

Lean, Finely Textured Beef or Pink Slime: Controversial Debate

By JaeMin Cha

Introduction

Today's consumers are more demanding than ever about food quality, and their perceptions of food quality are changing rapidly. For example, they have become more aware of - and much more concerned about - food hazards. They evaluate where food comes from and how it is processed. Thus, food safety, sustainability, nutrition and health have become increasingly important attributes of food quality (Rijswijk & Frewer, 2008). In its review of the top 10 menu trends, the National Restaurant Association's most recent survey What's Hot in 2012 (National Restaurant Association, 2012), health and sustainability are identified as the hottest trends.

Consistent with these identified trends, this case study deals with a huge controversial debate regarding beef, and in particular with the product the beef industry names "lean finely textured beef" (LFTB) but many critics and food activists call it "pink slime." The American Meat Institute recently issued a fact sheet to help consumers understand what lean finely textured beef (LFTB) is largely due to the phenomenon of social media, this latter label has become much more widespread than LFTB. Consumer concern about the safety of beef products has become high, with perceived risks that have been related to negative perceptions. One consequence is that consumers are changing their food choices, and restaurant diners' behaviors are impacted (Knight et al., 2007). For example, 2012 Food and Health Survey shows that more than 80% of interviewed respondents admit to giving some thought to the safety of their foods and beverages over the past year. 60% of respondents are concerned about contamination of food supply in general and more than 50% are worried about meat in particular (International Food Information Council Foundation, 2012).

After the 2008 documentary *Food Inc.* pointed out pink slime or LFTB, an article by Moss (2009) "Safety of Beef Processing Method is Questioned" was published in *The New York Times*. The article fully described the use of ammonium hydroxide in beef processing, and addressed several LFTB quality and safety. Later, Chef Jamie Oliver's *Food Revolution* popularized the term pink slime by questioning its safety and quality, while the meat industry and related associations posited that LFTB innovation has enhanced food safety and contributed to saving costs. This case study presents supporting and opposing argu-

ments, histories and claims about LFTB alias pink slime.

Teaching Objectives of the Case

This case study is based on investigating events, facts, controversies, and debates over LFTB/pink slime in terms of perceived risk, safety, quality, and health. Baertlein and Geller (2012) noted that this controversy has become one of the biggest U.S. food battles in recent history. The main purposes of this case study are to provide historical and current information about LFTB/pink slime in terms of food safety, labeling, and quality, and to present two compelling arguments by highlighting various public relations campaigns used by both the beef industry and the food critics. Another purpose of this case study is to discuss challenging business problems that the restaurant industry faces in this controversy by identifying different types of marketing strategies implemented. Accordingly, also presented are how some restaurants have changed their purchasing practices and how they communicate their new practices to consumers, to enhance their own brand images.

The now well-known term pink slime did not start from any published article or news reports. It first was coined by a former US Department of Agriculture - USDA - scientist, Dr. Gerald Zirnstein, in 2002 when via an email to a colleague he referred to the product coming from the facility producing it (Knowles, 2012). In March 2012 in an ABC World News interview, Dr. Zirnstein argued that "It's economic fraud. It is not fresh ground beef. It's a substitute. It's a cheap substitute being added in" (Avila, 2012). The American Meat Institute (2012) defines LFTB as "a category of beef products that uses high-technology food processing equipment to separate lean meat from fat because doing it by hand would be impossible. LFTB products prevent the waste of valuable, lean, nutritious, safe, beef by using technology to do what hands cannot."

The following describes how this controversial issue between pink slime and LFTB has been developed historically.

