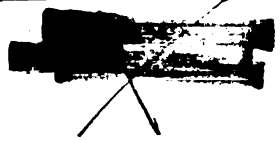
THE USE OF THE DEMONSTRATION-INTERVIEW TECHNIQUE IN ESTIMATING THE INSTITUTIONAL ACCEPTANCE OF DEHYDRATED MASHED POTATO PRODUCTS

Thesis for the Degree of M. S.

MICHIGAN STATE UNIVERSITY
E. Kirk McCreary

1962



ABSTRACT

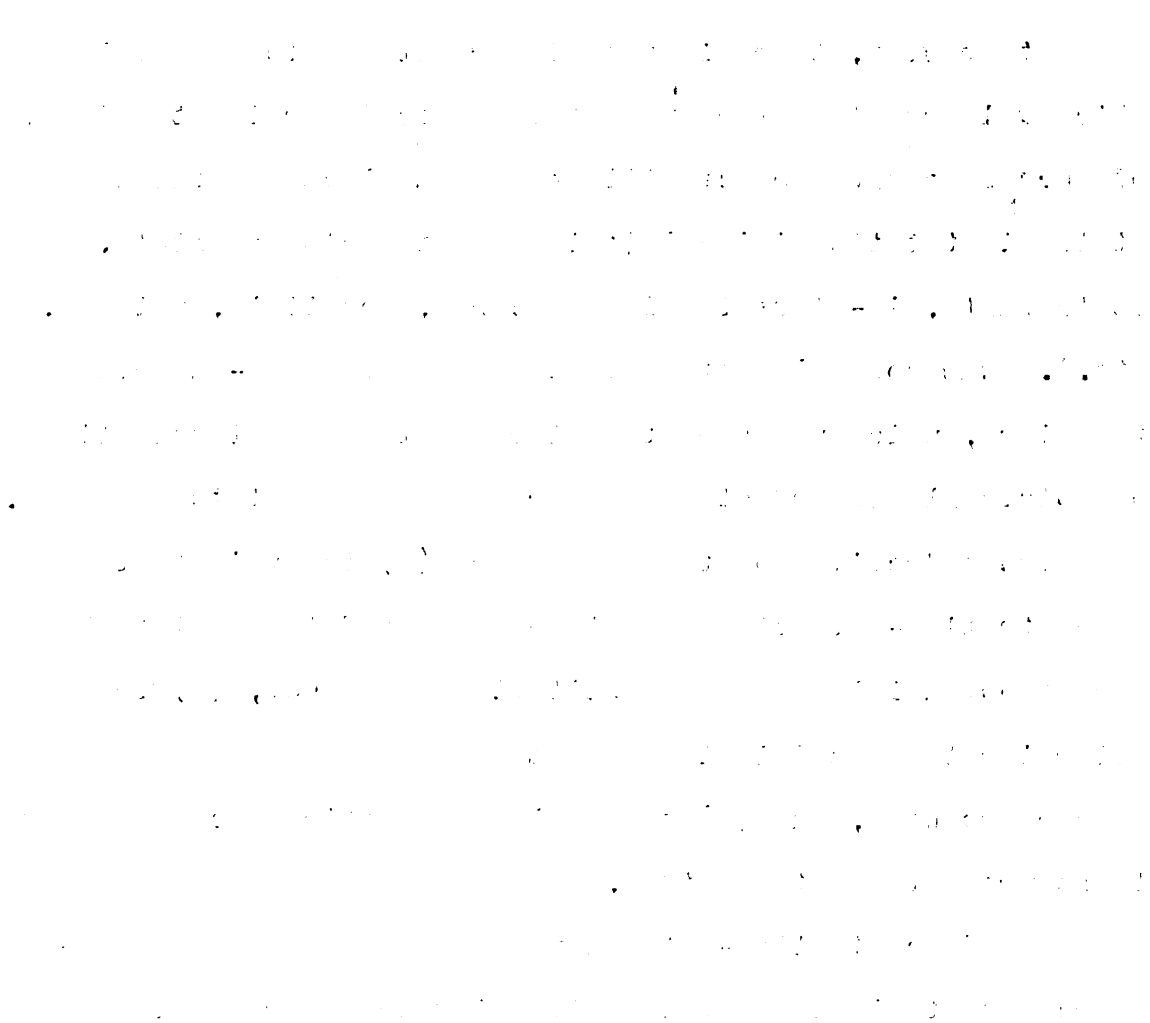
THE USE OF THE DEMONSTRATION-INTERVIEW TECHNIQUE IN ESTIMATING THE INSTITUTIONAL ACCEPTANCE OF DEHYDRATED MASHED POTATO PRODUCTS

by E. Kirk McCreary

At present, there is a need for methods to be developed which will enable a food manufacturer to determine the degree of success a new product will have when placed on the market at the institutional level (this market includes hotels, restaurants, in-plant feeding concerns, hospitals, prisons, etc.). One possible method is the demonstration-interview technique, which was used to determine the market potential of potato flakes and other dehydrated mashed potato products.

The objectives of this study are (1) to evaluate the demonstration-interview technique when used to predict the market potential of a new institutional product, (2) to determine the trend in the acceptance of dehydrated mashed potato products, and (3) to develop suggestions for marketing these products in the future.

The demonstration-interview technique was used by researchers at Michigan State University to determine the market potential of potato flakes, a new dehydrated mashed potato



product which was not yet on the market. The study was conducted in 1957 among 164 public eating places in Detroit, Michigan. The reconstitution of potato flakes into mashed potatoes was demonstrated to the buyers in each of the establishments. After sampling the product, the buyers were asked a series of questions designed to determine the acceptance of the product. Additional information was also gathered on other potato products used, and on the operation of the establishment. On the basis of buyer's answers, 51 percent of the establishments were classified as an "immediate" market for potato flakes, 32 percent as a "potential" market, and 17 percent as "no" market for the product. The results indicated a high acceptance and market potential for potato flakes and other dehydrated mashed potato products among the sample establishments.

The results of a second survey made of the same establishments in 1959 showed that the demonstration-interview technique was unreliable when used to predict the use of the potato flake product by individual establishments. There were several factors contributing to the failure of the technique in this respect, but this weakness of the technique cannot be overlooked. When the results of the 1957 study are interpreted as indications of the market potential for all dehydrated products, the number of establishments found using these products in 1959 more closely corresponded to the estimates made in 1957. It was found that the estimates

made in the 1957 study of the overall usage of dehydrated mashed potato products were fairly reliable. The 1957 estimates of the market potential for dehydrated products were an "immediate" market of 22 percent, and a "potential" market of 33 percent of all potatoes used by the sample. The actual usage of these products in 1959 was 20 percent of the total potatoes used by the sample establishments.

It was concluded that further improvements are needed in the demonstration-interview technique. Two such improvements may be (1) supplying sample establishments with a several day's supply of the test product, and (2) the use of this technique in conjunction with an institutional sales test. The latter approach may not only increase the accuracy of predicting market acceptance, but may also be a source of information that will lead to further product improvement.

The production of dehydrated mashed potato products has been increasing rapidly (a 375 percent increase from 1957 to 1959). It appears that this rapid rate will continue for the next few years. In the past the institutional trade has been the major market outlet for these products. While the institutional trade's demand has been increasing at a corresponding rate in the past, the results of this study indicate only a moderate increase in demand in the future. Consequently, the dehydrated mashed potato industry is faced with potential overproduction.

The two alternatives to this problem are either the

curtailment of production, or a much more rapid expansion of the retail market. The industry may be able to expand the retail market through pricing, advertising and promotions (including consumer education), and changes in package size. If efforts are not made to increase the retail market, the past rate of growth will be greatly decreased, and future increases in production will have to be curtailed.

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A THESIS

Submitted to the College of Agriculture of Michigan State University of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Department of Agricultural Economics

1962

ACKNOWLEDGMENTS

My first acknowledgments are due to Dr. Smith Greig, my advisor, for his guidance and generous help in the preparation of this thesis. I would also like to thank Dr. L. V. Manderscheid and Dr. W. W. Riley for their helpful criticisms and valuable corrections.

I am grateful to Dr. Lawrence L. Boger and the Department of Agricultural Economics for making available an assistantship which enabled me to complete my Masters' Degree.

I greatly appreciate the deep interest my parents showed throughout the completion of my Masters' program.

Last but not least I would like to thank my wife, Penny, who not only typed several drafts of this thesis, but provided encouragement when it was most needed.

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CHAPTER I

INTRODUCTION

In the field of market research there are numerous methods used in evaluating consumer acceptance of new retail food products before they are marketed on a commercial scale. Many food manufacturers have found pre-market testing a valuable aid in new product development and a considerable amount of work is carried out in this area. However, there has been a general lag in the development of methods for pre-market testing new food products designed mainly for the institutional trade.[1] Until recently, governmental agencies and educational institutions have done little work in this area of market research. No doubt the food industry has conducted studies designed to determine institutional acceptance, but there have been no published reports describing the techniques used.

The purpose of this thesis is to describe and evaluate

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[1]The term institutional trade, as used in this thesis will include restaurants, hotels, hospitals, and other private and public institutions serving meals on a regular basis. This segment of the food industry accounted for 13 percent of the total food budget in 1955. See Robert M. Walsh, "Marketing Farm Foods in the 1960's", Agricultural Marketing, Volume 5, No. 1, U.S. Department of Agriculture, Washington, D.C., January 1960, p. 13.

the use of the demonstration-interview technique in the pre-market testing of new food products for the institutional trade. While the study described deals specifically with dehydrated mashed potato products, it is possible to draw several conclusions concerning the value of the methods employed, as well as to make observations on the product itself.

A. METHODOLOGIES EMPLOYED IN PRE-MARKET TESTING

There are four general methods used in pre-market testing new food products - laboratory panels, mass consumer panels, retail or sales tests, and institutional acceptance studies. The first three methods mentioned may be used to test retail products, while the first, second, and last one may be used to test institutional products.

The laboratory panel is usually used in conjunction with new product development. The general procedure followed is to present the various alternative forms or formulas of a proposed product to a relatively small group of individuals.[2] The members of these panels are either trained or untrained testers. The panel members compare the various forms of the product against each other, to a predetermined standard, to a similar established product, or to their own personal pre-

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[2]The size of these panels may range from 4 to 100 members, but the average panel has from 4 to 12 members. See E. H. Dawson, and B. L. Harris, Sensory Methods for Measuring Differences in Food Quality, Agricultural Information Bulletin No. 34, U.S. Department of Agriculture, Bureau of Human Nutrition and Home Economics, Washington, D. C., 1951, p. 17.

ferences. The testing is carried out under laboratory conditions where an effort is made to control as many of the outside variables as possible. Therefore, the results obtained are more closely a reflection of the differences between the characteristics of the various samples themselves, rather than a combination of sample differences and external variables. The purpose of such tests is to give a preliminary indication of consumer preferences.[3] These preference indications, along with the accompanying comments, can be of considerable help in developing the product. It is possible to disregard those variations of the product which have a low degree of preference before large sums of money are spent on their further development or production.

The use of mass consumer panels is usually the next step in pre-market testing new food products. Samples of the new product are distributed (either by mail or personal contact) to a selected group of households. This product is usually compared with other selected products sent or delivered to the same households. Two principle questions can be answered through the use of mass consumer panels: (1) How does the test product compare with competing products

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[3] The word preference will be used when referring to "the ordering of choice among two or more alternative products in a given environment by a consumer or group of consumers. Acceptance refers to the degree of saleability of the product in a given market situation". See E. R. Kiehl and V. J. Rhodes, "New Techniques in Consumer Preference Research", Journal of Farm Economics, Volume 38, 1956, p. 1336.

(preferences), and (2) what qualities or attributes has the test product which are advantages or disadvantages in competing with similar products.[4] These two questions are essentially the same as those answered by the laboratory panels, but in the case of the mass consumer panels, the indications of consumer preferences should be more accurate. This is because of the larger number of panel members involved[5], and the opportunity for developing more representative samples. In addition, it is possible through the use of background questions, to develop information on various characteristics of the respondents. Such information is useful in planning future promotions for the product.

