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Phosphate levels in seafood products in Portugal: Where to after two decades of quality control?

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The consumption of phosphates, particularly added inorganic phosphates may cause several health problems for the general population. Thus, it is important to know the levels of added phosphates in foodstuffs namely in seafood. In this context, this work aimed to evaluate to what extent the legislated maximum phosphates value of 5 g P_2O_5/kg (1 g P_2O_5/kg in surimi) that can be added and has been followed in the last two decades in Portugal. For this purpose the organic baseline levels of phosphates were characterized in several species of crustaceans, molluscs and fish. For the evaluation of commercial samples data was gathered from the results of quality control samples analysed during two decades at the Portuguese Institute for the Sea and Atmosphere. The natural phosphates variations obtained allowed to define limits above which it can be said that phosphates were added and to quantify them. Average phosphates contents varied between 3.5 and 6.5 g P_2O_5/kg in wild sea bream and chub mackerel, respectively. In the case of commercial samples fish fingers presented the lowest average values of total phosphates (1.3 g P_2O_5/kg) while salted and dry cod, hake and shrimp had contents higher that 10 g P_2O_5/kg in some of the products analysed. Despite these high values the majority of the analysed samples are within the allowed limits. Though commonly the content of organic phosphates has been estimated using the conversion factor of 10.6 mg P/g of protein the natural phosphates and protein variations determined in seafood showed that it is not adequate for all seafood products and thus new conversion factors were proposed.

Biography

Bárbara Teixeira is a Marine Biologist and has developed her PhD work in Chemistry at the Portuguese Institute for the Sea and Atmosphere and at the University of Aveiro, Portugal. Her research interests include seafood technology, quality control, development of analytical methodologies and upgrading and development of new seafood based products.

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