Timeline

Tannenbaum (2012) and Andrew (2012) have summarized the timeline of this controversial issue as well as pertinent historical information. Table 1 outlines the controversy beginning with FDA approval of food grade ammonium hydroxide for human consumption. This has become a main debate over food additives. Starting with Chef

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Table 1**Historical Timeline about the LFTB vs. Pink Slime**

1974	FDA approves food grade ammonium hydroxide as being safe for human consumption.
1981	Beef Products Inc, an inventor of LFTB is founded by Eldon Roth.
1993	USDA approves BPI's heated centrifuge process of separating lean beef from fatty, boneless trimmings, which is the same process used for LFTB.
1991-1994	BPI develops a pH Enhancement System to reduce pathogens in beef. This involves ammonium hydroxide gas treatment.
2001	BPI receives USDA's approval for the BPI's pH Enhancement System to treat lean beef with ammonium hydroxide as an antimicrobial intervention.
2001	BPI develops a process of using fatty beef trimmings in beef products, and starts introducing ammonia-treated LFTB to the market.
2002	Zirnstein, USDA food scientist, investigates the BPI facility, and coins the term pink slime; Zirnstein's e-mail released to <i>New York Times</i> for investigative article on food safety - the start of pink slime.
2003	7,000 lbs. of LFTB are returned to BPI from a state prison because of complaints of strong ammonia odor.
2004	McDonald's starts to use LFTB in its hamburgers.
2004	Federal school lunch officials increase the amount of LFTB in school hamburgers from 10 to 15 percent in order to reduce costs.
2005-2006	Cargill company suspends three of its process plants for excessive pathogens, who of these were BPI plants.
2006	Federal school lunch officials stop shipments before they reach schools because E. coli is found in BPI products
2007	USDA exempts BPI from routine meat inspections because USDA officials believe BPI's ammonia treatment destroys E.coli to an undetectable level.
2007	BPI receives the Black Pearl Award, its highest honor for BPI's commitment to food safety, recognized by the International Association of Food Protection.
2007	Iowa state regulators fine BPI \$1 million and identify 34 safety violations.
2008	The documentary <i>Food Inc.</i> talks about pink slime in foods.
2008	Federal School Lunch Program is using 5.5 million lbs. of processed beef.
2008	An estimated 75% of hamburger patties in the U.S. contains LFTB.
2009	Officials from the Federal School Lunch Program temporarily bans the product due to linking LFTB to salmonella in BPI's Kansas facility.
2009	BPI and LFTB headlines in <i>New York Times</i>
2010	BPI sues Iowa State University for releasing company's confidential documents to Marler Clark law firm.

*Source: Andrews (2012); Tannenbaum (2012)

Jamie Oliver's involvement, Table 2 presents more recent updates of this topic and highlights the role of electronic word-of-mouth via social media tools. In particular, Table 2 presents how supermarkets and fast food restaurants have changed their purchasing practices and promotional strategies, and how the beef industry has been damaged negatively and financially. In fact, Tannenbaum (2012) called these series of events March Beef Madness, as various news updates and

articles about this topic appeared almost daily.

Dilemma: Criticisms about pink slime

Use of Ammonia during Production Process

Although FDA in 1974 approved food grade ammonium hydroxide as safe for human consumption (refer to Table 1), consumers are concerned that ammonium hydroxide may risk their health. In

