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INVESTIGATION OF SEMEN COLLECTION METHODS FROM THE BLACK RHINOCEROS (*DICEROS BICORNIS*)

IAN GUNN, ANDREW THORNE, DAVID BLYDE, RUPERT WOODS, and ALAN TROUNSON

Institute of Reproduction and Development, Level 5, Monash Medical Centre, 246 Clayton Road, Clayton, Melbourne, Victoria, 3168, Australia ian.gunn@med.monash.edu.au (1) alan.trounson@med.monash.edu.au (5).
PO Box 831, Western Plains Zoo, Dubbo NSW, 2830, Australia athorne@zoo.nsw.gov.au (2). *PO Box 831, Western Plains Zoo, Dubbo, NSW 2830, Australia* dblyde@zoo.nsw.gov.au (3) rwoods@zoo.nsw.gov.au (4)

The future survival of the black rhinoceros and the maintenance of the species' genetic diversity is projected in the future to be largely dependent on a scattered, protected captive population. Small, isolated breeding groups are scattered internationally, a group of 12 (5 males & 7 females) are located at the western plains Zoo, Dubbo, Australia. The objective is to collect, evaluate, inseminate or freeze semen; the possible transfer of semen to breeding centres internationally; or to utilise semen in assisted reproductive techniques for IVF and IVF programs, depending on the ability to collect quality samples. Alternative procedures to electroejaculation which enable the safe and efficient collection of semen have been examined. These procedures exclude general anaesthetic and associated risks involved for repeated collections. Adopting a system of penial massage (manual, using and artificial vagina, or with an inflatable penial cuff combined with an air pressure pulsating stimulator) in combination with ejaculatory stimulating drugs (administered singularly or in combination), the experiment was designed to determine the optimum procedure to collect semen from a male contained in a holding crush. The drugs evaluated were Xyazine 0.5 mg/kg (Rompum; Bayer) administered orally or rectally; Clomipramine 2.2 mg/kg (Tofranil, Geigy) orally; and Oxytocin 0.5 mg/kg (Syntocin, Ilium) IV through the ear vein. The degree of response achieved relates directly to the male's conditioning to restraint, his mood and temperament, and to the related presence of females. Initially superior results, full erection with rhythmical flagellation to the abdominal region and seminal emissions were obtained without restraint, during feeding in an open day yard, with massage to the penis and teat buttons. Seminal fluid containing motile spermatic cells have been obtained with and without restraint. Further trials are progressing to establish optimal drug response protocols to achieve adequate relaxation, maximum stimulation in a restraining crush, and the collection of semen samples suitable for processing and freezing.

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