



Research Report



Date: October, 2010

Consumer Perceptions of Beef Safety Research Overview

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Consumer Perceptions of Beef Safety

Research Overview

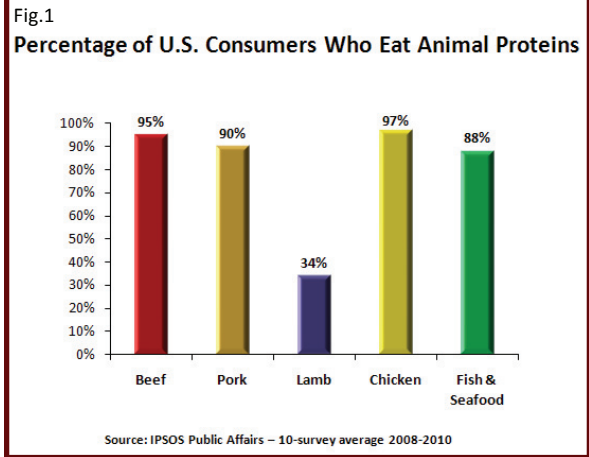
October 2010

Introduction

The checkoff conducts periodic surveys to monitor consumer confidence in the safety of beef. These studies provide measures of the effects on consumers of issues in the marketing environment and support a strategic foundation for consumer and influencer programs in issues management and communications.

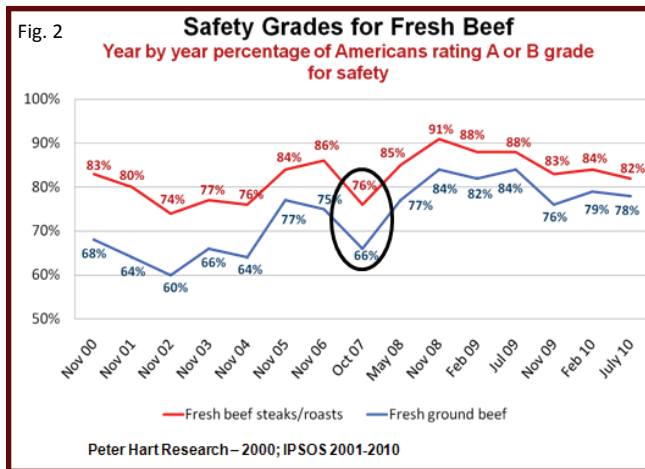
Protein Choices

The vast majority of Americans eat animal protein. Typically chicken tops the list as the number one animal protein choice of consumers with beef following closely behind. An analysis of consumer survey data from 2008 through 2010 (Fig.1) shows that, on average, 95 percent of Americans eat beef.



Trend Analysis – Consumer Confidence

Time series data provide a look at consumer perception trends over time and identify changes associated with media coverage of marketplace events. Fig. 2 shows a 10-year look back at general consumer confidence in the safety of ground beef and of steaks and roasts.



The general 10-year trend for steaks and roasts has been relatively flat with a peak confidence of 91 percent in November of 2008. Confidence in the safety of ground beef, however, has trended upward and confidence measures a 10 percentage point increase from 2000 to 2010.

The decline in confidence for both ground beef and steaks and roasts in October 2007 is the result of heavy media coverage of the Topps Co. ground beef recall. There had been no major recalls for quite some time prior to that and the heavy attention this recall received caused a consumer reaction.

Fig. 3 (page 3) shows confidence measured in a different manner. These data result from a question in which respondents are given four fresh foods they might buy in the supermarket (beef, pork, chicken, fish) and are asked which one is their food of highest safety concern.

Typically beef is rated a low safety concern relative to other foods, usually averaging 12 to 14 percent of consumers naming it as their highest concern. However, in February 2008, the percentage of consumers naming beef as their food of highest safety concern jumped to 28 percent from 15 percent in January. Consumer concern did not return to beef's historic average until July 2008.

