MARKETING RESPONSES TO CHANGING CONSUMER PREFERENCES IN THE FRESH BEEF INDUSTRY

By

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CHAPTER ONE

INTRODUCTION

The fresh meat industry is changing the way it markets its products. The decline in red meat consumption that has resulted from greater consumer concerns about the "healthfulness" of red meat, coupled with changes in consumer lifestyles emphasizing a need for convenience is contributing to the diminishment of "commodity selling" in favor of a true "marketing" approach (Pierson and Allen, 1986). In a traditional industry such as meats, the shift from a commodity-selling perspective (i.e., selling of homogeneous goods) to a marketing (i.e., marketing of differentiated goods) perspective is a slow transition. The fresh beef industry is moving toward the adoption of this contemporary food marketing strategy by shifting away from the traditional selling of beef as a commodity in favor of marketing differentiated beef products targeted to the wants and needs of specific consumer segments (Pierson and Allen, 1986).

This research investigates recent developments in the fresh beef industry and assesses the implications of these developments for consumers, retailers, processors and producers. Beef marketing programs are reviewed in the following areas:

1) The introduction of close-trim programs by the meat industry;
2) The introduction of "light" (reduced fat content) beef;
3) The introduction of "natural" (hormone-free) beef;
4) The introduction of branded and branded case-ready beef by leading processors and retailers.

An Overview of the Beef Industry

Over the past two decades, the U.S. beef industry has undergone substantial changes in the areas of livestock production and management, processing and distribution of animal carcasses, and fresh meat marketing at the retail level. Some examples of recent innovations include: breeding and feeding programs designed to produce leaner animals and improve feed efficiency (i.e., conversion of feed to lean meat); the development of a closer working relationship between meat packers and retailers, including additional processing at the packer level; and new merchandising techniques at the retailer level.

Per capita consumption of beef increased steadily from 64.2 pounds (retail weight) in 1960 to 94.4 pounds in 1976. Over the next five years, per capita consumption steadily declined, reaching a low of 76.5 lbs. in 1980. Since 1980, per capita consumption has held relatively steady, averaging 77.9 pounds during the 1981 to 1984 period (USDA, 1985, p. 17).

A number of studies examining the consumption of fresh beef attribute the decline in consumption to structural changes in demand for beef, the development of mature
markets, relative price effects between beef and other meats, and consumers' changing tastes and preferences (Skaggs and Menkhaus, 1986; Hahn, 1988). Other studies of the demand for beef products concluded that existing demand system approaches (i.e., the use of relative prices and expenditures) explain the decline in red meat consumption, while some findings imply that social changes or shifts in consumer attitudes may have an effect on red meat consumption (Yankelovich, Skelly, and White, 1983, 1985; Burke, 1987; Kinsey, 1986; Johnson, 1987; Chalfant and Alston, 1988). These changes includes the changing role of women in society, the emergence of more nutritious food items, and the impact of the increased value of time on food preparation (Breidenstein, 1988). The results of all of these studies, coupled with results of consumer studies (e.g., the National Consumer Beef Study, and the Wyoming Lean Beef Survey) provide insights into consumer perceptions of today's beef (Branson et. al., 1986).

In an effort to respond to the decline in per capita consumption, the beef industry has undergone adjustments from producers to retailers. The production of leaner beef through changes in feeding and livestock management practices, the development of the Nutri-Facts program which communicates the nutritional benefits of red meats, and the introduction of beef products in more time-saving and convenient forms are examples of industry efforts to respond
to the changing needs of consumers. The implementation of new marketing programs such as branded beef, light beef, natural beef, and close-fat trim programs by producers, packers and retailers are designed to change consumers' images of fresh beef, add value to products, change product presentation, as well as enhance marketing and merchandising techniques. The impacts and implications of these marketing programs are reviewed in this research.

**Research Objectives**

The overall objective of this paper is to describe and analyze recent marketing initiatives by the beef industry. Specific objectives include:

0 To describe and analyze the development and performance of close-trim beef products by retailers;

0 To describe and analyze the development and performance of branded, and branded case-ready beef programs by packers and retailers;

0 To describe and analyze the development and performance of light beef programs by packers and retailers;

0 To describe and analyze the development and performance of natural beef programs by packers and retailers;

0 To conduct a survey of packers, retailers and other industry professionals' attitudes toward each of the above mentioned initiatives and to review the
implications of the survey results on future beef marketing programs.

The significance of this research for the fresh beef industry is discussed in the next section.

Importance of Research

As stated earlier, the decline in per capita beef consumption is prompting the beef industry to re-evaluate its' marketing methods. An increase in market research on consumer behavior and perceptions, as well as the development of new marketing programs, are part of the solution to changing the mind-set of the beef industry from that of selling of relatively homogeneous products (commodity selling) to the marketing of differentiated goods (product marketing). The success of the beef industry--producers, meat packers, wholesalers and retailers--to understanding changing consumer demands will have impacts on per capita consumption and may in fact determine the future profitability of the beef industry.

Producers are concerned with the decline in beef consumption and are interested in the effectiveness of new beef marketing programs designed to present a more positive image. Processors and retailers are interested in the relationship between consumers and the contemporary marketing programs. This paper compiles and analyzes various consumer and industry-related research results. The results in total present a picture of today's beef industry marketing as well as a series of beef marketing program
profiles. This information will be useful to various beef industry organizations from producers and packers to wholesalers and retailers as well as related commodity groups.

**Research Methods**

The majority of background information on branded beef, light beef, natural beef and close-fat trim programs is taken from articles appearing in trade and academic publications and is found in the review of literature. In addition, information from marketing studies performed by universities and marketing research firms is also presented. In order to gather information about the perceptions of beef industry professionals, a survey of meat packers, wholesalers, and retailers was conducted. This survey focused on new meat marketing initiatives (i.e., branded beef, natural beef, light beef and close fat-trim programs) and was conducted at the 1987 AMI/FMI Meat Marketing Conference. Results of the survey are used to assess retailer, wholesaler, and processor attitudes toward each marketing program.

Information on consumer attitudes and preferences for fresh beef products is compiled from secondary sources such as the National Consumer Beef Study, the Consumer Climate for Red Meat, and the National Beef Safety Assurance Task Force. Given the empirical research previously conducted on changes in beef consumption, this paper focuses on industry responses to these changes.
**Expected Findings**

The following statements reflect the expected findings of this research:

0 Compiled results of recent consumer attitude surveys on beef indicate a need for differentiated beef products and marketing programs;

0 Compiled results of the AMI/FMI Meat Marketing Survey are expected to reveal similarities between beef marketing programs.

0 Compiled results are expected to indicate positive responses by packers, retailers and other industry professionals with respect to the development of differentiated beef products, increased consumer information programs, and an increase in the further processing of carcasses by packers.

**Organization of Report**

This remainder of this paper is organized in the following manner: Chapters 2 through 5 provide reviews of literature and the American Meat Institute/Food Marketing Institute Survey results on each of the marketing programs (i.e., branded beef, light beef, natural beef, and fat-trim programs). Chapter 6 provides a summary of the research results, conclusions about the effectiveness of the four marketing programs, and suggests future research that could be pursued.
CHAPTER TWO

THE EFFECT OF CLOSE-FAT TRIM PROGRAMS ON FRESH BEEF MARKETING

Close-fat trim is the first of four fresh beef marketing program areas examined in this research. The other marketing areas include: light beef; natural beef; and branded, case-ready beef. Initiatives in each of these areas evolved from industry and university-sponsored research.

Close-fat trim programs focusing on the removal of trimmable external fat from retail beef cuts, were developed in response to increased consumer concerns about dietary fat intake (Burke, 1987). Research findings revealed the presence of visible fat in meat products (i.e., marbling, intermuscular and external) had a negative impact on consumers perceptions of red meats. Additional research studies revealed that the removal of external fat yielded positive consumer reactions toward fresh beef products and that consumers apparently view close-trimmed fresh beef products as leaner and healthier (Branson, et al., 1986a, Burke, 1987).

The first section of this chapter identifies food consumption patterns and consumer lifestyle changes. For example, consumer perceptions of dietary fat intake and the effect of these perceptions on the fresh beef industry are examined. The second section provides an overview of
current research regarding consumer perceptions about the presence of fat on fresh beef and the development of packer and retail initiated close-fat trim programs. Finally, the results of the 1987 AMI/FMI Meat Marketing Conference Survey of packers, retailers and other industry representatives provides industry feedback about the use and success of close-fat trim programs.

Food Consumption Patterns and Changes in Consumer Lifestyles

Over the last 25 years, food consumption in the United States showed only a 4% change in total per capita consumption, from a high of 1425 pounds per capita in 1984 to a low of 1360 pounds per capita in 1973 (Kinsey, 1986). While the amount of food consumed has not changed significantly, the types of food eaten and the methods of food preparation have been modified. For example, per capita consumption of poultry, cheese, frozen fruits and vegetables, and fresh vegetables have increased in recent years. Also, the consumption of fresh produce, while it has not reached the equivalent of per capita consumption of fresh fruits and vegetables in the 1940's, has increased steadily. Other changes in foods consumed between 1967 and 1983 include an 81% increase in vegetable oil consumption and a 29% decrease in the consumption of animal fats (Kinsey, 1986). These changes in food consumption patterns are a reflection of the changes in consumer tastes and preferences and changing demographics and lifestyles.
Consumer lifestyle changes in the area of health and fitness have effected the type and quantity of foods consumed. In addition, information linking a balanced diet and moderation of cholesterol, sodium, sugar and fat intake to longevity has increased consumer awareness of these ingredients and has ultimately influenced their consumption (Kinsey, 1986).

Close-Fat Trim Programs: Development and Implementation

As discussed earlier, part of the negative image associated with beef resulted from an increased consumer awareness of the presence of excess fat on beef cuts. Once fat was identified as a key negative factor, meat scientists and industry researchers began experimenting with methods to reduce fat content, and develop low-fat beef products that would be more acceptable to consumers. The initial industry reaction was to concentrate research efforts on the reduction of intermuscular fat (seam fat) and marbling from beef cuts.

Further research at Texas A&M University found that consumers perceived the presence of external trimmable fat on fresh retail beef cuts as the most negative factor affecting their purchase decision. Consumer survey results indicated that once external fat was removed to 1/4 inch or less, perceptions toward fresh beef products greatly improved. Close-fat trimming reduces the easily removed external fat on retail beef cuts. Since program participation is voluntary, specifications for close-fat
trim are set by individual retailers. The remainder of this chapter focuses on the industry's development and implementation of close-fat trim programs.

**The Consumer Climate for Red Meat**

Since 1983, the Consumer Climate for Red Meat, a biennial survey of the consumer market for meat products has focused on changes in consumer attitudes about red meat usage. First prepared by the marketing research firm Yankelovitch, Skelly and White, this report was more recently prepared by Burke Marketing.

The objectives of the Consumer Climate for Red Meat Studies in 1983, 1985 and 1987 were three-fold:

- To keep the meat industry abreast of consumer changes by monitoring demographic, social and economic factors which affect consumer attitudes and impact meat purchase behavior;

- To provide the meat industry with general guidelines for market communications, product development, and merchandising strategies designed to improve consumer preferences and increase the demand for meat products;

- To provide the meat industry with an instrument for monitoring the effectiveness of new marketing programs (Yankelovitch, Skelly and White, 1985; Burke, 1987).
The objectives of the Consumer Climate studies were adjusted over time and were primarily focused on consumer behavioral and attitudinal changes toward red meats and red meat usage.

The 1987 Consumer Climate Study, conducted by Burke Marketing Research, utilized a National Probability Sample which consisted of a list of telephone numbers in the 48 contiguous states. Appropriate procedures were taken to ensure a representative sample (Burke, 1987). Survey participants were 18 years of age or older and were primary grocery shoppers in their households. Each respondent (n=1514) was questioned about the following categories:

- Frequency of serving red meat, poultry, fish and other protein sources during a two week period;
- Perceived changes in serving frequency;
- Attitudes relating to meat and other dietary issues;
- Actions regarding fat trimming and poultry skin removal;
- Awareness and concern about additives present in meat;
- Use of leaner meats;
- Demographics" (Burke, 1987, p. 3).

In all Consumer Climate Studies, consumer respondents were separated into five groups, each possessing the different attitudes toward meat. "Meat Lovers" are highly committed to meat, while "Creative Cooks" are highly conscious of diet and health issues. The food purchase decisions of "Price-Driven" consumers are heavily influenced
by price. "Active Lifestyle" consumers make food purchase decisions based importantly on ease of meal preparation, and "Health Oriented" consumers express the highest levels of concern about health related issues (Yankelovich, et. al, 1985).

Findings from the 1987 survey revealed that consumers believe meat is the best tasting meal entree, however, few respondents felt a meal must include meat. Additionally, respondents indicating they had changed their red meat consumption were twice as likely to claim a decrease in consumption rather than an increase. Fewer respondents than in previous years stated that prices governed their meat purchase decisions. The 1987 study revealed that ease and speed of preparation have become important characteristics for meat items.

The 1987 study showed a large portion of consumer respondents were concerned about health-related issues (salt levels, cholesterol and fat content), however, these levels of concern have not changed significantly since the 1985 study (Burke, 1987). Participants' concern about weight control and caloric intake increased since the 1985 study. Similarly, consumer concerns about cholesterol intake also appeared to be increasing.

The National Consumer Retail Beef Study

The 1985 National Consumer Retail Beef Study (NCRBS), conducted by Texas A&M University and funded by the Beef Industry Council and the National Cattlemen's Association,
was an industry-wide study which identified the wants of beef consumers in a diversified market. The NCRBS was performed in two phases. Phase I focused on the role of quality grade and taste appeal, while Phase II examined the issue of palatability and the amount of external fat trim desired by beef consumers. This two-phase study (NCRBS) and the related National Beef Market Basket Survey, a 12-city survey initiated in the fall of 1987 and completed in February of 1988, prompted a change in the beef industry's perspective toward consumers and the marketing of fresh retail beef products.

 Phase II of the NCRBS, conducted in the Philadelphia and San Francisco markets, consisted of 750 female primary food shoppers from 21 to 64 years of age who used beef products at least once a month. The study was conducted in the Fall of 1985 using the Yankelovich, Skelly and White Laboratory Test Market (LTM) Procedure. Trimmed beef products were offered in both Philadelphia and San Francisco at parity and premium (10% more than parity) prices. Retail cuts in the Philadelphia LTM consisted of Choice grade beef cuts at the following trim levels: 0.5 inches--Regular trim; 0.3 inches--Extra trim; and no external fat--Super trim. Since the San Francisco consumer market was typically a lean beef market, the LTM consisted of Select grade beef at Extra trim and Super trim levels.

 The following conclusions from NCRBS Phase II addressed the close-fat trim concept:
1) In the absence of other marketing or branding programs consumers rely on product appearance to assess leanness in beef selection. As a result "consumers look at and assess beef cuts primarily on the basis of external fat and secondarily on the amount of seam fat (intermuscular)" (Branson, et al., 1986b, p. 12).

2) The level of external fat trim had a positive impact on fresh beef purchases in the Philadelphia Choice grade market, where retail cuts are merchandised with greater amounts of external fat. In the Philadelphia market, trimming of external fat (0.5 inches or less) enhanced product appearance and increased sales appeal when the price differential between conventional and trimmed beef was moderate. In the San Francisco market, where fresh beef products are typically marketed with less trimmable external fat, consumers were exposed to closer trimmed, leaner beef products. Extra Trim (0.3 inches of external fat) beef products utilized in this market were "not meaningful sales generators" (Branson, et al., 1986b, p. 13).

3) In general, consumers perceived closely trimmed beef more positively and as a value-added product (i.e., beef trimmed to levels less than the norm for the market in question).

4) These findings indicate immediate sales benefits
could result from the introduction of closer trimmed beef cuts in markets where 0.5 inch external fat cover was the norm. Researchers estimated a 3 to 6% increase in total sales volume if Choice grade beef were merchandised, at parity prices, in markets similar to Philadelphia. Researchers also estimated that trimmed cuts would capture a 75% share of total beef sales volume when offered at parity prices (Branson, et al., 1986b, p. 14).

**Initial Retail Close-Fat Trim Programs**

Prior to the NCRBS animal scientists and meat science researchers perceived the presence of marbling (intramuscular fat) as negatively affecting consumer attitudes toward fresh beef. NCRBS results communicated to the industry that consumers did not want large amounts of external trimmable fat on fresh beef products and were willing to pay for less visible fat. Upon identifying consumer wants, industry began to develop close-fat trim programs and related products designed to reduce the amount of external fat and better meet consumer preferences. This section examines the transformation of NCRBS results, by retailers and packers, into close-fat trim programs. An overview of selected retail programs and the impact of close-fat trim on the packing industry is reviewed in this section.

The release of NCRBS results in January 1986 prompted several national and regional retail supermarket chains to
re-evaluate and modify the external fat trim on retail beef cuts. Since close-fat trim programs at the retail level are quite similar, retailers who were early adopters benefited the most in terms of fresh beef sales.

