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OHIO POTATO CULTIVAR TRIALS

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TABLE OF CONTENTS

	Page
Statewide Trials	1
Red Potato Trial - Urbana	11
Observation Trial - Wooster	12
Specialty Trial - Wooster	15
Campbell Cultivar Trial - Napoleon	17
North Central Regional Trial - Wooster	19
Northeastern Regional Trial - Wooster	22
Location of 1992 Ohio Potato Variety Trials	27

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OHIO STATEWIDE TRIALS - 1993

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 in each plot. At harvest, the tubers are evaluated, weighed and graded with samples taken for chipping and other quality determinations.

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

Farm Locations

The three farms referred to in the publication are as follows:

Farm 1 (M) Michael Farms, Urbana (Champaign County)
Farm 2 (L) Logan Farms, Mt. Gilead (Morrow County)
Farm 3 (W) Ohio Agricultural Research and Development Center (OARDC), Wooster (Wayne County) non-irrigated land.

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

Procedures

Twenty cultivars were planted in three replicates at each of the three farms. Thirty seed pieces were planted in each replicate. In addition, twelve red-skinned varieties (including one purple) were planted in three replications at Farm 1.

The seed potatoes were cut and treated (mancozeb) on May 12-13, 1993. Farm 1 was planted May 20; Farm 2 was planted May 21, and Farm 3 was planted May 18. All plots were harvested between September 14 and October 12. The potatoes were harvested with flat-bed diggers, then picked up by hand and weighed. Representative 40-pound samples were collected, then graded to represent U.S. Standards.

Grading dates: Farm 1 - October 12
Farm 2 - October 6
Farm 3 - October 26

At grading, ten tubers from each replicate were cut for internal defects. A sample of each variety was taken to The Ohio State University Pilot Plant (Columbus) for chipping tests. The samples were stored at 52°F. Atlantic, Katahdin and Superior were standard varieties for comparison.

The red-skinned plot in Farm 1 was planted on May 10, 1993, and harvested August 25, 1993. These samples were graded October 12, 1993.

Weather and Growing Conditions

See Table 1 for rainfall data for the three farms. Additional data are contained in the North Central Report, page 21.

Observations and Viewpoints

When you study this report on the 1993 potato trials, remember the wide variation in temperature and moisture conditions during the main growing season (June-July-August) where there was much rain in some regions and very little in Wooster, for example.

The following data from the plots at the Ohio Agricultural Research and Development Center, Wooster, illustrate the effect of seasonal conditions in the yield of potatoes.

Table 1. Wooster - U.S. No. 1 (Cwt/A)

Variety	1988	1990	1991	1992	1993
Somerset	---	245	126	234	---
Norchip	133	285	124	276	140
N.Y. 85	---	237	147	320	---
Katahdin	163	208	121	311	138
Atlantic	246	278	163	343	213
LaBelle	---	226	122	177	172
Monona	170	243	---	271	---
Superior	172	307	199	317	170
Gemchip	---	268	111	337	217
Rainfall (July-Aug.)	9.8	10.8	3.93	12.32	2.81

Field Observations

The average percent stand at Farm 1 was 70%, Farm 2 was 66%, and Farm 3 was the highest with 78%. However, the yields were highest for Farm 1. The percent stand in 1993 was very similar to the stand in 1992, but the average stand in 1991 was much better--78%, compared with 74% in 1992 and 72% in 1993.

Observations of tuber characteristics are made under field conditions when plots are harvested. These observations include tuber shape, color and surface

texture are noted, along with uniformity and yielding ability. Observations are recorded on each replication. These observations, along with yield data, help determine cultivars which warrant further testing under Ohio conditions.

Observations on Promising Varieties

The following comments are based primarily on field observations made at harvest on the two cooperating commercial farms. Growers will be unable to purchase seed of new varieties except perhaps in limited quantities--maybe several hundred pounds at the most. This information is being presented so growers will have some background information on variety selection when these new varieties become available. **Also some of these varieties will be discarded after more testing is done under many different conditions.**

AF875-15 is a medium-early maturing variety with round to slightly oval tubers with moderate netting which tends to give tubers a light tan to light buff appearance. The irregular surface may be a problem for fresh market. Resistant to verticillium wilt and net necrosis.

Gemchip is a medium-late maturing variety with smooth, white skin texture. The tubers are round to slightly oval shape. Trace of surface scab was present. It appears to have yielding ability under dry conditions.

It has much resistance to verticillium wilt and is reported to be resistant to early blight, but we have not been able to evaluate it for early blight tolerance. Developed by Campbell Soup and released by USDA and several western states.

AF1060-2 is a medium-late maturing selection from Maine Experiment Station with reported resistances to verticillium wilt, net necrosis, Fusarium dry rot and early blight. Round tubers with medium buff to light texture and fairly uniform tuber size. Experiences in Ohio in 1992 indicate variety may have yielding potential.

We observed some purple streaks in the tubers which were probably a genetic disorder.

A80559-2 is a late maturing variety with round tubers and a white to buff skin appearance. Has a high specific gravity and chips well from 50°F storage, according to reports from West. In our plots it had an irregular surface and seemed to be scab susceptible. It does best under irrigated conditions.

N.Y. 84 is a new variety from the breeding program at Cornell. Round to slightly oval tubers with buff to light tan skin color and with uniform shape and size in these plots. Eyes are shallow. It is reported to have scab resistance. The maturity is late midseason. Promising for fresh market. Specific gravity is low.

NYE 55-44 is another new variety from Cornell. It is a medium-early variety with round to slightly oval tubers and with a smooth surface. Excellent uniformity in our plots in '93. It has resistance to common scab and golden nematode.

Langlade is a variety from the Wisconsin breeding program. The tubers are round to slightly oval with a medium buff appearance and fairly uniform. There is tendency for large tubers. Closer spacing may help to reduce tuber size. Good appearance for fresh market.

Mainechip was released in 1992 from the Main Breeding Program. The round tubers with buff skin texture are attractive. The relatively smooth tuber surface aids their appearance. Tuber size tended to be small, but perhaps more fertilizer and/or irrigation may help to improve size. It has been a high-yielding variety in previous Ohio plots. The variety was developed primarily for the chip industry, but it may have a place in the fresh market.

