

Digital massage for semen collection, evaluation and extension in Malaysian estuarine crocodile (*Crocodylus porosus*)

ABSTRACT

Study in semen of the estuarine crocodiles is limited partly due to the lack of knowledge on the semen collection method and their reproductive biology. Therefore, this study was conducted to determine the possibility of semen collection via digital manipulation of the penis. Four matured male crocodiles kept in the same enclosure were physically restrained for semen collection. The collection was done in January 2015 during crocodiles mating season. Mean (\pm SEM) seminal volume, mass movement, pH, sperm concentration, general motility, forward movement, rotating and vibrating movements measured were 0.55 ± 0.12 ml, 2.75 ± 0.48 , 7.13 ± 0.24 , $396.88 \pm 43.41 \times 10^6$ sperm/ml, $45 \pm 17.56\%$, $37.13 \pm 5.12\%$, $9.56 \pm 5.38\%$ and $53.13 \pm 1.92\%$ respectively. The most important sperm abnormalities that requires further investigation is the cytoplasmic droplets which was $28.25 \pm 2.29\%$. Sperm motility trend was best preserved in extender made up of 0.01 M PBS with 5% egg yolk. Sperm stored 4 °C in this extender had survived longer than the other two extender which was 11 days. There is a unique trend in the spike of spermatozoa motility post 48 h in chilled condition however the cause of such pattern is still unknown. Semen collection by digital manipulation of the penis was adequate in obtaining semen and the semen characteristics of the estuarine crocodile are described.

Keyword: Semen collection; Digital manipulation; Estuarine crocodile