

Sodium Reduction by Means of Salt Substitutes in Selected Fish Products

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High dietary sodium intake is an important risk factor for hypertension and a public health challenge worldwide. The aim of this study was to evaluate the feasibility of reducing the sodium contents of fish products by the use of salt substitutes. Two model fish products produced without heat treatment were studied: Matjes *nordische Art* (a typical German product with 5-6% NaCl) and cold-smoked salmon (2-4% NaCl). Sodium chloride was replaced by various salt substitutes including potassium chloride, potassium lactate and commercial salt substitutes. Fish samples containing salt substitutes and the reference products containing pure sodium chloride were stored under typical conditions and analyzed periodically with regard to microbiological, physico-chemical and sensory parameters. Challenge tests were performed with *Listeria monocytogenes* and samples of Matjes *nordische Art* were subjected to a consumer test.

Commercial Matjes *nordische Art* (5% NaCl) and samples containing salt substitutes (2-3.25% NaCl) did not differ significantly ($p < 0.05$) during storage with regard to aerobic and anaerobic mesophilic counts, organoleptic properties as well as texture and color. Moreover, there were no significant differences towards the reference product in the growth potential of *Listeria monocytogenes* and consumer acceptance. Likewise, the sodium-reduced samples of cold-smoked salmon (1.5-2.25% NaCl) did not differ significantly from the reference product (3% NaCl) in most cases. One of the sodium-reduced samples was perceived as less salty by the sensory panel. Before a potential market launch of the sodium-reduced fish products, companies will have to invest in further product development in order to meet product-specific quality and safety requirements