Table 2**Timeline for Media Attention about the LFTB vs. Pink Slime**

April-11	Jamie Oliver has a TV episode on pink slime.
31-Jan-12	McDonald's, Burger King, and Taco Bell announced stop using LFTB.
6-Mar-12	Bettina Siegal creates a petition on Change.org asking USDA to stop using LFTB in school lunches.
6-Mar-12	National School Lunch Program announces its continuation of pink slime in its meals.
8-Mar-12	ABC News reports that Costco, Publix, HEB, and Whole Foods do not sell LFTB products.
9-Mar-12	BPI launches BeefIsBeef.com to support the use of LFTB.
16-Mar-12	Pink slime is dropped from some school lunches; USDA provides options to school districts providing ground beefs with or without LFTB.
16-Mar-12	Jamie Oliver's launches petition to stop pink slime at www.StopPinkSlime.org . Over 258,000 people signed saying they wanted pink slime to be out of their food and 41 members of Congress are demanding an end to pink slime in lunches.
21-Mar-12	Major grocery chains including Kroger and Safeway discontinued selling LFTB.
23-Mar-12	BPI runs full-page ad in Wall Street Journal, arguing "the media's mis-information campaign."
26-Mar-12	Primary processor of LFTB, BPI closes three of four plants.
29-Mar-12	American Meat Institute (AMI) urges media to stop using the phrase pink slime.
30-Mar-12	Congresswoman Pingree introduces a bill "Requiring Easy and Accurate Labeling of Beef Act" that requires labeling of beef products containing LFTB with words.
30-Mar-12	Wendy's runs full-page ads in eight major newspapers, presenting a message, "we've never used 'pink slime' and we never will."
2-Apr-12	USDA approves label requests by ground beef producers who want to label their products that have LFTB.
2-Apr-12	A main manufacturer of pink slime, AFA Foods, files for bankruptcy.
4-Apr-12	Harris Interactive survey, commissioned by Red Robin, finds that 88% of U.S. adults are aware of pink slime with 76% of those being "at least somewhat concerned" and 30% being "extremely concerned."
14-May-12	Cargill, a major ground beef producer has seen an 80% drop in volume in its production of LFTB.
13-Sept-12	BPI announces that it has filed suit against ABC News, former USDA officials, and a former BPI employee.

*Source: Andrews (2012); Tannenbaum (2012)

particular, Jamie Oliver's reality program (i.e., Jamie Oliver's Food Revolution) highlighted that ammonium hydroxide was commonly used for cleaning and treating beef, and that it caused unpleasant odors. In addition, it was averred that, in the past, these same beef trimmings and connective tissues used to make LFTB were only used for pet food and oil. Consumers then raised alarms and posed critical questions about what they actually are purchasing (Geller, 2004).

Questioning Labeling Issue

Today's consumers increasingly demand to know what ingredients they are eating. For example, Stop Pink Slime website (www.StopPinkSlime.org) has the message, "Tell us exactly what is in the food we eat!" Consumers were distressed by the ABC News report that 70 percent of ground beef at grocery stores contain LFTB, and upset that they did not really know what they were consuming, because this product had not been declared on labels for many years (Avila, 2012). Consumers increasingly question this labeling lapse (Aleccia, 2012).

According to regulations, if less than one percent is used, it is not required to be on the label (Geller, 2012). Consumers also are alarmed that beef can be labeled 100% ground beef, although it contains up to 15% of LFTB (Kiri, 2012).

Safety / Quality Issue

Since the E. coli outbreak associated with ground beef at Jack in the Box restaurants in 1993, the safety of ground beef has been a concern among general consumers and restaurant diners (Mahon & Cowan, 2004). While the beef industry argued that the use of ammonium was necessary to eliminate germs and enhance safety, many consumers still have concerns about mixing chemicals with food. Furthermore, several reports have indicated positive test results for salmonella and E. coli in some products from Beef Product Inc., a main producer of LFTB (Tannenbaum, 2012). For example, a New York Times report indicated that Beef Product Inc. had a rate of 36 positive results for salmonella per 1,000 tests from 2005 to 2009, compared to a rate of

nine per 1000 tests for other competing suppliers (Moss, 2009). Consumers also question quality standards of LFTB in the United States by addressing an issue about why the use of ammonium hydroxide in beef or other kinds of food is not approved in some other countries such as Canada and the United Kingdom (Oliver, 2012).

