

Table 6. Yield data at various harvest dates of the Earliness trial located at the Vegetable Crops Branch, Fremont, Ohio.

Variety	% Stand	70 day harvest ¹		80 day harvest ¹		90 day harvest ¹	
		cwt/acre		cwt/acre		cwt/acre	
		2- 2 3/4	≥2 3/4	2- 2 3/4"	≥2 3/4"	2- 2 3/4"	≥2 3/4"
NY11-45	69	81	13	133	48	139	109
Conestoga	69	109	51	122	68	114	260
Superior	92	117	10	227	14	190	232
CA82054-5	84	121	92	168	70	101	306
BO15100-72	72	125	33	143	34	171	149
G8525-3P	69	83	4	230	9	162	114

Planted: May 5, 1995

¹Harvested: 70 days = 7/18/95

80 days = 7/27/95

90 days = 8/16/95

Plot Size: 36" between rows

30' long

12" between seed pieces

Table 7. Plant stand, total yields, U.S. No. 1 yields, grade distribution, and internal disorders for selections in Observation trials, Wooster, Ohio - 1995.(two replications)*

Cultivar	% Plant stand	Total yield cwt/A	U.S. No.1 cwt/A	U.S. No.1 %	Internal Defects				
					Culls %	B's %	Hollow heart %	Vascular discoloration %	Necrosis %
PI23-17	68	240	167	69.25	4.05	26.75	0	5	0
N15-3	52	194	146	75.50	14.50	10.00	0	0	0
N15-18	68	194	136	68.83	10.39	20.78	0	0	0
NY103	67	287	182	63.50	8.25	28.25	0	0	0
P49-3	62	115	57	49.51	19.79	30.70	0	0	0
N15-8	78	244	190	78.00	9.25	12.75	0	0	0
P49-19	75	226	186	82.50	10.75	6.75	0	0	0
P23-31	60	207	129	62.25	6.50	31.25	0	5	10
N50-3	62	159	129	81.25	6.25	12.50	0	0	0
P50-4	79	296	170	57.50	19.50	23.00	0	0	0
P49-13	80	261	185	71.00	10.75	18.25	0	5	0
P29-2	85	240	186	77.50	10.00	12.50	0	5	0
NY102	80	195	155	79.50	9.75	10.75	0	0	0
P49-20	94	313	186	59.50	12.75	27.75	0	0	0
M19-3	75	254	185	72.75	8.25	19.00	0	0	20
P1-101	85	225	167	74.25	11.25	14.50	0	0	0
NY101	84	249	176	70.75	6.50	22.75	0	5	0
P13-110	75	253	200	79.25	5.75	15.00	0	10	0
P18-8	79	238	179	75.25	2.25	22.50	0	0	10
M28-3	74	259	202	78.00	4.00	18.00	0	0	0
P7-19	59	225	177	78.75	7.00	14.25	0	0	0
BO174-16	89	295	207	70.25	7.25	22.50	0	0	0
BO903-2	84	342	153	44.75	6.75	48.50	0	5	0
BO717-1	90	264	172	65.25	24.00	10.75	0	0	0
BO852-7	95	281	237	84.50	9.25	6.25	0	0	0
BO766-3	84	219	152	69.25	6.00	24.75	0	0	0
BO564-8	84	285	199	69.75	14.50	15.75	0	0	0
BO892-7	90	254	201	79.25	7.50	13.25	0	0	0
B1004-8	97	272	207	76.25	9.25	14.50	0	5	0
BO684-5	88	300	240	80.00	6.75	13.25	0	0	0
BO257-12	94	336	285	84.75	5.75	9.50	0	0	0
BO856-4	90	305	229	75.00	12.25	12.75	0	5	15
BO564-9	89	301	245	81.25	5.75	13.00	0	5	0
BO178-34	95	392	278	71.00	5.25	23.75	0	5	0
BO763-15	90	261	167	64.00	5.50	30.50	0	5	0
G8160-11RY	82	237	183	77.25	10.25	12.50	0	5	0
G8160-6R	64	281	192	68.25	8.25	23.50	5	5	0
PT	47	196	71	36.25	6.00	57.75	0	0	0
Conestoga	74	237	175	74.00	6.75	19.25	0	0	0
G8525-3P	52	172	114	66.25	7.25	26.50	0	0	0
CA82054-5	72	255	171	67.00	4.25	38.75	0	0	0
BO493-8	57	178	115	64.75	7.75	37.50	0	0	0
NDC4069-4	82	180	97	54.00	20.25	25.75	0	0	0
AC83068-1	87	231	143	61.75	10.25	28.00	0	0	0
AC78069-17	82	226	129	57.00	11.50	31.50	0	0	0
CO81082-1	55	109	72	66.54	16.54	16.92	0	0	0
CO82142-4	64	115	70	60.71	20.00	19.29	0	0	0
CO80011-5	67	235	123	52.25	8.75	39.00	0	0	0

