

Is Image Everything?

Image is everything to many consumers when they choose products to buy. But image may be misleading when consumers consider food products and a healthy, wholesome diet.

by *Corinne Blender*

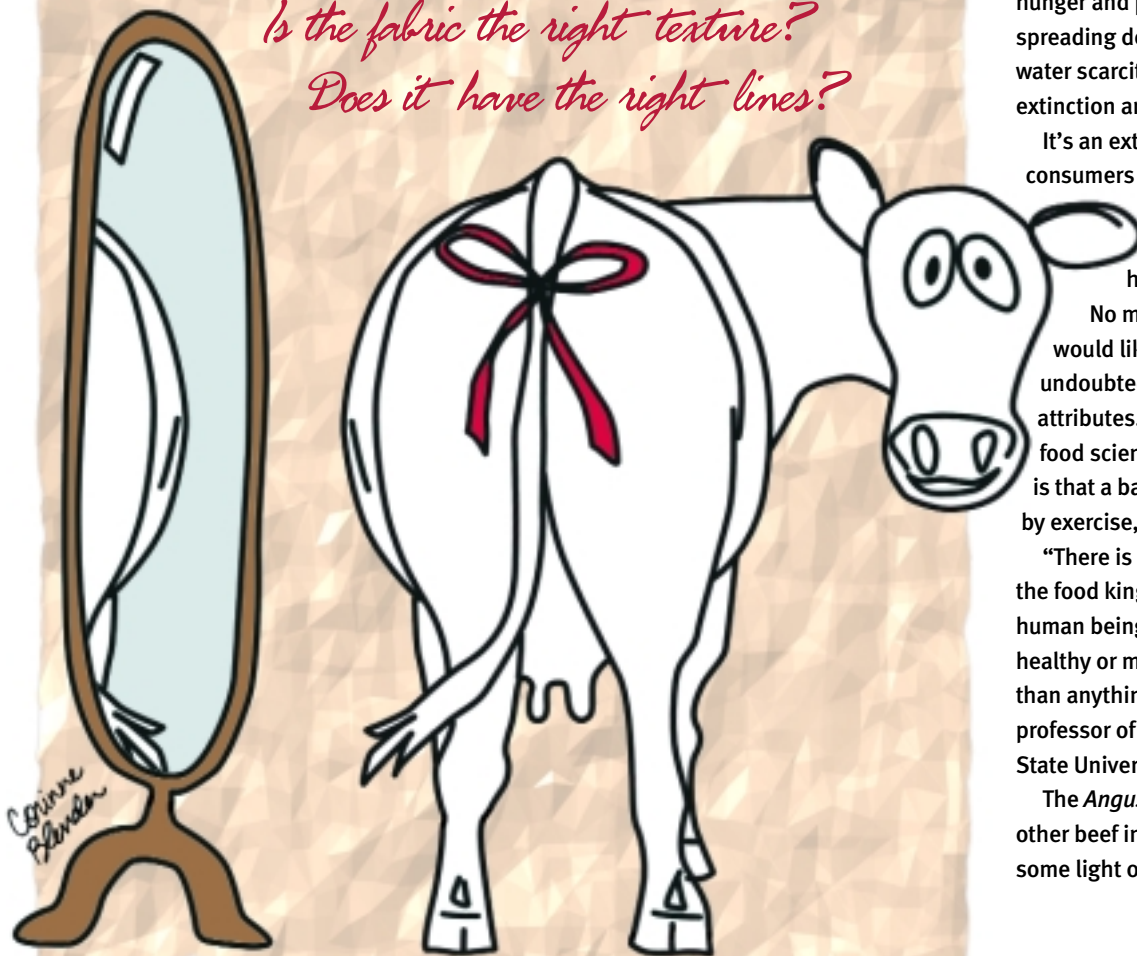
Does this make me look fat?

It's a question consumers ask as they try on clothes, hoping to find the outfit that will present just the right look.

Is it the right color? Is it still in fashion?

Is the fabric the right texture?

Does it have the right lines?



Consumers shop for food just like they shop for shoes or a pair of jeans. They ask questions like, "What will eating this do to my waistline? What will it do to my arteries? How many calories will it provide?"

Just as fashion industry magazines say one day that turtlenecks are in style and say the next day that they are out, the food industry is plagued with fads. Nutrition advice often seems to be in conflict as new information is released from various sources.