For retail products, the third phase in pre-market testing is the use of a retail sales test. The laboratory and mass consumer panels enable the manufacturer to select the best form of the product. This product is then actually put on sale in a limited but representative market area. Sales records are kept on the test product which are used as a basis for determining consumer acceptance. In addition, it is possible (1) to compare the sales of the new product with those of competing products (i.e. consumer preferences), (2) to determine the approximate effects of advertising, promotion, and pricing on the sales of the new product,

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[4]J. L. Bogert, "A Method of Consumer Product Testing", Food Industries, Volume 13, 1941, p. 47.

[5]Many of these tests have 200 or more respondents.

(3) to determine the rate of initial and repeat purchases (when followup interviews are used), and (4) to obtain consumer opinions about the new product and statements about its uses (when followup interviews are used).[6] When properly conducted, retail testing should give a fairly accurate estimation on how successful the new retail product will be under actual market conditions.

In the pre-market testing of institutional products, there are two groups of individuals who must be considered. The first of these is the ultimate consumer of the product. This includes the customers of hotels, restaurants, and inplant feeding establishments, hospital patients, prison inmates, etc. Laboratory and mass consumer panels can be used to determine this group's preferences for the different variations of the product. The results of these tests will indicate whether or not this group of individuals will like the product when it is served to them.

The second group involved consists of the buyers, chefs, dieticians, etc., who will judge the acceptability of the product. It is possible, especially with the development of frozen, concentrated, dehydrated, and other processed foods, that a high degree of preference on the part of the first group of individuals will not necessarily guarantee

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[6] M. M. Walsh, "What Is and What Is Not Good Consumer Research", Paper presented at the Twelfth Reciprocal Meat Conference, U.S. Department of Agriculture, Agricultural Marketing Service, Washington, D. C., 1959, p. 3.

acceptance by the second group. Many of these new products require special handling and preparation techniques which may or may not be accepted. Therefore, the food manufacturer not only has to determine the ultimate consumers' preferences, but also must determine if it will be acceptable to those who prepare and serve it, i.e. the institutional trade.

The methods used in laboratory and consumer panels have been so developed that it is now possible to get fairly reliable indications of consumers' quality preferences. The food manufacturer, therefore, can be fairly sure of how the ultimate consumer of his product will react when it is served to him. On the other hand, there are no well-developed methods currently available to a food manufacturer to determine the acceptance of the product by the other important group he deals with - the institutional trade.

The method or methods used to determine institutional trade acceptance need to be accurate enough so that reliable predictions can be made concerning the product's market potentials. It is desirable to obtain information on the handling, storage, and preparation of the product, on consumer reactions, on container size, and on comparisons to similar products being used. This information would not only aid in determining the acceptance of the product, but may also aid in product improvement. Thus, the role of institutional acceptance studies is to provide basically the same information on consumer acceptance as is sought in the

later phases of pre-market testing retail products.

B. THE NATURE OF THE STUDY

The demonstration-interview technique was used in the summer of 1957 to determine the institutional acceptance of potato flakes (a dehydrated mashed potato product). This product was demonstrated to 164 buyers in a probability sample of public eating places. Included in the sample were most of the types of feeding establishments that were included in the definition of the institutional trade. After the demonstrations, the buyers were asked a series of questions designed to determine product acceptance and market potential. On the basis of these answers, predictions were made on the future use of this product. The same buyers were again interviewed in 1959. The purpose of the second survey was to determine the rate of acceptance of potato flakes and other potato products among the sample establishments. The data gathered in the two surveys makes it possible to study the acceptance of various potato products, and make an evaluation of the research technique used.

Specifically, the objectives of this study are:

1. To describe and evaluate the demonstration-interview technique when used to predict the market potential of a new institutional food product.
2. To determine the trend in the institutional acceptance of dehydrated mashed potato products.
3. To suggest possible changes in the marketing of dehydrated

mashed potato products based on the information developed in the second objective.

CHAPTER II

AN APPLICATION OF THE DEMONSTRATION-INTERVIEW TECHNIQUE

A. BACKGROUND

In the early 1950's, the U.S. Department of Agriculture developed the potato flake process for manufacturing dehydrated mashed potatoes. By this process, a high quality dehydrated mashed potato product can be produced from relatively low dry-matter content potatoes grown in Michigan and the eastern United States. Before the development of this new process, only the relatively high dry-matter content potatoes grown in the West were utilized for dehydrated mashed potatoes.[7] These older processes included the "add back" method and the "extrusion" method. The first process produces a powder form called "granules"; the second, an extruded noodle-like form referred to as "shreds".[8] Granules were the major form of dehydrated mashed potatoes produced at the time of the development of flakes.

In 1957, the Department of Agricultural Economics at Michigan State University decided to conduct an institutional acceptance study on the potato flake product which was not

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[7] W. S. Greig, F. O. Strand, and H. E. Larzelere, Relative Retail Sales and Elasticity of Demand for Dehydrated Mashed Potato Products (Preliminary Report), Department of Agricultural Economics, Michigan State University, 1958, p. 1.

[8] R. L. Olson, and W. O. Harrington, "Dehydrated Mashed Potatoes - A Review", AIC - 297, U.S. Department of Agriculture, Washington, D.C., 1951.

yet on the market.[9]

Two pre-market tests had already been made on this product. The results of these tests indicated considerable consumer satisfaction with flakes. The first of these tests was a retail sales test and consumer survey conducted by the U.S. Department of Agriculture during the summer of 1956.[10] On the basis of the consumer survey, it was found that a high proportion of the homemakers who had used the product were satisfied with it.

The second pre-market test consisted of a series of taste preference tests comparing the flake, granule, and shred forms of dehydrated mashed potatoes. These tests were conducted in Michigan State University's consumer preference panel at Detroit (a laboratory type panel) in the Spring of 1957.[11] In the first taste preference test, reconstituted mashed potatoes made from all three forms were rated by the

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[9]The results of this study are reported by W. Smith Greig, The Restaurant, Hotel and Institutional Market for Dehydrated Mashed Potatoes (Preliminary Report), Department of Agricultural Economics, Michigan State University, 1957. The 1957 data used in this Thesis has either been taken directly from this report or from other data developed in this study.

[10]P. B. Dwoskin, and M. Jacobs, Potato Flakes - A New Form of Dehydrated Mashed Potatoes: Market Position and Consumer Acceptance in Binghamton, Endicott, and Johnson City, New York, Market Research Report 186, U.S. Department of Agriculture, Agricultural Marketing Service, Washington, D.C., 1957.

[11]S. Greig, and H. Larzelere, "Consumer Taste Preference Among Dehydrated Mashed Potato Products", National Potato Council News, Volume 5, No. 2, 1957, pp. 4-6.

panel. Each panel member was given three samples of mashed potatoes, one made from each form, and was asked to rank them according to his preference. Of the 119 panel members who sampled the three products, 57 ranked potato flakes the highest; 43 ranked granules the highest; and only 19 ranked the "extruded" product the highest. A statistical analysis of the results indicated that the "extruded" product was ranked lowest by a significant number of consumers.[12] Although the potato flakes were rated higher by more members than the granules, the difference was not statistically significant.

Only the potato flakes and granules were used in the second taste preference test. The "triangle" method was employed in this test. With this method, three samples were presented to each panel member. Two of the samples were identical, while the third was different. The panel members were asked to identify the "different" sample and then to state their preference for either the two samples that were alike, or for the "different" sample.

The results of this second test showed that 81 of the 148 participating panel members were able to correctly identify the "different" sample. Of these 81 members, 54 indicated they preferred the flakes. Twenty-seven indicated they preferred the granules. The results showed that there was a statistically significant preference for the mashed potatoes

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[12]The shred form of dehydrated mashed potatoes (the "extruded" product) was withdrawn from the market by the manufacturer in 1950.

made from potato flakes among the 81 members who could discern the difference between the samples.[13]

While it appeared that potato flakes had potential in both the retail and institutional markets, it was felt that the largest initial market for this product would be with the latter group. Flakes have several advantages over using raw potatoes for the mashed form. They require less storage space, are quicker to prepare, can be made in small batches, and require less labor and equipment. These advantages would be more important in the institutional trade, and consequently, they would be more likely to adopt the product sooner. Also, the price per pound of flakes is lower at the institutional level than at the retail level because of the size of containers used. The retail price of flakes is higher since smaller containers are used, which increases the packaging cost per pound. The lower price at the institutional level makes flakes more competitive with raw potatoes than is possible at the retail level. With these factors in mind it was decided to conduct an institutional acceptance study among public eating establishments.

The source of the flakes used in the demonstration was a pilot plant operation at the Eastern Utilization Research and Development Division, Agricultural Research Service,

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[13]The results are significant at the 0.001 level. Odds are 1000 to 1 that this agreement in preference among consumers for the mashed potatoes from the flakes was not due to chance alone. Greig and Larzelere, Op. Cit. p. 6.

U.S. Department of Agriculture in Philadelphia, Pennsylvania. The output of the operation was so limited that it was possible to get only enough flakes for small demonstration samples. Leaving a several days' supply with each buyer was entirely out of the question; although this method had been used in a market test of dehydrofrozen peas conducted by the U.S. Department of Agriculture.[14] The effect of this limited supply on the accuracy of the responses is discussed later.

B. PROCEDURE

1. Sample Selection

A probability sample of 164 restaurants, hotels and other public eating places was selected in Wayne County (principally Detroit), Michigan. Since a relatively small number of the larger establishments represented over half of the total market, it was decided to sample disproportionately, i.e., to include in the sample a greater number of the larger establishments than would be included in a completely random sample. The sample drawn represented approximately seven percent of the total market based on the number of eating establishments in Wayne County. Based on the number of employees (an indication of size of establishment), the sample represented 17 percent of the total market. The sample did not represent the entire city of Detroit since

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[14] E. J. McGrath and M. S. Sills, Restaurant Acceptance of Dehydrofrozen Peas, Marketing Research Report 198 U.S. Department of Agriculture, Agricultural Marketing Service, Market Research Division, 1957.

the metropolitan area extends beyond Wayne County.

2. The Demonstration-Interview Technique

This study was conducted during the months of July and August in 1957. Each buyer (i.e. the individual who made the decisions concerning product use) in the 164 sample establishments was contacted by telephone. After explaining the purpose of the study, appointments were made with the buyers. At each establishment the interviewer demonstrated the reconstitution of a sample four-person serving package of flakes into mashed potatoes. For ease and accuracy, each interviewer carried a case containing all the materials necessary for the demonstration. Upon the completion of the demonstration, the reconstituted flakes were offered to the buyers for sampling. Then the buyers were asked questions designed to obtain their opinions on the product itself, and on the possible usage of it in their establishments. Detailed information on the operation of each establishment and the use of other potato products were obtained during the interviews.

It would have been possible to take samples of both the potato flakes and granules to the establishments used in the study. This would have given the buyer an opportunity to compare the two products. However, direct comparisons had already been made through the consumer preference panel with a considerable preference indicated for the potato flake product. In light of these results, it was decided to use

just the potato flakes in the study to predict the parameters of market potential for dehydrated mashed potato products.

3. Market Classifications

After the demonstration-interview was completed, each establishment was classified in terms of its market potential for potato flakes. This classification was based on a consideration of the overall response of the buyer to flakes. The three classifications used were: (1) an immediate market, (2) potential market, and (3) no market. The criteria for these classifications were as follows:[15]

> Immediate market was defined as: "those buyers who indicated that potato flakes were better in quality than, or of the same quality as, other dehydrated potato products; who indicated that the flakes would be satisfactory for use in their establishments; who would buy the flakes if they were on the market; would pay seven cents per pound for them on an equivalent fresh-weight basis;[16] and who would use the flakes for all mashed potatoes made in the establishment." As a group these buyers were quite enthusiastic about the product. The principal question asked by this group of buyers was, "How will they stand up on the serving line?" and this was questioned by less than half of these buyers.
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> The potential market was defined as: "Those buyers who indicated that the flakes were better than or the same as other dehydrated mashed potato products; who indicated that the quality of the

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[15] Greig, Op. Cit., p. 9-10.

