

7-1-1964

Consumer response to selected in-store promotion of cottage cheese

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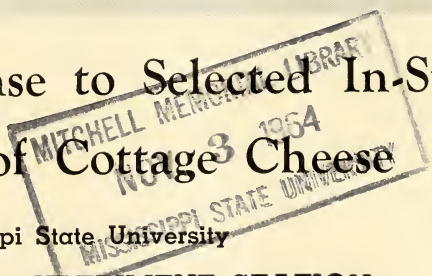
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Consumer Response to Selected In-Store Promotion of Cottage Cheese



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TABLE OF CONTENTS

	Page
Scope and methods	3
The families	4
Homemakers	6
Type of shopper	6
Marketing knowledge	7
Nutritional knowledge	7
Cottage cheese sales in experimental and control stores	8
Ideas about cost and nutritive value of cottage cheese	8
Attitudes toward cottage cheese	10
Use of cottage cheese versus use of other dairy products	11
Frequency of serving cottage cheese and kind served	12
Quality of cottage cheese	12
Last time purchased, amount, where, brand, any on hand now?	12
Ranking of creamed and non-fat cottage cheese according to calories	13
Ranking of cottage cheese as cheap source of protein	13
Pattern of serving dairy foods in parental home	14
Replies to statements about value of cottage cheese	14
Adults and children disliking cottage cheese and reasons	15
New recipes using cottage cheese since display period	15
Amount of cottage cheese used in past two weeks	16
Type of food information needed and preferred source	16
Recent food advertisements that stand out	17
Six things that influence choices most in buying food	17
Summary	17
Implications	19

ACKNOWLEDGEMENTS

The authors wish to thank the dairy companies who furnished materials and offered suggestions, particularly the Pet Milk Company; the officials of Krogers and A & P who furnished information and granted permission for displays; the managers of the six Kroger and four A & P stores in which there were displays; and the officials of the Jitney Jungle who gave information from ten stores that served as controls.

Thanks are also due to Dr. Robert Branson of the Texas Experiment station who read the manuscript and offered suggestions. The assistance and time given by the homemakers in the sample are much appreciated.

CONSUMER RESPONSE TO SELECTED IN-STORE PROMOTION OF COTTAGE CHEESE¹

By DOROTHY DICKINS AND
ALVIRDA F. JOHNSTON

Previous studies with dairy products² show the need for further information in which to base promotional programs to increase the use of cottage cheese. Any additional insight into the "hows" and "whys" of the homemaker's choices would be useful as a guide to the dairy industry in its efforts to stimulate family interest and to consumers in providing greater satisfaction per dollar spent on food.

Controlled market studies have been concerned for the most part with increasing sales of a particular product and with evaluating merchandising. It is the purpose of this study to determine the nature and scope of the consumer responses resulting from selected in-store promotional programs with cottage cheese.

Scope and Methods

The study was made in Jackson, Mississippi, a city of 147,480 according to the 1960 census of population.

A representative sample of customers from ten A & P and Kroger super-markets was drawn. Three of these stores were classified as having most of their customers in the higher socio-economic groups, five as having most customers classified in the middle socio-economic groups, and two as having most customers classified in the lower socio-economic groups.

Ten Jitney Jungle supermarkets and one Sunflower supermarket³ were selected as controls. Three of the Jitney Jungle stores were classified as having most of their customers in the higher socio-economic group, four as having most customers in the middle socio-economic group, and three as having customers in the lower socio-economic group.

Field workers stood outside each of the experimental stores in order to obtain the names and addresses of those

entering the store, Thursday afternoon May 9, 1963, Friday May 10, 1963, and Saturday May 11, 1963. Store managers stated that less shopping was done on the first three days of the week and that customers shopping these days usually also shopped the last three days.

Each store interviewer was instructed to obtain about 60 names on Thursday afternoon and 120 each on Friday and on Saturday, or one every three to four minutes. If two or more shoppers came together, the name of only one was taken.

The shopper was asked (1) if she, or he, shopped regularly at the store; (2) if she, or he, did less than half or more than half of all grocery shopping at the store; and (3) how often she, or he, shopped at the store. If the customer said she did more than half of the grocery shopping there and shopped there at least once every two weeks, her name and address were taken. If residence was more than one mile from the store, the name was later eliminated.

Approximately 300 names and addresses were recorded at each store. Those obtained at each store (300) were divided at random into two groups, one-half for the pre-test study and one-half for the post-test study; i.e. 150 each. Each of these groups was then divided at random into three sub-groups — the sample

¹This bulletin reports on the Mississippi sub-project of the Southern Regional Project, SM-13 Revised.

²Dorothy Dickins, "Responses of Southern Urban Homemakers to Newer Forms of Dairy Products", Southern Cooperative Series Bulletin 82, March 1962.

³Data from the Sunflower store with customers from the upper socio-economic bracket were not included since the operation of a bakery in connection with the store apparently affected the average size of sales and the amount of cottage cheese per check-out.

the first substitute, the second substitute.⁴

Goals were set to complete interviews with 50 customers from each store in the pre-test study, made before the cottage cheese display in the ten experimental stores, and from the same size sample in the post-test study, made after the display. Store managers were asked about the proportion of white to Negro customers and an attempt was made to have this same proportion in the sample.

Eligibility requirements for families included in the study were: (1) Family must have 2 or more members; (2) At least one meal a day must have been served in the home to some family member during the preceding week; and (3) There must be fewer than 5 boarders.

Five hundred and eighteen schedules were completed in the pre-test study, 517 in the post-test study. Appendix A shows the number of families contacted and the schedules completed in the pre-test and post-test studies.

Sixty-seven percent of the initial sample was completed in the pre-test study compared with 59 percent in the post-test study (see Appendix A). More families were on vacation, for example, during the post-test study, therefore a slightly larger number of substitute families was used in the post-test.

The time schedule followed in this study was as follows: (1) Conducted the pre-test survey from a sample of shoppers the weeks of May 20, 27, and June 3, 1963; (2) Set up a display in each of the 10 experimental supermarkets the last 2½ days of the weeks of June 10 and June 17, 1963; (3) Conducted a post-test survey from a sample of shoppers the weeks of July 8, 15, and 22, 1963; (4) Obtained records of sales of cottage cheese per check-out count from each of 10 experimental stores and 10 control stores during the weeks of May 27, June 3, June 10, and June 17, June 24, and July 1, 1963.

The displays were up for 2½ days during two weeks in each of the 10 experimental stores (see Figure 1). Centering the display was a colorful poster emphasizing the nutritive properties of cottage cheese (low calories and high protein) and showing how it could stretch the family dollar. Beneath the poster were cartons of the various brands of cottage cheese sold in the Jackson stores.

Display and other promotional material were developed cooperatively with Texas, South Carolina, and Alabama—the other three states involved in the in-store promotion studies.

The demonstrator at the display distributed leaflets entitled, "Stretch Your Food Dollar with Cottage Cheese Dishes" which contained recipes of cottage cheese dishes that had been tested by Mississippi home economists. The leaflet was prepared at the Mississippi Agricultural Experiment Station and was edited and published by the Texas Agricultural Experiment Station which cooperated with Mississippi in the series of cottage cheese promotion studies.

Certain questions common to all cooperators in both promotional and educational phases of the regional study were included in the schedule used for interviewing families in the pre- and post-test periods. The part of the schedule dealing with cottage cheese was developed at a meeting held by Mississippi and Texas investigators. Schedule questions were designed to measure changes, if any, in consumers' knowledge and attitudes towards the use of cottage cheese as a result of the promotion. The schedules in the two periods were similar except for added questions on the "after" schedule designed to determine the use of leaflets distributed at the time the display was in the supermarket.

The Families

Differences in race, in age, and in education of male heads of households and homemakers, in household size, in source

⁴The second substitute sample list was not used either in the pre- or post-test periods.



Figure 1. Cottage cheese display at a supermarket showing demonstrator distributing recipe pamphlets.

of income, and in per capita income of families in the pre- and post-surveys were studied by chi-square tests. Differences found were in no case significant. In other words, family characteristics in

the two surveys were similar. (See Appendix B, Tables 1-8).