Supporting the Use of LFTB

Saving Costs

School lunch officials indicated that they used LFTB because it is substantially less expensive than ordinary meat trimmings; its choice of LFTB resulted in saving about US \$1 million a year, and the USDA estimates the cost difference between ground beef with or without LFTB is approximately 3 percent (Lin, 2012). After it was introduced to the market in 2001, school lunch officials actually increased the amount used from 10 to 15 percent in 2004 to save costs (Giordano, 2012). Furthermore, the beef industry argues that consumption of red meat is increasing while available supply is declining. An important argument addressed by the beef industry is that if LFTB is not effectively utilized, approximately 1.5 million additional cattle would need to be slaughtered annually, which is undesirable for good use of natural resources (American Meat Institute, 2012; Destiny, 2012).

Different Types of Ammonium

Jamie Oliver's Food Revolution show has been heavily criticized by the beef industry, which argues that ammonium hydroxide used for LFTB differs from ammonium used in general cleaning products. In fact, use of ammonium hydroxide was approved about 40 years ago by U.S. health officials (Tannenbaum, 2012). The challenge in using beef trimmings was to eliminate any biological contaminants associated with material from the outer surfaces of the carcass. Untreated beef naturally contains some level of ammonia, which tends to range approximately 6 on the pH scale, depending on the freshness of the meat. Initially, Beef Products, Inc. treated beef with ammonia, potentially raising the pH of the meat up to 9.5 but later (circa 2009) lowered the pH level after complaints of the ammonia smell (Beef Products Inc., 2012). Ammonium treated beef was approved by the USDA's Food Safety and Inspection Service which said, "It eliminates E. coli to the same degree as if you cooked the product" (Moss, 2009).

A food additive refers to "any substance the intended use of which results or may reasonably be expected to result – directly or indirectly – in its becoming a component or otherwise affecting the characteristics of any food" (FDA, 2010). BPI and American Meat institute highlights that ammonium hydroxide is considered a food additive or processing aid. They also argue that the ammonium is also used in baked goods, cheese, chocolates, puddings, and other processed food.

Enhancing Food Safety

The American Meat Institute, representing the beef industry, argues that the U.S. Food and Drug Administration (FDA) in 1974 approved the use of ammonium hydroxide "generally recognized as a safe" (GRAS) substances (Geller, 2012). The FDA published the GRAS substances database to evaluate the safety of over 370 GRAS food substances by differentiating types of GRAS, ranging from Type 1 (no evidenced of a hazard) to Type 5 (insufficient data to evaluate a hazard). After evaluating 34 different reports, the select committee on GRAS substances concluded Type 1 for ammonium hydroxide: "there is no evidence in the available information on ammonium hydroxide that demonstrates, or suggests reasonable grounds to suspect, a hazard to the public when they are used at levels that are now current or might reasonably be expected in the future" (FDA, 2006).

The USDA data show that the incidence of E. coli in fresh ground beef has declined significantly over the past decade. The number of USDA ground beef samples testing positive for E. coli O157:H7 dropped 55 percent between 2000 and 2010. The beef industry and the American Meat Institute argue that the LFTB innovation has contributed to this decrease (American Meat Institute, 2012). Beef Products Inc. argues that meat treated with ammonia should be considered as "innovations in food safety technology and strategy" and the ammonium is only used in the interests of consumer safety" (Beef Products Inc., 2012).

Improving Labeling

The FDA requires that ingredients used in foods be listed on food labels (FDA, 2009). Ammonium hydroxide, however, has not been listed as an ingredient on a ground beef label, since USDA defined the ammonium hydroxide as a processing aid. Dr. Russel Cross, former USDA Food Safety and Inspection argued that "LFTB is 100 percent beef, plain and simple. There is no need for labeling LFTB – because nothing is being added that is not beef" (Cross, 2012). While current regulation does not require LFTB to be labeled, a spokesman from Cargill implied on April 4, 2012 through MSNBC News that some suppliers are considering voluntary labeling as an alternative option, but no final decision has yet been made to implement this change. In this regard, USDA has endorsed voluntary labeling of ground beef, containing LFTB thus: "Contains lean finely textured beef" or the opposite: "LFTB free" (Avila, 2012).