Kroger and Safeway were the first national chains to offer and promote close-fat trim programs in their retail stores. The Cincinnati-based Kroger Company, with over 1000 retail stores nationwide, initiated the first publicized 1/4 inch trim program for retail beef cuts in January 1986. At year-end, total beef sales had increased by almost 230 million lbs. Similarly, Kroger reported that total beef sales for 1987 had increased 1.5% over 1986 sales. Kroger indicated that the 1/4 inch trim program, coupled with in-store educational and promotional programs, "substantially increased their retailers share of the consumers' meat dollars" (Ostroff, 1988). In addition, consumer surveys conducted by Kroger showed that "customers preferred the 1/4 inch trim beef, and ...felt better about the quality of products purchased." Kroger executives believe the close-fat trim concept is "definitely an image and sales builder" (Ostroff, 1988). Following Kroger, the Safeway chains began offering a 1/4 inch trim program during early 1986, and reportedly increased meat tonnage by 10% during the first year (National Provisioner, April, 1987). It is now estimated that over 60 percent of the national chains are offering close-fat trim products or participating in close-fat trim programs (Knop, May, 1989).
Industry's Response to Close-Fat Trim Programs

In order to gain insight into industry's reaction to current beef marketing programs, a survey of meat industry leaders attending the American Meat Institute/Food Marketing Institute (AMI/FMI) Meat Marketing Conference was conducted in May 1987. The five section survey addressed separate fresh beef marketing programs, such as close-fat trim, branded beef, "light" beef and "natural" beef. Approximately 254 respondents, consisting of packers (n=99), retailers (n=124), and other meat industry-related individuals (packaging suppliers, meat buyers, equipment manufacturers, etc.) participated in the 1987 study. Respondents were questioned about participation, in beef marketing programs, the intent of future participation and the impact of these programs on overall meat sales.

This section will review industry responses on close-fat trim programs, specifically, participant reactions on the amount of external trim on retail cuts, the effect of close-fat trim products on overall meat sales and potential participation in close-fat trim programs.

When participants were questioned about a desirable amount of external fat trim on fresh retail cuts, 46% of the overall respondents selected 1/4 inch trim. Both packers and retailers viewed the 1/4 inch and 1/8 inch external trim favorably (Table 1).
TABLE 1: External Fat Trim on Fresh Beef Cuts

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=82)</th>
<th>Whls/Ret (n=114)</th>
<th>Pkg Supp (n=8)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2 inch</td>
<td>0</td>
<td>1(0.9)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1/4 inch</td>
<td>33(40.2)</td>
<td>62(54.4)</td>
<td>2(25.0)</td>
<td>5(27.8)</td>
</tr>
<tr>
<td>1/8 inch</td>
<td>24(29.3)</td>
<td>31(27.2)</td>
<td>0</td>
<td>7(38.9)</td>
</tr>
<tr>
<td>total trim</td>
<td>5(6.1)</td>
<td>7(6.1)</td>
<td>3(37.5)</td>
<td>3(16.7)</td>
</tr>
<tr>
<td>different trim</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for different</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shoppers</td>
<td>20(24.4)</td>
<td>13(11.4)</td>
<td>3(37.5)</td>
<td>3(16.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>82(100.0)</td>
<td>114(100.0)</td>
<td>8(100.0)</td>
<td>18(100.0)</td>
</tr>
</tbody>
</table>

When respondents were asked whether they participated in special trim programs in addition to their regular trim programs, 64.2% of packers indicated they offered special trim products in addition to regular trim, while almost 63% of the 104 wholesaler/retailer respondents stated they did not (Table 2). In a related question, respondents participating in new trim programs were asked whether these products had an impact on total meat sales. The majority of packer (52.9%) and retailer (70.0%) respondents indicated these products had a modest, or 1 to 5%, positive effect on overall sales (Table 3).

TABLE 2: Stocking Special Trim Products in Addition to Regular Trim Products

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=53)</th>
<th>Whls/Ret (n=104)</th>
<th>Pkg Supp (n=0)</th>
<th>Other (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>34(64.2)</td>
<td>39(37.5)</td>
<td>0</td>
<td>5(62.5)</td>
</tr>
<tr>
<td>no</td>
<td>19(35.8)</td>
<td>65(62.5)</td>
<td>0</td>
<td>3(37.5)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>53(100.0)</td>
<td>104(100.0)</td>
<td>0</td>
<td>8(100.0)</td>
</tr>
</tbody>
</table>
### TABLE 3: The Effect of Close-Trim Beef on Fresh Beef Sales

<table>
<thead>
<tr>
<th>(n=110) (%)</th>
<th>Packer (n=34)</th>
<th>Whls/Ret (n=70)</th>
<th>Pkg Supp (n=0)</th>
<th>Other (n=6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No effect</td>
<td>4 (11.8)</td>
<td>8 (11.4)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Modest positive effect</td>
<td>18 (52.9)</td>
<td>49 (70.0)</td>
<td>0</td>
<td>2 (33.3)</td>
</tr>
<tr>
<td>Substantial positive effect</td>
<td>12 (35.3)</td>
<td>13 (18.6)</td>
<td>0</td>
<td>4 (66.6)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34 (100.0)</td>
<td>70 (100.0)</td>
<td>0</td>
<td>6 (100.0)</td>
</tr>
</tbody>
</table>

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**An Evaluation of Retailer Programs**

The National Beef Market Basket Survey a follow-up to the NCRBS, was conducted in 1988 by researchers at Texas A&M University. The NCRBS indicated that the cooperative marketing efforts of cattle producers, state beef councils, packers and retailers had resulted in a reduction in the amount of external fat on retail beef products. NCRBS also indicated that once the amount of external fat on retail beef items had decreased, consumer perceptions of these products improved, as did the likelihood of consumers making beef purchases. A 1987 American Meat Institute (AMI) study revealed that "over 87% of the retail chains surveyed offered retail cuts with 1/4 inch trim specifications" (Savell, Cross et al., 1988, p. 2). Thus, the close-fat trim programs had a positive impact on consumer perceptions by reducing the amount of fat intake per serving of beef.
The beef industry then needed to transfer these positive attitudes to health professionals and governmental agencies responsible for compiling national food consumption statistics. These statistics, compiled from the National Health and Nutrition Examination Survey, are utilized by dietitians and food-related professionals as nutritional-intake guidelines for U.S. consumers. They are the primary source of information in the calculation of caloric, sodium and fat content for nutritional labeling, and are found in USDA Handbook 8-13.

In the past, the estimation of dietary fat intake from beef products was based on the consumption of retail cuts with 1/2 inch external fat trim. Meat science researchers believed information regarding the fat content of beef products should be adjusted to reflect 1/4 inch trim products.

The objective of National Beef Market Basket Survey (NBMBBS) was two-fold:

1) To assess the availability of 1/4 inch or less trimmed fresh beef cuts at the retail level; and
2) To assess the separable lean and fat content of trimmed fresh beef.

The survey of supermarket beef cases in 12 U.S. cities gathered information on fat thickness, numbers and weights of packages, price per pound, price per package, boneless versus bone-in cuts, and other related data (Savell, Cross, et al., 1988, p. 1). Retail cuts (steaks and roasts) and
ground beef products were selected randomly and transported to Texas A&M for separation of lean and fat and chemical analysis for total product fat content.

The results of the NBMBS indicated that "over 42% of the beef retail cuts had no external fat, and approximately 75% of all cuts surveyed were boneless. The overall fat thickness for all retail cuts in the beef case was .11 inch, and the overall fat thickness for steaks and roasts from major primals--chuck, rib, loin, and round--was .14 inches. The average percentage of separable lean was 78.9%, separable fat content averaged 11.7%, and bone and connective tissue content averaged 9.4%" (Savell, Cross, et al., 1988, p. 1). Retail cuts included in the survey averaged approximately twice as much separable seam fat as separable external fat. A comparison of these results to the USDA data base (Handbook 8-13) used in the calculation of average dietary consumption of nutrients revealed that beef steaks and roasts contained 27.4% less fat (than similar cuts) than previously reported. Thus, a considerable decline in fat content of retail beef cuts may be attributed to the removal of external fat prior to merchandising. The results of the National Beef Market Basket Survey gave a more accurate assessment of the fat and caloric content of fresh beef products and allowed the Department of Health and Human Services to update the information presented in USDA Handbook 8-13.
The Effect of Close-Fat Trim at the Packer Level

Close-fat trim programs at the retail level require trimming of up to 1 inch of external fat off of some primals and sub-primals, and have increased the amount of "back room" labor needed in meat departments.

The final set of close-fat trim questions addressed packers and retailers separately. Retailers were asked if they desired close-fat trim products from packers, while packers were asked if they were planning to develop or expand close-trim programs for their retail customers. Ninety-six percent of the retailer respondents indicated a need for close-fat trim programs from their packers, while about 78% of the packer participants indicated they were planning to develop or expand current external trim programs for their retail customers (Tables 4 and 5).

<table>
<thead>
<tr>
<th>(n=109) (%)</th>
<th>Whls/Ret (n=100)</th>
<th>Pkg Supp (n=0)</th>
<th>Other (n=9)</th>
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<td>yes</td>
<td>96(96.0)</td>
<td>0</td>
<td>7(77.8)</td>
</tr>
<tr>
<td>no</td>
<td>4(4.0)</td>
<td>0</td>
<td>2(22.2)</td>
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<td>TOTAL</td>
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<td>0</td>
<td>9(100.0)</td>
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<tr>
<td>(n=67) (%)</td>
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<td>Pkg Supp (n=0)</td>
<td>Other (n=4)</td>
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</tr>
<tr>
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<td>14 (22.2)</td>
<td>0</td>
<td>1 (25.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>63 (100.0)</td>
<td>0</td>
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</tr>
</tbody>
</table>

These results indicate a need for further research on the implementation of close-fat trim programs at the packer level. The development of an economical and efficient system of external fat removal, at the packer level, that would "still allow for the identification of carcasses differing in cutability (i.e., yield grade)" is needed for marketing purposes (Savell and Cross, undated, p. 3).

Monfort of Colorado, one of the largest beef packers in the U.S., suggested removing external fat before carcass chilling (i.e., hot fat trimming). This procedure could be easily integrated into present carcass processing procedures, and Monfort reported no interference or slow down in their hourly kill rate (approximately 400 head). An added benefit of hot fat trimming was speedier carcass fabrication, since most of the external fat had already been removed (Savell and Cross, undated).

While the concept of hot fat trimming on the kill floor may be a viable solution for packers, this procedure is not
without drawbacks. The primary disadvantage of hot carcass trimming begins with the USDA carcass grading procedures, in which the chilled beef carcass is evaluated for cutability (yield grade), then assigned a quality grade. A major component of the yield grade evaluation procedure is the amount of external fat trim on the carcass. Further, since the carcass evaluation system (i.e., quality and yield grading) is "coupled," carcasses must be yield graded before the assignment of a quality grade. Other drawbacks to hot fat trimming include:

- For cattle purchased on an other than live weight basis (i.e., "in-the-beef" or "grade and yield") hot fat trimming would interfere with the current end point weight used in pricing cattle.

- Seam fat in the chuck and rib differ across yield grades, quality grades and sex classes. For example, "yield grade 4 and 5 carcasses, trimmed to 1/4 inch external fat, may possess more seam fat than higher cutability (i.e., lower yield grade) carcasses" (Savell and Cross, undated). This may present a problem to end-users (i.e., primary retailers), in terms of value per pound of lean beef, if over fat subprimals were not sorted out of the boxed beef population.

In an effort to allow the USDA to examine the benefits and drawbacks of the Monfort proposed system, a study funded by the National Cattlemen's Association with support from
state beef boards and the American Meat Institute, was conducted by researchers at Texas A&M. The study examined the following issues:

1. The use of ultrasound technology for the identification of carcasses that differ widely in cutability, and the use of ultrasound for live animal yield grading. This concept would enable packers to determine the composition of the live animal and producers would be paid at a predetermined price.

2. The importance of yield grades, once carcasses are trimmed to 1/4 inch. Current deboning and deseaming and related beef trimming and fabrication techniques may eliminate yield grades.

3. The need for quality grade only beef carcasses, before fabrication, since most boxed beef is sold on a quality grade, as opposed to yield grade, basis.

Results of this study indicated the use of ultrasound technology produced a reasonably accurate estimate of external fat thickness and, ultimately, yield grade. Thus, hot fat trimming was concluded to be a viable short term alternative for external fat removal by packers. Researchers recommended "that pricing of cattle/carcasses by packers who wish to hot fat trim should remain an individual company policy, not mandated by outsiders" (Savell and Cross, undated, p. 6).
Results also showed that hot fat removal narrowed differences in carcass composition among the yield grades. The difference in external fat trim among yield grades was quite substantial, while the difference in the amount of seam fat among yield grades was not.

Finally, to provide a more accurate assessment of actual hot fat removal from carcasses, a series of equations was used to account for intermuscular fat (i.e., seam fat) of over 1/4 inch left on carcasses, and the amount of fat that should be removed from given yield grades. Researchers developed adjustment factors for packers who wish to remove excess trimmable fat from carcasses of particular yield grades (YG). The adjustments are as follows: YG 2 = 7.1%; YG 2.5 = 8.6%; YG 3 = 10.1%; YG 3.5 = 11.6%; YG 4.0 = 13.1% Packers may utilize these figures as a guideline for the amount of external fat that should be removed from carcasses of particular yield grades or, conversely, the yield grade of particular carcasses based on the percentage of hot fat removal (Savell and Cross, undated).

**Decoupling Quality and Yield Grades**

The recent decoupling of yield and quality grades, effective April 1989, has made the hot fat trimming of beef carcasses possible. Monfort of Colorado, one of the nation's largest beef packers, believes "the close-fat trim concept is consumer driven and will not go away" (Knop, May 1989, p. 7). Monfort believes that retailer concerns, with respect to hot fat trim, must be alleviated before further
advances take place at the packer-level. Among these concerns are how the absence of yield grades may result in increased seam fat found in heavier carcasses.

Monfort has attempted to change retailer attitudes through a selling campaign designed to educate retailers about the increased efficiency of purchasing pretrimmed products and convince them that seam fat is not a significant problem (Knop, May 1989, p. 18). In addition, Monfort believes that while quarter-inch trim products may cost more, their "retail yield and other economies will more than make up the difference" (Knop, May 1989, p. 18). Monfort also offers retailers credit on the rendering value of fat when close-trimmed carcasses are purchased.

**Summary of the Marketing Process**

To review, the introduction of close-fat trim programs was the beginning of the beef industry's move toward the development of consumer-oriented beef products. For organizational and comparative purposes, a three-step marketing framework, developed by Pierson and Allen, will be utilized in summarizing this chapter. The three-step marketing framework consists of the following stages:

1) The identification of consumers needs and wants;
2) The development of products and positioning of programs in order to fulfill consumers wants and needs; and
3) The communication of beef product improvement or feedback from the implementation of marketing programs.

In the first stage, consumer needs and wants with respect to the presence of external fat on fresh retail beef cuts were assessed and identified through the use of industry and university-sponsored research. The 1987 Consumer Climate for Red Meat Study indicated that while meat is the best tasting meal entree, respondents were concerned about the presence of fat and related cholesterol levels in meat products. The National Consumer Retail Beef Study prompted a change in the beef industry's approach toward fat by identifying external fat trim as the primary negative factor in consumers' perception of beef products. Results from both National Consumer Retail Beef Study (NCRBS) and National Beef Market Basket Survey (NBMBBS) indicated the trimming of external fat, to 1/4 inches or less, from fresh retail beef cuts not only appeals to consumers, but may even improve their perception of fresh beef.

The second stage focuses on the development of products and the positioning of programs designed to meet consumer needs. Research showed positive consumer responses toward fresh beef products with 1/4 inch or less external fat trim. Results from the NCRBS prompted retailers to introduce fresh beef products with 1/4 inch external fat trim. Kroger and Safeway, two of the nation's top retailers, were the first
to adopt 1/4 inch or less trim programs and report an increase in fresh retail beef sales. Close-fat trim success at the retail level prompted beef packers to develop similar programs at their level. Larger packers, such as Excell, Monfort and IBP, began offering trimmed box beef to their retailer customers. Monfort introduced the hot carcass fat trim procedure, in which external fat is removed before carcass chilling, and reported success with no interference in the carcass fabrication process. Additionally, results from the NBMBS stated that close-fat trim products improved consumer perception of fresh beef and revealed that retail close-fat trim products were available nationwide.

The third stage involves the communication of fresh beef product improvement via feedback. The results of the 1987 AMI/FMI Survey of packers, retailers and other meat industry representatives indicated the majority of respondents either offered, or had a positive attitude about, external fat trim programs, and believed these programs increased total meat sales. Further, both packers and retailers indicated a need for additional development of and future research in close-fat trim programs at the packer level.
CHAPTER THREE

THE EFFECT OF "LIGHT" BEEF PROGRAMS ON FRESH BEEF MARKETING

The introduction of "light" beef programs parallels the development of the close-fat trim programs discussed in Chapter 2. "Light", or reduced fat content, beef was first introduced in late 1984, when Texas Chianina cattle breeders approached meat scientists at Texas Tech University. Local Chianina producers wanted to compare the nutritional content (i.e., fat, cholesterol, caloric) of full blood Chianina cattle with those cattle typically grading USDA Choice. The study compared the beef of full blood Chianina cattle to Hereford-Angus crossbreeds (i.e., Black Baldy). Results indicated that while grain-fed Chianina cattle possessed no difference in cholesterol content, and very little difference in eating quality, Chianina beef had a lower fat content, and thus fewer calories than traditional USDA Choice crossbred beef. Based on these results, local producers began identifying Chianiana beef as a "light" product (Davis, 1989).

The first section of this chapter provides the USDA definition and terminology for "light" food products, followed by an overview of industry and university research on "light" beef products. The second section examines four "light" beef programs and highlights the results of marketing research studies on these programs. The third
section presents the results of the 1987 AMI/FMI Meat Marketing Conference Survey of packers, retailers, and other industry representatives. Specific questions addressing "light" meat products were used in the assessment of packer and retailer feedback about "light" beef products. The final section looks at the future of "light" beef products and the directions of animal science research.

