

Cloned Animals on the Dinner Plate?

The Food and Drug Administration (FDA) is expected to endorse the safety of cloning animals for meat and milk very soon. At a June, 2005 biotech conference, FDA spokesmen said they had completed a four-year risk assessment that concludes that meat and milk from cloned animals and their offspring are safe for human consumption. Yet, ethical, health and fertility concerns remain.¹

Currently, the appeal of cloned animals to the livestock industry largely lies in their role as breeders or milk producers. Already, cloned bulls' sperm is shipped all over the country to sire offspring with particularly desirable traits, such as high milk production. These "half-clones" (offspring of cloned animals) are possibly reaching the marketplace, with no consumer awareness as to their ancestry. One semen broker who has sold the sperm of cloned bulls, said that these offspring are "going to be slaughtered [for food], and the FDA can't do anything about it." In 2001, the FDA asked farmers to voluntarily refrain from selling meat or milk from cloned animals or their offspring, but no one at the agency is tracking whether farmers are complying.²

In 1998, cows were successfully cloned for the first time in Japan. Approximately 300 beef cows, 150 dairy cows, and 200 pigs have been cloned in the United States.³ A Texas-based company began cloning champion horses in

March 2006, which can sell for as much as \$150,000 per horse.⁴ And pet cats can be cloned by a private company for \$32,000.⁵

Pushing ahead with cloning animals for food, researchers have cloned pigs whose meat contains higher levels of omega-3 fatty acids by blending a gene from earthworms with pig's genetic material. No one has tasted the transgenic piglets' meat, yet. Nevertheless, scientists hope to clone chickens and cows with high levels of omega-3s in the future.⁶ Even as the FDA is poised to approve cloned animals for human consumption, there are concerns about the process' impact on animal health and the insufficient research on eating meat or drinking milk from cloned animals.

Health

Animal Welfare

According to one FDA official, although others disagree, cloned animals are more likely to have birth defects and health problems when they are young, but after 50 days these animals are as healthy as non-cloned animals. In fact, studies of cloned animals detail very low survival rates; the success rate of live, healthy animals through the cloning process is less than 5%.⁷ Many cloned embryos die in the uterus or shortly after birth.

"I believe a normal clone has yet to be made," stated Rudolf Jaenisch, professor of biology at the Massachusetts of Technology. "You can't tell me that 95 percent die before birth and the other 5 percent are normal."⁸

The National Academy of Sciences (NAS) released a report in 2002 on the safety of cloned animals, which noted that they often experience complicated births and harm



the surrogate animals. The report also noted that some clones have health problems like heart and lung disease, and other developmental problems, while some cloned mice have behavioral abnormalities.⁹

Cloned sheep, cows, and mice have been born with malformed brains, livers, spleens, lymph nodes and urogenital tracts.¹⁰ Internal hemorrhaging, digestive problems, hydrocephalus, and multiple organ failure are some of the most common causes of death among cloned animals in the first week of life.¹¹ A 2005 USDA study revealed that cloned pigs had weakened immune systems compared with normal pigs.¹²

“I’ve looked at the immune response of hundreds of young pigs and I’ve never seen anything that low until I looked at a clone,” remarked Jeff Carroll, leader of the study.¹³

One major cause of clones’ health problems is “epigenetic effects”, which can cause clones to be different than the original animal. Even though the DNA is the same amongst these animals, they can still look and develop differently because certain genes may be turned “on” or “off” in the cloned animal relative to its predecessor. These epigenetic effects can be created by the process of cloning the animal, environmental conditions (like pollution), and other factors. Epigenetic effects are also the reason that identical twins may look slightly different and have unique fingerprints. Therefore, even if clones may seem to be healthy, they may have epigenetic defects that cause problems when certain genes are activated years



later in their lives.¹⁴ For example, cloned dairy cows have developed chronic lameness, revealing an inherent weakness. In fact, the most common form of death for cloned cows that survive weaning is from euthanasia after suffering from a musculoskeletal abnormality.¹⁵

Consuming Cloned Meat and Milk

There is little information on the effects of eating meat or drinking milk from cloned animals or their offspring. The 2002 NAS report found “no evidence [that] cloned animals are unsafe to eat, but data [is] still lacking.”

