Document details

‹ Back to results | 1 of 1

Aquaculture International
Volume 27, Issue 5, 1 October 2019, Pages 1565-1577

A review of betanodavirus vaccination as preventive strategy to viral nervous necrosis (VNN) disease in grouper (Review)

Hazreen-Nita, M.[a,b], Azila, A.[c], Mukai, Y.[a], Firdaus-Nawi, M.[a], Nur-Nazifah, M.[a]

[a]Kulliyyah of Science, International Islamic University Malaysia, Bandar Indera Mahkota, Kuantan, Pahang 25200, Malaysia
[b]Faculty of Agro-Based Industry, University Malaysia Kelantan, Jeli Campus, Jeli, Kelantan 17600, Malaysia
[c]National Fish Health Research Centre, Batu Maung, Penang, 11960, Malaysia

Abstract

View references (46)

Viral disease outbreak is the most serious issue as it may cause severe losses to farmers as well as to economy in the marine industry worldwide. Among fish viral diseases, betanodavirus is a significant pathogen that causes viral nervous necrosis (VNN) and can result in mass mortalities to fish culture especially at larval stages. In Malaysia, betanodavirus had been isolated from groupers, seabass, red snappers, and golden pomfret. Recently, inconsistent seed supply is observed due to viral infection at larval stages which limits the growth of fish culture. Therefore, seeds of grouper are often imported from neighboring countries such as Indonesia by farmers. Strict importation regulations should be practiced as the importation of fish seeds may become a possible source of the virus entering the country. It is a challenge to track farmers who are affected by the disease in order to segregate or eliminate the VNN carrier spawners. This scenario had resulted in incomplete destruction of diseased fish population and leads to re-occurrence of the disease at the early stage of grouper. This situation warrants immediate attention to develop promising prevention strategies such as a new vaccine which is very important and could work effectively with better farm management approaches. This article discusses the occurrence of viral nervous necrosis (VNN) disease in Malaysia and reviews possible preventive measures via vaccination to combat the disease. © 2019, Springer Nature Switzerland AG.

SciVal Topic Prominence

Topic: Nodaviridae | Betanodavirus | Red-spotted grouper

Prominence percentile: 84.841

Author keywords

Betanodavirus | Fish disease | Grouper | Vaccination | Viral nervous necrosis (VNN)

Indexed keywords

GEOBASE Subject Index: aquaculture | disease spread | fish | literature review | perciform | vaccination | viral disease

Regional Index: Malaysia

Species Index: Betanodavirus | Epinephelinae | Lutjanidae

ISSN: 09676120
DOI: 10.1007/s10499-019-00410-5
Source Type: Journal
Document Type: Review
Original language: English
Publisher: Springer International Publishing

References (46)

View in search results format >

All | Export | Print | E-mail | Save to PDF | Create bibliography

1 (2016) *Annual Fisheries Statistic*. Cited 3 times.
Department of Fisheries, Ministry of Agriculture & Agro-Based Industry, Malaysia

2 Arimoto, M., Mizuta, Y., Mushiake, K., Nakai, T., Muroge, K., Furusawa, I.
Detection of Striped Jack Nervous Necrosis Virus(SJNNV) by Enzyme-Linked Immunosorbent Assay(ELISA) (Open Access)

(1992) *Fish Pathology*, 27 (4), pp. 191-195. Cited 114 times.
doi: 10.3147/jsfp.27.191

View at Publisher

3 Ahmad, A.K., Amal, M.N.A., Saad, M.Z., Murni, M., Abdullah, A., Mustafa, S., Yusof, N.H.N.
Prevalence, Risk Factors and Transmission of Nervous Necrosis Virus in A Hatchery Producing Hybrid Grouper (Epinephelus lanceolatus × Epinephelus fuscoguttatus) Fry

(2019) *Pertanika Journal of Tropical Agricultural Science*, 42 (1), pp. 125-138.
http://www.pertanika.upm.edu.my/Pertanika%20PAPERS/JTAS%20Vol.%2042%20(1)%20Feb.%202019/09%20JTAS-1488-2018.pdf

4 Bondad-Reantaso, M.G., Subasinghe, R.P., Arthur, J.R., Ogawa, K., Chinabut, S., Adlard, R., Tan, Z., (...), Shariff, M.
Disease and health management in Asian aquaculture

(2005) *Veterinary Parasitology*, 132 (3-4 SPEC. ISS.), pp. 249-272. Cited 302 times.
www.elsevier.com/locate/vetpar
doi: 10.1016/j.vetpar.2005.07.005

View at Publisher

5 Chi, S.C., Lo, C.F., Kou, G.H., Chang, P.S., Peng, S.E., Chen, S.N.
Mass mortalities associated with viral nervous necrosis (VNN) disease in two species of hatchery-reared grouper, Epinephelus fuscogutatus and Epinephelus akaara (Temminck and Schlegel)

(1997) *Journal of Fish Diseases*, 20 (3), pp. 185-193. Cited 90 times.
http://www.blackwellpublishing.com/jfd
doi: 10.1046/j.1365-2761.1997.00291.x

View at Publisher