**Light Beef Programs: Development and Implementation**

The USDA Standards and Labeling Division developed guidelines for the labeling of "light" food products. The definitions for "light", "lean" and "extra lean" are as follows:

"Lean or low fat may be used on labels of meat products containing no more than 10 percent fat, by weight. Correspondingly, the term 'extra lean' is permitted for products containing no more than 5 percent fat by weight. In each case, the actual fat percentage must be disclosed on the label. Products are not permitted to become lean through dilution with water" (Leddy, undated, p. 2).

In contrast to close-fat trim programs, the concept of "light" beef products focuses on the fat content of specific cuts rather than the removal of external fat. "The term 'light' (lightly, lite, etc.), frequently used as a comparative term, implies that a product contains significantly fewer calories, less fat, breading, salt or sodium than a comparable product (a significant reduction is considered to be a minimum of 25 percent)" (Leddy, undated,
p. 2). Thus, beef products labeled "light" must possess at least 25% less fat than the industry standard (average fat content of a similar cut of beef), as defined in USDA Agriculture Handbook No. 8-13. "'Light' terminology may also be used to describe products low in any of these components (i.e., no more than 40 calories per 100 grams or no more than 10 percent fat, no more than 35 mg of sodium per serving), however, regardless of how the term is used, it must be fully explained on the label" (Leddy, undated, p. 2). An overview of USDA guidelines for the nutritional labeling of "light" beef products is provided in the remainder of this section.

The USDA Food Safety Inspection Service Standards and Labeling Division (FSIS-SLD) sets the guidelines for nutritional labeling of food products. "All labels bearing nutritional claims must be accompanied by analytical data substantiating these claims at the time the label is submitted for approval. Also the label may only be used in conjunction with an approved Nutritional Labeling Verification (NLV) procedure at a federally inspected establishment" (Leddy, undated, p. 2). An outline of the NLV process involves the following steps:

1) Labelling information about nutritional content (i.e., sodium, fat, cholesterol) for which the NLV procedures must be outlined and presented at the time of label approval;

2) NLV products must receive the approval of the regional
director of each processing plant;

3) Once the NLV procedure has been approved by the Regional Director, a copy of the approval must be sent to the Standards and Labeling Division (SLD).

The aforementioned NLV procedure must specify the following information: "a) processing plant number; b) a list of products covered (i.e., container sizes, serving size, and label declaration for each nutrient); c) fresh meats with "light", lean or fat claims must include specifications for standards such as yield grade or level of external fat trim; d) NLV records and similar information must be made available to inspectors for at least a year" (USDA Policy Memo 085A, Nov. 4, 1986, p. 1).

The NLV guidelines for "light" labeling with respect to fat content states that terminology such as "light" may be used on meat and poultry product labels. While these terms are generally associated with caloric content, they may also be utilized to identify products at least 25% lower in fat content than the industry standard. Labeling terminology must be explained either adjacent to the term or referenced with an asterisk and explained somewhere on the principal label. This explanation must provide the purchaser with quantitative information about the product's nutritional components and include a quantitative comparison to nutritional components found in a comparable product or permitted by a set standard (Recommended Daily Allowance).
When "light" terminology is used as a fanciful name, brand name or trademark, such as Chi-Lite, it may imply product leanness, or substantial reduction in fat. Since this information is seen as useful to consumers making food purchase decisions, it should be followed with an explanation. A claim alone, without explanation, may be misleading and does not provide the necessary information for consumers to make informed purchase decisions. Thus, the explanation accompanying most claims must be stated in comparative terms to better assist the consumer in their food purchase decisions (USDA, Policy Memo 070A, March 31, 1986).

It should be noted that while the "light" label may used for beef cuts meeting the above specifications, "light" terminology may not be used for entire carcasses, since the fat content of individual cuts differ within a carcass. Boxed primals and subprimals containing at least 25% less fat than the "average" primals and subprimals may use the "light" label. Actual grams of fat per serving must accompany products with the above mentioned labels (Wilkes, 1987).

**Public Awareness of Cholesterol**

As stated earlier, the "light" beef concept was initiated by Texas cattle producers in an effort to present a more positive image for fresh beef. The goal of this marketing program was to increase consumption of low-fat fresh beef products by non-beef consumers.
The Consumer Climate for Red Meat (1987) reported a large proportion of consumers expressed concern over the relationship between red meat and health-related complications, such as increased dietary fat intake and cholesterol levels. The Public Perspective on Cholesterol and Heart Disease, a 1984 survey of 4007 individuals age 18 and older, conducted by the National Heart, Lung and Blood Institute (NHLBI) and the Food and Drug Administration (FDA), examined "public attitudes and knowledge about coronary heart disease from high blood cholesterol, and the public's efforts to lower cholesterol" (Schucker, et al., 1984, p. 2). When participants were asked what methods they would use to control blood cholesterol and fat levels, 50 percent indicated that they would change their dietary habits. Of these respondents, 16 percent reported actually making dietary changes, which included replacing red meats with fish and poultry. This study indicated an increased public awareness of a dietary link between red meats and high cholesterol levels. "Light" beef products might attract consumers who have decreased their beef consumption for similar health reasons.

**Consumer Preferences for Fat Content in Beef**

As described in Chapter 2, the National Consumer Retail Beef Study (NCRBS) was an industry-wide research project supported by the government, cattle producers and feeders, and packers and retailers. The results of the 1985 study, conducted by researchers at Texas A&M University, and
jointly sponsored by the Beef Industry Commission and the National Cattlemen's Association, helped change the beef industry's understanding of consumers and the marketing of fresh retail beef products. This study, as well as other research findings from Texas A&M (Savell and Cross) will be used to assess the effectiveness of "light" beef products.

The NCRBS project identified product lines that would satisfy various consumer and market segments. It also looked at the importance of the taste appeal in beef products, and how consumer perceptions of convenience, price and health, with respect to fat content, may have affected the issue of product taste. In summary, the questions addressed by NCRBS were: 1) what are the demands of specific consumer segments for fresh beef products? and 2) what types of beef products will satisfy these needs?

The NCRBS was performed in two phases. Phase I, modeled after a Houston pilot study, used in-home, consumer-prepared beef top loin (i.e., strip) steaks from U.S. Prime, Choice, Select, and Standard grade carcasses to measure the effects of quality grade and taste appeal on consumer acceptance of beef products. Laboratory Test Markets were conducted in San Francisco, Kansas City, and Philadelphia. While results showed the overall acceptability of beef products decreased as the degree of marbling decreased, they also indicated palatability differences among consumer groups. For example, the San Francisco consumer group preferred lower grade, "no-roll" beef, while Philadelphia
consumers were more critical of lower grade beef. It should be noted that the majority of beef currently marketed in the San Francisco area was "no-roll", while Philadelphia beef is primarily U.S. Choice. Kansas City consumers rated steaks from all grades high, with minimal changes in palatability as quality grade was lowered. The overall conclusion of Phase I suggested that quality, as measured by marbling, is important to the overall palatability and, thus, consumer acceptability of beef products. It also revealed two separate consumer groups with different preferences for beef products.

Phase II of the NCRBS examined 1) the amount of taste consumers are willing to sacrifice to obtain leanness advantages from lower grade beef, and 2) the degree of external fat covering consumers are seeking and willing to pay for. The first issue will be addressed in this chapter, while the latter was addressed in Chapter 2. Phase II was conducted in the Fall of 1985 in the San Francisco and Philadelphia markets only, as those cities showed the greatest differences between ratings in Phase I. The three objectives of Phase II were: 1) To examine how the relationship between taste, leanness and price of retail cuts influences consumer attitudes and purchase behavior; 2) To determine if some or all external fat removal from retail beef cuts could stimulate sales and improve beef's image (discussed in Chapter 2); 3) To evaluate the marketing potential for two grades of beef (Choice and Select).
Phase II consisted of 750 female primary food shoppers ranging from 21 to 64 years of age and came from households that used beef at least once per month. Five test comparisons using four retail cuts (top round steak, rib eye steak, top loin strip steak and chuck roast) in the LTM were conducted in each city.

The NCRBS Phase II conclusions related to "light" beef were:

1) Leanness was a key factor in improving the image of beef and increasing purchase appeal. Given current diet and health attitudes, consumers have shown they are receptive to new and modified beef products promising to be leaner, lower in fat, and thus, more healthful in the long run.

2) Without branding, marketing, or other forms of product communication, consumers rely on product appearance to assess leanness in the beef selection process. Thus, marbling is more likely to be considered in the context of taste and texture than in assessing leanness.

3) The results of grade test experiments brought attention to weaknesses in the marketing and merchandising of beef. First, the industry's focus on grade as a quality measure is not shared by consumers, as consumers are not likely to evaluate quality in the context of USDA grade terms. Second, consumers need information in the form of
aggressive promotion and merchandising efforts, to identify the products that meet their needs and requirements.

4) The information suggested that consumers accept Select and Choice graded products for different reasons. Select may be perceived to be better for their health than currently available beef products, while Choice indicates an opportunity for richer, fuller tasting beef.

5) The insights gained through this research show opportunities for a range of beef products targeted at selective consumer segments and positioned for different qualities and/or usage occasions (Texas A&M, NCRBS Executive Summary, March, 1986).

NCRBS conclusions also revealed that regional (geographic) differences exist with respect to the amount of marbling in beef products. The two distinct consumer groups, possessing unique attitudes toward beef, showed that consumers in the Eastern region of the U.S. (i.e., Philadelphia) preferred high quality Choice grade product and consumers in the Mid-Western (i.e., Kansas City) and Western (i.e., San Francisco) regions were more concerned with the fat content of beef, preferring the Select grade product with less marbling. The NCRBS, in conjunction with related palatability studies, suggests the industry must develop these two separate markets. In order to gain further insight into consumer attitudes toward fresh beef
fat content and to better understand and identify consumer wants and needs, researchers began to examine the role of fat in beef palatability.

**Palatability Studies: The Role of Fat**

Additional research conducted at Texas A&M University examined the importance of fat in beef products (i.e., marbling), and its association with taste and flavor (i.e., palatability). The purpose of intramuscular fat, or marbling, is two-fold: 1) it decreases the density of cooked beef and 2) acts as a lubricant during chewing. Results indicated the percentage of ether extractable fat in an uncooked longissimus dorsi (LD) muscle, as related to USDA marbling score and quality grades, ranged from 1.77% to 10.42% (Savell, Cross, Smith, 1986). A higher percentage denotes a higher marbling score and, thus, a more tender cut of beef.

Various palatability studies concluded that the minimum fat percentage required for the acceptable palatability and tenderness of broiled beef cuts (rib, loin, sirloin, etc.) was 3% (Tatum, 1982, Griffin et al., 1985 and Smith et al. 1982, 1984, 1987).Consumer research on beef palatability, and the amount of marbling necessary to create a tender, acceptable product, has produced the "window of acceptability" for fat content. The "window" encompasses carcasses grading low Select, with a marbling score of low Slight, to high middle Choice with a low Moderate marbling score (Savell and Cross, Oct. 1986).
Light Beef Programs

Meat scientists and researchers recognized the need for a balance between product fat content and taste which has been an obstacle in the development of "light" beef products. While various types "light" beef products have been or are currently being marketed, the products selected for analysis in this section were all researched and developed in university settings and focus on the feedlot management for production and laboratory product test markets for "light" beef products.

Chianina Light Beef

As stated at the outset of this chapter, the concept of "light" beef first began in 1984 when Texas Chianina breeders asked meat scientists at Texas Tech University to investigate the nutritional content of beef from Chianina cattle. The August 1985 experiment compared carcass characteristics and palatability of steer and heifer carcasses from 28 purebred Chianina cattle (i.e., late-maturing) and 28 Hereford x Angus crossbreds (i.e., early-maturing). The results indicated that low-fat beef with desirable palatability could be produced by late-maturing breeds of cattle (Wheeler, 1989).

Concluding comments of this study indicated that the beef industry needed to respond to consumer demands for low-fat beef products. While "the economic merit of utilizing late-maturing cattle would depend on the specific production and marketing system,...'light' beef provides another
incentive for the beef industry to utilize the inherent leanness of late maturing breeds in crossbreeding to produce palatable, low-fat beef" (Wheeler, et al., 1989, p. 150).

A similar study examined the effects of days on feed, breed type, and sex class on cholesterol content (as opposed to total fat content) of beef loins. Results indicate that muscle and fat tissue cholesterol concentration did not vary in response to differences in muscle, breed type, sex class or days on feed. Thus, efforts to select and market low-cholesterol retail beef cuts from specific breeds was not feasible (Wheeler, et al., 1987).

**Wyoming Lean Beef**

The Wyoming Lean Beef (WLB) program was an attempt by Wyoming cattle breeders and the state's animal science industry to respond to the changing fresh beef marketplace. In an attempt to restore beef's image as a contemporary food, WLB was seen as meeting the needs of "health-oriented" and "active lifestyle" consumers (Yankelovich, Skelly and White, 1981, 1985). In 1985, the Wyoming State Legislature passed legislation allowing the College of Agriculture at the University of Wyoming to investigate the possibility of producing and marketing beef animal products lower in fat (i.e., grass-fed cattle) and free of antibiotic and hormonal residues. This product was to be sold under the WLB trademark label, and royalties for the use of the WLB trademark were to be paid to the state of Wyoming.
In the first of two research projects, the 1985 WLB laboratory test market (LTM) conducted by Yankelovich, Skelly and White, had three objectives: "1) to estimate market potential/sales effectiveness for Wyoming Lean (i.e., sales comparison of WLB vs. Select grade beef in the San Francisco area); 2) to provide diagnostic insights into consumer appeal of WLB vs. existing beef in terms of purchase considerations (e.g. price, taste, and leanness); and 3) to assess performance strengths and weaknesses of 'test' products based on home usage" (Yankelovich, Skelly and White-LTM Study I, 1985, p. 3-4).

The San Francisco Bay area was chosen as the study site because of its demographic characteristics and population density. Since this area was also used in both Phases of the NCRBS, area firms were familiar with LTM procedures, and were able to assist in the selection of participants and set-up of LTM facilities. Finally, the majority of beef marketed in San Francisco is U.S. Select grade, as opposed to U.S. Choice, and the WLB product was similar to beef products found in San Francisco area supermarkets.

Study participants consisted of three-hundred primary female shoppers, from 21 to 64 years of age, and from households using fresh beef at least once per month. Participants were separated into two test cells. Cell I LTM participants were offered only control beef products, similar to that found in San Francisco area supermarkets (i.e., grain-fed, U.S. Select grade). Cell II participants
were given a promotional brochure, describing the nutritional benefits of low-fat, range-grazed beef, prior to entering the LTM area. The Cell II LTM offered both control beef products and WLB products. Beef cuts available in the LTM consisted of Rib-eye steak, Strip steak, Top round steak, and Boneless chuck roast (under blade). Steaks and roasts were trimmed of all external fat and were available for both control and WLB. Buyers of WLB products were re-interviewed by telephone to determine reactions to products purchased and to measure repurchase intentions (Yankelovich, Skelly and White-LTM, 1985; Medieros, et al., 1987).

The WLB LTM study conclusions were as follows:

1) Consumers appeared receptive to new and modified beef products that claimed to be lower in fat and more "healthful".

2) In the absence of other marketing programs, the consumer relies primarily on product appearance factors (i.e., freshness, packaging, amount of visible fat) in selecting a cut of beef. Thus, consumers look for a fresh, lean product.

3) The WLB study involved an advertising and branding approach. This served to illustrate the power of these consumer marketing tools. Also the nutritional claims made by WLB stimulated a high trial rate by LTM standards.

4) Results indicated consumers were willing to compromise on product taste (i.e.,
palatability) for an increase in perceived
"health-related" benefits (i.e., lower fat
content).

5) There is a need for further research to
identify opportunities for a line of beef
products specifically targeted at the health-
conscious consumer.

6) Consumers were able to distinguish between
beef types and selected products based upon
taste, health, and price factors, on a case-by-
case basis (Yankelovich, Skelly and White-LTM,
1985).

The remainder of these results focus on the
investigation of promotional programs, such as branding, and
the development of new products.

The second WLB-LTM Study was conducted in the San
Francisco Bay area in July, 1987. The primary objective of
this follow-up study was to examine market potential, or
sales effectiveness, of WLB products offered at a 25% price
premium. Thus, the appeal of WLB, in terms of purchase
considerations (i.e., price, taste, leanness, naturalness),
was compared to similar beef products. The experimental
design and methodology were similar to the first WLB-LTM,
however, the WLB beef products were now offered at a 25%
price increase over the control beef. Ground chuck was
added to the original four-cut LTM beef product selection.
Conclusions from the second WLB-LTM study focused on the relationship between the "light" beef concept, price, and product. The LTM results pertaining to concept and product were utilized to verify the 1985 WLB LTM findings. Additionally, these results were also used to investigate the impact of premium pricing on consumer acceptance of WLB. The study concluded that:

1) "The low-fat, all-natural concept of WLB was still appealing to the majority of fresh beef users" (Yankelovich, Skelly and White, 1987, p. 6). Similarly, LTM II revealed that "the susceptible WLB consumer group was made up of approximately 40 to 50% of the total beef users" (Yankelovich, Skelly and White, 1987 p. 10). Consequently, the WLB consumer group may be willing to pay a premium price, in varying degrees, in exchange for a product perceived as more nutritionally beneficial.