A little more than 90 percent of the families in each sample were white families (Appendix B, Table 1). The mana-

gers of the supermarkets included explained that most Negroes traded in neighborhood stores where they felt more at home and could get credit. Moreover, supermarkets where Negroes did more trading did not have check-out counts on their cash registers. A record of check-out count was a necessary part of this study.

A little more than one-half of the male heads of households surveyed were under 45 years of age. Nearly one-half had had training beyond high school (Appendix B, Tables 2 and 3). About two-thirds of the homemakers were less than 45 years of age. Nearly two-fifths had had training beyond high school (Appendix B, Tables 4 and 5).

More households of families in both surveys consisted of 4 members than of any other number. A little more than one-fourth of the families in both groups had 5 or more members. (See Appendix B, Table 7).

In about two-thirds of the families only the male head of the household worked for pay. In about one-fourth of the households both the male head and the homemaker worked for pay. The situation in the other families varied considerably. In some only the homemaker earned income. Others were double families with male head and parents working for pay (Appendix B, Table 6).

Family incomes in this study on a per capita basis, ranged from under \$600 to over \$3200 per year (Appendix B, Table 8). The modal level was \$1200-1799 per person. However, slightly more than one-half had per capita incomes higher than \$1800.

Homemakers

A homemaker in this study was defined as the person most familiar with food-buying habits and preferences of the household. Since they were most familiar with buying habits and preferences, a description of them is essential for interpretation of the promotion program. Three characteristics of homemakers

which were given attention were: (1) Type of shoppers: (a) their shopping habits, whether impulsive, rational, or habitual; and (b) their varying attitude towards shopping. (2) Shoppers' marketing knowledge. (3) Shoppers' nutritional knowledge.

Type of shopper. Homemakers were asked 6 questions which would give insight about them as shoppers, whether impulsive, rational, or habitual (see Appendix C-1 for method of scoring replies to the 6 questions).

On the basis of replies to these 6 questions, homemakers were scored and classified into three groups.

	Per cent
Habitual (Score 16-22)	27
Rational (Score 23-26)	46
Impulsive (Score 27-33)	27

Relationships were studied to type of shopper, to race, age and education of homemaker, source of family income, per capita income, type of grocery in which traded (lower, middle, or upper socio-economic groups), and whether the family was in the pre- or post-survey (Appendix B, Table 9). A significant relationship was found between type or orientation of the homemaker and only two of these factors; i.e. source of income and type of grocery. In both cases this relationship was significant at the 1 percent level. There were more habitual shoppers among the group of women who were not gainfully employed, and more rational shoppers among those who were gainfully employed, and more rational and fewer habitual shoppers in stores of the middle socio-economic groups.

The homemaker was asked questions not only to determine the type of shopper she was, but also to find out the first, second, and third things she thought about in food shopping, how she felt about food shopping, and why.

Mentioned most often as things the homemaker thought about in food shopping were: economy, price, values — 22 percent; quality — 14 percent; menus, individual items, seasonal foods — 14

percent; family preferences — 9 percent; nutrition and diet — 8 percent; regular needs, quantity — 5 percent.

About three-fourths (72 percent) of the women said they liked shopping most or part of the time; about one-fourth (24 percent) said they disliked shopping most or part of the time. The remainder stated "don't mind" or gave no report.

The main reasons given for enjoying shopping most or part of the time were: (1) Like to see new food items and recipes in store; (2) Like to get out of house; like to see people; (3) Like to cook, like to eat; (4) It's something that has to be done.

Main reasons given for disliking shopping most or part of the time were: (1) Takes time needed for other things; (2) Budget control, have to shop for cheapest; (3) Children and other family members go along.

Marketing Knowledge. Homemakers' marketing knowledge score was based on two questions (see Appendix C-2). Marketing knowledge scores ranged from 0 through 14 with the following distribution.

	Number
Low knowledge (0-5)	299
Medium knowledge (6-10)	359
High knowledge (11-14)	377

The relationship was studied of marketing knowledge of homemaker to race, age of homemaker, education of homemaker, source of family income, per capita income, family composition, how homemaker feels about food shopping, the first thing she thinks about in food shopping, the type of grocery in which she traded (whether lower, middle, or upper socio-economic groups) and whether the family was in the pre- or the post-survey.

According to chi-square tests a significant relationship was found between marketing knowledge of the homemaker and all of these factors except two; i.e. how homemaker feels about food shopping and the first thing she thinks about in food shopping. White women, younger women, women with more schooling, wo-

men without gainful work, women from families with higher per capita income, women with children, and those shopping in stores where more customers were in the higher socio-economic groups, more often had high marketing knowledge scores.

Also, there were relatively more women in the post-survey scoring high on marketing knowledge.⁵ This fact may be partly related to the season of the post-survey; i.e. in July when there was much eating out of doors and many comments in local papers about grades of foods for "outdoor cooking."

Nutritional Knowledge. Homemakers' nutritional knowledge score was based on replies about words or phrases that best explain 4 areas of nutrition; i.e. protein, carbohydrates, fats, and vitamins (see Appendix C-3 for method of scoring and Appendix D, Table 1, for a summary of replies of homemakers).

Total scores for nutritional knowledge ranged from 0 through 36 with the following distribution:

	Number
Low knowledge (22 & under)	359
Medium knowledge (23-28)	363
High knowledge (29 & over)	313

A highly significant relationship was found between nutritional knowledge of homemaker and her age, education, and working away from home. Also, such a relationship existed between her nutritional knowledge and (1) income per capita and (2) type of grocery store in which she traded. Women scoring highest in nutritional knowledge were middle-aged (35-44 years) with more schooling, not gainfully employed, of higher income per capita, and trading in groceries with more of its customers of the higher socio-economic groups.

There were fewer homemakers in the post-study scoring low nutritional knowledge than in the pre-study (see Appendix B, Table 11). The cottage cheese store displays emphasized nutritive value of

⁵Appendix B Table 10.

cottage cheese, its good protein and low calories. However, it should be noted that in the warm weather of the post-survey local newspapers mentioned nutrition in connection with dieting quite frequently. There was no emphasis placed on cottage cheese in local newspapers.

Cottage Cheese Sales

In Experimental and Control Stores

Records of sales of Cottage cheese per check-out count were obtained from each of the 10 experimental stores and the 10 control stores during the weeks of May 27, June 3, June 10, June 17, June 24, and July 1. Displays were shown in experimental stores during weeks of June 10 and June 17. There was a significant difference in sales of cottage cheese between experimental and control stores of the upper socio-economic groups, and a highly significant difference between sales of cottage cheese in experimental and control stores of the middle and lower socio-economic groups (see Appendix D, Table 2). In other words, the store-promotion program increased the sale of cottage cheese per customer count in all three types of experimental stores, especially in stores with the majority of customers from the middle and lower socio-economic levels.

Figure 2 presents a chart showing the sales of cottage cheese for experimental and control stores during the course of the test. One hundred percent represents cottage cheese sales during the week of May 27.

Ideas About Cost and Nutritive Value of Cottage Cheese

Homemakers were told: "Ann is running low on her grocery money and she needs ideas about inexpensive foods to use in main dishes. Which three of the following would you suggest she consider?" Interviewees were handed a sheet with choices mentioned. The seven main dishes named received the following per centages of the 3105 votes:

	Per cent
Hamburger	26
Chicken	21
Macaroni and cheese	15
Baked pork and beans	15
Chuck roast	10
Weiners	7
Cottage cheese in a casserole or main dish salad	6 6

As will be noted, cottage cheese was selected by only a few homemakers as food to use in main dishes. This may in part be due to the fact that many were unfamiliar with the product as well as the cost. Differences in replies of women in the pre- and post-surveys were not statistically significant. However, the difference in replies of women from families with lower and higher per capita income was significant at the 5 percent level while the difference in replies of those shopping in the three types of groceries and those having different levels of nutritive knowledge was significant at the 1 percent level. Homemakers from families of higher income more often mentioned macaroni and cheese. Homemakers shopping in lower socio-economic stores more often mentioned weiners and baked pork and beans than those shopping in the upper socio-economic stores. Homemakers with little nutritional knowledge more often mentioned baked pork and beans and weiners than did those with highest knowledge. There was little difference in percentages of women with low and high nutritional knowledge who selected cottage cheese as the main dish.

