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Preservation of genetic diversity in the captive population of the Great Indian Rhinoceros.

Great Indian Rhinoceros (*Rhinoceros unicornis*) – one of the most endangered large mammals – have been kept in captivity for more than 50 years now and are distributed in zoological gardens world-wide. Breeding in captivity was first successful at Basel Zoo in 1956. Nowadays, 82 of the 130 Indian Rhinoceros kept in zoos are zoo-born. Until recently, however, little attention was paid to the genetic health of the zoo-population.

In the present study we analysed, based on the studbook, the breeding history and its genetic consequence on the zoo population of the Indian Rhinoceros. Inbreeding coefficients of zoo-kept Indian Rhinoceros vary between 0% and 37.5%. At present, nearly 50% of the genes of all zoo-born Indian Rhinoceros stem from three founder individuals, whereas the other 29 founders contributed the other half of the genes. The founder equivalent, a measure to describe the genetic health of a zoo population, is 10.16. For a viable zoo population, a founder equivalent of at least 20 is considered to be necessary.

We analysed the outcome of seven more or less hypothetical breeding programmes for Basel Zoo and their impact onto the genetic health of the world-wide zoo population.