2) In comparison to the WLB 1985 LTM, "the only measurable effect of 25% premium pricing on WLB sales was a lower trial purchase rate. Results indicated that, among trial users, the short-term repeat purchase rate was not affected" (Yankelovich, Skelly and White, 1987, p. 15). The incidence of WLB repurchase within the next ten beef purchases, increased above the 1985 rate. Research found that
consistent product quality was paramount in long-term repeat usage and a stable market franchise.

3) A sizeable group of participants willing to pay a premium price for beef perceived as "natural" and "healthy", indicated that WLB products, in both the 1985 and 1987 LTMs, may not possess palatability qualities (i.e., taste, texture) associated with an enjoyable eating experience. The tradeoff between a less palatable, higher priced product and the increased health benefits from lower fat content may be too great to sustain a loyal repeat user group over the long term. Thus, as palatability improves, so would the likelihood of repeat purchase (Yankelovich, Skelly and White, 1987, pp. 19-20).

Packers' and Retailers' View of "Light" Beef

As described previously, the AMI/FMI Marketing Conference Survey of meat industry leaders was used to gain insight into packer and retailer reactions toward "light" beef programs. The three questions pertaining to "light" programs focused on respondent views about current and future participation in "light" beef programs and the impact of "light" beef on overall meat sales.
The results indicate that 29%, or 55 of 192 total respondents, were currently participated in a "light" beef or pork program. Over 25% of the packers and retailers indicated participation in "light" beef or pork programs.

TABLE 6: Current Participation in "Light" Programs

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=69)</th>
<th>Whls/Ret (n=108)</th>
<th>Pkg Supp (n=2)</th>
<th>Other (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>22 (31.9)</td>
<td>29 (26.9)</td>
<td>2 (100.0)</td>
<td>2 (20.0)</td>
</tr>
<tr>
<td>no</td>
<td>47 (68.1)</td>
<td>79 (73.1)</td>
<td>0</td>
<td>8 (80.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>69 (100.0)</td>
<td>108 (100.0)</td>
<td>2 (100.0)</td>
<td>10 (100.0)</td>
</tr>
</tbody>
</table>

When respondents were asked about future participation in "light" beef or pork programs, 57% of 152 overall responses were positive. Sixty-one percent of the packer respondents and nearly 54% of the retailers were considering "light" programs in the future. None of the packaging suppliers responded to this question (Table 7).

TABLE 7: Future Participation in "Light" Programs

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=54)</th>
<th>Whls/Ret (n=89)</th>
<th>Pkg Supp (n=0)</th>
<th>Other (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>33 (61.1)</td>
<td>48 (53.9)</td>
<td>0</td>
<td>5 (62.5)</td>
</tr>
<tr>
<td>no</td>
<td>21 (38.9)</td>
<td>41 (46.1)</td>
<td>0</td>
<td>3 (37.5)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>54 (100.0)</td>
<td>89 (100.0)</td>
<td>0</td>
<td>8 (100.0)</td>
</tr>
</tbody>
</table>

A majority of the overall respondents, approximately 63%, believed "light" beef programs would increase overall meat sales, while 36% felt these products and programs would
have no impact on meat sales. Almost 80% of the packer respondents and 50% of the retailers felt "light" beef programs would increase overall meat sales.

TABLE 8: The Effect of "Light" Programs on Beef Sales

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=69)</th>
<th>Whls/Ret (n=104)</th>
<th>Pkg Supp (n=1)</th>
<th>Other (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduces sales</td>
<td>0 (0.0)</td>
<td>2 (1.9)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>No impact</td>
<td>14 (20.3)</td>
<td>50 (48.1)</td>
<td>0 (0.0)</td>
<td>3 (25.0)</td>
</tr>
<tr>
<td>Increase sales</td>
<td>55 (79.7)</td>
<td>52 (50.0)</td>
<td>1 (100.0)</td>
<td>9 (75.0)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>69 (100.0)</td>
<td>104 (100.0)</td>
<td>1 (100.0)</td>
<td>12 (100.0)</td>
</tr>
</tbody>
</table>

While the results of this study indicated a positive attitude toward "light" programs, further research is needed in the area of "light" beef palatability and the need for products labeled "light".

The Future of "Light" Beef in a Changing Industry

As defined in USDA Agriculture Handbook No. 8, a "light" beef product contains 25% less fat than the industry standard (i.e., the fat content of a similar cut). The increasing popularity of close fat trim products have detracted from the benefits of "light" beef, as the majority of close-fat trim products qualify for "light" beef labeling. Research has concluded that a decrease in USDA grade, from Choice to Select, would not, by itself, constitute a "light" beef product by definition (Savell, Cross and Smith, 1986). Also, the decoupling of quality and yield grading, along with the concept of hot fat trimming
carcasses, encourages packers to support close-fat trim programs and related products. Thus, the adoption of close-fat trim programs has made it more difficult for the industry to make significant progress in the area of "light", or low-fat beef.

**Directions for "Light" Beef Through Animal Science Research**

Research in the area of "light" beef has resulted in new discoveries in meat science and beef production management. Studies on the relationship between the amount of intramuscular fat (i.e., marbling) and palatability have been a primary focus. This section provides an overview of research efforts by meat scientists to enhance the flavor and further reduce the fat content of "light" beef products.

**Modified Fatty Acid Beef Products**

Beef products with modified fatty acid composition, less saturated fats, and more monounsaturated fats, is one area of "light" beef research. Beef fat is composed of saturated (i.e., primarily palmitic acid) fats, which contribute to high cholesterol levels and coronary heart disease, and (mono)unsaturated fats, which are termed "neutral" or have no effect on cholesterol levels or coronary heart disease (Grundy, 1989). In the modified fatty acid process, the composition of beef fat is altered to contain fewer saturated fatty acids and more unsaturated fatty acids (Forest, Aberle, et al., 1975). Further research is needed to identify methods for modifying fatty
acid composition (Smith, 1987).

Hormonal Implants

The idea of anabolic estrogenic (i.e., hormonal) implants as a method of lean beef production is an ongoing area of research. These steroid-based compounds, known as partitioning agents, alter animal growth by "shifting dietary nutrients from fat to protein accretion...overriding the body's naturally occurring hormonal and nutritional mechanisms...which set priorities for, and limits on, protein (muscle) deposition" (Byers and Schelling, Oct. 1986, p. 11). Simply, the animal will produce more muscle (protein accretion) and less fat, and yield a leaner, more desirable carcass. The possibility of the use of anabolic estrogenic implants in conjunction with an integrated growth management program ("the regulation of growth and synchronization of nutrient supplies with the nutrient needs to support desired growth" (Byers and Schelling, Oct. 1986, p. 10) was also investigated as a method of producing leaner beef products for specific consumer markets (Byers and Schelling, Oct. 1986).

Summary

The first section of this chapter reviews the findings of The Public Perspective on Cholesterol and Heart Disease which concluded that a large proportion of consumers were concerned with the relationship between dietary fat intake and cholesterol levels, and had replaced red meat products
in their diet with fish and poultry. The 1985 The National Consumer Retail Beef Study defined "lean" beef as retail cuts showing little external fat. This study also revealed geographic differences between Philadelphia and San Francisco consumer groups and their preference for different grades of beef. Results of these studies support the need for a beef product containing less fat and suggest the need to separate the markets for Choice and Select beef products. Phase II of this research examined the tradeoff between marbling and palatability, and how much taste consumers would willingly give up for a low fat beef product with perceived health benefits. This prompted additional studies on the role of fat and its' impact on palatability in beef.

In an effort to determine the minimal level of fat needed for acceptable palatability, the function of intramuscular fat in red meat was investigated, and a "window of palatability" was developed.

The development of "light" beef products began with the Texas Chianina Breeders who were disturbed over decreasing per capita beef consumption and reports of negative consumer perceptions about beef. These breeders sponsored research to examine the nutritional benefits of Chianina beef. Research indicated it was possible to produce low-fat, palatable beef from late maturing cattle, and that Chianina beef possessed less fat than typical Choice grade beef. In an effort to differentiate Chianina beef on the basis of fat
content, Chianina producers initiated the "light" beef concept.

The WLB product was a similar attempt by Wyoming cattle producers to offer a differentiated beef product in the marketplace. Results of the Wyoming Lean Beef Study (LTM I and II), performed in 1985 and 1987 respectively, found that while consumers were receptive to the low-fat concept and perceived the product as more healthful, reduced product palatability may cause problems. LTM II results indicated that the tradeoff between palatability and perceived health benefits may be too great when the product is offered at premium prices.

The results of the 1987 AMI/FMI Meat Marketing Conference Survey of packers, retailers and other industry representatives indicated that while the majority respondents were not participating in "light" beef programs at the time of this survey, participants expressed a positive attitude about future participation. Similarly, the majority of packers and retailers believed "light" beef products would have a positive effect on overall meat sales.

The popularity of close-fat trim products and related changes in industry, such as the decoupling of quality and yield grades, has increased industry support for and encouraged the adoption of these programs at the expense of "light" beef. Current research in the "light" beef area focuses on the concept of a modified fatty acid product with
a reduced cholesterol content, and the development and implementation of feedlot management programs that include repartitioning agents to increase muscle deposition and produce a leaner carcass.
CHAPTER FOUR

THE EFFECT OF "NATURAL" BEEF PROGRAMS ON

FRESH BEEF MARKETING

The introduction of "natural" beef programs at the retail level is the third in the series of four retail beef marketing programs examined in this research. The "natural," or chemical-free, beef concept started in 1979 when Mel Coleman, a Colorado cattle rancher, began raising his beef cattle without the aid of growth-promoting chemicals, hormones, or feed additives. While other producers have chosen to raise their cattle "naturally", the definition of this term varies across producers. While some producers perceive "natural" as animals raised without exposure to drugs, growth stimulants, antibiotics, hormones, feed additives, or pesticides, others may view this term to mean range-fed cattle, raised in open spaces, as opposed to feedlot finished cattle. Similarly, consumer appeal toward "natural" products has prompted various studies on consumer attitudes on the perceived safety of food and the presence of chemical residues in food products. This chapter will examine the concept and evolution of "natural" beef products and the beef industry's marketing strategy to attract health-conscious consumers back to beef.

This chapter will be similar to "Light" Beef Programs, in that the first section will provide an overview of the USDA definition and related terminology for "natural" products, and its application to beef products. The next
section examines recent consumer research pertaining to food safety and reviews the development of recent "natural" beef products. Finally, the results of the AMI/FMI Meat Marketing Conference Survey is used as an indicator of the industry's attitudes towards feedback on "natural" beef products.

The Natural Beef Concept: An Overview of Terminology

Current USDA labeling requirements for "natural" meat products do not focus on the nature of production, but on the amount of processing the product has undergone. Under this definition, any minimally processed product, such as fresh beef, would automatically qualify for "natural" labeling (Leddy, 1988). Beef industry specialists believe consumer interpretation of "natural" labeling may pose a problem, as individuals might perceive unlabeled beef negatively, or as an "un-natural" product.

Recently, several livestock producers have proceeded a step further than the previously mentioned USDA requirement for "natural" labeling, and have elected to raise their animals without the use of sub-therapeutic levels of antibiotics, growth stimulants, hormonal implants, or similar chemical additives. This has resulted in confusing labeling claims with respect to the production of cattle for "natural" beef. Both consumers and producers consider livestock management practices an integral part of "natural" beef labeling, qualifying phrases such as "No Hormones", "No Growth Stimulants", and "No Antibiotics" remain independent
of USDA "natural" labeling policies and must be approved by the Standards and Labeling Division. The USDA Standards and Labeling Division (SLD) states that producers may verify livestock husbandry practices (with a labeling claim) through the use of: 1) Signed affidavits and producer testimonials; or 2) a Verified Production Control (VPC) program.

**Producer Testimonials**

Testimonials and affidavits include specific descriptions about production practices employed at the ranch or feedlot. The amount of information needed in these testimonials is dependent upon the labeling claim used on the product. "For example, if a labeling statement specifies that no antibiotics or hormonal implants were administered during the final 100 days of finishing, protocol should include information covering that time period" (Leddy, 1988, p. 1). Similarly, if general labeling statements, such as "Arkansas Grown", "Fed Only Grass", "Drinking Only Spring Water" ...are used, protocol must cover the entire life of the animal" (Leddy, 1988, p. 1).

During the labeling approval process, qualifying statements appearing on labels are reviewed to ensure truthfulness and clarity. Label statements about the non-participation in a common production practice, such as the administration of antibiotics or growth promotants, may be designated on the label. Upon approval of the label, the establishment of a control program is required both for
identification purposes, and to prevent mixing of labeled and unlabeled beef carcasses (Leddy, 1988).

**Verified Production Control**

In general, a VPC program states that "documentation and verification of production practices...that occur prior to...or under normal meat inspection, and are applicable to labeling criteria (i.e. any claims stated on the product label) shall be based on a contractual agreement, or Memorandum of Understanding (MOU), between an official slaughter establishment (packer) and the Food Safety Inspection Service (FSIS)" (NCA, January 1987, p. 25). The MOU is a contractual agreement between the packer and the FSIS, and gives the FSIS the legal authority to verify the truthfulness about pre-slaughter labeling claims, or special practices and controls, through the appropriate inspection both inside and outside the packing plant or the farm facility. Typically, MOU's are utilized by large, vertically-integrated (i.e., feedlot to packer) cattle feeders, but smaller producers wanting to participate in VPC programs may make legal arrangements (i.e., form a corporation or partnership) with their packers and obtain an MOU that authorizes the FSIS to randomly inspect individual farms. The USDA offers the VPC program and similar residue control programs to all cattle producers.

**An Overview of Safety Assurance Programs**

Several versions of the above mentioned USDA safety assurance programs and related informational programs have
surfaced in recent years. These programs vary in the degree of producer participation, from awareness of residues to an adjustment in production practices to prevent the contamination of livestock with chemical residues. An overview of these programs will be presented for informational purposes:

**Residue Avoidance Program** (RAP)--a USDA educational program designed to build producer awareness of chemical residues in agricultural production. No specific requirements such as contracts or formal agreements are involved.

**Safety Assurance Program** (SAP)--Requirements include the certification of products produced under specific guidelines, along with information regarding production practices.

**Quality Assurance Program** (QAP)--QAP expands the concept of SAP one step further. It involves control over product quality in addition to safety. Thus, "a product can be safe but not high quality; however a product cannot be of high quality if it is not safe" (NCA Task Force, January 1987, p. 22).

**Verified Production Control** (VPC)--As described earlier, VPCs relate to the federal program of residue prevention or control established between a private producer and the USDA through a mutually agreed upon "Memorandum of Understanding" or MOU. Currently the USDA is developing new guidelines for VPC, and related voluntary residue control programs. Under
these guidelines, producer testimonials will no longer be allowed and MOUs will be required for participation in residue avoidance programs. The new guidelines are expected to be approved in late 1989 (Leddy, July 31, 1989; Brewington, August 1989).

Beef produced under these safety assurance program guidelines will be labeled to identify the positive features of the product. The USDA and NCA hope the majority of commercial cattle feeders will become receptive to this concept, and that consumers will eventually demand beef produced under safety assurance programs. Further research will be needed to determine the degree or type of safety assurance and wholesomeness demanded by consumers and the economic value of a safety assurance program to the consuming public (NCA, January 1987).

**Consumer Awareness of Additives in Red Meat**

As noted in Chapter Two, the Consumer Climate for Red Meat (CCRM), a biennial survey that focuses on changing consumer attitudes and their effect on red meat consumption, categorized consumers into five groups: Meat Lovers, Creative Cooks, Price Driven, Active Lifestyle, and Health Oriented. One of the specific objectives of the 1987 study was to explore current issues in the meat industry, including consumer awareness of additives and preservatives in meat products. Selected results of this study will be to assess consumer needs with respect to "natural" beef products. CCRM results showed that consumer awareness of
various additives in meat ranged from 40% indicating an awareness of hormonal residues to 81% claiming awareness of additives and preservatives used in fabrication and further processing of meat products. Similarly, between one-third and one-half of the study participants stated they were "extremely or very concerned" about the presence of additives, preservatives, antibiotics, nitrates and hormonal residues in red meat products.

Consumer participants were also questioned about the presence of specific substances, such as antibiotics and hormones used in the production of beef cattle. Participant awareness levels of antibiotics increased from 39% in 1985 to 43% in 1987. Similarly, the 1987 study inquired about the presence of hormonal residues in red meats, and 40% of the respondents indicated they were concerned about the presence of hormonal residues in red meat. Of the total 1987 consumer respondents (n=1514), only 18 percent reported they were unaware of additives or preservatives in red meats.

Consumer Response to the Issue of Beef Safety

The Beef Safety Assurance Task Force was organized by the National Cattlemen's Association in March 1986 with the objective of enhancing consumer confidence in the safety and wholesomeness of beef products. The research was prompted by "consumer surveys, conducted by nationally recognized organizations, that revealed a high degree of consumer concern about the presence of drug and chemical residues in
beef. While USDA and FDA residue data do not justify this level of concern, it exists nevertheless" (ORC, December 1987, p. 1).

The research project designed to test this hypothesis was performed in two stages. Phase I consisted of a focus group designed to gather information, provide direction for further research on consumer attitudes, and learn more about the language consumers use to describe safe and wholesome beef. Information gathered in Phase I was useful in the development of the National Consumer Survey on beef safety used in Phase II.