Table 1. Cultural and pest control practices and rainfall totals for Ohio statewide potato trials - 1993

	Michael Farms	Logan Farms	OSU Farm
Date Planted	5/20/93	5/21/93	5/18/93
Date Harvested	10/12/93	10/6/93	9/14&15/93
1992 crop	field corn	field corn	alfalfa
Cover crop	none	none	winter wheat - plow down
Fertilizer applied in row	1200 lbs. 13-20-20 sidedress 30 lb. N	sidedress 75 lb. N	1200 lbs. 10-20-20 (1/2 at plow-down; 1/2 at planting)
Herbicide	Dual, Sencor	Dual, Lorax	Dual, Sencor
Spacing	8" x 36"	8" x 36"	12" x 36"
Soil Type	Silt Loam		Wooster Silt Loam
Soil conditions at planting	Good	Excellent	Excellent
Irrigation	Yes	No	No
Monthly Rainfall Totals (inches)			
May	3.39	N/A	1.44
June	5.56	7.60	4.22
July	9.82	3.28	2.23
August	*3.14	1.08	.58
September	5.00	3.00	3.96
Season Total	26.91	14.96	12.43

*Two additional irrigations

SOIL ANALYSES OF STATEWIDE TRIAL PLOTS - 1993

Test Results	Michael Farms Red	Michael Farms White	Logan Farms	OARDC
pH	6.9	5.3	6.1	6.2
P (lb/A)	616	374	216	136
K (lb/A)	783	417	390	270
Ca (lb/A)	4220	1930	3060	2180
Mg (lb/A	787	363	475	561
CEC (mgq/100 g)	15	12	11	8
Ca (% base sat.)	71	41	71	67
Mg (% base sat.)	22	13	22	29

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

Table 2. Stand counts for main trials of potato cultivars, Ohio Statewide Trials, 1993.

Cultivar	Percent Stand: Michael Farms 34 days after planting	Logan Farms 35 days after planting	OSU Wooster 35 days after planting	Mean
W 877	55	59	59	58
AF 828-5	58	51	56	55
W 870	65	63	87	72
AF 875-15	62	52	88	67
BO 178-34	62	70	69	67
Gemchip	72	62	79	71
AF 1060-2	76	65	76	72
Portage	62	60	73	65
Sunchip (Suncrisp)	77	62	90	76
LaBelle	70	60	70	67
A 80559-2	76	73	89	79
Langlade	74	73	79	75
NY 84	56	60	69	62
Atlantic	81	82	89	84
Snowden	73	76	88	79
NYE 55-44	75	65	83	74
EideRusset	80	72	78	77
Superior	85	81	87	84
MaineChip	81	69	90	80
Neb. 19-47	76	78	78	77
Mean	70	66	79	72

Table 3. Total yields, percent U.S. No.1 and marketable yields for main trial potato cultivars, Ohio Statewide Trial, 1993.

Cultivar	Total Yield cwt/a			% U.S. No. 1			No. 1 Yields cwt/a		
	Michael	Logan	OSU	Michael	Logan	OSU	Michael	Logan	OSU
W 877	260	123	161	88	74	82	228	90	132
AF 828-5	298	181	177	86	86	68	257	155	120
W 870	344	211	212	91	83	78	312	174	165
AF 875-15	263	165	252	84	89	80	221	147	202
BO 178-34	280	186	192	83	82	90	232	152	173
Gemchip	297	192	256	87	93	85	258	178	217
AF 1060-2	396	212	239	86	92	89	342	196	212
Portage	335	148	195	74	80	66	247	118	129
Sunchip (Suncrisp)	323	176	206	81	85	77	263	148	159
LaBelle	316	221	224	89	89	77	280	198	172
A 80559-2	252	166	165	84	87	82	212	145	135
Langlade	374	190	201	89	90	71	334	170	143
NY 84	362	177	192	88	91	77	318	161	148
Atlantic	421	250	257	91	93	83	384	231	213
Snowden	324	205	215	88	89	66	285	181	141
NYE 55-44	304	159	195	93	91	80	283	145	156
Eiderusset	293	129	184	83	72	82	245	93	151
Superior	285	169	207	86	79	82	244	134	170
MaineChip	358	235	228	89	86	71	317	203	162
Neb. 19-47	229	107	180	87	74	83	199	79	149

Table 4. Percent culls, percent B's and internal defects for main trial potato cultivars, Ohio Statewide Trials, 1993.

Cultivar	Percent Culls			Percent B's			% Hollow Heart			Necrosis*	Discolor*	Vascular* Discoloration
	Michael	Logan	OSU	Michael	Logan	OSU	Michael	Logan	OSU	OSU	OSU	OSU
W 877	8	23	10	4	4	8	0	0	0	0	10	15
AF 828-5	12	13	16	2	2	15	0	0	3	0	0	10
W 870	7	13	12	2	5	10	13	0	0	0	0	0
AF 875-15	14	6	3	2	4	17	30	10	0	0	0	30
BO 178-34	11	11	4	6	7	6	7	0	0	0	0	45
Gemchip	6	2	7	7	5	8	7	0	0	0	0	3
AF 1060-2	8	2	7	5	6	5	3	0	0	0	0	0
Portage	20	13	28	6	7	6	7	0	0	0	0	5
Sunchip (Suncrisp)	15	11	11	4	4	12	30	0	0	10	0	0
LaBelle	9	7	11	2	4	11	17	0	0	0	0	0
A 80559-2	11	7	9	5	6	8	13	0	0	0	0	0
Langlade	6	4	22	5	6	6	10	0	0	0	0	0
NY 84	7	4	18	6	5	5	0	0	0	3	0	3
Atlantic	4	2	9	4	6	8	7	7	0	0	0	0
Snowden	9	1	6	3	10	28	37	0	0	0	0	0
NYE 55-44	4	1	4	3	8	16	27	7	0	0	0	0
EideRusset	3	14	8	14	14	11	7	0	0	0	0	3
Superior	7	16	10	8	5	8	7	0	0	0	0	0
MaineChip	7	3	19	5	11	11	7	0	0	0	0	5
Neb. 19-47	4	8	9	9	18	8	3	0	0	0	0	0

*No internal defects were noted at each of the other farms.

Table 5. Specific gravity, chip color, percent blister, and Agtron E1-5F. Readings of potato cultivars grown at three farms in statewide trials, 1993.

