



Fish Diseases

Prevention and Control Strategies

2017, Pages 81-117

Chapter 4 - Prophylactic and Prevention Methods Against Diseases in Aquaculture

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Abstract

Aquaculture is the fastest growing food industry that has increased its production annually at a rate of approximately 9.6% worldwide from 1980 to 2010. This growth is realized despite the annual loss of approximately 50% of the fish to diseases. Various factors ranging from seed quality to emergence of new fish pathogens contribute to this disease loss. Despite these agonizing conditions prevailing in aquaculture worldwide, by and large, fish farmers in major fish producing regions are left with meager and obsolete choices to control fish diseases. This chapter aims to explain the causes of diseases and various prophylactic and therapeutic methods available at present against these diseases. Essential research approaches required in future, in the area of immunoprophylactics and therapeutics are also discussed.

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[Current practices and emerging possibilities for reducing the spread of oomycete pathogens in terrestrial and aquatic production systems in the European Union](#)

2022, Fungal Biology Reviews

Citation Excerpt :

...The usefulness of pro- and prebiotics in EUS management remains understudied (Devi et al., 2019). Currently, there are no vaccines available to minimise the impact of saprolegniosis, but there are several immunostimulatory products commonly used, of plant and microbial origin, to elevate the immune status of fish (Subramani and Michael, 2017). For example, Salar-bec (a vitamin premix immunostimulant) increased in vitro serum inhibition of both reproduction and growth of *A. invadans* cysts (Miles et al., 2001; OIE, 2019b)....

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[Effects of Assam tea extract on growth, skin mucus, serum immunity and disease resistance of Nile tilapia \(*Oreochromis niloticus*\) against *Streptococcus agalactiae*](#)

2019, Fish and Shellfish Immunology

Citation Excerpt :

...As a natural consequence, alternatives to such antibiotics and chemotherapeutics have been sought out by several researchers within the scientific community. The use of medicinal plants is one of promising means for the prevention and/or treatment of such diseases in aquacultural farming [7,8]. Due to their cost-effectiveness, biodegradability, and safety; medicinal plants have been widely applied in the aquaculture industry in an attempt to control such diseases....

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[Polysaccharide fraction from the Indian mistletoe, *Dendrophthoe falcata* \(L.f.\) Ettingsh enhances innate immunity and disease resistance in *Oreochromis niloticus* \(Linn.\)](#)

2019, Fish and Shellfish Immunology


Citation Excerpt :

...Of these methods, antibiotics may have negative impact on the, fish's health, also its consumers' health and natural environment. Similarly, vaccines are putatively expensive and protect fish against a particular disease [4]. The alternative approach is the use of plant-derived immunostimulants which in the current scenario, is considered to be the most promising immunoprophylactic method as they are biodegradable, biocompatible (less side effects), effective in protecting against wide range of diseases and cost-effective [5]...


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[Insight Into Whole Genome of Aeromonas veronii Isolated From Freshwater Fish by Resistome Analysis Reveal Extensively Antibiotic Resistant Traits](#) 

2021, Frontiers in Microbiology

[Stimulation of non-specific immunity, gene expression, and disease resistance in Nile Tilapia, Oreochromis niloticus \(Linnaeus, 1758\), by the methanolic extract of the marine macroalga, Caulerpa scalpelliformis](#) 

2019, Veterinary World

[Non-specific immunity and disease resistance are enhanced by the polysaccharide fraction of a marine chlorophycean macroalga in Oreochromis niloticus \(Linnaeus, 1758\)](#) 

2018, Journal of Applied Ichthyology



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