To date, there are only a few scientific studies that compare the meat and milk products from cloned and non-cloned animals, and the studies have not found definitive, significant differences in the composition of the meat and milk products.

In one study, the cloned cattle did have significantly higher levels of some fats than the non-cloned animals, and there were four other areas, largely regarding muscle composition, in which clones differed from the comparison groups.¹⁶ Another study found differences in the mineral and fatty acid content of milk from cloned versus non-cloned cows.¹⁷ A 2003 report commissioned by Japan’s Ministry of Health, Labor and Welfare recommends caution: “Since cloning technology is new, prudent consideration is necessary on declaration of the safety of food from cloned cattle.”¹⁸

In sum, a 2004 NAS report states, “Since there is no evidence that food from cloned animals poses any increased health risk to the consumer, it could be concluded that food from cloned animals should be approved for consumption. However, the paucity of evidence in the literature on this topic makes it impossible to provide scientific evidence to support this position.”¹⁹



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Consumer Attitudes

One aspect of clones that is clear is that people do not want to eat them. A 2004 Gallup poll found that 64% of Americans think that cloning animals is “morally wrong.” In October 2005, a poll conducted for the Pew Initiative found that 66% of adults are “uncomfortable” or “strongly uncomfortable” with animal cloning.²⁰ In fact, in six major polls, a majority of people in each survey were against animal cloning.²¹ In a recent industry survey, 62% of consumers said they would be “very unlikely” or “somewhat unlikely” to buy animal products from cloned animals.²² The International Dairy Foods Association is so concerned with potential consumer backlash, they do not want the voluntary FDA ban on cloned animals lifted.²³ None of the survey results bode well for the consumption of cloned animals, except for the fact that such meat and milk products don’t need to be labeled. Cloned animals and their offspring may be for sale on the marketplace already, making people unwitting consumers of meat and milk they want to avoid. Consumers should have the opportunity to make informed choices about their food, which necessitates labeling meat and milk from clones and clones’ offspring. And prior to these animals being



fed to the public, there should be public discussions about the related ethical issues, since there is such widespread opposition to this technology.

Who Will Benefit?

These polls make clear that consumers do not want meat or milk from cloned animals. So who does? It is likely that the agribusiness and biotech companies will benefit from this expensive technology, as they could either directly profit off the sale of cloned animals and their offspring, or better afford such a purchase. Moreover, if, for example, cloned dairy cows are able to produce higher quantities of milk, the price of milk could fall even lower, which would harm struggling farmers. Finally, this technology pushes the industrialization of agriculture even further, moving us farther from diversified, sustainable farming.



Take Action!

1. Tell FDA that more long-term studies are needed on the health effects of consuming meat and milk from cloned animals, and that if cloned animals or their offspring are approved for human consumption, then their meat and milk products should be clearly labeled as such. Call 1-888-463- 6332 or email d.commissioner@fda.hhs.gov
2. Buy sustainable meat from a producer who you can ask or read about their practices. Visit the Eat Well Guide, www.eatwellguide.org, to find sustainable meat and dairy products near you.

Endnotes

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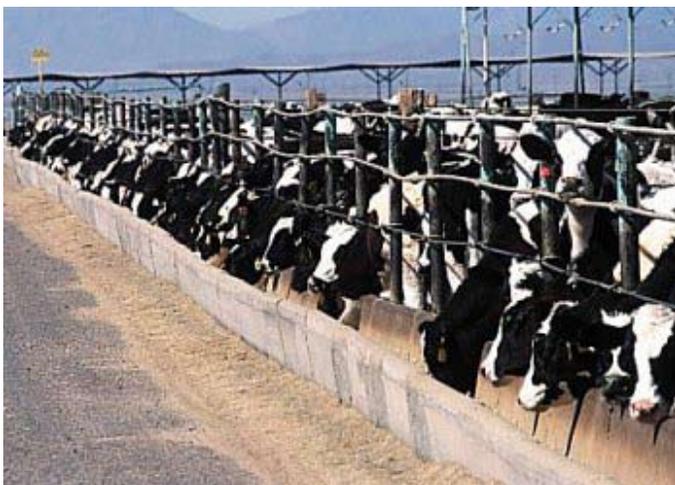
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For more information:

web: www.foodandwaterwatch.org

email: foodandwater@fwwatch.org

phone: (202) 797-6550

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