Two questions were asked to learn what homemakers thought of the nutritive value of cottage cheese. One stated: "Sara is trying to lose weight. Which four of the following 7 foods should she consider?" In the other question the homemaker was asked to rank cottage cheese (1-9) according to protein, calcium, vitamin B², and iron.⁶

As will be noted, 4 oz. broiled chicken

⁶See Appendix C-1, Question 6, for ranking type of question and method of ranking. The same procedures as used in question 6 were used in this question.

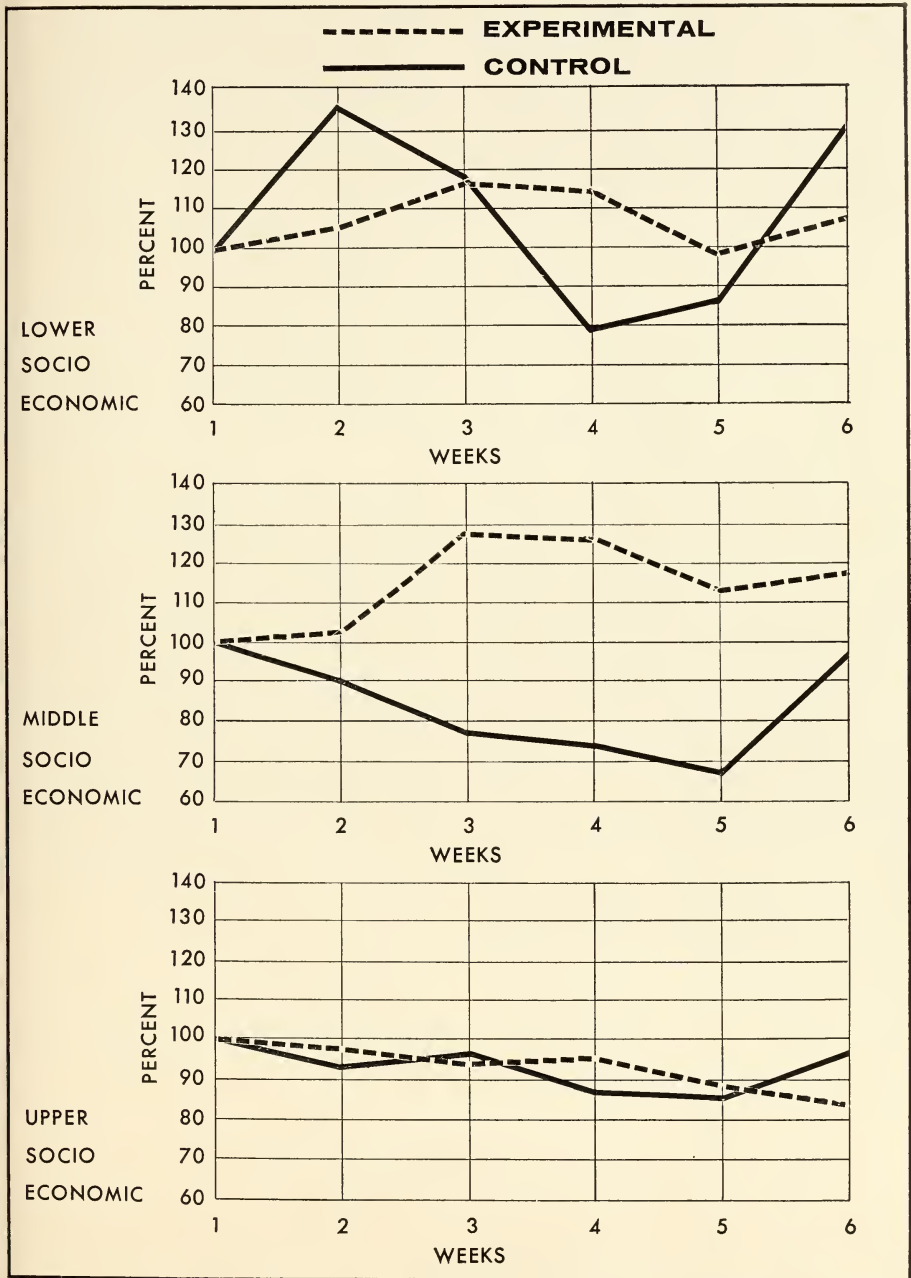


Figure 2. Comparisons of sales of cottage cheese during the 6-week period in control and experimental stores.

and $\frac{1}{2}$ c. non-fat cottage cheese were selected by more women as foods Sara, who was trying to lose weight, should consider.

	Percent
4 oz. broiled chicken	23
$\frac{1}{2}$ c. non-fat cottage cheese	23
1 c. fruit salad	18
$\frac{1}{4}$ lb. hamburger patty	18
2 deviled eggs	8
$\frac{1}{2}$ c. creamed cottage cheese	6
$\frac{1}{2}$ c. tuna fish salad	4

It is to be noted that $\frac{1}{2}$ cup of cottage cheese (non-fat) contains 98 calories, and $\frac{1}{2}$ cup of creamed cottage cheese only 22 calories more or 120 calories. Both deviled eggs and tuna fish salad made the usual way with mayonnaise would be higher in calories than creamed cottage cheese.

There was a highly significant difference between foods selected for Sara by women in the pre- and post-surveys (see Appendix D, Table 3). More women in the post-survey selected creamed cottage cheese. In the leaflet distributed in stores during the store display period, the fact was stressed that creamed cottage cheese is not high in calories.

Women with high nutritional knowledge more often selected hamburger and fruit salad than did those with low nutritional knowledge. Those with low nutritional knowledge more often selected deviled eggs and tuna fish salad than those with high nutritional knowledge. Women shopping in stores of the upper socio-economic group more often selected a hamburger patty than those shopping in stores of the lower socio-economic group.

Women shopping in stores of the upper socio-economic group more often chose creamed cottage cheese than those shopping in stores of the lower socio-economic group. On the other hand, those shopping in stores of the lower socio-economic group more often mentioned non-fat cottage cheese than those shopping in stores of the upper socio-economic group.

Homemakers knew more about the protein and calcium content of cottage cheese than about the Vitamin B² and iron content (Table 1). The median score for protein and calcium was 8 while that of vitamin B² was 5 and that of iron 3. More women in the post-survey correctly placed protein, calcium, and vitamin B² than in the pre-survey. In all three cases there was a significant or highly significant difference (see Appendix D, Tables 4-6). However, more in the pre-survey correctly placed iron (see Appendix D, Table 7). Also, more women in the group having high nutritional knowledge correctly ranked cottage cheese as to protein and calcium content. The difference was highly significant. More women with little nutritional knowledge correctly ranked vitamin B² content in cottage cheese. The percentage ranking iron in cottage cheese correctly was about the same for women with low as with high nutritional knowledge.

Attitudes Towards Cottage Cheese

Interviewees were asked: "What is the first thing that comes to your mind when I say cottage cheese?" The 1035 replied as follows:

Table 1. Cottage cheese ranked according to nutrients by 1035 homemakers.*
Per cent ranking cottage cheese (1-9)

Nutrient	No Info.	Per cent ranking cottage cheese (1-9)									Total No.
		1	2	3	4	5	6	7	8	9	
Protein	2	3	3	2	5	10	7	10	17	41	1035
Calcium	3	3	2	2	8	14	7	9	16	36	1035
Vitamin B ²	10	5	8	11	14	29	6	5	4	8	1035
Iron	7	20	14	11	9	15	6	5	5	8	1035

*1 signifies very low in the specified nutrient and 9 signifies very high in the specified nutrient.

	Per cent
Salads, fruits, vegetables	31
Diet, high protein, low in calories, husband on diet	25
Derogatory statements, such as don't like, ugh, tastes awful, looks awful	18
Other dairy products, as clabber, like buttermilk	9
Like it, delicious, appetizing	8
Nothing, no answer	4
Brand or type	3
Other foods to use cottage cheese with or on	2

	Per cent
Salads, fruits, vegetables	30
Diet, high protein, low calorie, husband on diet	24
Nothing, no answer	21
Derogatory statements, don't like	9
Like it, delicious, appetizing	7
Other dairy products, as clabber, like buttermilk	4
Other foods to use cottage cheese with	4
Brand or type	1

Most of the comments could be classified into three categories; (1) salads, fruits, vegetables; (2) diet, high protein, low calories; and (3) derogatory statements, such as don't like.

