

# Successful artificial insemination in white rhinoceros at Budapest Zoo

## Waiting patiently...

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The viability problem within the captive white rhinoceros population is well known, therefore in 2001 we decided to cooperate with the 'integrated approach for the enhancement of reproductive performance of white rhinoceroses in the EEP' that was initiated in 1992. The stakeholders of this project are the colleagues from the Institute for Zoo and Wildlife Research (IZW) in Berlin, the University of Veterinary Medicine, the Biochemistry Institute in Vienna and the Salzburg and Dvur Kralove zoos.



### First successful AI attempt

Budapest Zoo has kept 1.1 Southern white rhinos (*Ceratotherium simum simum*) since 1983. Due to the 'brother-sister' relationship there was no chance for natural breeding. The first logical step was that the experts from the IZW performed an evaluation of the reproductive organs of both of the animals, and this occurred in September 2001. This assessment revealed that the sperm of the male 'Easy Boy' was suboptimal and that the female 'Lulu' had already pathologic alterations in her reproductive tract. After several examinations,  $\beta$ -carotene supplementation and an unsuccessful artificial insemination (AI) attempt in 2003, a successful AI took place on 6 April 2004. This was already a small miracle as during the last few months further reproductive pathology had started to develop in the female.

### High expectations

The expectations were incredibly high, as this white rhino pregnancy was not only the first ever in Hungary, but the third which was a result of AI and the first which was the result of AI and reached the status of the second trimester. Despite of the detailed planning, the thorough emergency plan and all possible efforts, Lulu gave birth to a dead female calf, called 'Ada' on 9 August 2005. Ada died during the birthing process due to disconnection of the umbilical cord and subsequent suffocation. The post mortem findings revealed that the intensive resuscitation efforts were already too late, she died well before leaving the birth canal. It is hard to relay the level of the disappointment and sorrow, but this changed after a while.

It is often stated that rhinos and horses are very similar regarding certain points and that after birth the first oestrus of a horse is probably the most fertile one. So, our task was known: catch this moment and use it, as there are not many more opportunities, Lulu is not a young animal any more!

### Timing precisely

The first examination took place in August 2005, which showed that the pregnancy – despite its sad outcome – had been the best treatment for Lulu's ageing reproductive organs. The cysts and fibrotic scars were gone and the evaluation showed that she could conceive if the timing was right. The next examination (at the end of August) showed early signs of ovarian development and we needed to make a calculation – when to inseminate a rhino?

### Pregnant again!

On 8 September 2005, almost exactly a month after of the sad stillbirth, another AI was attempted. The same team worked together again, and this time everything seemed perfect – the timing, the follicle, the sperm quality. And indeed, it was: the subsequent blood and faecal hormone values proved that Lulu was pregnant again! Moreover, a 4D ultrasound examination gave us the visual proof in December 2005. We expect the delivery in January 2007. We are waiting patiently... •

