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BEEF/PORK VARIETY MEATS: II. CONSUMER PREFERENCES, ATTITUDES TOWARD, AND PRODUCT USAGE

by Joe W. Koudele, Arlin M. Feyerherm, and David E. Schafer

Research Report #8

Department of Agricultural Economics

Kansas State University

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II. CONSUMER PREFERENCES, ATTITUDES TOWARD, AND PRODUCT USAGE¹

by

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INTRODUCTION

Reasons for Study

The primary reason for this study was to ascertain whether the demand for selected beef/pork variety meats could be expanded in household markets in Midwestern cities in the United States. For more details, see Beef/Pork Variety Meats: I. Effect of Promotion on Retail Sales at Kansas Food Stores. Research Report #7, Department of Agricultural Economics, Kansas State University.

Objectives of Study

This study had two objectives:

1. To measure the effects of promotional and merchandising strategies upon food store sales of selected beef/pork variety meats.
2. To obtain information on consumers' acceptance and preferences for beef/pork variety meats, consumers' current knowledge about variety meats (health/nutrition aspects and food preparation), consumers' attitudes toward their use, product usage, and the relationship of these factors to certain socio-economic characteristics.

Research results are presented in two reports: Beef/Pork Variety Meats: I. Effect of Promotion on Retail Sales at Kansas Food Stores (Objective 1 - Research Report #7), and Beef/Pork Variety Meats: II. Consumer Preferences, Attitudes Toward, and Product Usage (Objective 2 - Research Report #8).

RESEARCH DESIGN

Promotion took place in eight retail stores of one food chain in three test markets (Salina, Topeka, and Wichita, Kansas). They included two conventional supermarkets in Topeka; the remainder were warehouse stores, two in each city.

A conventional supermarket is a full-line, self-service grocery store with annual sales of \$2 million or more. It has more specialized departments, more merchandise selection, and less emphasis on economy than a warehouse store. A warehouse food store typically carries 1500 to 7500 items, minimizes store decor, and attempts to price about 10% below conventional supermarkets.

During the third eight-week test period (TP-3), information was obtained from consumers on their preferences for beef/pork variety meats, knowledge about health/nutrition aspects and food preparation, attitudes (including prejudices) toward use of variety meats, and product usage. Data were obtained by in-store interviewing of a sample of "meat

shoppers" who passed by an information stand located near the variety meats display in the store's fresh meats section. Two-person teams of trained interviewers (Home Economists, Pork Council Women, CattleWomen, and others) were stationed at each food store during alternate weeks during a busy four-hour period on heavy customer days (Thursday, Friday, and Saturday). They also distributed recipes, nutritional information, and variety meat samples for tasting.

A training session for interviewers was held on the campus of Kansas State University just prior to the beginning of test period 3. At this time, they decided the variety meat items to be given out as taste samples, recipes to be used, method of serving, and week of distribution.

Some of the interviewers in each test market city met with the Project Leader at one store the week before TP-3 began for store orientation. They observed the promotion in progress and became familiar with the store layout.

No meat taste samples were distributed in any store during week #1 of TP-3 while team captains and others were familiarizing themselves with interviewing consumers. During weeks #2 through 8, the following uniform procedure was used in all stores to serve variety meat samples:

Week #2 - Beef sweetbreads or thymus gland (diced horizontally, dredged in flour, and pan fried. (Served with toothpicks).

Week #3 - Pork Liver Chow Mein. (Served with cups and spoons).

Week #4 - Same as week #3, but in a different store.

Week #5 - Beef Tongue. (Served alone, warm, with toothpicks).

Week #6 - Same as week #5, but in a different store.

Week #7 - Beef Oxtail Stew (with potatoes, carrots and peas). (Served with cups and spoons).

Week #8 - Same as week #7, but in a different store.

It was decided not to distribute meat samples on Friday, for religious reasons. Each team was permitted to pick the best day (Thursday or Saturday) in a given test week and the best consecutive four-hour time period (beginning at 9:00 A. M.) for store duty.

Team members on duty (either interviewing or serving meat samples) wore a purple and white KSU name badge and stood near a stand (table) with a large sign CONSUMER RESEARCH ON BEEF/PORK VARIETY MEATS by Kansas State University. The sign indicated that nutritional information, recipes, and meat taste samples were available. Recipes and nutritional information for selected beef/pork variety meats and the questionnaire for interviewing consumers are located in the Appendix.

A "structured" interview questionnaire was used to obtain information from consumers. This was necessary to focus on important aspects of consumer usage of variety meats, to facilitate and speed up the interviewing process, and to permit summarization of much data.

Two-way statistical tables showing the relationships between consumers' responses and certain socio-economic characteristics were prepared. The strength of a relationship was tested using a chi-square statistic. The statistical significance of relationships was indicated by a probability level. The smaller the probability, the stronger the relationship.

THE SAMPLE OF CONSUMERS

Personal interviews were obtained from a sample of meat shoppers in retail food stores. Most interviewing took place during a busy four-hour time period (e.g., 2-6 p.m.) and during heavy customer days. For most stores, the busiest days were on Thursday, Friday and Saturday. Some interviewing occurred on Wednesday to avoid repeat contacts with shoppers who had already been interviewed. Table 1 shows the day of the week that consumers were interviewed.

Table 2 shows the number and percent of consumer interviews, by city and store of one food chain. Specific stores within each of the three test markets of Salina, Topeka, and Wichita were selected by the Director of Meat Operations of the chain. Stores were selected to provide a cross section of the population in terms of ethnic groups, urbanization, income levels, and occupations. After editing and eliminating 58 incomplete questionnaires, a total of 3,340 usable questionnaires remained for summarization.

Table 3 shows the sex of consumers interviewed. Approximately 15% of the food shoppers were males. Only persons were interviewed who chose and/or prepared the meat served in a particular household. Interviewers handed a folder (with the questionnaire) to the consumer so that she/he might look at questions being asked. Interviewers then asked each question out loud and wrote answers on the questionnaire form as consumers responded.

Socio-economic Characteristics

Socio-economic characteristics of consumers provided descriptive background information about the sample of consumers that was interviewed. Information was obtained on four socio-economic characteristics: Size of household, age, educational level, and family income. No attempt was made to compare consumers' characteristics in the sample with U. S. census population data for the three cities.

Table 4 shows the size of household of consumers interviewed. Members of a household usually pool their income, buy as a unit, and share similar food preferences. One-member households often consist of single persons and widows living alone. Two-member households most

frequently include young married and retired couples as well as two singles living together. In this study, two-member and three-to-four member households predominated and accounted for about three-fourths of all households.

Table 5 shows the age of consumers interviewed. There was a fairly even percentage distribution of consumers in four age classes (25-34, 35-44, 45-54, and 55-64) and from 65 years and over.

Table 6 shows the educational level of consumers interviewed. Data show the last year of school completed. About 12% had only grade school or some high school education. Most (44%) had completed only high school. Slightly over one-fourth had a vocational school diploma or had attended some college. Nearly one-fifth were college graduates.

Table 7 shows the estimated annual family income of consumers interviewed. Approximately 10% refused to disclose their income. The data show a wide range in income levels (from under \$5,000 to \$50,000 and over). For purposes of analysis, the data were aggregated into four meaningful income classes (under \$10,000, \$10,000-\$24,999, \$25,000-\$39,999, and \$40,000 & over). Approximately 60% of the consumers interviewed fell into the two middle-income classes.

From a marketing standpoint, the three socio-economic characteristics considered to be most useful were age, income level and educational level of consumers. Hence, these three characteristics were used in analyzing certain relationships among the data.

CONSUMERS' USE OF BEEF/PORK VARIETY MEATS

Table 8 shows the percentage of 3,340 consumers who have eaten selected beef/pork variety meats sometime during their life. By far, a higher percentage of consumers (nearly 90%) have eaten beef liver than any other variety meat. Other beef variety meats commonly consumed were tongue, heart, and oxtails. These items were usually available in the meats section.

Among the pork variety meats, pork liver and pigs feet had been eaten by the highest percentage of consumers.

Items that a relatively small percentage of consumers had eaten were beef brains, beef sweetbreads (or thymus), beef kidney, beef tripe (or rumen-reticulum), pork brains, and pork maws (or stomach) (Table 8).

Table 9 shows the earliest age that 3,340 consumers remember eating any beef/pork variety meat, no matter whether it was a beef or pork item. Most consumers (86%) had eaten some kind of variety meat before the age of 20. Nearly everyone had tried them by the age of 40. Those who grew up on farms had a greater chance of eating these products because farmers generally butchered a hog or steer for their own family meat supply and edible offals were seldom discarded.

Table 10 shows the percentage of 3,340 households that served any beef/pork variety meat during the last year. Two-thirds of them, or 2,213 households, had served at least one variety meat sometime during the year.

Table 11 shows the percentage of households that served selected beef/pork variety meats during the last year. Most households (92%) had served beef liver. An average of 25% of the households had served such items as beef oxtail, beef heart, beef tongue, pork liver, and pigs feet. Only a small percentage of households had served beef brains, beef sweetbreads, beef tripe, beef kidney, pork maws, and pork brains.

