



Rapid diagnostic test of red sea bream iridoviral disease (rsivd) and viral neuro necrosis(vnn) in Grouper epinephelus sp. Based on serological Co-agglutination and molecular study

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Abstract:

Red sea bream iridoviral disease (RSIVD) and viral nervous necrosis infections are known as a contagious disease in the marine aquaculture commodities mainly on grouper (*Epinephelus* sp.) cause a highly mortality rate. Symptoms of disease were weak, darker skin and swollen spleen of fish. Aim of study was to create and apply a rapid diagnostic test and supported by a molecular analysis. Field trials on mass mortality outbreaks were identified in islands of Batam, Tanjungpinang, West Java, Lombok, and Bali Indonesia. Serum anti RSIV and VNN were obtained by immunizing of the vaccine RSIV and VNN intraperitoneally with graded doses per week was 0.5 ml, 1 ml, 2 ml and 3 ml, to boost antibody titers. In the fifth week, serum was harvested via the auricular vein, serum was purified to obtain immunoglobulin G (IgG) then was coupling with protein A of *Staphylococcus aureus* at the same volume (kit co-agglutination RSIVD). Field samples of spleen were taken from the normal fish and suspected fish then crushed and suspended with PBS pH 7.2, and centrifuged at 8.000 rpm for 15 minutes. Fifty microliter of co-agglutination RSIVD and VNN kits and 50 µl of spleen supernatant were reacted on the sterile glass object. The results showed sandy agglutination after 10 minutes for positive infected spleen for RSIVD and brain for VNN. There was no agglutination in the samples of healthy fish (negative) as well as in control with PBS (negative). Confirmation testing by polymerase chain reaction (PCR) using primer of RSIVD forward 1-F (5'-CTC-AAA-CAC-TCT-GGC-TCA-TC-3') and reverse 1-R (5'-GCA-CCA-ACA-CAT-CTC-CTA-TC-3') had 570 bp of band, and primer of VNN forward 2 (5'-CGT-GTC-AGT-CAT-GTG-TCG-CT-3') and reverse 3 (5'-CGA-GTC-AAC-ACG-GGT-GAA-Ga-3'). Testing with co-agglutination



RSIVD and VNN kits had the advantages such as cheap, fast and an accurate in diagnosing the disease red bream iridoviral (RSIVD). Results of immunohistochemistry showed the antigen-antibody stains in all organs of grouper including gonades. The results proved that transmission of virus could be vertical from the breeder fish to the younger fish, and also horizontal transmission.

Biography:

Kurniasih is the professor of oceanography department and faculty of science from Gadjah Mada University in Indonesia

Recent Publications:

1. Optimizing application of biochar, compost and nitrogen fertilizer in soybean intercropping with kayu putih (*Melaleuca cajuputi*).
2. Influence of furrow with organic material and Chromolaena odorata compost on upland rice productivity in an agroforestry system with *Melaleuca cajuputi*
3. GGE-Biplot Analysis for the Suitability of Soybean Varieties in an Agroforestry System based on Kayu Putih (*Melaleuca cajuputi*) Stands

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