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for fish Fungal Diseases -- 12. Disease Diagnosis and Control in Marine Fish Aquaculture -- 13. Molecular Techniques in Diagnosis of Fish Parasitic Infection -- 14. Hematological Techniques for Diagnosis of Fish Diseases -- 15. The Challenges of PCR Amplification in Disease Diagnosis -- 16. Histological Techniques in Fish Disease Diagnosis -- 17. Sensing Techniques for Microbial Pathogens -- 18. Hormonal regulation and disorder during fish disease -- 19. Applications of Monoclonal Antibodies for Detection of Fish Pathogens -- 20. Nanotherapeutics: An Approach for Fish Disease Treatment -- 21. Detection and Quantification of Tilapia Lake Virus (TiLV) and Tilapia Parvovirus (TiPV) by Real-Time PCR -- 22. Role of Artificial Intelligence in Fish Disease Modeling and Prognosis -- 23. Introduction to Microplastics: A Global Perspective of an Alarming Contaminant in the Aquatic Ecosystem -- 24. Emerging Challenges of Extended-Spectrum -Lactamase Producing Pathogen: Laboratory Strategies for Detection -- 25. eDNA Approaches for Ecosystem Health Monitoring: Focus on Pathogens, Vectors, and Microbial Assessment.1. An overview of sample collection and standard necropsy procedures for fish -- 2. Biosafety, Sterilization, and Disinfection Protocols -- 3. Common Staining Techniques in Laboratories -- 4. In vitro Susceptibility Assays for Bacterial Response to Antimicrobial Agents -- 5. Quality Assurance in Laboratory Practices and Equipment Maintenance: Ensuring Precision, Reliability, and Compliance -- 6. Methodological Approaches to Assess Innate Immune Responses of Fish -- 7. Fundamentals of innate immune system of shrimp -- 8. Disease in shrimp aquaculture: diagnostic technique for sustainable management -- 9. Fish Disease Diagnosis Methods: Assessment and Possible Applications -- 10. Genomic Approaches to Validate the Pathogenicity of Bacterial Fish Pathogens -- 11. Diagnostic techniques for fish Fungal Diseases -- 12. Disease Diagnosis and Control in Marine Fish Aquaculture -- 13. Molecular Techniques in Diagnosis of Fish Parasitic Infection -- 14. Hematological Techniques for Diagnosis of Fish Diseases -- 15. The Challenges of PCR Amplification in Disease Diagnosis -- 16. Histological Techniques in Fish Disease Diagnosis -- 17. Sensing Techniques for Microbial Pathogens -- 18. Hormonal regulation and disorder during fish disease -- 19. Applications of Monoclonal Antibodies for Detection of Fish Pathogens -- 20. Nanotherapeutics: An Approach for Fish Disease Treatment -- 21. Detection and Quantification of Tilapia Lake Virus (TiLV) and Tilapia Parvovirus (TiPV) by Real-Time PCR -- 22. Role of Artificial Intelligence in Fish Disease Modeling and Prognosis -- 23. Introduction to Microplastics: A Global Perspective of an Alarming Contaminant in the Aquatic Ecosystem -- 24. Emerging Challenges of Extended-Spectrum -Lactamase Producing Pathogen: Laboratory Strategies for Detection -- 25. eDNA Approaches for Ecosystem Health Monitoring: Focus on Pathogens, Vectors, and Microbial Assessment.

Sommario/riassunto

This book covers various aspects of fish health, disease identification and laboratory procedures. Each section of the book is detailed and includes practical information, step-by-step procedures and relevant illustrations and diagrams. The recent updates on fish disease diagnosis have been incorporated to address new techniques and technologies in the field. Fish disease diagnosis is primarily based on the color and characteristics in the image to target the infected area. It is an indispensable part of modern aquaculture, and rapid and real-time diagnosis is an essential part of the early and precise treatment of the diseases. As farmed fishes are affected by viruses, bacteria, parasites, metal pollution, and fishing damage, accurate disease diagnosis is crucial for effective management interventions. It often

requires a combination of clinical expertise, advanced technology, and collaboration among healthcare professionals. This book is a comprehensive guide for students, researchers and professionals involved in fish disease diagnosis. .