

Making smoked salmon more safe



Combining traditional and innovative approaches

This division has four departments: Consumers and Sensory Evaluation, Food Processing, Traceability and Marketing. Among the projects carried out by the Food Processing group are those involving treatment, processing and distribution of food products.

Scientists at Matis have been working on the development of an innovative method to eliminate harmful bacteria, such as *Listeria spp.*, from cold smoked salmon as well as to reduce bacterial load, hence increasing the quality and safety of this valuable product.

Salmon

Much of salmon is sold raw, i.e. either smoked or “graved”. The consumption of raw foods can involve a risk of food-borne diseases, such as listeriosis in the case of raw salmon, due to contamination of *Listeria monocytogenes*.

The main object of a recent Matis research was to study the effects of high pressure processing (400-900 MPa) on the survival of *Listeria monocytogenes* and the characteristics (microstructure, texture and colour) of cold smoked salmon when it was processed for 10, 20, 30 and 60 seconds. The changes in counts of total aerobic bacteria, lactic acid bacteria and *Bacillus* spores were also studied.

A study at Matis

In a report from Matis titled “Effect of high pressure processing in reducing *Listeria spp.*, and on the textural and microstructural properties of cold smoked salmon (CSS)”, (Report 30-07), scientists at Matis concluded that the combination of high pressure and short time treatment is very effective to improve the quality and safety of cold smoked salmon. They also came to the conclusion that because of the changes in the visual appearance and texture, further studies were necessary. This new development is promising to meet require-

ments for prolonged shelf life of ready-to-eat cold smoked salmon with high microbiological quality and safety.

Important result

This study is of high industrial relevance because it combines a traditional mild process an innovative approach of using high pressure processing for short time (seconds) to reduce the number of *Listeria* in cold smoked salmon and thereby extended the shelf life of this valuable product.

