Occurrence of white spot syndrome (WSS) in a prawn farm at Cochin

JASMIN, K. JOSE AND MARY, K. MANISSEY
Central Marine Fisheries Research Institute, Cochin - 682 014, India

ABSTRACT
Occurrence of White Spot Syndrome (WSS) was noticed in farm reared Penaeus indicus H. Milne Edwards of size group 110-150 mm at Munambam, Cochin in January 1997. The affected prawns showed symptoms, similar to those reported in P. monodon, such as sluggish movements, absence of feeding, escape reactions, reddish discoulouration, white spots on cephalothorax and abdomen and loss of part of one or both the antennae. Histopathology of hindgut from the affected P. indicus revealed the presence of inclusion bodies.

Among the various diseases, affecting prawns from the wild and the culture ponds, it is generally recognised that viral infections cause the greatest threat to the prawn culture industry. This is primarily because very little information is available on the taxonomy and biology of these pathogens, so that effective preventive and control measures could not be developed. They cause complete destruction of the stock within a few days (Lightner, 1993). According to Lightner (1993), as many as eleven viral diseases of cultured penaeid prawns have been identified and described. Recently, outbreak of a new disease, resulting in mass mortality of the cultured prawn stock was reported from southeast Asia and Indo-Pacific region (Wongteerasupaya et al., 1995; Wang et al., 1997). This disease is increasingly known as White Spot Syndrome (WSS) and the agent(s), White Spot Syndrome Baculovirus (Chou et al., 1995; Wang et al., 1997).

In China, 80% reduction in the cultured prawn production, amounting to US $1 billion was recorded in 1993. Thailand reported a loss of US $500 million in 1996, due to WSS outbreaks. This shows the dreadful effect of this disease on the world economy (Wang et al., 1997).

The white spot syndrome was first reported in P. chinensis from Japan, in 1992 and it spread to other shrimp farming countries (Chang, 1998). In India, the disease was first noticed towards the end of 1994 (Karunasagar, 1997). Even though, several penaeid species are known to be affected by this disease, detailed studies have been conducted mainly in P. monodon and P. japonicus (Takahashi et al., 1994; Nakano et al., 1994; Chen and Kou, 1994). The present study emphasises the histopathology of the hindgut of P. indicus, affected by WSS.

Affected, live specimens of P. indicus and P. monodon were collected from a
Nuclear hypertrophy of the infected cells is because of the development and accumulation of intranuclear virions. The cytoplasm around the infected nucleus gets thinned as the viral development progresses, leaving a transparent zone surrounding it, which appears as a 'halo' in the present study, as reported by Wongteerasupaya et al. (1995) in *P. monodon*. Death occurred in some *P. indicus*, which did not show any external symptoms, characteristic of WSS. However, histopathological studies of the affected tissues from such lethargic specimens also revealed the presence of inclusion bodies.

References


