

## MORPHOMETRIC ANALYSIS OF SUGAR GLIDER (*Petaurus breviceps papuanus*) SPERMATOZOA

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### ABSTRACT

This study aims to analyze spermatozoa morphometry of sugar glider (*Petaurus breviceps papuanus*). Semen samples were collected from three mature male sugar gliders using manual manipulation technique and cauda epididymal mincing technique. Semen samples were stained using eosin negrosin. Spermatozoa morphometry were measured for head length, width, area and perimeter, mid piece tail, primary tail, and total spermatozoa length using Image Raster Software. The results indicates two variations of spermatozoa shape that are spear-shaped and T-shaped. Morphometry of spear-shaped spermatozoa from cauda epididymal mincing technique were  $5.97 \pm 0.44 \mu\text{m}$  HL and  $3.03 \pm 0.36 \mu\text{m}$  HW;  $16.96 \pm 2.26 \mu\text{m}^2$  A and  $16.00 \pm 1.01 \mu\text{m}$  P;  $6.70 \pm 0.57 \mu\text{m}$  MPTL and  $78.50 \pm 3.21 \mu\text{m}$  PTL; and  $91.13 \pm 3.28 \mu\text{m}$  TSL. Analysis of T-shaped spermatozoa obtained from cauda epididymal mincing technique show  $3.49 \pm 0.8 \mu\text{m}$  HL and  $6.22 \pm 0.52 \mu\text{m}$  HW;  $17.98 \pm 4.22 \mu\text{m}^2$  A and  $16.6 \pm 1.64 \mu\text{m}$  P;  $7.4 \pm 0.66 \mu\text{m}$  MPTL and  $78.311 \pm 2.76 \mu\text{m}$  PTL; and  $89.2 \pm 2.89 \mu\text{m}$  TSL. Another result of spermatozoa morphometry from spear-shaped obtained from manual manipulated technique shown  $6.36 \pm 0.429 \mu\text{m}$  HL and  $3.40 \pm 0.53 \mu\text{m}$  HW;  $16.35 \pm 1.35 \mu\text{m}^2$  A and  $15.50 \pm 0.74 \mu\text{m}$  P;  $6.71 \pm 0.40 \mu\text{m}$  MPTL and  $57.20 \pm 8.04 \mu\text{m}$  PTL; and  $70.27 \pm 8.26 \mu\text{m}$  TSL.

**Keywords:** spermatozoa morphometry, spermatozoa, sugar glider