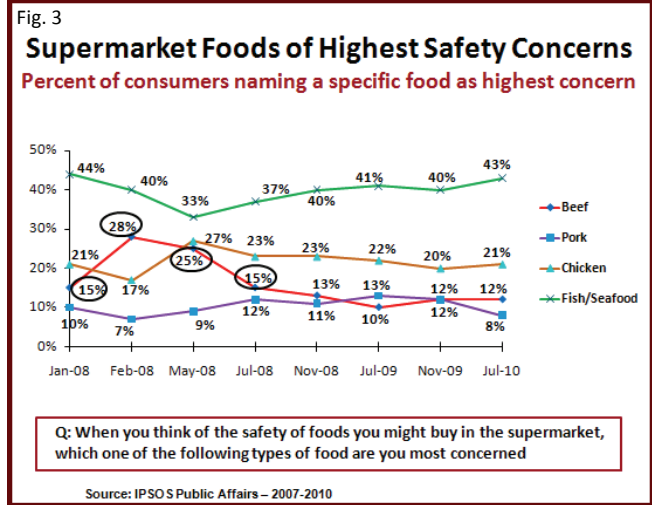
This abrupt increase in concern about beef resulted from two sources. First, the widespread media coverage of footage from the Humane Society of the United States of dairy cattle being mishandled at the Hallmark/Westland packing plant in California and, second, from the reporting on the massive recall of beef from that plant ordered by USDA.

Conclusions

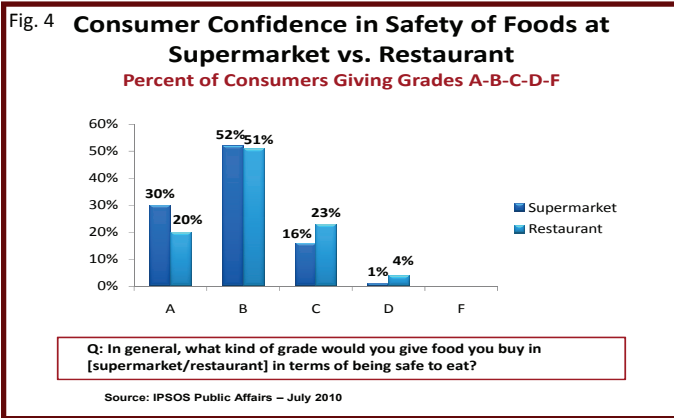
Public visibility and media coverage of safety issues do affect consumer perceptions of beef. The concern created, however, does not last nor does there appear to be a 'ratcheting up' phenomenon where concerns levels go back down but not as low as before.

A recent study from the Dept. of Agricultural Economics at Kansas State University looked at the influence of animal welfare media coverage from 1999 to 2008 on U.S. meat demand. The study concluded that animal welfare media coverage had reduced overall pork and poultry demand but had not directly impacted beef demand. Beef was not immune, however, because the study found that increased media attention cause a reallocation of expenditures to non-meat items rather than reallocating expenditure to competing meat products.

Given the prominence of beef in media coverage of food safety issues and data clearly showing consumer reactions to highly visible safety incidents, one wonders what a similar analysis focusing on safety media coverage might find.



Supermarket vs. Restaurant Food



Consumers generally are more concerned about the safety of food at restaurants than the food they purchase at supermarkets. This is an issue of feeling in control. Consumers are less concerned about food safety when they can select and prepare it themselves. Fig. 4 shows July 2010 survey data comparing perceptions of supermarket and restaurant food safety.

Foodborne Illness Concerns

Concern about foodborne illness from eating ground beef has increased significantly since 2008 and has concern about foodborne illness from eating vegetables. Concern about foodborne illness from ground beef is somewhat higher than concerns about illness from eating vegetables but both have shown the same trend. Table 1 shows the comparison between ground beef and vegetables regarding safety concern.

Table 1

Q: On a scale from one to five, with one being no concern and five being high concerns, how concerned are you about foodborne illness from eating ground beef?

	7/10	2/10	11/09	7/09	11/08
1, no concern	6	10	10	10	19
2	28	23	22	26	32
3	38	36	40	34	32
4	14	14	19	17	10
5, high concern	15	18	9	13	7
Total low concern (1/2)	34	33	32	36	51
Total high concern (4/5)	29	31	27	30	18

Q: On a scale from one to five, with one being no concern and five being high concerns, how concerned are you about foodborne illness from eating vegetables?