Impacts on Restaurant Industry

Despite beef industry criticisms regarding the Stop Pink Slime campaign, large restaurant chains faced pressure, and discontinued accepting beef containing lean finely textured beef - LFTB. That is, although U.S. public health officials approved LFTB and the use of ammonium hydroxide as safe procedures, the nation's leading fast-food chains such as McDonald's, Burger King, and Taco Bell decided to discontinue using this product, and aggressively advertised that they no

Table 3

Contradicting Arguments: Stop Pink Slime vs. Beef is Beef Campaigns

Issue	Stop Pink Slime Campaign by Jamie Oliver and other food advocates.	Beef is Beef Campaign by American Meat Institute / Beef Products Inc.
Edible for humans	Beef trimmings were only used for pet food and oil.	While beef trimmings are edible, process separating the lean meat from the fat was previously impossible to accomplish by hand.
Use of ammonium	Ammonium hydroxide is commonly used for cleaning, and has unpleasant odor.	Food-grade ammonium hydroxide is used to prevent bacteria ; Other products have used this ammonia treatment.
Label / ingredient	Pink slime is not really beef. It's an additive and filler.	LFTB is 100% beef product in every regard from quality to nutrition.
Safety	There were at least 3 incidences where BPI trucks had to be stopped before they got to schools, because E. coli or salmonella was found.	LFTB tests show that all forms of LFTB are safe when produced in compliance with USDA regulation; enhancing food safety.
Production process	The ammonia treatment affects the pH scale of the beef. The pH has been found at 9.5 which is much larger than the normal beef pH of 6.	Innovative food safety process, separating meat from fat in beef trimmings.
Quality / Sustainability	It's not quality beef and is only used as a cheaper version of beef, emphasizing "chemically-treated scrap meat."	All types of LFTB are sustainable products because it is making the most of the resources.
Nutrition	Doesn't have the same value as beef; the trimmings come from a cow that used to be in dog food.	Lean product, without compromising nutrition.
Slogans used	Stop Pink Slime: because we deserve real food.	"Dude, it's beef." And "Beef is Beef"
Costs	Because of the controversy of pink slime, cattle ranchers must have more cows, thus increasing the price of beef.	Cost-effective product (LFTB is less expensive than ordinary meat trimmings).

longer use it at the beginning of 2012 (Andrews, 2012). To understand how long this use has been practiced, a report shows that McDonald's from 2004 had been using ammonia-treated ground beef from Beef Products, Inc. (Moss, 2009). Todd Bacon, Senior Director of U.S. Quality Systems and Supply Chain with McDonald's indicated that "the decision to remove BPI products from the McDonald's system was not related to any particular event, but rather to support our effort to align our global beef raw material standards. McDonald's complies with all government requirements and food safety regulations" (Bottemiller, 2012). The current McDonald's homepage in newsroom also highlights a statement that "McDonald's USA serves 100% USDA-inspected beef-no preservatives, no fillers, no extenders –period" (McDonald newsroom, 2012).

Although the government and industry try to manage the controversy relating to LFTB vs. pink slime, several reports show that many leading national casual-dining chain restaurants suffer from this controversy. Interestingly, some restaurants who never actually had used LFTB complained that this issue has impacted their businesses' bottom line because consumers assumed that they also used this product.

Also, most media highlighted the fact that McDonald's, Burger King, and Taco Bell have stopped using it but seemed to overlook some other chains. For example, Wendy's, the nation's second-largest hamburger chain, had to take action itself to advertise in eight major daily newspapers around the United States (Baertlein and Geller, 2012; Bruell, 2012). Red Robin, one of the leading casual-dining restaurant brands, commissioned Harris Interactive to conduct an online survey of general consumers' perceptions of pink slime and changes in their purchasing and dining behaviors. Findings of this study showed that 88 percent of U.S. adults are aware of the issue of LFTB/pink slime, 76 percent indicating at least some concern, and 30 percent indicating extreme concern, and 22% saying they have either decreased or stopped consuming foods using ground beef in restaurants (Harris Interactive, 2012). Since media increasingly reported new findings of this study, Red Robin was able to use this information as a public relations strategy, because all news indicated that Red Robin never had used LFTB, yet had tried to re-educate consumers and combat this issue. Red Robin hoped to assure that the quality of their food is a top priority for them.

