



White Spot Syndrome, a Widely Prevalent Viral Disease in Cultured Shrimps and Crustaceans of Economic Importance in Shellfish Aquaculture: A Review

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Abstract-- White spot syndrome affects a wide range of pinnaed shrimps and crustacean hosts. The infection is highly contagious in nature and affects a wide population of shrimps. The mortality rate in this viral infection is very high and so is of economic importance in shrimp farming sectors worldwide. The etiology belongs to the genus *Whispovirus*, which is the only genus in the family *Nimaviridae* (ds-DNA virus).

Keywords-- Biosecurity, Pinnaed shrimp, WSSV, Economic importance

I. INTRODUCTION

The virus is often designated as the White spot Syndrome Baculovirus complex (WSSV) which causes the white spot syndrome (WSS).^[1-3]

II. HOSTS AFFECTED

Mainly the natural hosts of the virus infection include cultured pinnaed shrimps *viz.*, *Penaeus monodon*, *Litopenaeus vannamei*, *Fenneropenaeus indicus* and *Marsupenaeus japonicus*).

Crustaceans such as crabs like (*Scylla spp.*, *Portunus spp.*), giant freshwater prawn (*Macrobrachium rosenbergii*), crayfish (*Cherax spp.*, *Astacus spp.*) and spiny lobsters (*Panulirus spp.*) are also reported to be infected.^[4-5]

III. TRANSMISSION

Elevated water temperature, contaminated water habitat and raised salinity are the predisposing conditions for this infection.

IV. CLINICAL SIGNS

The clinical signs include inappetance, loose cuticle with evident haemorrhagic spots and presence of white spots of nearly 2 mm diameter in the inner surfaces of appendages and carapace.^[6-8]

V. LESIONS

Distinct white colored spots are formed on the shell of infected shrimps which are raised in texture. In due course it leads to the loosening of cuticular epidermal layer. The ectodermal, mesodermal and haemopoietic system of the shrimps are affected in this infection including the involvement of connective tissues, gills, and nervous tissues. Tissue necrosis is a prominent pathological lesion.^[9]

VI. DIAGNOSIS

The clinical symptoms on cuticle and carapace with the pathological lesions aid in accurate diagnosis which is further confirmed by laboratory tests. Quantitative PCR and nested PCR techniques are employed for confirmatory laboratory diagnosis of the virus. Numerous effective disinfectants and water sanitizers also prevents the occurrence of WSSV.^[10]

VII. SUMMARY

The various sources of water pollution should be nullified along with the recommended adoption of strict biosecurity measures.

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