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5-1943

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## Recommended Citation

Kellogg, Minerva and Buckholtz, W.F., "An Evaluation of the Baking and Boiling Qualities of Eight Varieties of Potatoes" (1943).  
*Agricultural Experiment Station Home Economics Pamphlets*. Paper 4.  
[http://openprairie.sdstate.edu/agexperimentsta\\_home-econ/4](http://openprairie.sdstate.edu/agexperimentsta_home-econ/4)

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AN EVALUATION OF THE BAKING AND BOILING QUALITIES  
OF EIGHT VARIETIES OF POTATOES  
(A Progress Report)

An Evaluation of the Baking and Boiling Qualities  
of Eight Varieties of Potatoes

Minerva Kellogg and W. F. Buckholtz<sup>1</sup>

In 1942 the Sebago, Pontiac and Sequoia potatoes grown at Brookings were late blight-resistant and somewhat scab-resistant. The prevalence of scab in Deuel County and a part of Codington County may make it highly desirable to resort to a resistant variety for table stock production in that area. One of the prime requisites of a potato variety is its cooking quality, and varieties differ in their relative response to different methods; for instance baking and boiling. To evaluate these three varieties in that respect, they were scored, when baked and boiled, along side Early Ohio, Irish Cobbler, Bliss Triumph, Katahdin, and Chippewa, all produced in the same plot at Brookings in 1942. Early Ohio, Irish Cobbler, and Bliss Triumph are the three standard sorts; Katahdin and Chippewa are recent introductions which are finding their place in potato production in South Dakota. The Warba variety was not included because it is considered an extremely early home garden potato and therefore does not compete with these varieties. Potatoes were stored after harvesting in a root cellar until April. The temperature was approximately 40° F until March when it increased slightly about 5°.

Child and Willeman (1929) gave the following descriptive standards for boiled, pared potatoes: "Form - retained with no sloughing; texture - mealy and not soggy for old potatoes, waxy for new; flavor - mild potato flavor; color - creamy white." For baked potatoes they specified: "Exterior appearance - skin thin, not wrinkled, even color; flavor--mild potato flavor and inside color - creamy white." Sweetman (1936) said that the properties of most importance in judging the palatability of cooked potatoes are texture, cohesion (important in boiled potatoes), color, and flavor.

With these references as a basis a score sheet was set up to evaluate baked and boiled specimens of the eight varieties. Baked potatoes were to be judged on the factors, color, absence of defects, texture, and flavor; and boiled potatoes were scored on color, texture, and flavor. Standard methods of preparation as given by Halliday and Noble were followed in baking and boiling the potatoes and when ready were judged by a committee of seven persons.

In tabulating results of the two methods of cooking, the varieties as scored by each judge are listed. Ratings on the scores of the four different factors for baked and the three factors for boiled are given separately followed by ratings on total scores for the same. The ratings of each variety are then totaled and the resulting figures used in determining the rank over all.

This is followed by a table giving a comparison of the total scores of the two methods and the over-all scores on each of the different factors.

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BAKED POTATOES

COLOR

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	2	5	2	3	2	2	1	17	5
Irish Cobbler	2	7	1	4	3	1	2	20	6
Bliss Triumph	2	6	2	4	3	2	1	20	6
Chippewa	1	1	1	4	1	1	1	10	2
Katahdin	1	4	1	2	2	2	1	13	3
Pontiac	3	6	2	3	3	1	2	20	6
Sebago	1	3	1	1	1	1	1	9	1
Sequoia	2	2	2	4	3	2	1	16	4

ABSENCE OF DEFECTS

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	1	5	3	2	2	1	1	15	4
Irish Cobbler <sup>1</sup>	4	7	4	3	3	3	2	26	6
Bliss Triumph	3	4	1	2	2	2	1	15	4
Chippewa	2	1	1	1	1	1	1	8	1
Katahdin	1	3	1	1	2	1	1	10	3
Pontiac	3	6	2	3	2	1	1	18	5
Sebago	1	2	1	1	1	1	1	8	1
Sequoia	1	2	1	1	2	1	1	9	2

Note 1 This lot of Irish Cobblers contained approximatley half "hollow heart" tubers.