Cultivar	Specific Gravity			Chip Color[y]			% Blister[z]			Agtron		
	Michael	Logan	OSU	Michael	Logan	OSU	Michael	Logan	OSU	Michael	Logan	OSU
W 877	1.082	1.094	1.083	3	3	3	0	10	10	35.2	44.7	47.5
AF 828-5	1.060	1.076	1.077	3	1	2	0	0	20	36.4	50.4	55.6
W 870	1.084	1.096	1.083	2	1	2	0	0	0	46.2	53.6	51.1
AF 875-15	1.079	1.086	1.087	2	1	1	0	20	20	46.6	54.1	61.6
BO 178-34	<1.060	1.090	1.093	5	1	1	0	0	10	18.8	56.3	54.5
Gemchip	<1.060	1.082	1.082	2	1	1	0	0	10	47.1	57.1	55.6
AF 1060-2	<1.060	1.081	1.076	5	2	3	0	0	30	25.0	50.4	48.9
Portage	<1.060	1.082	1.091	4	2	2	0	0	20	25.3	50.3	50.7
Sunchip (Suncrisp)	1.079	1.094	1.079	3	1	2	0	0	10	38.7	51.7	48.9
LaBelle	1.065	1.085	1.078	3	1	3	0	0	10	43.8	52.8	46.4
A 80559-2	1.082	1.084	1.084	1	1	3	0	0	0	47.1	45.5	46.5
Langlade	<1.060	1.076	1.086	2	1	1	0	0	30	41.7	47.0	53.1
NY 84	<1.060	1.070	1.075	3	1	2	0	10	30	46.1	50.2	57.1
Atlantic	1.074	1.010	1.098	3	1	2	0	0	10	46.1	54.7	53.5
Snowden	1.074	1.092	1.094	2	1	1	0	0	0	42.5	55.4	56.1
NYE 55-44	1.075	1.087	1.099	1	2	1	0	0	10	57.4	46.1	57.3
EideRusset	1.069	1.084	1.090	5	3	3	0	0	20	28.7	51.8	45.3
Superior	1.064	1.082	1.085	3	2	1	0	0	0	40.9	52.2	49.7
MaineChip	1.083	1.092	1.100	2	1	1	0	10	0	45.4	52.2	55.8
Neb. 19-47	1.064	1.080	1.089	2	1	1	0	10	60	41.3	56.6	48.9

[y]PC/SFA standards: 1 = light (high Agtron index readings); 5 = dark, low agtron index readings.
[z]Percentage of chips that develop blisters >20mm in diam. during the frying process.
[z]Percentage of chips that develop blisters >20 mm in diam. during the frying process.

Table 6. 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	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Early & Med. Early										
Superior	---	---	---	---	131	---	207	224	278	183
Conestoga	230	266	321	225	---	---	---	---	---	---
Rus. Norkotah	---	---	302	272	105	---	---	---	---	---
Early Midseason										
Langlade (W718)	---	---	---	---	181	188	---	---	---	216
Norchip	208	228	301	236	160	161	235	---	---	---
Midseason										
Snowden (W855)	---	---	---	---	---	167	---	231	373	202
LA01-38 (LaBelle)	---	359	413	330	233	211	272	---	344	217
Katahdin	315	335	363	276	187	178	246	251	373	---
Atlantic	---	---	---	---	---	193	260	260	269	276
Late										
Castile (B7592-1)	---	---	---	---	---	191	280	238	338	---
Allegany (NY72)	---	---	---	---	213	184	---	192	---	---
Denali	---	---	---	---	---	---	---	---	---	---
Elba (NY59)	---	---	393	---	---	---	---	---	---	---
Neb.A129-69-1	278	---	---	---	---	---	---	---	---	---
WCN521-12	---	325	344	---	---	---	---	---	---	---
MS700-70	---	---	378	281	232	187	230	263	---	---
Gemchip (BR7093-24)	---	---	---	---	---	---	268	230	344	218
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 Shurchip, Monona, Kennebec, Atlantic, Crystal, Sebago, Red Pontiac, Red LaSoda, etc. Katahdin, Norchip and Superior are well known and used as standards for comparison.

Table 7. Plant stand, total yields, U.S. No. 1 yields, grade distribution, and internal disorders for red potato trial entries, grown at Michael Farms, Urban, Ohio - 1993

Cultivar	% Plant stand	Total yield cwt/a	U.S.#1 cwt/a	U.S. #1 %	Cull %	B's %	Hollow Heart[z] %
W1100R	67	192	139	72.0	3.0	25.0	0
Caribe	76	293	108	37.0	53.0	10.0	0
Red Gold	69	269	229	85.0	3.0	12.0	0
Red LaSoda	77	236	182	77.0	10.1	12.9	0
ND2224-5R	63	281	222	79.4	6.4	14.2	0
Red LaSoda #10	85	215	178	82.6	4.7	12.7	0
LA 72-12	72	249	53	21.4	71.1	7.5	5
NDT X 731-11	76	336	277	82.6	13.1	4.3	5
Red Viking(Sport)	53	235	176	75.1	18.7	6.2	0
Red Viking #10	63	180	140	77.5	16.7	5.8	0
Red Viking #5	52	215	174	81.0	12.4	6.6	0
All Blue	97	100	---	----	----	----	-

All data based on 4 replications
Planting Date: 5/10/93
Harvest Date: 8/25/93
Cultural practices and planting spacing, see Table 1
[z]Hollow heart and internal necrosis ratings indicate the percentage of affected tubers found in 40 tubers sampled.

Table 8. Plant stand, total yields, U.S. No. 1 yields, grade distribution, and internal disorders for the Observation trial grown at Wooster, OH - 1993.

Cultivar	% Plant stand	Total yield cwt/A	U.S. No.1 cwt/A	U.S. No.1 %	Culls %	B's %	Internal Defects			
							Hollow heart %	Internal necrosis %	Dis-color %	Vascular discoloration %
B0866-8	73	203	179	88.0	75.0	4.5	0	0	0	0
B0178-34	83	244	172	70.3	16.6	13.1	0	0	0	0
B0564-9	90	257	225	87.5	6.1	6.4	0	0	10	0
B0564-8	67	240	208	86.7	3.0	10.3	0	0	10	0
B0554-1	57	198	134	67.7	21.8	10.5	0	0	0	10
B0610-2	83	201	159	78.9	7.1	14.0	0	0	0	0
B0935-1	63	165	138	83.6	14.3	2.1	0	0	0	0
B0918-5	73	198	165	83.2	9.1	7.7	0	0	0	10
B0874-1	63	177	147	82.8	8.3	8.9	0	0	0	0
B0894-15	77	184	150	81.5	3.5	15.0	0	0	0	0
B0856-4	70	215	161	75.0	13.0	12.0	0	0	0	0
B0892-7	70	212	180	84.8	10.9	4.3	0	0	0	0
B0760-15	83	242	198	82.0	12.8	5.2	0	0	0	0
L8-6	63	206	152	73.8	11.9	14.3	0	0	0	10
K9	67	196	186	94.7	0.0	5.3	0	0	0	10
L8-18	67	235	207	87.9	9.2	2.9	0	0	0	0
K7-18	83	206	152	74.0	5.6	20.4	0	0	0	20
NY101	77	201	163	81.0	4.5	14.5	0	0	0	10
K88-24	63	207	165	79.6	6.8	13.6	0	0	10	20
K8-4	47	174	141	80.8	12.5	6.7	0	0	10	30
LA81-16	83	223	208	93.2	4.3	2.5	0	0	0	0

All data based on one replication.

Table 9. Tuber data and chip data for the Observation trial grown at Wooster, OH - 1993.

