

# HISTOLOGICAL AND HISTOCHEMICAL EVALUATIONS OF THE LINGUAL SALIVARY GLAND OF YOUNG EDIBLE BIRD'S NEST SWIFTLETS (*Aerodramus Fuciphagus Fuciphagus*)

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## Abstract

The morphological evaluation of salivary glands in swiftlets has been done for more than twelve decades for their efficient feeding ability and other special functions such production of nest building material in *Aerodramus fuciphagus fuciphagus*. However, there is dearth information related to the evaluation of the swiftlet's salivary glands especially in young. Thus, this study was conducted to understand the development and function of the most important organ in young Edible Bird's Nest (EBN) Swiftlets (*Aerodramus fuciphagus fuciphagus*) since the development of salivary glands of this birds has a special function which are not just related to the diet but also in the production of precious EBN. The histological and histochemical evaluations of the salivary glands were done in four young EBN swiftlets of approximately 4 month-old. Grossly, no visible sublingual, lingual, maxillary, palatine and angularis salivary glands were observed. The histological evaluation using haematoxylin and eosin staining method showed the undeveloped existence of such lingual salivary glands in these groups of young birds except for sublingual salivary gland. The histochemical staining used in this study were Alcian Blue-PAS (demonstration of acid mucins and neutral mucins), PAS ( $\alpha$  Amylase), Aldehyde fuchsin-Alcian Blue (to differentiate the sulphated and carboxylated mucins) and Alcian Blue at pH 1 and pH 2.5 (to differentiate and identify the different acid mucins). The lingual salivary gland was found to be acidophilic (acidic mucin) using the Alcian blue-PAS staining. Alcian blue pH 2.5 staining demonstrated that they were weakly sulfated mucins but more carboxylated mucins type by using Aldehyde fuchsin-alcian blue stains. In conclusion, these findings suggested that the glands produced acidic carboxylated mucin which is the main substances used to build the nest and facilitates in lubrication of the food ingested.

**Key words:** EBN swiftlets; lingual salivary glands; morphology; histochemical; mucins