Table 8. Tuber and chip data for selections in Observation trials, Wooster, Ohio - 1995.(two replications)*

Cultivar	Tuber color	Skin texture	Tuber shape	Eye depth	Appearance	Specific gravity	Chip color	Blisters
P23-17	6.75	6.0	3.0	5.5	4.0	1.070	1.0	0
N15-3	6.00	5.5	4.5	6.0	3.5	-----	----	---
N15-18	6.00	6.0	3.0	7.0	4.5	1.092	1.0	30
NY103	6.00	7.0	3.0	7.0	6.0	1.070	1.5	10
P49-13	2.00	7.0	3.0	5.0	5.5	-----	----	---
N15-8	5.25	5.0	2.0	5.0	4.5	1.081	1.0	10
P49-19	2.00	7.0	2.0	5.0	5.5	-----	----	---
P23-31	7.00	6.0	2.0	7.0	5.0	-----	----	---
N50-3	7.00	5.0	2.0	5.0	5.5	-----	----	---
P50-4	2.00	6.0	2.0	6.0	5.0	-----	----	---
P49-3	2.00	6.0	2.0	4.0	4.0	-----	----	---
P29-2	7.00	6.0	3.0	5.0	5.5	1.076	1.0	40
NY102	7.00	7.0	3.0	6.0	6.5	1.076	1.0	20
P49-20	2.00	6.0	3.0	5.0	3.5	-----	----	---
M19-3	5.00	6.0	3.0	8.0	7.0	1.064	1.5	30
P1-101	6.25	6.0	3.0	6.0	5.0	1.080	1.0	30
NY101	4.00	5.0	3.0	6.0	4.0	1.072	1.5	40
P13-110	7.00	7.0	3.0	6.0	4.5	-----	----	---
P18-8	7.00	6.0	3.0	5.0	2.0	-----	----	---
M28-3	7.00	7.0	3.0	4.0	3.5	-----	----	---
P7-19	4.00	5.0	3.0	6.0	4.5	1.083	1.0	0
BO174-16	7.00	7.0	2.0	6.0	4.5	1.089	1.0	0
BO903-2	1.00	6.0	4.0	6.0	3.0	-----	----	---
BO717-1	5.00	5.0	2.0	4.5	5.5	-----	----	---
BO852-7	1.00	6.0	3.0	6.0	6.5	-----	----	---
BO766-3	6.00	6.0	3.0	7.0	5.0	1.072	1.0	10
BO564-8	5.00	5.0	2.0	5.0	4.5	1.080	1.0	10
BO892-7	6.00	6.0	2.0	6.0	6.0	1.085	2.0	20
B1004-8	5.00	6.0	4.0	6.0	5.5	1.085	2.5	10
BO684-5	7.00	6.0	3.0	5.0	4.5	1.070	2.0	20
BO257-12	6.00	6.0	3.0	4.0	3.5	1.083	1.0	10
BO856-4	7.00	7.0	2.0	4.0	2.5	-----	----	---
BO564-9	6.00	6.0	3.0	6.0	5.5	1.079	1.5	10
BO178-34	7.00	5.0	3.0	5.0	4.5	1.092	1.5	30
BO763-15	6.00	6.0	2.0	7.0	4.5	1.075	1.0	10
G8160-11RY	2.00	6.0	4.0	5.0	4.0	-----	----	---
G8160-6R	2.00	7.0	2.0	7.0	5.5	-----	----	---
PT	6.00	6.0	3.0	7.0	3.0	-----	----	---
Conestoga	5.00	5.0	2.0	7.0	2.0	1.075	1.5	10
G8525-3P	1.00	6.0	4.0	7.0	2.0	-----	----	---
CA82054-5	6.00	7.0	2.0	6.0	4.0	1.063	3.0	20
BO493-8	6.00	5.0	7.0	6.0	1.5	-----	----	---
NDC4069-4	1.00	6.0	3.0	5.0	2.5	1.062	Dk.red	0
AC83068-1	4.00	3.0	6.0	7.0	3.0	-----	----	---
AC78069-17	4.00	4.0	5.0	5.0	3.5	-----	----	---
CO81082-1	6.00	5.0	4.0	7.0	4.5	-----	----	---
CO82142-4	5.00	5.0	4.0	6.0	3.0	-----	----	---
CO80011-5	5.00	4.0	7.0	6.0	4.0	-----	----	---

