

News

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April 14, 1988

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****UT Southwestern nutrition scientist explains
new lean livestock recommendations

DALLAS--One of the framers of a powerful new call for leaner beef and other livestock says cattlemen can begin immediately to develop healthier meat by eliminating feedlot fattening. Economic motivation for this may come as a result of changes in meat grading and marketing practices.

Dr. Scott Grundy, director of the Center for Human Nutrition at The University of Texas Southwestern Medical Center at Dallas, said the common practice of fattening cattle with corn or other grain just before sale increases the ratio of fat to lean meat in the animal, and this eventually contributes to a less healthy product on the dinner table.

Grundy was one of 16 members of a National Academy of Sciences committee that recently issued a lengthy report, Designing Foods: Animal Products Options in the Marketplace. The report deals with the production, processing and marketing of animal products from farm and ranch to the local supermarket.

Excess consumption of saturated fat and cholesterol has been linked to atherosclerosis or clogging of arteries, which is a contributor to heart attacks and stroke--the number one killer of Americans.

Much fat could be eliminated easily and quickly from freshly slaughtered animals through a technique known as a "hot fat trim," Grundy said. Removal is harder when the meat has cooled. If the producer were paid for the net weight of the carcass after fat removal, it should reduce the incentives for producing overly fat cattle, he added.

Although these measures could be instituted quickly, there are other interesting possibilities for making meat healthier, the nutritionist said. These include new feeding procedures, hormone intervention and genetic engineering.

Grundy has been working with Dr. Steven Smith of Texas A&M University to produce pigs with higher ratios of monounsaturated fats to saturated fats. Compared to saturated fats, monounsaturated fats--found in olive, rapeseed and peanut oils--lower levels of low density lipoprotein, the "bad" form of lipoprotein that carries most of the cholesterol in the blood. At the same time they maintain high levels of high density lipoprotein, the "good" cholesterol that seems to help keep arteries clear of clogging.

The change in pigs was accomplished by feeding them Canola oil from rape seeds. Since this oil is expensive, research is under way on substitution of sunflower seeds.

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However, a cow has a different digestive system than a pig. The four-stomach ruminant actually converts foodstuffs to saturated fats. It might be possible, said Grundy, to coat the monounsaturated fat with protein and get it by the cow's digestive system. At least, "we're working on that now," he added.

A second possibility would be giving certain hormones to cattle to give them a greater ratio of lean to fat.

"There are protein hormones known as somatotropins that promote muscle formation. These proteins are broken down by cooking or in the human digestive tract and would not enter the human body further. There are studies being carried out now at A&M and other institutions on this," he said.

Genetic manipulation is a third area in which changes can be effected in meat. Some breeds of cattle have higher muscle-to-fat ratios than others and selective breeding could be employed here. "They'd be like you would want a football player to be--big, but having a lot more muscle than fat."

More intriguing would be genetic engineering--actually inserting genes into embryos to produce an animal that produced, or "expressed," a particular biological substance. "The enzymes [that could change fat ratios] are known. What we might do is to make their production more active with genetic alteration," said Grundy. Such research eventually could have profound meaning for Texas and Southwestern farmers and ranchers.

Grundy believes beneficial changes in livestock and dairy products may come as a result of political and economic changes dictated by increasing demands from the consumer area.

"There's a large contingency here. And I think that reason will eventually win out."

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Note: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and Southwestern Allied Health Sciences School.