Cultivar	Tuber Data[x]					Chip Data			
	tuber color	skin texture	tuber shape	eye depth	appear-ance	specific gravity	chip color	blisters[z] %	Agtron[y]
B0866-8	7.0	7.0	3	6	7	1.075	2	30	48.2
B0178-34	7.0	6.0	4	6	4	1.094	1	0	57.8
B0564-9	5.5	4.0	2	7	7	1.093	2	10	46.5
B0564-8	6.0	6.0	2	5	5	1.081	1	10	55.6
B0554-1	7.0	6.0	2	5	4	1.083	2	0	49.1
B0610-2	7.0	7.0	2	7	6	-----	-	--	----
B0935-1	7.0	6.0	2	4	5	1.093	1	10	56.4
B0918-5	1.0	6.0	2	5	6	1.079	1	0	48.7
B0874-1	7.0	6.0	2	6	6	1.076	1	10	59.3
B0894-15	7.0	7.0	2	6	6	1.088	2	30	54.2
B0856-4	7.0	7.0	3	5	5	-----	-	--	----
B0892-7	6.5	6.0	2	5	6	1.092	2	20	49.0
B0760-15	7.0	6.0	2	6	7	1.097	2	0	51.8
L8-6	7.0	7.0	2	6	5	1.073	2	30	49.7
K9-5	6.5	7.0	2	5	5	-----	-	--	----
L8-18	7.0	7.0	3	5	5	1.084	1	30	39.9
K7-18	6.0	5.0	2	5	5	1.086	2	10	51.3
NY101	7.0	6.0	2	5	4	1.078	2	20	47.5
K88-24	7.0	7.0	2	6	5	1.080	2	10	47.7
K8-4	7.0	6.0	7	6	6	1.079	2	10	50.0
LA81-16	5.0	5.0	2	5	5	-----	-	--	----

[x]Tuber Data Rating System:
Tuber 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) moderate russet, 4) light russet, 5) netted, 6) slight net, 7) moderate smooth, 8) very smooth
Tuber Shape: 1) very deep, 2) --, 3) deep, 4)--, 5) intermediate, 6) --, 7) shallow, 8) --, 9) very shallow
Appearance: 1) very poor, 2) --, 3) poor, 4) --, 5) fair, 6) --, 7) good, 8) --, 9) excellent
[y]PC/SFA Standards: 1 = light (high Agtron index readings), 5 = dark (low Agtron index readings).
[z]Percentage of chips that develop blisters >20 mm in diam., during the frying process.

Table 10. Plant stand, total yields for the observation trial grown at Wooster, Ohio - 1993*

Cultivars	Plant stand %	Total yields cwt/A
B0866-6	57	97
B0616-1	93	242
B0809-10	80	162
B0887-5	73	230
B0884-17	90	248
NY87	77	174
E11-45	67	249
K7-6	73	244
L8-4	63	184
L61-2	60	194
L14-1	67	198
L53-11	70	215
K9-29	80	206
K6-155	77	223
NY95	80	165
AC83064-6	73	247
AC83172-1	80	231
AC83068-1	83	160
AC83064-1	70	143
AC83306-1	87	186
LA82-185	70	152
LA881-180	87	266
LA81-188	83	227
LA98-38	83	151
LA81-152	77	217
LA81-9	70	145
Neb.19-47	87	104
LA91-37	77	140
LA81-151	80	182
LA81-24	73	203
LA81-20	60	126
LA81-21	63	136
LA81-167	83	152
LA91-17	60	177

All data based on one replication
*Grade-outs of tubers were not performed due to unfavorable observations while being harvested.

Table 11. Plant stand, total yields, U.S. No. 1 yields, grade distribution, internal disorders for the specialty trial grown at Wooster, OH - 1993.

Cultivar	Plant stand %	Total yields cwt/A	U.S. No.1 cwt/A	U.S. No.1 %	Culls %	B's %	Internal Defects			
							Hollow heart %	Internal necrosis %	Dis-color %	Vascular discolor %
NYL 235-4	54	192	140	72.90	13.00	14.10	0	0	0	100
BO339-1	74	181	134	74.25	14.90	10.85	0	15	0	15
BO717-1	71	165	125	76.00	10.50	13.50	0	0	20	30
BO178-35	76	154	125	81.20	7.50	11.30	0	0	0	80
BO220-14	68	128	85	66.40	26.40	7.20	0	0	0	0
CO82142-4	60	114	71	62.10	17.10	20.80	0	0	0	0

All data are based on three replication

Table 12. Tuber data and chip data for the Observation trial grown at Wooster, OH - 1993.

Cultivar	Tuber Data[x]					Chip Data			
	tuber color	skin texture	tuber shape	eye depth	appear-ance	specific gravity	chip color	blisters[z] %	Agtron[y]
NYL235-4	5.25	5.50	2.50	5.00	3.50	1.076	1	10	54.5
B0339-1	5.00	4.00	6.00	5.00	4.67	1.095	1	10	57.3
B0717-1	7.00	5.50	2.00	5.00	4.25	1.088	2	70	43.5
B0178-3	7.00	5.67	2.30	6.00	5.33	1.090	1	10	58.6
B0220-14	5.75	6.50	4.00	4.00	4.00	1.083	2	50	40.3
C082142-4	5.17	4.00	3.67	5.67	4.33	1.074	4	10	29.7

[x]Tuber Data Rating System:
Tuber 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) moderate russet, 4) light russet, 5) netted, 6) slight net, 7) moderate smooth, 8) very smooth
Tuber Shape: 1) very deep, 2) --, 3) deep, 4)--, 5) intermediate, 6) --, 7) shallow, 8) --, 9) very shallow
Appearance: 1) very poor, 2) --, 3) poor, 4) --, 5) fair, 6) --, 7) good, 8) --, 9) excellent
[y]PC/SFA Standards: 1 = light (high Agtron index readings), 5 = dark (low Agtron index readings).
[z]Percentage of chips that develop blisters >20 mm in diam., during the frying process.

Table 1. Campbell Soup Potato Cultivar Trial - 1993;Replicated Potato Variety Trial - Napoleon, 1993.

