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Title	Living with white spot disease in shrimp farming
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Citation	
Issue Date	2003
URL	http://hdl.handle.net/10862/626

This document is downloaded at: 2013-07-02 09:15:05 CST



How do I avoid stress to my shrimps?

First, minimize water change; it is stressful. Rely on long arm paddlewheels to maintain water quality.



Paddlewheel aerators

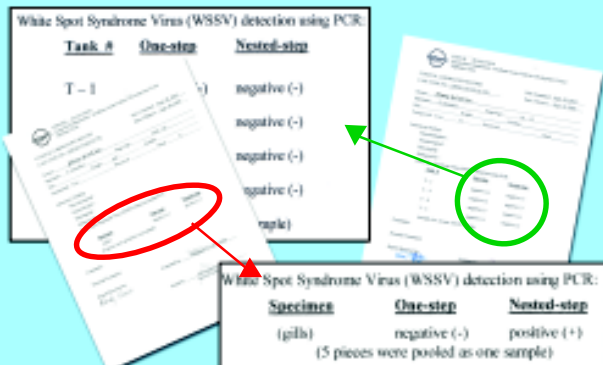
Second, fortify feed with Vitamin C especially in the first 60-90 days. Ask your feed company for dosage and directions.

Third, apply regularly probiotics to your water and immunostimulants to your feed. Ask your aquaculture store for directions to use

Are there really no visual/gross signs of a creeping White Spot outbreak?

Again, there is none. Shrimps that appear 'healthy' to the naked eye may in fact be infected. Submit live or ethanol-fixed specimens to fish health labs to detect a creeping White Spot outbreak, regularly, say every 15 days for the first 60 days.

Lab reports



When all hell break loose!

Remember to protect your environment. Drain most of the water to a holding pond; let it stay for 5 days before throwing out. Disinfect the remaining water with chlorine (calcium hypochlorite, 40 ppm). Show compassion to your shrimp-farming neighbor – inform him!



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Further reading:

Lavilla-Pitogo CR, Lio-Po GD, Cruz-Lacierda ER, Alapide-Tendencia EV, de la Pena LD. 2000. Diseases of Penaeid Shrimps in the Philippines. 2nd ed. Aquaculture Extension Manual No. 16. SEAFDEC Aquaculture Department, Tigbauan, Iloilo, Phils. 83 p.

de la Pena LD, Lavilla-Pitogo CR, Namikoshi A, Nishizawa T, Inui Y, Muroga K. 2003. Mortality in Pond-Cultured Shrimp *Penaeus monodon* in the Philippines Associated with *Vibrio harveyi* and White Spot Syndrome Virus. Fish Pathology, 38:59-61.

Funded from: Regional Fish Disease Project
Government of Japan Trust Fund

TID October 2003



Living with
White Spot
Disease in Shrimp Farming

What is White Spot in shrimp?

It is a deadly disease caused by a virus called White Spot Syndrome Virus (WSSV). White Spot could obliterate your shrimp stock in just a few days.

Who brought White Spot to the country?

First reported in China and Japan in 1993, most shrimp farming countries already have it. Due to loose compliance with regulations on transfer of live shrimp, its spread throughout the world was a matter of time. It is now in the country to stay.



The Asian White Spot pandemic

What are the signs of White Spot?

Affected shrimp lose appetite followed by the appearance of moribund shrimp in a few days. Moribund shrimp has white inclusions or spots in the cuticle sometimes accompanied with red body coloration.



Infected shrimp

Can you contain White Spot within the affected pond?

Yes, but difficult. Water released from infected ponds could find its way to other ponds or farms. Wild crustaceans or even aquatic insect larvae are White Spot carriers.

Can you treat White Spot?

There is no silver bullet against White Spot. Once abnormal feeding is observed in intensive systems; shrimps are in trouble.

It is best to harvest your shrimps immediately for whatever value that is left. Affected shrimps are safe for human consumption.

So, is there a way to live with White Spot?

Yes, of course. The best strategy is to **prevent** its entry into your pond, and to avoid **stress** to your shrimps.

What are proven methods of preventing entry of White Spot into your ponds?

First is, thorough pond prep: dry, plow, harrow, and flush in several cycles, then apply lime (hydrated, ~ 2 t/ha) to pond and canals, in between cycles. White Spot carriers - wild crabs and small shrimps, should be removed. During culture, avoid trash fish feeding.



Dried pond bottom

White spot free fry



White spot free fry

Limed pond bottom



Second, during water filling, use reservoir-water only where settling occurred for at least 5 days. Water must be filtered or screened carefully to prevent entry of White Spot carriers.

Screened reservoir water



Third, maintain green water in your shrimp and reservoir ponds to control luminous bacteria; it aggravates White Spot. About 2 t/ha tilapia in the reservoir ensures green water. Also, tilapia-in-pen inside the shrimp pond helps maintain green water.



Green pond water

Fourth, stock fry that are White Spot free after 2 samplings (before PL10 and harvest). Fish health labs routinely perform this diagnosis using a nested PCR technique.