Challenges in Parasitic Copepod Researches

Alper Yanar
İskenderun Technical University, Faculty of Marine Sciences and Technology, Department of Marine Sciences, Hatay, Türkiye

Abstract:

Aquaculture, which supplies approximately 15% of the world's animal protein, has achieved a production volume of around 223 million tons. However, diseases in aquaculture, particularly those caused by parasitic copepods, result in significant economic losses. Consequently, numerous studies aim to address the economic impact of parasitic copepods on aquaculture. Research into these parasitic copepods is fraught with technical, ecological, and methodological challenges that complicate the study of their biology, ecology, and interactions with hosts. First of these challenges are due to the logistical difficulties associated with observing, sampling, and conducting field studies in aquatic environments. Additionally, some researchers emphasize that field and laboratory limitations in capturing copepod-host dynamics obstruct a comprehensive understanding of their ecological roles within aquatic systems. Secondly, factors such as species misidentification, preservation challenges of type materials, and reporting inaccuracies compound the taxonomic issues, further complicating studies on these parasitic organisms. Furthermore, the minute sizes and complex anatomical structures of parasitic copepods present additional difficulties in performing optical, physiological, and biochemical examinations. Addressing these multifaceted challenges is essential for advancing research and developing effective strategies to mitigate the impact of parasitic copepods on aquaculture.