	7/10	2/10	11/09	7/09	11/08
1, no concern	11	13	14	10	22
2	29	27	26	30	33
3	36	33	37	36	30
4	14	14	11	14	10
5, high concern	9	13	12	9	5
Total low concern (1/2)	40	41	40	40	55
Total high concern (4/5)	23	27	23	23	15

Conclusions

In 2008 there was no statistically significant difference between high safety concerns related to ground beef consumption compared to vegetable consumption. Both ground beef and vegetables show a similar upward trend toward higher concerns in the past three years and the difference between the two in 2010, though significant, is not huge. A reasonable hypothesis is that visibility of safety issues due to media coverage also may play a role in the trend toward high concern.

Most Concerning Food Safety Issues

The food safety tracking studies ask consumers about their level of concern (on a 1 - 5 scale from not at all concerned to extremely concerned) in regard to eight issues that may affect the safety of food. These range from bacteria to pesticides to mad cow disease to antibiotics and hormones.

These questions are asked both to gauge concern levels for issues that might affect beef but also to get a reading on the things that activists might successfully leverage to frighten consumers. Fig. 5 shows the result of the most recent food safety study results for the percent of consumers who say they are “extremely concerned” about these issues.

Bacteria in food currently is the number one rated food safety issue for consumers and has been the leading issue of concern for the past several years. Looking back over the past 10 years, bacteria concerns have been higher than all other issues except mad cow disease which was the issue of highest concern from 2002 until 2009. In 2001, 39 percent of consumers said they were extremely concerned about bacteria while a quarter (24%) said they were not concerned. In July 2010, 40 percent say they are extremely concerned about bacteria and only 7 percent say they are unconcerned.

Fig. 5 shows the top consumer food safety concerns as measured in the July 2010 consumer food safety survey.

While bacteria are rated as the most concerning safety threat, pesticides have remained an issue of concern at a fairly high level since 2001 as has chemical additives in food. Mad cow disease, with 34 percent saying extremely concerned, remains a scary consumer issue but significantly lower than the 50 to 55 percent extremely concerned about this issue in 2002 and 2003.

Those extremely concerned about hormones have varied little with 32 percent today compared to 30 percent in 2001. Antibiotic concern also has varied little, standing at 29 percent currently but averaging 26.5 percent since 2001.

Concern about genetically modified foods also has not changed much, standing at 32 percent extremely concerned today compared to an average of 31 percent since 2001. Similarly, concern about irradiated foods has averaged 26 percent since 2001 and is at 25 percent currently.

Conclusions

The hierarchy of consumer concerns about food safety issues has changed little in the past ten years with the exception of the diminishment of mad cow disease in the mid-2000s. It is reasonable to assume these issues create a sort of a ‘background noise’ in the consumer environment whose volume rises and falls depending on incidents and associated media coverage. This analysis also tells us that certain issues (in this case bacteria) can increase in salience, not because the high concern score goes up dramatically but because the low concern score decreases significantly. It also should be noted that a general low rating of a particular issue means does not mean it isn’t salient to consumers in a specific context – hormone use in cattle production being a primary example.