Table 12 shows the percentage of households, by city, that served any beef/pork variety meat during the last year. The percentage of households was highest in Salina, followed by Topeka and Wichita. The differences among these cities were statistically significant.

Table 13 shows the percentage of households, by city, that served selected beef/pork variety meats during the last year. There were significant differences statistically among Topeka, Salina, and Wichita in the percentage of households in each city that served 10 of the 12 variety meats. The Wichita market had the highest percentage of households that served eight variety meats (beef kidney, beef tripe, beef sweetbread, beef brains, beef oxtails, pork maws, pork brains, and pigs feet). The Salina market had the highest percentage of households serving beef liver, beef tongue and pork liver. The differences among these cities probably reflect the influence of different ethnic origins of consumers patronizing the food stores.

CONSUMERS' PREFERENCES FOR VARIETY MEATS

Ranking by Consumers

Consumers were asked to rank in order (1,2,3) the three beef/pork variety meats that they purchased and served most frequently during the last year. Table 14 shows that ranking by 2,213 consumers.

The sum of percents for the top 3 ranks, by variety meat, was the basis for arraying them from first to last. As shown, six variety meats (beef liver, pork liver, pigs feet, beef oxtails, beef heart and beef tongue, in that order) were the main items preferred by consumers. Beef liver was the most preferred variety meat, by far.

Reasons for Ranking

Table 15 shows various reasons given by consumers for their #1 ranking of a beef/pork variety meat. Data are shown in the left column for all variety meats, even the least-preferred item, beef kidney, and in the right column for beef liver only. The percentages are very similar because of the relative importance of beef liver.

The two reasons given most frequently by consumers were that they "like the taste and flavor" of variety meats and consider them to be "nutritious." Only about 30% considered them to be "inexpensive (economical)". Around 20% of the consumers would use them because of "family tradition." This reason was important to certain ethnic groups who might use them at holiday seasons, say Christmas. Versatility--"can prepare different ways" appealed to about one-eighth of the consumers. Around 10% liked them because they were considered to be "low in calories." A small percentage preferred variety meats because they were "good to eat cold or for snacks" or were considered to be a "gourmet meat treat."

Influence of Ethnic Origin

Table 16 shows tastes and preferences for variety meats by consumers as related to their ethnic origin(s). Forty-four percent of the 3,340 consumers thought their ethnic origin(s) influenced their tastes and preferences.

A relatively high percentage (close to 40%) of consumers from German origin or from the British Isles thought ethnic origin was important. Other ethnic groups who felt their origin was influential were Blacks, Dutch, American Indians, French, and Scandinavians.

Data from the 1977-78 Nationwide Food Consumption Survey showed that weekly per capita at-home consumption of variety meats in the United States was much higher for Blacks (0.32 lb.) than for nonblacks (0.05 lb.).¹

INFLUENCE OF SOCIO-ECONOMIC CHARACTERISTICS ON PRODUCT USE

Table 17 shows the percentage of consumers, by age group, who purchased and served any beef/pork variety meat during the last year.

The percent of consumers purchasing and serving variety meats trended upward through age group 45-54. By that age, 75% of the consumers were using variety meats (Table 17). After that, the percentage held fairly steady for the age group 55-64, and declined only slightly for the age group 65-74. From 75 years and over, the percentage dropped sharply, but 62% were still using these products. The differences among the age groups were statistically significant at the 0.01 level.

Table 18 shows the percentage of consumers, by age group, who purchased and served selected beef/pork variety meats during the last year.

A high percent of consumers of all age groups used beef liver. The percent purchasing beef heart increased up to age 54, then held fairly

¹Consumer Demand for Red Meats, Poultry and Fish, USDA, 1982. p. 33.

steady. For beef tongue and beef sweetbread, there was increased percentage use up to age 64, then it declined. The relationship for beef sweetbread was not significant statistically. The percent using beef kidney and beef tripe was not related to age. The percent using beef brains and pork brains increased at higher age levels. The percent using beef oxtail increased up to age 54, then was fairly steady. For pork liver, the percentage use increased through age 74, and then declined. There was increased percentage use of pork maws up to age 44, then it declined. The percent using pigs feet remained fairly constant for all age groups but was not significant statistically (Table 18).

Table 19 shows the percentage of consumers, by income level, who purchased and served any beef/pork variety meat during the last year.

As the level of annual income increased, there was a downward trend in percent of consumers purchasing and serving variety meats. Differences among income levels were highly significant statistically.

Table 20 shows the percentage of consumers, by income level, who purchased and served selected beef/pork variety meats during the last year. There was a direct (or positive) relationship between use of beef liver and income level. The relationship was highly significant statistically. Differences among the percentages of consumers using certain variety meats (beef heart, beef sweetbread, beef kidney and pork brains) as related to income level were not significant statistically. The percent of consumers purchasing and serving certain variety meats (beef oxtail, beef brains, beef tripe, pork liver, pigs feet, and pork maws) tended to decline as income levels rose (Table 20).

Table 21 shows the percentage of consumers, by educational level, who purchased and served any beef/pork variety meat during the last year.

In general, the percent of consumers using variety meats tended to decline as the educational level of consumers rose. Differences among educational levels were highly significant.

Table 22 shows the percentage of consumers, by education level, who purchased and served selected beef/pork variety meats during the last year.

Differences among the percentages of consumers using certain variety meats (beef liver, beef kidney, beef heart, beef tongue, and beef sweetbread) as related to educational level were not significant statistically. However, the differences were highly significant for some variety meats (beef tripe, beef brains, beef oxtail, pork liver, pork maws, pork brains and pigs feet). Consumers with a grade school and/or some high school education accounted for the highest percentage use of these variety meats. At higher educational levels, the percent of consumers using them declined.

REASONS FOR NOT USING VARIETY MEATS MORE OFTEN

Table 23 shows various reasons given by 3,340 consumers why they or their families have not used beef/pork variety meats more often.

Two major reasons were "habit" (seldom or never using them) and "an unappetizing product image" when the name of a particular variety meat was mentioned. About one-fourth of the consumers had tried them but didn't like them. Approximately one-fifth had never tasted some of them. Problems dealing with home preparation of variety meats ("didn't know how to prepare, too hard to prepare, and too much cooking time") were mentioned by nearly one-fourth of the consumers. Medical reasons were mentioned by some. Medical doctors advised some patients against eating certain variety meats, particularly brains, because of the high fat content and/or high cholesterol levels (Table 23).

Table 24 shows various reasons given by consumers, by age group, why they or their families have not used beef/pork variety meats more often.

Two reasons that were not related to age were "not available at the store or hard to find" and "too much cooking time." All other reasons were related to age. For some reasons, the differences among age groups were highly significant. The younger the age group the higher the percentage of consumers who mentioned such reasons as the following for not using variety meats: They "didn't like the sound of their name, never tasted some of them, didn't know how to prepare them, didn't know about their nutritional values, or even didn't know about them" (Table 24).

Table 25 shows various reasons given by 2,998 consumers, by income level, why they or their families have not used beef/pork variety meats more often.

Five reasons that were not related to income level were: "Tried them but didn't like, didn't know about them before, not available at store or hard to find, too hard to prepare, and too much cooking time."

Six other reasons for not using variety meats more often were related to income level. The higher the income, the greater was the tendency for consumers to give these reasons: "Habit, didn't like the sound of their name, have never tasted some of them, and didn't know how to prepare." Lower-income consumers, who used more variety meats than higher-income consumers, gave as a reason that they "didn't like the package appearance" (Table 25).

Table 26 shows various reasons given by 3,332 consumers, by educational level, why they or their families have not used beef/pork variety meats more often.

Most reasons were not related to educational level. The only three reasons that were related were: "Didn't like the sound of their name, didn't know how to prepare, and too hard to prepare" (Table 26).

INCENTIVES FOR CONSUMERS TO USE VARIETY MEATS MORE OFTEN

In order to increase the demand for variety meats, it is necessary first to learn why consumers or their families have not used these products more often. Once these reasons are known, the next step is to ask consumers which incentives would possibly get them to try and use beef/pork variety meats or use them more often. This process was followed in this study. Consumers were also given the option to say that "no incentive would change my mind."

Table 27 summarizes the responses of 3,340 consumers. Various incentive were arrayed from high to low by the percent of consumers who would respond to each incentive. The major incentive would be "more recipes and instructions on how to prepare" (variety meats). Incentive #2 would be the "opportunity to taste" and incentive #3 would be "price specials." A surprisingly high percentage (48%) indicated that "no incentive would change my mind."

Table 28 shows various incentives that may persuade consumers, by age group, to try beef/pork variety meats.

All 10 of the incentives, as well as "no incentive", were related to age group. For most incentives, the differences among age groups were highly significant statistically. In general, the younger the age group, the higher the percent of consumers who would respond to each incentive to try variety meats.

Also, the older the age group, the higher the percent of consumers who felt that "no incentive would change my mind." Therefore, if promotion of variety meats is to do the most good, it must be directed at the younger consumers (Table 28).

Table 29 shows various incentives that may persuade consumers, by income level, to try beef/pork variety meats or use them more often.