[16] The seven cents per pound was used for the following reason: the price per case of granules (six No. 10 cans of six pounds each net weight) delivered to restaurants in Detroit was from $10 to $14 per case. Using manufacturers' conversion factors of one No. 10 can equal to 40 pounds raw, the granules were from five to six cents per pound of potatoes on a fresh equivalent basis. Seven cents was used because of possible added transportation costs for flakes.

flakes, as demonstrated, would be satisfactory for their purposes; but who would not necessarily pay seven cents per pound equivalent fresh-weight basis and/or would not use the product for all mashed potatoes." These buyers indicated an interest in the product but questioned how well it might stand up on the serving line, price, customer reaction, or intended use of the product. In general, the attitude of this group of buyers was, "I would probably try them (the flakes), but it is hard to tell whether I would use them all the time or not."

No market was defined: "Those buyers not falling in the above classifications - that is, those who indicated that present arrangements were completely satisfactory; those who used little or no mashed potatoes; those who felt the product was of borderline quality; and those who indicated the product quality was definitely inferior and could not be used under any circumstances."

Subjective opinions of the demonstrator-interviewer were used in determining the market classification of an establishment only in those cases where a buyer gave a qualifying or conditional response to a particular question.

C. RESULTS OF THE 1957 STUDY

The overall results of the 1957 study seemed to indicate a rather high market acceptance and potential for flakes and other dehydrated mashed potato products. The following results have particular significance:

1. Eighty-three percent of the buyers who had tasted other forms of dehydrated mashed potatoes indicated that potato flake quality was better. However, over half of the buyers had never tasted a dehydrated mashed potato product.

2. Eighty-two percent of buyers currently using other forms of dehydrated mashed potatoes indicated that the potato flakes were a better product. Only 17 establishments were using dehydrated product (granules) regularly or for emergency use at the time of the first survey.

3. Eighty-eight percent of the buyers indicated that the flakes were the same as or of better quality than the mashed potatoes normally made in their establishments.

4. Ninety-one percent of the buyers indicated that flakes would be of satisfactory quality for use in their establishments.

5. Forty-one percent of the buyers indicated they would buy the potato flakes if commercially available; 38 percent stated that the purchase depended on price; and only 13 percent indicated they would not buy the product.

6. Eighty-one percent of the buyers stated that they would pay more for the flakes than for raw potatoes (on an equivalent basis).

7. Eighty-three percent of the buyers who would purchase the flakes would use them regularly for all mashed potatoes; only 17 percent would keep them for emergency use.

8. Fifty-one percent of the establishments in the survey were classified as an "immediate" market for potato flakes, 32 percent as a "potential" market, and 17 percent as "no" market for the product.

D. THE MARKET PREDICTIONS BASED ON THE 1957 STUDY

With the information gathered in the 1957 study, it was possible to expand the sample data to state, regional, and national market potentials. It was found that 39 percent of the potatoes used by the sample establishments were in the mashed form. With the total amount of potatoes used by the sample establishments in each market classification known,

the approximate amount of potatoes used by each group for mashed form was computed by taking 39 percent of the total potatoes used by that group (Table 1). The next step was to determine the percent of potatoes used for the mashed form by each market classification based on the total amount of potatoes used by all the sample establishments. For example, Table 1 shows that the establishments in the immediate market classification used 218 hundredweight of potatoes per week for the mashed form. This amount represents 22 percent of the total potatoes used by all the sample establishments (979 hundredweight per week). The immediate and potential groups combined were using 320 hundredweight of potatoes per week for the mashed form. This amount represents 33 percent of the total potatoes used by all the sample establishments (979 hundredweight per week).

To expand the sample data, the percent of potatoes used for the mashed form by the immediate and potential market groups were applied to the total amount of potatoes used by public eating places in a given market. For example, in 1957 it was estimated that 39 million hundredweight of potatoes were used in the United States at the institutional level.[17] Assuming that the immediate market utilizes 22 percent of all the potatoes used in the mashed form, the immediate market potential for dehydrated mashed potato products would be

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[17] "U.S. Production, Utilization, and Use of Designated Potato Crops", National Potato Council News, January 1957, p. 11.

Table 1 - The amount and percent of potatoes used per week by the sample establishments (164 establishments, Detroit, 1957)

Market Classification (1957)	Number of Establishments (1957)	Total Potatoes Used	Estimated Amount of Potatoes Used for Mashed Form	Amount of Potatoes Used for the Mashed Form, as a Percent of the Total Potatoes Used by the Entire Sample
		(hundredweights per week)		
Immediate	84	521.5	218.3	22.3
Potential	52	245.3	101.2	10.3
No Market	28	212.6	65.1	6.6
Total	164	979.4	384.6	39.1

approximately 8,500,000 hundredweight. The potential market would utilize 12,670,000 hundredweight of potatoes in the dehydrated form (33 percent of 39 million hundredweight).

There are several limitations to the results and expansions made in this study which should be kept in mind. These limitations include:[18]

(a) Although buyer cooperation was excellent, the reception and courtesies shown the interviewers very good, and the responses to the interviews sincere, there is a basic difference between what an individual says he will do under specified conditions and what he actually will do under those conditions.

(b) Proportions of potatoes consumed in mashed form vary widely among areas.[19] Likewise, individual preferences in quality (the degree of mealiness, taste and flavor) may vary among geographical areas in the United States. Expansion of the sample to a regional or national basis would probably result in large errors.

(c) All the establishments in the sample were within Wayne County, Michigan, (principally the city of Detroit) as a legal entity. The sample did not cover the complete city of Detroit when defined as a contiguous center of concentrated business and residential areas.

(d) The fact that the bulk density of potato flakes is variable was not discussed with each buyer. It is possible that attempts by institutions to use volumetric measurements for recipes in reconstitution large quantities could lead to varying textures of the mashed potatoes and a resulting dissatisfaction with the product.

(e) Probably the question most often asked concerning the quality of the potato flakes was that of their line-holding ability. The buyers were asked to assume that the product would hold up on the

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[18] Greig, Op. Cit., p. 28-29.

[19] Potato Preferences Among Restaurant and Hotel Buyers, Miscellaneous Publication 648, U.S. Department of Agriculture, Washington, D.C., April 1948. Also, Potato Preferences Among Household Consumers, Miscellaneous Publication 647, U.S. Department of Agriculture, Washington, D.C., August 1948.

serving line. Preliminary tests, however, indicate that this was a fairly safe assumption.

(f) The study was conducted during July and August. A comparison of quality was most logically a comparison of flake quality with the quality of mashed potatoes made from summer varieties of potatoes. In actual practice, the major proportion of all mashed potatoes used are made from late crop varieties.

The results obtained were not intended to be exact answers to the question of the acceptance and potential of potato flakes, but were indications of what might be expected based on the information developed in the sample study.

CHAPTER III

THE METHOD USED TO CHECK THE ACCURACY OF THE DEMONSTRATION-INTERVIEW TECHNIQUE

In 1959 it was decided to re-survey the 164 establishments ch participated in the 1957 market test. The purpose of s survey was to gather information which would (1) aid in aluating the demonstration-interview technique when used to edict the market potential of a new institutional food oduct, (2) determine the trend in the acceptance of dehy- ated mashed potato products, and (3) be useful in developing ggestions for marketing these products in the future.

PROCEDURE

The followup survey was conducted during the months of uly and August. Appointments were made with the same buyers hen possible. The questionaire used was designed to cover several aspects of the usage of potato products. Specifically, the buyers were questioned on their use of potato flakes, the prices they paid for the product, and their reasons for using or not using the product. The buyers were asked to give the amounts and the prices of the various other potato products that they were using. They were also questioned on their knowledge of flakes, their experience with the product, and the contact they had with potato flake salesmen.

B. THE CHARACTERISTICS OF THE ESTABLISHMENTS NOT INCLUDED IN 1959

While every effort was made to contact as many of the

inal establishments as possible, only 141 establishments
included in the results of the followup survey. Twenty-
e establishments were not interviewed or included because
on-cooperation, the closing of the dining facilities,
g out of business, or radical changes made in size or
e of business. The size and market classification of the
ablishments excluded are shown in Table 2. Of these estab-

le 2 - The size and market classification of the establish-
ts not included in the 1959 survey (23 establishments,
roit, 1959).

ize Class Total Amount Potatoes ed Per Week (cwt)	Number of Establish-ments (1959)	Market Classification (1957) Immediate Market (Number of	Potential Market Establishments)	No Market
mall, 0-5.0	21	14	3	4
dium, 5.1-10.0	0	0	0	0
arge, 10.0-up	2	1	1	0
Total	23	15	4	4

shments 15 had been classified as an immediate market in
57, four as a potential market and four as no market. As
n be seen from the table, the majority of these establish-
nts were small in terms of the total amount of potatoes
ed per week.

Of the 141 establishments included, 12 had changed hands
ince 1957. The type and size of operation carried on by the

management appeared to be similar to that reported in
so they were not eliminated. Those establishments which
substantially changed are among the 23 not included in
1959 study.

CHANGES IN THE USAGE OF POTATO PRODUCTS IN THE DETROIT SAMPLE

The questionnaires used in each study had questions concerning the amount of raw potatoes and prepared potato products used by each establishment. By comparing this data from the two studies it is possible to establish trends in the usage of these various potato products by the sample establishments.

1. Non-dehydrated Forms of Potatoes

The overall results show an increase of 26 percent in the total amount of potato products used (Table 3). There had been a decline in the use of raw potatoes not only in the actual amount used (a seven percent decrease), but also in the relative proportion of raw potatoes used to the total of all forms of potatoes used. While raw potatoes were still the largest single source of potatoes in 1959 (57.3 percent of the total potatoes used), their importance had diminished considerably among the sample establishments.

The actual amount of prepeeled french fries used had decreased by 12 percent, but the amount of prepeeled whole potatoes increased by 16.6 percent. However, the importance of both of these products as a source of potatoes had decreased.

Table 3 - The change in the amounts of potatoes and [illegible] in 1957 and 1959, expressed in percentages and equivalent hundredweights* (141 establishments, Detroit).

Forms of Potatoes	Amounts used in 1957		Amounts used in 1959		1959 Totals Expressed as Percent Change Over 1959 Totals
	Equivalent cwt/week	Percent of Potatoes Used	Equivalent cwt/week	Percent of Potatoes Used	
Raw	774.2	77.9	717.5	57.3	-7.3
Prepeeled french fries	68.4	6.9	60.1	4.8	-12.1
Prepeeled whole	73.3	7.4	85.5	6.8	16.6
Frozen french fries	27.5	2.8	134.8	10.8	390.2
Chiplets	(Not on the market)		3.0	0.2	---
Flakes	(Not on the market)		13.8	1.1	---
Granules	50.6	5.0	238.5	19.0	371.3
Totals	994.0	100.0	1253.2	100.0	26.1

*The following conversion factors were used:

(a) One pound of dehydrated form (granules, flakes, and chiplets) is equal to 6.7 pounds of raw potatoes.
(b) Twenty-five percent was added to the weight of prepeeled french fries and prepeeled whole potatoes.
(c) Forty percent was added to the weight of frozen french fries.

The use of frozen french fries increased considerably, oth in actual amount used and the relative importance of the roduct as a source of potatoes.

2. Potato Chiplets

Potato chiplets, a dehydrated product suitable for hashed rowns, potato salad, soups, etc. were just being introduced t the time of the 1959 survey. Thus, it was not possible to etermine reliable trends in the use of this product.

3. Dehydrated Mashed Potato Products

The use of dehydrated mashed potato products greatly increased from 1957 to 1959, (Table 3). In 1957, the 141 ample establishments were using only 5,000 equivalent pounds f potatoes per week in granule form. At that time, potato lakes were not yet on the market. The results of the second urvey showed that 1,300 equivalent pounds of potatoes in lake form were being used per week in the 141 establishments. he use of granules had increased to over 23,000 equivalent ounds per week (a 371 percent increase). The granules ccounted for five percent of the total potatoes used in 957, whereas in 1959 they accounted for 19 percent of the otal (the second largest source of potatoes). Potato flakes ere used for only one percent of the total, but the two ehydrated mashed potato products together accounted for 0 percent of the total potatoes used by the sample establishments.

Another way of looking at the trend in the usage of ehydrated potato products is to consider the portion of the

nsible market using these products (Table 4). The percent
' mashed potatoes made with dehydrated products has increased
nsiderably among the sample establishments. While in 1957
ly 13 percent of the total mashed potatoes used were in the
hydrated form, in 1959 52 percent of the mashed potatoes
ed were made with dehydrated products. Though the possible
rket concentration is over 50 percent, there appears to be
om for further expansion. The likelihood of such an expan-
ion taking place among the sample establishments will be
iscussed in Chapter V.

