

Vibriosis in Fish: A Review on Disease Development and Prevention

By: Ina-Salwany, MY (Ina-Salwany, M. Y.)^[1,2]; Al-saari, N (Al-saari, Nurhidayu)^[2,3]; Mohamad, A (Mohamad, Aslah)^[2]; Mursidi, FA (Mursidi, Fathin-Amirah)^[1]; Mohd-Aris, A (Mohd-Aris, Aslizah)^[2,4]; Amal, MNA (Amal, M. N. A.)^[2,5]; Kasai, H (Kasai, Hisae)^[6]; Mino, S (Mino, Sayaka)^[7]; Sawabe, T (Sawabe, Tomoo)^[7]; Zamri-Saad, M (Zamri-Saad, M.)^[2,8]

[View Web of Science ResearcherID and ORCID](#)

JOURNAL OF AQUATIC ANIMAL HEALTH

Volume: 31 Issue: 1 Pages: 3-22

DOI: 10.1002/aah.10045

Published: MAR 2019

Document Type: Review

[View Journal Impact](#)

Abstract

Current growth in aquaculture production is parallel with the increasing number of disease outbreaks, which negatively affect the production, profitability, and sustainability of the global aquaculture industry. Vibriosis is among the most common diseases leading to massive mortality of cultured shrimp, fish, and shellfish in Asia. High incidence of vibriosis can occur in hatchery and grow-out facilities, but juveniles are more susceptible to the disease. Various factors, particularly the source of fish, environmental factors (including water quality and farm management), and the virulence factors of *Vibrio*, influence the occurrence of the disease. Affected fish show weariness, with necrosis of skin and appendages, leading to body malformation, slow growth, internal organ liquefaction, blindness, muscle opacity, and mortality. A combination of control measures, particularly a disease-free source of fish, biosecurity of the farm, improved water quality, and other preventive measures (e.g., vaccination) might be able to control the infection. Although some control measures are expensive and less practical, vaccination is effective, relatively cheap, and easily implemented. In this review, the latest knowledge on the pathogenesis and control of vibriosis, including vaccination, is discussed.

Keywords

KeyWords Plus: ASIAN SEA-BASS; OUTER-MEMBRANE PROTEIN; GROUPEP EPINEPHELUS-COIOIDES; FORMALIN-INACTIVATED VACCINE; POSSIBLE PROBIOTIC TREATMENT; LARGE YELLOW CROAKER; SALMON SALMO-SALAR; LATES-CALCARIFER; AEROMONAS-HYDROPHILA; VIRULENCE FACTORS

Author Information

Reprint Address: Ina-Salwany, MY (reprint author)

+ Univ Putra Malaysia, Dept Aquaculture, Fac Agr, Serdang 43400, Selangor, Malaysia.

Reprint Address: Ina-Salwany, MY (reprint author)

+ Univ Putra Malaysia, Inst Biosci, Lab Marine Biotechnol, Serdang 43400, Selangor, Malaysia.

Addresses:

- + [1] Univ Putra Malaysia, Dept Aquaculture, Fac Agr, Serdang 43400, Selangor, Malaysia
- + [2] Univ Putra Malaysia, Inst Biosci, Lab Marine Biotechnol, Serdang 43400, Selangor, Malaysia
- + [3] Int Islamic Univ Malaysia, Int Inst Halal Res & Training, KICT Bldg,Level 3, Gombak 53100, Selangor, Malaysia
Organization-Enhanced Name(s)
International Islamic University Malaysia
- + [4] Univ Teknol MARA, Sch Biol, Dept Biol, Kampus Kuala Pilah, Kuala Pilah 72000, Negeri Sembilan, Malaysia
- + [5] Univ Putra Malaysia, Fac Sci, Dept Biol, Serdang 43400, Selangor, Malaysia
- + [6] Hokkaido Univ, Fac Fisheries Sci, Lab Fish Pathol, 3-1-1 Minato Cho, Hakodate, Hokkaido 0418611, Japan
- + [7] Hokkaido Univ, Fac Fisheries Sci, Lab Microbiol, 3-1-1 Minato Cho, Hakodate, Hokkaido 0418611, Japan
- + [8] Univ Putra Malaysia, Fac Vet Med, Dept Vet Lab Diag, Serdang 43400, Selangor, Malaysia

E-mail Addresses: salwany@upm.edu.my

Funding

Funding Agency	Grant Number
Inisiatif Putra Berkumpulan, Universiti Putra Malaysia	9484102
Ministry of Higher Education via the Higher Institution Centre of Excellence	6369100

[View funding text](#)

Publisher

WILEY, 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Journal Information

Impact Factor: Journal Citation Reports

Categories / Classification

Research Areas: Fisheries; Veterinary Sciences

Web of Science Categories: Fisheries; Veterinary Sciences

[See more data fields](#)

- EndNote Desktop
- EndNote Online
- Other File Formats
- Claim on Pubsols - track citations
- Print
- Email

Create Citation Alert

All Times Cited Counts

10 in All Databases

[See more counts](#)

228

[Cited References](#)

[View Related Records](#)

Most recently cited by:

Hirano, Takako; Okubo, Manabu; Tsuda, Hironobu; et al.
Chitin Heterodisaccharide, Released from Chitin by Chitinase and Chitin Oligosaccharide Deacetylase, Enhances the Chitin-Metabolizing Ability of *Vibrio parahaemolyticus*.
JOURNAL OF BACTERIOLOGY (2019)

Yi, Che-Chun; Liu, Chun-Hung; Chuang, Kuo-Pin; et al.
A potential probiotic *Chromobacterium aquaticum* with bacteriocin-like activity enhances the expression of indicator genes associated with nutrient metabolism, growth performance and innate immunity against pathogen infections in zebrafish (*Danio rerio*).
FISH & SHELLFISH IMMUNOLOGY (2019)

[View All](#)

Use in Web of Science

Web of Science Usage Count

21 **35**

Last 180 Days Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection - Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please suggest a correction.