Cloned Puppies: Sure, They're Cute, But at What Cost?

By Brandon Keim 3 hours ago

Bertmann McKinney from the United States received five pit bull puppies — copies of her late pit bull, Booger — from South Korean biotech firm RNL Bio. In bio one calls the world's first commercial canine-cloning service.

Photo: Jin Han Hong/AP

When skin cells from a dead pit bull named Booger gave rise to five healthy-looking puppies with a $50,000 price tag, it marked the formal beginning of a commercial dog-cloning industry.

But for all the attention given to these and other clones, little is paid to the behind-the-scenes science. For every successfully cloned animal thrust into the spotlight, how many failures were quietly ushered out of sight?

"What we're seeing with the clones they present are the ones that look good," said Jaydee Hanson, an animal-cloning analyst at the Center for Food Safety, a Washington, D.C.-based liberal nonprofit.

In March, the U.S. Humane Society and American Anti-Vivisection Society released a report castigating pet cloning for "serious animal suffering and disputable activities." Critics point to the general tendency of animal embryos to fail before they're born, and for survivors to develop debilitating diseases. And dogs, it's widely agreed, are among the hardest of all animals to clone.

These are serious charges for a nascent industry comprising, for now, just two startup companies: the South Korea-based RNL Bio -- Booger's cloners -- and California-based BioArts International, who in July promised clones to four high bidders and a contest winner.

RNL Bio's charge of $50,000 for Booger's clones was heavily discounted, and BioArts' bidders paid $150,000 apiece, but prices could drop if the procedure becomes popular. That could make cloning an option for many of the United States' 50 million dog owners, but disfigured and diseased outtakes would turn the joy derived from copying their canine into horror.

"Clone enough dogs, and occasionally you have offspring that aren't perfect," said Lou Hawthorne, CEO of both BioArts and the late Genetic Savings and Clone. "But it's comparable to what you have through conventional breeding."

Yet defenders of the industry say that it's wrong to apply analogies taken from other species' clones: Despite the difficulties, they insist, cloned dogs tend to be healthy, not least because scientists have spent the last decade figuring out how to do it.

But for all the attention given to these and other clones, little was paid to the behind-the-scenes science. For every one of these resulted in a miscarriage, and Snuppy's only brother died of pneumonia after three weeks. According to Hawthorne, there's a silver lining to the complications of canine cloning: Flawed embryos are miscarried.
Cloned Puppies: Sure, They're Cute, But at What Cost?

or fail to develop altogether.

"The extreme sensitivity of the canine reproductive system means you have to have an absolutely perfect pregnancy," he said. "In other systems, you can just put a flawed embryo in, and get offspring out."

Hawthorne also headed Genetic Savings and Clone, a pioneering company whose six-year run ended in 2006 after producing just three cats and no dogs.

Researchers at that company -- who'd already started canine-cloning work three years before the company's founding -- produced just a single canine pregnancy, and it ended in a naturally caused stillbirth.

"The idea that there's a holocaust of malformed offspring and all these miscarriages is false," said Hawthorne, who insisted that his researchers have learned from a decade of painstaking, often frustrated efforts.

Overseeing Bioks' cloning efforts is Woo Suk Hwang, the former leader of a South Korean research team disgraced for its fraudulent human stem cell findings, but only after cloning Snuppy. Another member of that team was Lee Byeong-chun, who now directs science at RNL Bio.

Hawthorne cited unpublished data showing that 90 percent of his company's cloned dogs are born healthy, a figure though she cautioned that conclusive studies haven't yet been conducted.

"There are cases where something appears to go wrong later," she said. "You get that with natural breeding, too. The question is, what's the rate, the big picture? There haven't been that many clones made to get a true feel."

"It is still unknown how the surviving animals will do later in life," reads the Humane Society's report, "as no cloned cat or dog has lived long enough to assess."

Carol Keefer of age; if they're free of defects that long, said Hawthorne, they should stay healthy.

Hawthorne cited unpublished data showing that 90 percent of his company's cloned dogs are born healthy, a figure that his researchers have learned from a decade of painstaking, often frustrated efforts.

"The idea that there's a holocaust of malformed offspring and all these miscarriages is false," said Hawthorne, who insisted that his researchers have learned from a decade of painstaking, often frustrated efforts.

Researchers at that company -- who'd already started canine-cloning work three years before the company's founding -- produced just a single canine pregnancy, and it ended in a naturally caused stillbirth.

Overseeing BioArts' cloning efforts is Woo Suk Hwang, the former leader of a South Korean research team disgraced for its fraudulent human stem cell findings, but only after cloning Snuppy. Another member of that team was Lee Byeong-chun, who now directs science at RNL Bio.

"The extreme sensitivity of the canine reproductive system means you have to have an absolutely perfect pregnancy," he said. "In other systems, you can just put a flawed embryo in, and get offspring out."

Indeed, cloners have only produced about 40 dogs to date, and all since 2005.

"There are cases where something appears to go wrong later," she said. "You get that with natural breeding, too. The question is, what's the rate, the big picture? There haven't been that many clones made to get a true feel."

"It is still unknown how the surviving animals will do later in life," reads the Humane Society's report, "as no cloned cat or dog has lived long enough to assess."