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Fish and Fishery Products Analysis

A Theoretical and Practical Perspective

 Springer

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This novel and informative book discusses the various aspects of seafood quality. The book is divided into 7 broad sections, each tackling a different aspect. The first section covers the general aspects relevant to the nutritional quality of the fish and the various extraction protocols for macro-/ micro-nutrients. The second section provides insights into handling and the principles of thermal and non-thermal processing techniques for commercially important fishery products. The quality standards and safety concerns in the seafood industry and consumption are discussed in this section. The freshness indices of the processed products including biochemical, microbiological and toxicological characteristics are also included. The third section discusses the physico-chemical characteristics and quality parameters of potable water/ ice. The fourth section includes the quality assessment of various toxicants related to seafood products. The fifth section deals with the specific aspects such as principle, instrument and procedures of conventional and novel analytical instruments relevant to the seafood industry. The sixth section deals with the seafood waste management including solid and liquid seafood wastes. Presently, there is a great awareness regarding environmental sustainable processing/ preservation techniques. The final chapter discusses the bioactive compounds from under-utilized marine sources showing pharmaceutical/ nutraceutical applications.

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Water is the most important component in fish processing industry and in ice-making. The contamination of water used in seafood industry (sources) will increase the pathogen load in fish posing a serious health hazard to the consumers. Hence, it is urgent to meet the basic requirements of the water/ice quality and should meet the drinking water standards. The World Health Organization (WHO) has issued guidelines for drinking water quality and has identified that very stringent standards cannot be used universally; and hence, a range of guideline values for more than 60 parameters were elaborated. The water/ice quality parameters have to be qualitatively and quantitatively analyzed and monitored regularly for each source of water supply such as at the point of collection (harbor) to the final use (until packaging). The qualified technicians are to perform the analysis. The water sampling and analysis should be certified by ISO-certified laboratories. The different sources of water used in seafood industry could be bore wells, municipal mains, water tanks, reservoirs, and harbor basin water. The contamination of bore wells and municipal mains may occur from corroded casings, sewage, etc. The bore well water needs to be tested every month. Similarly, the tanks and reservoirs need to be checked regularly for the residual chlorine levels. Periodic scrubbing may assist in preventing deposition. The municipal mains, water tanks, and reservoirs have to be tested half yearly. Harbor basin water has to be tested yearly, more accurately at the peak of the dry season and the wet season, when the chances of contamination are high.

The testing procedures include:

- (a) Physical tests
- (b) Chemical tests
- (c) Bacteriological tests