

Gross Morphology of Feeding Canal, Salivary Apparatus and Digestive Enzymes of Salivary Gland of *Catamirus brevipennis* (Servile) (Hemiptera: Reduviidae)

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ABSTRACT

Gross morphology of feeding canal, and salivary apparatus, protein content, enzyme profiles of *Catamirus brevipennis* Servile (Hemiptera: Reduviidae) salivary gland and alimentary canal were investigated. *C. brevipennis* has two each maxillary stylets inside and mandibular stylets outside. Maxillary stylets bear barbs where as mandibular stylets composed of filtering structures. Salivary gland is organized into larger multilobed principle gland (anterior and posterior lobes) and a shorter vesicular accessory gland. Posterior lobe of principle gland further constructed in to multilobes. At junction of anterior and posterior principle lobes of the principle gland shows a well-developed hilus. Short foregut (2.26±0.05 mm) was followed by very long midgut (6.02±0.06 mm) and hindgut (7.38±0.05 mm). Digestive enzymes like amylase, lipase and protease were found in both salivary gland and alimentary canal. Significantly low level of amylase and acid phosphatase and high level of protease was observed in the principle gland. Lipase activity was almost similar in both principle and accessory gland. Fore, mid and hindgut showed lipase and amylase activities. However, midgut and hindgut showed higher level of protease and acid phosphatase activity. This predatory bug is equipped purely for zoophagy by its functional morphological features and physiological nature.

Keywords: Salivary gland, alimentary canal, morphology, protein, enzymes, *Catamirus brevipennis*.

INTRODUCTION

Reduviids are the largest terrestrial predatory insects, mostly feeding on insects. They are considered as effective biological control agents against several agricultural pests (Ambrose, 1999; Sahayaraj *et al*, 2007). Proper assessment of the role of Reduviid predators in regulation of insect pests in diverse crop system was also proposed earlier (Whitcomb, 1981). *Catamirus brevipennis* (Servile) is one of the largest predators of the family Reduviidae present in scrub jungles, semiarid zones, tropical rain forest and agroecosystems of south India (Sahayaraj, 2007). It feeds on wide range of insect pests including *Helicoverpa armigera* (Hubner) (Bhatnagar *et al*, 1983), *Mylabris pustulata* (Faust) (Ambrose, 1999), *Spodoptera litura* (Fab.) (Sahayaraj, 2000). A consumer's ability to use plant or animal materials for food is indicated by the presence of specific digestive enzymes and by food and feeding canal

