

SYRACUSE, N.Y. — Scientists are taking new approaches to boosting the growth of beef cattle and milk yields in dairy animals. A Cornell University

scientist says that natural bovine growth hormone (bGH) speeds up the growth rate of dairy heifers, resulting in more and leaner meat with less fat.

Isolated from pituitary glands in slaughtered cattle, the growth hormone also dramatically increases milk-synthesizing cells in mammary glands in

the same animals tested. Such an increase in the milk-manufacturing tissue in young animals may lead to improved milk production when

these animals become full-fledged milking cows, says Dale E. Bauman, a professor of nutritional biochemistry in the New York State College of Life Sciences

at Cornell. Bauman presented his research findings Wednesday at the 1984 Cornell Nutrition Conference for Feed Manufacturers now in

session in Syracuse. The Cornell scientist conducted the study jointly with two Danish scientists—Kris Sejrsen and John Foldager—at the Danish National Institute of Animal Science in Copenhagen during 1983-84.

The study had two objectives: to determine effects of long-term administration of natural bovine growth hormone on growth rates and mammary development of young growing dairy animals.

Nine pairs of identical twins were tested in this study. One of each pair received daily injections of hormone for more than 100 days, and the other one of each pair was used as control.

The hormone treatment began shortly before the test animals reached puberty (about 8 months old); each weighed about 400 pounds (180 kilograms).

Results show that the hormone treatment improved weight gain at a rate of about 9 percent a day during the study, with more muscle and significantly less fat.

Because fat production in the animals tested is significantly lower than normal, the finding may have a major impact on the beef industry in the United States.

"The difference between the value of fat, a by-product, and feed costs for the fat represents an annual cost of more than \$1 billion dollars that is absorbed by the producer, processor, and consumer," Bauman pointed out. "Thus, even small shifts in diverting nutrients for muscle rather than body fat would have tremendous commercial impact."

In another phase of the Cornell-Denmark study, researchers discovered that the mammary tissue called "parenchyma" that manufactures milk in cows' mammary glands was increased by 38 percent.

"This is a dramatic boost," Bauman commented.

He said that it is theoretically possible for these animals with greater milk-producing tissue to produce more milk than normal cows when they go into milk production.

"Results from this initial experiment are extremely encouraging, but additional studies are needed to determine if this enhanced mammary development around puberty will lead to increased milk yields," Bauman said.

As in other studies in which hormone-treated milking cows increased their milk yields dramatically (up to 41 percent), Bauman is convinced that results of the Cornell-Denmark study strengthen growing evidence that

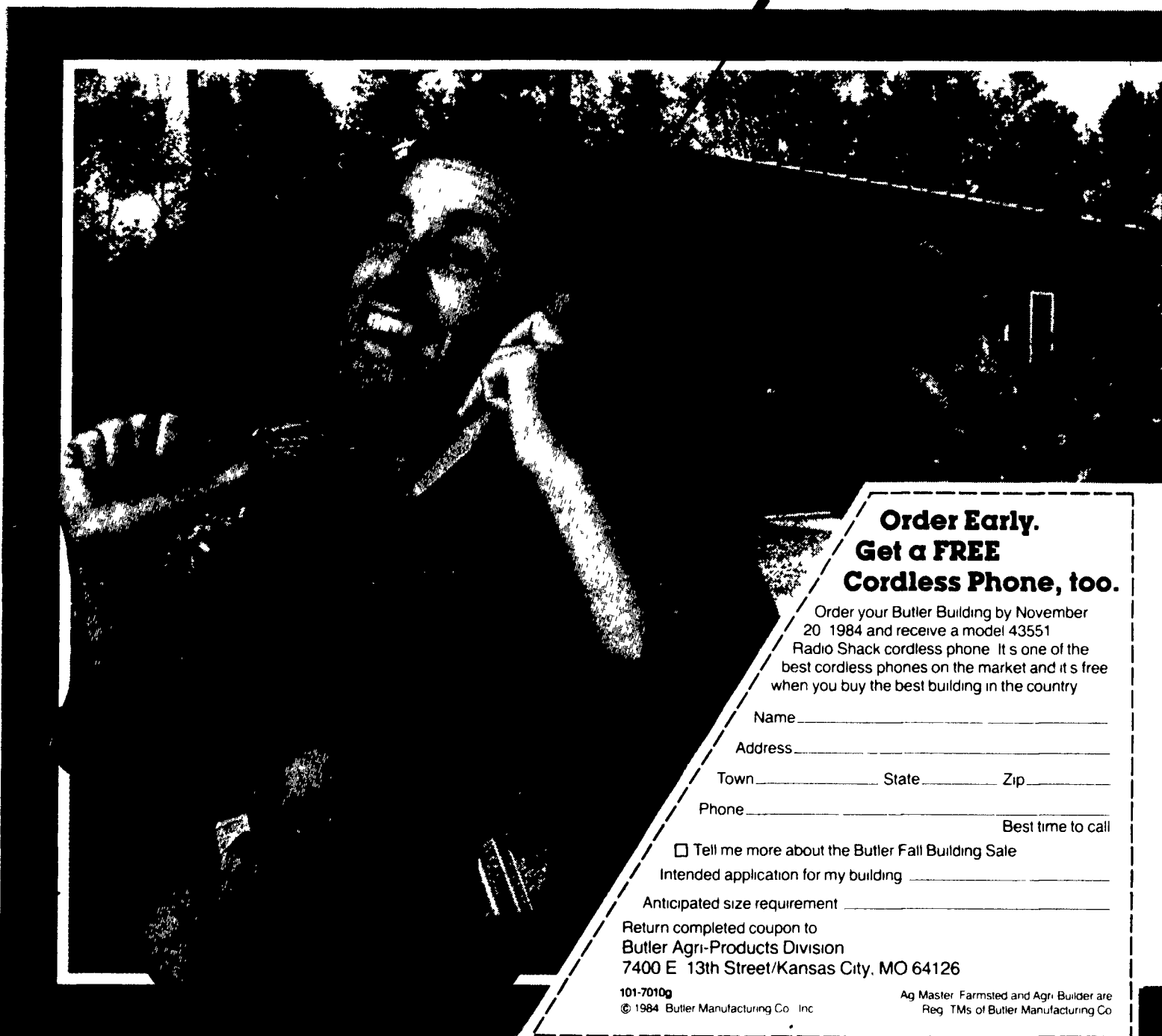
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