

HISTOLOGICAL ABNORMALITIES RELATED TO MORTALITY IN PENAeid SHRIMP (*PENAEUS STYLIROSTRIS*) REARED IN NEW-CALEDONIA

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Outbreaks of mass mortality occurred since 1993 in penaeid shrimp (*Penaeus stylirostris*) reared in New-Caledonia. Since then, the disease, called « syndrome 93 » (S93) has inflicted serious losses (60 to 100%) during the cold period and thus must be considered as an economically significant disease. Peracute episodes of S93 were the most common manifestation and occurred in both juvenile and adult shrimp (of 1 to 20 g) into grow out ponds. Gross signs displayed by moribund shrimp included anorexia, weakness, swimming abnormalities, increased clotting time and multiple melanized cuticular lesions suggestive of shell disease. Several *Vibrio* species were isolated from the hemolymph of diseased shrimp. An infectious etiology for S93 has been proposed, strongly related to stress conditions such as temperature or zootechnical manipulations. In order to assess the role of stress in the manifestation of the S93, four hundred shrimp from a chronically affected pond in a recovery phase were transferred into a clear water tank. At the beginning of the experiment, 30 shrimp were sampled for histological examination as negative control. 25% of the transferred shrimps died within the 48 first hours, although non significant mortality was recorded in the pond. 30 shrimp were randomly caught in castnet in the experimental tank after 10, 20 and 48 hours post transfer, and prepared for histological examination. Affected shrimp displayed a distinctive histopathological picture that consisted in the presence of abnormal basophilic inclusion bodies in the lymphoid and hematopoietic organs. These inclusion bodies were numerous, variably sized, located in the cytoplasm and Feulgen positive. The cytoplasmic localization of these inclusion bodies and their Feulgen positive reaction suggested the presence of an intracellular pathogen agent.

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