There was no significant relationship between income level and five incentives ("more recipes and instructions on how to prepare, opportunity to taste, recommended by someone, easier preparation, and products available regularly"). "Price specials" and "improved packaging" would be greater incentives to lower-income groups. The incentive "more information on nutritional values" would have the greatest effect on the lowest income group. "Dependable quality" was important to all income levels. "More products available in frozen form" appealed more to the lower-income levels (Table 29).

Table 30 shows various incentives that may persuade consumers, by educational level, to try beef/pork variety meats or use them more often.

Only three incentives ("more recipes and instructions on how to prepare, price specials, and products available regularly") were related to educational level.

Consumers with both the least education and the most education were interested in having "more recipes and instructions on how to prepare" variety meats. Those with grade and/or some high school education were most interested in "price specials" and in having "products available regularly." However, even college graduates and post graduates found price specials to be an incentive.

While a high percent of consumers indicated that "no incentive would change my mind" and persuade them to try variety meats or use them more often, the most educated consumers were somewhat more open minded (Table 30).

USE OF BEEF LIVER, THE #1 RANKED ITEM

Frequency of Purchasing and Serving

Consumers were asked to rank in order (1,2,3) the three beef/pork variety meats that they purchased and served most frequently during the past year. Any of the 12 beef/pork variety meats might have been ranked #1 by 2,213 consumers and, in fact, were so ranked.

The four most-preferred variety meats that were ranked #1, in order, were: Beef liver (50.58%), beef oxtail (3.48%), pigs feet (3.21%), and pork liver (2.64%) (see Table 14, page 19). As shown above, the overwhelming choice was beef liver.

Table 31 shows the frequency of consumers purchasing and serving their #1-ranked beef/pork variety meat during the last year. The left column shows data for all variety meats, including beef liver, while the right column shows data for beef liver only.

Questions requiring a "recall" of information such as the frequency of doing something are difficult for consumers to answer. However, they probably remember doing something on a regular basis such as every 1-2 weeks. Consumers who purchased and served beef liver every 1-2 weeks were "regular users." Approximately one-sixth of the 1,686 consumers fit this category. Slightly over one-fourth purchased beef liver every month. Approximately one-third purchased it infrequently, "every 2-3 months". One-fifth of those who ranked beef liver #1 said they purchased and served it "very seldom." Other variety meats were served on "special occasions only" more frequently than beef liver.

Table 32 shows the frequency of purchasing and serving beef liver during the last year by consumers, by age group.

Among the "regular users" of beef liver, a higher percent of consumers in older age groups through 65-74 purchased and served the product "every 1-2 weeks." The same tendency occurred for "monthly" purchases by older age groups, including those 75 and over.

Table 33 shows the frequency of purchasing and serving beef liver during the last year by consumers, by income level.

A higher percent of consumers at lower income levels used beef liver regularly ("every 1-2 weeks") than those at higher incomes. Differences were not great in the percent of consumers, by income level, who purchased beef liver infrequently ("every 2-3 months"), or on "special occasions only" and "very seldom" (Table 33).

Table 34 shows the frequency of purchasing and serving beef liver during the last year by consumers, by educational level.

Consumers at higher educational levels did not use beef liver as regularly and frequently ("every 1-2 weeks") as those with less education. Differences were not great in the percent of consumers, by educational level, who purchased beef liver "every month." Consumers at higher educational levels were more likely to serve beef liver on "special occasions only" (Table 34).

Reasons for Using

The reasons for using beef liver by 1,686 consumers are the same as those for ranking it the #1 variety meat (see Table 15, page). The four most important reasons, in order, and the percent of consumers giving that reason were: Like the taste and flavor (81.4%), nutritious (61.7%), inexpensive (economical) (29.5%), and family tradition (18.3%). Less important reasons were: Can prepare different ways (12.7%), low in calories (11.4%) good to eat cold or for snacks (7.6%), and gourmet meat treat (3.7%). Other reasons (7.4%) were suggested by consumers but were not summarized.

Table 35 shows various reasons given by consumers, by age group, for using beef liver.

Differences in the percent of consumers, by age group, who gave the two reasons "nutritious" and "family tradition" for using beef liver were not significant statistically.

A higher percent of consumers in older age groups gave the reason "like the taste and flavor" and a lower percentage of consumers in older age groups gave the reason "inexpensive" for using beef liver. Differences among age groups were highly significant.

A higher percent of consumers in younger than in older age groups gave the reason "low in calories" for using beef liver. Differences among age groups were significant.

Table 36 shows various reasons given by consumers, by income level, for using beef liver.

Differences in the percent of consumers, by income level, who gave these reasons "like the taste and flavor, family tradition, and low in calories" for using beef liver were not significant statistically.

Other reasons given for using beef liver, as related to income level, were significant statistically. A greater percent of consumers at higher income levels gave the reason "nutritious." A greater percent of

consumers at lower income levels gave the reasons "inexpensive" and "can prepare different ways". Consumers at lower income levels found beef liver "good to eat cold or for snacks" (Table 36).

Table 37 shows various reasons given by consumers, by educational level, for using beef liver.

Two reasons ("family tradition" and "low in calories") for using beef liver were not influenced significantly by educational level. Other reasons, as related to educational level, were highly significant statistically.

Consumers at all educational levels but especially those with a grade school and/or some high school education "liked the taste and flavor" of beef liver. The most educated consumers particularly valued the "nutritional" values. Consumers with both the lowest and highest levels of education felt that beef liver was an "inexpensive" food.

Consumers with the lowest level of education mentioned much more than those at higher educational levels that one "can prepare (beef liver) different ways." The same was true for such reasons to use beef liver as "good to eat cold or for snacks" and "gourmet meat treat." (Table 37).

SUMMARY AND CONCLUSIONS

The object of this research was to obtain information on consumers' preferences for 12 selected beef/pork variety meats, their knowledge about health/nutrition aspects and food preparation of variety meats, attitudes toward their use, product usage, and the relationship of these factors to certain socio-economic characteristics of consumers.

Data were obtained by in-store interviewing of a random sample of food shoppers in eight retail stores of one food chain in three markets--Salina, Topeka, and Wichita, Kansas, during early 1986.

Two-thirds of 3,340 households had served at least one variety meat during the last year. Most households (92%) had served beef liver during the last year. Other items commonly purchased and served were beef tongue, beef heart, beef oxtail, pork liver, and pigs feet. Only a small percent of households had served beef brains, beef sweetbreads, beef tripe, beef kidney, pork maws, and pork brains.

Six variety meats--beef liver, pork liver, pigs feet, beef oxtails, beef heart, and beef tongue, in that order, were the main items preferred by consumers.

Forty-four percent of the 3,340 consumers thought their "ethnic origin(s)" influenced their tastes and preferences for variety meats. A relatively high percent of consumers from German origin or from the British Isles thought ethnic origin was important. Others who felt their origin was influential were Blacks, Dutch, American Indians, French, and Scandinavians.

The percent of consumers purchasing and serving variety meats trended upward through age group 45-54, and by that age, 75% of consumers were using them. As annual income increased, there was a downward trend in percent of consumers using variety meats. The percent of consumers using variety meats also tended to decline as the educational level of consumers rose.

Major reasons given by 3,340 consumers why they or their families have not used beef/pork variety meats more often were: "Habit, didn't like the sound of their name (unappetizing), tried them but didn't like, have never tasted some of them, medical reasons," and problems dealing with home preparation.

Various incentives that may persuade consumers to try beef/pork variety meats or use them more often were: "More recipes and instructions on how to prepare, opportunity to taste, price specials, more information on nutritional values, and easier preparation."

The older the age group, the higher the percent of consumers who felt that "no incentive would change my mind" (about trying variety meats). Therefore, promotion should be directed at younger consumers.

Beef liver was the #1 ranked variety meat. Four reasons mentioned most frequently for using it were: "Like the taste and flavor, nutritious, inexpensive (economical), and family tradition."

Table 1. Day of week that consumers were interviewed at retail food stores.

Day	Percent of interviews
Wednesday or Thursday	25.5
Friday	35.8
Saturday	<u>38.7</u>
TOTAL	100.0 ¹

¹3,340.

Table 2. Consumer interviews, by city and store of one food chain.¹

City and store number	Interviews	
	Number	Percent
Salina 8	396	11.9
Salina 16	351	10.5
Topeka 2	328	9.8
Topeka 4	303	9.1
Topeka 6	273	8.2
Topeka 12	528	15.8
Wichita 18	552	16.5
Wichita 20	<u>609</u>	<u>18.2</u>
TOTAL	3,340	100.0

¹Falley's, Inc.

Table 3. Sex of consumers interviewed.

Sex	Percent of consumers
Male	15.1
Female	<u>84.9</u>
TOTAL	100.0 ¹

¹3,340.

Table 4. Size of household of consumers interviewed.

Number of members	Percent of consumers
One	10.8
Two	36.6
Three to four	36.5
Five or more	<u>16.1</u>
TOTAL	100.0 ¹

¹3,340.

Table 5. Age of consumers interviewed.