Variety	Yield Cwt/A Total	Market-able	Small	% Market-able	S.G.	Tuber Characteristics shape	eyes	internal defects
Sunchip	332.6	310.0	20.0	93	1.085	R-blocky	M	5
Atlantic	326.6	290.4	35.7	89	1.082	O-R	M	5
Gemchip	290.0	234.0	52.3	81	1.077	R	S	0
AF1060-2	258.6	224.0	34.0	87	1.067	R	S	10
W 870	255.1	189.2	61.9	74	1.089	R	S	0
W 887	249.0	200.7	44.5	81	1.084	R-blocky	S	7.5
OH875-15	202.0	166.3	34.0	82	1.087	R	S	10
AF825-5	194.2	158.7	32.3	82	1.066	O	S	5
NY-E55-44	192.4	146.7	42.7	76	1.079	R	S	0
Portage	190.7	146.7	41.8	77	1.072	R	S	15
Katahdin	188.1	154.8	32.3	82	1.063	O-flat	S	15
Snowden	184.6	138.9	44.5	75	1.084	R-rough	M-D	40
Superior	169.8	149.1	19.2	88	1.075	R	M	5
B0178-34	163.7	109.5	50.6	67	1.083	O	S-M	10
Labelle	157.6	132.8	20.1	84	1.079	O	S	0
NY84	152.4	109.9	40.1	72	1.063	R	S	35
Langlade	148.0	115.2	32.7	78	1.065	O	S	15
EideRusset	136.7	48.3	88.1	35	1.077	Oblong	S	5
Bays LSD 5%	20.9	23.1	11.7	--	--	--	-	--

Procedure/Methods

Experiment was a RCB design with 4 reps. Plots consisted of a single row 20 hills, at 12" spacing, per variety. Potatoes were planted on 5/19 in a sandy loam soil and harvested 9/23. Standard fertilizer, cultural and pest management practices were followed. The crop received adequate moisture during May, June and until mid-July and then was under moisture stress until harvest. A heavy second generation of Colorado potato beetles resulted in some defoliation (25%).

Tubers were graded as marketable >2.25" dia., smalls, culls (misshapen or rot). Twenty tubers of each variety were cut and examined for internal defects--the primary one being necrosis of the vascular tissue, with a few black spots. There was no hollow heart observed in this trial. S.G. - storage at 45°F.

NOTE: Mr. D. Kelly - Ohio Potato Growers Association provided seed for this trial.

Table 2. Campbell Soup Co. Potato Cultivar Trial; Observation potato variety trial - Napoleon, OH 1993.

Variety	Yield Cwt/A Market-able Total	Market-able	Small	% Market-able	S.G.	Tuber Characteristics shape	eyes	internal defects
AF1060-2	323.4	287.7	35.7	89	1.068	R	M	0
AF1302-1	244.1	178.7	59.3	72	1.064	R	M	20
AF1333-1	262.4	198.8	30.1	76	1.076	Sl.oblong	S	0
AF1331-2	291.2	258.1	22.7	88	1.072	O-Bl'y	S	0
AF1438-4	269.4	213.6	55.8	79	1.069	O	S	0
AF1426-1	341.7	315.6	26.0	92	1.076	O-Bl'y	M	0
AF1453-4	340.0	309.5	39.0	91	1.070	R-flat	S	0
B0257-3	347.8	295.5	47.9	85	1.084	R	M	0 SCA
Mainechip	287.7	272.0	13.1	94	1.090	R	M	0
NY87	230.1	190.9	39.2	83	1.079	R	M	0
NY88	312.1	259.1	54.0	83	1.079	R	M	TRACE
NYE11-45	284.2	227.5	54.9	80	1.064	O-Bl'y	S	0
NYE55-35	217.9	161.3	56.7	74	1.084	R	M	40
A80559-2	157.8	122.4	13.9	77	1.077	R	S	20
AC80545-1	252.8	215.3	35.7	85	1.068	R-flat	S	0
Castile	193.5	157.8	35.7	81	1.072	O-flat	M	0
NC012-18	217.8	170.9	45.3	78	1.073	O	M	0
ND2224-5R	253.7	215.3	35.7	85	1.062	R	S	0
NDT9-1068-11R	270.2	226.7	30.5	84	1.0587	O	S	0
F80054	133.4	61.0	70.6	45	--	O	S	Yellow flesh
B9922-11	102.9	76.7	26.1	74	--	O	S	0
MN12567	282.5	192.7	89.7	68	1.075	R	S	0
MN12823	240.6	196.2	42.7	81	1.079	O-Bl'y	M	0

Procedure/Methods:

This entry was an observation planting consisting of a single plot of each entry, = 20 hills on a 12" spacing. Potatoes were planted on 5/19 in a loamy soil - slightly heavier than the area where the replicated trial was located resulting in slightly less moisture stress on these entries. Potatoes were harvested 9/23.

Tubers were graded as marketable >2.25" dia., small >2.25" and culls. Five tubers were cut to examine internal defects - primarily vascular necrosis. There was no hollow heart in the trial. Specific gravity (S.G.) was run on an 8 lb. tuber sample one month after storage at 45°F.

NOTE: Mr. D. Kelly - Ohio Potato Growers Association supplied seed for this trial.

1993 NORTH CENTRAL REGIONAL POTATO TRIALS

Location Wooster, Ohio Soil Type Wooster Silt Loam

Fertilizer Treatment 600 lbs/10-20-20 disked in 600 lbs/10-20-20 at planting Date Planted 5/18/93

Date Harvested 9/14/93 Size of Plots Single rows-30 ft. long

Spacing - Between Hills 12 inches Spacing - Between Rows 36 inches

Replications 4 Number of Hills per Replication 30

Environmental Factors (rainfall, temperature, irrigations, etc.)

	Rainfall (in.)	Long Term Avg.(in.)	Air Temperature (°F) Avg. Min.	Avg. Max.	Long Term Avg. (°F) Min.	Max.
May	1.45	3.91	45.3	72.0	46.5	70.6
June	4.22	3.93	55.8	78.9	55.5	79.4
July	2.23	4.19	62.8	85.9	59.6	83.6
Aug.	.58	3.61	59.5	87.9	57.9	82.0
Sept.	3.96	3.18	51.1	72.2	51.4	75.6
Total	12.44	18.82				

Sprays Applied:

6/16/93	Dithane 2 lb. + Guthion 1.5 pt.
6/28/93	Dithane 2 lb. + Imidan 2 lb.
7/3/93	Dithane 2 lb. + Imidan 2 lb.
7/15/93	Bravo 1.5 pt. + Penncap M 3 pt.
7/20/93	Bravo 1.5 pt. + Imidan 2 lb.
7/30/93	Bravo 1.5 pt. + Monitor 2 pt. + Thiodan 2 lb.
8/5/93	Dithane 2 lb. + Guthion 2 pt.

Other Data (vine killing, specific gravity determinations, etc.):

Herbicide: Dual 8E (2 pt.), Sencor 75% (1 lb.), 5/20/93

Vine Killing: Diquat (1 pt.) plus Sticker 9/3/93

Specific Gravity determined using weight in air-weight in water method, and solids determined by tabular conversion.

Objective chip color measurements were made with Agtron E-5F.

Early blight evaluations were not made due to lack of disease pressure.

