Jeeranan Intanakom 2010: Study on Morphological, Bacterial Identification and Histology in Mud Crab (*Scylla* sp.) with Red Thoracic-Abdominal Syndrome. Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Jintana Salaenoi, Ph.D. 93 pages.

External morphology of 100 mud crabs collected from Samut Songkhram and Chanthaburi Provinces during October 2008 to February 2009 was observed. There were many abnormal symptoms in those crabs including brown to red abdominal thorax, chela and joints. The muscle developed white to pinkish coloration. Haemolymph of those crabs were classified into five groups; transparent (group I), transparency orange (group II), translucent brown (group III), cloudy orange (group IV) and opaque white (group V). Crabs in group IV and V developed unclottable blood, impair internal organs, pale hepatopancreas, loose muscle and soft carapace. Those crabs were lethargic and died very fast. The bacterial isolates from heart, muscle, hepatopancreas and gill of the nornal and infected mud crabs was indentified into 9 species: *Shewanella putrefaciens group*, *Pasteurella multocida*,*Vibrio alginolyticus*, *Vibrio parahaemolyticus*1, *Vibrio parahaemolyticus* 2, *Vibrio parahaemolyticus* 3, *Vibrio vulnificus*, *Grimontia hollisae* and *Brevundimonas diminuta*.

Histopathological study of the abnormal crabs group I (transparent) and group II (transparency orange) showed necrotic cells in heart tissue, muscle, hepatopancreas and gill. Hemocyte infiltration, nodule formation and melanization were also observed in the infected areas which indicated the immune response to infection.

Disease-free crabs were experimentally infected with *V. parahaemolyticus* and *V. alginolyticus* isolated from red thoracic-abdominal syndrome. It was found that *V. parahaemolyticus* infected crabs had decreased total hemocyte count from 6 hours to 168 hrs. and hemolymph color was changed from transparent to transparency orange from 48-168 hrs. *V. alginolyticus* infected crabs also had decreased total hemocyte count at 6-96 hrs. but hemolymph remained transparent as normal. Some part of the muscle from *V. alginolyticus* infected crabs developed light brownish coloration. Based from this result, it could be suggested that *V. parahaemolyticus* was the cause of red thoracic-abdominal (group II) syndrome in the mud crab classified by the development of transparency orange hemolymph after the reinfection.

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