*Trial includes various advanced lines and clones from US Department of Agriculture, Beltsville, MD.

1995 NORTH CENTRAL REGIONAL POTATO TRIAL

Herbicide:	5/22/95	Sencor 75 DF 1 lb. Dual 8E	2 pt.
Vine Kill:	9/2/95	Diquat	1 pt. + Sticker
Sprays:	6/13/95	Dithane DF	1 lb.
	6/22/95	Dithane DF	1 lb.
	7/3/95	Dithane DF	2 lb.
	7/11/95	Dithane DF	.5 lb.
		Ridomil Brave 81 W	2 lb.
	7/18/95	Ridomil Bravo 81 W	2 lb.
	7/27/95	Dithane DF	2 lb.
	8/2/95	Dithane DF	2 lb.
		Thiodan 3EC	2 pt.
	8/10/95	Dithane DF	2 lb.
		Thiodan 3EC	2 pt.
	8/16/95	Dithane DF	2 lb.
	8/29/95	Ridomil Bravo 81 W	2 lb.
Fertilizer:	600 lbs	Admire	1 pt. applied at planting time
	600 lbs	10-20-20 disked in	
		10-20-20 at planting	

Harvest Dates: 9/25 & 26/95

Month	Rainfall	Long Term average	<u>Air Temp.</u>		<u>Long Term</u>	
			Avg. min	Avg. max	Avg. min	Avg. max
May	4.54	3.91	46.7	69.7	46.4	70.6
June	3.05	3.92	60.0	83.1	55.5	79.5
July	3.57	4.13	62.9	85.5	59.7	83.6
August	3.28	3.67	65.2	87.8	57.9	82.0
September	1.06	3.15	47.7	74.1	51.3	75.6

1995 NORTH CENTRAL REGIONAL POTATO TRIALS

Cooperator Dr. Richard L. Hassell

Address Hort & Crop Science, OARDC/OSU, 104 Gourley Hall, Wooster, OH 44691

Phone 216-263-3810 **FAX** 216-263-3685 **E-Mail** hassell.1@osu.edu

Location Wooster, Ohio

Date Planted May 22, 1995

Date Harvested September 25 & 26, 1995

Irrigated or Dryland Dryland

Unusual environmental factors that affected the trial, if any (rainfall, temperature, irrigation, or special conditions, etc.):