It is interesting to compare these results concerning
he use of dehydrated potatoes with the findings of a restau-
nt and hotel buyer survey made by the U.S. Department of
griculture in New Orleans and Cincinnati in 1943. Less than
ne buyer in a hundred was using dehydrated potatoes at that
ime. Further, four-fifths of the buyers indicated that they
ould not be interested in using them.[20] While the results
f the Detroit study and this U.S. Department of Agriculture
tudy cannot be compared directly, it does give some indica-
ion as to the general trend in the institutional trade's
cceptance of dehydrated potato products.

. THE REASONS GIVEN BY BUYERS FOR USING AND NOT USING FLAKES

Only nine establishments in the Detroit sample were

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[20] Potato Preferences Among Restaurant and Hotel Buyers, . Cit., p. 6.

Table 4 - The proportion of the total mashed potatoes used made with dehydrated mashed potato products (141 establishments, Detroit).

Preparation	Estimated Amount of Potatoes Used for Mashed/Week*		Type of Dehydrated Product Used	Amount of Dehydrated Product Used Per Week		Total Amount of Dehydrated Product Used Per Week		Percent of Mashed Made With Dehydrated Products	
	1957 (equivalent cwt.)	1959		1957	1959	1957	1959	1957	1959
				(equivalent cwt.)					
Mashed	387.7	488.7	Granules	50.6	238.5	50.6	253.3	13	52
			Flakes	---	13.8				

*These estimates are based on the findings of the 1957 study. Mashed potatoes accounted for 39 percent of the total potatoes used (see Table 1).

ular users of potato flakes in 1959.[21] The buyers in these
ablishments were asked for the reasons they switched to the
duct. The reasons given have been summarized in Table 5.

ble 5 - Reasons given by the regular users of flakes to the
stion, "Why did you switch to potato flakes?" (11 estab-
shments (a), Detroit, 1959).

Reasons for Switching to Potato Flakes	Number of Times Mentioned
ste	6
nds up well in serving line	1
ick preparation, less labor required	10
ss waste	2
ss mess in preparation	1
ice	2
her reasons	1
Total	23 (b)

a) Includes one buyer who was planning to switch to flakes in
he immediate future, and one buyer who found flakes very sat-
sfactory quality-wise, but was using granules because of the
rice advantage.
b) Some buyers gave more than one reason.

he quickness of preparation and less labor required were
entioned by almost all the buyers. The taste and quality

[21] An establishment is classified as "a regular user" when
ll the mashed potatoes served are made from the same
roduct.

factor also was mentioned rather frequently. All these answers were given by buyers who had been previously using the fresh form (either raw or precooked whole potatoes) for their mashed potatoes. The small number of buyers involved, however, limits the conclusions that can be drawn concerning the reasons why the regular users prefer flakes.

To determine some of the reasons why more of the establishments were not using potato flakes regularly, the non-users were asked "Why didn't you switch to potato flakes?". Of the 70 non-users contacted by flake salesmen (i.e. buyers who had the opportunity to purchase flakes but did not), 64 gave one or more reasons for not switching (Table 6).

The taste, texture, and quality of potato flakes were listed by 35 of the non-users as a reason for not using the product. Seven of the establishments had labor or equipment available for handling other forms of potatoes. In these cases the buyers felt that it would be uneconomical not to utilize them. The higher price of the flakes as compared to other forms was given by seven of the buyers (at the time, granules were 4.9 cents per equivalent pound while flakes were 6 cents per equivalent pound). Also, seven buyers felt that flakes did not "hold up" well on the serving line.

The answers given by the granule users in this group are also shown in Table 6. About half of the answers given by the 12 granule users indicated that granules were better than flakes in terms of taste, texture and quality. This seems to be the most important reason why the granule users did not

switch, although the evidence is limited.

Table 6 - Answers given by the non-user buyers (a) contacted by flake salesmen to the question, "Why didn't you switch to potato flakes?" (64 establishments, Detroit, 1959).

Reasons for Not Switching to Flakes	Number of Times Mentioned	
	All Buyers	Buyers Using Granules (d)
Taste, texture, quality of flakes (b)	35	5
Present labor and/or equipment set up for other forms of potatoes	7	-
Price-flakes too expensive compared to product now using	7	1
Flakes do not "hold up" well on serving line	7	1
Small volume of mashed potatoes used	5	-
Need raw for other types of potatoes served	5	-
Poor customer would object if aware they were eating a dehydrated product	2	-
Procedure too critical, too much chance for error	2	1
Other reasons	10	5
Total	80 (c)	13 (c)

a) Includes the 14 buyers using flakes on an emergency basis only.
b) This category includes 10 buyers who felt the present product they were using was of better quality than the flakes.
c) Some buyers gave more than one reason.
d) There are 12 buyers in this category. The remaining non-users are using raw or prepeeled whole for their mashed.

CHAPTER IV

ANALYSIS OF THE DEMONSTRATION-INTERVIEW TECHNIQUE

The information obtained in the 1959 study makes it ossible to evaluate the use of the demonstration-interview chnique in predicting the market potential of a new insti-tional product. This evaluation helps to point out some the weaknesses of the demonstration-interview technique were experienced in this particular study. These weak-esses in turn suggest possible improvements which may make his technique more effective.

ANALYSIS OF BUYERS' EXPECTATIONS CONCERNING THE USE OF FLAKES

One of the most noticeable things when comparing the ata from the two studies is the difference between the buyers' eactions to potato flakes in 1957 and their use of the prod-ct in 1959. It is recalled that the results of the 1957 tudy (Chapter II) indicated a high acceptance of potato lakes among the sample establishments.

Of the 141 establishments included in the second survey, 9 had been contacted by flake salesmen. Thus, 56 percent f the sample establishments had an opportunity to carry ut the course of action they expressed in the 1957 study (Table 7).

In 1957, 35 establishments in the group contacted by flake salesmen indicated that they would be immediate users of flakes, while an additonal 23 were potential users (based

on the market classifications used in 1957). However, in 1959 only nine establishments were using the flakes regularly, with an additional 14 using them for emergencies only (Table 7).

Table 7 - Comparison of the actual use of potato flakes in 1959 with the market classification made in 1957 (79 establishments contacted by flake salesmen, Detroit).

Market Classification (1957)	Total Number of Establishments (1957)	Number of Establishments Contacted (1959)	Percent of Establishments Contacted (1959)	Number of Establishments in 1959 Using	
				Flakes regularly	Flakes for Emergency Only (a)
Immediate	69	35	51	6	6
Potential	43	23	58	2	5
No Market	24	16	67	1	3
Total	141	79	56	9	14

a) An establishment is classified as an "emergency user" when flakes (or granules) are just used when the regular source of potatoes is not available.

This difference between buyers' expectations and actual courses of action concerning flakes can be further illustrated by referring to three specific questions asked in the 1957 study. In this study, after the interviewer had demonstrated the reconstitution of the flakes, the buyers were given an opportunity to taste the sample. They were then asked several questions concerning the quality of the product. One of these questions was, "Would potato flakes be of satisfactory quality for use in your establishment?". The response to this

question showed that 67 of the 79 buyers who were contacted by flake salesmen found flakes satisfactory (Table 8). It will be noted, however, that only nine of these 67 buyers were using the flakes regularly in 1959. An additional 14 were using them just on an emergency basis.

Table 8 - Comparison of actual use of potato flakes in 1959 with the answers given in 1957 to the question, "Would potato flakes be a satisfactory quality for use in your establishment?" (79 establishments contacted by flake salesmen, Detroit).

Market Classification (1957)	Number of Establishments Contacted (1959)	Opinion of Buyers (1957)			Number of Establishments in 1959 Using	
		Flakes Satisfactory	Flakes Unsatisfactory	Other	Flakes Regularly	Flakes for Emergency
		(Number of Establishments)				
Immediate	34	34	0	0	6	6
Potential	27	24	0	3	2	5
No Market	16	9	6	1	1	3
Total	77*	67	6	4	9	14

*One establishment in the immediate and one in the potential group did not answer this question.

To get a more direct estimate of the market potential for potato flakes, the buyers were asked if they would purchase flakes if available. While 20 buyers felt that their final decision would depend on the price of flakes and its substitutes (i.e. granules, raw, and prepeeled whole potatoes),

1 10 others gave various qualifying answers, 33 buyers ated that they would purchase the product (Table 9). Only of the 79 buyers contacted by flake salesmen stated definely that they would not buy flakes. Yet only 23 establishnts were using flakes in 1959, and 14 of these were just ergency users.

Another question used in 1957 to develop an estimate of e market potential for flakes was, "Would you be willing to y seven cents per pound for potato flakes on an equivalent resh-weight basis?".[22] As in the other two illustrations, nly a small number of the buyers were actually following heir expected course of action in 1959 (Table 10), even in ight of a more favorable price situation. Raw potato prices ere unusually high in the period before and during the second urvey. While the average price reported by the sample establishments (5.6 cents per equivalent pound) was still below hat reported for potato flakes (6.6 cents per equivalent ound), the price relationship between the two products was uch more favorable than occurred in the 1957 study. The verage price for raw potatoes reported in 1957 was 4.2 cents er equivalent pound, compared to the hypothetical price for otato flakes of seven cents upon which the question was ased. It would seem that the price situation in 1959 would ave encouraged a number of buyers to switch if they were

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[22]See footnote 16 in Chapter II for the reason for selecting this particular price for flakes.

Table 9 - Comparison of actual use of flakes in 1959 with the answers given in 1957 to the question, "Would you purchase potato flakes if they were on the market?" (79 establishments contacted by flake salesmen, Detroit).

Market Classification (1957)	Number of Establishments Contacted (1959)	Buyers Answers 1957				Number of Establishments in 1959 Using	
		Would Buy	Would Not Buy	Depends On Price	Other Qualifying Answers	Flakes Regularly	Flakes Emergency
		(Number of Establishments)					
Immediate	34	23	0	11	0	6	6
Potential	26	9	0	7	10	2	5
No Market	15	1	12	2	0	1	3
Totals	75 (a)	33	12	20	10	9	14

(a) One establishment in the immediate and one in the no market groups and two in the potential group did not answer this question in 1957.

Table 10 - Comparison between the actual use of potato flakes in 1959 and answers in 1957 to the question, "Would you be willing to pay seven cents per pound for potato flakes on an equivalent fresh-weight basis?" (79 establishments contacted by flake salesmen, Detroit).

Market Classification (1957)	Number of Establishments Contacted (1959)	Number of Buyers in 1959 who			Number of Establishments in 1959 Using	
		Would Pay 7¢	Would Not Pay 7¢	Would Buy On Relative Prices (a)	Flakes Regularly	Flakes Emergency
Immediate	34	27	1	6	6	6
Potential	27	6	13	8	2	5
No Market	11	4	5	2	1	3
Totals	72 (b)	37	19	16	9	14

(a) Buyers who stated the price they would be willing to pay was based on the relative price between raw and dehydrated, or would pay "the market price" for the dehydrated product.

(b) One establishment in the immediate and one in the potential market groups, and five in the no market group did not answer this question.

.ling to pay even a greater price premium for flakes in
57.

The accuracy of the market classification used in the
57 study might be questioned on the basis of the last three
bles (Tables 8, 9 and 10). This seems to be especially
parent for the immediate market classification since one
the criteria of this classification was that the establish-
nt would use flakes regularly (See p. 15). A quick glance
any one of these tables shows that only six of the 34
stablishments in the immediate group were actually using
lakes regularly. However, it will be shown below that this
iscrepency between the classification system and the actual
se pattern of flakes may have been caused by several factors
ther than the criteria selected for the classification
ystem.

. THE REASONS FOR THE DISCREPENCY BETWEEN BUYERS' EXPECTA-
TIONS IN 1957 AND THEIR USE OF FLAKES IN 1959

There are several factors which contribute to the differ-
nces between buyers' expectations concerning their use of
lakes in 1957 and their actual use of the product in 1959.
ne of these factors was the growing importance of granules
s a source of mashed potatoes (See Table 3). Since granules
re a close substitute for flakes as well as for raw potatoes
or the mashed form, it seems possible that the increase in
the use of granules may have affected the acceptance rate of
lakes.

