Diseases Caused in Aquatic Environment

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Introduction

Infectious diseases are one of the greatest threats to the success of aquaculture, and packing large numbers of fish in small areas provides an environment that facilitates the onset and spread of infectious diseases [1]. In this crowded and relatively unnatural environment, fish are stressed and susceptible to illness. In addition, the aquatic environment and limited water flow promote the spread of pathogens in crowded populations. Aquaculture in Maine and elsewhere in North America and Europe considers the prevention and control of infectious diseases a top priority for their own benefit [2]. Unlike treating human and other animal diseases, few medicines are available to treat fish diseases. Due to environmental concerns, only two drugs have been approved for use in US fish populations. Disease management in aquaculture and fish farms relies on a combination of good management practices, the use of several approved over the counter drugs and vaccines, and infection prevention [3].

Description

The dynamics of disease development, severity, and spread within and between populations of fish are similar to those in human and terrestrial populations. However, an additional factor in fish populations is the aquatic environment, which can promote the spread of pathogens. The disease is transmitted from one individual to another in two ways: vertical or horizontal transmission [4]. In vertical transmission, the pathogen is transmitted to the offspring via sex cells directed from one or both parents to the offspring. Horizontal transmission includes the transmission of pathogens from one individual to another via direct contact, air or water [1]. The onset and severity of illness after exposure to a pathogen involves a complex network of variables, including: B. Pathogenicity of the pathogen (ability to cause disease); immunological, genetic and physiological status of the host; emphasis; and population density. Different strains of the same pathogen can have significantly different abilities to cause disease. That is, some strains can infect the host without causing clinical disease [1]. In addition, individual animals have different susceptibility to disease. Some individuals may be more resistant to the disease, either because of genetic composition or as a result of previous exposure and immune development. Conversely, poor nutrition, stress, or many other factors can make an individual susceptible to illness. Population density is a particularly important factor in the spread of fish diseases [4]. Disease can spread more easily within dense populations simply because infected fish have more opportunities to associate with uninfected fish. The actual evolution of the disease within the fish population and the associated severity of the disease are affected by the complex interactions of these variables associated with the pathogen, host, and environment. Most production ponds are outdoor soil (lined with soil or clay) and are heavily loaded with organic matter over time as a result of feeding, fish growth, waste accumulation, and other related processes Increase [3]. For protests that infect gills and fish skin, see Protests that infect gills and skin. The information presented here is relevant to fish raised in intensively farmed systems. As mentioned earlier, trichodinide is an indicator of poor hygiene and/or overcrowding. These organisms are common in farmed fish. It is especially found in systems with high breeding densities, high organic matter loads, and minimal (or no) in-line hygiene treatments (such as UV and ozone). If the fish are badly infested, losses will occur. In these cases, chemical treatment alone may not be sufficient for complete control. Administrative issues that contribute to infection should be included in the treatment plan [2].

Conclusion

Organic matter reduction is essential to the effectiveness of the treatment, as it can be protected from chemical treatment "hidden" by organic debris. Ambiphyra and Apiosoma are sessile ciliates found on fish skin, gills and fins. These are common in pond fish and prefer an organically rich environment. They are generally not found in saltwater fish. Often, these parasites cause serious epithelial damage, make fish susceptible to optimistic environmental pathogens, and impair respiratory and osmoregulation. Affected fish show

blinking of the affected epithelial surface, loss of appetite, loss of condition and hyperplasia. Heavy invasion of the gills is especially harmful.

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Conflict of interest

The author declares there is no conflict of interest in publishing this article.

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