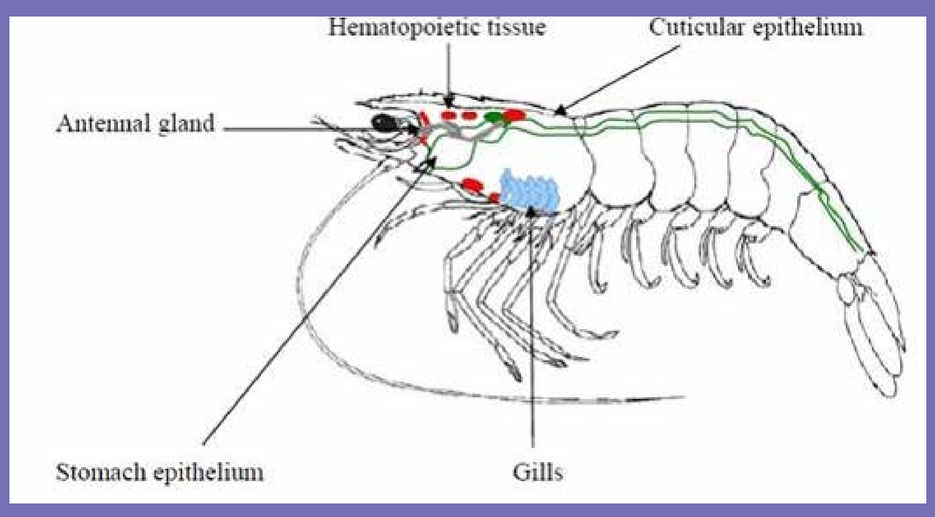
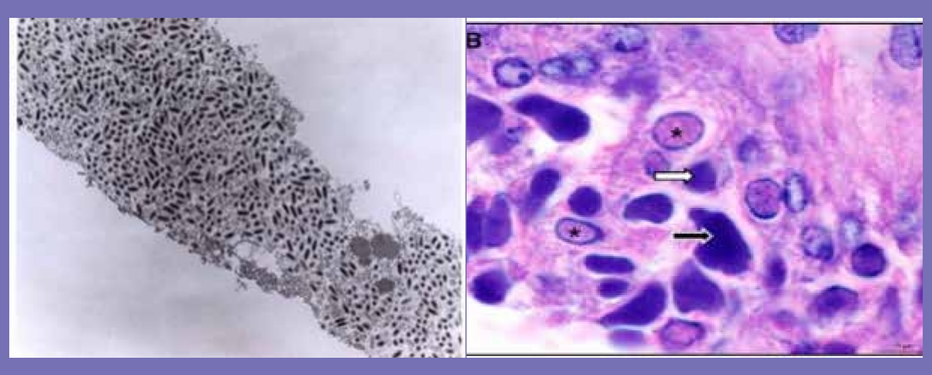
WHITE SPOT DISEASE OF SHRIMP

White spot syndrome or white spot disease (WSD) is a highly lethal and contagious viral disease of farmed penaeid shrimp. Since its emergence in 1993, has caused losses of over US$ 6 bn globally. The disease is caused by white spot syndrome virus (WSSV). The disease kills affected shrimps within 3-7 days of onset of signs of disease such as

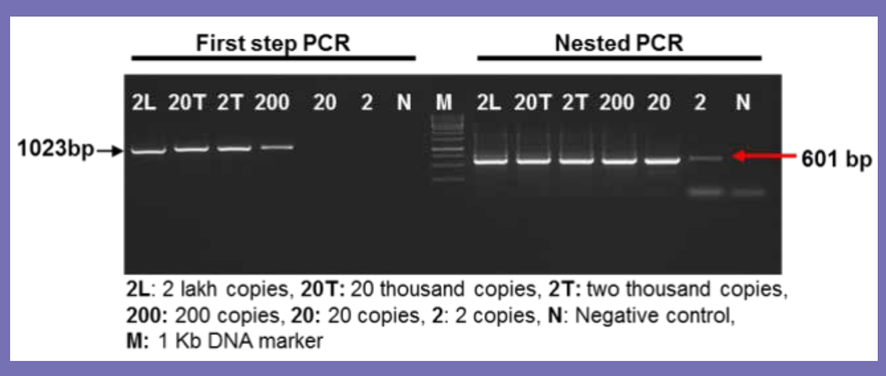
- Sudden reduction in feeding
- Shrimp lethargic
- Red discoloration
- White spots 0.5 to 2 mm under cuticle





CAUSATIVE AGENT AND DIAGNOSIS

- WSSV is a double stranded circular DNA virus with a genome size of ~300 kb with an envelope and belongs to the family Nimaviridae and genus Whispovirus
- WSSV affects all the ectodermal and mesodermal tissues. These tissues show prominent intra-nuclear inclusion bodies that are initially eosinophillc and gradually become basophilic
- WSD can be diagnosed using molecular methods such as polymerase chain reaction (PCR), and Real time PCR using gills or pleopods



2L: 2 lakh copies, **20T:** 20 thousand copies, **2T:** two thousand copies, **200:** 200 copies, **20:** 20 copies, **2**: 2 copies, **N**: Negative control, **M:** 1 Kb DNA marker

HOW WSD IS TRANSMITTED?

- All penaeid shrimps of all life stages are susceptible to WSD.
- Other crustaceans such as crabs, copepods from marine and brackish water are either hosts or carriers.
- Crayfish and scampi are also hosts for this virus. Non-arthropod crustaceans such as *Balanus sp* and polycheate worms can be carriers
- WSSV is Viable in water for 12 days and nearly three weeks in wet pond sediments

Vertical transmission

Horizontal transmission

- Carriers
- Cannibalism
- Waterborne
- Fomites

PREVENTION AND CONTROL

- There is no treatment for the control of WSD so far; prevention is the only means by adopting best management practices (BMPs) and ensuring strict biosecurity measures
- Dry the ponds completely before stocking.
- Provide bird fencing and crab fencing
- Maintain a reservoir and use only disinfected water for culture
- Stock only healthy larvae, free from WSSV tested by PCR
- Do not discharge water from WSD affected ponds before proper disinfection

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