

Perspective

About bacterial fish disease

Rebecca Merritt Bichel*

Department of Aqua Science, Land-grant University Pennsylvania, Penn State, USA

Received: 07-Jan-2022, Manuscript No. AIAFM-22-58324; Editor assigned: 10-Jan-2022, Pre QC No. AIAFM-22-58324 (PQ); Reviewed: 25-Jan-2022, QC No. AIAFM-22-58324; Revised: 08-Mar-2022, Manuscript No. AIAFM-22-58324 (R); Published: 15-Mar-2022.

INTRODUCTION

The prime requirement to the development of fish aquaculture is bacterial infections. Bacterial-caused granulomatous illnesses cause fish culture losses due to high mortality rates and delayed growth. *Streptococcus spp.*, *Mycobacterium spp.*, *Nocardia spp.*, *Francisella spp.*, and *Staphylococcus spp.* have all been linked to the development of granulomatous processes. The formation of inflammatory cells and the immunological response of fish are still being studied by scientists. Non-specific humeral factors, including as transferrin and ant proteases, as well as lytic effectors such as lysozyme and antimicrobial peptides, form the initial line of defence in fish, linking with non-specific phagocyte responses. Fish produce antibody ingredients for a specialized humeral defence preventing bacterial adherence, as well as mobilization of non-phagocytic host cells and counteracting bacterial toxins, if the first line is breached. Bacteria that cause granulomatous disorders, on the other side, might be persistent pathogens that cause chronic diseases and even require immune system components to exist. To learn more about fish immunology and develop strategies to fight granulomatous disorders, researchers must first understand the infectious process that leads to granulomatosis and how the host's immune system responds to granulomatous diseases. Aquaculture contributes significantly to household food security, as natural fish harvest from lakes, dams, and oceans is insufficient to supply Tanzania's present need for animal protein.

For appropriate pond management techniques and sustaining fish health by fish farmers, sustainable aquaculture necessitates well-established regulatory structures and extension services. In Tanzania, fish farming is widely performed, ranging from tiny to large-scale ponds, and these farming systems are transitioning from vast routine operations to intense farming. However, the sector is still mostly run on a subsistence basis, with limited output. Infections with bacteria have been reported in these fish farms, and they will continue to be a source of concern in the future.

DESCRIPTION

The current challenges, successes, and prospects for a sustainable

aquaculture industry in Tanzania are highlighted in this review, which include: limited extension services, which reflect farmers' limited knowledge of pond management practices; a lack of funds to conduct fish disease research or implement a surveillance system; a lack of expertise in fish disease diagnosis and treatment; and poor management options.

We recommend that extension services be strengthened in the future, together with on-farm knowledge transfer, to reduce disease outbreaks and optimize output. Pond management methods and fish disease management should be prioritized, as should the establishment of a well-functioning fish disease surveillance system and the strengthening of collaborative aquaculture research between government research institutions and universities. It is also proposed that small cooperative fish farmer organizations be formed within the Aquaculture Association of Tanzania (AAT) for easy access to information. Aquaculture contributes significantly to household food security, as natural fish harvest from lakes, dams, and oceans is insufficient to supply Tanzania's present need for animal protein. For appropriate pond management techniques and sustaining fish health by fish farmers, sustainable aquaculture necessitates well-established regulatory structures and extension services. In Tanzania, fish farming is widely performed, ranging from small-scale ponds to large-scale ponds, and these farming systems are evolving from extensive routine operations to intense farming.

CONCLUSION

However, the sector is still mostly run on a subsistence basis, with limited output. Infections with bacteria have been reported in these fish farms, and they will continue to be a source of concern in the future. The current challenges, successes, and prospects for a sustainable aquaculture industry in Tanzania are highlighted in this review, which include: limited extension services, which reflect farmers' limited knowledge of pond management practices; a lack of funds to conduct fish disease research or implement a surveillance system; a lack of expertise in fish disease diagnosis and treatment; and poor management options.

*Corresponding author. Rebecca Merritt Bichel, E-mail: rbichel123@gmail.com.