**1995 NORTH CENTRAL REGIONAL POTATO VARIETY TRIAL
SUMMARY OF GRADE DEFECTS FROM OHIO**

Selection Number Or Variety	Scab (2) Area-Type (A-T)	Growth Cracks	Percent External Defects (1)			Total (3) Tubers Free of Ext. Defects	Percent Internal Defects (1)			Normal Tubers (4)
			Off Shape and Second Growth	Sun Green	Tuber Rot		Hollow Heart	Internal Necrosis	Vascular Discoloration	
STANDARDS										
Atlantic	T-1.25	2.50	6.25	5.00	0.00	86.25	2.5	5.0	0	92.5
Snowden	0	0.00	10.00	1.25	0.00	88.75	0	0	0	100.0
Norchip	0	8.75	37.75	27.50	0.00	26.00	0	0	0	100.0
Red Pontiac	0	0.00	27.50	1.25	0.00	71.25	0	0	0	100.0
Dk Red Norland	0	0.00	6.25	0.00	0.00	93.75	0	0	0	100.0
ENTRIES										
MN15620	0	0.00	35.00	7.50	0.00	79.50	0	0	0	100.0
MN16191	3-2.5	0.00	42.50	6.25	0.00	51.25	0	32	0	68.0
MN16201	0	2.50	17.50	3.75	0.00	76.25	0	0	0	100.0
ND2225-1R	0	0.00	7.50	2.50	0.00	90.00	0	0	0	100.0
ND2417-6	0	0.00	16.25	13.75	0.00	70.00	0	0	0	100.0
ND2471-8	0	2.50	11.25	5.00	0.00	81.25	0	0	0	100.0
MSA091-1	0	3.75	23.75	5.00	0.00	67.50	0	0	0	100.0
MSB007-1	0	0.00	13.75	1.25	0.00	85.00	0	0	0	100.0
P84-13-12	0	5.00	12.50	3.75	0.00	78.75	0	0	0	100.0
W1149	T,12.50	1.25	16.25	1.25	0.00	81.25	5	0	0	95.0
W1189	T,23.75	0.00	17.50	2.50	0.00	80.00	0	17.50	0	82.5
W1242	0	1.25	11.25	7.50	0.00	80.00	0	0	0	100.0
AVERAGE	0	1.62	18.38	5.59	0.00	75.69	0	0	0	96.4

26

- 1) Based on four 20 tuber samples (one from each replication). Percentage based on number of tubers.
- 2) % Tubers with scab; average area-type; do not count as external defect. AREA: T-Less than 1%; 1 - 10-20%; 2 - 21-40%; 3 - 41-60%; 4 - 61-80%; 5 - 81-100%
TYPE: 1. Small, superficial; 2. Larger, superficial; 3. Larger, rough pustules; 4. Larger pustules, shallow holes; 5. Very large pustules, deep holes.
- 3) Tubers free from any external defect of any sort.
- 4) Percentage normal tubers are those showing no internal defects. Some individual tubers will have more than one type of internal defect.

1995 NORTH CENTRAL REGIONAL POTATO TRIAL SUMMARY SHEET of Ohio

Selection Number Or Variety	Average Maturity ¹	CWT/A Average Yield	CWT/A Yield US#1	Average Percent US #1	Ave. % Total Solids/ Specific Gravity ²	General Merit Rating ³	Chip Color ⁴	Comments and General Notes
STANDARDS								
Atlantic	2.00	350	247.63	70.75	23.38/1.095		1.0	
Snowden	2.50	236	176.72	74.88	21.90/1.088		1.5	
Norchip	2.00	223	194.01	87.00	19.74/1.073		1.5	
Red Pontiac	2.50	255	204.00	80.00	15.99/<1.060		3.0	
Dark Red Norland	1.00	222	182.88	82.38	15.99/<1.060		2.0	
ENTRIES								
MN15620	2.50	213	99.88	46.88	16.14/1.064		1.5	
MN16191	3.00	282	192.83	68.38	22.11/1.089		2.0	
MN16201	2.25	239	168.50	70.50	15.99/<1.060		3.0	
ND2225-1R	1.83	189	140.11	74.13	17.47/1.067	3	2.0	Excellent red color
ND2417-6	2.50	318	231.76	72.88	20.64/1.082	1	1.0	Possible lenticels problem
ND2471-8	1.25	284	205.28	72.28	21.90/1.088	2	1.0	Fairly smooth with little second growth
MSA091-1	2.25	210	138.35	65.88	22.96/1.093		1.0	
MSB007-1	3.00	188	125.02	66.50	21.48/1.086		1.0	
P84-13-12	3.00	238	185.05	77.75	22.11/1.089	4	1.0	Scruffy skin texture
W1149	4.50	190	133.25	70.13	18.32/1.071		1.0	
W1189	4.50	226	160.75	71.13	20.64/1.082		1.5	
W1242	2.00	227	160.33	70.63	21.90/1.088		1.0	
AVERAGE	2.50	227	173.31	71.89	19.91/1.078		1.0	