Table 11 shows the number of establishments in the group

tacted by flake salesmen using granules in 1957 and in 1959. 1957, only 7.6 percent of the total establishments contacted flake salesmen were using granules regularly. Two years er, this figure increased to 13 percent. In the immediate rket group the number of establishments using granules regu-ly increased from 17 percent to 20 percent. In the poten-l market classification, none of the establishments were ng granules in 1957. In 1959, four establishments had tched to granules. Those establishments in the no market ssification made only a small move toward the acceptance granules.

le 11 - The usage of granules in 1957 and 1959 by those blishments contacted by flake salesmen (79 establishments, roit).

rket ssi-ation 57)	Number of Establish-ments (1959)	Number of Establishments Using Granules Regularly		Percent of Establishments Using Granules Regularly	
		1957	1959	1957	1959
diate	35	6	7	17.2	20.0
ntial	28	0	4	---	14.3
rket	16	0	1	---	6.3
otal	79	6	12	7.6	15.2

The question now comes to mind, why the large acceptance granules over flakes, especially since the results of the higan State University's Detroit Preference Panel showed ter consumer preference for mashed potatoes made from hes them from granules (See p. 11). Perhaps the most impor-

it reason is the fact that potato flakes had been on the mar-
t for only six months prior to the second survey. It is
ssible that many buyers had become granule users before
kes were available. Also, when the potato flake product
s introduced, most of the sales contacts were made by sales-
n from the manufacturer, rather than through the normal
de channels (i.e. the food brokers). The product was
ng sold under only two private labels. On the other hand,
nules had been on the market for some time. The sales
re made through normal sales channels, and the product was
ng sold under several national brands. Thus, the granules
d more time for acceptance and likely had wider sales con-
cts through the food brokers than the flakes had through
mpany salesmen. In addition, nothing was known concerning
e intensity or quality of the flake sales program other
an knowing that "contact" had been made.

The price relationship between granules and flakes also
vored the use of granules. At the time of the second survey,
e granules were 4.9 cents per equivalent pound while flakes
re 6.6 cents per equivalent pound. Some of the buyers,
ile preferring the flakes, may have used the granules be-
use of this price differential (seven of the non-users of
akes mentioned price as a reason for not using the product,
e Table 6).

There is also the possibility that a number of the buyers
y have been dissatisfied with the quality, texture and
ste of flakes through their failure to properly prepare

product. The bulk density of potato flakes is variable, ..., "it is possible that attempts by institutions to use ...metric measurements for recipes in reconstituting large ...tities could lead to varying textures of the mashed potatoes ... a resulting dissatisfaction with the product".[23] Such ...rors in preparation may account for part of the large number ... non-users of flakes mentioning taste, texture and quality ... reasons for not using the product (See Table 6).

Other contributing factors to the overall failure of ...yers to act as they had expected are:

1. The buyers' original opinions of potato flakes were ...med on the basis of a small sample carefully prepared by ... interviewer. Since the buyers did not have a chance to ...t the product in actual use over a period of time, they no ...ubt were not aware of some of the factors which may have ...fluenced their later decision to use flakes.

2. There was no way of checking the quality of the ...tato flake product that was used by the buyers who had ...ied flakes and rejected them. The samples used in the 1957 ...dy were carefully prepared under laboratory conditions. ...ther, the samples were individually packaged in a heat-...aled, trilaminate foil liner placed in a folding cardboard ...x. It is possible that under commercial manufacturing con-...itions the quality of the flakes was not as high as the

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[23]Craig, On. Cit., p. 22.

samples used in 1957. The commercial products may also have been subjected to improper handling and/or lengthy storage period which may have effected their quality.

3. It is possible that improvements may have been made in the technology of manufacturing granules which would have made them a closer competitor to flakes quality-wise.

4. It is possible that there was a tendency for the buyers to give answers that would please the interviewer, rather than expressing their true opinions.

5. Since the classification of each establishment was based on subjective as well as objective factors, it is possible that interviewer biases may have influenced the classification chosen for each of the establishments.

6. A number of the sample establishments have not yet been contacted by potato flake salesmen. Thus, some of the potential users have not yet had an opportunity to purchase the product.

7. Twenty-three establishments were not included in the 1959 study results. Of these 23 establishments, 15 were in the immediate market classification. Some of these establishments may have switched to flakes. It was found, however, that most of these establishments were small in size (Table 1). Thus, while the number of flake users may have been larger if these establishments had been included, it is questionable as to whether the total amount of flakes used would have been altered appreciably.

8. Tradition, habit, and prejudice are factors which

...der the adoption of many new products. Since potato flakes ...e a fairly radical change from raw potatoes, it might be ...ected that some buyers would hesitate to use them.

...N EVALUATION OF THE PREDICTIONS OF THE 1957 STUDY FOR ...DUCTS IN FLAKE

An evaluation of the estimates made in the 1957 study ...n be made from several different approaches. As was pre...iously noted, the market classifications developed were not ...ilable when used as a basis for estimating the use of ...tato flakes by individual establishments (Table 12). ...lle there were several factors which contributed to this ...ilure of the classification system, the fact that it did ...ll as a predictive tool for the use of flakes by individ...l establishments cannot be overlooked.

...ble 12 - The use of potato flakes by those establishments ...ntacted by flake salesmen (79 establishments, Detroit, 1959).

...rket ...ssifi...tion (1957)	Number of ...establish...ments (1959)	Number Users of Flakes 1959	
		Number of ...establish...ments	Percent of ...establish...ments
...mediate	35	6	17.2
...otential	28	2	7.1
...o Market	16	1	6.3
Total	79	9	11.4

When these classifications are interpreted as indicators
the market potential for all dehydrated mashed potatoes
s they were when the two predictive factors were developed
the 1957 study), then they more closely correspond with
e actual use of these products by the sample establishments
ble 13). In 1959, 37 percent of the establishments in the

ble 13 - The use of dehydrated mashed potato products by
ose establishments contacted by field salesmen (7) estab-
hments, Detroit, 1959).

Market Classification (1957)	Number of Establishments (1959)	Regular Users of all Dehydrated Products	
		Number of Establishments	Percent of Establishments
mediate	35	13	37.1
tential	28	6	21.4
Market	16	2	12.5
otal	79	21	26.6

diate market classification, and 21 percent of the estab-
hments in the potential market classification were using
n form of dehydrated mashed potato product regularly. Only
percent of the establishments in the no market classifica-
n were using these products regularly. However, these
ssifications are still fairly weak as predictors of the
e of dehydrated mashed potato products by individual estab-
hments. For example, according to the criteria of the

immediate market classification, all 35 of the establishments in this classification in Table 13 should be using a dehydrated product regularly for their mashed potatoes. This obviously is not the case. Thus, the classification system used still cannot be considered very accurate when used to predict the product use of individual establishments.

When considering the overall usage of dehydrated mashed potato products by the Detroit sample, the two predictive factors (which were derived from the market classification system) coincided more closely with the 1959 study results than did the predictions of product use by individual establishments. In 1957, it was found that only five percent of the potatoes used were the dehydrated type. Based on the 1957 study, it was estimated that the immediate market for dehydrated mashed potato products among public eating places would be 22 percent of the total potatoes used by the establishments in a given market; the potential market was estimated at 33 percent of this total amount. The data presented in Table 3 showed that the establishments in the Detroit sample were actually using 20 percent of the total potatoes in the dehydrated mashed potato form. While the current usage of delydrated mashed potato products in the sample is only 13 percent below the level predicted for the potential market, it is only two percent below the level predicted for the immediate market. When considering the fact that one of the dehydrated products (flakes) had been on the Detroit

market for only six months, it seems reasonable to conclude that the classification system, and the predictive factors developed from it, were fairly accurate indications of total product acceptance of dehydrated mashed potatoes in the sample market.

It should be emphasized that the purpose of the 1957 study was not to develop specific predictions of the market potentials for dehydrated mashed potato products (such predictions could not be expected because of the limitations involved). Rather, the goal was to develop indications of what the market potentials might be under a given set of assumptions and limitations.

C. POSSIBLE IMPROVEMENTS IN THE [illegible]

It was shown that there exists a considerable difference between the buyers' expected course of action concerning the use of flakes in 1957 and their actual use of the product in 1959. Several factors were given to account for this difference (p. 30). While a number of these factors were beyond the control of the researcher (e.g. the length of time flakes were on the market, contact by flake salesmen, the price relationship between flakes and granules, and the failure to survey all the establishments in both studies), there were some factors which might be partially eliminated or controlled.

Perhaps the most important of these factors is the situation under which the buyers made their evaluations of potato flakes. It would seem much more desireable to leave

supply of the product with the buyer and let him use it under actual operating conditions, rather than just demonstrating it. The buyer then has an opportunity to evaluate the product in terms of storage and handling, preparation, holding quality, and consumer reaction. He can also compare it to the present products that he may be using. In this way, he can be more fully aware of the new product's advantages and disadvantages, and of how well it will fit into his present operation. With this knowledge, he can say with more certainty whether he would use the product if available.

It is possible, however, that the quantity of the product may be limited, making it impossible to furnish establishments with a several day's supply (as was the case in the 1957 study). There is also an added expense involved in supplying samples to a large number of establishments. These two limitations may be serious drawbacks in using this approach - especially for smaller food manufacturers or for research projects with limited funds. Also, it is not known at this time if the added expense is justifiable in terms of increased response accuracy (or even if response accuracy is increased). A follow-up study of the results obtained when such a sample is supplied to establishments would help to clarify this point.

The demonstration-interview technique does not necessarily have to be used as it was in the 1957 study. It could possibly be used as a preliminary test somewhat like the mass consumer panel. Samples of the product (and perhaps of

similar products) could be taken to a number of establishments selected by the probability method. The purpose of this would be to determine the tentative acceptance and preference for the product. If a small supply of the product was left for each establishment to use, follow-up interviews may help to uncover difficulties encountered when it is used under actual operating conditions. This information would be useful in improving the product, its container, and its preparation methods. A study of this nature could then be followed by an institutional sales test, either among the same sample, or with different establishments in another probability sample. This procedure, while being more costly, may be of more value to the food manufacturer. The demonstration-interview phase would aid in product development, whereas the sales test might give a more accurate indication of market potential than was possible with the demonstration method alone.

CHAPTER V

ANALYSIS OF THE [illegible] MARKET FOR DEHYDRATED MASHED POTATO PRODUCTS

As a result of the 1957 and [illegible] studies, it is possible to develop new estimates on the present market potential for dehydrated mashed potato products in both the sample market and in the United States market. These estimates can then be used as a basis for suggesting possible changes in the marketing of dehydrated mashed potato products. It will be noticed that throughout the following discussion there is a heavy reliance placed on the use of the data developed from the market classification system used in the 1957 study. The shortcomings of this system were discussed in the previous chapter. These shortcomings will be inherent in the new estimates made of the present market potential for dehydrated mashed potato products. While this will tend to weaken the value of these new estimates, the trends established still should have a degree of validity.

[illegible]

1. [illegible]

In the Detroit sample, there were [illegible] establishments (44 percent) out of the [illegible] which had not been contacted by flake [illegible]. Of these [illegible] establishments, [illegible] were in the [illegible] market classification, [illegible] in the potential market classi-

lfication and eight in the no market classification. In terms of the total numbers of establishments in each of these three classifications, 49 percent of the immediate market, 42 percent of the potential market, and 33 percent of the no market had not yet been contacted by flake salesmen (Table 14).

On the basis of the market classification system, it would appear that 34 establishments would be willing to purchase flakes if contacted by a salesman (based on the number of establishments in the immediate market classification). The 20 establishments in the potential market classification would also be possible users of the product. On the basis of the buyers' answers in 1957 to the question "Would you purchase potato flakes if they were on the market?", it would appear that 30 establishments would be willing to purchase the product if contacted; 22 might be willing if the price was right; and four others would be interested at least to some extent (Table 14). However, in light of the discussion in the previous chapter, the actual course of action taken by individual buyers when contacted by flake salesmen may be quite different from what they expressed in 1957. Therefore, these figures on the possible number of establishments using flakes or other dehydrated products would be viewed only as a maximum possibility.

