



Supporting a future with safe, nutritious, and sustainable seafood

SEAFOOD^{TOMORROW} Final Event, 15.04.2021

Sodium reduction in seafood products and economic feasibility

Tim Nielsen, RISE Agrifood and Bioscience, Sweden

- Too high sodium intake can lead to high blood pressure.
- High blood pressure increases the risk for several serious diseases.
- The sodium consumption is above recommended levels in most countries.



- According to WHO, the two most effective lifestyle-related measures to be taken in order to improve public health is to quit smoking and to eat less sodium.



- The aim of this work was to produce two seafood products with at least 25 % sodium reduction without any negative effects on microbiological safety and sensory quality.



- Two model foods were selected, salmon pâté and smoked salmon.



Salmon pâté

- Sodium chloride was replaced by Saltwell.
- Saltwell is a natural salt made up of sodium chloride and potassium chloride.
- The sodium content in Saltwell is approximately 35 % lower than in sodium chloride.



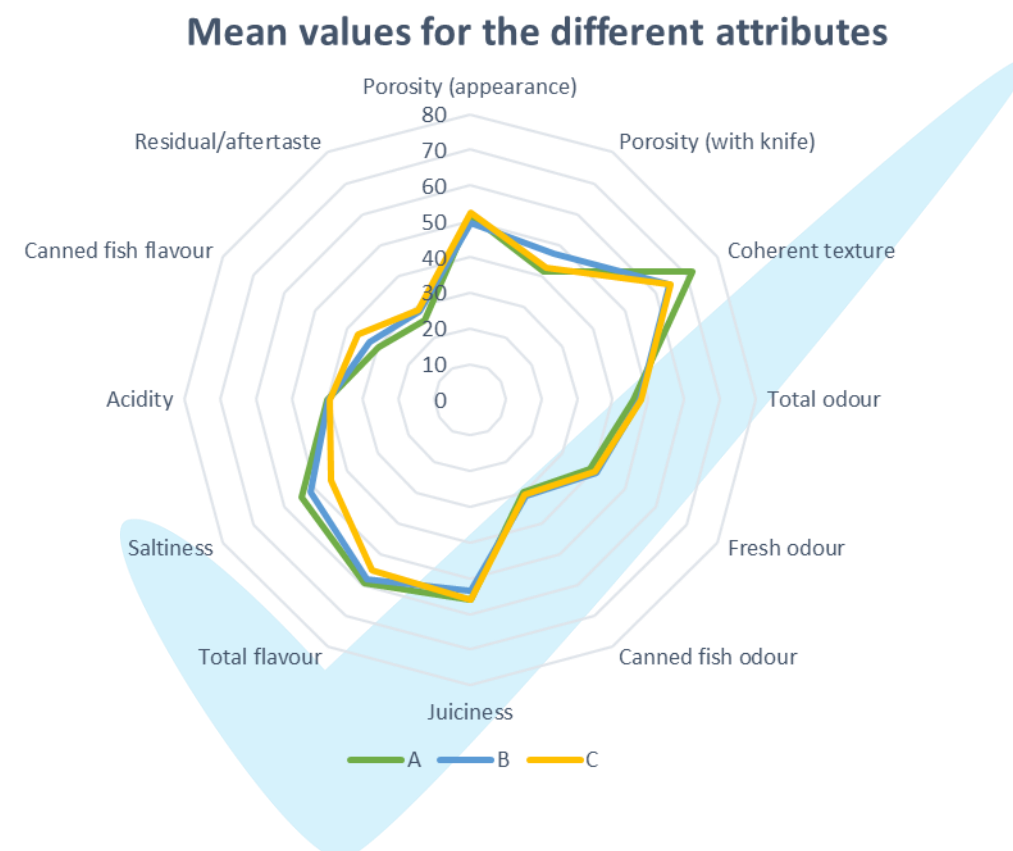
Salmon pâté

- Samples were prepared with different degrees of salt substitution.
- Microbiological, sensory and chemical analyses were carried out.



Salmon pâté

- It was possible to replace all sodium chloride with Saltwell without any effects on the microbial growth.
- There were only minor effects on the sensory properties, and only on a few of the studied attributes.



