

Apiruedee Songsuk 2011: Pathogenesis of Yellow-head Virus in Pacific White Shrimp (*Litopenaeus vannamei*) and Some Carriers. Doctor of Philosophy (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Associate Professor Chalor Limsuwan, Ph.D. 130 pages.

A study was conducted on the pathogenesis of yellow head virus (YHV) in Pacific white shrimp (*Litopenaeus vannamei*) focusing the carriers involved on disease pathogenesis by surveying and collection of samples from 29 shrimp farms of low salinity culture area in Ratchaburi province. The infection of the virus was confirmed by RT-PCR, histopathology and immunohistochemistry technique. Three crustacean species namely fresh water crab (*Somanniathelphusa germaini*), giant fresh water prawn (*Macrobrachium rosenbergi*) and Lanchester's fresh water prawn (*Macrobrachium lanchesteri*) have been detected as carrier of the virus as these species harbour the infection for considerable periods without showing any clinical sign. The study revealed the presence of YHV type 1-b by molecular method. The infection of carrier was also determined and confirmed by the same technology as was done in white shrimp. The study was divided in to five experiments. In experiment 1, among the 3 species of carriers, fresh water crab and giant fresh water prawn were infected by injecting the virus while Lanchester's prawn were infected by immersion method. All the animals showed no mortality or clinical sign of infection and first 2 could eliminate the virus after 28 days and 3rd one get rid of the virus after 21 days. In experiment 2, the three carriers fed the infected (YHV infected) *L. vannamei* to establish the infection and the infection was confirmed by previous method. The result was same as showed in experimental 1, that no mortality or clinical sign exhibited and the virus was eliminated after a certain periods (mentioned before). In experiment 3, it was observed that there was successful transmission of virus from carriers to *L. vannamei* culture. The experiment 4 was about the establishment of infection in *L. vannamei* by feeding the infected carriers. The results obtained from the study indicated that 3 species of carriers can establish the infection and mortality in *L. vannamei*. The experiment 5 was determined the severity of YHV infection in *L. vannamei* by injection and feeding at different salinity levels (5, 15 and 30 ppt). Similar results were observed which the mortality in the low salinity group (5ppt) was faster than those of 15 and 30 ppt groups respectively.

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