

**Experimental transmission of white spot disease virus (SEMBV) to tiger shrimp, *Penaeus monodon* under different salinity and hardness levels in water**

RPH Somathilake, M Hettiarachchi, A Pathiratne,  
Department of Zoology, University of Kelaniya, Kelaniya.

---

**ABSTRACT**

Repeated occurrence of white spot disease outbreaks, causing heavy mortalities in cultured *Penaeus monodon*, has severely affected the shrimp farming industry in Sri Lanka. Systemic Ectodermal and Mesodermal Baculo Virus (SEMBV) is the pathogen responsible for this disease. Our field investigations over the last 3 years revealed that the occurrence of the disease was associated with the low levels of salinity and hardness of the grow-out pond water. The present study was conducted to examine the susceptibility of *P. monodon* to white spot disease when the shrimps were challenged with SEMBV by oral exposure under optimal and sub optimal levels of salinity and hardness in water.

*P. monodon*, free of SEMBV were acclimated to sub optimal levels of salinity (5 ppt) and hardness (800 ppm) and optimal conditions (20 ppt salinity and 3200 ppt hardness) separately and were fed with infected shrimp tissues. Occurrence of the disease in test animals was monitored by gross clinical signs and histopathology. Time taken to show signs of the disease by shrimp in the sub optimal salinity or hardness conditions ranged between 27 and 34 hours and that of the shrimp under optimal conditions took only 72 hours post exposure to the virus. Shrimp that were in sub optimal levels of salinity and hardness experienced 100% mortality within 160-198 hours post exposure whereas the shrimp in optimal salinity and hardness survived until 252 hours. Results indicate that *P. monodon* under sub optimal salinity and hardness conditions are highly susceptible to the SEMBV compared to the susceptibility of the shrimp in optimal salinity and hardness in water.