Where Tradition meets Transfer – Cloning Technology in the Equine Industry Gathers Interest

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The horse industry is one based on skilled tradition, where knowledgeable breeders make their money combining the best possible equine bloodlines to produce foals with the capability to excel. But with the introduction of equine cloning, many are now looking at some new, potentially favorable outcomes.

Ever since the cloning of a sheep named Dolly over a decade ago, the idea of cloning animals has become increasingly more common. May 4, 2003 marked the introduction of the first equine clone, a mule named Idaho Gem to the industry. A combined effort from the University of Idaho in Moscow and The Utah State University in Logan, the birth of Idaho Gem marked an accomplishment that took over 4 years to create.

Cloning is an intricate procedure that involves a process called nuclear transfer. When normal breeding occurs, the offspring has a genetic mix of the parent DNA. Laboratory cloning on the other hand uses only one set of DNA. The nucleus from an egg is replaced with the nucleus of an adult body cell. The two components fuse and divide like a normal embryo. The embryo is then placed in a surrogate mother where is grows and develops until birth.

The cloning process is a very tedious process, not without its difficulties. The clones are very susceptible from their first creation in a culture dish until weeks after birth, they are incredibly vulnerable.

Cloning is seen by many as both an advantage to the horse industry and to research. It now brings us the option to prolong the bloodlines of superior horses, by enabling reproduction of castrated male horses and infertile female horses. It also provides an incredible research tool to veterinarians that otherwise would have never been available. Currently clones are being used in the veterinary field to study early embryonic development, as well as *In vitro* fertilization, and in embryonic stem cell research.

Not only do clones provide benefits to the horse world, but groups at the University of Iowa are also exploring the benefits in human medicine. The University recently launched a company called CancEr2, which aims to use animals as models to better understand human cancers.

One of the few limitations to cloning is the potential limitation to register them in certain associations. Registration limitations currently vary from organization to organization, but groups such as the American Quarter Horse Association (AQHA) are discussing clone registration options for the future.

Thoroughbred, harness horse, and Quarter horse racing at present do not allow cloned animals. However, other organizations such as the National Cutting Horse Association (NCHA) and Professional Rodeo Cowboys Association (PRCA) do allow clones to compete.

Equine cloning is not expected to become widespread within the industry. Researchers predict that its chief function will be as a way to preserve aging genetic lines and as a valuable research aid.

Among some of the famous horses that have been commercially cloned include world champion barrel racing horse Scamper, AQHA legend Smart Little Lena, and famous European show jumpers Calvaro and E.T.

Works Cited

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