It's hard to know fact from fiction, especially when it comes to beef. Bold statements with very little, if any, fact blanket the Internet. For example, under the lone headline "Beef Facts," a Web page by www.animalliberationfront.com, says, "Most people know that beef consumption plays a major role in the development of heart disease, strokes and cancer. But the overconsumption of beef is also a major cause of human hunger and poverty, deforestation, spreading deserts, water pollution, water scarcity, global warming, species extinction and animal suffering."

It's an extreme view presented to consumers as "facts" to discredit beef's image. But what is the truth? Is beef part of a healthy diet?

No matter what food product you would like to examine, there will undoubtedly be positive and negative attributes. But one thing dietitians, food scientists and doctors agree on, is that a balanced diet, complemented by exercise, is a key to healthy living.

"There is no magic bullet anywhere in the food kingdom or the nutrition of human beings that makes us more healthy or more susceptible to disease than anything else," says Melvin Hunt, professor of meat science at Kansas State University (K-State).

The *Angus Journal* asked Hunt and other beef industry specialists to shed some light on beef as a nutrition source.

Let's talk turkey

Consumers look for fast, easy food entrées that take only minutes to prepare in between picking the kids up from school and dropping them off at soccer practice. Ground beef is one product that meets the quick-and-easy requirement, but it has received a bad rap for being high in cholesterol and fat. Consumers look to products such as ground turkey because of its healthy image, but that image can be misleading, Hunt says.

Beef processors have answered consumers' worries about ground beef and a healthy diet. The U.S. Department of Agriculture (USDA) released updated nutritional information showing how lean ground beef stacks up to ground turkey, which was published in a *Drovers Alert*[™] article.

A 3-ounce (oz.) serving of 95% lean ground beef has only 5 grams (g) of fat and 139 calories. A 3-oz. serving of 90% lean ground beef has 9 g of fat and 173 calories. A 3-oz. serving of ground turkey has 11 g of fat and 200 calories (see Table 1).

Ground turkey is roughly equal to 85% lean ground beef in terms of fat and calorie content. Ground beef also contains significantly more vitamin B₁₂, zinc, niacin and iron.

And when food scientists stack beef up against other meat products to compare cholesterol content, there really isn't a significant difference for one product's having more or less than the other.

"Beef's cholesterol content is no higher than pork, no higher than chicken and not much higher than most fish," Hunt says.

For those who worry about their *Certified Angus Beef*[®] (CAB[®]) brand product having more cholesterol because of its higher marbling, the cholesterol content of meat products is not necessarily related to fat content, according to the Certified Angus Beef LLC (CAB) Web site.

For example, veal contains the least amount of total fat per 3-oz. serving. But veal, in general, contains a greater amount of cholesterol. Cholesterol content is essentially equal in a cut of beef with more marbling and a cut with less marbling.

"The American Heart Association recommends people to eat two servings of lean meat a day. Beef can certainly be lean, if you pick the right cut," Hunt says.

Whether due to choice or affordability, many people in the world don't eat beef.

Table 1: Nutritional comparison of ground beef and ground turkey

3 oz. serving of ...	Fat, grams	Calories
95% lean ground beef	5	139
90% lean ground beef	9	173
Ground turkey	11	200

Source: U.S. Department of Agriculture and *Drovers Alert*[™].

Table 2: Nutritional comparison

One 3-oz. serving of lean beef has the same amount of ...

- ▶ zinc as 10 cups of sliced cooked carrots
- ▶ iron as 3 cups of spinach
- ▶ protein as 1¾ cups of cooked kidney beans

Source: USDA Nutrient Database for Standard Reference, release 15, Nutrient Data Laboratory Home Page at www.nal.usda.gov/fnic/foodcomp found on the National Cattlemen's Beef Association (NCBA) Web site at www.beef.org.

"Beef is consumed 79 million times each day across America."

—www.beefoodservice.com/ncba

Hunt says that meat plays a critical role in the human diet, and if people around the world had access to beef in their diets, their

health could improve.

"If we could just get them to eat one 4-ounce serving per day we could improve their health status, their mineral balance and their likelihood to not become

anemic because they aren't getting iron from muscle," he says.

Hormonal response

"If we listen to the European community, it doesn't buy American beef because it is not quote, 'hormone free,' " Hunt says.

"Europeans ignore the fact that beef from an intact male — a bull — would probably have more residual hormone in it than we would ever find in a steer or heifer given a growth promotant."

The image is that natural things are better because they have fewer hormones, Hunt explains, adding that there is a misconception that "natural" beef is safer to consume. "It is more complex than that."

