

White tail disease of *Macrobrachium rosenbergii*

Background

As aquaculture expands and intensifies, more and more new diseases will emerge. Till recently, freshwater prawn, *Macrobrachium rosenbergii* was regarded as disease resistant. The recent report of white tail disease (WTD) in freshwater prawn hatcheries and farms, has sent shock waves through the prawn aquaculture industry in India. The new disease has been discovered in many hatcheries located at Nellore, Andhra Pradesh and Chennai. This disease has also been reported in some of the farms in Nellore, Andhra Pradesh.

Clinical Signs

The clinical signs of this new disease observed include lethargy, anorexia and opaqueness of abdominal muscle in post-larvae (Fig.1) and adults (Fig. 2). This opaqueness gradually expands on both sides (anterior and posterior) and leads to degeneration of telson and uropods in severe cases. Some infected animals without uropods have been observed. Whitish appearance of the tail is the prominent clinical sign, and therefore, the disease is named as white tail disease. The mortality recorded is 100% within two or three days after the appearance of the clinical sign of opaqueness.

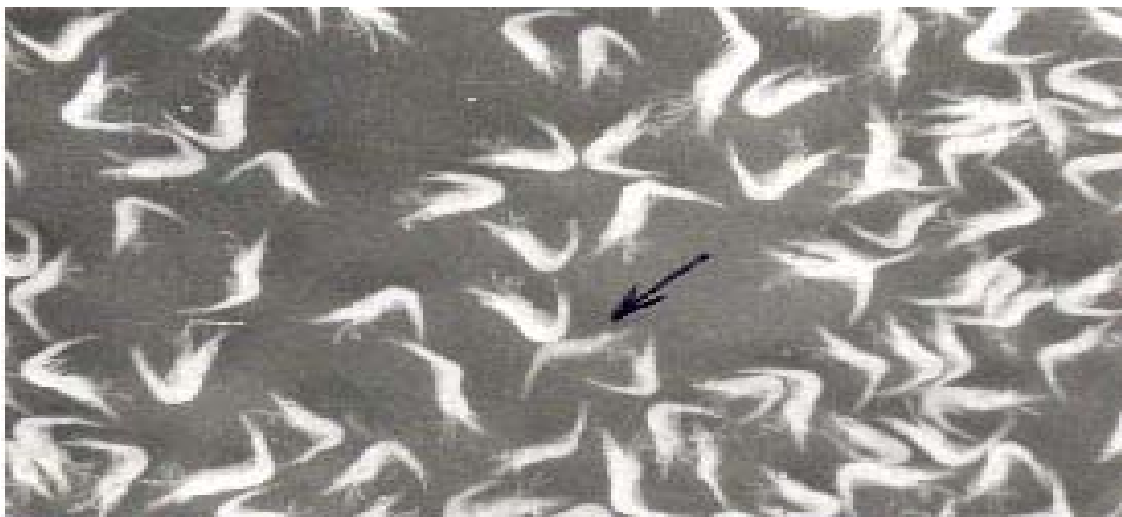


Fig.1. Hatchery-reared post-larvae of *Macrobrachium* infected with white tail disease (opaqueness of abdominal muscle).



Fig. 2. Adult *Macrobrachium* from grow-out pond infected with white tail disease

Experimental Transmission

Experimental transmission of this new disease was carried out in the healthy post-larvae and adult *Macrobrachium rosenbergii* by immersion and intramuscular injection, respectively with homogenized samples prepared from infected animals. The cumulative mortality reached 100% in post-larvae within four days. The clinical signs observed in experimental infection were found to be similar to that of natural infection. The experimentally infected adults became lethargic and anorexic. Mortality up to 50% was observed within 5 days. The cephalothoracic region increased in size and it became double of the original size. This sign was observed in all the experimentally infected animals (both survived and moribund animals). Similar clinical signs, (referred to as branchiostegite blister disease (BBD) or swollen head syndrome) accompanied by mortalities, have been reported from adults in grow out farms. The cephalothoracic region when opened, had two water sac-like structures with watery fluid above the hepatopancreas on either side (Fig. 3).



Fig. 3. Experimentally infected *Macrobrachium* with sac-like structure.

Etiology

Two viruses, *Macrobrachium rosenbergii* nodavirus (MrNV) and extra small virus (XSV) have been found to be associated with WTD. The causative organism has been identified as *Macrobrachium* nodavirus (*MrNV*) by RT-PCR in Dr. Bonami's Lab. Genome based detection methods for MrNV and XSV have been developed

Management

As there are no treatments to viral pathogens, only through adoption of better management practices in hatcheries and farms, the spread and impact of White tail disease can be minimized.

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