First live rhinoceros birth from frozen-thawed semen

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There may be less than 20,000 rhinoceros in the world, with one species perhaps already extinct and another with possibly only four animals remaining in the wild. As the populations of these animals age and become infirm, successful breeding becomes increasingly difficult. In an article scheduled for publication in *Theriogenology, An International Journal of Animal Reproduction*, researchers from the Leibniz Institute for Zoo and Wildlife Research, Berlin, Zoo Budapest and the University of Veterinary Medicine, Vienna, report on the first live birth of a rhinoceros resulting from artificial insemination (AI) with frozen and thawed semen.

Using semen collected from a 35-36 year-old Southern white rhinoceros, frozen for 2 to 3 years and then thawed, a 30 year old female rhinoceros was artificially inseminated in two attempts. The first failed, but the second resulted in pregnancy and the birth of a healthy offspring. At the time of conception, the female was housed at the Budapest Zoo in Hungary and the male donor in Colchester Zoo in the United Kingdom.

Techniques for AI in rhinoceros have improved in recent years and the first live birth by AI occurred in 2007. However, that instance used fresh semen from a male rhinoceros in the same zoo, limiting the widespread use of the technique. By demonstrating that frozen semen could be thawed and used to successfully inseminate a female at a remote location, the researchers have opened a new avenue to the preservation of endangered species. Semen samples can be collected and preserved from both wild and captive populations to maintain a genome resource

bank and to boost reproduction in these megaherbivores.

Writing in the article, Dr. Robert Hermes, Med. Vet., and colleagues state, "This achievement joins a fairly short list of fewer than 30 wildlife species, most of which are closely related to domestic species, in which artificial insemination with frozen-thawed semen has been successful in producing live offspring. The use of frozen-thawed semen holds great potential as a means to overcome the crisis most captive and wild rhinoceros populations are facing in various ways."

The article is "First successful artificial insemination with frozen-thawed semen in Rhinoceros" by R. Hermes, F. Göritz, J. Saragusty, E. Sós, V. Molnar, C. E. Reid, F. Schwarzenberger, and T. B. Hildebrandt. It appears in Theriogenology: An International Journal of Animal Reproduction, DOI: dx.doi.org/10.1016/j.theriogenology.2008.10.008

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