Rattiyakorn Inthusai 2006: Study on the Causes of White Feces Syndrome in Black Tiger Shrimp (*Penaeus monodon*) Culture in Low Salinity Water. Master of Science (Fisheries Science), Major Field: Fiseries Science, Department of Fishery Biology. Thesis Advisor: Asistant Professor Niti chucherd, Ph.D. 117 pages.
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Penaeus monodon (9-16 g, n=540) cultured in low salinity water exhibiting white feces syndrome from nine farms in the central and eastern regions of Thailand during June 2004 to May 2005 were sampled and examined. The disease outbreaks were associated with a deterioration in the pond environment. Clinical and external signs of the diseased shrimp consisted of abnormal behaviour, e.g. shrimp gathered at the sides or surface of the ponds, lethargy, inappetence, and, either red or blue discoloration. In this study, one species of protozoa (*Zoothamnium* sp.) was found as an ectoparasite on the surfaces of the shrimp and one species of endoparasite (*Gregarina* sp.) infected the midgut were found from eight samples collected from Farm 1 Lhamsing district, Chantaburi province. Fifteen halophilic vibrios were isolated and identified from haemolymph of diseased shrimp. *Vibrio parahaemolyticus* was the most frequently isolated bacteria, followed by *V. fluvialis, V. alginolyticus*, *V. cholerae* (non 01), and *V. mimicus*, respectively. Pathogenicity tests showed that injection with *V. parahaemolyticus*, *V. fluvialis* and *V. alginolyticus* concentrations at LD_{50} could produce the characteristic white feces in healthy shrimp. Histopathological examination of infected animals revealed hepatopancreatic decreased R-cell stored lipid, increased numbers of atrophic tubules, multifocal tubular epithelial cell necrosis and sloughing, with resultant loss of the tubular acinar structure. Haemocytic responses to the bacteria in the affected tissues comprised haemocyte aggregation and melanization in association with the haemocyte encapsulation and nodule formation.

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