More of those in the post-survey than in the pre-survey gave comments about liking and disliking cottage cheese which may mean that more had tasted the product during or following the display (see Appendix D, Table 8).

Difference in type of store in which respondents traded and what comes in mind when say cottage cheese was highly significant. More women trading in stores of the upper socio-economic group mentioned salads, fruits, and vegetables, and liking cottage cheese than those trading in stores of the lower socio-economic group. On the other hand, more women trading in stores of the lower socio-economic group mentioned dairy products and bad taste.

The difference was highly significant between nutritional knowledge of homemaker and what comes to her mind when you say cottage cheese. More women with little nutritional knowledge replied "dieting, low calories, bad taste" than did women with high nutritional knowledge. On the other hand, more with high nutritional knowledge than with little knowledge replied, "salads, fruits, vegetables." and "like it, delicious".

Homemakers were asked a follow-up question; i.e., "What else comes to your mind when I say cottage cheese?" The 1035 replied to this question as follows:

About one-fifth, as will be noted, did not give a reply. The remainder replied similar to the way they replied to the question concerning the first thing that came to their minds.

Use of Cottage Cheese Versus Use of Other Dairy Products

Homemakers were asked what dairy products they had used during the last month. This was an open-end question; i.e., one in which the interviewee had to name those used without having a list of such products read to her. Table 2 shows percentage of homemakers from low, middle and high income families who reported use of specified products during past month. To be noted is the fact that there is greatest difference in use by low and middle income families and by middle and high income families in

Table 2. Percentage of homemakers who reported that they had used specified dairy products during the past month, classified by family income.*

Dairy products	Family Income		
	Low	Middle	High
Fluid milk	96	99	97
Yellow cheese	71	73	78
Ice cream	59	55	55
Other frozen desserts	4	3	4
Cottage cheese	28	38	50
Buttermilk	33	34	41
Canned milk	23	23	21
Butter	18	18	24
Whipping cream	13	17	20
Other kinds of cheese	7	11	17
Skim milk	5	7	10
Half and Half cream	2	6	13
Dry milk	8	7	6
Other	4	7	12

*Low income is under \$1200 per capita; middle income is \$1200-\$2499 per capita; and high income is \$2500 and over per capita.

cottage cheese than in any other dairy product.

Frequency of Serving Cottage Cheese and Kind Served

Every homemaker was asked how often she usually served cottage cheese. The frequencies reported are given by income group (Table 3).

As will be noted in the table, cottage cheese was served once a week or more in about one-fifth of the low income families. It was served this often in a little more than one-third of the high income families. In about one-fourth of the high income and nearly one-half the low income families it was never served.

Homemakers were questioned about the size of cottage cheese curd (large or small) as well as about the type of cottage cheese (creamed or non-fat) which they usually bought. Size of curd purchased was reported as follows:

	Per cent
Small curd	47
Large curd	16
Don't know	3
Other	2
Don't serve	32

There was a significant difference (at the 5 percent level) between size of curd and use in the pre- and post-survey period. More families reported the small curd in the post-survey period.

Over 70 percent of the reasons given for choosing size of curd were related to taste and/or family preferences. The small curd in other words was selected more often because it was "better tasting" or "liked by members of my family".

The 1035 women reported that the cottage cheese they usually bought was of the following types:

	Per cent
Creamed	43
Non-fat	13
Salad type	8
Other	1
Don't know	3
Don't serve	32

Table 3. Percentage of homemakers who reported various frequencies of serving cottage cheese, classified by family income.*

Frequency of serving	Family Income		
	Low	Middle	High
Once a week or more often	19	23	36
Two or three times a month	10	17	18
About once a month	12	11	11
A few times a year	16	15	11
Never	43	34	24

*See footnote Table 2.

Most of the cottage cheese purchased was creamed cottage cheese. There was, moreover, a highly significant difference (at the 1 percent level) between the type of cottage cheese purchased and the time of the survey. Many more in the post-survey purchased creamed cottage cheese. Relatively fewer reported use of non-fat cottage cheese during this period.

The three reasons most often given for buying the type they did were: (1) Preferred by family members; like flavor. (2) Food value; diet food; protein. (3) Better for specific recipes, as salads; like to make salads.

Quality of Cottage Cheese

To the question, "Can you always find the quality of cottage cheese you like in your food stores", only 29 women replied "No". Twenty-three of these gave irrelevant remarks, such as "don't carry my favorite brand". The other six mentioned factors related to quality, such as "not fresh". One mentioned opening the carton and smelling it, a practice that would be frowned on by Public Health officials. **Last Time Purchased, Amount, Where,**

Brand, Any on Hand Now?

Replies to the question concerning the last time interviewee bought cottage cheese are shown by income class in Table 4.

Replies to the question about when homemakers last bought cottage cheese were somewhat similar to the replies concerning frequency of serving cottage cheese. More high income families had served it this week or last week than had

Table 4. Percentage of homemakers who reported various frequencies of last time bought cottage cheese, classified by family income.*

Last time bought	Family income		
	Low	Middle	High
This week	11	17	24
Last week	20	28	33
3 - 7 weeks	12	9	11
8 weeks or more	12	9	7
Never buy; Don't remember	45	37	25

*See foot note Table 2.

low income families (57 percent as compared with 31 percent).

When asked how much they bought the last time they purchased cottage cheese, interviewees in post-survey reported more than those in the pre-survey (Table 5).

Ninety percent of those who bought cottage cheese said they had purchased the last bought at a grocery store. Nine percent said the last bought had been "delivered by dairy". One percent said they had purchased the last bought at a dairy. In other words, most cottage cheese had been purchased at a grocery store.

When questioned about the brand of cottage cheese said they had purchased it bought cottage cheese, about three-fourths of those who use it gave the name of a national brand. Eighteen percent of the families had cottage cheese on hand at the time of the visit.

Ranking of Creamed and Non-Fat Cottage Cheese According to Calories

In this study it was desired to learn whether or not the women regarded creamed cottage cheese as high in calories.⁷ They were asked to rank creamed cottage cheese and non-fat cottage cheese in a nine-point scale — according to their estimate of the calories they contain, number 1 being very low in cal-

ories and number 9 being very high (see Table 6).

Table 6. Creamed cottage cheese and non-fat cottage cheese ranked according to calorie content.

Rank in calories	Creamed cottage cheese	Non-fat cottage cheese
	Per cent	Per cent
1 (very low)	6	65
2	7	19
3	10	9
4	15	3
5	17	2
6	11	*
7	10	0
8	9	1
9 (very high)	13	*
0 **	2	1

*Less than .05 per cent.

**No information.

The women in the post-survey ranked creamed cottage cheese as well as non-fat cottage cheese lower in calories than those in the pre-survey. (See Appendix D, Tables 10 and 11).

Ranking of Cottage Cheese as Cheap Source of Protein

Homemakers were asked to rank weiners, cottage cheese, and hamburger according to cheapness as a source of protein.⁸ Cottage cheese was correctly ranked as the cheapest source and hamburger was next. Weiners were consider-

⁷One-half cup of creamed cottage cheese has 120 calories; one-half cup non-fat cottage cheese has 98 calories.

⁸One pound of non-fat cottage cheese contains 88.5 grams protein; 1 lb. hamburger, 73.0 grams protein; 1 lb. creamed cottage cheese, 69.9 grams protein; and 1 lb. weiners (frankfurters), 64.5 grams protein. At the time of this study costs per pound were as follows: 32c; 45c; 32c; and 49c. More in the post-study than in the pre-study ranked cottage cheese first as to cheapness as a source of protein. The difference between the two periods was significant at the 5 per cent level.

Table 5. Amount of cottage cheese bought by families in the pre- and post-surveys the last time cottage cheese was purchased.*

Amount bought	Pre-survey		Post-survey		Total No.
	No.	Per cent	No.	Per cent	
12 ounces	283	55	261	50	544
13 - 16 ounces	30	6	34	7	64
Over 16 ounces	28	5	52	10	80
Never use or no information	177	34	170	33	347

*Chi-square equals 8.482. Significant at the 5 per cent level.

Table 7. Ranking of cottage cheese, hamburger, and weiners as to cheapness as a protein source.