**Phase I--Focus Group Research**

Four focus group sessions held in Portland, Oregon, Los Angeles, California, Richmond, Virginia, and Philadelphia, Pennsylvania, revealed that consumer concerns about the safety of beef products focused primarily on product "freshness" rather than drug and chemical residues. While most focus group members indicated an awareness of "drugs", "chemicals", "preservatives" or "additives" and expressed concern about them, "some expressed a helplessness, stating these compounds are 'the way of the world' and...were 'necessary evils'" (ORC, December 1987, pp. 3-4). When focus group members were asked if a labeling program would alleviate safety concerns, some expressed interest, however "this was not the top-of-mind solution to the perceived...(safety) problems associated with beef" (ORC, December 1987, p. 4). Results of this research provided
information on consumer attitudes toward safe and wholesome beef products and provided background in the development of the survey used in Phase II.

Phase II—National Consumer Survey

Phase II involved a national consumer telephone survey of 502 households on consumer attitudes toward safe and wholesome beef products. Respondents stated that food product safety was as important as price, and almost as essential as taste and nutritional benefits when making beef purchase decisions. When asked to express factors referring to food safety 55% of the overall respondents cited conditions relating to "freshness", while 8% mentioned "artificial ingredients." Among the 79% of the respondents expressing concern about beef safety, 35% said "artificial ingredients" were a problem, and 50% felt "freshness" was a relevant issue. While nearly 80% of the survey participants expressed concern about beef safety and desired additional information about product freshness and the use of antibiotics, hormones, chemicals, and preservatives, only half of the respondents indicated they would support the cost of informational programs through higher beef prices.

The reassurance of consumers about beef product safety through consumer information programs was also addressed. Information on production practices of cattle producers, and their usages of additives, chemicals, and animal drugs may help alleviate concern about beef safety. A labeling or certification program for beef products with regard to
freshness dates, additives, and nutritional information may also influence beef purchasing decisions. Approximately 30% of the respondents expressed a desire for freshness dates, while 12% felt information on drugs given to animals was needed, and 10% believed USDA inspection information should be on the label. Endorsement or sponsorship of labeling programs, by the American Medical Association or a government agency, might also enhance consumer confidence in beef products. Seventy-five percent of consumer participants indicated beef purchase decisions would be influenced by a label providing safety assurance information. The NCA Beef Task Force concluded that consumers have positive attitudes toward beef safety and related informational programs, but recommended additional behavioral research should be completed before appropriate industry action is taken (ORC, December, 1987).

**An Overview of "Natural" Beef Products**

As suggested earlier, the producers of "natural" beef products subscribe to different production practices. Thus, the natural beef products described below vary in their degree of "naturalness" as well as in their merchandising and promotional strategies.

**Coleman Natural Beef**

Mel Coleman had always raised his beef cattle without the use of feed additives or growth promotants. At the suggestion of his daughter-in-law, Coleman began marketing his beef as a "natural" product, in 1979 (LaRocca, 1986).
Coleman's cattle management program involves animals raised in uncrowded, high-country environment, drinking water from snowmelt-fed mountain streams, summer grazed on natural range grasses and winter fed alfalfa hay certified free of pesticides (with the exception of government required calfhood inoculations). Animals requiring medical treatment are removed from the herd, treated and sold on the conventional beef market (LaRocca, November, 1986). Due to these natural production practices, Coleman cattle require an average of 4 additional months on feed and Coleman beef products are consequently priced about 25% higher than conventionally produced beef (Everett, August 1987).

In order to further substantiate his beef product as "natural", in 1979 Coleman approached the Standards and Labeling Division of the USDA, "with notarized statements from veterinarians, feed suppliers, feedlot managers and laboratories testifying to the purity of his cattle, feed and beef" (LaRocca, November 1986, p. 28). Approximately two years later, the USDA created the "natural" classification for red meats, with Coleman Natural Beef receiving the first USDA-authorized label which states:

"No hormones, antibiotics or stimulants were ever administered to the animals. No artificial or synthetic ingredients were ever added to this meat. The USDA does not permit preservatives in this product" (LaRocca, November 1986, p. 28).

When the demand for natural beef rose beyond production, the capacity of the Coleman Ranches, the Coleman Certified
Ranchers, Inc. was established, in 1984. "This group of local farmers and ranchers were contracted by Coleman to raise natural beef, feed and livestock for Coleman Natural Beef, Inc. under stringent chemical free conditions" (LaRocca, November 1986, p. 30). As of 1987, the Coleman Certified Ranchers totaled 35 members and controlled a combined herd of over 70,000 head that graze on more than 1 million acres of Rocky Mountain pasture land.

While Coleman does not believe in negative promotional strategies at the expense of conventional beef, their advertisements suggest that consumers concerned about the presence of chemicals in beef should consider this product as an alternative. This campaign was designed to increase awareness of "natural" beef through consumer education and the use of promotional materials. The Coleman marketing strategy involves "strong visual presentations using multi-media advertising and point-of-purchase materials, and stresses animals raised in an unpolluted environment, raised on spring water, mother's milk, cracked corn and grain" (Marks, April 1987, p. 104).

In 1987, Coleman Natural Beef, Inc. projected an estimated annual income of almost $20 million and sold some 20,000 head of naturally raised cattle. While Coleman Beef was first marketed primarily in California health food stores, they now offer Coleman products in national grocery chains (Everett, August 1987 and Berry, Oct. 1986). It should be noted that Coleman Natural Beef is in the process
of adopting a Verified Production Control program, a USDA-FSIS regulated program that gives FSIS the authority to inspect producer farms and livestock for chemical residues (Cowman, 1989).

Roseland Farms Organic Beef

As stated earlier, it is possible, although difficult, for independent producers to label their cattle as "natural" through the USDA-FSIS VPC program. Roseland Farms of Cassopolis, Michigan, in cooperation with Brady's Midway Market (a local packer), is a local "natural" beef producer that participates in a VPC program. Dr. John Clark, owner of the 800 acre Roseland Farms, is an advocate of voluntary residue-control programs and food safety and welcomes FSIS inspection of both his farm and cattle.

In order to ensure a chemical-free environment and deter chemical carryover from neighboring fields, Roseland Farms maintains a 200 acre buffer zone around production acreage and does not permit the use of chemicals (pesticides, insecticides, decontaminants) or feed additives (hormonal or antibiotics) on the premises. Cattle drink water from captive ponds (Clark owns the watershed rights) and consume only chemical-free feeds produced on Roseland Farm.

Roseland Farms Organic Beef is targeted toward consumers who are chemically-sensitive or have "seriously chosen to eliminate chemicals from their diet" (Clark, October 1988). Taste is a secondary factor. Clark is a
selective supplier and only markets his product at regional specialty stores, food co-ops, health food stores, and on a national basis by mail. Roseland Farms Organic Beef is certified by the Organic Growers Association of Michigan. In 1987 annual beef sales totaled approximately $73,000 or about 44,000 lbs. (retail weight).

Promotion of Roseland Farms Beef, via a seasonal newsletter ($5 subscription fee), informs patrons of farm production methods, beef shipping and delivery rates, and updates on organic and safe food issues. Clark and his family also promote their product at local and state fairs. Unlike the above mentioned "natural" beef promotional strategies, Clark attempts to differentiate his beef by making direct comparisons to conventionally produced beef, and convincing consumers of the additional benefits of "organically" produced beef.

**Hitch Ranch Premium Beef**

Hitch Ranch Premium Beef, a division of the Fleming Companies in Guymon, Oklahoma, markets their beef product toward consumers who, due to concerns about chemical residues in beef products, have reduced overall beef consumption. Hitch Ranch, with an annual production of over 350,000 head, is one of the largest family owned cattle producers in the U.S. While Hitch Ranch chooses not to make "natural" labeling claims, or deviate from conventional beef husbandry practices, cattle are raised under a VPC program. The Hitch Ranch VPC program regulates cattle management
practices to assure their beef products are free of drug and chemical residues at the time of slaughter.

The Hitch Ranch Beef Marketing Study

In order to assess consumer awareness of Hitch Ranch and gain further insight on the positioning of a "natural" product in the fresh beef marketplace, a study on the impact of labeling terminology and promotional programs on consumer purchase behavior was conducted by Central Research Corporation in 1986. Various labeling terms, such as "natural", "light", and branded beef, along with several packaging concepts, were tested. Actual products, in mock packages, were made available to study participants. The results, encompassing respondents reaction to packaging, descriptive words and terms, and product price, were as follows:

0 The packaging concept was similar to conventional meat packaging, "a white meat tray with clear plastic overwrap, then inserted into a colorful sleeve" (Central Research Corp., February 1987, p. 1). The packaging concepts were well received by both groups, however respondent groups felt that the darker colored sleeve, featuring a picture of cooked product presented a more attractive package. Wording on the sleeves seemed secondary to overall graphics and color.

0 Labeling terminology that implied "premium" beef (i.e., higher quality, better taste) accompanied
with the word "guaranteed" worked best with fresh beef consumers. Use of the term "residue-free" was not recommended, but informational material describing Hitch Ranch production practices (i.e., less chemicals, pesticides and herbicides, and fewer steroids/hormones) was recommended. While the terms "natural" and "light" may be used at retailer discretion, results indicated consumers were not clear on their meaning and felt this terminology was confusing and subject to individual interpretation.

Participants unanimously agreed to pay increased prices for a higher quality product (real or implied by Hitch Ranch packaging), and there were no objections to the higher prices listed on the packages (Central Research Corp. February 1987).

The results of this study assisted the Fleming Company in designing a marketing and merchandising strategy for Hitch Ranch Beef. Their promotional campaign emphasizes the positive attributes of the product, such as "premium quality" and "guaranteed", without negative implications toward conventional beef. Hitch Ranch furnishes beef to all 50 states and overseas markets (Schroeder, October 1988).

Packers' and Retailers' Reaction to "Natural" Beef

The AMI/FMI Meat Marketing Conference Survey was used as an indicator of industry response to the development of
"natural" beef products. Questionnaire respondents were categorized as: packer/processors (n=99); wholesaler/retailers (n=124); packaging supplier (n=9); and other (meat buyers, government organization, educational institutions) (n=18).

Overall responses indicate that about 13%, or only 28 participants, were currently involved in "natural" or "natural-light" programs. More specifically, approximately 4% of the packers and 19% of the retailers were currently involved in "natural" or "natural-light" programs (Table 10).

TABLE 10: Current Participation in "Natural" Programs

<table>
<thead>
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<td>1 (8.3)</td>
</tr>
<tr>
<td>no</td>
<td>78 (96.3)</td>
<td>95 (81.2)</td>
<td>3 (60.0)</td>
<td>11 (91.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>81 (100.0)</td>
<td>117 (100.0)</td>
<td>5 (100.0)</td>
<td>12 (100.0)</td>
</tr>
</tbody>
</table>

When respondents were asked if they were considering adopting a "natural" beef program, about 26%, or 52 of 197 responses, were positive. While only 9% of the packers indicated they were considering such a program, 42% of the retailers felt "natural" beef programs warranted additional consideration. Only 1 of 4 packaging suppliers, and 2 (almost 17%) of the "other" participants were considering the adoption of "natural" beef programs (Table 11).
TABLE 11: Future Participation in "Natural" Programs

\[
\begin{array}{lcccc}
\text{(n=197) (%)} & \text{Packer (n=78)} & \text{Whls/Ret (n=100)} & \text{Pkg Supp (n=4)} & \text{Other (n=12)} \\
\hline
\text{yes} & 7 (9.0) & 42 (42.0) & 1 (25.0) & 2 (16.7) \\
\text{no} & 71 (91.0) & 58 (58.0) & 3 (75.0) & 10 (83.3) \\
\text{TOTAL} & 78 (100.0) & 100 (100.0) & 4 (100.0) & 12 (100.0) \\
\end{array}
\]

Finally, participants were asked how "natural" products would effect overall beef sales. While almost 45% of the overall responses indicated "natural" programs would increase beef sales overall, the majority (about 51%) of the participants felt "natural" programs would have no impact on beef sales. The remaining 4% believed "natural" programs would reduce beef sales. Similarly, about 51% of the packers and 52% of the retailers indicated "natural" programs would not effect overall beef sales (Table 12).

TABLE 12: The Effect of "Natural" Programs on Beef Sales

\[
\begin{array}{lcccc}
\text{(n=217) (%)} & \text{Packer (n=79)} & \text{Whls/Ret (n=114)} & \text{Pkg Supp (n=7)} & \text{Other (n=15)} \\
\hline
\text{Reduces sales} & 3 (3.8) & 5 (4.4) & 0 & 2 (13.3) \\
\text{No impact} & 40 (50.6) & 59 (51.8) & 4 (57.1) & 7 (46.7) \\
\text{Increase sales} & 36 (45.6) & 50 (43.9) & 3 (42.9) & 6 (40.0) \\
\text{TOTAL} & 79 (100.0) & 114 (100.0) & 7 (100.0) & 15 (100.0) \\
\end{array}
\]

**Beef Safety Programs and Their Effect on "Natural" Beef**

Increased producer participation in government regulated voluntary residue control programs (i.e., producer testimonials and VPCs), coupled with increased consumer awareness of beef safety and "natural" beef products, has prompted the introduction of privately sponsored
certification, or product assurance programs. Certification programs are similar to the VFC concept, however, contractual arrangements are made between the individual producer (as opposed to packers) and the sponsoring organization (i.e., National Cattlemen's Association or state cattle association). It should be noted that since sponsoring agencies are not official governmental (regulatory) agencies, contractual arrangements may not necessarily be recognized by the USDA as official.

The NCA and other industry representatives express concern that these programs may have an negative impact on non-certified, conventionally produced beef products. NCA also believes additional research is needed on the effectiveness of safety programs, and consumer educational programs that provide information on modern beef production and slaughter methods. An outline of past and present programs safety are discussed below.

**Nutritional Effects Foundation**

The Nutritional Effects Foundation (NEF), a "private, non-profit research and education association, was founded to foster production and easy identification of leaner, safer meat for...American diets. NEF put its' seal of approval on meat products...meeting its' standards for fat content and residue-safety" (NCA, January 1987, p. 19). As described earlier, the individual cattle producer (as opposed to the packer in the VFC program) would enter into a
contract with NEF which allows them to monitor production practices.

The goal of NEF was two-fold: 1) To utilize available research, education and communication to influence production, processing and merchandising products meeting NEF standards; and 2) To inform health care professionals, consumers and related organizations of the wholesome meat produced and processed under NEF standards. In order to ensure standards are met, NEF required that products be prepared and packaged for retail sale in USDA inspected facilities. In addition, NEF personnel conducted random spot checks on products at the plant and at retail points of sale.

Due to the cost of monitoring and enforcing stringent standards, NEF certified beef costs more than conventionally produced beef. NEF recommended retailers promote the intrinsic benefits of their meat. The NEF planned to expand to a national program, however, lack of producer participation and funding forced the program to end in 1989 (National Cattlemen's Association, January 1987 and Cowman, August 1989).

**Texas Cattle Feeders Association Program**

The Texas Cattle Feeders Association (TCFA) began a voluntary certification program in 1986, in which members may voluntarily enter into a contractual agreement, or compliance contract, with the association. "Similar to the MOUs in VPCs (only less stringent), this NCA coordinated
program is a cooperative effort between the producer and TCFA, and is monitored by periodic sampling of carcasses by FSIS at packing plants" (NCA, January 1987, p. 38).

The objective of this compliance agreement is to assure all cattle shipped from the feedyard (i.e., producer) are healthy, wholesome, and meet FDA, USDA and EPA specifications. Contractual procedures specify quality control, testing and maintenance of records for feed sources, FDA approved medications (and pesticides), and the medical treatment of individual animals by a licensed veterinarian (National Cattlemen's Association, January 1987). Records of "rations fed, feed additives added to individual rations and individual animal treatments must be maintained by producer throughout the life of and 90 days after slaughter" (National Cattlemen's Association, January 1987, p. 38). Violations of these agreements must be reported to the producer and will be jointly assessed by both producer and FSIS before corrective actions are taken. Similarly, National Cattlemens's coordinated certification programs are also offered by the Nebraska Beef Board and Colorado Cattle Feeders Association.

The objectives of the TCFA certification program were to increase cattle feeder's awareness to the additional record keeping and management practices involved with program participation, and to encourage producers to become involved in the USDA voluntary residue control programs described earlier. Another possibility was that the
compliance contract might be accepted as an official safety assurance program for a locally branded product by a packers. Similar to other contracts between a manufacturer and raw product supplier, this would be a private enterprise contract, and not need involve the government. Finally this type of program could impress upon the media, regulators, and consumers that cattle producers are serious about beef safety.

The National Cattlemen's Association prefers state certification programs not be utilized for "natural" labeling purposes because of negative implications that beef not produced under compliance contracts is not a wholesome product. In the future, NCA will probably not continue coordinating state sponsored compliance contracts, but would prefer to take an educational role in the assurance of beef safety (Cowman, August 1989).

**Technician Certification Program**

The NCA has recently developed a Technician Certification Program to train feedyard employees about "the issues and approved management practices involved in...implementing a day to day beef safety assurance program" (National Cattlemen's Association, 1989, p. 1).

The Technician Certification Program will consist of 80 to 100 hours of intensified instruction under the auspices of industry professionals. The program consists of a technical curriculum that provides participants with a professional level of knowledge and confidence in beef
safety assurance implementation. "Successful completion of this program will result in trained individuals recognized as beef safety assurance professionals in their specific area of certification" (National Cattlemen's Association, 1989, p. 1).

Technician Certification Programs will focus on two primary areas: 1) animal health and 2) feed ingredient procurement and feed mill management. The animal health curriculum "covers beef safety related issues involved in the administration of an animal health preventative and treatment program" (i.e., use of subtherapeutic antibiotics). The latter program will concentrate on the management of feed mills and related "training in areas which assure the safety compliance of the livestock feeding and nutritional program" (National Cattlemen's Association, 1989, p. 2).

