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# Potato Variety Demonstration Plots, Minnesota, 1975

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Potato variety demonstrations were conducted at seven locations in 1975. In the Red River Valley plots were located at Baker and Lake Bronson. In the irrigated area of central Minnesota, plots were grown at Villard, Clear Lake, and Osseo. At Hollandale and Anoka, plots were located on the organic soil. These trials are conducted on commercial potato growers' farms in cooperation with the county agricultural extension agents. Demonstrations familiarize the grower with new varieties and assist in evaluating the varieties to grow.

All plots consisted of 20 varieties planted in 20 hill rows and replicated twice. Seed pieces were approximately 2 ounces in size and were spaced 12 inches apart in the row.

At harvest, the potatoes from the entire plot were weighed and graded for size with a 2-inch screen. Specific gravity was determined immediately by the hydrometer method. Tables 1 through 5 report on the performance of the varieties and selections in all but the Red River Valley. See Horticulture Fact Sheet 28 for those two locations.

The specific gravity is a measure of the total dry matter content of the potato. It refers chiefly to the texture or mealiness that can be expected when the potatoes are cooked. Potatoes for chipping and baking should have a specific gravity over 1.080 or a dry matter over 20 percent. Dry matter as determined by specific gravity is only one measure of cooking quality, but it is used universally by both growers and processors of potatoes to indicate internal quality. Dry matter will vary with variety, soil type, season moisture, fertilization, pest control, and maturity. The following chart presents a classification of dry matter in relationship to cooking quality and processing.

**Chart 1. Classification of dry matter in relationship to cooking quality and processing**

Specific gravity	Percent dry matter	Texture	Best use
Below 1.060	Less than 16	Very soggy	Good pan friers and salads, fair boilers
1.061-1.070	16 to 18	Soggy	Good pan friers and salads, fair boilers
1.071-1.080	18-20	Waxy	Good boilers and mashers
1.081-1.090	20-22	Mealy	Good bakers, mashers, chippers, French friers
Above 1.090	22-24	Very mealy	Good bakers, chippers, French friers

**Table 1. Potato variety demonstration planting, Clear Lake, Minnesota**

Variety	Total yield per acre	U.S. No. 1 size	Specific gravity	Dry matter	Rating*
	cwt				
Red Pontiac	635	97	1.052	13.7	3
Superior	635	95	1.070	17.0	2
Cascade	591	95	1.065	16.5	3
Kennebec	575	96	1.072	18.0	3
W 284-1	571	94	1.069	17.3	2
Russet Burbank	563	94	1.070	17.5	3
Norland	532	96	1.052	13.7	2
Nampa	502	93	1.076	18.8	3
W 245-2	497	97	1.077	19.0	2
Haig	490	91	1.062	15.8	2
Norgold	475	93	1.064	16.2	3
Anoka	474	94	1.065	16.5	2
W 285-3	474	92	1.064	16.2	3
W 420-1	434	93	1.064	16.2	3

(continued)

**Table 1. (continued)**

Variety	Total yield per acre	U.S. No. 1 size	Specific gravity	Dry matter	Rating*
	cwt				
Targhee	409	92	1.064	16.2	2
I 6334-20	398	96	1.064	16.2	2
Bison	380	93	1.066	16.7	2
W 285-83	377	96	1.068	17.1	3
Nooksack	363	97	1.078	19.2	2
WC 316-1	349	94	1.072	18.0	3
WC 285-18	340	90	1.062	15.8	2
Average	479	94	1.066	16.7	2.5

\*The ratings of the varieties were made at harvest and based on the following scale: 1 = excellent; 2 = good; 3 = fair; 4 = poor; and 5 = very poor.

Cooperators: Edling Bros., Rt. 1, Clear Lake, grower; Glen Ertel, Sherburne County, Elk River, county extension agent; and Curtis Klint, Anoka, area extension agent, Soils.

Planted: May 15, 1975.

Harvested: October 30, 1975.

Spacing: 12 inch hills, 36 inch rows.

Fertilizer: 400 lbs. 0-0-60 broadcast fall of 1974. 1,000 lbs. 8-16-16

Spec. banded with planter. 270 lbs. 33-0-0 side-dressed when plants were 6"-8" tall.

Spraying: Manzate + Thiodan - 5 applications by air.

Irrigations: Every 5-6 days - 10-12 applications.

Vines killed: Sept. 5, Dinitro + Diesel Oil + Wex.