- 1) 1-Very Early - Norland maturity; 2-Early - Norchip or Irish Cobbler maturity; 3-Medium - Red Pontiac maturity; 4-Late - Katahdin maturity; 5-Very Late - Kennebec or Russet Burbank maturity.
- 2) Percent total solids, not total solids/acre; report % solids/specific gravity.
- 3) Place top FIVE among all entries, including check varieties, disregard maturity classification. (Rate first, second, third, fourth, fifth (in order) for overall worth as a variety.)
- 4) Chip Color - PCII Color Chart or Agtron. Indicate what Agtron you are using.

OHIO

Richard Hassell, David M. Kelly, E.C. Wittmeyer, John Elliott, and Elaine Grassbaugh

Introduction

Thirty-six varieties and clones from the NE107 Regional project were evaluated in replicated field trials located at the Ohio Agricultural Research and Development Center, Wooster, Ohio.

Methods

The seed samples when received from the NE107 project nursery were stored under recommended temperature and humidity conditions. A randomized complete block design with four replications was used.

The soil type is a well-drained Wooster silt loam with a pH 6.2, a phosphorus level of 132 lbs. and a potassium level of 190 lbs, according to the analytical procedures of the Research and Extension Analytical Laboratory at the Ohio Agricultural Research and Development Center.

Fertilization consisted of 600 lbs/A of 10-20-20 disked in prior to planting and 600 lbs/A 10-20-20 sidedressed at planting.

Following harvest on September 25, samples for chip quality evaluation were taken to the Pilot Plant, The Ohio State University, Columbus, Ohio, where the samples were held at ambient temperatures until early October (approximately 20 days) when chipping and specific gravity determinations were made. In addition, other samples were graded for market quality. At the time 10 tubers were taken at random from each replicate for hollow heart and internal necrosis ratings (see Table 2).

Weather Conditions

Rainfall during the growing season (May-September) was 15.50 inches, 3.31 inches below the long-term average for Wooster.

Results

Entries producing more than 225 cwt/A U.S. No. included AF1425-1, BO257-12, AF1475-16, ND2417-6, BO464-8, Snowden, AF1433-4, AF1438-1, Chieftan, and BO163-2. The range in U.S. No. 1 yields of these entries ranged from 229 cwt/A to 276 cwt/A.

Entries with specific gravity above 1.085 included BO257-12, AF1475-16, BO405-4, BO585-5, ND2471-8, Snowden, Mainechip, AF1379-3, NY95, Atlantic, AF875-15, and BO172-

22. The only entries showing hollow heart and internal discoloration were BO405-4, AF1455-9, Chieftan and Atlantic.

On the basis of this trial under these environmental conditions the following clones are worth further trial and possible testing on commercial farms: BO245-15, AF1425-1, BO257-12, AF1475-16, AF875-15, AF1424-7, Cherry Red, AF1438-1, BO172-22, ND1871-3R, BO564-8, ND2471-8, AF1433-4.

Ohio Table 1. Yield, marketable yield, percent of yield by grade size distribution and specific gravity for varieties grown at Wooster, Ohio - 1995. (Northeast)

