

**Title** Scaling up parameters for shelf-life extension of Atlantic Salmon (*Salmo salar*) fillets using superchilling and modified atmosphere packaging

**Author** Katherina Fernández, Estrella Aspé and Marlene Roeckel

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#### **Abstract**

A scale-up parameter to ensure optimal conditions for packaging Atlantic Salmon (*Salmo salar*) fillets using superchilling and a modified atmosphere system for different compositions of CO<sub>2</sub>:N<sub>2</sub> gas mixture, product weight, and *g/p* ratio; utilizing an integrated mathematical model for MAP systems at equilibrium was determined: the solubility. High correlation between the measured solubility and the theoretical solubility estimated with the model ( $r^2 > 0.98$ ). Also, an experimental validation based on bacteriological, sensory and physical–chemical analysis was done. Modeling will allow develop new products estimating the appropriate design parameters to ensure the shelf-life extension and to avoid package collapse.