	Ranked as cheapest source	Ranked as second cheapest source	Ranked as third cheapest source
	Per cent	Per cent	Per cent
Cottage cheese	47	21	32
Hamburger	28	46	26
Weiners	25	33	42
Total No.*	1021	1021	1021

*Fourteen gave no information.

Table 8. Frequency of serving dairy products in parental home.

Item	Often	Sometimes	Never	Don't Remember
	Per cent	Per cent	Per cent	Per cent
Fluid milk (sweet)	95	3		
Cottage cheese	14	36	1	1
Buttermilk	63	30	39	11
Clabber	28	30	6	1
Cocoa or chocolate mlk	52	28	34	10
		40	5	3

Table 9. Statements about cottage cheese which homemakers think are most nearly correct.

Statements	To keep good figure should not eat cottage cheese	Cottage cheese is constipating	Creamed cottage cheese supplies same nutrients as whole milk
	Per cent	Per cent	Per cent
That's completely true	4	3	45
That's partly true	9	19	39
That's completely false	65	45	4
That's partly false	19	19	5
Undecided	3	14	7
Total No.	1035	1035	1035

ed the most expensive source of protein.

As will be noted from Table 7, slightly less than half of the women ranked each of the foods correctly as to cheapness as a protein source. Forty-seven percent ranked cottage cheese as the cheapest source, 46 percent ranked hamburger as second cheapest source, and 42 percent ranked weiners as the third cheapest source.

Patterns of Serving Dairy Foods in Parental Home

When asked about the frequency that mother served 5 dairy foods (whole milk, cottage cheese, buttermilk, clabber, and cocoa or chocolate milk) when interviewee lived at home, fewer women answered "often" and more answered "never" to cottage cheese than to the other four dairy foods named (table 8).

The pattern of serving cottage cheese in the parental home was rather similar to that of serving clabber (Table 8). Also, the proportion who stated that they ate cottage cheese and clabber when served in the parental home was similar (Appendix D, Table 11). Cottage cheese is similar to clabber. In fact, it is clabber with much of the whey removed.

Replies to Statement About Value of Cottage Cheese

The three statements were: (1) If you want to keep a good figure you should not eat cottage cheese; (2) Cottage cheese is constipating; (3) Creamed cottage cheese supplies the same nutrients as whole milk.

Interviewees were asked if they thought each of the three statements was

true or false. If their reply was true, then they were asked if the statement was completely or partly true. If their reply was false, then they were asked if the statement was completely or partly false. When the interviewee would not express herself she was classified as "undecided".

The majority of women knew the first two statements were false and the third statement was true (Table 9).

It was decided to test this method of getting homemaker's knowledge about cottage cheese with the method of having her rank her opinion on a 9-point scale. In this latter method she was read the statement, such as "cottage cheese is constipating" and asked to check block 1 or 2 if she thought milk was very constipating and block 8 or 9 if she thought it **not at all** constipating. Checking block 5 would mean she was more or less neutral; that she thought cottage cheese neither constipating or not constipating. The scale questions appeared in the first part of the schedule; the other questions (true, false, etc.) in the latter part of the schedule.

A statistical study was made comparing answers to the 3 questions by the two methods (statements versus scale). At a given level of education of homemaker there was no significant difference in the average answer in the two different ways of asking the questions. This was also the case at a given level of nutritional knowledge and in per capita income.

The scale-type question could be checked by the interviewee and did not take as much thought at the statement-type question. It was also easier to administer.

Adults and Children Disliking Cottage Cheese and Reasons

In 53 percent of the households there were no adults who disliked cottage cheese. In 22 percent of the families only one adult disliked cottage cheese; in 23 percent, two adults disliked it; and in 2

percent of the families, 3 or 4 adults disliked it. The reason most commonly given for adults disliking related to its taste which was described as "tastes bad", "not sweet enough", "just doesn't like".

Twenty-seven percent of the families had one or more children who disliked cottage cheese. The percentage of children disliking cottage cheese seemed to increase with age up to 12 years and then to decrease. This percentage was as follows:

Children	Per cent disliking
0 - 11 months	1
1 - 2 years	4
3 - 6 years	12
7 - 12 years	16
13 - 18 years	12

It may be that cottage cheese has certain appeals for the teen-ager that it does not have for the pre-adolescent. As in the case of adults, the main reason for disliking was the taste of the cottage cheese with reasons such as, "don't like it", "tastes bad," "tastes raw," "sour taste".

New Recipes Using Cottage Cheese Since Display Period

Eighty-four of the 1035 women reported they had tried new recipes using cottage cheese within the past few weeks. There was a significant difference between the percentage trying new recipes in the pre- and post-surveys. More who were interviewed in the post-survey had tried them.

Those who tried new recipes using cottage cheese were asked where they got the recipes. When a pamphlet or store promotion or display was mentioned the interviewer probed to determine whether or not it was our leaflet. The following number reported these sources: a pamphlet, 33; friends and/or relatives, 23; store promotion or display, 11; magazines, 6; newspapers, 2; and other, 9. The 84 recipes were: salads, 44; desserts, 20; main dishes, 15; spreads or dips, 3; other, 2. Ten women mentioned 2 new dishes with cottage cheese tried. These second dishes were salads by 5;

Table 10. Type of food information prefer to get from varying sources.

Type of food information	Radio	TV	Newspapers	Magazines	Newsletters	Meetings	Friends and relatives	Pamphlets	Store promotions	Other
	%	%	%	%	%	%	%	%	%	%
Food purchasing	7	23	35	5	4	2	3	3	6	1
Food preparation	1	7	3	19	3	5	19	10	3	3
Meal planning	1	4	2	8	1	3	12	10	5	14
Food purchasing & preparation	*	5	20	10	*	*	8	1	1	*
Food purchasing & meal planning	*	3	7	3	*	1	1	1	*	*
Food preparation & meal planning	0	1	1	15	*	1	9	2	*	5
All of these	*	3	11	11	*	0	7	1	1	*
Not mentioned	90	54	21	29	91	87	41	72	84	76

*Less than .05 per cent.

desserts by 4; and a main dish by one. Sources of these second recipes were: pamphlet, 4; friends or relatives, 3; store promotion, 1; magazine, 1; and other, 1.

Of the 94 new recipes tried 37 (or 39 percent) were apparently from our pamphlet. The families in the pre-survey had tried 34 new recipes; those in the post-survey, 60 new recipes.

Amount of Cottage Cheese Used Past Two Weeks

A significant difference was not found between amount of cottage cheese used in the past two weeks for the pre-survey and the post-survey. Amount purchased when last bought seems to measure better the differences in the pre- and post-study periods. This is probably related to the fact that cottage cheese is not a food used as often as once every two weeks by the majority of families.

A highly significant difference (at the 1 percent level), however, was found in the amount of cottage cheese used in the past two weeks and nutritional knowledge of homemakers. Those with homemakers of high nutritional knowledge had used larger amounts of cottage cheese than those with homemakers of low nutritional knowledge.

Type of Food Information Needed and Preferred Source

When asked if they felt a need for more information on specified items, women reported such needs as follows.*

Items	Per cent
Food value	12
Meal planning	14
Food preparation	9
Food selection	10
All of these	37
Other	1
None of these	32

*Some checked more than one.

A significant relationship was not found between any of these items checked and nutritional knowledge of homemaker.

In Table 10 is shown how women would prefer to get the various types of information. As will be noted, newspapers,

magazines, friends and relatives, television, and pamphlets were the 5 sources most often mentioned. For food purchasing more preferred newspapers; for food preparation, friends and relatives; for meal planning, friends and relatives and pamphlets.

Recent Food Advertisements Stand Out

When asked to name recent food advertisements that they had heard about or seen that stood out in their minds, only 506 women could name one. Products advertised named by more women included dairy products, 17 percent; dessert (other than gelatin), 12 percent; meats, 9 percent; rice, spaghetti, cereals, 9 percent; beverages, 9 percent. Other products named varied widely from bakery products to nuts. Some named no particular product, rather a brand of a product.

The advertisement of 61 percent of these foods had been seen on television, 18 percent in magazines, 13 percent in newspapers, and 6 percent in a store display.

When asked to describe the advertisement a number mentioned 2 or 3 things, but most mentioned the product placed in a pretty setting (19 percent). Other points mentioned by from 12 to 17 percent were: Person preparing recipes; extra features added to product; children eating or admiring product; variety in product; animated picture; novel situation; picture use of new product. It would thus seem that in the advertisements remembered there were action, novelty, and/or something to see.