NCA hopes this program will be implemented by the end of 1990. Certified Technicians will be required to attend state and regional seminars on current beef safety assurance issues and updates. Attendance at annual certification seminars would satisfy technician re-certification requirements (National Cattlemen's Association, 1989, p. 4).

**Summary**

The first section of this chapter highlights findings from the most recent Consumer Climate for Red Meat survey. The 1987 study revealed an increased concern, among "active
lifestyle" and "health-oriented" fresh beef consumers, about the presence of hormonal, antibiotic and related chemical residues in beef products. Results from this study, coupled with negative publicity about fresh beef wholesomeness, expanded the concept of "natural" beef to include the larger issue of beef product safety, and led to the formation of the Beef Safety Task Force. This task force conducted studies on the control of agriculture-related chemical residues in beef, and the consumer reactions toward increased safety regulations through residue-control programs. Additional research by the Beef Safety Task Force looked at the benefits of labeling information and promotional programs on fresh beef products. This study concluded that consumers have a positive attitude toward beef safety and related informational programs.

"Natural" beef products reviewed in this section were similar in concept, but differed in production practices, producer participation in residue-control programs, labeling terminology and marketing. Coleman Natural Beef is produced without antibiotics, feed additives or hormonal implants, and available at national grocery chains. Coleman emphasizes their "natural" production practices in both labeling terminology and promotional programs. Roseland Farms Organic Beef emphasized cattle production in a chemical-free environment. This product was targeted at "chemically-sensitive" individuals and was marketed at regional specialty and health food stores, and also sold by
mail order. Finally, Hitch Ranch producers do not deviate from conventional feedlot management practices, however, the company does emphasize participation in an FSIS regulated residue control program to assure product wholesomeness. Hitch Ranch Beef, available on a national basis, also places great importance on consumer reactions to product packaging and labeling terminology.

The 1987 AMI/FMI Meat Marketing Conference Survey revealed mixed responses on the subject of "natural" beef. Results indicated that the majority of packers and retailers were not currently involved in "natural" beef programs. The impact of "natural" beef on overall meat sales was not easily discernible, but a slight majority of packers and retailers believed "natural" programs would have no impact on overall beef sales.

The future of "natural" beef programs is focusing on safety, more specifically on privately regulated beef certification programs which have educated producers about the necessity of additional record keeping and management practices in the production of certified beef products. While these programs have been well received by producers, the NCA prefers that these type of private certification programs, or similar state association sponsored programs, not be used for labeling purposes. NCA also wishes to increase their role in consumer education with respect to "natural" beef.
CHAPTER FIVE

THE EFFECT OF BRANDED AND CASE-READY PROGRAMS ON FRESH BEEF MARKETING

The introduction of brand marketing, or heterogeneous product marketing, in the beef industry evolved from the marketing programs described in earlier chapters. According to Allen and Pierson (1986, p. 4), "The fresh meat industry has crossed the threshold...and abandoned the idea of selling of commodity beef to the general population in favor of marketing beef products to specific consumer segments". This chapter will examine the impact of branded and branded case-ready products on fresh beef marketing.

The first section of this chapter will provide background on the factors contributing to the development of branded beef programs. This will include an overview of the technological changes in the packaging area and the impact of commodity promotional programs as a guideline for further application to branded programs. The second section examines some branded beef products and reveals differences in product specifications and marketing programs. The third section presents the results of the 1987 AMI/FMI Meat Marketing Conference Survey of meat industry representatives. Specific questions pertaining to branded and case-ready beef products were used to assess packer and retailer attitudes toward branded beef programs. The final section examines at the future of branding and directions for new beef products.
The Concept of Branding

Beef has typically been sold as a homogeneous commodity rather than as a branded, differentiated good. Branding in the fresh beef industry applies the principles of market segmentation and target marketing. Market segmentation may be described as an assumption that all consumers are unique and the needs of individuals may not be satisfied with a mass marketing approach (Kotler, 1986). Similarly, target marketing may be defined as a market segment profiled by its demographic, economic and psychographic characteristics so that a marketing opportunity may be evaluated (Kotler, 1986). Skaggs, et al. applied these principles to the contemporary beef industry by pointing out that the unsatisfied consumer has different needs which might better be satisfied by a specialized product. Thus, new product development, product differentiation, and product branding are methods by which the needs of a market segment or target market may be identified and fulfilled (Skaggs, et al., 1987, p. 258).

The concept of product differentiation is indicative of branding, as a product brand represents "a name, term, symbol, design, or combination of them intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors" (Skaggs, et al., 1987, p. 257). The objective of a brand name is to create product awareness and assure the retailer of a consistent quality product which, in turn, assists in
marketing. Branding of homogeneous commodities may also differentiate products despite the fact that physical differences are minimal. Skaggs, et al. (pp. 258-259) note that product branding and promotion create a "brand personality" designed to appeal to a corresponding "consumer personality", or target market. The successful match of product to consumer personalities results in market segmentation (Kotler, 1986).

**Impact of Homogeneous Advertising on Commodities and Branding**

Information on the decline in per capita consumption of some agricultural products, in conjunction with increasing competition from international markets, have focused interest on the impact of promotional efforts on consumption patterns. Chang, et al. investigated the effect of promotional commodity programs as marketing tools and identified theoretical similarities and differences between generic and brand advertising efforts. The research concluded that both generic and brand advertising were increasingly important in food production and marketing (Chang, et al., 1985).

Their study also examined the effectiveness of and interrelationship between brand and generic promotional programs. Results indicated these two promotional programs may be complementary or competitive. In a complementary sense, generic advertising generally contains more factual information about product groups, increases consumer
awareness, and reduces barriers to entry in the market. In the competitive sense, as generic advertising increases, brand advertising is forced to convey product-oriented messages in order to differentiate products. These claims are more difficult for advertisers to validate. The study concluded that "generic advertising should encourage general commodity consumption, while brand advertising is directed to increase consumption of specific brands that have both real and perceived differences" (Chang, et al., 1985, p. 269). In general generic and branded promotional programs in agriculture may serve to enhance branded beef products, however, promotional programs may only establish this significant impact at a high cost investment.

The Impact of Packaging Technologies on Branding

Conventional beef packaging (foam tray with film overwrap) no longer meet the freshness (shelf life) and informational (cooking instructions) needs of modern beef consumers. Recent innovations in packaging technologies and merchandising have attempted to answer these needs and contribute to consumer acceptance of branded products. In addition, the packaging itself may contribute to consumer identification of the product.

The following packaging technologies, adopted at the packer-level, are known as centrally processed products. The tray-ready, foam/film package involves the central processing (pre-slicing, vacuum packaging) of sub-primals. These products arrive at the retailer ready to be trayed and
wrapped in foam and film. The chub pack, a plastic tube primarily used for ground meat and sausage products, is packed at central processing plants and shipped ready for the retail counter. Gas-flush packaging involves the use of a semi-rigid deep dish plastic container with a clear cover. Meat products contained in this package are primarily consumer cuts as opposed to large roasting items and are "bathed in a controlled atmosphere gas-flush. The gases maintain product color and prolong shelf life" (Skaggs, et al., 1986, p. 15).

These packaging systems have been tested by several firms (for example, the Kenosha Beef tray-ready program, the Chatham/American Can case-ready vacuum package, and the Kroger gas-flush package testing) (Skaggs, et al., 1986). Aside from increased shelf life and a more consistent beef product, packaging technologies may also contribute to consumer acceptance of branded products, as the consumers begin to identify the beef product with the package. Supermarket point-of-purchase merchandising efforts on the benefits of new packaging technologies, such as increased shelf life and improved product quality, may prompt positive consumer reactions to centrally processed beef products. Consequently, consumers may begin to differentiate products based upon packaging technology.

Successful examples of brand marketing of meat commodities can be seen in the poultry and processed pork industries. While the beef industry has lagged behind other
meat industries in moving from the traditional commodity approach toward a marketing perspective, further processing of beef products for branding and an increase in the variety of products may produce benefits similar to that of branded poultry and processed pork products. Industry representatives believe beef products would be easier to merchandise than poultry, since beef has a superior quality image and consumers prefer its taste (Allen, 1985).

As noted earlier, beef items bearing a logo or brand from the producer, packer, or retailer would assist the consumer in identifying the product with a company and in building consumer confidence. Messages received from a branded product may be utilized to correct consumer misconceptions about beef products. The objective of such programs is to develop a consistent, high quality product targeted at the needs of consumers.

The Development and Implementation of Branded Beef Programs

Two studies have examined the effectiveness of branded beef marketing programs. The first examines consumer responses toward branded beef products in a controlled laboratory test market (LTM) environment. The second examines participant feedback from a beef advertising and awareness study.

The Reactions of LTM Consumers to Branded Wyoming Lean Beef

The Wyoming Lean Beef (WLB) concept of a low fat, natural, branded beef product was developed by Wyoming animal scientists and cattle producers concerned about
changing consumer lifestyles and their impact on fresh beef consumption. The objective of the Laboratory Test Market Study I (LTM I) for Wyoming Lean Beef (WLB), conducted by Yankelovich, Skelly and White in 1985, was to examine consumer responses to this branded fresh beef product and determine if the WLB concept fulfilled contemporary consumer needs and lifestyle changes.

The LTM, conducted in the San Francisco area, a known "Select" beef market, consisted of two groups of 150 female primary food shoppers, age 21 to 64. The two groups differed only in the types of beef sold in the LTM, where Group I was offered Control Beef only (labeled "Select") and Group II was able to purchase both WLB and Control Beef. Both products were offered at the same price per pound. Before engaging in the LTM, Group II participants were provided with brochures and pamphlets describing the nutritional benefits of WLB over conventionally produced beef. Participants filled out questionnaires before and after the study, and WLB purchasers were interviewed again by telephone to determine their reaction to the products purchased.

The conclusions of the study, with respect to the branding of beef products, were as follows:

(1) Marketing program support of WLB products increased WLB purchases over the control beef. This suggests that the WLB test, which involved an advertising and a branding approach,
(2) Participants were able to discern between WLB and conventional beef and make a purchase decision based upon information presented. This indicates that products addressing different consumer needs should be made available;

(3) Opportunities exist for a variety of beef products targeted at selective consumer segments and for different uses;

(4) A commitment to marketing and branding may be required for new beef products to realize their full potential and thus have an impact on the marketplace behavior (Yankelovich, Skelly and White, 1985, pp. 13-19).

Consumer Response to a Beef Advertising Program

As stated earlier, information gathered on the effect of generic advertising can be used as part of a branded products promotional program. A six year study, conducted by Ketchum Research of San Francisco, California, focused on consumer response to a generic beef advertising program sponsored by the California Beef Industry Commission (BIC). A national sample of 1000 adults (1/2 male and 1/2 female), along with a subsample of 300 participants from California, were interviewed by telephone. The objective was to track consumer awareness of BIC advertising, a generic promotional program designed to promote total beef consumption and changes in consumer attitudes over time. The study revealed
that "attitudes toward beef, developed over many years, are not only affected by advertising, but other marketing and environmental factors" (Ketchum, 1988).

Overall conclusions of this study were:

1. The BIC advertising campaign was effectively communicating the key selling messages (the benefits of beef consumption). In the U.S., consumer awareness of beef commodity advertising was second only to milk;

2. Consumers accepted the notion that beef is making a comeback, thus the perceived popularity of beef products has continued to increase;

3. Consumer attitudes toward beef products were more positive than in earlier studies.

Study results also indicated that consumer perceptions of beef products over the six year testing period have changed. While respondents believed beef products were not prepared as easily or as quickly as in previous years, beef was seen as a convenient product fitting into consumer lifestyles and a good value. Consumers also rated beef as showing more consistent quality than in the past.

**Branding at Different Levels in the Beef Industry**

In the beef industry the concept of branding takes on different forms, which may be separated into three categories.

**Producer Programs/Labels**
In an effort to lure consumers back to the meat case, breed associations are spending funds on the development and promotion of breed branded beef (Angus, Chianina, Limousin). Breed association labels, such as Certified Angus Beef, Limousin Supreme, or Chi-Lite Beef, and the related promotional materials, allow consumers to differentiate products based upon the perceived differences among cattle breeds versus non-labeled beef products. Similarly, meat items bearing producer logos such as Coleman's Natural, Maverick, and Hitch Ranch Beef are distinguished as health-related, producer-promoted brands. These promotional programs emphasize cattle production practices as well as the "light" or "natural" character of the beef product (Linsen, 1988).

**Packer/Processor Programs**

Shrinking profit margins and shifting total demand prompted the meatpacking industry to consider branded beef products. "The last major innovation in meatpacking came in 1970 with the development of boxed beef, in which the packer cuts up the carcass and ships pieces to the store. The brand name strategy, though similar in purpose, is a radical advance. The packer not only performs the preliminary carcass breakdown, but also does the final cutting and packaging. This enables them to bring in more profits as they control a larger share of the finished good. Overall efficiency should also rise as meatcutting is removed from the store-level butcher and consolidated at the packing
plant." (Lochhead, 1987, p. 44). Case-ready packer-processed meat products arrive at the supermarket ready to be displayed, with no further cutting, trimming, or packaging.

Retailer Labels

In order to decrease sagging meat sales, supermarkets began offering consumers a variety of differentiated beef products such as "light," "natural," and 1/4 trim beef. Retailers are also engaging the help of processors to provide case-ready products with retailer-processor labels. For example, the Cincinnati-based Kroger Company, with the assistance of the Excell Corporation, developed a line of branded case-ready products. The new line, selling at the same price as regular USDA Choice beef, has a 30 day shelf-life, and are guaranteed fresh, without freezing, for at least 7 days after purchase.

Other branded products available in case-ready form include pre-cooked, pre-seasoned entrees, smaller portion sizes, and boneless cuts. A series of surveys conducted by MCRA Information Services found that while at-home consumption of red meats had declined 11.1% over a 5 year period, the consumption of red meat away-from-home increased 1.3%. In an effort to capture the growing away-from-home market, retailers began offering pre-cooked or heat-and-serve beef products in selected marketing areas (Linsen, 1988).
An Overview of Branded Beef Products

This summary of beef marketing programs provides an overview of the various producer, packer and retailer marketing programs and their attempts to differentiate fresh beef products. These programs represent collaborative efforts among producers, packers, and retailers to develop new products and present them in a manner that reflects added value and caters to different consumer segments.

Certified Angus Beef

Initiated in 1978 by the American Angus Association (AAA), the objective of the Certified Angus Beef (CAB) program was to promote and protect the identity of the Angus breed, and help consumers identify Angus beef in supermarkets and restaurants.

Angus cattle used in the CAB program are identified as Angus at the processing plant, and this breed identification is then maintained throughout the system. Hereford-Angus cross are also admitted into the CAB program if the carcass exhibits Angus qualities identified later. About one in four visually selected animals meet CAB carcass criteria. Selected carcasses must meet the following seven criteria, as determined by a USDA grader, before being rolled (branded) with the CAB stamp:

(1) All carcasses must qualify for the upper two-thirds of the USDA Choice quality grade (i.e., at least a Modest marbling score);
(2) All carcasses must be within the "A" maturity (youngest) range;

(3) All carcasses must be a Yield Grade 3 or better (leaner);

(4) The lean must be within the "fine" texture range;

(5) Marbling must be from fine to medium texture range, as coarse marbling is less desirable;

(6) Color of the lean must be slightly dark red or lighter;

(7) The lean must be moderately firm with no indications of softness.

CAB carcasses are then fabricated separately, vacuum packaged, boxed, and labelled as CAB. The CAB trademark is officially licensed to participating retailers. Each package is stickered at the retail counter and accompanied by point-of-purchase promotional material. Other promotional exposure includes advertisements in trade journals, newspapers, and general publications. CAB representatives report their product has been successful because of their high quality product, stringent product specifications and the long standing consumer recognition with Black Angus cattle (Skaggs, 1986; Ferguson, 1988).

The CAB market continues to expand. The American Angus Association estimated 350,000 cattle were CAB certified in 1988, with a projected 500,000 animals certified for 1989. In 1983 annual tonnage of CAB sold (fiscal year October 1 through September 30) totaled 3.02 million pounds. The 1988
estimate was 63.60 million pounds, with 1989 projections of 85 million pounds. Most of the CAB tonnage went to hotels and "white table cloth" restaurants in the eastern U.S., Hong Kong, Singapore, Jakarta, and Bermuda. The strongest retail markets are Boston and New York City, but a growing number of U.S. supermarkets and meat markets are stocking CAB products (Ferguson, 1988).

**Chianina Lite Beef**

The Chianina Lite Beef product was the result of meat science research at Texas Tech University. "Chi-Lite" (pronounced KeyLite) was targeted at "health-oriented" and "active lifestyle" consumers and contains 25% less total fat and 36% fewer calories than beef from typically fed cattle (Skaggs, 1986; Burke, 1987). The USDA Standards and Labeling Division has accepted Chi-Lite composition information for certification as "lite" beef. Unlike the CAB product, which carries the label from meat packer to final consumer, Chi-Lite beef may only be carcass identified, carrying its label from packer to wholesaler or retailer.

In 1985, Chi-Lite began establishing agreements with Texas feeders and meat packers to supply the product. Chi-Lite products will be produced without growth-stimulating implants, but will not be promoted as "natural" beef (Skaggs, 1986).
Coleman Natural Beef

As described in Chapter 4, Coleman Natural Beef is produced and marketed by the Coleman family in Saguaghe, Colorado. Coleman Beef complies with USDA regulations for a "natural" product and is produced without drugs, chemical stimulants, growth hormones, or additives.