1993 NORTH CENTRAL REGIONAL POTATO TRIAL SUMMARY SHEET of OHIO

Selection Number or Variety	Aver. (1) Maturity	Most (2) Representative Scab Area-Type (A-T)	CWT/A Average Yield	CWT/A Yield US #1	Average Percent US #1	Aver. (3) % Total Solids	Gen (4) Merit Rating	Chip (5) Color	Early (6) Blight Reading	Comments and General Notes
EARLY TO MEDIUM MATURITY										
ND2471-8	3.0	T-1	204	64	31.6	22.11	3	4	N/A	Round buff, uniform, med. to large size.
Norland	1.0	0-0	181	161	88.9	17.47	5	3	N/A	Light to med. red, fair uniform large tubers
Russet Norkotah	2.5	0-0	183	118	64.3	20.64		2	N/A	Long, knobby, miss-shapen curved tubers
Norchip	2.5	0-0	180	140	77.5	19.16		2	N/A	Deep apical end, round tubers, large, knobby
MEDIUM LATE TO LATE MATURITY										
MN13540	3.5	0-0	117	-	-	18.95		3	N/A	Severe second growth, knobby
MN15111	4.0	0-0	56	-	-	17.89		2	N/A	Flattened, misshapen, knobby
MN15220	4.0	0-0	130	81	62.5	18.53		3	N/A	Round to oblong, light skins, irregular surface
ND1871-3R	2.5	0-0	138	63	46.0	17.89	4	2	N/A	Dark red, round, small size, uniform
ND2417-6	4.0	T-1	240	220	91.8	20.43	1	1	N/A	Knobby, second growth, not uniform
W1100R	1.0	T-1	152	111	73.3	18.32	2	1	N/A	Moderate light color, small size, uniform
W1099	3.0	0-0	92	---	----	18.53		3	N/A	Long to oblong, second growth!!
W84-75R	4.0	--	10	---	----	-----		-	N/A	Insufficient tubers
Red Pontiac	4.0	0-0	170	127	74.5	15.99		4	N/A	Knobby tubers, light skin, second growth
Russet Burbank	5.0	0-0	165	114	69.0	19.16		3	N/A	Knobby, misshapen
AVERAGE		--	144	120	68.0	18.85		2.54	N/A	

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) 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) Percent total solids, not total solids/acre.

4) 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).

5) Chip Color - PCII Color Chart or Agtron. Indicate what Agtron you are using.

6) Early blight: 1 - susceptible; 5 - highly resistant.

1993 NORTH CENTRAL REGIONAL POTATO VARIETY TRIAL
SUMMARY OF GRADE DEFECTS FROM OHIO

	Percent External Defects (1)					Percent Internal Defects (1)				
Selection Number or Variety	Scab (2)	Growth Cracks	Off Shape and Second Growth	Sun Green	Tuber Rot	Total (3) Tubers Free of Ext. Defects	Hollow Heart	Internal Necrosis	Vascular Discoloration	Normal Tubers (4)
EARLY TO MEDIUM MATURITY										
ND2471-8	5	1	11	0	1	82	0	0	25	75
Norland	0	1	1	0	0	98	0	0	50	50
Russet Norkotah	0	1	41	0	4	54	0	0	30	70
Norchip	0	0	31	0	0	69	0	0	20	80
MEDIUM LATE TO LATE MATURITY										
MN13540	0	0	39	5	1	56	-	-	--	--
MN15111	0	0	19	0	0	81	-	-	--	--
MN15220	0	0	28	0	3	69	10	0	0	90
ND1871-3R	0	0	18	1	0	82	0	0	5	95
ND2417-6	3	0	26	1	0	70	0	0	10	90
W1100R	1	0	26	0	3	70	0	0	10	90
W1099	0	0	44	3	0	53	-	-	--	--
W84-75R	-	-	--	-	-	--	-	-	--	--
Red Pontiac	0	0	38	1	0	61	10	0	5	85
Russet Burbank	0	0	73	1	4	22	5	0	10	85
AVERAGE	.69	.23	30.38	.92	1.23	66.69	2.50	0	43.50	81

1) Based on four 25 tuber samples (one from each replication). Percentage based on number of tubers.

2) Includes all tubers with scab lesions, whether merely surface, pitted or otherwise and regardless of area. Be sure to count tubers with any amount of scab in this category.

3) This total - 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.

Ohio

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Introduction: Thirty-six varieties and clones were tested in 1993 at the Ohio Agricultural Research and Development Center, Wooster, as part of the NE107 Regional Project (Breeding and Evaluation of Potato Clones for the Northeast).

Methods: Plots were planted on May 18, 1993, with 30 hills spaced 12 inches apart, in rows 36 inches apart. A randomized complete block design with 4 replications was used. Soil type was a Wooster silt loam (fine-loamy, mixed, mesic Typic Fragiudalf) with a pH of 6.0 and an organic matter of 3.0%. Fertilization consisted of 1200 lbs/A 10-20-20, one-half applied at plow-down, and the remainder banded at planting. Herbicides used were Dual and Sencor. Pesticides included Bravo, Penncozeb, Dithane, Pounce, Asana, Monitor and Guthion. Plots were mechanically harvested on September 14, 1993. Chip samples were stored at 52°F and chipped 37 days after harvest. Chip color was evaluated using the standards established by the Potato Chip/Snack Food Association (PC/SFA). Objective color measurements were made with the Agtron E-5F. Specific gravity was determined using the potato hydrometer method. Hollow heart and internal necrosis ratings (Ohio Table 2) indicated the percent of affected tubers found per 40 tubers examined.

Results: Top-yielding entries included Atlantic, Norland, Gemchip, AF875-15, AF1426-1, AF1331-2, AF1302-1, AF1060-1, Mainechip, and AC80545-1. These ten varieties/clones produced total yields ranging from 217 cwt/A to 357 cwt/A, and percentage of U.S. No. ranged from 64-88%. Entries with specific gravity above 1.080 included Atlantic, Gemchip, AF875-15, AF1426-1, Snowden, NY88, NC012-18, NC012-19, Superior, NY87 NYE55-44, MN12567, B0178-34, AF1438-4, B0257-3, NYE55-35, AF1433-4, EideRusset, MN12823, F80054, AF1333-1, and B9922-11. Potential for hollow heart was noted for one of the ten top-yielding entries (AC80545-1A) with 10% of the sampled tubers affected.

Rainfall during the 1993 growing season (May-September) was 12.44 inches, 6.38 inches below the long-term average for Wooster.

Ohio Table 1. Yield, marketable yield, percent of yield by grade size distribution and specific gravity for varieties grown at Wooster, Ohio - 1993.