**Table 2. Potato variety demonstration planting, Villard, Minnesota 1975**

Variety	Total yield per acre	U.S. No. 1 size	Specific gravity	Dry matter	Rating*
	cwt				
Red Pontiac	337	96	1.054	14.1	4.0
Kennebec	335	95	1.067	16.9	3.0
W 420-1	321	89	1.061	15.6	2.0
Chieftain	314	92	1.061	15.6	2.0
Norland	310	94	1.053	13.9	2.5
W 285-3	288	88	1.063	16.0	2.5
Superior	285	94	1.069	17.3	3.0
Anoka	277	98	1.060	15.4	2.0
Norgold	274	90	1.062	15.8	2.0
Cascade	266	90	1.069	17.3	3.0
Bison	264	83	1.062	15.8	2.0
Nampa	255	93	1.071	17.7	2.5
Russet Burbank	252	86	1.068	17.1	3.0
W 284-1	247	86	1.065	16.5	2.0
W 245-2	209	84	1.075	18.6	2.0
I 6334-20	208	87	1.067	16.9	2.0
WC 316-1	200	86	1.070	17.5	2.0
Haig	194	88	1.072	18.0	2.5
Targhee	188	79	1.064	16.2	2.0
Nooksack	150	95	1.075	18.6	2.0
Average	259	90	1.065	16.5	2.4

\*The ratings of the varieties were made at harvest and based on the following scale: 1 = excellent; 2 = good; 3 = fair; 4 = poor; and 5 = very poor.

Cooperators: Rost Bros., Villard, grower; Jack Morris, Pope County, Glenwood, county extension agent; and Orville Gunderson, Morris, area extension agent, Soils.

Planted: May 13, 1975.

Harvested: October 7, 1975. (continued)

**Table 2. (continued)**

Spacing: 12 inch hills, 38 inch rows.  
 Fertilizer: Total: 150 lbs. N, 100 lbs. P<sub>2</sub>O<sub>5</sub>, 100 lbs. K<sub>2</sub>O.  
 Broadcast preplant: 50 lbs. N.  
 Starter with planter: 50-100-100.  
 Side-dressed: 50 lbs. N.  
 Herbicide: Lorox 2 lbs. preemergence.  
 Spraying: 5 applications of Thiodan and Dithane M45 by air.  
 Irrigation: 6 times.  
 Vine killer: None.  
 Hail damage: July 9 resulted in 37 percent damage to stems. All healed by July 15. Perfect stand on July 15.

**Table 3. Potato variety demonstration planting, Osseo, Minnesota 1975**

Variety	Total yield	U.S. No. 1 size	Specific gravity	Dry matter	Rating*
	per acre				
	cwt	%		%	
Kennebec	572	96	1.064	16.2	3
Red Pontiac	540	98	1.049	13.1	4
W 420-1	535	90	1.072	18.0	2
Anoka	509	94	1.070	17.5	2
Cascade	411	82	1.069	17.3	3
Chieftain	402	96	1.058	15.0	2
Targhee	400	90	1.065	16.5	2
Norgold	396	86	1.066	16.7	2
W 285-3	388	88	1.061	15.6	3
Norland	377	92	1.058	15.0	2
Nooksack	376	90	1.074	18.4	2
I 6334-20	374	88	1.066	16.7	2
Russet Burbank	372	90	1.069	17.3	3
W 284-1	371	87	1.065	16.5	2
Nampa	354	89	1.077	19.0	3
Haig	320	90	1.068	17.1	3
Superior	318	87	1.071	17.7	3
WC 316-1	307	83	1.070	17.5	3
W 245-2	265	82	1.076	18.8	3
WC 285-18	249	93	1.070	17.5	2
Average	392	90	1.067	16.9	2.6

\*The ratings of the varieties were made at harvest and based on the following scale: 1 = excellent; 2 = good; 3 = fair; 4 = poor; and 5 = very poor.

Cooperators: Wilbur Goetze, 9124 Regent Ave. N., Brooklyn Park, grower; George Roadfeldt, Hennepin County, Wayzata, county extension agent; and Curtis Klint, Anoka, area extension agent, Soils.

Planted: May 8, 1975.

Harvested: September 23, 1975.

Spacing: 12 inch hills, 36 inch rows.

