Hathairat Chanphao 2007: Studies on the External Morphology of *Boophilus microplus* Midgut by Scanning Electron Microscope. Master of Science (Veterinary Anatomy), Major Field: Veterinary Anatomy, Department of Anatomy. Thesis Advisor: Associate Professor Worawut Rerkamnuaychoke, Ph.D. 46 pages.

The morphology of the midgut of *Boophilus microplus* was studied using the scanning electron microscope (SEM). The alimentary tract of *B. microplus* was divided into 3 parts; foregut, midgut and hind gut. The foregut contains the pharynx and the esophagus, the midgut consists of the ventricular caeca and the stomach, while hind gut, the last part of the alimentary tract, consists of the rectal sac and the rectum. The midgut is the most important part of the alimentary tract, because several proteins identifiable here lead to the commercial vaccine against *B. microplus.* However, there is limited data concerning the morphology of *B. microplus*, especially the midgut. Therefore, we used the SEM in combination with the LM technique to clarify the morphology of the *B. microplus* midgut. This study analyzed the midgut of a sample of 30 engorged adult females of *B. microplus* of 4-6 mm in length. The midgut consists of 7 pairs of ventricular caeca and can be divided into two parts, the anterior and posterior part. The anterior part consists of 4 short pairs (a.l.1-a.l.4) and 1 long pair of ventricular caeca (a.l.5) while the posterior part consists of 2 long pairs of ventricular caeca (p.l.1-p.l.2). The stomach (STO) is situated between the anterior and the posterior part. A rectum forms from the ventral part of the stomach and enlarges becoming a rectal sac (RS). Even though the midgut is formed of 7 pairs of ventricular caeca and the stomach, it is possible to categorize them into 3 groups according to the cells composing each part. Group 1 consists of STO, RS, a.l.1 and p.l.1. Group 2 consists of a.l.2, a.l.3 and a.l.5 and group 3 consists of a.l.4 and p.l.2. This study shows that each ventricular caeca of the midgut of *B. microplus* can be identified distinctly either observing them by SEM or analyzing the components of the composing cells by LM technique.

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