If it is true that those establishments currently using one or more prepared potato products are more likely to use potato flakes (this was found true for the tentative acceptance of flakes in 1957), then the market not yet contacted

ble 14 - The number of establishments not yet contacted by otato flake salesmen in relation to their market classification and their answers in 1957 to the question, "Would you urchase potato flakes if they were on the market?" (62 establishments, Detroit, 1958).

Market Classification (1957)	Number of Establishments (1958)	Percent of Establishments Not Contacted (1958)	Buyers' Answers in 1957 Would Would Depends Other Buy Not on Price Qualifying Buy (Number of Buyers) Answers			
Immediate	34	40	22	0	11	1
Potential	20	42	7	0	10	3
No Market	8	33	1	6	1	0
Total	62	44	30	6	22	4

y be fairly limited. Sixteen of the 62 establishments in he untapped market were using only 17 percent of total prened potato products (excluding flakes) being used per week y all the sample establishments (Table 13). On the other nd, 36 of the 79 establishments already contacted by flake alesmen were using 83 percent of the total prepared potato roducts (excluding flakes). If only nine establishments out f the later group switched to flakes on a regular basis, it y well be that even a smaller number may switch in the untapped market.

Another way of looking at the remaining market potential s to consider the size of the establishments not yet contacted y flake salesmen. Table 15 shows the size of these establishments in terms of the total amount of potatoes used per week.

by field salesmen as compared to those establishments already contacted (141 establishments, Detroit, 1950).

Classification	Amount of Each Prepared Potato Product Used per Week (Equivalent Cut)					Total Amount of Prepared Products Used Per Week
	Granules	Prepeeled Whole	Prepeeled French Fries	Frozen French Fries	Omelets	
Not Contacted	11.3	25.3	27.3	22.3	1.0	86.7
Contacted	223.7	61.7	32.8	112.0	2.0	435.2
Total	233.5	86.5	60.1	134.3	3.0	521.9

Classification	Percent of Total Amount of Each Prepared Potato Product Used Per Week					Percent of Total Prepared Products Used Per Week
	Granules	Prepeeled Whole	Prepeeled French Fries	Frozen French Fries	Omelets	
Not Contacted	5	29	45	17	33	17
Contacted	95	72	55	83	67	83
Total	100	100	100	100	100	100

[illegible]ty percent of these establishments fall in the "small" [illegible] when the basis is the total amount of potatoes used per [illegible].

Table 16 - Size of those establishments not yet contacted by flake salesmen in terms of the total amount of potatoes used per week (62 establishments, Detroit, 1955).

Size Class By Total Potatoes Used/Week (cwt)	Number of Establishments (1955)	Percent of Establishments (1955)	Market Classification (1957): Immediate Market	Potential Market	No Market
			(Number of Establishments)		
Small, 0-5.0	4[illegible]	70.5	20	17	6
Medium, 5.1-10.0	13	21.3	10	3	0
Large, 10.1-up	5	8.2	3	0	2
Total	61 (a)	100.0	33	20	8

(a) One establishment in the immediate market class did not report the amount of potatoes used.

On further examining this question of size related to the total amount of potatoes used per week, it is found that the establishments not yet contacted by flake salesmen used only [illegible] percent of the total potatoes used by all the sample establishments (Table 17). The immediate and potential market groups combined in this "uncontacted" market represent only [illegible] percent of the total potatoes used by all the sample establishments.

le 17 - The total amounts of potatoes and mashed potatoes
ed per week by those establishments not contacted by flaha
[illegible] compared to those already contacted (141 establish-
nts, Detroit, 1959).

ssification	Total of All Potatoes Used Per Week (Equivalent cwt)	Percent of Total of All Potatoes Used Per Week	Percent of Total of All Mashed Used Per Week
t Contacted	294.7	22.7	22.7
ntacted	968.5	77.3	77.3
Total	1263.2	100.0	100.0

2. The Market Potential for Dehydrated Mashed Potato Products from Public Eating Places in the Detroit Market

In the 1957 study, it was estimated that the immediate market for dehydrated mashed potato products would be 22 percent of all potatoes used; the potential market, 33 percent of all potatoes used. When comparing these two percentages with the present rate of usage of dehydrated products at 20 percent of the total potatoes used, there appears to be some grounds for expecting more establishments to be using these products in the future (assuming that these predictive factors are fairly reliable indicators of market acceptance for the sample market as a whole). Table 4 in Chapter III also indicated that the market for these products was far from being saturated (32 percent of the mashed potatoes used were made from dehydrated products).

Part of this growth could possibly come from the use of ...to flakes or other dehydrated mashed potato products by ...e group not yet contacted by flake salesmen. It was found ...t the establishments in the immediate market classification ...f the group not yet contacted by flake salesmen were using ...4.8 percent of the total amount of potatoes used by the entire ...ple (i.e. the 141 sample establishments); those in the ...ential market classification were using 4.8 percent of the ...tal. If it is assumed that 30 percent of the total potatoes ...d by a group of establishments are utilized in the mashed ...m, then (1) the establishments in the immediate market classi-...ation in the untapped market would be utilizing 5.8 percent ... the total amount of potatoes used by the entire sample in ...e mashed form,[24] and (2) the establishments in the potential ...ket classification in the untapped market would be utiliz-... 1.9 percent of the potatoes used by the entire sample in ...e mashed form.[25] If it is assumed that these establishments ... the untapped immediate market switched entirely to flakes ...n contacted, then the amount of dehydrated products used ... the entire sample would be increased by 5.8 percent. If ...is assumed that these establishments in both the untapped

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[24]Computed as follows: 14.8 percent (the portion of the ...l amount of potatoes used by the immediate group) X 39 ...ent (the portion of the total amount of potatoes used in ...e mashed form) = 5.8 percent.

[25]Computed as follows: 4.8 percent (the portion of the ...l amount of potatoes used by the potential group) X 39 ...ent (the portion of the total amount of potatoes used in ...e mashed form) = 1.9 percent.

diate and potential markets switched entirely to flakes
contacted, then the amount of dehydrated products used
the entire sample would be increased by 7.7 percent (5.8
cent plus 1.9 percent). If this latter figure was attained,
the amount of dehydrated mashed potato products used by
entire sample would be increased to 27.7 percent of the
al amount of potatoes used by all the sample establishments
igure 1).[25] This percentage would surpass that estimated
r the immediate market (22 percent), and would be close to
t estimated for the potential market (35 percent).

However, the chances of an immediate widespread change
potato flakes or other dehydrated products by these estab-
hments discussed above is highly unlikely. In analyzing
characteristics of the untapped market in the Detroit
ple, it was found that about half of the establishments
t contacted by flake salesmen indicated that they would
rchase the flake (keep in mind the large difference found
tween what buyers said in 1957 and what they were doing in
57). The size of these establishments, however, was found
be "small" in the majority of the cases (Table 15). In
ms of total mashed potato usage, they accounted for only
3 percent. Further, it was pointed out that a small propor-
ion of these establishments were using other prepared potato

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[25] Computed as follows: 20 percent (the current level of
age of dehydrated products) + 7.7 percent (the increase due
to use of dehydrated products by the immediate and potential
establishments in the untapped market) = 27.7 percent.

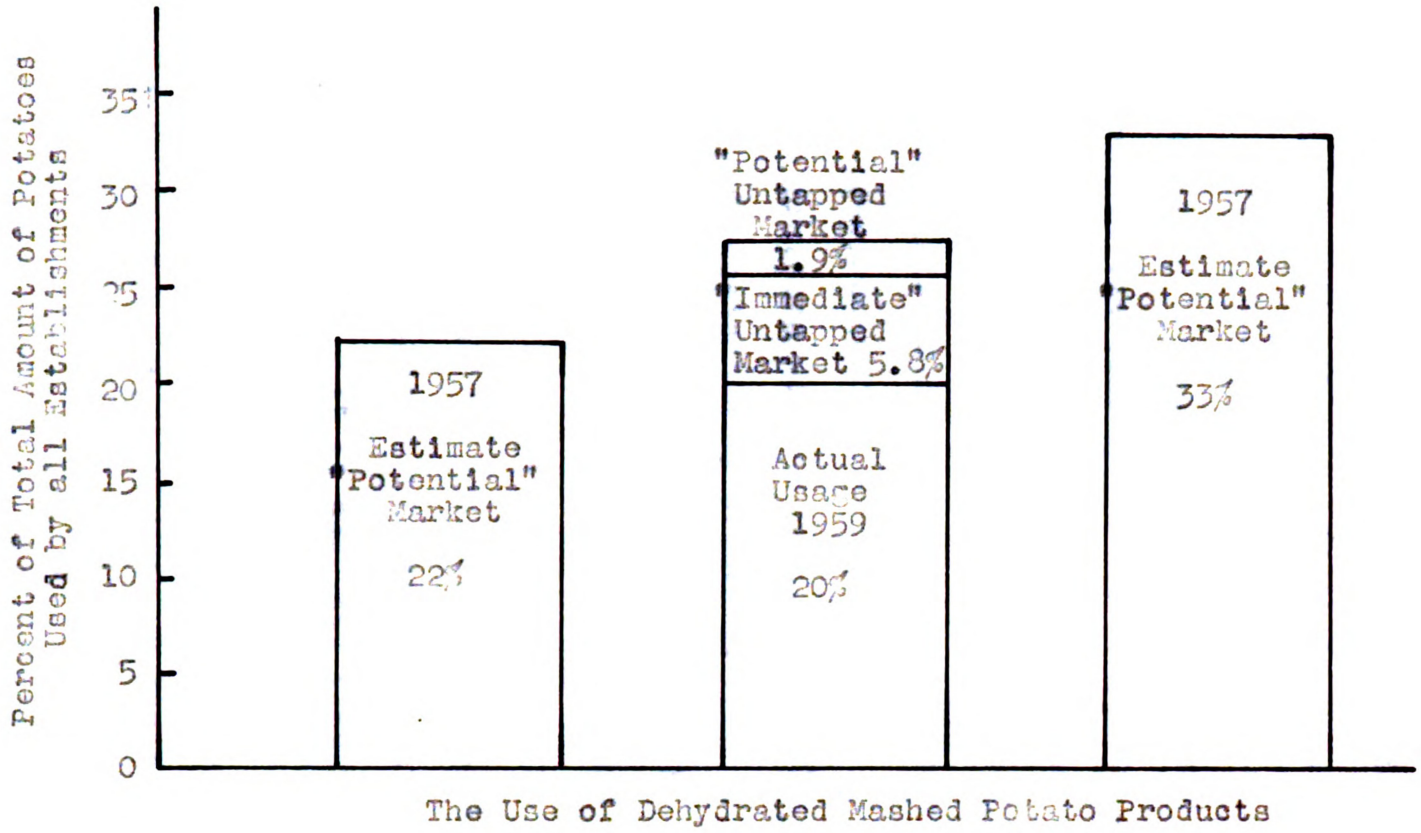

Figure 1 - The current use of dehydrated mashed potato products compared to the 1957 estimated use of these products, and the estimated increase through the use of these products by those establishments in the untapped market for flakes (expressed as percentages of the total amount of potatoes used by the sample, 141 establishments, Detroit).

products, which was found to be an important factor influencing the use of potato flakes.

Because of these characteristics, the firms selling potato flakes and other dehydrated products will find it more difficult and perhaps less profitable to sell their products to the remaining untapped market in the public eating trade. It takes more time to reach a large number of small accounts and the sales volume compared to the time that would be much less than when dealing with fewer, but larger, establishments. Also more time and effort is needed to sell buyers not currently using prepared potato products since it is first necessary to sell them on the idea of using prepared products. Thus, it is likely that not too much sales pressure will be put on many of these establishments not already contacted by salesmen.

When considering the entire Detroit sample market for all dehydrated products, it seems valid to conclude that the use of these products will increase at a decreasing rate in the future. As was shown above, the chances of a widespread change to flakes by those establishments not yet contacted by flake salesmen is not likely. It is expected that the expanded use of dehydrated mashed potato products will continue in the Detroit sample as more buyers accept the idea of using the dehydrated form. However, this rate of expansion will be more limited in the future than in the past since the untapped market consists mostly of those establishments who have a higher resistance to using prepared products. While some establishments will change to a dehydrated product because of

product improvements, changes in price relationships, and the further education of the buyers and customers, it will be at a much slower rate than was experienced between 1957 and 1959.