Age	Percent of consumers
Under 25 years	6.0
25-34	19.2
35-44	20.1
45-54	17.1
55-64	18.2
65-74	14.5
75 and over	4.7
Refused information	<u>0.2</u>
TOTAL	100.0 ¹

¹3,340.

Table 6. Educational level of consumers interviewed.

Last year of school completed	Percent of consumers
Grade school and/or some high school	11.6
High school graduate	43.8
Vocational school or some college	26.2
College graduate/post graduate	18.2
Refused information	<u>0.2</u>
TOTAL	100.0 ¹

¹3,340.

Table 7. Estimated annual family income of consumers interviewed.¹

Annual Income	Percent of consumers	
Under \$5,000	5.5	
\$5,000 - 7,499	4.7	
\$7,500 - 9,999	<u>4.6</u>	14.8
\$10,000 - 14,999	9.7	
\$15,000 - 19,999	11.0	
\$20,000 - 24,999	<u>11.2</u>	31.9
\$25,000 - 29,999	12.0	
\$30,000 - 39,999	<u>15.2</u>	27.2
\$40,000 - 49,999	9.2	
\$50,000 and over	<u>6.7</u>	15.9
Refused information	<u>10.2</u>	
TOTAL	100.0 ²	

¹For 1985.

²3,340.

Table 8. Percentage of 3,340 consumers who have eaten selected beef/pork variety meats.

Variety meat	Percent
Beef liver	89.5
Beef tongue	51.0
Beef heart	50.2
Beef oxtail	40.9
Beef brains	26.9
Beef sweetbreads	23.5
Beef kidney	18.1
Beef tripe (or rumen-reticulum)	12.0
Pork liver	53.9
Pigs feet	52.4
Pork brains	17.7
Pork maws (or stomach)	11.2

Table 9. The earliest age that 3,340 consumers remember eating any beef/pork variety meat.

Age	Percent of consumers
0-19 years	86.1
20-39 years	7.9
40 years and over	<u>0.6</u>
TOTAL	94.6 ¹

¹5.4% have never eaten any variety meat.

Table 10. Percentage of 3,340 households that served any beef/pork variety meat during the last year.

Item	Percent
Served any variety meat:	
Yes	66.3 ¹
No	<u>33.7</u>
TOTAL	100.0

¹2,213 households.

Table 11. Percentage of 2,213 households that served selected beef/pork variety meats during the last year.

Variety meat	Percent
Beef liver	91.8
Beef oxtail	24.5
Beef heart	22.4
Beef tongue	20.9
Beef brains	7.3
Beef sweetbreads	6.9
Beef tripe	5.2
Beef kidney	4.8
Pork liver	29.9
Pigs feet	26.4
Pork maws	8.0
Pork brains	5.8

Table 12. Percentage of households, by city, that served any beef/pork variety meat during the last year.

City	Percent ^{1,2}
Topeka	67.7
Salina	71.8
Wichita	61.0

¹Probability of a larger value of chi-square ≤ 0.01 under H_0 : Percentages are the same by city.

²Based on 3,340 households.

Table 13. Percentage of households, by city, that served selected beef/pork variety meats during the last year.

Variety meat	City			Probability ¹
	Topeka	Salina	Wichita	
	<u>Percent²</u>			
Beef liver	92.0	96.1	88.4	≤ 0.01
Beef kidney	3.3	3.9	7.6	≤ 0.01
Beef heart	21.5	26.5	20.6	≤ 0.03
Beef tongue	19.0	22.9	22.0	0.13
Beef tripe	3.6	3.9	8.3	≤ 0.01
Beef sweetbread	5.8	4.8	10.0	≤ 0.01
Beef brains	6.0	7.5	8.9	≤ 0.10
Beef oxtails	22.3	20.7	30.4	≤ 0.01
Pork liver	26.8	34.1	30.8	≤ 0.01
Pork maws	3.9	3.4	17.2	≤ 0.01
Pork brains	4.9	5.4	7.2	0.14
Pigs feet	22.1	23.7	34.3	≤ 0.01

¹Probability of a larger value of chi-square under H_0 : Percentages are the same by city.

²Based on 2,213 households.

Table 14. Ranking of three beef/pork variety meats that were purchased and served most frequently by consumers during the last year.

Variety meat	Consumers ranking each item			Sum of percents
	#1	#2	#3	
	<u>Percent of consumers¹</u>			
Beef liver	50.58	9.07	3.53	63.18
Pork liver	2.64	12.92	4.32	19.88
Pigs feet	3.21	5.55	9.28	18.04
Beef oxtail	3.48	7.41	5.48	16.37
Beef heart	2.01	7.57	5.17	14.75
Beef tongue	1.98	5.38	6.01	13.37
Pork maws	0.48	2.07	1.74	4.29
Beef sweetbreads	0.75	1.17	1.16	3.08
Beef brain	0.30	1.09	1.42	2.81
Beef tripe	0.39	0.89	0.68	1.96
Pork brain	0.30	0.49	0.95	1.74
Beef kidney	0.09	0.77	0.84	1.70

¹2,213.

Table 15. Various reasons given by consumers for their #1-ranking of a beef/pork variety meat.

Reason	<u>#1-ranked item</u>	
	All variety meats ¹	Beef liver only ²
	<u>Percent of consumers</u>	
Like the taste and flavor	82.2	81.4
Nutritious	55.2	61.7
Inexpensive (economical)	29.4	29.5
Family tradition	19.8	18.3
Can prepare different ways	12.5	12.7
Low in calories	10.9	11.4
Good to eat cold or for snacks	8.6	7.6
Gourmet meat treat	4.4	3.7
Other	7.5	7.4

¹2,213 consumers.

²1,686 consumers.

Table 16. Tastes and preferences for variety meats by consumers as related to their ethnic origin(s).

Item	Percent of consumers
Do you think your ethnic origin(s) influenced your tastes and preferences for variety meats?	
Yes	44.0 ¹
No	<u>56.0</u>
TOTAL	100.0
If yes, influential ethnic origin(s):	
American Indian	10.9
Arabic	0.2
Black	15.2
British Isles (English, Irish, Scotch, Welsh)	38.4
Dutch	11.3
Eastern Europe (Czech, Polish, Russian, Yugoslavian, etc.)	4.7
French	9.3
German	39.9
Hispanic (Spanish, Mexican, etc.)	4.2
Indian (India)	0.4
Italian	1.4
Jewish	1.0
Oriental (Chinese, Japanese, Korean, Thai, Vietnamese, etc.)	0.8
Scandinavian (Dane, Norwegian, Swede)	8.5
Other	1.9

¹1,471 consumers.

Table 17. Percentage of consumers, by age group, who purchased and served any beef/pork variety meat during the last year.

Age group	Percent ^{1,2}
Under 25 years	47.8
25-34	55.4
35-44	64.9
45-54	75.0
55-64	73.8
65-74	72.0
75 and over	62.4

¹Probability of a larger value of chi-square ≤ 0.01 under H_0 :

Percentages are the same by age group.

²Based on 3,335 responses.

Table 18. Percentage of consumers, by age group, who purchased and served selected beef/pork variety meats during the last year.

Variety meat	Age group							Probability ¹
	Under 25 yrs.	25-34	35-44	45-54	55-64	65-74	75 & over	
	<u>Percent²</u>							
Beef liver	79.2	89.0	92.2	93.9	92.9	93.4	92.9	≤ 0.01
Beef kidney	5.2	7.0	4.8	5.4	4.0	3.7	2.0	0.39
Beef heart	12.5	14.6	20.2	27.1	26.7	24.1	24.5	≤ 0.01
Beef tongue	15.6	16.0	19.0	22.4	25.4	23.6	16.3	≤ 0.02
Beef tripe	3.1	6.2	6.0	7.2	3.8	3.4	4.1	0.19
Beef sweetbread	1.0	6.5	6.5	7.7	8.2	7.2	6.1	0.39
Beef brains	3.1	3.1	6.0	6.5	8.7	11.8	13.3	≤ 0.01
Beef oxtail	15.6	20.8	22.5	27.1	26.1	27.6	26.5	≤ 0.10
Pork liver	17.7	24.4	29.6	31.5	33.4	33.9	25.5	≤ 0.10
Pork maws	9.4	11.2	11.2	7.7	4.9	6.0	4.1	≤ 0.01
Pork brains	1.0	3.6	4.8	5.1	8.0	7.8	8.2	≤ 0.03
Pigs feet	20.8	25.8	24.8	26.9	28.3	28.2	24.5	0.72

¹Probability of a larger value of chi-square under H_0 : Percentages are the same as age group.

²Based on 2,211 responses.

Table 19. Percentage of consumers, by income level, who purchased and served any beef/pork variety meat during the last year.

Annual income	Percent ^{1,2}
Under \$10,000	73.1
\$10,000-24,999	66.4
\$25,000-39,999	64.9
\$40,000 & over	61.2

¹Probability of a larger value of chi-square ≤ 0.01 under H_0 : Percentages are the same by income level.

²Based on 2,998 responses.

Table 20. Percentage of consumers, by income level, who purchased and served selected beef/pork variety meats during the last year.