Cultivar	Total Yield cwt/A	Size Distribution by Classes: Marketable Yield U.S.#1 cwt/A	% STD	U.S.#1 (>1-7/8")	% of Total Yield: B size	Culls	Specific gravity
Atlantic	257	213	149	82.8	8.0	9.2	1.098
Dk.Red Norland	257	198	149	77.1	9.9	13.0	1.070
Gemchip	256	217	148	84.6	8.1	7.3	1.082
AF875-15	252	202	146	80.1	16.6	3.3	1.087
AF1426-1	251	183	145	73.0	20.2	6.8	1.081
AF1331-2	249	175	144	70.2	6.9	22.9	1.080
AF1302-1	241	154	139	64.0	17.3	18.7	1.075
AF1060-2	239	212	138	88.6	4.5	6.9	1.076
Mainechip	228	161	132	70.6	10.7	18.7	1.100
AC80545-1	217	192	125	88.5	3.4	8.1	1.075
NYE11-45	216	164	125	75.7	8.7	15.6	1.077
Snowden	215	141	124	65.8	27.9	6.3	1.094
NY88	212	150	123	70.7	8.5	20.8	1.095
NC012-18	211	155	122	73.6	11.7	14.7	1.088
NC012-19	211	145	122	68.6	14.2	17.2	1.088
Kennebec	208	179	120	86.2	5.4	8.4	1.076
Castile	108	167	120	80.5	10.3	9.2	1.080
Superior	207	170	120	82.1	7.6	10.3	1.085
NY87	196	151	113	76.8	6.0	17.2	1.081
NYE55-44	195	156	113	80.1	15.6	4.3	1.094
MN12567	192	142	111	74.1	11.6	14.3	1.088
B0178-34	192	173	111	89.9	5.9	4.2	1.093
AF1438-4	192	163	111	85.0	5.4	9.6	1.085
NY84	192	147	111	76.7	5.4	17.9	1.075
B0257-3	189	159	109	83.9	9.5	6.6	1.095
NYE55-35	187	156	108	83.2	6.6	10.2	1.094
AF1433-4	185	117	107	63.4	9.4	27.2	1.084
EideRusset	184	150	106	81.7	10.5	7.8	1.090
NDT9-1068-11R	183	143	106	78.0	15.5	6.5	1.071
St.Johns (AF828-5)	177	121	102	68.3	15.4	16.3	1.077
MN12823	176	143	102	81.3	9.7	9.0	1.081
Katahdin	173	138	100	79.8	7.8	12.4	1.075
ND2224-5R	167	121	97	72.7	20.4	6.9	1.070
F80054	166	137	96	82.5	9.5	8.0	1.094
AF1333-1	163	142	94	87.0	4.0	9.0	1.085
B9922-11	154	141	89	91.4	3.0	5.6	1.089

Ohio Table 2. Tuber shape and appearance, hollow heart ratings, internal necrosis ratings and chip color for varieties grown at Wooster, Ohio - 1993.

Cultivar	Plant maturity	Tuber shape	Appear-ance[z]	Hollow heart	Internal necrosis	Chip[y] color
Atlantic	6	2.0	5.0	0	0	2
Dk.Red Norland	8	2.0	6.0	0	0	1
Gemchip	4	2.0	5.5	0	0	1
AF875-15	4	3.0	4.5	0	0	1
AF1426-1	5	3.5	4.3	0	0	1
AF1331-2	5	3.3	5.0	0	0	2
AF1302-1	3	2.5	4.3	0	0	1
AF1060-2	7	2.0	5.3	0	0	3
Mainechip	6	2.0	5.3	0	0	1
AC80545-1	8	3.3	4.3	10	0	3
NYE11-45	7	2.8	5.5	0	0	1
Snowden	6	2.0	3.0	0	0	1
NY88	4	2.0	6.5	0	0	2
NC012-18	5	4.0	4.0	5	0	1
NC012-19	7	3.0	4.8	0	0	1
Kennebec	7	4.5	3.5	0	0	3
Castile	7	3.8	4.0	3.3	0	2
Superior	3	2.8	4.5	0	0	1
NY87	5	2.3	4.3	0	0	1
NYE55-44	3	2.8	6.5	0	0	1
MN12567	5	4.0	4.5	3.3	0	1
B0178-34	6	3.5	3.0	0	0	1
AF1438-4	3	1.8	5.5	0	0	1
NY84	6	3.0	5.8	0	3.3	2
B0257-3	4	4.0	3.8	0	0	1
NYE55-35	7	2.0	6.5	0	0	2
AF1433-4	6	2.0	4.3	0	0	1
EideRusset	6	3.7	5.0	0	0	3
NDT9-1068-11R	6	2.3	7.3	0	0	1
St. Johns (AF828-5)	8	5.0	3.0	2.5	0	2
MN12823	6	3.0	4.0	0	0	2
Katahdin (std)	8	2.8	4.5	0	0	2
ND2224-5R	4	2.3	7.5	0	0	2
F80054	5	2.0	4.5	0	0	2
AF1333-1	1	2.8	5.5	0	0	1
B9922-11	8	4.5	4.5	0	6.7	2

[z]See standard NE107 rating system
[y]PC/SFA standard

Ohio Table 3. Plant stand, percent blister, Agtron readings, and additional tuber data for varieties grown at Wooster, Ohio - 1993.

Cultivar	Plant stand %	Blister %[z]	Tuber Data			
			Agtron E-5F	skin texture	eye depth	skin color
Atlantic	89	10	53.5	5.0	6.0	5.0
Dk.Red Norland	90	10	55.4	7.0	4.8	2.0
Gemchip	79	10	55.6	8.0	6.5	7.5
AF875-15	88	20	61.6	5.5	4.5	6.5
AF1426-1	86	10	56.2	6.3	6.0	6.0
AF1331-2	73	0	51.4	7.5	5.0	7.0
AF1302-1	89	10	58.2	6.8	5.0	7.0
AF1060-2	76	30	48.9	7.0	6.0	7.0
Mainechip	90	0	55.8	6.8	5.3	7.0
AC80545-1	92	50	49.6	5.8	5.8	6.4
NYE11-45	75	0	58.8	7.5	6.3	7.0
Snowden	88	0	56.1	5.0	3.0	5.0
NY88	73	20	54.2	7.0	6.0	7.0
NC012-18	84	10	61.4	7.0	5.5	6.5
NC012-19	86	10	55.4	6.8	5.0	7.0
Kennebec	83	20	57.0	6.5	4.8	7.0
Castile	80	0	49.9	7.0	6.0	7.0
Superior	87	0	49.7	6.3	4.5	7.0
NY87	82	0	58.7	6.3	4.8	7.0
NYE55-44	83	10	57.3	5.3	6.0	5.1
MN12567	74	10	68.8	6.8	6.0	6.9
BO178-34	69	10	54.5	5.8	5.8	6.5
AF1438-4	68	10	56.7	6.3	5.3	7.0
NY84	59	30	57.1	5.5	6.3	6.4
BO257-3	87	0	56.1	6.3	6.8	6.6
NYE55-35	75	10	57.9	5.8	5.0	6.3
AF1433-4	68	0	56.0	7.0	4.8	6.3
EideRusset	78	20	45.3	4.0	6.0	5.0
NDT9-1068-11R	67	10	55.3	7.5	6.8	1.6
St. Johns (AF828-5)	56	20	55.6	8.0	4.0	7.0
MN12823	80	0	61.7	8.0	5.3	7.0
Katahdin (std)	83	0	52.2	7.0	6.0	7.0
ND2224-5R	70	20	56.0	7.5	6.8	7.5
F80054	84	10	58.6	7.0	5.5	6.9
AF1333-1	73	0	52.6	7.3	5.5	6.9
B9922-11	79	40	50.8	4.0	7.0	4.0

[z]Percentage of chips that develop blisters greater than 20 mm in diameter during the frying process.
[y]See standard NE107 rating system.