C. THE POTENTIAL MARKET FOR DEHYDRATED MASHED POTATO PRODUCTS IN THE UNITED STATES

1. National Output of Dehydrated Mashed Potato Products

Figure 2 shows the amount of dehydrated potato products produced in the United States since the 1955 crop year, as reported by the National Potato Council.[37] The output of both the granules and the flakes have been steadily increasing since they were introduced on the market. The smallest increase in the total production of dehydrated mashed potato products occurred in 1956 when granules were relatively new on the market. One year later the output increased by 100 percent and two years later by 137 percent. The estimates made for 1959 and 1960 indicate a continued strong trend toward increased output. This pattern of continued growth is also apparent for both the granules and the flakes.

2. Estimates of the Amounts of Dehydrated Mashed Potato Products Used by Public Eating Places in the United States and Projections of the Amounts Used in the Future

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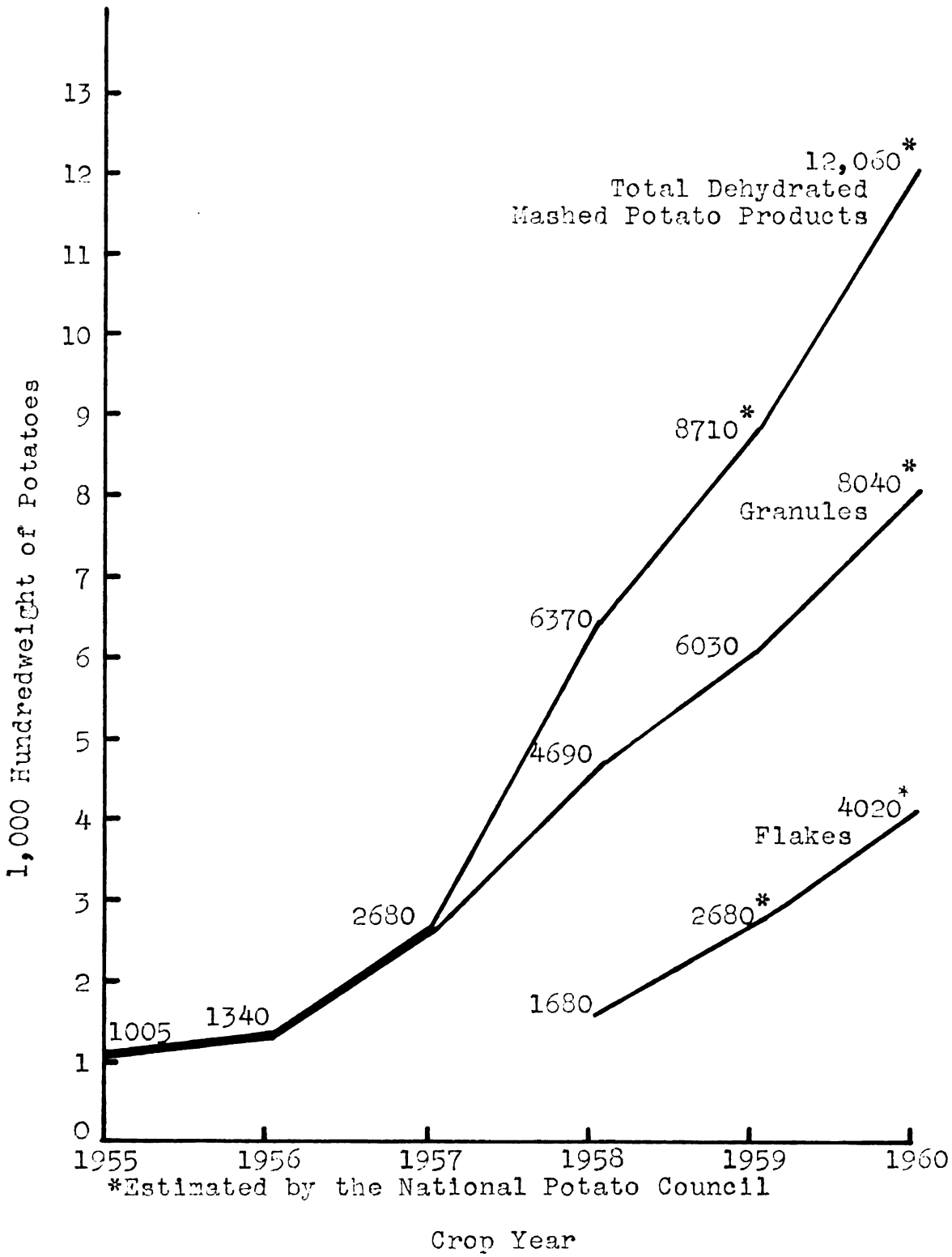
[37] While it is felt by some people that these figures tend to overestimate the output of dehydrated mashed potato products, they are still used in this study since they are the only available source of data including the 1956 crop year.



igure 2 - United States production of dehydrated mashed potato roducts for the 1955 to the 1960 crop years. (Source: National otato Council Mimeo on output of finished products; converted raw potato equivalents - 1 pound dehydrated equals 6.7 pounds aw).

There are some definite limitations encountered when attempting to expand the results of these two studies to national basis. The six limitations given in Chapter II in relation to the expansions made in the 1957 study still apply (p. 23). In addition, there is reason to believe that the promotion of potato flakes was stronger in Detroit than in some other market areas. Thus, the use of dehydrated potato products by the sample establishments may be higher than for other areas in the United States.

The data developed in these two surveys only applies to the 141 establishments in the sample, and the expansions made below should be viewed only with these limitations in mind.

On the basis of the results from the Detroit sample, estimates have been made on the size of the public eating establishment market for dehydrated mashed potato products in relation to the total output of these products. Predictions of the future market also have been made (See Figure 3). These estimates and predictions were computed as follows:

Estimated Market 1957:

a) Estimated total amount of potatoes used by public eating establishments in 1957 - 13,330,000 hundredweight.[23]

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[23]The estimated figure used here is based on the pounds of potatoes used per employee per year (based on the findings of the 1957 Detroit study) multiplied by the number of employees in the public eating places (Census of Business, 1954). The term "public eating place", as defined by the Census of Business, includes restaurants, hotels, cafeterias, and other establishments of this nature. Excluded are lunch counters, hospitals, and other public and private institutions which are part of the institutional trade. Therefore, this figure does not reflect the potato usage by the entire institutional trade, but it seems to be the best estimate currently available. Census of Business, U.S. Department of Commerce, Washington, D.C., 1954.

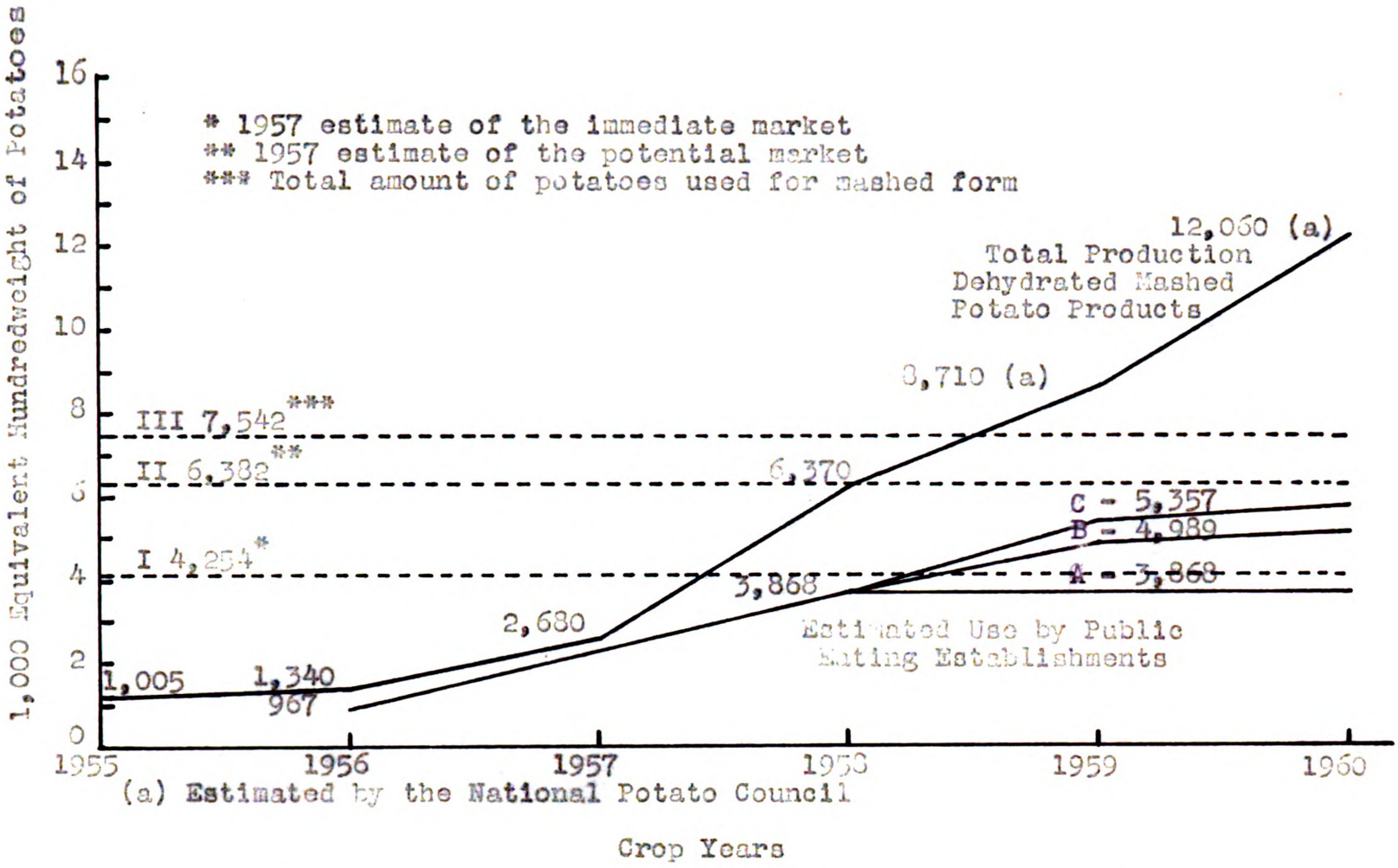

Figure 3 - United States production of dehydrated products used for mashed potatoes compared to estimated usage by public eating establishments based on Detroit studies.

(a) five percent of the total potatoes used in the sample were in the dehydrated form in 1957 (from Table 3).

(b) The estimated size of the 1957 market is 266,000 equivalent hundredweight of potatoes (five percent of 13,320,000 hundredweight).[2]

Estimated market 1959:

(a) Assume estimated amount of potatoes used by public eating establishments in 1959 - 13,333,000 hundredweight.

(b) Twenty percent of the total potatoes used in the sample were in the dehydrated form in 1959 (From Table 3).

(c) The estimated size of the 1959 market is 3,867,000 equivalent hundredweight of potatoes (20 percent of 13,333,000 hundredweight).

Estimated market 1960:

(a) Assume there is no substantial change in the use of dehydrated mashed potato products from 1959 to 1960 (Point A, Figure 3).

(b) Assume that in addition to the amount used in 1959, the immediate group in the untapped market will switch entirely to a dehydrated form:
13,333,000 hundredweight (the total amount of potatoes used by public eating establishments in 1957) multiplied by 5.3 percent (the percent of the total amount of potatoes this group uses in the mashed form, p. 55) equals 1,101,504 equivalent hundredweight of dehydrated mashed potato products (the additional amount of these products used by this group). This figure added to 3,867,300 equivalent hundredweight (amount used in 1959) equals 4,969,304 equivalent hundredweight (point B, Figure 3).

(c) Assume that in addition to the amount used in 1959, both the immediate and potential groups in the untapped market will switch entirely to a dehydrated form:
13,333,000 hundredweight (the total amount of potatoes used by public eating establishments in 1957) multiplied by 1.9 percent (the percent of the total amount of potatoes this group uses in the mashed form, p. 55) equals 337,448

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[2] It should be noted that while the first study was made in [illegible], the results apply to the amount of dehydrated products manufactured from the 1956 crop (this crop year is based on when new crop is available, rather than on a calendar year); the results of the 1959 survey will apply to the 1958 crop year.

equivalent hundredweight (amount used in 1939) plus 1,101,614 equivalent hundredweight (the additional amount used by the immediate group) equals 5,556,000 equivalent hundredweight (Point C, Figure 3).