Cultivar	Total Yield cwt/A	Size Distribution by Classes					Specific gravity
		Marketable Yield			% of Total Yield		
		U.S.#1 cwt/A	% STD	U.S.#1 (>1-7/8")	B size	Culls	
BO245-15	222	195	.94	88	5	7	1.083
AF1425-1	279	229	1.11	82	6	12	1.080
AF1060-2	346	211	1.02	61	9	30	1.074
BO257-12	341	235	1.14	69	7	24	1.089
AF1475-16	283	235	1.14	83	5	12	1.085
ND2417-6	328	262	1.26	80	9	11	1.079
AF875-15	267	174	.84	65	7	28	1.091
AF1424-7	214	171	.83	80	9	11	1.084
AF1481-4	147	103	.50	70	10	20	1.084
BO172-22	225	162	.78	72	5	23	1.091
ND1871-3R	293	196	.95	67	21	12	1.079
AF1455-9	228	150	.72	66	21	13	1.077
BO405-4	237	121	.58	51	7	42	1.092
BO585-5	255	168	.81	66	6	28	1.089
Yukon Gold	252	204	.99	81	6	13	1.078
BO564-8	290	229	1.11	79	13	8	1.084
ND2471-8	291	218	1.05	75	7	18	1.085
Red Ruby	319	217	1.05	68	24	8	1.065
Superior	239	184	.89	77	8	15	1.079
St. Johns	243	160	.77	66	5	29	1.077
NY87	256	202	.98	79	7	14	1.079
Snowden	300	276	1.33	92	4	4	1.094
Cherry Red	260	218	1.05	84	5	11	1.083
Mainechip	270	197	.95	73	9	18	1.093
Kennebec	321	180	.81	56	9	35	1.078
1379-3	276	204	.99	74	17	9	1.085
NY95	215	178	.86	83	10	7	1.098
AF1433-4	296	334	1.13	79	6	15	1.073
AF1426-1	322	174	.84	54	5	41	1.082
AF1438-1	318	232	1.12	73	11	16	1.076
Katahdin (std.)	259	207	1.00	80	8	12	1.066
Dark Red Norland	223	190	.92	85	6	9	1.065
Chieftain	328	233	1.13	71	7	22	1.072
BO564-9	283	198	.96	70	9	21	1.084
BO163-2	338	264	1.28	78	10	11	1.070
Atlantic	285	214	1.03	75	10	15	1.099

Ohio Table 2.

Tuber shape and appearance, hollow heart ratings, internal necrosis ratings and chip color for varieties grown at Wooster, Ohio - 1995. (Northeast)

Cultivar	Plant maturity	Tuber shape	Appearance ²	Hollow heart	Internal ¹ necrosis	Chip ^y * color
BO245-15	4.0	6.00	4.5	0	0	1
AF1425-1	4.6	3.25	4.5	0	0	1
AF1060-2	2.0	2.00	3.0	0	0	2.5
BO257-12	4.5	3.00	3.50	0	0	1
AF1475-16	3.8	3.00	6.50	0	0	1
ND2417-6	4.8	4.50	4.75	0	0	1
AF875-15	4.0	3.25	3.25	0	0	1
AF1424-7	3.0	3.00	5.50	0	0	1
AF1481-4	6.0	6.75	5.25	0	0	1
BO172-22	6.0	3.25	4.25	0	0	1.5
ND1871-3R	3.5	2.00	3.75	0	0	1
RF1455-9	4.5	2.00	4.75	0	5	1
BO405-4	7.0	3.00	4.00	0	40	2
BO585-5	4.5	2.00	4.00	0	0	1
Yukon Gold	5.0	3.00	4.00	0	0	2
BO564-8	3.5	2.00	4.75	0	0	1
ND2471-8	2.5	2.00	4.75	0	0	1
Red Ruby	4.0	3.00	3.00	0	0	2
Superior	2.7	3.00	3.50	0	0	1
St. Johns	5.5	3.75	3.75	0	0	1
NY87	4.0	3.00	5.75	0	0	1
Snowden	4.5	2.75	4.75	0	0	1
Cherry Red	2.8	3.00	5.50	0	0	1.5
Mainechip	3.5	2.00	4.25	5	0	1
Kennebec	8.0	3.75	2.50	0	0	1
AFB79-3	4.5	3.00	4.75	0	0	1.5
NY95	3.0	3.00	4.25	0	0	1
AF1423-4	4.5	3.75	3.50	0	0	1
AF1426-1	4.5	4.00	2.00	0	0	1
AF1438-1	2.3	3.00	5.25	0	0	1
Katahdin	4.7	2.00	4.25	0	0	1.5
Dark Red Norland	1.0	2.00	3.75	0	0	1
Chieftain	2.0	3.00	4.25	0	2	2.5
BO564-9	3.5	3.00	3.50	0	0	1
BO163-2	4.0	2.00	4.50	0	0	1
Atlantic	4.5	2.00	3.50	7.5	0	1

²See standard NE107 rating system^yPC/SFA standard

Ohio Table 3.