This beef product is sold nationwide at select retailers, health food stores, and a small number of restaurants. Retail markets include Bread & Circus Markets in Massachusetts, Alfalfa's of Boulder, Colorado, Grand Union stores in New York, and other retail stores in Denver, San Diego, Atlanta, New Orleans and Austin (Skaggs, 1986).

Harris Ranch Beef

Harris Ranch, a California-based, vertically integrated (production, processing, marketing) beef producer began marketing fresh beef products at the retail level after their success at the company's restaurant. While a small amount of Harris Ranch Beef is sold through food service, retail sales represent a majority of the business. Harris Ranch Beef is primarily sold in the California market, and industry analysts note a strong brand loyalty exists among Harris Ranch consumers.

Harris Ranch beef is targeted at retailers who want to provide their consumers with a branded beef product. This product is promoted using retail sticker programs and point-of-purchase materials. It is also available in an unbranded
form for retailers wanting to establish their own high quality fresh beef program (Skaggs, 1986).

Laura's Lean Beef

Laura's Lean Beef Company produces a branded, low fat, natural beef product from USDA Standard and Select grade exotic cattle. The growing agent for Laura's Lean Beef is Old Field Farms, a 1700 acre farm in Winchester, Kentucky. Exotic crossbreeds (Chianina x Charolais x Limousin) weighing between 1200 and 1400 pounds are grain-fed about for 30 days prior to slaughter. Fed cattle are then transported to a Cincinnati meatpacker for slaughter, and carcasses are dry-aged approximately two weeks before cutting. Laura's has now leased a Cincinnati packing plant and begun cutting carcasses and packaging their own product for distribution in the Louisville and Lexington, Kentucky markets. Laura's Lean is merchandised as a total trim, boneless product, with a 3 oz. serving containing only 2 grams of fat, in comparison to 6 to 9 grams of fat for USDA Choice beef. In an effort to broaden their customer base, Laura's Lean has begun working with local hospital dietitians, restaurants, and exporters (Skaggs, 1986; Barnard, 1989).

Granada Heart Healthy Beef

A 1987 certification and verification program was established by the Granada Corporation to identify cuts and the nutritional composition of beef products. The objective of this program was "to facilitate the marketing
of...Granada Heart Healthy beef...as a 'lean' and 'totally trimmed', 'heart-healthy'... product" (Cross, et al., 1987, p. 19). The Granada Corporation, along with Texas A&M University, approached the American Heart Association with the possibility of endorsing specific beef products as "Heart Healthy". This program would be designed to identify, via labeling, the total fat, caloric intake from fat, cholesterol, and saturated fatty acid content of specific beef cuts. Labelling information would confirm with the American Heart Association's guidelines for dietary fat intake. Additionally, researchers at Texas A&M indicate that the identification and labeling of retail beef according to trim specifications or fatness levels would most likely enhance consumer opinions and increase product acceptability (Cross, et al., 1987).

**Generic Beef**

Generic, or unbranded white foam tray, clear plastic overwrap, beef products were first introduced by Jewel Stores in the late 1970's. The Generic concept offered consumers a "no-roll" (the equivalent of USDA Standard or Select grade) beef product of moderately consistent quality at a discounted price. This product, targeted at price conscious consumers, essentially developed into a differentiated product. Since the economic recovery of the mid-1980's, however, many generic goods have lost their appeal, and retailers are noticing an increased brand
consciousness among consumers for a higher quality, more consistent beef product (Skaggs, 1986).

**Tender Trim Beef**

Tender Trim was an experimental program involving the combined effort of Florida cattle feeders, meat packers, the Florida Department of Agriculture, the University of Florida, and local retailers. The Tender Trim program lasted from March to November of 1983 and the primary objective was "to identify and merchandise, at the wholesale level, Florida fed cattle that do not reach USDA Choice. A secondary objective was directed toward increasing the annual production of no-roll or ungraded beef with consistent palatability and meatiness qualities" (Skaggs, 1986, p. 13).

The processing and marketing of Tender Trim beef was managed by Tender Trim, Inc., a cooperative association of feedlot owners and packers. The Tender Trim name was a registered trademark made available to member packers through a franchise agreement between the packer and Tender Trim, Inc. Product specifications for Tender Trim beef must meet the following criteria:

1. Cattle must be grain fed for 90 days or more;
2. Carcasses must possess a marbling score of 'Slight' or better;
3. Carcasses must show an 'A' maturity score;
4. Carcasses must be electrically stimulated to improve tenderness and palatability;
(5) No bullocks or dark cutters;
(6) No carcasses with yellow fat;
(7) No carcasses with coarse textured lean or soft meat;
(8) Carcasses must be chilled at least forty-eight hours before delivery, with the product reaching the consumer no sooner than 4-5 days postmortem;
(9) Yield grade must be 3.2 or lower;
(10) Adjusted fat thickness over the rib-eye should range between 0.2 and 0.6 inches;
(11) Carcass weight may range from 450 to 750 pounds" (Skaggs, 1986, p. 14).

Carcasses meeting these specifications were identified with the Tender Trim stamp and roller brand. Packer members used the Tender Trim name to label beef sold to retailers, however the Tender Trim name was never used at the consumer level. Strong competition from similar no-roll beef products in individual stores and chains brought the program to an end in 1983 (Skaggs, 1986).

**Industry's Response to Branded Case-Ready Products**

The AMI/FMI Meat Conference Survey of meat packers, retailers and other industry representatives will be utilized to assess industry reaction to fresh beef marketing programs. This section will examine industry viewpoints on branded case-ready meat programs and the concept of further processed meat items (fresh prepared beef products). The first set of eight questions focused on respondent
viewpoints toward branded, case-ready fresh meats in comparison with conventional, store-wrapped, self-service meats.

The participant were first asked about the impact of branded, case-ready fresh meats on retail economics and profitability. Sixty-one percent of the respondents felt branded case-ready programs would have a favorable impact on retailer profits, while 37% were uncertain and 2% believed these programs would have an unfavorable effect. All four groups reacted favorably toward the effect of branded, case-ready programs on economics and profitability, while very few perceived branded meats to have an unfavorable, or negative effect on retail profitability. Packers generally viewed such programs most favorably (64% favorable) followed by wholesalers and retailers (52%) (Table 13).

**TABLE 13: Overall retail economics and profitability**

<table>
<thead>
<tr>
<th>(n=250) (%)</th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>unfavorable</td>
<td>0 (0.0)</td>
<td>4 (2.0)</td>
<td>0 (0.0)</td>
<td>1 (5.5)</td>
</tr>
<tr>
<td>uncertain</td>
<td>32 (32.3)</td>
<td>50 (25.1)</td>
<td>2 (22.2)</td>
<td>4 (22.2)</td>
</tr>
<tr>
<td>favorable</td>
<td>64 (64.6)</td>
<td>65 (52.4)</td>
<td>7 (77.8)</td>
<td>12 (66.7)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>96 (100.0)</td>
<td>119 (100.0)</td>
<td>9 (100.0)</td>
<td>17 (100.0)</td>
</tr>
</tbody>
</table>

The effect of branded case-ready beef products on in-store labor costs and the resistance of store employees to case-ready products were two related questions. The large majority of respondents in all categories believed that the development and inception of such programs would lower in-
store labor costs (Table 14). Although some industry respondents were concerned that store employee resistance may present a major problem for case-ready beef, the majority perceived this to be a slight problem (Table 15).

**TABLE 14: In-store Labor Costs**

<table>
<thead>
<tr>
<th>(n=250) (%)</th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lower</td>
<td>73(73.7)</td>
<td>91(73.4)</td>
<td>8(88.9)</td>
<td>13(72.2)</td>
</tr>
<tr>
<td>same</td>
<td>11(11.1)</td>
<td>26(21.0)</td>
<td>1(11.1)</td>
<td>3(16.7)</td>
</tr>
<tr>
<td>higher</td>
<td>6(6.1)</td>
<td>4(3.2)</td>
<td>0</td>
<td>1(5.5)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>90 (100.0)</td>
<td>121 (100.0)</td>
<td>9 (100.0)</td>
<td>17 (100.0)</td>
</tr>
</tbody>
</table>

**TABLE 15: Store Employee Resistance**

<table>
<thead>
<tr>
<th>(n=250) (%)</th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>major problem</td>
<td>23(23.2)</td>
<td>23(18.5)</td>
<td>1(11.1)</td>
<td>6(33.3)</td>
</tr>
<tr>
<td>slight problem</td>
<td>62(62.6)</td>
<td>84(67.7)</td>
<td>8(88.9)</td>
<td>10(55.6)</td>
</tr>
<tr>
<td>no problem</td>
<td>2(2.2)</td>
<td>14(11.3)</td>
<td>0</td>
<td>1(5.6)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>87 (100.0)</td>
<td>121 (100.0)</td>
<td>9 (100.0)</td>
<td>17 (100.0)</td>
</tr>
</tbody>
</table>

When asked to predict consumer reaction to the color of vacuum-packaged beef, packer and wholesaler/retailer participants felt this may be a slight problem in the marketing of branded case-ready beef (Table 16). In a similar question, survey participants were asked to anticipate shopper reaction to packer brands. All survey groups felt packer brands would benefit branded beef products (Table 17).
TABLE 16: Shopper Reaction to Vacuum-Packaged Beef

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major problem</td>
<td>23(23.2)</td>
<td>28(22.6)</td>
<td>1(11.1)</td>
<td>6(33.3)</td>
</tr>
<tr>
<td>Slight problem</td>
<td>61(61.6)</td>
<td>82(66.1)</td>
<td>8(88.9)</td>
<td>9(50.0)</td>
</tr>
<tr>
<td>No problem</td>
<td>5(5.1)</td>
<td>10(8.1)</td>
<td>0</td>
<td>3(33.3)</td>
</tr>
<tr>
<td>Total</td>
<td>89 (100.0)</td>
<td>120 (100.0)</td>
<td>9 (100.0)</td>
<td>18 (100.0)</td>
</tr>
</tbody>
</table>

TABLE 17: Shopper Response to Packer Brands

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A problem</td>
<td>2(2.2)</td>
<td>11(8.9)</td>
<td>0</td>
<td>1(5.6)</td>
</tr>
<tr>
<td>No impact</td>
<td>19(19.2)</td>
<td>39(31.5)</td>
<td>2(22.2)</td>
<td>4(22.2)</td>
</tr>
<tr>
<td>A benefit</td>
<td>69(69.7)</td>
<td>68(86.3)</td>
<td>7(77.8)</td>
<td>13(72.2)</td>
</tr>
<tr>
<td>Total</td>
<td>90 (100.0)</td>
<td>118 (100.0)</td>
<td>9 (100.0)</td>
<td>18 (100.0)</td>
</tr>
</tbody>
</table>

Survey participants were questioned on the visual appeal of a meat case containing branded, case-ready product. While almost 49% of the respondents felt visual appeal was strong, responses varied among different groups. Packers, packaging suppliers and other industry representatives believe branded, case-ready beef presented a stronger visual appeal, while the opinions of wholesalers and retailers were mixed (Table 18).

TABLE 18: Visual Appeal of Branded, Case-ready Products

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weaker</td>
<td>16(16.2)</td>
<td>45(36.3)</td>
<td>2(22.2)</td>
<td>2(11.1)</td>
</tr>
<tr>
<td>Same</td>
<td>12(12.1)</td>
<td>31(25.0)</td>
<td>2(22.2)</td>
<td>2(11.1)</td>
</tr>
<tr>
<td>Stronger</td>
<td>63(63.6)</td>
<td>41(33.1)</td>
<td>5(55.6)</td>
<td>14(77.8)</td>
</tr>
<tr>
<td>Total</td>
<td>91 (100.0)</td>
<td>117 (100.0)</td>
<td>9 (100.0)</td>
<td>18 (100.0)</td>
</tr>
</tbody>
</table>
Participants were then asked to estimate overall shopper acceptance of branded case-ready beef products. Of 239 total respondents, 69% believed shopper acceptance of branded case-ready products would be the same or higher than conventional beef products. More specifically, 43% of wholesaler/retailer respondents felt overall shopper acceptance would be lower, while 41% of the packer respondents perceived shopper acceptance to be higher than that of conventional products (Table 19).

TABLE 19: Overall Shopper Acceptance

<table>
<thead>
<tr>
<th></th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>lower</td>
<td>20 (20.2%)</td>
<td>54 (43.5%)</td>
<td>2 (22.2%)</td>
<td>2 (11.1%)</td>
</tr>
<tr>
<td>same</td>
<td>28 (28.3%)</td>
<td>38 (30.6%)</td>
<td>4 (44.4%)</td>
<td>8 (44.4%)</td>
</tr>
<tr>
<td>higher</td>
<td>41 (41.4%)</td>
<td>27 (21.8%)</td>
<td>3 (33.3%)</td>
<td>8 (44.4%)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>89 (100.0%)</td>
<td>109 (100.0%)</td>
<td>9 (100.0%)</td>
<td>18 (100.0%)</td>
</tr>
</tbody>
</table>

Respondents were then asked to estimate the portion of fresh, retail, self-service meat sales that will be branded, case-ready product in 1987, 1990 and 1995. The overall average estimate of beef sales from branded case-ready product increased from 9.5% in 1987 to 55.3% in 1995 (Table 20).
TABLE 20: Actual and Estimated Meat Sales from Branded Beef Products, 1987-1995

<table>
<thead>
<tr>
<th></th>
<th>(Actual)</th>
<th></th>
<th>(---Estimated---)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1987</td>
<td>1990</td>
<td>1995</td>
<td></td>
</tr>
<tr>
<td>Overall Average</td>
<td>9.5%</td>
<td>28.9%</td>
<td>55.3%</td>
<td></td>
</tr>
<tr>
<td>Packer (n=99)</td>
<td>7.9%</td>
<td>28.0%</td>
<td>53.3%</td>
<td></td>
</tr>
<tr>
<td>Whls/Retail (n=124)</td>
<td>10.8%</td>
<td>28.4%</td>
<td>55.1%</td>
<td></td>
</tr>
<tr>
<td>Pkg. Supp. (n=9)</td>
<td>9.4%</td>
<td>34.2%</td>
<td>57.7%</td>
<td></td>
</tr>
<tr>
<td>Other (n=18)</td>
<td>8.1%</td>
<td>33.3%</td>
<td>65.6%</td>
<td></td>
</tr>
</tbody>
</table>

The Future Direction of Branded Beef

In an effort to gain further insight into beef industry perceptions of further processed (i.e., oven-ready, partially cooked, microwave-ready) meat products, questions pertaining to the acceptability of "fresh prepared food" items were utilized. An inquiry into the growth potential of further processed, fresh, stove- and oven-ready meats (i.e., fresh sausage, fajita meats, marinated meats) showed a majority of the respondents (76.8%) felt this was an area of modest (i.e., 5-15%) to substantial (greater than 15%) growth. In a similar question, overall response indicated the market potential for fully prepared, never frozen, microwave-ready meats (i.e., ribs, roasts, steaks) yielded a 31.5% response for modest product growth and 44.4% response for substantial product growth (Tables 21 and 22).

<table>
<thead>
<tr>
<th>(%)</th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>slight (1-5%)</td>
<td>9 (9.1)</td>
<td>7 (5.6)</td>
<td>1 (11.1)</td>
<td>0</td>
</tr>
<tr>
<td>modest (5-15%)</td>
<td>33 (33.3)</td>
<td>51 (41.1)</td>
<td>4 (44.4)</td>
<td>6 (33.3)</td>
</tr>
<tr>
<td>substantial- (over 15%)</td>
<td>38 (38.4)</td>
<td>46 (37.1)</td>
<td>3 (33.3)</td>
<td>10 (55.6)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>80 (100.0)</td>
<td>104 (100.0)</td>
<td>8 (100.0)</td>
<td>16 (100.0)</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>(%)</th>
<th>Packer (n=99)</th>
<th>Whls/Ret (n=124)</th>
<th>Pkg Supp (n=9)</th>
<th>Other (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>slight (1-5%)</td>
<td>6 (6.1)</td>
<td>11 (8.8)</td>
<td>0</td>
<td>1 (5.6)</td>
</tr>
<tr>
<td>modest (5-15%)</td>
<td>27 (27.3)</td>
<td>40 (32.3)</td>
<td>5 (55.6)</td>
<td>8 (44.4)</td>
</tr>
<tr>
<td>substantial- (over 15%)</td>
<td>46 (46.5)</td>
<td>55 (44.4)</td>
<td>3 (33.3)</td>
<td>8 (44.4)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>79 (100.0)</td>
<td>106 (100.0)</td>
<td>8 (100.0)</td>
<td>17 (100.0)</td>
</tr>
</tbody>
</table>

Wholesaler/Retailer respondents were asked if they wanted processors to develop further processed and fully prepared meat products and programs. Ninety-four percent of the wholesaler/retailer respondents indicated they would like processors to offer these programs. In the "other" category, 9 of 10 respondents indicated processors should offer further processed or fully prepared meat items (Table 23).

TABLE 23: Retailers: Development of Fully Prepared Meat Products by Processors

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale/Retail (n=98)</td>
<td>94 (95.9%)</td>
<td>4 (4.1%)</td>
</tr>
<tr>
<td>Other (n=10)</td>
<td>9 (90.0%)</td>
<td>1 (10.0%)</td>
</tr>
</tbody>
</table>
In a similar question, processors, packaging suppliers and other industry representatives were asked if they were planning to develop or expand further processed or fully prepared fresh meat programs for retail customers. Ninety percent of the packers and 87% of the "other" industry representatives indicated they were planning on developing such programs. The majority of packaging suppliers indicated they were not considering these programs (Table 24).

