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Spermiogram of Wild and Captive Malaysian Horseshoe Crab (*Tachypleus gigas*) from Pantai Balok, Kuantan, Pahang, Malaysia

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Abstract

Horseshoe crab (HSC) populations around the world are declining in recent decades mainly due to destruction of breeding grounds and habitats. A short-term solution for this problem is captive breeding and artificial rearing. This experiment aimed at looking for a source of good sperm donors for in-vitro fertilization and captive breeding. *Tachypleus gigas* were collected from Balok Beach, Kuantan, Pahang, Malaysia. Crabs were divided to wild and captive groups. Wild *T. gigas* sperm was collected on the same day, while sperm of captive *T. gigas* was collected after 5 months of captivity to assess captivity effect on sperm traits. Sperm density and sperm viability were studied and correlated to morphometric measurements. The results indicated that *T. gigas* from Balok is a good sperm donor. Captivity was found to affect sperm traits where sperm density dropped significantly and sperm viability increased slightly. Intraocular width to carapace width ratio (IO-Car) of the HSC body correlated to sperm density, hence can be used as an indicator for donor selection during sampling. In conclusion, *T. gigas* from Balok can be used as a sperm donor for in-vitro fertilization for *T. gigas* propagation.

Keywords

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