

Rapid test developed to detect aquaculture virus

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New Delhi: A group of Indian researchers have developed a rapid test to detect a virus that affects shrimp.

White Spot Syndrome Virus (WSSV) is a highly contagious and lethal virus especially to the Penaeid shrimp. Death is certain between 3 and 7 days after the attack. It belongs to a new family of viruses known as Nimaviridae. The first outbreak of the virus was reported in Taiwan in 1992 and since then it has caused economic losses in aquaculture industry in many other countries including India.

Conventional methods of virus detection based on polymerase chain reaction (PCR), microarray methods and blot tests are available but they are either time consuming or not very accurate in small populations. Considering this situation, scientists felt the need to develop a virus detection test which could easily identify the affected shrimp without taking much time or money.

The new test involves an electrochemical sensor uses methylene blue dye immobilized grapheme oxide and modified glassy carbon electrode. It has been developed by scientists at the Vellore Institute of Technology University in Tamil Nadu.

The research team led by Anusha Natarajan, conducted series of experiments beginning with fabrication of the sensor and optimizing its parameters. The test results on raw tissue samples have indicated a high degree of accuracy in identifying affected animals (almost four times more than conventional methods) and detecting

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unaffected animals. The test takes 30 to 40 minutes for giving results compared to 2 to 3 taken in other tests, according to results of the study published in journal *Scientific Reports*. The research team included K.S.Shalini Devi, Sudhakaran Raja and Annamalai Senthil Kumar.

The test can be helpful to the aquaculture industry, particularly 'crustacean' farmers. The aquaculture industry has seen a rapid growth in the past 10 to 15 years. While most of the finfish is consumed by domestic market, shrimps and prawns are exported. The economic and employment benefits for suppliers in India and other Asian countries are tremendous. The timely detection of the virus can go a long way in enabling farmers to take preventive measures in order to save the other stock from being infected. (India Science Wire)