Table 4

Full page ad from Wall Street Journal, March 23, 2012

"After what I personally experienced watching my son suffer and die, I am very skeptical and cynical about for-profit meat companies and their professed commitment to food safety. Not all companies "walk their talk," BPI does" (Nancy Donley, Founder and President STOP Foodborne Illness).

"It is simply amazing how this misinformation campaign can take a company and product that has long been recognized for its quality and safety and turn the public perception so negative that it now may result in the loss of over 3,000 jobs..... as the founder of the company, I can personally guarantee that in our 30 year history, we have never produced pink slime" (Eldon Roth, President & CEO of Beef Products Inc.).

Some restaurants are trying to utilize their own websites to communicate with diners about their standards and purchasing practices relative to this topic. For example, Five Guys (www.fiveguys.com) recently added the point as part of its Frequently Asked Questions - FAQ – regarding "Is there pink slime in Five Guys burgers?" Their responses: "Five Guys uses 80/20 ground chuck-high quality ground beef containing only steer and heifer meat, which does not include any cow meat or fatty trimmings. We do not use ammoniated procedures to treat our ground beef. This means that there is NO "pink slime" in our burgers. Our beef comes from companies that do NOT use these methods."

Highlights: Public Relations Campaigns

Stop Pink Slime Campaign

While LFTB has been on the market for more than ten years, LFTB had never received such a high level of public attention until celebrity chef Jamie Oliver became heavily involved in this issue. In one episode of his reality show Jamie Oliver's Food Revolution, Chef Oliver highlighted LFTB, criticizing its increased inclusion in the U.S. school lunch programs and explaining why LFTB is called pink slime, by showing different steps of its production process. Chef Oliver's show increased public awareness and concerns about the ammonium-treated beef (Oliver, 2012). As of April 13, 2012, one of his YouTube clips had been viewed by more than 1,540,000 users (counting).

Jamie Oliver was a main thrust in the successful campaign Stop Pink Slime: Because we deserve real food, and in the promotion of more than 258,000 endorsements via Change.org telling USDA to stop allowing pink slime in school food. Certainly, his reality show has brought to light growing concerns about the consumption of ground beef containing LFTB. As a result, many consumers are increasingly questioning the safety and quality of LFTB as well as the perceived risk of dining at restaurants selling hamburgers.

The news and a campaign Stop Pink Slime have spread via social media to reach many consumers and via e-word of mouth (eWOM). A key message from this campaign was "It is simply wrong to feed our

children connective tissues and beef scraps that were, in the past, destined for use in pet food and rendering, and were not considered fit for human consumption." General consumers increasingly have inquired whether LFTB really impacts people's health and safety. Table 3 presents contradicting views and arguments from two different parties about the same product (LFTB vs. pink slime): 1) food activists (Stop Pink Slime campaign), and 2) beef industry (Beef is Beef campaign).

Beef is Beef Campaign

General consumers' worries and concerns over LFTB have beef sales in decline in general (Keiser, 2012). For example, primary processor of LFTB, Beef Products Inc. closed three of four plants on March 26, 2012. AFA Foods, a ground-beef processor filed for bankruptcy on April 1, 2012 (Berry, 2012). To combat these problems, there are several media campaigns initiated by the America Meat Institute - AMI, and Beef Products Inc. – BPI (Keiser, 2012). For example, AMI has promoted the campaign "Beef is Beef" (<http://beefisbeef.com/>), and increasingly stresses that ammonia occurs naturally in plants, animals, water, air and, most importantly, in some foods. AMI's website also argues that LFTB is a "safe, wholesome, and nutritious form of beef." BPI characterizes the Stop Pink Slime campaign as "the mis-information or mis-categorization campaign." Labeling LFTB as pink slime is irresponsible, says critics. BPI has worked actively to develop public-relations campaigns to "convince consumers that the product is not harmful and is essential to the industry and to the U.S. and world economy." Among various PR strategies, BPI released a full page advertisement in The Wall Street Journal (Table 4) to make the case for LFTB, by casting stories from Nancy Donley, founder and president of STOP Foodborne Illness, and Eldon Roth, President & CEO of BPI.

