

## Documents

Mohamad, N.<sup>a</sup>, Amal, M.N.A.<sup>a e</sup>, Yasin, I.S.M.<sup>b e</sup>, Zamri Saad, M.<sup>c e</sup>, Nasruddin, N.S.<sup>d</sup>, Al-saari, N.<sup>f</sup>, Mino, S.<sup>g</sup>, Sawabe, T.<sup>g</sup>

**Vibriosis in cultured marine fishes: a review**  
(2019) *Aquaculture*, 512, art. no. 734289, .

**DOI:** 10.1016/j.aquaculture.2019.734289

<sup>a</sup> Department of Biology, Faculty of Science, Universiti Putra Malaysia, Serdang, Selangor 43400 UPM, Malaysia

<sup>b</sup> Department of Aquaculture, Faculty of Agriculture, Universiti Putra Malaysia, Serdang, Selangor 43400 UPM, Malaysia

<sup>c</sup> Department of Veterinary Laboratory Diagnosis, Faculty of Veterinary Medicine, Universiti Putra Malaysia, Serdang, Selangor 43400 UPM, Malaysia

<sup>d</sup> Centre for Craniofacial Diagnostics and Biosciences, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, Kuala Lumpur, 50300, Malaysia

<sup>e</sup> Laboratory of Marine Biotechnology, Institute of Bioscience, Universiti Putra Malaysia, UPM, Serdang, Selangor 43400, Malaysia

<sup>f</sup> International Institute for Halal Research and Training, International Islamic University Malaysia, Gombak, Selangor 53100, Malaysia

<sup>g</sup> Faculty of Fisheries Sciences, Hokkaido University, 3-1-1 Minato-cho, Hakodate, 041-8611, Japan

**Abstract**

For more than a century, vibriosis affects various species of economically important cultured marine fishes around the globe. The knowledge of this bacterial disease on many species of cultured fish is still lacking, but progressing. This review focuses on updated fundamental knowledge related to vibriosis including the history, taxonomy, and various epidemiological aspects such as socio-economy, clinical signs, pathological changes, diagnosis, pathogenesis, transmission, risk factors and control measures of vibriosis. This review revealed a rising prevalence of vibriosis in aquaculture, concomitant with the rapid development of this industry worldwide. Yet, information on *Vibrio* infection in cultured fish, particularly on the *Vibrio* of non-medical importance, the influence of their virulence toxins to host cells, effects of global warming and the socio-economic impacts are still scarce, and need more profound studies. Moreover, comprehensive epidemiological information on vibriosis are quite limited in many Asian countries with tropical climate, limiting the progression in control and prevention aspects of the disease. © 2019 Elsevier B.V.

**Author Keywords**

Aquaculture; Fish pathogen; Health management; Marine finfish; Vibriosis

**Index Keywords**

aquaculture, bacterial disease, bacterium, disease prevalence, fish, global warming, infectivity, pathogen, socioeconomic impact, virulence; Asia; Bacteria (microorganisms), Pisces, *Vibrio*

**Funding details**

Ministry of Higher Education, MalaysiaMOHE

**Correspondence Address**

Amal M.N.A.; Department of Biology, Faculty of Science, Universiti Putra MalaysiaMalaysia; email: mnamal@upm.edu.my

**Publisher:** Elsevier B.V.

**ISSN:** 00448486

**CODEN:** AQCLA

**Language of Original Document:** English

**Abbreviated Source Title:** *Aquaculture*

2-s2.0-85069717737

**Document Type:** Review

**Publication Stage:** Final

**Source:** Scopus

---

**ELSEVIER**

Copyright © 2019 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

 **RELX** Group™