Variety Meat	Income level				Probability ¹
	Under \$10,000	\$10,000-\$24,999	\$25,000-\$39,999	\$40,000 & over	
	<u>Percent of consumers, by income level²</u>				
Beef liver	87.6	90.5	94.2	93.8	≤ 0.01
Beef tongue	21.4	20.2	19.2	26.6	≤ 0.10
Beef heart	21.7	23.3	20.9	27.2	0.16
Beef oxtail	31.6	26.4	17.5	24.2	≤ 0.01
Beef brains	12.1	6.9	5.3	6.5	≤ 0.01
Beef sweetbreads	9.6	5.9	6.4	7.4	0.14
Beef kidney	7.1	4.2	4.6	4.0	0.15
Beef tripe	7.1	5.8	3.6	5.6	≤ 0.10
Pork liver	35.4	30.0	27.2	29.4	≤ 0.10
Pigs feet	35.7	27.9	20.7	22.3	≤ 0.01
Pork brains	7.4	6.1	5.4	4.0	0.28
Pork maws	13.7	8.9	5.6	6.5	≤ 0.01

¹Probability of a larger value of chi-square under H_0 : Percentages are the same by income level.

²Based on 1,983 responses.

Table 21. Percentage of consumers, by educational level, who purchased and served any beef/pork variety meat during the last year.

Last year of school completed	Percent ^{1,2}
Grade school and/or some high school	71.3
High school graduate	68.3
Vocational school or some college	62.7
College graduate/post graduate	63.2

¹Probability of a larger value of chi-square ≤ 0.01 under H_0 :

Percentages are the same by educational level.

²Based on 3,332 responses.

Table 22. Percentage of consumers, by educational level, who purchased and served selected beef/pork variety meats during the last year.

Variety meat	Educational level				Probability ¹
	Grade school and/or some high school	High school graduate	Vocational school or some college	College graduate and post graduate	
	<u>Percent²</u>				
Beef liver	89.9	91.6	93.1	92.2	0.51
Beef kidney	6.2	4.8	4.7	4.2	0.78
Beef heart	26.1	22.8	21.7	19.8	0.40
Beef tongue	21.7	20.9	18.6	23.7	0.43
Beef tripe	8.7	5.5	4.6	2.9	≤ 0.02
Beef sweetbread	9.4	7.0	7.1	4.7	0.19
Beef brains	11.6	7.0	7.8	4.2	≤ 0.01
Beef oxtail	34.4	23.8	22.4	21.9	≤ 0.01
Pork liver	40.6	32.0	26.1	22.7	≤ 0.01
Pork maws	12.0	8.7	7.1	4.7	≤ 0.01
Pork brains	9.4	5.3	7.1	2.6	≤ 0.01
Pigs feet	42.0	28.8	21.9	15.1	≤ 0.01

¹Probability of a larger value of chi-square under H_0 : Percentages are the same by educational level.

²Based on 2,207 responses.

Table 23. Various reasons given by 3,340 consumers why they or their families have not used beef/pork variety meats more often.¹

Reason	Percent of consumers
Habit - my family seldom or never used them	37.1
Didn't like the sound of their name (unappetizing)	34.1
Tried them but didn't like	23.7
Have never tasted some of them	22.0
Didn't know how to prepare	14.9
Medical reasons ²	8.2
Didn't know about their nutritional values	6.2
Didn't know about them before	5.2
Not available at store or hard to find	5.1
Too hard to prepare	4.8
Didn't like the package appearance	4.0
Too much cooking time	3.7
Dietary considerations (non-medical) ³	2.5
Other reasons ⁴	5.7

¹3.2% indicated they ate variety meats regularly, seasonally, or as often as desired.

²Medical doctors advised patients against eating certain variety meats because of high fat content and/or high cholesterol levels.

³In order, by frequency: Follow a vegetarian diet, prefer other meat cuts, prefer fish and poultry, will not use "organ" meats, and do not eat pork (includes religious reason).

⁴In order, by frequency: Inconvenience of cooking in 1-2 person household, certain family members (husband, wife, children) won't eat variety meats or only liver, variety meats are eaten only when butchering farmer-owned livestock or when purchasing processed, packaged, frozen beef sides, eating out more, and variety meats were too expensive.

Table 24. Various reasons given by consumers, by age group, why they or their families have not used beef/pork variety meats more often.

Reason	Age group							Probability ¹
	Under 25 yrs.	25-34	35-44	45-54	55-64	65-74	75 & over	
	<u>Percent of consumers, by age group²</u>							
Habit - my family seldom or never used them	38.8	40.9	38.0	38.9	35.9	32.5	28.7	≤ 0.03
Didn't like the sound of their name	45.8	50.1	41.8	34.3	22.7	18.2	14.0	≤ 0.01
Tried them but didn't like	27.4	25.2	25.9	23.5	23.0	20.5	17.2	≤ 0.10
Have never tasted some of them	45.8	30.6	27.2	18.6	15.1	11.6	6.4	≤ 0.01
Didn't know how to prepare	23.9	23.9	18.2	11.9	10.5	7.7	3.2	≤ 0.01
Didn't know about their nutritional values	13.4	7.5	8.2	5.4	5.1	3.1	0.0	≤ 0.01
Didn't know about them before	12.4	8.2	5.1	4.0	3.3	2.7	2.6	≤ 0.01
Not available at store or hard to find	6.0	5.3	4.5	6.6	4.0	5.6	3.2	0.41
Too hard to prepare	8.5	5.1	4.9	4.2	3.6	3.9	7.6	≤ 0.10
Didn't like the package appearance	8.0	8.2	3.3	2.6	2.1	2.5	1.3	≤ 0.10
Too much cooking time	5.0	3.9	3.3	4.7	2.6	3.7	2.6	0.56

¹Probability of a larger value of chi-square under H₀: Percentages are the same by age group.

²Based on 3,335 responses.

Table 25. Various reasons given by consumers, by income level, why they or their families have not used beef/pork variety meats more often.

Reason	Income level				Probability ¹
	Under \$10,000	\$10,000 - \$24,999	-\$25,000 - \$39,999	-\$40,000 & over	
	<u>Percent of consumers, by income level²</u>				
Habit - my family seldom or never used them	31.3	39.9	40.9	33.7	≤ 0.01
Didn't like the sound of their name	31.5	36.1	38.2	33.0	≤ 0.05
Tried them but didn't like	24.5	23.0	23.9	26.3	0.54
Have never tasted some of them	20.7	23.7	25.2	19.9	≤ 0.10
Didn't know how to prepare	12.1	16.4	18.5	12.3	≤ 0.01
Didn't know about their nutritional values	6.6	8.2	6.1	4.4	≤ 0.05
Didn't know about them before	4.8	6.4	5.4	4.2	0.27
Not available at store or hard to find	6.4	4.2	5.6	5.3	0.27
Too hard to prepare	5.4	4.4	5.1	4.6	0.80
Didn't like the package appearance	5.0	4.6	4.1	1.9	≤ 0.05
Too much cooking time	3.0	4.0	4.0	3.2	0.68

¹Probability of a larger value of chi-square under H₀: Percentages are the same by income level.

²Based on 2,998 responses.

Table 26. Various reasons given by consumers, by educational level, why they or their families have not used beef/pork variety meats more often.

Reason	Educational level				Probability ¹
	Grade school and/or some high school	High school graduate	Vocational school or some college	College graduate & post graduate	
	<u>Percent of consumers, by educational level²</u>				
Habit - my family seldom or never used them	32.4	37.4	37.5	36.5	0.94
Didn't like the sound of their name	30.8	33.4	36.2	35.4	≤ 0.10
Tried them but didn't like	26.1	22.2	26.1	22.4	0.15
Have never tasted some of them	18.1	22.4	21.9	24.0	0.25
Didn't know how to prepare	13.2	13.5	17.0	16.8	≤ 0.05
Didn't know of their nutritional values	7.8	5.9	6.4	5.6	0.60
Didn't know about them before	5.2	4.8	4.9	6.4	0.57
Not available at store or hard to find	5.2	4.1	5.9	6.2	0.17
Too hard to prepare	5.4	3.5	6.3	5.4	≤ 0.03
Didn't like package appearance	4.6	4.0	4.1	3.3	0.81
Too much cooking time	4.6	3.2	3.3	4.6	0.40

¹Probability of a larger value of chi-square under H₀: Percentages are the same by educational level.

²Based on 3,332 responses.

Table 27. Various incentives that may persuade 3,340 consumers to try beef/pork variety meats or use them more often.

Incentive	Percent of consumers
More recipes and instructions on how to prepare	30.5
Opportunity to taste	20.8
Price specials	18.8
More information on nutritional values	13.4
Recommended by someone	12.2
Easier preparation (convenience)	11.7
Dependable quality	8.7
Products available regularly	6.3
More products available in frozen form	4.7
Improved packaging	4.2
Other	3.6
No incentive would change my mind	48.1

Table 28. Various incentives that may persuade consumers, by age group, to try beef/pork variety meats or use them more often.