Fig. 5

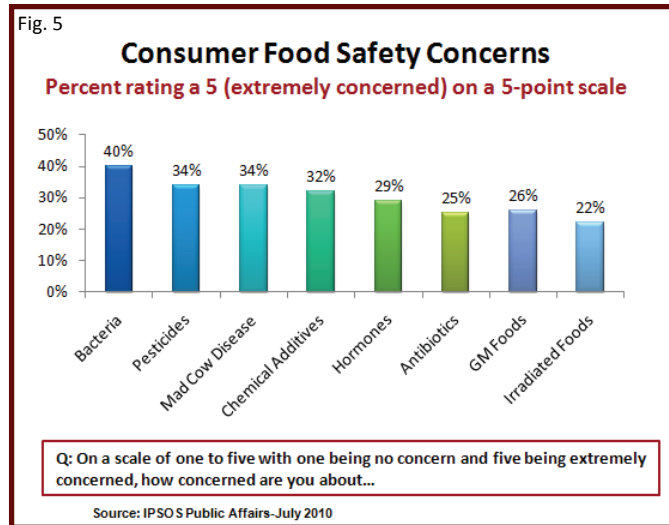
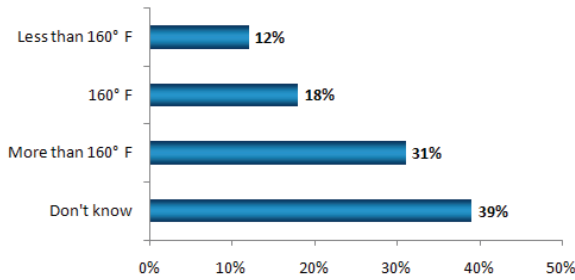


Fig. 6

Consumer Awareness of Correct Ground Beef Cooking Temperature



Source: IPSOS Public Affairs – July 2010

Food Safety/Preparation Knowledge

Despite long-standing food safety education efforts including programs such as Fight Bac, relatively few consumers know the proper temperature to safely cook ground beef. The beef industry food safety tracking studies have asked consumers about cooking temperatures in an open end question for several years and the results have been uniformly dismal. Figure 6 shows July 2010 responses to the proper cooking temperature question. A disturbingly high number of respondents simply say they don't know.

The proportion of consumers who say they don't know the proper cooking temperature for ground beef has

declined from 51 percent in July of 2009 to 39 percent in July 2010. This, however, is offset by the fact that the percentage who say more than 160F has increased from 25 percent to 31 percent.

In addition, methods of determining doneness rarely rely on use of a meat thermometer although usage may be increasing slightly. In July 2010, only 14 percent of respondents mentioned using a meat thermometer as the way to ensure proper doneness.

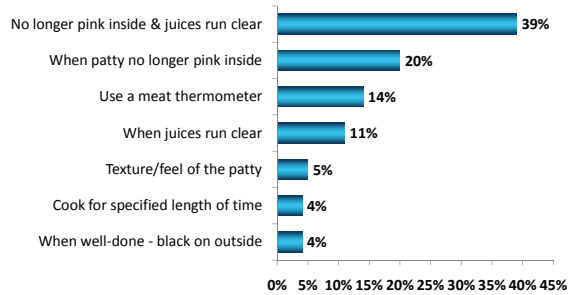
Conclusions

Things that have not changed in the past 5 – 10 years: use of thermometers to determine doneness; the number of consumers who know the proper safe cooking temperature for ground beef; the number of consumers who use some sort of visual method to determine doneness.

The dilemma is that consumers would like a guarantee of product safety so they don't have to worry about it and the industry is working to get consumers to accept they have a role in the process. Continued thought must be given to how to both make the product safer and how to get consumers to recognize the critical role they must play.

Fig. 7

How Consumers Determine Doneness of Ground Beef Patty



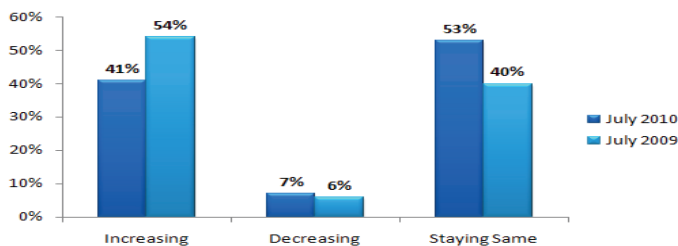
Source: IPSOS Public Affairs – July 2010