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

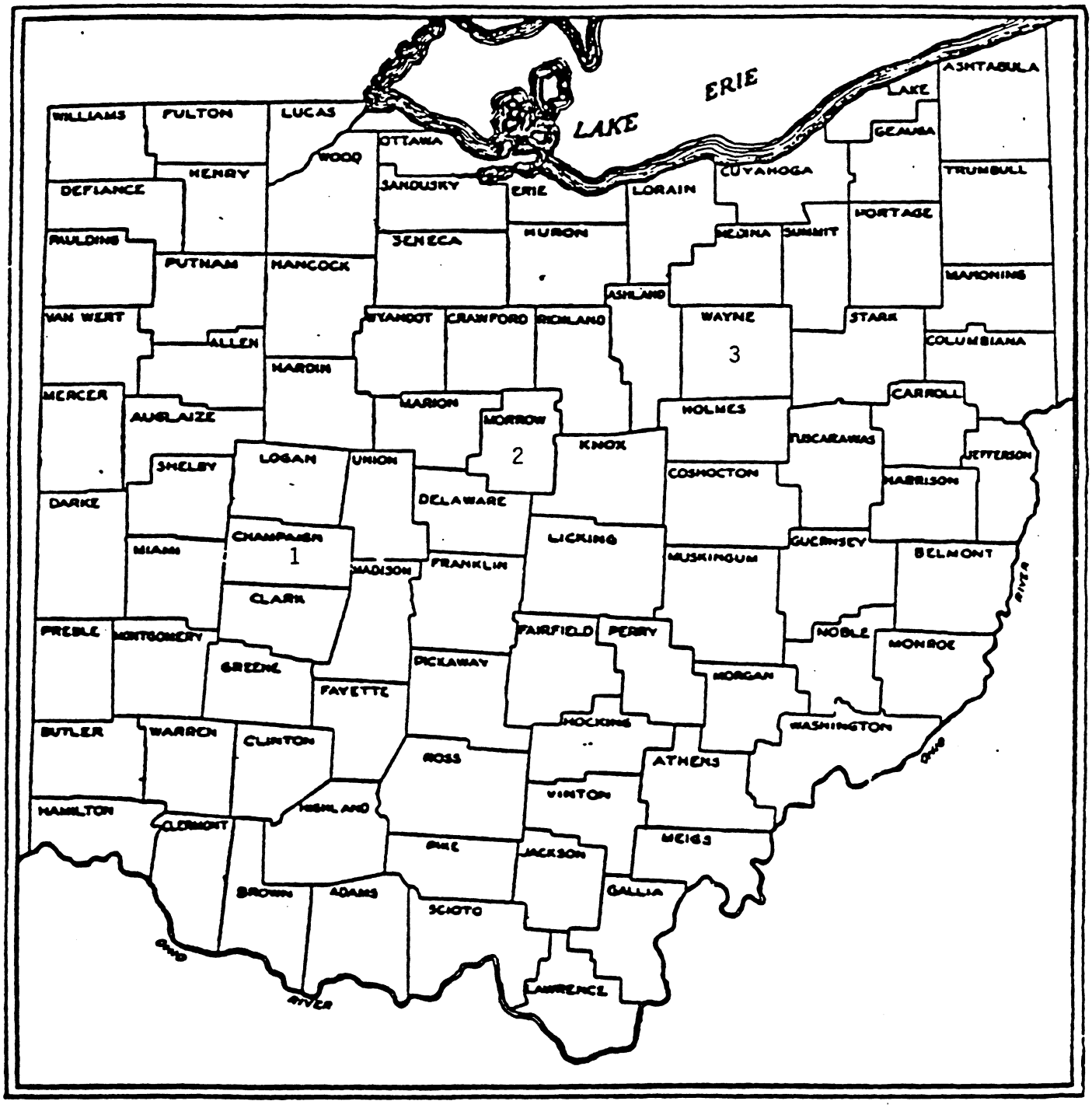
Tuber Skin Color	Skin Texture	Tuber Shape
1. Purple	1. Part. russet	1. Round
2. Red	2. Heavy russet	2. Mostly round
3. Pink	3. Mod. russet	3. Round to oblong
4. Dark Brown	4. Light russet	4. Mostly oblong
5. Brown	5. Netted	5. Oblong to long
6. Tan	6. Slight netting	6. Mostly long
7. Buff	7. Moderately smooth	7. Long
8. White	8. Smooth	8. Cylindrical
9. Cream	9. Very smooth	

Eye Depth	Appearance
1. VD	1. Very poor
2. --	2. --
3. D	3. Poor
4. --	4. --
5. Intermediate	5. Fair
6. --	6. --
7. S	7. Good
8. --	8. --
9. VS	9. Excellent

PLANT RATING SYSTEM

Plant Type	Air Pollution
1. decumbent-poor canopy	0. dead
2. decumbent-fair canopy	1. decreasing plant appearance
3. decumbent-good canopy	2. with varying degrees
4. spreading-poor canopy	3. of defoliation
5. spreading-fair canopy	4.
6. spreading-good canopy	5. most leaves have symptoms, but generally appearance is still good
7. upright-poor canopy	6. good plant condition with decreasing
8. upright-fair canopy	7. percent of foliar symptoms
9. upright-good canopy	8.
	9. no symptoms

Plant Size	Plant Maturity	Plant Appearance
1. very small	1. very early	1. very poor
2. +	2. early	2. poor
3. small	3. +	3. +
4. +	4. medium early	4. --
5. medium	5. medium	5. fair
6. +	6. medium late	6. +
7. large	7. +	7. --
8. +	8. late	8. good
9. very large	9. very late	9. excellent



LOCATIONS OF 1993 OHIO POTATO VARIETY TRIALS

1. Michael Farms, Urbana
2. Logan Farms, Mt. Gilead
3. Ohio Agricultural Research & Development Center

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