Incentive	Age group							Probability ¹
	Under 25 yrs.	25-34	35-44	45-54	55-64	65-74	75 & over	
	<u>Percent of consumers, by age group²</u>							
More recipes and instructions on how to prepare	45.3	39.7	36.0	31.4	23.8	18.4	10.8	≤ 0.01
Opportunity to taste	38.3	29.4	25.0	20.5	16.0	8.1	5.7	≤ 0.01
Price specials	25.4	21.8	19.8	19.4	17.3	15.3	8.3	≤ 0.01
More information on nutritional values	20.9	17.0	13.7	14.2	12.2	8.9	5.1	≤ 0.01
Recommended by someone	17.4	16.6	14.0	12.3	11.4	6.0	3.2	≤ 0.01
Easier preparation	16.4	15.4	12.2	11.7	10.2	8.1	5.7	≤ 0.01
Dependable quality	13.4	11.0	7.9	10.0	7.9	5.6	3.8	≤ 0.01
Products available regularly	9.0	8.1	5.5	7.5	5.4	4.4	4.5	≤ 0.10
More products available in frozen form	6.5	6.2	3.7	6.0	5.1	2.7	1.3	≤ 0.02
Improved packaging	8.5	7.2	2.7	2.4	3.3	3.9	4.5	≤ 0.10
No incentive would change my mind	29.4	37.2	44.1	47.5	53.4	63.2	68.8	≤ 0.01

¹Probability of a larger value of chi-square under H₀: Percentages are the same by age group.

²Based on 3,335 responses.

Table 29. Various incentives that may persuade consumers, by income level, to try beef/pork variety meats or use them more often.

Incentive	Income level				Probability ¹
	Under \$10,000	\$10,000-\$24,999	\$25,000-\$39,999	\$40,000 & over	
	<u>Percent of consumers, by income level²</u>				
More recipes and instructions on how to prepare	32.5	31.9	33.0	28.2	0.28
Opportunity to taste	21.5	22.2	22.8	17.8	0.13
Price specials	26.9	22.0	16.3	13.8	≤ 0.01
More information on nutritional values	17.3	11.7	14.2	13.8	≤ 0.03
Recommended by someone	13.6	13.4	13.7	10.2	0.23
Easier preparation	12.2	13.2	12.0	10.8	0.60
Dependable quality	10.0	9.8	10.0	6.4	≤ 0.10
Products available regularly	7.6	7.0	6.5	5.5	0.54
More products available in frozen form	6.4	5.6	4.6	3.2	≤ 0.10
Improved packaging	6.4	5.4	2.9	3.0	≤ 0.01
No incentive would change my mind	43.6	47.2	46.0	50.0	≤ 0.01

¹Probability of a larger value of chi-square under H₀: Percentages are the same by income level.

²Based on 2,998 responses.

Table 30. Various incentives that may persuade consumers, by educational level, to try beef/pork variety meats or use them more often.

Incentive	Education level				Probability ¹
	Grade school and/or some high school	High school graduate	Vocational school or some college	College graduate and post graduate	
	<u>Percent of consumers, by educational level²</u>				
More recipes and instructions on how to prepare	32.3	28.3	32.0	32.7	≤ 0.05
Opportunity to taste	19.6	20.0	21.4	23.2	0.26
Price specials	27.6	17.1	17.4	19.2	≤ 0.01
More information on nutritional values	13.2	13.3	14.4	12.8	0.70
Recommended by someone	14.5	11.3	12.5	13.0	0.34
Easier preparation	12.7	10.9	11.5	13.5	0.37
Dependable quality	11.6	8.1	9.1	7.6	0.14
Products available regularly	10.8	5.3	5.9	6.4	≤ 0.01
More products available in frozen form	7.2	4.2	4.8	4.4	0.14
Improved packaging	6.5	4.0	3.7	4.3	0.19
No incentive would change my mind	47.8	50.2	46.5	45.2	≤ 0.05

¹Probability of a larger value of chi-square under H₀: Percentages are the same by educational level.

²Based on 3,332 responses.

Table 31. Frequency of consumers purchasing and serving their #1-ranked beef/pork variety meat during the last year.

Frequency	#1-ranked item	
	All variety meats ¹	Beef liver only ²
	<u>Percent of consumers</u>	
Every 1-2 weeks	17.1	17.3
Every month	27.0	28.4
Every 2-3 months	31.9	31.5
Special occasions only	3.2	2.2
Very seldom	<u>20.8</u>	<u>20.6</u>
TOTAL	100.0	100.0

¹2,213 consumers.

²1,686 consumers.

Table 32. Frequency of purchasing and serving beef liver during the last year by consumers, by age group.

Frequency	Age group						
	Under 25 yrs.	25-34	35-44	45-54	55-64	65-74	75 & over
	<u>Percent of consumers, by age group^{1,2}</u>						
Every 1-2 weeks	14.1	15.0	14.6	20.1	18.5	20.2	13.4
Every month	20.3	25.9	26.7	29.0	28.4	33.4	29.3
Every 2-3 months	29.7	31.7	31.9	30.5	36.0	27.0	30.7
Special occasions only	0.0	2.3	3.2	2.4	2.1	1.5	1.3
Very seldom	<u>35.9</u>	<u>25.1</u>	<u>23.6</u>	<u>18.0</u>	<u>15.0</u>	<u>17.9</u>	<u>25.3</u>
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹Probability of a larger value of chi-square ≤ 0.05 under H_0 : Percentages are the same by age group.

²Based on 1,684 responses.

Table 33. Frequency of purchasing and serving beef liver during the last year by consumers, by income level.

Frequency	Income level			
	Under \$10,000	\$10,000-\$24,999	\$25,000-\$39,999	\$40,000 & over
	<u>Percent of consumers, by income level^{1,2}</u>			
Every 1-2 weeks	19.9	17.6	17.4	15.7
Every month	33.3	30.2	23.7	31.1
Every 2-3 months	28.5	31.8	33.0	32.3
Special occasions only } Very seldom	<u>18.3</u>	<u>20.4</u>	<u>25.9</u>	<u>20.9</u>
TOTAL	100.0	100.0	100.0	100.0

¹Probability of a larger value of chi-square ≤ 0.10 under H_0 :

Percentages are the same by income level.

²Based on 1,505 responses.

Table 34. Frequency of purchasing and serving beef liver during the last year by consumers, by educational level.

Frequency	Educational level			
	Grade school and/or some high school	High school graduate	Vocational school or some college	College graduate and post graduate
	<u>Percent of consumers, by educational level^{1,2}</u>			
Every 1-2 weeks	28.2	17.0	14.1	15.9
Every month	28.7	29.9	28.0	24.6
Every 2-3 months	28.2	31.9	28.9	36.6
Special occasions only	0.5	1.7	2.8	3.6
Very seldom	<u>14.4</u>	<u>19.4</u>	<u>26.2</u>	<u>19.4</u>
TOTAL	100.0	100.0	100.0	100.0

¹Probability of a larger value of chi-square ≤ 0.01 under H_0 : Percentages are the same by educational level.

²Based on 1,681 responses.

Table 35. Various reasons given by consumers, by age group, for using beef liver.

Reason	Age group							Proba- bility ¹
	Under 25 yrs.	25-34	35-44	45-54	55-64	65-74	75 & over	
	<u>Percent of consumers, by age group²</u>							
Like the taste & flavor	75.0	73.8	82.8	82.3	83.0	85.6	80.0	≤ 0.02
Nutritious	56.2	66.0	60.9	63.2	62.5	56.3	62.7	0.34
Inexpensive	32.8	34.4	35.3	28.7	27.6	22.4	21.3	≤ 0.01
Family tradition	12.5	21.2	20.1	15.0	20.8	17.1	13.3	0.22
Can prepare different ways	25.0	13.9	11.5	12.0	13.8	10.7	9.3	≤ 0.10
Low in calories	17.2	13.9	12.9	12.3	9.4	9.9	2.7	≤ 0.10
Good to eat cold or for snacks	6.2	8.1	8.1	7.8	8.2	6.5	2.7	≤ 0.01
Gourmet meat treat	7.8	6.6	2.9	3.9	4.1	1.5	0.0	≤ 0.05

¹Probability of a larger value of chi-square under H₀: Percentages are the same by age group.

²Based on 1,684 responses.

Table 36. Various reasons given by consumers, by income level, for using beef liver.

Reason	Income level				Probability ¹
	Under \$10,000	\$10,000-\$24,999	\$25,000-\$39,999	\$40,000 & over	
	<u>Percent of consumers, by income level²</u>				
Like the taste & flavor	78.1	84.3	81.3	79.5	0.15
Nutritious	58.9	63.5	66.2	55.5	≤ 0.03
Inexpensive	32.1	31.4	31.7	21.6	≤ 0.02
Family tradition	20.3	19.7	17.9	16.9	0.68
Can prepare different ways	19.9	13.6	11.6	7.1	≤ 0.01
Low in calories	11.8	12.5	11.3	9.8	0.75
Good to eat cold or for snacks	11.0	8.5	5.9	5.9	≤ 0.10
Gourmet meat treat	4.5	4.9	2.9	1.6	≤ 0.10

¹Probability of a larger value of chi-square under H₀: Percentages are the same by income level.

²Based on 1,505 responses.