3. Possible Trends in the Usage of Dehydrated Mashed Potato Products by Public Eating Establishments

The projections made for the 1939 crop year give some indication as to the possible trends in the usage of dehydrated mashed potatoes by public eating establishments. Point A on Figure 3 indicates one extreme. Here it is assumed that the usage of dehydrated products becomes relatively stabilized at 3,957,600 hundredweight. Point B indicates the amount that would be utilized if the immediate group in the untapped market for flakes switched entirely to a dehydrated form for their mashed potatoes (a total of 4,959,214 hundredweight). Point C indicates the amount that would be utilized if in addition to the immediate group, the potential group in the untapped market for flakes switched entirely to the dehydrated form (a total of 5,556,000 hundredweight). This would be the other extreme of possible growth. It is more likely that the total usage of dehydrated mashed potato products would fall somewhere between points A and C in the next year or so.

The above predictions were based on only the remaining market-potential for potato flakes in the Detroit sample, which may raise a question to the reliability of such a procedure. In the first place, no attempt was made to determine the remaining demand for granules. The use of this product is likely to continue to increase which will increase the

total amount of dehydrated products used by public eating establishments. There is also the possibility of additional sales of dehydrated mashed potato products to establishments previously contacted by flake selection. A second consideration is the fact that it was concluded that these establishments in the untapped market offered only a very limited source of market expansion. The use of this group as a basis for predicting the remaining market potential on a national basis thus becomes somewhat dubious. However, this is the only data available in the study from which it is possible to make a projection of possible growth. So while the exact figures developed for points A, B, and C in Figure 3 must be viewed with some reservation, they do give some indication of the market parameters that may be expected.

There are four other important points that should be noted in Figure 3:

1. By the end of the 1959 crop year the estimated public eating trade usage will have exceeded the immediate market for dehydrated mashed potato products as was estimated in the 1957 study (22 percent of the total potatoes used, see Level I).
2. The estimated public eating trade usage is moving closer to the potential market level as was predicted in the 1957 study (35 percent of the total potatoes used, see Level II).
3. The estimated total output of dehydrated mashed potato products will exceed the predicted potential market level of the public eating trade usage in the 1959 crop year.
4. If the estimate of total production for the 1959 crop year

is reached (and assuming no substantial change in the total amount of potatoes used by public eating places), then the industry's output will exceed the maximum amount of mashed potatoes used by the public eating trade (based on 30 percent, see Level III). The possibility of the trade usage reaching this later point is very remote since it would mean that all the mashed potatoes used by public eating places would be made with dehydrated products.

From all indications, it appears that the market for dehydrated mashed potato products among public eating establishments is reaching a period of moderate growth as compared with the previous period. While the market is not completely saturated, there are indications which suggest that the remaining market is fairly limited (based on the observations from the Detroit sample).

[illegible] MARKET POTENTIAL FOR WILL DEHYDRATED MASHED POTATO INDUSTRY

If the above assumptions and analysis of the dehydrated mashed potato market are reasonably accurate, then it appears that national production is increasing at a more rapid rate than the public eating trade market (Figure 3). This makes it necessary to examine other possible outlets for dehydrated mashed potato products.

One possibility is the remaining segment of the institutional trade which was not included in the analysis. It is not possible to ascertain the size or degree of market satur-

ation in this segment from the data and analysis used in this study. However, it seems plausible to assume that this segment too has reached a point of moderate growth. If this assumption is true, then the only other major outlet is the retail trade.

To date, the retail outlet for dehydrated mashed potatoes has been secondary in terms of the industry's total output. It is assumed that the residual between the total output curve and the curve estimating the use of dehydrated products by public eating places in Figure 3 represents the amount being utilized by the rest of the institutional trade, and the amount being sold at the retail level. With the widening of the gap between the two curves and the likelihood of only moderate growth in institutional usage, it becomes apparent that nearly all future increases in production must be absorbed by the retail trade.

In 19[illegible], Michigan State University conducted a retail sales test on dehydrated mashed potato products in seven stores in Detroit.[30] It was found that on the average, only 1.37 percent of the total potato and potato products sold in these stores were in the dehydrated form. The test results indicated a fairly high elasticity of demand for dehydrated mashed potatoes in response to price changes. For example, when the [illegible] price was used, 1.[illegible] percent of the total potatoes sold (equivalent fresh weight) were in the dehydrated form. With [illegible] percent reduction in the [illegible] price, sales increased to

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[30] Greig, Strand, and Larzelere, Op. Cit.

2.56 percent (a 68% increase in the amount sold).

In addition to pricing, the dehydrated mashed potato industry may find increased advertising and promotions helpful in expanding the retail demand. These dehydrated forms are generally of high quality.[31] It is necessary, however, that the consumers become aware of the product, and that they become accustomed to the idea of using an "instant" dehydrated product.

There is also the possibility of increasing sales through changes in the size of the retail container. As was mentioned earlier, the cost of the container is one of the major reasons why the retail price of flakes is high compared to the price of raw potatoes. It would seem worthwhile to investigate the acceptance of larger retail containers, passing the savings in packaging costs on to the consumer. This may help to make the retail price of flakes closer to that of raw potatoes, thus, increasing the competitive position of flakes. This in turn would increase the substitutability of flakes for raw potatoes,[32] and would expand the retail market potential for this product.

The industry, therefore, has two possible courses of action. It can curtail its expansion so that the output will

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[31] "Instant Mashed Potatoes", Consumer Reports, Volume 24, September 1959, pp. 466-467.

[32] The retail sales test conducted in 1958 showed no significant substitutability between flakes (and all dehydrated mashed potato products) and raw potatoes within the price levels of this particular test (See Greig, Strand, and Larzelere, op. cit., p. 22)

more closely coincide with the predicted moderate growth of the institutional market; or, if production is to be increased, it must put more effort into developing the retail market.

CHAPTER VI

SUMMARY AND CONCLUSIONS

There has been a general lag in the development of methods for pre-market testing new food products which are to be used by the institutional trade. Laboratory and home consumer panels can be used to determine the ultimate consumers' preferences for these products. However, methods need to be developed which will enable the food manufacturer to determine the degree of acceptance of his product will have with the institutional trade (i.e. with those who handle, prepare, and serve the product).

In 1957, Michigan State University conducted an institutional acceptance study of potato flakes - a new dehydrated mashed potato product which was not yet on the market. The method used was the demonstration-interview technique. A probability sample of 164 public eating places in Detroit was used for this study. A demonstration of the reconstitution of flakes into mashed potatoes was given to the buyer in each of the 164 establishments. After sampling the product, the buyers were asked questions designed to obtain their opinions on the product itself, and on the possible use of it in their establishments. Detailed information on the operation of each establishment and on the use of other potato products was also obtained during the demonstration-interviews. On the basis of the buyers' responses to the potato flakes, the sample establishments were classified as to frankfurt, potential, or no

market for the product. From the information developed in the study it was predicted that the immediate market for all dehydrated mashed potato products would be 22 percent of the total potatoes used by public eating places in a given market; the potential market was estimated at 33 percent of this total. At the time, it was found that only five percent of the total potatoes used by the sample establishments were the dehydrated form (granules). The results of the 1957 study indicated a high acceptance and market potential for flakes among the sample establishments.

In 1959, a second study was made of the same 164 establishments. The purpose of this study was to obtain information which would (1) aid in evaluating the demonstration-interview technique when used to predict the market potential of a new institutional food product, (2) determine the trends in the acceptance of dehydrated mashed potato products, and (3) be useful in developing suggestions for marketing these products in the future. It was possible to include only 141 of the original establishments in the results of the second study.

In comparing the data from these two studies, it was found that there had been a considerable change in the acceptance of all dehydrated mashed potato products. The use of granules had increased from five percent of the total potatoes used by the sample in 1957, to 19 percent in 1959 (there was a 399 percent increase in the amount used). The amount of flakes used accounted for only one percent of the total potatoes used by the sample. However, flakes had been on the

market for only approximately six months, while granules had been on the market for several years.

Only nine of the 141 establishments included in the second survey were using potato flakes regularly in 1959. When asked why they switched to flakes, most buyers enjoined the quickness of preparation, less labor required, and the taste of the product. When the non-users were asked why they didn't switch to flakes, the reason given most often (by the group who had been contacted by flake salesmen) was the taste, texture and quality of flakes.

When comparing the data from the two studies, the difference between the buyers' reactions to potato flakes in 1957 and their use of the product in 1959 is quite noticeable. Of the 141 establishments included in the 1959 study, 79 had been contacted by flake salesmen. Of this group, 55 establishments had been classed as an immediate market for flakes in 1957. It was found that only six of these 55 establishments were actually using flakes regularly in 1959. Of the 23 establishments in the potential market classification, only two were using flakes regularly. There was one establishment in the no market classification using flakes regularly. There were several reasons for this low acceptance of flakes by the sample establishments. One of the more important reasons was the very rapid increase in the use of granules. It appeared that many of those establishments who said they would use flakes in 1957 may have began using granules before potato flakes were on the market (flakes had been on the market for only

six months). Prices at the time of the second survey also favored the use of granules; granules being 1.7 cents per equivalent pound cheaper than flakes. While these reasons (and others given in Chapter IV) help to explain why the market classification system used in 1957 failed to predict the use of flakes by individual establishments, it should not be assumed that it would have been any more successful under other conditions. It must be concluded that under the set of conditions of this particular study, the demonstration-interview technique was weak in predicting the action of individual establishments. This also was found to be relatively true when the 1957 study results were interpreted as indicators of the market potential for all dehydrated mashed potato products among individual establishments.

Based on the data gathered in the 1957 study, it was predicted that the immediate market for dehydrated mashed potato products in the institutional trade would be 22 percent of the total potatoes used. The potential market would be 33 percent of the total. In 1959, it was found that the actual use of dehydrated mashed potato products by the sample establishments was 20 percent of the total potatoes used (over 400 percent increase in two years). The demonstration-interview technique (as used in this study) was more reliable in predicting the acceptance of the product in a given market, than in predicting the acceptance of the product by individual establishments within the market.

An evaluation of the results of the 1957 and 1959 studies

revealed several weaknesses of the demonstration-interview technique. Improvements can be made which will increase the accuracy and dependability of this technique when it is used to predict the acceptance of an institutional food product. Two such improvements may be (1) employing the sample establishments with a several days' supply, and (2) the use of this technique in combination with an institutional sales test. The latter approach may not only increase the accuracy of predicting market acceptance, but may also be a source of information that will lead to further product improvement.

The production of dehydrated mashed potato products has been increasing rapidly. In the period covered by the two studies (i.e. 1937-1939), the production in the United States has increased by 375 percent. It appears that the output of dehydrated mashed potato products will continue to increase at a rapid rate in the next few years (a 37 percent increase in the 1939 crop year and a 38 percent increase in the 1940 crop year were predicted by the National Potato Council). On the other hand, the results of these two studies indicated a considerable decrease in the future rate of growth in the use of dehydrated mashed potato products among public eating places in both the Detroit and United States markets. It also seems plausible to assume that the entire institutional trade has reached a period of only moderate growth in the use of these products.

In face of this [illegible] increase of output, and the predicted moderate increase in the use of dehydrated

products by the institutional trade, the [illegible] may be faced with potential over-production. The two alternatives to this problem are either the curtailment of production or a much more rapid expansion of the retail segment. A further kind of examination of this last alternative indicated that the industry may be able to expand the retail market through pricing, advertising and promotions (including consumer education), and changes in the size of the retail containers. If efforts are not made to increase this market, the past rate of growth will be greatly decreased, and future increases in production will have to be curtailed.

The results of this one study are not conclusive proof that the demonstration-interview technique is a "good" or "bad" method for determining institutional acceptance. Several factors peculiar to the study itself tended to reduce the technique's effectiveness as a prediction tool (i.e. the short time flakes had been on the market, the price relationship between flakes and granules, etc.). Further research is needed before it is conclusively known if this method of predicting the institutional market potential for new food products and the reliability and accuracy necessary for general use by the food industry, and other researchers in this area.

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