Perceptions of Food Recalls and Illnesses

Fig. 8

Consumer Perception of Food Recalls/Illnesses

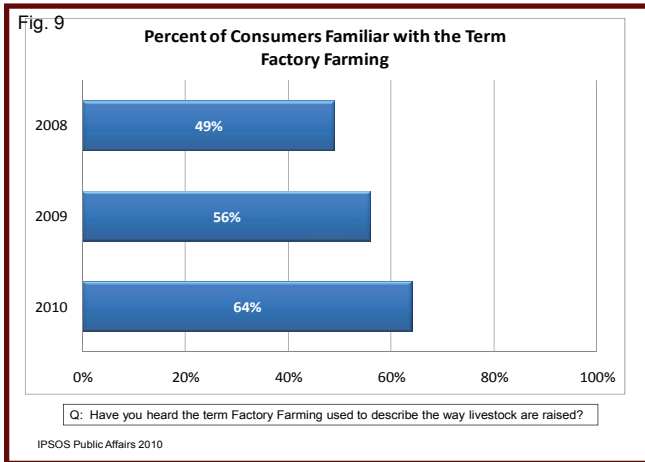
Q: Do you think the number of food recalls or illnesses from food borne bacteria is...



Source: IPSOS Public Affairs – 2009-2010

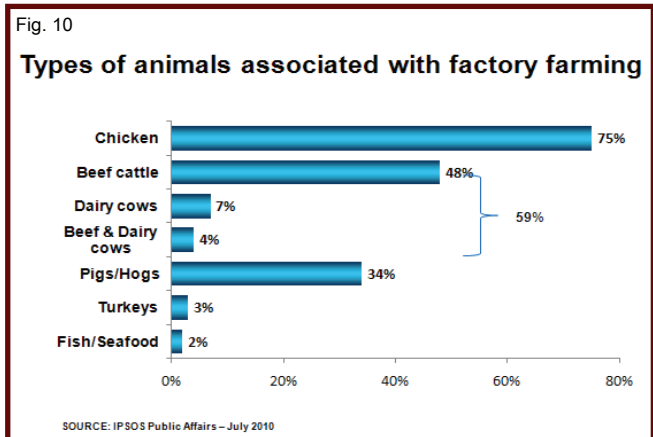
Consumer perception of frequency of food recalls has improved significantly in the past year with 13 percent fewer consumers saying they think recalls/illnesses are increasing with an equal percentage increase in the number who say they are staying the same.

Factory Farming Concerns

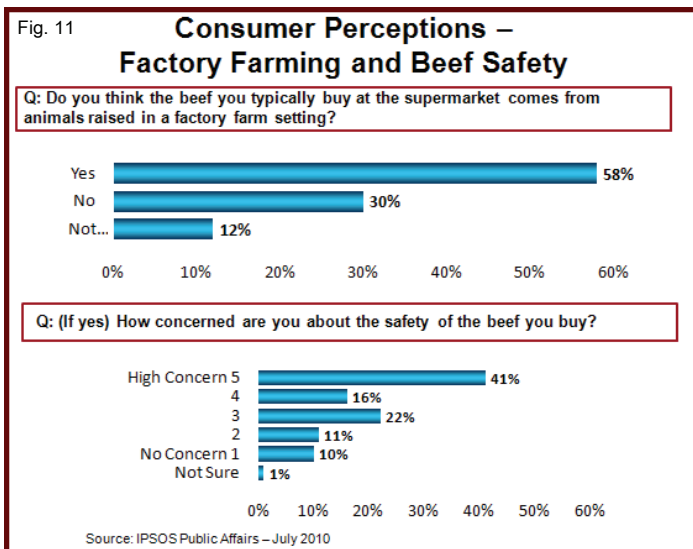


One of the weapons employed by activists against livestock production is the term ‘factory farming.’ In the past few years factory farming has shown up with increasing frequency in media monitoring of both traditional and online/social media as a term that signifies all that is bad about livestock production. It has come to connote animal suffering, excessive use of antibiotics and hormones, food safety concerns and environmental damage. The height of visibility may have occurred in February 2010 when CBS anchor Katie Couric did a story on antibiotic use in livestock production and used the term factory farm or factory farming five times in a three minute stretch of the story.

