E ective management of sh pathogens relies on accurate detection and diagnosis. Various methods, including molecular techniques like Polymerase Chain Reaction (PCR), loop-mediated isothermal ampli cation (LAMP), and serological assays, enable rapid and sensitive detection of pathogens. Additionally, histopathological examination, microbial culture, and metagenomic sequencing provide valuable insights into disease etiology and epidemiology [4].

Investigating Pat

Abstract

The health of sh populations is essential for the stability of aquatic ecosystems and the sustainability of sheries and aquaculture industries. However, numerous pathogens pose signi cant threats to sh populations worldwide, leading to economic losses and ecological disruptions. This abstract provides an overview of the complex landscape of pathogens a ecting sh and explores the importance of investigation, detection, and management strategies. Common pathogens, including bacteria, viruses, fungi, parasites, and environmental stressors, are discussed, along with their associated diseases and symptoms. Methods for investigating and detecting sh pathogens, such as molecular techniques, serological assays, and histopathological examination, are highlighted. Challenges, including antibiotic resistance, global trade, climate change, and emerging pathogens, are identi ed, emphasizing the need for integrated management strategies. Collaboration between researchers, veterinarians, industry stakeholders, and policymakers is essential for implementing e ective measures to safeguard sh health and ensure the long-term viability of sh populations in a changing environment.

C

Pathogens a ecting sh populations exhibit intricate transmission dynamics in uenced by various factors, including environmental