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**MICROBIAL INTERACTIONS IN
AQUATIC SYSTEMS AND
ECOLOGICAL SUSTAINABILITY**

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HISTAMINE REDUCTION MEASURES IN SEAFOOD INDUSTRY – A REVIEW

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Histamine poisoning, a significant foodborne illness, caused by the contamination of food products with histamine producing bacteria possess a substantial threat to global health and food safety. Histamine poisoning in seafood industry is a serious problem, particularly in relation to scombroid fish such as tuna, mackerel, and other some pelagic fishes. Histamine poisoning occurs by the action of histidine decarboxylase enzyme on L histidine and it gets converted to histamine, which has inflammatory responses. The most common symptoms are tingling and burning sensation around the mouth, facial flushing, sweating, nausea, vomiting, headache, palpitations, dizziness and rash. The current technique used in industry to control the increase of histamine is to keep the seafoods below 5°C. The chemicals used as antimicrobial agents in the processing sector are florfenicol, penicillin, natamycin, nitrofurans, organic acids, oxolinic acid, sulfonamides etc. The increasing request for safe and sustainable food preservation techniques has led to an emergent attention in natural antimicrobials as a possible substitute to synthetic preservatives. In this review we explore the identification, isolation methods for histamine forming bacteria and the potentials of natural antimicrobials such as polyphenols, terpenes, etc. as a sustainable solution to control histamine producing bacteria and prevent histamine poisoning. The applications of natural antimicrobials in preventing histamine poisoning and ensuring the seafood safety, while also addressing the need for the further studies to heighten their use in various food/ seafood industries is also explored in this review.

Keywords: Histamine, Histamine Poisoning, Histamine producing bacteria, Histidine decarboxylase, Natural antimicrobials



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USE OF NATURAL ANTIMICROBIALS IN AQUACULTURE – A REVIEW

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This review explores the potential of plant-based antimicrobial compounds to control bacterial diseases in aquaculture, focusing on fish pathogens. The primary objective is