

ABSTRACT

IDENTIFICATION OF SUGAR GLIDER (*Petaurus breviceps*) TONGUE MORPHOLOGY USING SCANNING ELECTRON MICROSCOPE (SEM) AND HISTOCHEMISTRY

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Sugar glider (*Petaurus breviceps*) is a gliding marsupial originate from Australia, Tasmania, Papua New Guinea and Indonesia. They are omnivorous, consuming mostly soft tissue from the diet's part. Nowadays, sugar gliders are breed inside captivity and is a popular pet among animal lovers. The captivity pet diet structure is different to the diet in the wild. While tongue provide function such as manipulating food to grooming, this study will provide an information about the lingual adaptation, feeding habit of captivity sugar glider in compare to the other species in terms of tongue morphology.

Sugar glider were identified in the Laboratory of Animal Systematic in the Faculty of Biology Universitas Gadjah Mada. They were anesthetized before separating the tongue and prepared using two different method that were later analyzed using scanning electron (SEM), Hematoxylin-eosin (HE) and periodic acid Schiff (PAS).

Two types of filiform papillae (brush-like and flower bud filiform) were found being the most abundant mechanical type of papillae. Fungiform papillae, a gustatory type scattered amongst *apex* and *corpus* while conical papillae; mechanical, laid on the lateral margin. Three circumvallate papillae in triangular order can be found in *radix*. Weber's gland secreting neutral carbohydrate conjugate reacted positive to PAS were found in *posterior corpus* and *radix*.

Keywords: Sugar Glider, Tongue, Lingual Papillae, Taste Bud, Scanning Electron Microscope, Hematoxylin Eosin, Periodic Acid Schiff.