Table 37. Various reasons given by consumers, by educational level, for using beef liver.

Reason	Educational level				Probability ¹
	Grade school and/or some high school	High school graduate	Vocational school or some college	College graduate and post graduate	
<u>Percent of consumers, by educational level²</u>					
Like the taste and flavor	86.2	82.6	75.5	83.5	≤ 0.01
Nutritious	61.7	55.8	66.2	69.3	≤ 0.01
Inexpensive	34.6	25.9	30.1	34.6	≤ 0.05
Family tradition	24.5	18.6	16.7	16.5	0.12
Can prepare different ways	21.8	12.5	10.9	10.4	≤ 0.01
Low in calories	16.0	11.6	11.1	9.1	0.18
Good to eat cold or for snacks	17.6	6.9	5.3	5.8	≤ 0.01
Gourmet meat treat	8.5	3.1	2.6	4.2	≤ 0.01

¹Probability of a larger value of chi-square under H₀: Percentages are the same by educational level.

²Based on 1,681 responses.

A P P E N D I X

Recipes for Beef/Pork Variety Meats

Recipes were prepared and tested by Jean Craig, Department of Foods and Nutrition, Kansas State University, Manhattan, for use on KAES Research Project OR 566 (Department of Agricultural Economics).

BRAINS WITH SCRAMBLED EGGS

Utensils:

Sauce pan
Skillet

Ingredients:

1 lb. brains
1 quart water
1 T vinegar
1 t salt
6 eggs
1/2 cup milk
3/4 t salt
1/4 t pepper
4 T margerine

1. Wash brains and simmer 20 minutes in water plus salt and vinegar.
2. Drain and remove membrane, cut into small pieces.
3. Beat eggs. Add milk, salt and pepper.
4. Cook brains in fat until lightly brown.
5. Add egg mixture, cook slowly, stirring constantly.

BREADED BEEF TRIPE

Utensils:

Sauce pan
Skillet or deep fat frying pan

Ingredients:

1 lb. tripe
1 egg
1 T milk
1/2 cup dry bread crumbs
cooking oil (as needed)

1. Cover tripe with water and cook slowly 2 hours or until tender.
2. Drain and cut into small serving pieces.
3. Dip in slightly beaten egg and milk, then bread crumbs.
4. Brown in fat or deep fat fry.

BEEF HEART FRICASSE

Utensils:

Electric skillet
Spatula

Ingredients:

1 Beef heart
1/4 cup flour
1/4 cup cooking fat
1 t salt
1/4 t pepper
1/2 cup sliced onions
1 cup sliced carrots
1 can tomatoes, 14.5 oz

1. Wash the heart and remove any hard parts.
2. Slice in very thin slices across the grain.
3. Dredge in flour and brown in hot fat.
4. Add salt, pepper, and onions and brown.
5. Add carrots and tomatoes.
6. Cover and cook at a low temperature for 1 hour or until the heart is tender.

Note: This could be prepared the day before and reheated in the store

LIVER CHOW MEIN

Utensils:

Electric skillet
Spatula

Ingredients:

1 1/2 lb. beef liver or pork liver
4 T cooking fat
1 cup diced celery
1/2 cup green peppers
1 can tomatoes, 29 oz
1 can chinese vegetables
6 T cornstarch
3 T molasses
2 T soy sauce
2 cans chinese noodles, 3 oz
1/2 t salt
1/2 t pepper

1. Slice liver into thin slices, 1/2 inch.
2. Brown lightly in hot fat.
3. Add celery, green pepper and tomatoes and simmer 10 min.
4. Add drained Chinese vegetables.
5. Mix cornstarch, molasses, soy sauce, salt and pepper.
6. Add to meat and vegetable mix and cook with stirring until thickened.
7. Serve over chinese noodles.

Makes about 4 cups

BOILED BEEF TONGUE

Utensils:

Pressure sauce pan or large covered pan
Electric skillet

Ingredients:

1 beef tongue
4 whole cloves
4 peppercorns
1 T vinegar
1 t salt
1/8 t pepper
1 jar of prepared spaghetti sauce

1. Place tongue in pressure sauce pan or in water to cover in pan and cook 2 hours in pressure or 4 hours in pan.
2. Partically cool in the liquid.
3. Remove the skin.
4. Slice and cut into 1 inch squares.
5. Put into skillet and cover with the spaghetti sauce.
6. Simmer 30 minutes and serve.

BRAINS

Utensils:

Pan to soak brains
Deep fat frying container

Ingredients:

1 lb. brains
1 quart water
1 T vinegar
1/2 cup flour
1/2 cup milk
1 egg

1. Cover brains with water plus 1 T vinegar and let stand 30 minutes.
2. Drain and remove the membranes.
3. Cook slowly in salted water 25 minutes.
4. Drain and chill.
5. Mix flour, milk and egg.
6. Dip in above mix and then bread crumbs.
7. Fry in deep fat 425⁰ F.
8. Drain and serve.

LIVER AND RICE CASSEROLE

Utensils:

Electric skillet

Ingredients:

1 lb. pork liver cut into small pieces, 3/4 inch
1/4 cup chopped green peppers
1/2 cup chopped celery
1 med onion diced
4 T cooking oil
1 can tomatoes 16 oz
1/2 t salt
1/2 t pepper
1/8 t thyme
3 cups minute rice
1/2 cup grated cheese
1 can tomato sauce

1. Cook liver, green pepper, celery and onion in fat until liver is lightly brown and vegetables are tender.
2. Add tomato sauce, tomatoes, salt, pepper and thyme, rice and water.
3. Cover, and bring to boil.
4. Let stand 10 minutes.
5. Add cheese and let melt.

BEEF SWEETBREADS

Note: Thaw sweetbreads under cold running water and let stand in cold water for 30 minutes.

Utensils:

Sauce pan to boil meat
Deep fat fryer, as small as possible

Ingredients:

Sweetbreads
1 T vinegar
1/2 cup flour
1/2 cup milk
1/2 cup bread crumbs
Butter flavored cooking oil

1. Put sweetbreads in a pan and cover with water plus 1 T vinegar.
2. Bring to boil and simmer 15 minutes.
3. Place immediately in ice water.
4. Remove membranes and connective tissues (if they bread into small pieces, it's alright).
5. Cut into bite-sized pieces.
6. Dip into flour, then milk and then breadcrumbs.
7. Deep fat fry, drain in basket or on paper towels.
8. Serve on a toothpick.

KIDNEY STEW

Utensils:

Sauce pan
Electric skillet

Ingredients:

1 kidney
1 cup water
2 beef bouillon cubes
1 large onion, diced
1/4 cup green pepper
1 t salt
1/2 t pepper
4 carrots, diced
1/4 cup lemon juice
2 T flour

1. Clean the kidney and remove tubes, membranes and any white parts.
2. Soak kidney in water plus 2 T vinegar for 30 minutes.
3. Simmer in clear water for 20 minutes and discard the water.
4. Cut into small pieces.
5. Put kidney, water, bouillon, onion, green pepper and carrots in the skillet and cook until tender.
6. Add lemon juice and flour and cook until thickened.

PORK MAWS A LA CREOLE

Utensils:

Sauce pan
Electric skillet

Ingredients:

1 lb. tripe or maws
water
2 T oleo
3 T green peppers
3 T chopped onions
3 T flour
1 can tomatoes
1 t salt
1/4 t pepper

1. Cover meat with water and cook slowly for 2 hours or until tender.
2. Chop into small pieces.
3. Heat oleo in skillet, add onions and green peppers and cook until tender.
4. Add flour, tomatoes and meat.
5. Simmer 30 minutes and serve.

BEEF OXTAIL STEW

Utensils:

Pressure sauce pan or large covered pan

Ingredients:

2 1/2 lb. oxtail, cut into 3-4 inch pieces
1/2 stick of oleo
1/2 large onion, chopped
1/2 cup celery, chopped
1 bay leaf
1 can tomatoes, 14.5 oz
2 medium potatoes, peeled and cut in 1/8
4 carrots, chopped
1/2 t salt
1/2 t pepper
1/4 cup flour

1. Heat oleo in pressure sauce pan or pan to be used.
2. Dredge oxtail in flour, salt, and pepper.
3. Brown meat in oleo.
4. Add onion, celery, bayleaf, tomato and two cups of water.
5. Pressure at 15 lbs. for 1 hour or simmer in pan for 4 hours.
6. Add potatoes and carrots the last 15 minutes in pressure pan or 1 hour in other pan.
7. Remove pieces of bone.
8. Serve in small cups with a spoon and a cracker.

Note: This could be prepared the day before and reheated in electric skillet at the store.

Questionnaire for Consumer Interviews

Kansas State University, Falley's Inc. Intvwr's Code No. T-__ S-__ W-__
Swift Independent, and Associated
Wholesale Grocers (KC), cooperating. Intvwr's Cumulative Questionnaire
No. _____

CONSUMER USAGE OF AND ATTITUDES TOWARD VARIETY MEATS

Date: ___/___/86 Day of week: () Thursday () Friday () Saturday
(Mark (X)).

