

## For more iron, elevate that cow

Today, cuts of beef are marketed on the basis of the amount and marbling of intermuscular fat, the age of the animal at slaughter or whether a cow was fed drugs such as steroids and antibiotics. In the future, however, carnivores with anemia problems may be advised to select their steaks on the basis of the altitude at which a cow has been raised.

Researchers at the University of Wyoming in Laramie report that more than half of the iron in meat from steers raised at higher altitudes is in the "heme" form. Heme iron — the form found in hemoglobin and myoglobin — is generally the most bioavailable type for humans. Their study involved 40 steers, about half raised at 2,145 meters above sea level, the rest at 549 meters. Though at slaughter all had the same amount of iron in their meat, those raised at the higher altitude had 10 percent more of that iron — roughly 70 percent — in the heme form.

This finding in four different breeds of cattle confirms "a physiological response to high altitude," according to William C. Russell and his colleagues, writing in the January/February *JOURNAL OF FOOD SCIENCE*. The researchers suspect the accommodation permits animals raised in a low-oxygen environment to transport and store oxygen better. Their finding also "suggests that this beef could offer a nutritional advantage" — especially to persons whose diets already contain less than recommended levels of iron.

## When to trim the fat

Responding to health concerns about saturated fats and cholesterol, many consumers are trimming away fats on meat. But when much of the external fat melts away during cooking anyway, is there any advantage to trimming meat before it's cooked? Yes, according to a new study by meat scientists at Texas A&M University in College Station.

Working with USDA Choice cuts of beef, Ki Soon Rhee and her colleagues trimmed all external fat from half of their strip-loin steaks and one side of each roast (top rounds, briskets, eye of rounds and arm pot roasts). Fat on the remaining steaks and the other side of each roast was trimmed to a thickness of 0.4 inch. After broiling the steaks and roasting or braising the other cuts, the researchers trimmed off any remaining external fat.

Fat content tended to be higher in cuts cooked with external fat. Fully pretrimming the steaks lowered fat content by as much as 19.4 percent, the researchers report in the January/February *JOURNAL OF FOOD SCIENCE*. And except in the case of the braised brisket, pretrimming did not compromise flavor, juiciness or tenderness. Moreover, for those who are weight-conscious, these data indicate that pretrimming fat from a typical USDA Choice strip-loin steak could result in a savings of about 13 calories per 100 grams (3.5 ounces).

Ironically, there was no advantage to pretrimming the fat to just 0.2 inch. After cooking, those cuts had *internal* fat equalling that of meats cooked with twice the external fat.

## What it takes to get a steak

Raising cattle for meat puts a large demand on resources, according to the Worldwatch Institute, a Washington, D.C.-based environmental think tank. Analyzing some implications of U.S. beef production in the January/February issue of *WORLD WATCH*, institute researcher Alan Durning points out that one-third of North America is devoted to grazing, more than half of U.S. croplands are planted with livestock feed, primarily for cattle, and more than half of all water consumed in the United States goes to livestock — again mainly for cattle. In the end, Durning calculates, 1 pound of steak from steers raised in a feedlot costs 5 pounds of grain, 2,500 gallons of water, the energy equivalent of a gallon of gasoline and about 35 pounds of eroded topsoil.

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## N reactor is retired, not dead

Since January 1987, the plutonium-producing N Reactor in Hanford, Wash., has been shut down for safety modifications (SN: 1/10/87, p.25). The Department of Energy (DOE) ordered those modifications for its 25-year-old reactor — which shares several major design features with the Soviets' crippled Chernobyl reactor — after independent reviews found that many reactor systems and components were deteriorating to a point where they could jeopardize safety (SN: 8/16/87, p.101). Now DOE has decided to remove the reactor's fuel and take the plant out of service.

DOE expects to meet the demand for new weapons-grade plutonium by relying on three other plants and on weapons recycling. However, should plutonium needs increase, DOE could call N Reactor out of retirement. To allow for that, the plant's scheduled safety modifications will be completed.

## Is EPA wearing too many HATS?

When the Reagan administration released its budget last month, it withheld a decision on how much to allocate for the Environmental Protection Agency's Human Adipose Tissue Survey (HATS). Begun in 1967, it surveys not only which toxic substances (such as pesticides) are being stored in human fat, but also whether regulation of such body-polluting chemicals is proving effective.

A few months ago, however, EPA announced plans to phase out the program this year, saying HATS could no longer be spared from congressionally mandated budget cuts. Though last month Congress ordered EPA to spend \$1.5 million on the program this year anyway, the agency is balking. Still citing funding constraints as well as questions about the adequacy of its tissue samples (which are taken during autopsies and, in some cases, surgery), EPA is now considering a counter-offer: funding HATS at only about \$1 million this year and next. According to EPA Assistant Administrator John A. Moore, such reduced funding would allow EPA to store, collect and analyze its tissue samples while HATS's worth is reevaluated.

## Chlordane deal ruled illegal

Last August, the Environmental Protection Agency announced its signing of a voluntary agreement with Velsicol Chemical Corp. of Rosemont, Ill., to immediately cancel registration — and therefore the right to legally sell or use — chlordane and heptachlor, the most widely used termite killers (SN: 8/15/87, p.102). In a supplemental, Oct. 1 agreement with Velsicol (sole maker of those termiticides), EPA said it would allow the firm to sell off its existing stocks of such chemicals for legal use through April 15, 1988. Ordinarily, the pesticide-cancellation process is long and costly. EPA decided to trade off its permission to sell existing stocks of the carcinogenic chemicals in exchange for an agreement by Velsicol to voluntarily cancel its pesticides — thereby reducing the time and cost of pulling those chemicals from the market.

However, last week a U.S. District Court judge ruled that the Oct. 1 agreement was "arbitrary, capricious and an abuse of [EPA's] discretion." In his ruling, Judge Louis F. Oberdorfer said that federal law permits the selling off of existing stocks of a banned pesticide only if doing so "will not have unreasonable adverse effects on the environment." Since EPA did not show that continued use of the termiticides would have no such adverse effects, Oberdorfer said the agency had no right to allow continued sales.

EPA, which has not decided whether to appeal, is concerned about the ruling's implications. Explains agency spokesman Al Heier, this "surprise" ruling would appear to eliminate a bargaining chip that has proved useful in encouraging the speedy ban of particularly toxic chemicals.

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