

Live vaccines against bacterial fish diseases: a review

ABSTRACT

Fish diseases are often caused either by bacteria, viruses, fungi, parasites, or a combination of these pathogens. Of these, bacterial fish diseases are considered to be a major problem in the aquaculture industry. Hence, the prevention of such diseases by proper vaccination is one of the integral strategies in fish health management, aimed at reducing the fish mortality rate in the aquaculture farms. Vaccination offers an effective yet low-cost solution to combat the risk of disease in fish farming. An appropriate vaccination regime to prevent bacterial diseases offers a solution against the harmful effects of antibiotic applications. This review discusses the role of live-attenuated vaccine in controlling bacterial diseases and the development of such vaccines and their vaccination strategy. The current achievements and potential applications of live-attenuated and combined vaccines are also highlighted. Vaccine development is concluded to be a demanding process, as it must satisfy the requirements of the aquaculture industry.

Keyword: Aquaculture; Attenuated vaccines; Bacterial fish diseases; Vaccination