Store # _____ () Food 4 Less City: () Topeka
() Falley's Supermarket () Salina
() Wichita

"Hello - I'm (Interviewer's name) representing Kansas State University.
We are trying to determine consumers' usage of variety meats and their
attitudes toward them. May I ask you a few questions? Information you
give us will be used only for research purposes.

QUESTIONS FOR PERSON BEING INTERVIEWED

1. ARE YOU THE PERSON WHO DECIDES AND/OR PREPARES THE MEAT SERVED IN
YOUR HOUSEHOLD? (Mark (X)).
- a. () Yes (If "yes" interviewer hands folder (with questionnaire)
to consumer so she/he may look at questions).
- b. (-) No (If "no" discontinue the interview).

2. HAVE YOU EVER EATEN ANY OF THESE BEEF/PORK VARIETY MEATS?
(Ask about each item, by name, and mark (X) for each one).

	<u>Yes</u>	<u>No</u>
a. Beef liver	()	()
b. Beef kidney	()	()
c. Beef heart	()	()
d. Beef tongue	()	()
e. Beef tripe	()	()
f. Beef sweetbreads .	()	()
g. Beef brains	()	()
h. Beef oxtail	()	()
i. Pork liver	()	()
j. Pork maws	()	()
k. Pork brains	()	()
l. Pigs feet	()	()

3. IF YOU ANSWERED "YES" TO ANY ITEM IN QUESTION #2, WHAT WAS THE
EARLIEST AGE THAT YOU REMEMBER EATING ANY OF THESE BEEF/PORK VARIETY
MEATS? (Mark (X) for one age group).
- a. () 0 - 19 years
b. () 20 - 39 years
c. () 40 years and over

4. HAVE YOU PURCHASED AND SERVED ANY BEEF/PORK VARIETY MEAT IN YOUR HOUSEHOLD DURING THE LAST YEAR? (Mark (X)).

- a. () Yes
- b. () No (If "no" go to question #9)

5. WERE ANY OF THE BEEF/PORK VARIETY MEATS (listed below) SERVED IN YOUR HOUSEHOLD DURING THE LAST YEAR? (Ask about each item, by name, and mark (X) for each one).

	<u>Yes</u>	<u>No</u>
a. Beef liver	()	()
b. Beef kidney	()	()
c. Beef heart	()	()
d. Beef tongue	()	()
e. Beef tripe	()	()
f. Beef sweetbreads	()	()
g. Beef brains	()	()
h. Beef oxtail	()	()
i. Pork liver	()	()
j. Pork maws	()	()
k. Pork brains	()	()
l. Pigs feet	()	()

6. RANK (in order) THREE BEEF/PORK VARIETY MEATS THAT YOU PURCHASED AND SERVED MOST FREQUENTLY DURING THE LAST YEAR. (write or print item name, use abbreviations: B = Beef and P = Pork. Example: B-liver; if only one item was purchased, write or print "None" in #2 and #3 spaces).

#1 _____ #2 _____ #3 _____

7. INDICATE YOUR REASON(S) (listed below) FOR USING EACH OF THE THREE TOP-RANKED BEEF/PORK VARIETY MEATS (in question #6 above).

(Mark (X) for applicable reason(s) for each ranked item).

(Write or print names of 3 top-ranked items here)

Reason(s)	#1	#2	#3
a. Inexpensive (economical).....	()	()	()
b. Nutritious.....	()	()	()
c. Like the taste and flavor.....	()	()	()
d. Good to eat cold or for snacks	()	()	()
e. Can prepare different ways....	()	()	()
f. Low in calories.....	()	()	()
g. Gourmet meat treat.....	()	()	()
h. Family tradition.....	()	()	()
i. Other_____	()	()	()
j. Other_____	()	()	()

8. DURING THE LAST YEAR, HOW OFTEN DID YOU PURCHASE AND SERVE THE #1 RANKED BEEF/PORK VARIETY MEAT? (See question #6 above, mention item name).

- a. () Every 1-2 weeks
- b. () Every month
- c. () Every 2-3 months
- d. () On special occasions (holidays, etc.) only
- e. () Very seldom

9. WHY HAVEN'T YOU OR YOUR FAMILY USED BEEF/PORK VARIETY MEATS MORE OFTEN? (Mark (X) for all possibilities).

- a. () Didn't know about them before.
- b. () Have never tasted some of them.
- c. () Didn't know how to prepare.
- d. () Didn't know about their nutritional values.
- e. () Too hard to prepare.
- f. () Didn't like the "sound of their name" (unappetizing).
- g. () Tried them but didn't like.
- h. () Too much cooking time.
- i. () Not available at store or hard to find.
- j. () Didn't like the package appearance.
- k. () Habit - my family seldom or never used them.
- l. () Other (explain) _____

10. WHICH OF THE INCENTIVES (listed below) WOULD POSSIBLY GET YOU TO TRY AND USE BEEF/PORK VARIETY MEATS OR USE THEM MORE OFTEN? (Mark (X) for all possibilities).

- a. () More information on nutritional values.
- b. () More recipes and instructions on how to prepare.
- c. () Easier preparation (convenience).
- d. () More products available in frozen form.
- e. () Improved packaging.
- f. () Products available regularly.
- g. () Price specials.
- h. () Dependable quality.
- i. () Opportunity to taste.
- j. () Recommended by someone.
- k. () Other (explain) _____

l. () No incentive would change my mind.

DEMOGRAPHICS

11. SEX OF PERSON INTERVIEWED () Male () Female (Mark (X)).

12. FOR HOW MANY PEOPLE IS FOOD USUALLY PREPARED IN YOUR HOUSEHOLD? (Mark (X)).

- a. () One
- b. () Two
- c. () Three to four
- d. () Five or more

13. WHAT IS YOUR AGE GROUP? (Mark (X)).

- a. () Under 25 years. () RA
- b. () 25-34
- c. () 35-44
- d. () 45-54
- e. () 55-64
- f. () 65-74
- g. () 75 and over

14. WHAT WAS THE LAST YEAR OF SCHOOL YOU COMPLETED? (Mark (X)).

- a. () Grade school and/or some high school () RA
- b. () High school graduate
- c. () Vocational school or some college
- d. () College graduate/post graduate

15. WHAT WAS YOUR ANNUAL "FAMILY" INCOME GROUP (A,B,C,D, etc.) IN 1985? (Mark (X)). (Ask "Which capital letter best indicates your income group?")

- A () Under \$5,000 () RA
- B () \$5,000 - 7,499
- C () \$7,500 - 9,999
- D () \$10,000 - 14,999
- E () \$15,000 - 19,999
- F () \$20,000 - 24,999
- G () \$25,000 - 29,999
- H () \$30,000 - 39,999
- I () \$40,000 - 49,999
- J () \$50,000 & over

16. DO YOU THINK YOUR ETHNIC ORIGIN INFLUENCES YOUR TASTES AND PREFERENCES FOR VARIETY MEATS?

- a. () Yes (If "yes" indicate the "influential" ethnic origin(s) in list below. (Mark (X)).
- b. () No

Ethnic origins (alphabetically)

- a. () AMERICAN INDIAN
- b. () ARABIC
- c. () BLACK
- d. () BRITISH ISLES (English, Irish, Scotch, Welsh)
- e. () DUTCH
- f. () EASTERN EUROPE (Czech, Polish, Russian, Yugoslavian, etc.)
- g. () FRENCH
- h. () GERMAN
- i. () HISPANIC (Spanish, Mexican, etc.)
- j. () INDIAN (India)
- k. () ITALIAN

- l. () JEWISH
- m. () ORIENTAL (Chinese, Japanese, Korean, Thai, Vietnamese, etc.)
- n. () SCANDINAVIAN (Dane, Norwegian, Swede)
- o. () OTHER (explain) _____

"THIS CONCLUDES OUR INTERVIEW. THANK YOU!" (Recover questionnaire folder)

Nutritional Values of Variety Meats

Variety Meat	Approximate Measure	Calo- ries	Pro- tein	Fat	Minerals					Vitamins			
					grams	grams	mg.	Cal- cium mg.	Phos- pho- rus mg.	Po- tas- sium mg.	So- dium mg.	A	B ₁
										units	mg.	mg.	mg.
BRAINS, beef, pork	3 1/2 oz.	125	10	8	2.4	10	312	219	125	0	.2	.2	4.4
HEART, braised	3 oz.	160	26	5	6.0	14	203	190	90	30	.2	1.0	6.8
KIDNEY, braised	3 1/2 oz.	230	33	7	13.1	18	220	320	250	1,150	.5	4.8	10.7
LIVER, beef, sauteed	3 1/2 oz.	230	26	10	9.0	8	476	380	184	53,400	.3	4.1	16.5
LIVER, pork, 2 slices	3 1/2 oz.	241	29	11	29.0	15	539	390	111	14,000	.3	4.4	22.3
SWEETBREADS, braised, calf	3 1/2 oz.	170	32	3	.8	7	360	244	116	0	.1	.3	5.0
TONGUE, beef	3 oz.	205	18	14	2.5	7	180	240	90	0	trace	.3	3.0



Agricultural Experiment Station, Kansas State University, Manhattan 66506

Department Report

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