When asked what attracted their attention the women mentioned appearance of product (13 percent) and appeal to appetite, tasty-looking (13 percent) equally as often. Other points attracting attention mentioned by from 7 to 11 percent were: price was low; children or child in advertisement; jingle song, music; bright colors in the picture; novel

idea, amusing situation; different sound effects.

Here, too, action, novelty, and/or something to see was what attracted attention.

Six Things That Influence Choice Most in Buying Food

Homemakers were given a list of 15 items to pick out the six that they thought had greatest influence in buying food. The following percentage of the 6210 items selected fell in these categories:

	Per cent
Neighbors and friends	18
Pamphlets	12
Articles about foods in newspapers	11
Food advertisements in magazines	9
Food store displays	9
Food ads on TV	8
Labels on foods on display	6
Special foods ads of a single product in newspapers	6
Food programs on TV other than ads	6
Food store ads in newspapers	5
Food ads in magazines	5
All other	11

The foregoing summary shows that neighbors and friends; pamphlets, and articles about foods in newspapers were the three items most often checked. One finds from this tabulation, however, that no one influence is overwhelmingly important; that there are many influences on choices in buying food. Advertising should not be limited to any one type.

In Appendix D, Table 12, is shown items named as first or most important of the 15 items; second in importance, third, etc. Named as most important by the largest percentage of homemakers was: food store ads in newspapers. Of second, third, and fourth importance were neighbors and friends; of fifth importance was food advertisements in magazines; and of sixth importance was recipes distributed at food stores.

Summary

This study is part of the Southern Region investigation of "Consumer Responses to Food Promotion Programs". It was the purpose of this phase of the study to determine the nature and scope of con-

sumer responses resulting from selected in-store promotional programs with cottage cheese. Texas agricultural economists cooperated with Mississippi home economists on this phase of the study.

A representative sample of customers from ten supermarkets in Jackson, Mississippi, was drawn for the experimental study. Ten other supermarkets were selected as controls. Markets were classified according to the socio-economic level (high, middle, or low) of the majority of their customers.

Only customers who said they did more than half of their grocery shopping at selected markets, who shopped there at least once every two weeks, and who lived no farther than a mile from this market, were included in the sample.

The time schedule followed in this study was as follows: (1) Conducted pre-test survey the weeks of May 20, 27, and June 3, 1963. (2) Set up a display in each of the 10 experimental supermarkets during the weeks of June 10, and June 17, 1963. (3) Conducted a post-test survey from a sample of shoppers the weeks of July 8, 15, and 22, 1963. (4) Obtained records of sales of cottage cheese per check-out count from each of 10 experimental stores and 10 control stores during the weeks of May 27, June 3, June 10, June 17, June 24, and July 1, 1963.

Centering the display was a colorful poster emphasizing the nutritive properties of cottage cheese and showing how its use could stretch the family dollar. The demonstrator at the display distributed recipe pamphlets, "Stretch Your Food Dollar with Cottage Cheese Dishes".

Family characteristics of those in the pre- and post-surveys were similar. The three characteristics of homemakers given attention in this study were (1) type of shopper, whether habitual, rational or impulsive; (2) marketing knowledge; and (3) nutritional knowledge.

According to chi-square tests the relationship between the period of the sur-

vey and the type of shopper was not significant; the relationship between the period of survey and marketing knowledge was significant at the one percent level; and the relationship between period of survey and nutritional knowledge was significant at the five percent level. More homemakers in the post-survey scoring high marketing and nutritional knowledge were apparently not altogether related to the store-promotion program, since Jackson newspapers carried much educational information on marketing and nutrition during July. It was not directed towards cottage cheese, however.

The store-promotion program increased the sale of cottage cheese per customer count in all three types of experimental stores, especially in stores with the majority of customers from the middle and lower socio-economic levels.

When families were classified by income there was a greater variation in the use of cottage cheese than in the use of other dairy products. Cottage cheese was never served in about one-fourth of the higher income families and in about one-half of the lower income families.

Creamed cottage cheese with small curd was the type reported used by most families. There was a highly significant difference between the type of cottage cheese purchased and the time of the survey. Many more in the post-survey purchased creamed cottage cheese.

Only 29 women replied "No" to the question, "Can you always find the quality of cottage cheese you like in your food stores?"

There was a significant difference in amount of cottage cheese purchased by those in the pre- and post-surveys. Those in the post-survey had purchased larger quantities. Ninety percent of those who bought cottage cheese had purchased it from a grocery.

In 47 percent of the households there were one or more adults who disliked cottage cheese. In 27 percent of the households one or more children disliked cot-

tage cheese. Reasons for disliking were similar for both groups — "Tastes bad", "don't like", "sour taste".

More of those in the post-survey than in the pre-survey gave comments about liking and disliking cottage cheese which may mean that more had tasted the product during or following the display.

When asked to rank weiners, cottage cheese, and hamburger according to cheapness as a source of protein, 47 percent of the homemakers giving information ranked cottage cheese correctly as the cheapest source.

The women in the post-survey ranked both creamed cottage cheese and non-fat cottage cheese lower in calories than those in the pre-survey.

There was a highly significant difference between food selected for Sara (who was trying to lose weight) by women in the pre- and post-surveys. More women in the post-survey selected creamed cottage cheese. In the leaflet distributed in stores during the display the fact was stressed that creamed cottage cheese is not high in calories.

More women in the post-survey than in the pre-survey correctly ranked protein, calcium, and vitamin B².

Two methods were used to get homemakers' responses to 3 statements about cottage cheese (the true and false method and that of ranking one's opinion according to a nine-point scale). There was no significant difference in the average answer, but the scale-type question is easier to administer.

Of the 94 new recipes tried using cottage cheese 37 (or 39 percent) were apparently from the leaflet distributed at the store display. The families in the pre-survey had tried 34 new recipes; those in the post-survey, 60 new recipes.

For food purchasing more women preferred newspapers as a source of information; for food preparation they preferred friends and relatives; and for meal planning, friends and relatives and pamphlets.

In advertisements remembered there was action, novelty, and/or something to see.

When asked to check 6 items from a list of 15 items that they thought had greatest influence on their choice in buying food, the following three were most often checked; friends, pamphlets, and articles about the foods in newspapers.

Implications

It would seem that this report has some important implications for home economists and the dairy industry in their educational and dairy-products activities with families. Some implications for home economists are:

(1) Response is greater from families in which homemakers rate high in marketing and nutritional knowledge. This shows the importance of strong nutrition and consumer-education programs.

(2) Much food information is obtained from friends and relatives. Emphasis, therefore, should not only be on how to use the educational material on one's own family, but also on techniques for passing it on to friends and relatives.

(3) It would seem that many homemakers are unaware of quality factors in cottage cheese. This unawareness may be one factor in the number who reported disliking it.

(4) Lower and middle income groups need more education regarding the importance of the use and nutritive value of cottage cheese.

Some implications for the dairy industry and for processors and handlers of cottage cheese are:

(1) A good display showing the nutritive value and low cost of cottage cheese increased sales. Families bought larger quantities at a time.

(2) The pamphlet distributed at the display changed opinions, especially about calorie-content of creamed cottage cheese. Maybe the name should be changed since this name suggests high calories and creamed cottage cheese is not a high-calorie food.

(3) More than half of the new recipes using cottage cheese and reported in the post-study came from the pamphlet distributed at the display. This shows that homemakers welcome new recipes using cottage cheese.

(4) It is always to be held in mind that there are many factors that influence choices in buying food. No one of

them can do all the work.

(5) Promotional efforts might well be aimed at the lower income groups. Promotion in stores in neighborhoods of low and middle class families were found to be worth while.

(6) This study shows that in effective advertising there must be action, novelty, and/or something to see.