Conclusion

This case study has raised several controversial issues and different views regarding the safety and quality of LFTB vs. pink slime. Consumer perception of food safety and quality seems to be more influenced by e-word of mouth and via social media, than by any other

method. It is important to address true facts of LFTB from both sides so that consumers have i) opportunities to know the facts, ii) necessary ingredients to inform their critical thinking and iii) whatever is necessary to accurately evaluate the situation. The purpose of this case study is to present two compelling arguments, based on factual information, and ask students to understand the different promotional strategies and evaluate their effectiveness. This case study also enhances students' understanding of the role of social media to increase awareness of controversial topics via e-word of mouth. This case study implies that sometimes e-word of mouth (e-WOM) via social media could be more influential than government endorsement such as the USDA, in changing restaurant businesses' decision making and consumer dining choices. Certainly, the addressed topics are tied into enhancing brand image and restaurant loyalty. Many foodservice establishments and suppliers have faced the challenge of meeting and exceeding today's consumer expectations, because consumers increasingly demand healthy and quality food, and this trend of course extends deeply into the restaurant industry. No doubt, consumers demand more transparency regarding food ingredients. While government and industry assure the safety of LFTB, it is clear that customers' perceived fears and perceived risk levels are substantial. Serving safe and good quality food is vital.

Discussion Questions

What are your own and/or general consumers' concerns regarding the safety, quality, and health of LFTB vs. pink slime? Do you feel that consumers are overreacting to the issues? What are your perceived risks after learning about this topic from both arguments (beef industry vs. food activists including Jamie Oliver)?

What are the roles of social media to increase awareness of LFTB and change attitude and actual behaviors? Why do you believe the Jamie Oliver's Stop Pink Slime was so successful and reached many consumers?

Do you think the issue of LFTB changed your attitude and impacts your behavior selecting particular restaurants?

Why do you think major fast food restaurants, including McDonald's, Burger King, and Taco Bells, discontinued using the LFTB product, even when the U.S. health officials approved it?

After reading this case study, what are your perceptions about the relationship between food safety and quality of food? To enhance food safety, sometimes some procedures add chemicals or food additives. What are your views relating to food safety vs. food quality? What relationships do you observe? One of the arguments from the beef industry is that the use of ammonium was necessary to improve food safety, since this ingredient could remove e-coli and salmonella, then a small amount of ammonium is safe.

The producer of LFTB, Beef Products Inc., together with the Amer-

ican Meat Institute, engaged in various public relations strategies to stop the public and USDA scientists from calling the LFTB pink slime, arguing "our product is 100% beef in every regard, from quality to nutrition." Would you agree that this is a valid argument to you? Why or why not?

Do you feel that some fast food restaurants' reputations were damaged by this controversy? You learned how Wendy's and Red Robin, who never used the product, reacted to the problems. What would you have done differently to protect the restaurant's brand image and reputation?

What are the benefits and negatives of using this controversial product for your own operations later, if you have the power to order products for your future operations? For example, presume that you are the president or one of the executive management team members operating the multi-unit chain restaurants, where one of the main menu items is the hamburger. What would you have done if your restaurant served burgers, including the LFTB, in this controversial time? Think of how consumers would start to view your restaurant. If you never served the menu items, including LFTB, what are the activities and actions that you could have done to improve the image?

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