**TABLE 24: Processors: The Development of Fully Prepared Meat Products for Retailers**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packers (n=70)</td>
<td>63 (90.0%)</td>
<td>7 (10.0%)</td>
</tr>
<tr>
<td>Packaging Suppliers (n=9)</td>
<td>1 (11.1%)</td>
<td>8 (88.9%)</td>
</tr>
<tr>
<td>Other (n=8)</td>
<td>7 (87.5%)</td>
<td>1 (12.5%)</td>
</tr>
</tbody>
</table>

**Summary**

In identifying consumer needs and wants, the idea of brand-labeling beef products may have a positive impact, similar to that observed in the poultry industry. Allen points out that consumer confidence in beef as a wholesome, consistent product would be greater if the product were associated with a company or firm. Also, the WLB study results indicate that a range of products targeted at select consumer segments should not be overlooked, and may be an effective marketing tool. The WLB study also concluded that consumers were able to distinguish between beef products, and that the development of branded beef programs might have
a positive impact on consumer purchase behavior. Finally, Ketchum Research concluded that promotional programs can create a positive attitude toward a product. Thus, the development of brand-labeling, and merchandising programs that promote a high quality, consistent product may enhance consumers' perceptions of fresh beef.

The development of branded beef programs can take different forms. The concept of branding may be separated into producer, packer and retailer labels. These various programs attempt to promote or differentiate their products based on perceived (i.e., different breeds) or actual (i.e., natural, lite) differences. The success of these branded beef programs described earlier may be attributed to a genuine interest on the behalf of the beef industry to develop products that meet changing consumer lifestyles.

In the case of branded, case-ready meat products, a general acceptance of such programs was exhibited. Seven of the 8 questions produced positive responses from survey participants, but respondents were undecided as to shopper acceptance of branded, case-ready meats. While packers, packaging suppliers, and other industry representatives felt shopper reaction to branded, case-ready products was higher than or similar to that of conventional beef products, wholesaler and retailer participants perceived consumer acceptance of branded case-ready meats to be lower.

Respondents also had positive opinions about fresh prepared beef products. All groups felt that further
processed and fully prepared meat items would be an area of modest or substantial growth in the future. Wholesalers, retailers, and other industry respondents indicated that they would like to see more of these types of programs developed by processors. The majority of packers indicated they were planning to develop or expand branded case-ready meat programs.
CHAPTER SIX

SUMMARY AND FUTURE RESEARCH

The beef industry has undergone a transitional period from a consumption high of 94.4 pounds per capita in 1976 to one of declining market share (USDA, 1985, p. 17). As a result of this decrease, the beef industry began seeking and developing new methods to identify and satisfy consumer needs. The increasing emphasis on meeting consumers' needs was the primary driving force behind the industry's change from commodity orientation to a brand oriented marketing focus.

In order to accomplish this transition, a series of products and programs responding to the changing consumer preferences have been developed. This research examined four marketing programs designed to satisfy consumers changing perceptions about fresh beef. The four programs examined were: Close-fat trim; "Light" beef; "Natural" beef; and Branded case-ready programs. While these products differ in concept, they were generally targeted at health-oriented and active lifestyle consumers who had developed negative attitudes toward red meat and whose beef consumption had declined.

In order to gain insight into consumer wants and needs with respect to beef products, the following consumer research studies were utilized: the National Consumer Retail Beef Study, the Consumer Climate for Red Meat, the National Beef Market Basket Survey, and the Beef Task Force
Report. Other studies by the Good Housekeeping Institute, Harris Polls and Food Marketing Institute were also used. An overview of beef products for each marketing program was then examined. Industry feedback on these various programs was assessed through the results of the AMI/FMI Meat Marketing Conference Survey of packers, retailers, packaging suppliers and other industry representatives.

This chapter concludes the research on fresh beef marketing programs and will be organized in the following manner:

0 Summary of objectives, methods and results from previous chapters;
0 Limitations of the Research;
0 An overview of the implications of the research findings on marketing in the fresh beef sector will be discussed;
0 Suggestions for future research needs in the fresh beef marketing.

**Research Objectives**

The general objective of this paper was to describe and analyze recent marketing-oriented initiatives in the beef subsector. Specific objectives included:

0 Describing and analyzing the development and subsequent performance of close-trim programs;
0 Describing and analyzing the development and subsequent performance of branded, and branded case-ready beef programs;
0 Describing and analyzing the development and subsequent performance of "light" beef programs;
0 Describing and analyzing the development and subsequent performance of "natural" beef programs;
0 Surveying packers, retailers, and other industry representatives about the success of these four marketing programs.

Emphasis was placed on obtaining industry feedback about the development and success of these programs at meeting changing preferences of consumers. The results of this research can now be used to assess future beef marketing programs.

Research Methods

Background information on branded, "light", "natural" and close-fat trim beef was found in both trade and academic publications. Additional information on consumer attitudes towards beef and close-fat trim, "light" beef, "natural" beef, branded beef were obtained through the use of industry and university-sponsored research studies. In order to gather information about the perceptions of beef industry professionals, a survey focusing on new meat marketing ideas (branded beef, natural beef, light beef and close fat-trim programs), was developed and distributed to meat packers, wholesalers, and retailers at the 1987 AMI/FMI Meat Marketing Conference. Survey results were then utilized to
assess retailer, wholesaler and processor attitudes toward each marketing program.

Research Results

Close-Fat Trim

The Consumer Climate for Red Meat indicated that active lifestyle and health oriented consumers made up the largest percentage of the beef consumer population. These individuals had a negative perception of the fat content in beef. The National Consumer Retail Beef Study further clarified consumers' dislike for fat and also found that the visual appeal of fresh beef products had an impact on consumer perceptions and purchase decisions.

The information from these two studies led to the development of close-fat trim programs (i.e., the trimming of external fat from retail cuts by both packers and retailers). Various retailers have adopted 1/4 inch trim programs successfully. Similarly, packers have begun investigating hot fat trim processes which will allow them to more efficiently provide the retailer with 1/4 inch trim products.

Industry reaction to close-fat trim programs appears very positive. The results of the 1987 AMI/FMI Survey indicated the majority of respondents felt positively about external fat trim programs, and believed they had increased overall meat sales. In addition, the National Beef Market Basket Study revealed that a high percentage of
retailers participate in close fat trim programs and that such products are available nationwide.

"Light" Beef

The increased consumer awareness of dietary fat levels also prompted the development of "light" beef products. These products use various farm production methods to decrease the overall fat content of the beef cut. The development of these programs allowed the beef industry to address regional differences in consumer preferences. For example, results from the National Consumer Retail Beef Study indicated geographic differences in consumer tastes. Philadelphia consumers preferred Choice grade beef, while San Francisco consumers chose the lesser marbled Select grade beef. These findings prompted additional studies on the function of marbling and optimal level of marbling needed for acceptable product taste.

The "light" beef products studied evolved from the combined effort of state beef councils and university researchers. Findings indicated consumers were highly receptive to the low-fat product concept, however, more research needs to be done to develop a product with a consistent palatability.

Similar to close-fat trim programs, industry responses toward "light" beef products have been positive. While the majority of AMI/FMI respondents were not currently offering "light" beef products, the majority of packers and retailers indicated they may stock "light" products in the future.
Furthermore, research in the areas of feedlot management programs, use of repartitioning agents, and the development of modified fatty acid beef products could expand the future potential of "light" beef production.

"Natural" Beef

The concept of "natural" beef focused on the increased concerns of consumers about the presence of hormonal and antibiotic residues in their beef products. These issues prompted the formation of the Beef Safety Assurance Task Force and the beginning of governmentally regulated beef safety assurance and related consumer information programs.

"Natural" products examined were similar in product concept, but differed in their degree of "naturalness" (i.e., production practices, participation in residue control programs, labeling terminology and promotional campaigns). These products also varied in producer participation in beef safety assurance programs.

Industry feedback on "natural" beef programs was inconclusive. AMI/FMI survey results indicated few packers and retailers provided "natural" beef products, but a larger percentage of retailers believed they may offer these products in the future. The introduction of privately regulated beef certification programs has increased producer awareness toward the availability and potential benefits of marketing "certified" beef. There is still controversy among industry specialists as to the impact of labeling fresh beef products as "natural". NCA prefers to slowly
abolish private certification programs and replace them with increased consumer promotional and informational programs, such as the Technician Certification Program.

**Branded and Branded Case-Ready Beef**

Research studies revealed that branding, or targeting a certain product at a select group of consumers may be an effective marketing tool. The WLB study indicated that consumers were able to differentiate between beef products and the development of branded programs might have a positive impact on consumer behavior. Also, Ketchum Research found that promotional programs can create a positive image toward a product.

The AMI/FMI survey indicated a positive industry response toward branded and branded case-ready products. Seven of eight AMI/FMI survey questions produced positive responses from participants. In addition, the related topic of Fresh Prepared Foods also produced an overall positive response from participants. The industry's overall positive response toward branded, further processed and fully prepared meat items highlight the need for fresh beef products that meet changing consumer tastes and lifestyles.

**Limitations of the Research Method**

The introduction of fresh beef marketing programs may not be the solitary cause of changing consumer attitudes or the reversal in per capita beef consumption. Additional information on the changing structure of the beef industry, changing consumer lifestyles, the role of women in the
household, and changes in governmental policies have also affected per capita consumption. The inclusion of such information may alter the conclusions of this research.

In the dynamic area of fresh beef marketing, new products and programs are continuously being developed and the need for updated research is paramount. While the information presented in this paper were some of the industry's latest research results, the concept and effects of new information on fresh beef marketing are constantly evolving among producers, packers, retailers and consumers. The speed of these changes and the promptness of the media to report new findings in food related areas, make research publications such as this a compendium of past happenings, but not necessarily an accurate assessment of future direction.

**Marketing Programs in the Fresh Beef Subsector**

The results of this research have revealed several implications for the fresh beef subsector. In order to respond to changing consumer preferences, and ensure that these marketing programs remain successful, further modifications in the behavior of beef producers, packers and industry marketers may be required. Some of these modifications are highlighted below.

**Hot CarcassTrimming**
To encourage meatpacker implementation of hot fat trim programs, the USDA has considered decoupling the yield and quality grade system. Hot fat trimming by packers would cause problems in carcass evaluation procedures, and Texas A&M researchers felt coupled quality and yield grades may no longer be a necessity. Since boxed beef accounts for over 85% of the beef produced, and merchandising of carcass beef is no longer the typical industry practice, the utility of the quality/yield grade system is questionable. Researchers have concluded that the benefits of hot fat removal may exceed the drawbacks of losing the yield grade system (Savell and Cross, undated).

While hot carcass trimming was seen as a short term solution to the overall reduction of external fat on beef carcasses, further research in the areas of beef cattle production and management, and carcass fabrication are needed to better evaluate the future of hot carcass fat trimming. Ultimately, institutional changes that more accurately transmit consumer preferences from the retail level to the farm level must be developed if producers are to be convinced of the necessity to market leaner beef.

**Informational Research**

The benefits of informational research on consumer wants and needs and the interpretation of perceptions are evident the National Consumer Retail Beef Study results. Furthermore, information gained from the Consumer Climate for Red Meat enlightened the industry about consumer
concerns on fat and chemical residues in meat, and opened the door for additional research on programs designed to differentiate fresh beef products. The National Consumer Retail Beef Study and the National Beef Market Basket Study were landmark research projects for the fresh beef industry. They utilized the information provided by the Consumer Climate for Red Meat and asked consumers to specify their definition of fat with respect to beef products. The result was the introduction of a line of external fat trim beef products.

Similarly, the consumer concerns about chemical and hormonal residues in fresh beef products prompted the National Cattlemen's Association to form a Beef Safety Assurance Task Force to investigate the issue of safe cattle production. The task force conclusions led to the development of the National Cattlemen's Association sponsored certification programs and the development of the Technician Certification Program. Having learned of the value of such information, the beef industry appears to be moving toward increased research in the area of identifying consumer attitudes and behavior with respect to purchasing fresh beef product (i.e., Step I of the Three-Step Marketing Approach).

Shift in Function from Retailer to Packer

The increase in central cutting and packer processing, coupled with the movement of industry toward a brand marketing philosophy, will have an impact on the meat
industry labor force. The demand for more labor intensive, efficiently produced fresh beef products at the retail level may shift the need for labor from the supermarket backroom to the packing plant.

External fat trim beef products, trimmed to retailer specifications, require additional modifications on the cutting line at the packing plant. Similarly, the implementation of "light", "natural" and branded beef programs also require the addition of regulatory inspectors and carcass separators at the packer level. Packers offering case-ready and portion control products may also require additional labor in the area of product trim, packaging, and final product inspection. As the cutting and trimming functions are shifted from the retailer to the packer level, the traditional in-store butcher may be replaced by retail meat merchandisers and informational resource personnel.

Changes in Beef Cattle Marketing

The majority of beef cattle are currently marketed under an average pricing system. Industry specialists feel this type of pricing system has been a handicap that masks producer inefficiencies. Producers, feeders, packers and retailers have agreed that average pricing has been a disadvantage for the industry and has created marketing problems. In particular, an average pricing system fails to reflect changing consumer preferences and transmit appropriate signals through the marketing system to
producers. The industry generally believes that the trend toward externally trimmed boxed beef and the expansion of central cutting and packaging of retail cuts by packers would best be reflected in a value-based marketing system.

In a value-based marketing system, carcass value would be assessed on characteristics most important to consumers, such as high cutability and palatability, along with the uniformity and predictability of these factors. In the short run, the producers of premium cattle would benefit from a value based marketing system. Long term adoption of value based marketing would provide a clear direction for producer breeding and management systems and enhance price discovery by packers and retailers.

There is a need to convince retailers, packers and feeders of the value of cutability and the benefits of receiving beef with less waste fat. Savell reports that "if fat is removed at the retail level, cattlemen are too far away in the distribution system to be able to participate and understand the benefits of a value system" (Bergland, March 1988, p. 15). Thus, industry will have to demonstrate to retailers that it pays to buy leaner wholesale cuts, with less trimmable fat.

Industry specialists predict the emergence of two distinct fresh beef markets over the next 4 to 5 years:

1) Generic boxed beef and;

2) High quality cattle produced for branded beef programs.
Cattle qualifying for the latter market will represent premium quality animals sold at substantially higher prices than those utilized for generic boxed beef. Researchers predict the branded beef market share must reach 20% to 25% of the boxed beef market, before packers would realize monetary benefits from a value based marketing system (Wilkes, January 1988).

**Future Needs of Fresh Beef Marketing Program**

**Predictions of Future Beef Marketing Developments**

Gary Smith, Texas A&M meat scientist, predicts the development of six primary markets for potential product expansion in the fresh beef industry in the 1990's. These six markets may be separated into three smaller markets for quality beef and three targets for the niche marketing of fresh beef. The quality beef market will consist of:

1) High quality beef, including U.S. Prime and the upper 1/2 of the Choice grade. These products will fill the needs of the hotel, restaurant, and food service industries and will be seen as a premium product emphasizing taste and tenderness for those most individuals who are able and willing to pay for it.

2) Intermediate quality beef, consisting of the U.S. Choice grade and will include cuts that are leaner and possess less external and seam fat. These cuts will be targeted at consumers who are willing to sacrifice some leanness for a product with improved taste and texture.
3) Acceptable quality beef, including Select grade products which are targeted toward the health conscious consumers who prefer a leaner, low fat cut of beef.

Several entrepreneurs have already capitalized on creating differentiated products and targeting niche markets. Smith believes the following products will be developed further and become more popular with consumers in the 1990's.

1) "Light" beef targeted toward health and dietary conscious consumers who might not otherwise purchase beef at all.

2) "Natural" beef targeted at consumers who are aware of and concerned about antibiotic and hormonal residues in their beef products.

3) Modified Fatty Acid (MFA) Composition beef, a dietary modification of the fatty acid content in regular beef products, is designed to reduce the overall saturated fat content and ultimately lower the cholesterol content of this fresh beef product.

These products are targeted toward consumers who have stopped purchasing beef because of high cholesterol, heart disease, or other health-related problems (Smith, undated).

The need for ongoing research in the area of consumer behavior and attitudinal perceptions of the four product categories would be the next logical step in the assessment of fresh beef marketing programs. The cooperative efforts
of both industry and private consulting firms for a
nationwide consumer survey and LTM study would provide
valuable information and greatly benefit the fresh beef
industry through the future direction of product development
and fresh beef marketing programs.

Additional Research

Additional research in the areas of consumer attitudes
and behavior toward fresh beef products is needed.
Cooperative research efforts between universities, producer
organizations, and private companies could increase the
available information in the industry. Due to the dynamic
nature of this industry and changing consumer lifestyles,
past research findings must be updated continually to assure
that the industry is working with the most recent
information when developing new products and marketing
strategies.

Research is needed in all areas of the industry, from
the efficiencies and return on investment of new cattle
management strategies to consumer reaction to retailer
promotional programs. Once gathered, this information
should be made available throughout the industry. Also,
specific research findings in the areas of nutritional
content of new products, and the positive contributions of
today's fresh beef to a nutritionally balanced diet should
be highly publicized and made available to consumers.
Additional research on the effects of the increase in
promotional programs on consumers, along with the impact of
new beef cattle pricing systems on the producer, would give further insight into the future of the fresh beef industry.
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