APPENDIX A

I. Families contacted and schedules completed in the pre-test.

Families in sample	524	Families first substitute	550
Schedules completed sample	346	Schedules completed first substitute	172
Schedules not completed sample ...	178	Schedules not completed	19
		Names not needed	359

Reasons for 197 Not Completed

Interviewee ill or hard of hearing	8
Lived too far away (more than one mile)	20
Not eligible	35
Interviewer couldn't locate dwelling	15
Not at home after three visits	82
Other	9
Refused, would not cooperate	27
Family on two store lists	1
	<hr/>
	TOTAL 197

II. Families contacted and schedules completed in the post-test.

Families in sample	524	Families first substitute	514
Schedules completed sample	304	Schedules completed first substitute	213
Schedules not completed sample ...	220	Schedules not completed	20
		Names not needed	281

Reasons for 240 Not Completed

Interviewee ill, or hard of hearing	7
Lived too far away (one mile or more)	17
Not eligible	27
Interviewer couldn't locate dwelling	21
Not at home after three visits	135
Other	14
Refused, would not cooperate	16
Family on two store lists	3

APPENDIX B
Description of families in pre- and post-test studies

Table 1. Families in pre and post-studies, classified by race*

Item	White		Negro		Total No.
	No.	%	No.	%	
Pre-study	484	93.4	34	6.6	518
Post-study	471	91.1	46	8.9	517

*n. s.

Table 2. Families in the pre- and post-study classified by age of male head of household.*

Item	Under 25		25-34		35-44		45-59		60 and over		Total No. **
	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	30	5.8	113	21.8	151	29.2	144	27.8	54	10.4	492
Post-study	13	2.5	117	22.6	171	33.1	135	26.1	47	9.1	483

*n. s.

**Sixty families were not included in chi-square analysis as they gave no information or had no male head.

Table 3. Families in the pre- and post-study classified by education of male head of household.*

Item	Under 9		9-11		High School		Some college, bus. or prof.		Bachelors degree		More than bachelors	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Pre-study	25	4.8	61	11.8	158	30.5	83	16.0	126	24.3	24	4.6
Post-study	22	4.3	53	10.3	147	28.4	94	18.2	120	23.2	38	7.4

*n. s.

**Eighty-four families were not included in chi-square analysis as they gave no information or had no male head.

Table 4. Families in the pre- and post-study classified by age of homemaker.*

Item	Under 25		25-34		35-44		45-59		60 and over		Total No. **
	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	51	9.8	140	27.0	155	29.9	124	23.9	46	8.9	516
Post-study	30	5.8	158	30.6	169	32.7	120	23.2	38	7.4	515

*n. s.

**Two families in each study were not included in the analysis as they gave no information or had no homemaker.

Table 5. Families in pre- and post-study classified by education of homemaker.*

Item	Under 9		9-11		High School		Some college, bus. or prof.		Bachelors or more		Total No. **
	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	22	4.3	74	14.3	214	41.3	110	21.2	82	15.8	502
Post-study	24	4.8	61	11.8	224	43.3	95	18.4	102	19.6	506

*n. s.

**Twenty-seven families were not included in analysis, as they gave no information or had no homemaker.

Table 6. Families in pre- and post-study classified by income sources.*

Item	Homemaker only		Head of household only		Both		All other		Total No.
	No.	%	No.	%	No.	%	No.	%	
Pre-study	17	3.3	371	71.6	115	22.2	15	3.0	518
Post-study	25	4.8	344	66.5	129	25.0	19	3.7	517

*n. s.

Table 7. Families in pre- and post-study classified by household size.*

Item	2 persons		3 persons		4 persons		5 persons		6 persons		7 persons		8 or more persons		Total No.
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	121	23.4	128	24.7	131	25.3	89	17.2	31	6.0	10	1.9	8	1.6	518
Post-study	113	21.9	104	20.1	143	27.7	94	18.2	41	7.9	11	2.1	11	2.2	517

*n. s.

Table 8. Families in pre- and post-study classified by per capita income.*

Item	Under 600		600-899		900-1199		1200-1799		1800-2499		2500-3199		3200 or more		Total No.**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	11	2.1	35	6.8	54	10.4	140	27.0	109	21.0	84	16.2	77	14.9	510
Post-study	17	3.3	26	5.0	55	10.6	139	26.9	121	23.4	67	13.0	89	17.2	514

*n. s.

**Eleven families were not included in the analysis as they gave no information concerning income.

Table 9. Families in pre- and post-study classified by type or orientation of homemaker.*

Item	Habitual		Rational		Impulsive		Total No.
	No.	%	No.	%	No.	%	
Pre-study	153	29.5	228	44.0	137	26.5	518
Post-study	127	24.6	244	47.2	146	28.2	517

*n. s.

Table 10. Families in pre- and post-study classified by marketing knowledge of homemaker.*

Item	Little		Medium		Highest		Total No.
	No.	%	No.	%	No.	%	
Pre-study	179	34.6	175	33.8	164	31.7	518
Post-study	119	23.0	184	35.6	214	41.4	517

*X²=18.92; significant at the 1% level.

Table 11. Families in pre- and post-study classified by nutritional knowledge of homemakers.*

Item	Little		Medium		Highest		Total No.
	No.	%	No.	%	No.	%	
Pre-study	201	38.8	167	32.2	150	29.0	518
Post-study	158	30.6	195	37.7	164	31.7	517

*X²=7.940; significant at the 5% level.

APPENDIX C

Scales used for scoring homemaker: Score (1) habitual; score (2) rational; and score (3) impulsive.

Question 2*		Question 4**	
No.	Score	No.	Score
1	3	1	3
2	1	2	3
3	3	3	1
4	2	4	2
5	1	5	2
6	1	6	1
7	3	7	3
8	3	8	2
9	2	9	2
0	2	0	2
Total		Total	

*The statements in questions 2 were: (1) Enjoy entertaining guests for meals; (2) Want to prepare only foods that the family likes; (3) Try new products from special store displays; (4) Encourages family members to help with meal planning; (5) Prepare a complete written shopping list for major food shopping; (6) Always serve the evening meal at the same time each day; (7) Serve meals that are original and very different from what most people have; (8) Decide on almost all food items to buy after entering store; (9) Vary meals occasionally with new products.

**The statements in question 4 were: (1) Try all kinds of food suggestions; (2) Enjoy having people drop in for meals; (3) Serve the same main dishes from week to week; (4) Buy whatever brand is on special; (5) Use food advertisements to plan food buying; (6) Always do food shopping on the same day at same time; (7) Plan meals when I am ready to prepare them; (8) Occasionally make own recipes; (9) Do major food shopping at several stores.

Question 6	Score
(1) 1st or 2nd choice to left checked	1
3rd, 4th, or 5th space checked	2
6th or 7th space checked	3
(2) 1st or 2nd space to left checked	1
3rd, 4th, or 5th space checked	2
6th or 7th space checked	3
(3) 1st or 2nd space to left checked	1
3rd, 4th, or 5th space checked	2
6th or 7th space checked	3
(4) 1st or 2nd space to left checked	1
3rd, 4th, or 5th space checked	2
6th or 7th space checked	3
Total	

An illustration of ranking type question: Interviewee: Rank self as food buyer.

1 2 3 4 5 6 7

Note: If you try many brands of food each time you shop, check blank 7. If you always buy the same brands, check blank 1. If you are in between the two extremes, then check the blank that best describes your buying habits.

Question 7 (2)	Score
1 checked	1
2. Checked	2
3 checked	3
4 checked	2
None checked	2
	Total

Question 10 (1)	Score
0 new recipes	1
1 or 2 new recipes	2
3 or more new recipes	3
Don't know, no answer	2
	Total

Question 10 (5)	Score
0 new food items	1
1 or 2 new food items	2
3 or more new food items	3
Don't know, no answer	2
	Total

GRAND TOTAL

(2) Marketing Knowledge	Score
Question 3. USDA grading and quality	Score
Control service shield	3
Meat, poultry, eggs, canned fruit, butter or other foods named correctly	3
Other replies, such as "policeman's badge"	0

Question 11 Score

(1) How often compare package sizes and prices to see which is best buy	
Often or occasionally	2
Seldom or never	0
(2) A and B grades of eggs	2
Named A or B grade	1
Named neither A or B	0
(3) Three or more grades meat named correctly	2
1 or 2 grades correct	1
None correct	0
(4) Named grade A milk	2
Other replies	0
	TOTAL

(3) Nutritional knowledge
Method of scoring homemakers' answers to nutrition questions.

