Fish silage as a dietary ingredient preliminary growth findings and nutritional pathology

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Received: *29-June-2022; Manuscript No: JAEFR-22-70488;* ***Editor assigned:*** *01-July-2022; Pre QC No: JAEFR-22-70488 (PQ);* ***Reviewed:*** *15-July-2022; QC No: JAEFR-22-70488;* ***Revised:*** *20-July-2022; Manuscript No: JAEFR-22-70488 (R);* ***Published:*** *27-July-2022;* ***DOI:*** *10.3153/JAEFR.22.8.002*

Introduction

Fish Pathology is a definitive and classic book on this subject, covering all important aspects of fish pathology in detail. One of the main limitations in aquaculture production is the susceptibility of farmed fish to diseases due to external factors such as breeding practices, pollution, climate change, and changes in the dynamics of product trading in the industry [1]. However, they cause enormous economic losses to the aquaculture industry, so it is important to better understand and characterize the parties involved in the process of disease outbreaks. High-throughput technologies such as proteomics have become important characterization tools, especially in pathogen identification and pathogenic mechanisms associated with host-pathogen interactions in disease research and diagnosis useful in controlling, preventing and treating diseases in farmed fish. The important role of proteomics has also been maximized by the pathogenic process and the overall approach to understanding the fish's response to external factors such as stress [2]. Due to the rapid increase in the world population, the demand for animal protein consumed by humans is increasing. Aquaculture is becoming an increasingly important source of protein for human consumption as it is an industry that can feed a rapidly growing population and provide solutions to reduce poverty in many countries [3]. To achieve this, the scale of aquaculture production and the range of species cultivated have increased dramatically over the last two decades.

Description

Live production always carries the risk of loss due to infections, as farming practices in aquaculture make farmed fish more susceptible to infections with a variety of bacteria, viruses, parasites and fungi than wild fish [4]. Also, trends towards high-density production systems, ecosystem imbalances associated with pollution and climate change, and the expected increase in international trade in aquatic products and their derivatives are interactions between organisms and infectious agents [5]. This affects pathogen replication and proliferation rates, widens the geographic distribution of pathogens, and increases the number of species affected by the outbreak of the disease [3]. The amount of data from various sources and the increasing frequency and severity of reported marine diseases require the implementation of new diagnostic tools for faster and more effective diagnostics. Therefore, some scientific advances in aquatic health continue to close the gap with veterinary medicine, and new optical, analytical chemistry, molecular biology, and omics techniques are becoming a reality in the aquatic agriculture industry. It brings a lot of benefits [2]. Proteomics technology is one of these new tools and one of the most interesting approaches to health care, epidemiology and fish disease research. Proteomics refers to a methodology involved in the study of the total complement of proteins expressed in a particular state of an organism or cell population [5]. Proteomes, or complete protein complements of the genome, are highly structured, in which proteins are physically or functionally related to other proteins or biomolecules to perform cellular functions in specific ways, temporally and spatially [1]. It is a unit that has been made. Mass spectrometry based high-throughput proteomics methods can measure multiple properties such as abundance of thousands of proteins, tissue distribution, intracellular localization, post-translational modifications, and protein-protein interactions [4]. Therefore, a proteomics-based approach provides unique insights into fish cell regulation during disease progression in response to pathogens, enabling rapid and sensitive detection and identification of pathogens.

Conclusion

Fish diseases are caused by a wide range of infectious organisms, including viruses, bacteria, fungi, unicellular and multicellular parasites. Bacteria are responsible for

most of the infectious diseases diagnosed in captive fish, and many act as secondary opportunistic invaders that prey on sick animals by overwhelming the natural host defence response. Opportunistic bacteria are widespread in the aquatic environment and pose a threat every time a fish is exposed to a stressful event. However, those detrimental effects rarely persist and usually stop when the original stress event is removed. Appropriate application of the quarantine program is E. It is important for controlling diseases of many fish, including ictaluri. E. ictaluri has historically been considered an essential pathogen and does not persist in the environment, but has been shown to survive up to 90 days in mud and water outside the catfish host. Zebra fish and E. ictaluri are best kept at similar water temperatures, so care must be taken to disinfect the equipment during use and during outbreaks. In addition, outbreaks of E. ictaluri in research zebra fish colonies are associated with imported pet shop zebrafish, the importance of procuring fish from reliable sources and regular quarantine procedures.

Acknowledgement

None

Conflict of Interest

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

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