The more accurate and scientific term, however, is intensive production and, ironically, it has been identified as a production model that should be adopted globally. The UN FAO report ‘Livestock’s Long Shadow’ which was released in November 2006 has become famous for claiming that livestock are responsible for more greenhouse gas emission worldwide than the entire transportation sector. What is less recognized is that the report also said that intensification provides ‘large opportunities for climate change mitigation,’ ‘can reduce greenhouse gas emissions from deforestation,’ and is the long-term solution to sustainable livestock production.



Seeing that the term factory farming was being used with increasing frequency to attack livestock production, the beef industry began a consumer tracking program in 2008 to analyze effects on consumer attitudes about beef. Recognizing that it isn’t what people *don’t know* that causes problems, it’s what they *do know that isn’t true*, the objective of these studies is to determine if use of this term is causing consumers concerns about beef and, if so, help identify a strategic platform to counter the concerns.



The number of Americans who are familiar with the term factory farming has increased significantly since 2008, rising by 15 percentage points (Fig. 9).

The percentage of consumers who associate factory farming with chickens has risen from 66 percent in 2008 to 75 percent in 2010 but the association with cattle has remained stable. In addition, beef cattle are much more associated with factory farming than are dairy cattle (Fig. 10).

Consumers overwhelmingly associate factory farming with big agriculture and large scale farming. They describe factory farming as being industrialized, using machinery and technology, **6**

owned by big corporations and producing large numbers of animals. A small percentage seems to have bought into the activist argument that factory farms are driving small family farms out of business.

Factory farming also creates a safety concern for consumers. Almost 60 percent (58%) of consumers believe the beef they typically buy at the supermarket comes from animals raised in a factory farm setting. Of those, 58 percent (a third of all consumers) have a concern about the safety of their beef (Fig. 11).

Conclusions

It is clear that activists and the media have successfully used the concept of factory farming to create a negative picture of beef production in the consumer's head and it has potential to affect demand. A major beef industry priority for 2011 is to reconnect consumers with modern beef production. A critical factor in that reconnection process is to identify strategies and tactics to talk to consumers in ways that can neutralize that negative image of factory farming, create an understanding and acceptance that feedlots play an important role and that animal health and welfare, production of safe and wholesome food and environmental stewardship are strong cattle feeder values.

To that end, research will begin in fall 2010 to develop strategies and messages to neutralize the effects of factory farming.

Non-Intact/Enhanced Product Labeling

Anticipating that FSIS may require a label calling for cooking to 160F on non-intact product and may consider pumped product in this category, the July 2010 food safety study explored consumer awareness and perceptions of such a label.

When asked if they had seen enhanced beef products (described as carrying a label that said it had been enhanced with a percentage of a solution (often water, salt and sodium phosphate), 34 percent of respondents said yes. Of those saying yes, 38 percent (13 percent of the total sample) said they purchase enhanced beef products —15% frequently, 55% occasionally and 31% rarely.

Table 2
In the near future, government regulations may require enhanced meat products, as well as products such as pre-marinated and/or mechanically tenderized, to carry a label that says: "Non-intact product – cook to 160F internal temperature." If you saw such a label on a package of beef steak or roast what would be your expectations about that product?

	TOTAL Agree with statement on LEFT	Strongly agree with statement on left	Moderately agree with statement on left	About the same	Moderately agree with statement on right	Strongly agree with statement on right	TOTAL Agree with statement on RIGHT	
Less safe than other beef products	26	8	18	62	9	3	12	Safer than other beef products
Lower quality than other beef products	32	9	23	58	8	2	11	Higher quality than other beef products
Less expensive than other beef products	17	3	14	59	18	6	24	More expensive than other beef products
Must be prepared differently than other beef products	31	8	23	50	14	6	20	Can be prepared the same as other beef products
Less tender than other beef products	19	5	14	62	17	3	19	More tender than other beef products
Less flavorful than other beef products	19	6	12	64	14	3	17	More flavorful than other beef products

Respondents then were provided with one of two sets of information. One set asked their reaction to beef with a label that said: **Non-intact product – cook to 160F internal temperature.** The other set of information asked their reaction to a beef label that said: **Processed to enhance tenderness and flavor – cook to 160F internal temperature.**

Table 3
In the near future, government regulations may require enhanced meat products, as well as products such as pre-marinated and/or mechanically tenderized, to carry a label that says: "Processed to enhance tenderness and flavor – cook to 160F internal temperature." If you saw such a label on a package of beef steak or roast, what would be your expectations about that product?