Words or phrases	Protein	CHO	Fats	Vitamins
	No.	No.	No.	No.
General good health	2	0	0	3
Quick energy	0	3	0	0
Chicken	3	0	1	2
Growth and repair	3	0	0	3
Bacon	2	0	3	0
cottage cheese	3	0	0	2
Cantaloupe	0	2	0	3
Most concentrated energy	0	0	3	0
Potatoes and candy	0	3	0	2
Pecans and other nuts	2	0	3	0
Bread	0	3	0	2
Tomatoes	0	0	0	3

Table 2. A comparison of ounces of cottage cheese sold per check-out count, by experimental and control stores.

UPPER SOCIO-ECONOMIC			
	df	MS	F
Groups	1	.374340	7.82*
Stores within groups	4	.047842	4.94*
Display periods within stores	12	.009675	4.85**
Weeks within display periods	18	.001995	
MIDDLE SOCIO-ECONOMIC			
	df	MS	F
Groups	1	.377815	13.23**
Stores within groups	7	.028566	4.89**
Display periods within stores	18	.005841	2.46*
Weeks within display periods	27	.002374	
LOWER SOCIO-ECONOMIC			
	df	MS	F
Groups	1	.347523	367.75**
Stores within groups	2	.002935	3.10 n. s.
Display periods within stores	8	.002134	2.26 n. s.
Weeks within display periods	12	.000945	

*Significant at the 5% level.

**Significant at the 1% level.

Note: On this analysis of store data on sales of cottage cheese per check-out count, analysis of variance, nested classification, was used.

Table 3. Families in the pre- and post-study classified by foods homemaker thinks one should consider in order to lose weight.*

Item	½ cup creamed cottage cheese		¼ lb. hamburger patty		1 cup fruit salad		2 deviled eggs		½ cup tuna salad		4 oz. broiled chicken		½ cup non-fat cottage cheese		Total No.
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	83	4.0	352	17.0	408	19.7	185	8.9	100	4.8	463	22.3	481	23.2	2072
Post-study	165	8.0	396	19.1	356	17.2	132	6.4	84	4.1	482	23.3	453	21.9	2068

*X²=44.58; significant at the 1% level.

Table 4 Families in the pre- and post-study classified by rank given by interviewees of protein in cottage cheese.

Item	1		2		3		4		5		6		7		8		9		Total**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	18	3.5	18	3.5	19	3.7	39	7.5	52	10.4	46	8.9	56	10.8	69	13.3	188	36.3	505
Post-study	12	2.3	11	2.1	5	1.0	10	1.9	54	10.4	28	5.4	50	9.7	107	20.7	236	45.6	513

*X²=46.55; significant at the 1% level.

**Seventeen families were not included in the chi-square analysis as they gave no information.

Table 5. Families in the pre- and post-study classified by rank given by interviewee of calcium in cottage cheese.*

Item	1		2		3		4		5		6		7		8		9		Total**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	16	3.1	12	2.3	21	4.1	45	8.7	91	17.6	38	7.3	55	10.6	74	14.3	146	28.2	498
Post-study	13	2.5	7	1.4	6	1.2	38	7.4	54	10.4	32	6.2	44	8.5	88	17.0	226	43.7	508

*X²=40.05; significant at the 1% level.

**Twenty-nine families were not included in chi-square analysis as they gave no information.

Table 6. Families in the pre- and post-study classified by rank given by interviewee of vitamin B³ in cottage cheese.*

Item	1		2		3		4		5		6		7		8		9		Total**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	31	6.0	45	8.7	67	12.9	67	12.9	156	30.1	26	5.0	27	5.2	24	4.6	28	5.4	471
Post-study	24	4.6	37	7.2	45	8.7	79	15.3	139	26.9	37	7.2	29	5.6	17	3.3	55	10.6	462

*X²=19.84; significant at the 1% level.

**One hundred and two families were not included in the chi-square analysis as they gave no information.

Table 7. Families in the pre- and post-study classified by rank given by interviewee of iron in cottage cheese*.

Item	1		2		3		4		5		6		7		8		9		Total**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	115	22.2	105	20.3	64	12.4	32	6.2	72	13.9	20	3.9	25	4.8	24	4.6	26	5.0	483
Post-study	88	17.0	42	8.1	52	10.1	57	11.0	81	15.7	42	8.1	31	6.0	27	5.2	56	10.8	476

*X²=38.94; significant at the 1% level.

**Seventy-six families were not included in the chi-square analysis as they gave no information.

Table 8. Families in the pre- and post-study classified by first thing that comes to interviewee's mind when mention cottage cheese.*

Item	Nothing, no answer		Brand or type		Salads, fruits, vegetables		Like it; appetizing		Diet; non-fattening; high protein		Other dairy products		Bad taste; & other derogatory remarks		Other foods to use cottage cheese with		Total**
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Pre-study	24	4.6	16	3.1	166	32.0	31	6.0	135	26.1	48	9.3	80	15.4	16	3.1	516
Post-study	13	2.5	13	2.5	155	30.0	47	9.1	120	23.2	48	9.3	110	21.3	8	1.5	515

*X²=15.52; significant at the 5% level.

**Five families naming "other" things were not included in the analysis.

Table 9. Creamed cottage cheese ranked according to calorie content, by homemakers in the pre- and post-survey.*

Rank	Pre-survey		Post-survey		Total No.
	No.	%	No.	%	
1 (very low)	25	4.9	39	7.6	64
2	31	6.1	43	8.4	74
3	44	8.7	60	11.7	104
4	59	11.7	96	18.7	155
5	93	18.4	86	16.7	179
6	65	12.8	46	8.9	111
7	56	11.1	45	8.8	101
8	51	10.1	46	8.9	97
9 (very high)	82	16.2	53	10.3	135
TOTAL	506	100.0	514	100.0	1020

* $X^2=27.45$; significant at the 1% level.

**Fifteen gave no information and were not included in the chi-square analysis.

Table 10. Non-fat cottage cheese ranked according to calorie content by homemakers in the pre- and post-survey.*

Rank	Pre-survey		Post-survey		Total No.**
	No.	%	No.	%	
1 (very low)	295	58.6	378	73.7	673
2	110	21.9	90	17.5	200
3	61	12.1	35	6.8	96
4	21	4.2	8	1.6	29
5	16	3.2	2	.4	18
TOTAL	503	100.0	513	100.0	1016

* $X^2=35.90$; highly significant.

**Thirteen gave no information and six women ranked this cheese 6-9; these nineteen cases were not included in the analysis.

Table 11. Specified dairy products drunk or eaten when in parental home.

Item	Yes	No	Can't remember	Total No.
	%	%	%	
Fluid milk (sweet)	88.8	10.7	.5	1035
Cottage cheese	27.8	61.4	10.7	1035
Buttermilk	61.0	37.7	1.4	1035
Clabber	28.2	62.7	9.1	1035
Cocoa or chocolate milk	73.8	23.2	3.0	1035

Table 12. Sources of greatest influence in food buying, checked by homemakers.

Greatest influence	Most important	2nd most important	3rd most important	4th most important	5th most important	6th most important
	%	%	%	%	%	%
Articles in newspapers	22.3	12.8	8.4	7.6	7.4	8.4
Special food ads						
of a single food in newspaper	4.8	8.7	7.4	4.6	5.9	6.0
Radio programs other than ads	1.7	1.4	1.9	1.5	2.7	3.7
Food ads on radio	1.4	1.8	1.6	1.5	2.0	1.6
Food programs on TV other than ads	3.3	5.2	7.9	7.4	6.0	6.9
Food ads on TV	5.0	6.9	9.8	7.9	8.4	7.4
Food store displays	4.2	9.1	10.6	10.7	10.0	6.2
Labels on foods on display	4.1	7.0	5.9	8.0	7.0	6.3
Neighbors and friends	8.3	16.8	16.2	14.6	10.1	7.2
Food ads in magazines	4.1	8.9	9.5	11.3	10.9	10.2
Tasting samples at the grocery store	2.4	2.2	3.2	5.5	5.6	8.4
Pamphlets	.4	1.7	1.8	3.7	4.3	6.2
Food store ads in newspapers	33.5	11.2	8.9	6.7	5.7	5.1
Recipes distributed						
at food store or elsewhere	1.4	3.5	3.7	5.0	8.3	10.3
Other	1.3	.8	.3	0	.7	.7
No information	1.9	2.1	2.8	3.8	5.0	5.3