TEXTURE

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	3	2	3	3	3	1	3	18	3
Irish Cobbler	2	1	1	1	2	1	3	11	1
Bliss Triumph	3	6	3	2	6	4	3	27	8
Chippewa	3	5	2	2	3	5	4	24	6
Katahdin	3	2	5	3	5	3	4	25	7
Pontiac	3	5	5	1	3	2	4	23	5
Sebago	4	4	4	1	4	2	2	21	4
Sequoia	1	3	3	2	1	1	1	12	2

FLAVOR

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	1	3	1	4	5	2	2	18	3
Irish Cobbler	2	6	1	2	4	2	2	19	4
Bliss Triumph	2	7	1	2	6	2	2	22	6
Chippewa	2	5	2	4	4	1	2	20	5
Katahdin	3	2	1	3	2	2	3	16	2
Pontiac	2	7	3	1	2	3	1	19	4
Sebago	1	4	2	3	3	2	1	16	2
Sequoia	2	1	3	3	1	1	2	13	1

BOILED POTATOES

COLOR

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	3	1	1	2	4	3	1	15	1
Irish Cobbler	1	5	2	3	2	1	2	16	2
Bliss Triumph	2	5	4	3	4	2	5	25	5
Chippewa	3	1	3	2	3	1	4	17	3
Katahdin	5	5	5	4	5	1	4	29	6
Pontiac	4	3	4	2	1	1	3	18	4
Sebago	4	2	4	1	2	1	3	17	3
Sequoia	6	4	5	4	5	1	4	29	6

TEXTURE

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	2	2	1	2	4	4	1	16	2
Irish Cobbler	1	1	2	1	1	2	1	9	1
Bliss Triumph	2	1	5	3	1	1	4	17	3
Chippewa	3	2	6	3	3	2	5	24	5
Katahdin	4	3	7	4	3	3	2	26	7
Pontiac	3	2	3	4	2	4	2	20	4
Sebago	5	2	5	4	3	3	3	25	6
Sequoia	4	4	4	3	5	4	2	26	7

FLAVOR

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	1	4	2	2	3	3	1	16	2
Irish Cobbler	3	1	1	1	1	1	4	12	1
Bliss Triumph	2	2	3	4	4	2	3	20	3
Chippewa	4	6	7	5	6	4	4	36	8
Katahdin	4	5	8	6	4	4	4	35	7
Pontiac	2	5	4	6	3	2	5	27	6
Sebago	3	5	5	3	5	2	2	25	4
Sequoia	4	3	6	4	2	3	4	26	5

TOTAL SCORES  
BAKED POTATOES

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	2	3	3	7	5	2	3	25	3
Irish Cobbler	4	6	2	2	6	7	7	30	6
Bliss Triumph	4	8	2	3	6	5	3	31	7
Chippewa	3	5	1	6	2	4	5	26	4
Katahdin	3	1	4	5	4	3	6	26	4
Pontiac	5	7	6	1	3	2	4	28	5
Sebago	4	4	4	1	2	2	1	18	2
Sequoia	1	2	5	4	1	1	2	16	1

BOILED POTATOES

Variety	Judges							Total	Over-all Rank
	1	2	3	4	5	6	7		
Early Ohio	2	3	1	2	3	6	1	18	2
Irish Cobbler	1	1	1	1	1	1	2	8	1
Bliss Triumph	3	2	2	3	5	2	4	21	3
Chippewa	5	8	4	6	7	4	5	39	7
Katahdin	7	7	5	8	8	5	3	43	8
Pontiac	4	5	2	7	2	4	3	27	4
Sebago	6	4	3	5	6	3	2	29	5
Sequoia	8	6	4	4	4	5	3	34	6

SUMMARY

OVER-ALL RANKS

Variety	Color		Texture		Flavor		Absence of defects	Total Scores	
	Baked	Boiled	Baked	Boiled	Baked	Boiled	Baked	Baked	Boiled
Early Ohio	5	1	3	2	3	2	4	3	2
Irish Cobbler	6	2	1	1	4	1	6	6	1
Bliss Triumph	6	5	8	3	6	3	4	7	3
Chippewa	2	3	6	5	5	8	1	4	7
Katahdin	3	6	7	7	2	7	3	4	8
Pontiac	6	4	5	4	4	6	5	5	4
Sebago	1	3	4	6	2	4	1	2	5
Sequoia	4	6	2	7	1	5	2	1	6

SUMMARY

The total scores show that for the baked potatoes, Sequoia rated first, Sebago second, and Early Ohio third; and of the boiled potatoes, Irish Cobbler was first, Early Ohio second, and Bliss Triumph third. Results show also that Bliss Triumph was least liked for baked and Katahdin for boiled potatoes.

As indicated by the scores on flavor for the two methods, three of the judges ranked Sequoia first, two rated it second and two third place when baked. When boiled Irish Cobbler was given first place by five judges, third and fourth by one each.

Of the new varieties, Sebago rated second baked, fifth boiled. Pontiac rated fifth baked and fourth boiled. Sequoia rated first baked, sixth boiled. In general, these three and Bliss Triumph ranked below Irish Cobbler and Early Ohio but above Katahdin and Chippewa in these two methods of cooking.