

POTATO RESEARCH

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Some Newer Potato Varieties And Their Chipping Qualities

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MANY new varieties of potatoes have been introduced in the past 30 years. A few have been developed by private individuals or potato processing companies. Most of the new introductions have resulted from the cooperative efforts of State and U. S. Department of Agriculture potato breeders through the National Potato-Breeding Program. Several potato chip companies have variety testing programs and are constantly looking for newer and better varieties for processing purposes.

In the past, satisfactory varieties have been selected for different areas largely through trial and error. Today, new varieties must still be grown and tested under the conditions of each area to determine their performance and suitability for special purposes. An evaluation of a variety based on its response under one or two growing conditions is a limited evaluation and therefore has limited value for predicting varietal behavior. However, such information may serve as a guide to others conducting testing programs. Some information of this type is given in Table 1. The 10 varieties listed, all introduced during the 1950's, were grown in Maine and shipped to Beltsville shortly after

TABLE 1. Color scores of chips of 16 varieties shortly after harvest and after storage.

Variety	Sp. Gr.	Harvest	12 wks.	10 wks. 40° F. plus	
			55° F.	1 wk. 70°	2 wks. 70°
Boone	1,069	50	40	30	40
Delus	1,084	75	75	55	55
Early Gem	1,070	70	55	40	50
Keswick	1,082	85	55	45	60
Merrimack	1,077	80	70	45	60
Osage	1,080	95	80	60	75
Plymouth	1,076	65	75	60	65
Red Beauty	1,063	60	60	55	55
Red Kote	1,068	80	70	60	65
Tawa	1,085	90	80	65	70
Canse	1,083	90	70	45	55
Huron	1,081	55	50	35	40
Manota	1,078	75	75	65	70
Rukat	1,066	55	65	55	60
Saco	1,080	70	70	50	65
Saranac	1,070	65	70	60	55

Scores of 70 and above indicate satisfactory color.

harvest. They were stored at 40° and 55° F. After 10 weeks those stored at 40° were transferred to 70° for 1 or 2 weeks before they were made into chips. Among the first 10 listed,

Osage and Tawa produced better chip color considering all storage conditions. Delus and Plymouth produced chips of satisfactory color when used immediately out of 55° storage but

TABLE 2. Certified seed produced in 1964 of 10 varieties introduced between 1950 and 1958.

Variety	Cwt.	Location*
Boone	1,200	North Carolina
Delus	5,000	Maine
Early Gem	270,000	North Dakota
Keswick	65,000	Maine
Merrimack	35,000	Maine
Osage	43	Minnesota
Plymouth	17,000	Maine
Red Beauty	960	Wisconsin
Red Kote	27	Minnesota
Tawa	60	Wisconsin

* Location includes only the state producing the major portion of the seed.

TABLE 3. Chipping quality of 18 varieties introduced since 1960.

Variety	After Harvest	After Storage	Other Comments
Arenac	good	medium	Good general cooking qualities
Bianca	good	good	Also good baker
Catoca			Good french fries after harvest in Florida
Emmet	good	poor	
Hunter	medium	medium	Excellent boiling and baking
La Chipper	good	medium	Good in South
La Rouge	poor	poor	Not for chipping
Manota	very good	very good	Introduced for chipping
Norgold Russet	poor	poor	
Ona	good	good	
Pannchip	very good	very good	
Panbecot	good	good	
Pioneer	medium	poor	Good french fries
Reliance	medium	poor	Table & fresh market type
Shoshoni			Primarily for dehydrated products
Snowflake	medium	medium	Excellent boiling & baking
Superior	good	very good	
Viking	poor	poor	For boiling & baking

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those varieties did not benefit by the conditioning period at 70°.

Some certified seed of the first 10 varieties listed in Tables 1 and 2 was produced in this country in 1964 (Certification Seed Potato Report, Crop Reporting Board, Washington, D. C.). No certified seed is available of the last six varieties included in Table 1. In this group, chips of Montota were the best in overall color characteristics, and chips of Canso had a satisfactory color score when made immediately after harvest and after 55° F. storage.

The chipping qualities of 18 varieties introduced since 1960 are described briefly in Table 3. This is a general evaluation based on the performance at a number of locations as reported by the men responsible for the release of the varieties. This list does not include all introductions since 1960 but does include some of the more widely distributed varieties upon which a fair amount of data is available for evaluation. Four of the listed varieties, Catoosa, La Rouge,

Pioneer, and Viking, are redskinned. None of these is particularly good for making chips. Three of the varieties, La Chipper, Monona, and Pennchip, were introduced specifically for making chips. Others in the group that have given good results are Blanca, Ona, Penobscot, and Superior.

Some certified seed of all 18 varieties listed in Table 3 has been produced although only very small quantities of some of these are available. The approximate amounts and the States producing the major portion of the certified seed are given in Table 4.

The improvements in qualities of new potato varieties for the making of chips can be regarded as a good beginning. Most of the Federal, State, and private potato breeding programs are emphasizing these qualities. Although many of our present varieties are highly satisfactory for making chips, even better ones can be expected in the near future as a result of research in progress at many locations.

TABLE 4. Certified seed produced in 1964 of 18 varieties introduced since 1960.

Variety	Cwt.	Location*
Arenac	17,000	Michigan
Blanca	2,600	Colorado
Catoosa	610	Wisconsin
Emmet	17,000	Michigan
Hunter	1,835	Maine
La Chipper	6,000	Wisconsin
La Rouge	86,000	North Dakota
Monona	1,500	Colorado
Norgold Russet	353,000	North Dakota
Ona	6,800	California
Pennchip	2,400	Pennsylvania
Penobscot	620	Maine
Pioneer	520	Nebraska
Reliance	43	Minnesota
Shoshoni	6,000	Idaho
Snowflake	31,000	North Dakota
Superior	290,000	Wisconsin
Viking	41,000	North Dakota

*Location includes only the State producing the major portion of the seed.

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