Plant stand, percent blister, Agtron readings, and additional tuber data for varieties grown at Wooster, Ohio - 1995. (Northeast)

Cultivar	Stand %	Plant Blister % ²	Tuber Data		
			skin texture	eye depth	skin color
BO245-15	92	0	7.00	4.50	7.00
AF1425-1	89	10	5.75	5.75	6.00
AF1060-2	93	20	6.75	6.75	6.75
BO257-12	94	0	5.75	6.25	5.25
AF1475-16	82	10	7.00	6.50	7.00
ND2417-6	90	0	6.75	6.75	7.00
AF875-15	84	0	5.00	5.00	5.00
AF1424-7	84	10	6.00	7.00	6.50
AF1481-4	59	10	3.00	6.75	4.00
BO172-22	87	20	6.50	6.25	7.00
ND1871-3R	91	10	6.00	5.00	2.00
RF1455-9	88	10	6.50	6.00	6.00
BO405-4	88	0	5.00	5.50	5.00
BO585-5	72	10	6.50	6.25	5.25
Yukon Gold	72	30	6.00	6.00	6.75
BO564-8	93	10	5.00	6.00	5.50
ND2471-8	83	0	7.00	6.00	7.00
Red Ruby	94	0	7.00	6.00	2.00
Superior	88	10	5.00	5.25	6.00
St. Johns	82	0	6.75	5.75	6.00
NY87	92	20	6.75	6.00	6.25
Snowden	95	10	5.00	6.00	4.75
Cherry Red	92	10	5.00	6.00	2.00
Mainechip	93	20	7.00	6.00	7.00
Kennebec	87	0	6.00	6.00	7.00
AFB79-3	86	0	7.00	5.75	7.00
NY95	92	10	5.75	7.00	5.75
AF1423-4	83	0	6.75	5.75	7.00
AF1426-1	90	10	5.00	6.00	5.00
AF1438-1	73	10	7.00	7.00	7.00
Katahdin	93	10	6.00	5.00	7.00
Dark Red Norland	87	0	6.00	5.00	2.00
Chieftain	94	20	7.00	5.00	2.00
BO564-9	89	0	5.25	6.50	4.75
BO163-2	83	0	5.00	6.00	6.00
Atlantic	81	10	5.00	4.50	6.00

²Percentage of chips that develop blisters greater than 20 mm in diameter during the frying process.³See standard NE107 rating system.

**TUBER DATA RATING SYSTEM FOR
POTATO VARIETY TRIALS - NE-107**

Tuber Skin Color

1. Purple
2. Red
3. Pink
4. Dark brown
5. Brown
6. Tan
7. Buff
8. White
9. Cream

Skin Texture

1. Part. russet
2. Heavy russet
3. Mod. russet
4. Light russet
5. Netted
6. Slight netting
7. Moderately
8. Smooth
9. Very smooth

Tuber Shape

1. Round
2. Mostly round
3. Round to oblong
4. Mostly oblong
5. Oblong to long
6. Mostly long
7. Long
8. Cylindrical

Eye Depth

1. VD
2. --
3. D
4. --
5. Intermediate
6. --
7. S
8. --
9. VS

Appearance

1. Very poor
2. --
3. Poor
4. --
5. Fair
6. --
7. Good
8. --
9. Excellent

PLANT RATING SYSTEM

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

Air Pollution

0. dead
1. decreasing plant appearance
2. with varying degrees
3. of defoliation
- 4.
5. most leaves have symptoms, but generally appearance is still good
6. good plant condition with decreasing
7. percent of foliar symptoms
- 8.
9. no symptoms

Plant Size

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

Plant Maturity

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

Plant Appearance

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



LOCATIONS OF 1995 OHIO POTATO VARIETY TRIALS

1. Michael Farms, Urbana
2. Ohio Agricultural Research & Development Center
3. Vegetable Crops Branch, Fremont

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OARDC

Ohio Agricultural Research and Development Center
1680 Madison Avenue
Wooster, OH 44691-4096
216-263-3700