	TOTAL Agree with statement on LEFT	Strongly agree with statement on left	Moderately agree with statement on left	About the same	Moderately agree with statement on right	Strongly agree with statement on right	TOTAL Agree with statement on RIGHT	
Less safe than other beef products	25	8	17	63	9	3	12	Safer than other beef products
Lower quality than other beef products	30	11	19	58	9	2	12	Higher quality than other beef products
Less expensive than other beef products	17	5	13	51	22	10	32	More expensive than other beef products
Must be prepared differently than other beef products	23	7	16	55	15	6	22	Can be prepared the same as other beef products
Less tender than other beef products	15	4	11	56	22	7	29	More tender than other beef products
Less flavorful than other beef products	18	5	13	56	22	5	26	More flavorful than other beef products

Tables 2 and 3 summarize the reactions to the language of the two labels. There are four areas of significant difference between perceptions of the language of the two labels. First, the label describing the product

as “processed to enhance tenderness and flavor” was significantly less likely to be perceived as requiring different preparation methods than the label that used the “non-intact product” language. In addition, the “processed to enhance tenderness and flavor” language was perceived as being more expensive as well as more tender and more flavorful.

Of note, there was no difference in perceived safety of the two different label descriptions but a quarter of respondents did perceive the product as less safe than other beef products. In addition, almost a third (32%/30%) believed the product was of lower quality than other beef products.

Conclusions

This analysis suggests that if labeling of these type products is required in the future, it will be important for the beef industry to assure that labeling language is non-technical and oriented toward explaining a benefit.

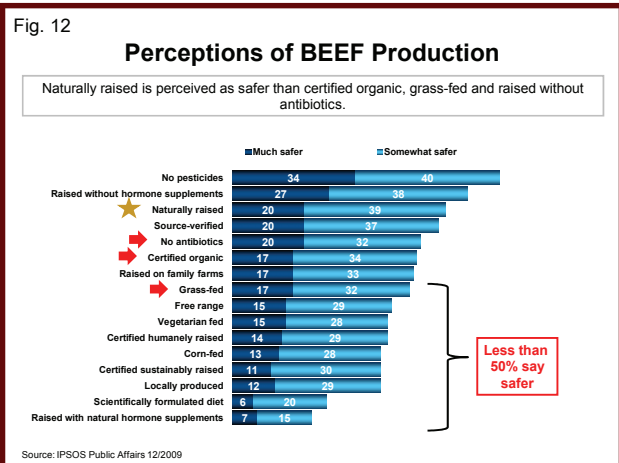
Production Methods and Safety Perceptions

Beef from production systems such as organic, grass-fed, naturally raised and locally produced often are portrayed by the media as well as by some marketers as being safer. In addition, a safer product often is implied by claims of what is not used to raise cattle – no antibiotics, no hormone supplements, no byproducts fed/all vegetarian fed.

Research conducted for presentation at the 2010 Beef Safety Summit analyzed consumer perceptions of beef safety in relation to various production systems and technology uses.

The research looked at three elements: consumer perceptions of relative safety of differing production methods/technologies, believability of production claims and willingness to pay more for beef produced in certain ways.

Fig. 12 shows how consumers rated the safety of beef from various production processes. Beef raised without the use of pesticides was rated the safest. This may seem odd at first but studies over many years have shown that consumers are scared about pesticides – whether pesticide use is associated with fruits, vegetables or meat.



Beef raised without use of hormone supplements was rated the second safest. Although hormones do not rate at the top of the concern list as a general food safety issue (Fig. 5) when directly associated with beef safety, they are a top concern. For many years it has been rare for the topic not to come up in any focus group discussing beef.