CONTINUED ON PAGE 36

"Beef protein comes packaged with essential B vitamins, especially riboflavin, niacin, B₆ and B₁₂. To get the same amount of B₁₂ found in a 3-ounce serving of beef, you'd need to consume nearly seven chicken breasts!"

"Nearly half the fat in beef is monounsaturated, the same heart-healthy fat found in olive oil."

"A third of beef's saturated fat is stearic acid, a unique saturated fat that has a neutral effect on blood cholesterol levels."

—USDA Nutrient Database for Standard Reference, release 12, Nutrient Data Laboratory Home Page at www.nal.usda.gov/fnic/foodcomp found on the National Cattlemen's Beef Association (NCBA) Web site at www.beef.org.

Part of the confusion about implants arises from the information and research published about them. You really have to read the fine print to make sure the study that produced data for or against hormone implants is based solely on the beef product that the average consumer is going to eat.

Beef cattle in the United States can receive three to four implants, on average, throughout their lives, says Mark Spire, a doctor of veterinary medicine at K-State. But the key to the implant equation is that the implant is used up during the animal's life. Residual in the bloodstream or muscle is insignificant when the animal is processed, Spire says.

Blood levels of the product dissipate no matter what type of implant is used — estrogen or androgen, he adds.

Ellin Doyle, of the Food Research Institute at the University of Wisconsin, states in her July 2000 *Scientific Literature Review: Human Safety of Hormone Implants Used to Promote Growth in Cattle*, "Hormone implants containing estradiol

benzoate/progesterone were first approved in 1956 by the U.S. Food and Drug Administration (FDA) for increasing growth, feed efficiency and carcass leanness of cattle."

Doyle's article says the safety of hormonal implants in cattle has been reviewed many times since they were first approved, with most reviews stating that the levels used in beef production are safe.

Most hormones found in cattle implants occur naturally in the human body at different levels depending on gender and maturity.

Doyle says, "Estradiol, progesterone and testosterone are present in many foods of animal origin, including beef, pork, poultry, milk, eggs and fish. Some plant foods such as potatoes and wheat contain significant levels of progesterone; and other foods, including some oils and wheat, have measurable levels of testosterone. In addition, many plants contain other compounds with estrogenic activity.

"It has been estimated that milk products

provide approximately 80% of the progesterone, 30% to 40% of testosterone, and 60% to 70% of estrogens in the diet," Doyle continues. "Meat and fish provide about 5% of progesterone, 20% to 30% of testosterone and 15% to 20% of estrogens in the diet. Eggs and plant foods are responsible for the remainder of the dietary hormone intake."

Antibiotics use

Just like humans, cattle get sick and are treated with antibiotics. Cattle also are fed antibiotics to promote growth. Spire says the \$64 million question is whether either application is a threat to humans.

"Most of the antibiotics, as they are picked up and absorbed into the system, will end up either being taken out and modified in the liver or excreted through the kidneys. In some cases they may not be absorbed at all, and they act strictly in the intestinal tract," Spire says.

"By and large, what ends up as residual in the muscle tissue is negligible, if any," he adds. "It's not an issue if we look at products that are administered according to label instructions established by the FDA. The use of antimicrobials *outside* of those limits, as 'extra-label,' is governed by guidelines established by the FDA." Extra-label use requires detailing a lack of available products for the condition, the existence of a veterinary/client patient relationship, veterinary availability in the case of adverse reactions and extended withdrawal times before an animal is marketed.

Consumers who worry about violators of antibiotic use may need to look no further than their own medicine cabinets to see abuse firsthand, Hunt says. "We are doing it to ourselves," he says.

"It doesn't mean that there hasn't been some increased resistance on both fronts, but the organisms affecting cattle, sheep and pigs many times are different strains than what would affect humans," he adds.

"If you look at how antibiotics are being fed you have to make a definition of what the antibiotics are and whether they are therapeutic or a growth promotant," Spire says. Two of the most frequently used products are Rumensin® and Bovatec®. While listed as antibiotics, they actually are used to

"The average amount of antibiotics in medicated feed is less than 2 ounces per ton of feed."

"In the United Kingdom, where penicillin and tetracyclines in animal feed have been banned for more than 20 years, no reduction in the level of human antibiotic-resistance has been achieved."

"With the world's population expected to increase by more than 50% over the next 30 years, the need for products to maintain animal health will increase. To compensate for the loss of diseased animals if antibiotics were eliminated from farm use, we would need 23 million more cattle, 12 million more pigs, 452 million more chickens and 60 thousand more sheep."