Fertilizer: 1,000 lbs. 8-24-12 with planter. 200 lbs. 33-0-0 broadcast. 400 lbs. 0-0-60 broadcast fall 1974. 200 lbs. 33-0-0 side-dressed.

Insecticide: Thimet 15 lbs. 15G with planter. Thiodan 2 applications.

Fungicide: Maneb 4 applications.

Irrigation: 7 applications.

Vines killed: Dinoseb on 9/6/75.

**Table 4. Potato variety demonstration, Hollandale, Minnesota 1975**

Variety	Total yield	U.S. No. 1 size	Specific gravity	Dry matter	Rating*
	per acre				
	cwt	%		%	
Chieftain	289	94	1.057	14.8	1.5
Kennebec	274	97	1.063	16.0	3.0
Red Pontiac	273	97	1.053	13.9	3.0
Cherokee	270	94	1.066	16.7	4.0
Bison	258	93	1.055	14.3	1.5
Cascade	254	96	1.062	15.8	3.0
Irish Cobbler	240	94	1.063	16.0	3.5
Anoka	219	94	1.060	15.4	1.0
Norgold	211	94	1.055	14.3	2.0
W 245-2	208	89	1.059	15.2	2.5
I 6334-20	207	95	1.061	15.6	2.0
Haig	196	92	1.055	14.3	2.0
W 284-1	194	89	1.065	16.5	2.5
Targhee	194	93	1.058	15.0	2.5
Superior	194	87	1.058	15.0	4.5
Wischip	191	90	1.058	15.0	2.5
Norland	185	88	1.053	13.9	2.0
Nampa	180	95	1.063	16.0	4.0
Nooksack	171	91	1.065	16.5	2.5
W 285-3	170	87	1.054	14.1	2.5
Average	219	92	1.059	15.2	2.6

\*The ratings of the varieties were made at harvest and based on the following scale: 1 = excellent; 2 = good; 3 = fair; 4 = poor; and 5 = very poor.

(continued)

**Table 4. (continued)**

Cooperators: C. Muilenburg and Sons, Hollandale; Eldon Senske, Freeborn County, Albert Lea, county extension agent; and Dan Heins, Freeborn County, Albert Lea, assistant extension agent.  
 Planted: May 20, 1975  
 Harvested: October 14, 1975.  
 Spacing: 12 inch hills, 35 inch rows.  
 Fertilizer: 700 lbs. 0-14-42.  
 Herbicide: Sencor preemergence.  
 Insecticide: Thiodan, 1 application.  
 Fungicide: Dithane M45, 9 applications.  
 Vines killed: Dinoseb September 15.  
 Note: Excessive precipitation and flooding resulted in below normal yields.

**Table 5. Potato variety demonstration, Anoka, Minnesota 1975**

Variety	Total yield	U.S. No. 1 size	Specific gravity	Dry matter
	per acre			
	cwt	%		%
Norland	443	97	1.055	14.3
Kennebec	406	98	1.065	16.5
Red Pontiac	356	97	1.053	13.9
Cascade	356	97	1.062	15.8
Chieftain	319	98	1.058	15.0
W 420-1	305	95	1.060	15.4
I 6334-20	294	98	1.068	17.1
Norgold	290	95	1.058	15.0
Wischip	290	94	1.063	16.0
Anoka	276	95	1.066	16.7
Haig	265	96	1.061	15.6
W 245-2	260	98	1.062	15.8
Nampa	258	98	1.074	18.4
W 284-1	229	92	1.064	16.2
BakeKing	225	95	1.070	17.5
Superior	223	91	1.063	16.0
W 285-3	207	96	1.058	15.0
Targhee	207	96	1.064	16.2
Nooksack	172	90	1.077	19.0
W 285-83	156	95	1.074	18.4
Average	277	96	1.064	16.2

Cooperators: Stanley Knoll and Sons, Anoka, growers; Ron Boulton, Anoka Peatland Project, Anoka, plot supervisor; Curtis Klint, Anoka, area extension agent, Soils; and Richard Swanson, Anoka County, Anoka, county extension agent.

Planted: May 19, 1975.

Harvested: October 7, 1975.

Spacing: 12 inch hills, 36 inch rows.

Fertilizer: 600 lbs. 4-12-36 broadcast.

Insecticide: Thiodan every 10 days from 7/2, 3 applications.

Fungicide: Bravo with malathion every 14 days from 7/2. Bravo alone after 3rd spray.

Vines killed: Frost.

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