An interesting finding was that consumers rated ‘naturally raised’ as safer than ‘raised without antibiotics’, ‘certified organic’ and ‘grass-fed.’ Certified organic and grass-fed frequently are touted, especially in the media, as being safer choices. Naturally raised, and the word natural in general, seems to resonate with consumers. However, in focus groups when it has been explained that natural does not have a specific definition or set of standards like certified organic, consumers are surprised and much less enamored of natural beef.

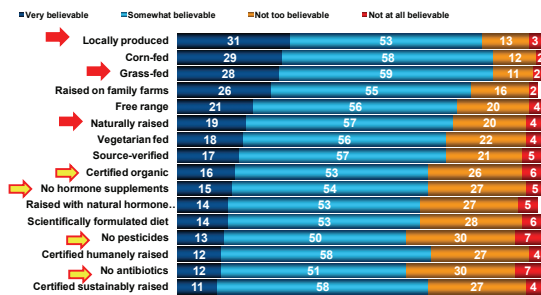
It will be interesting to see if the current perception changes – for the better or for the worse – if and when USDA finalizes a definition for natural.

Despite consumers’ beliefs that certain production methods produce safer beef, the credibility of many of these

Fig. 13

Believability of BEEF Production Claims

Few consumers find beef production claims very believable – the majority of consumer opinion is 'soft' (only somewhat believable), and there is a significant proportion of consumers who find little believability in these claims.



Source: IPSOS Public Affairs 12/2009

claims is not high. As shown in Fig. 13, production methods that consumers think produces safer beef (certified organic, no hormones, no pesticides, and no antibiotics) rank in the bottom half of the scale in terms of high believability with roughly a third of consumers finding these claims to be not very or not at all believable. Locally produced, grass-fed and naturally raised rank in the top of the believability scale with 75 percent or more of consumers finding these claims to be very or somewhat believable.

The bottom line on production claims is whether consumers are willing to pay more for beef produced in specific ways. For each of the production claims, the survey asked consumers if they were

willing to pay more for beef in increments beginning with \$1 per lb. more up to \$3.50-plus per pound. A non-production term (extra lean) was inserted into the list of production claims just to see how it would fare.

Fig. 14 illustrates the findings from this analysis. The most obvious finding is that an average of 43 percent of consumers are unwilling to pay anything extra for specific types of beef. The second most obvious finding is that 'extra lean' – a non-production claim – trumps all the production claims. Extra lean had the fewest percentage of consumers saying they would not pay more, the highest percentage saying they would pay up to \$1 lb more and at or slightly above the average for all other price ranges.

Some of the new cuts being developed from the round may qualify as extra lean and some consideration may be given to promoting them in that way.

Fig. 14

Price Sensitivity to Production Claims

Percent of consumers willing to pay more for certain types of beef

Production claim	No More	Up to \$1/lb.	\$1.50 - \$2/lb	\$2.50/lb- \$3/lb.	\$3.50 - \$4/lb.
No antibiotics used	40	22	13	13	8
Naturally raised	42	21	12	12	7
Locally produced in your state	43	21	12	12	9
Certified organic	45	19	11	11	8
Certified humanely raised	46	19	11	12	8
Raised on family farms	41	22	12	12	9
Grass-fed	44	20	12	11	8
Source verified/traceable	47	18	12	11	7
Corn fed	45	20	11	11	8
No hormones	37	24	11	11	8
Certified sustainably raised	47	18	11	12	8
Vegetarian fed	49	16	11	11	8
Extra lean	34	27	13	11	10
No pesticides	38	24	12	12	7
Free range	46	19	11	10	8
Average:	43%	21%	12%	11%	8%

Conclusions

The media and niche marketers will continue to make claims about specific production methods producing safer beef. However, this analysis shows that for many consumers such claims are low in believability as well as being "nice to haves" but not a benefit they are willing to pay more to receive. The fact that a greater number of consumers were willing to pay more for extra lean beef than for beef supposed to be safer because of a particular production method suggests that, ultimately, the most important industry focus should be on providing product benefits that are not associated with a specific production method. This, of course, should be accompanied by a continuation of the industry's consumer messaging programs that promote the taste, safety, nutrition and convenience that are a hallmark of all beef products.

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