

Texas A&M Scientists Clone First-Ever Bull

COLLEGE STATION, Texas — Scientists at Texas A&M University have successfully cloned what is believed to be the first calf cloned from an adult bull, which is also the oldest animal ever cloned — a 21-year-old Brahman. Their research could have enormous implications in the beef cattle industry and in the future applications of cloning technology.

Researchers Jonathan Hill and Mark Westhusin accomplished the cloning of the bull, fittingly named "Chance," in a year-long project. Chance's offspring, "Second Chance," was born three weeks ago and displays identical markings as his father and has identical DNA, the researchers say.

"The owners of Chance, who are from LaGrange, Texas, wanted to have their prized bull cloned because of his unusually gentle nature, and they considered the cloning effort a good opportunity to see if an identical copy of Chance might also have such an easy going disposition," Hill said. "Chance was great around people, and he was in several TV commercials, performed in the Houston Rodeo and was even on The Late Show with David Letterman," Hill added. "They want to see if Second Chance lives up to his heritage."

Hill said the bull was unable to reproduce naturally because of the removal of both diseased testicles two years ago. Therefore, he said, cloning Chance was the only option for preserving his genetics.

"Second Chance is obviously an intact male and should be able to sire offspring when he reaches puberty," Hill confirmed. Chance died a few months ago at age 21, shortly before his DNA was used to produce Second Chance. Hill said there is considerable interest in keeping track of Second Chance throughout his lifetime because of the age of the cells used to clone him.

Last spring, scientists revealed that the DNA of Dolly, the first cloned sheep, had some characteristics of the older cells that were used to generate her.

"The chromosomes, which package the animal's DNA, have some special DNA at their tips called telomeres," Hill explained.

"These small pieces of DNA help to protect chromosomes from damage. Very young animals have long telomeres, but as the animal ages, the telomeres are worn away. We should know in a month or so if the telomeres of Second Chance are like those of the 21-year-old bull used as the source of the cells for the cloning process, or if they are more like those of a normal newborn calf."

Hill said it took 189 attempts — that is, transferring 189 cells into 189 different eggs — before a pregnancy ended in the delivery of Second Chance.

Because Second Chance came from the oldest animal cloned to date, he has received intensive monitoring and treatment since birth by a team of veterinarians and intensive care technicians at

the Texas A&M Large Animal Hospital. Like many previously cloned calves, at birth he displayed some symptoms that resembled those seen in premature human babies. However, Second Chance is now in good health, Hill said.

The successful cloning effort could dramatically impact the multi-billion dollar beef cattle industry in Texas and throughout the world.

"This could lead to new opportunities in cattle breeding, and for that matter, other animals," Hill believes.

Hill is a veterinarian trained in Australia and at Texas A&M who used the cloning work as part of his doctor of philosophy studies in physiology with Westhusin. He is also a member of another research team led by Westhusin that is involved in the Missyplicity Project, the first-ever attempt to clone a dog.

The Missyplicity Project is a 2-year effort to produce the first cloned dog. The anonymous sponsor of the project have invested \$2.3 million to produce a clone of their pet dog, Missy, a mixed breed border collie. A team of about 20 researchers is working on the Missyplicity Project, and some of the knowledge gained by Second Chance is helping to advance that research.

Maryland and Virginia Returns Patronage

RESTON, Va. — Maryland and Virginia Milk Producers Cooperative Association, Inc. distributed \$6.5 million today in patronage dividends to its members shipping milk in 1998. The distribution includes 70 percent in cash—or 21 cents per hundredweight—and 30 percent—or 9 cents—issued in eight-year revolving fund certificates. The profits were generated prior to Maryland and Virginia's consolidation with Carolina Virginia and were distributed to 1,150 members in Pennsylvania, Maryland, Virginia, West Virginia and Delaware.

By law, cooperatives are required to return only 20 percent in cash to its members, making Maryland and Virginia's 70 percent distribution 3½ times higher than required. The cooperative distributed 80 percent last year and averaged 57 percent over the last ten years.

1998 EARNINGS TOTAL 75 CENTS/CWT

This brings the 1998 cooperative earnings to 75 cents per hundredweight in cash above Federal Order market prices. In addition to patronage dividends,

this total includes over-order premiums, quality premiums and profits of raw milk sales.

"With drought conditions and volatile milk prices, we hope this cash distribution will help ease the financial challenges dairy farmers are facing," said President Jack Hardesty, a dairy farmer from Berryville, Va.

General Manager Robert Shore added, "The cooperative's excellent financial condition coupled with a good year for divisional operations contributed to another good year of patronage dividends. Maryland and Virginia has been fortunate to continue its long-standing record of financial success."

Maryland and Virginia Milk Producers, headquartered in Reston, Va., is a milk marketing and processing cooperative which markets milk for over 1,560 dairy farmers in ten states from Pennsylvania to Alabama. The cooperative includes Marva Maid, a milk processing division in Newport News, Va.; a manufacturing division in Laurel, Md.; an equipment division in Frederick, Md.; and a regional office in Charlotte, N.C.



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