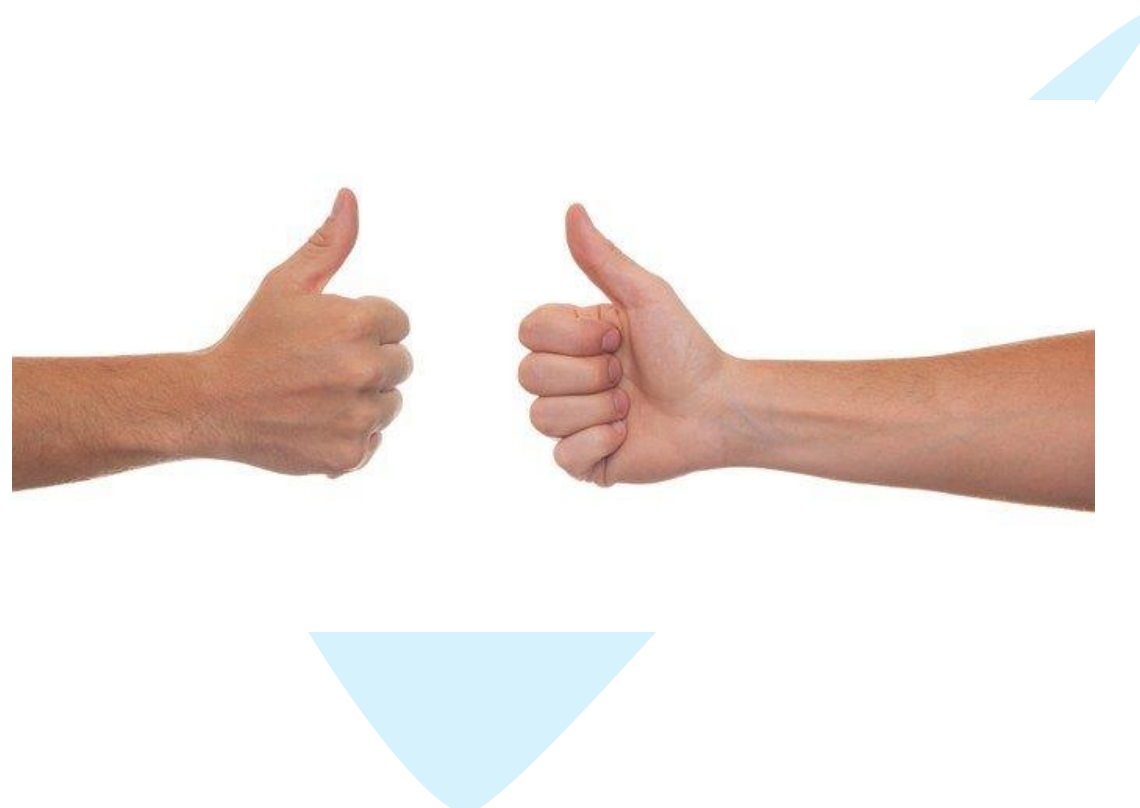
Salmon pâté

- 90 % of sodium chloride was replaced with Saltwell in salmon pâté samples produced for consumer surveys in Belgium, Hungary and Italy.
- This corresponded to a 27 % reduction of the sodium level.



Salmon pâté

- There were no statistically significant differences between the sodium-reduced sample and the reference sample regarding liking or willingness to pay.
- These results were consistent in all three countries.



Salmon pâté

- The estimated cost increase was 0.34 %.
- By increasing health awareness of customers their willingness to pay may increase.
- The product was considered to be economically feasible.
- Furthermore, reduced sodium intake will lower healthcare costs for society.



Smoked salmon

- Sodium chloride was replaced by potassium chloride.
- Samples were prepared with different degrees of salt substitution.
- Microbiological, sensory and chemical analyses were carried out.



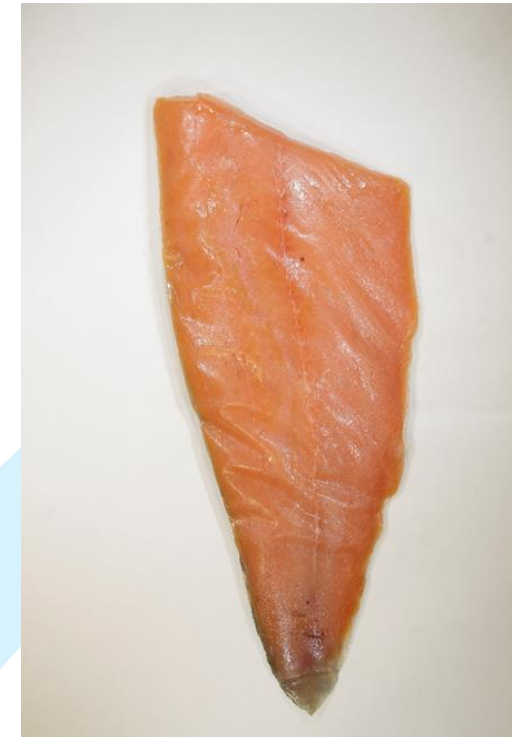
Smoked salmon

- There were no differences in microbial growth when 50 % of sodium chloride was replaced by potassium chloride.
- 28 % sodium reduction could be achieved without major changes in sensory attributes.
- Bitterness was detected at 50 % sodium reduction.



Smoked salmon

- Unfortunately, samples could not be sent to the consumer surveys due to bureaucratic trouble and absence of certificates.
- Consumer surveys in Belgium, Hungary and Italy were based on photos of the products.



Smoked salmon

- The sodium-reduced sample received a higher willingness to pay compared to the reference sample after the respondents were informed about the differences between the two products.
- These results were consistent in all three countries.



Smoked salmon

- The estimated cost increase was 0.62 %.
- By increasing health awareness of customers their willingness to pay may increase.
- The product was considered to be economically feasible.
- Furthermore, reduced sodium intake will lower healthcare costs for society.





Thank You

Contact Details:

tim.nielsen@ri.se

 @SEAFOOD_TMRW