"Two separate scientific studies comparing the prevalence of antibiotic-resistant bacteria in vegetarians and meat-eaters show no significant difference between the two groups."

—Food Systems Insider, Antibiotic use in food-animal production, Putting antibiotic use into perspective, www.vancepublishing.com/FSI/Special/Antibiotics/perspective.htm

improve feed efficiency. "Well over 90% of the cattle are going to receive those," he adds.

They act locally within the rumen to change the biochemistry. They alter the microflora to gain better production out of the rumen, thereby enhancing the performance of the animal, Spire says.

Whether the antibiotics are feed additives or are therapeutic, very little residual, if any, will make it into the food supply, Spire adds. Most antibiotic treatments (about 75%) are administered within the animals' first 45 days in the feedlot, he explains. Therapeutic feed-grade antibiotics are also used very early in the feeding period. Those cattle are going to have another 80 to 120 days on feed, during which the antibiotics will be dissipated.

Meat safety during preparation

Hunt says there are two issues that plague the safety of ground beef cookery.

(1) Ground beef may prematurely turn brown during cooking; it may look like it is ready to be eaten when it is not.

(2) You can cook ground beef patties until they are done and there is no doubt they are safe, yet they will still be pink on the inside.

"The only way to ensure your safety on ground meat is to measure the temperature," Hunt says.

Hamburger is not the only meat product that consumers should measure the temperature of while cooking. However, steaks offer an added safety bonus because they are a whole cut, and the center portion has not been exposed to bacteria.

"The exterior portion of a steak is going to have a high enough end-point temperature even though the center of it remains pink. The bacteria are on the surface," Hunt explains. Still, consumers should measure the temperature and take all safety precautions while handling food products.

He warns, however, that blade-tenderized

"Being vegetarian doesn't ensure that you'll lose weight. Like any way of eating, a vegetarian diet can be high in fat and cholesterol, low in fiber, or both. Many vegetarian foods, including cheese and nuts, are high in fat and calories. So cutting out meat and replacing it with other equally fatty (or even more fatty) vegetarian foods is not only a bad diet move, but it may also increase your chances for nutritional deficiencies — especially if you don't plan your diet well."

— excerpt from *Dieting For Dummies*®

cuts may have some surface organisms that get translocated into the interior through the tenderizing process, which has food safety ramifications. But because of the way the cut cooks, the thermal lethality occurring in the center is much greater than for ground products, so the food safety risk is very low.

Bacteria are a fact of life and are present everywhere. Thinking their homes are clean, safe environments, most consumers don't look at their kitchens as part of the food supply chain, but they may be surprised.

"There are probably some examples where there are less than desirable hygienic conditions. Most frequently those are found in kitchens at home," Hunt says.

Playing it safe

Headlines touting meat recalls have been plastered across the front pages of newspapers across the country, giving a bad image to beef processors for the contamination of food products. But

the beef industry is constantly monitored by many codes and regulations. Millions more pounds of beef are produced that are safe and wholesome than the number of pounds that are recalled.

There is truth in the saying that the United States has one of the safest food supplies in the world, Hunt says. The food

industry's rules and regulations are the backbone that makes it so.


Irradiation is a technology that has been around for many years, but irradiated beef products have just recently hit the supermarket and school lunchrooms.

"It makes you wonder why the beef industry has put up with the continual plaguing and reoccurrence of *E. coli* O157:H7 in some of our product," Hunt says. "We could almost totally eliminate that risk if we would just irradiate all of our ground beef. People are unsure of it, and yet it is one of the safest processing tools that we have."

Irradiation isn't the only technological advancement that has received a bad rap. Many consumers fear beef from cattle that have been fed genetically modified feedstuffs, but Hunt says several regulatory agencies have studied the matter and have approved their use.

Hunt says to go back to what the FDA has said — that it is safe.

Hunt won't tell anyone what he or she has to eat and what he or she can't eat. That's an individual decision. But he says one thing he believes whole-heartedly is:

"There is no substitute for a balanced diet that contains some meat." 

Author's Note: *If you are looking for the facts on beef, Melvin Hunt, professor of meat science at Kansas State University (K-State), recommended www.beefinfo.org, a Web site by the Canadian Beef Information Centre, and www.beef.org, by the National Cattlemen's Beef Association (NCBA), as excellent sources. Both were referenced in the writing of this article.*

"The amount of iron that your body is able to absorb from food is more important than just how much total iron is present. For example, beef sirloin steak and bran flakes have about the same amount of total iron; however, your body absorbs four times more iron from beef than from the cereal."

—www.beefinfo.org