FRESHLABEL

Integrated approach to enable traceability of the cooling chain of fresh and frozen meat and fish products by means of tailor made Time/Temperature Indicators (TTI)

The Challenge

The safety of chilled and frozen fish and meat products is of increasing concern for the general public, non-governmental organisations, professional associations, international trading partners and trade organisations. In order to ensure the safety of food, it is necessary to consider all aspects of the food production chain as a continuum from and including primary production and the production of animal feed up to and including sale or supply of food to the consumer, since each element may have a potential impact on food safety. The freshness or the spoilage of fresh, chilled meat and fish products is generally a function of temperature conditions and fluctuations during transport and storage.

EU Regulation 178/2002/EEC on General Food Law (enforced since 1 January 2005) requires traceability of a food, feed, food-producing animal or substance intended to be incorporated into a food or feed be established through all stages of production, processing and distribution.

Therefore the development of a dedicated tool to monitor, record and quantify a cumulative degree of degradation of these chilled and frozen products associated with disruptions to the cold-chain is of considerable importance. This would have the potential to increase confidence in the cold-chain and would be of interest to all involved in food production, processing, trade, logistics/distribution and ultimately the consumer.

Project Objective

The primary objective of the FRESHLABEL project was to develop tailor-made Time/Temperature Indicators (TTIs) for specific fish and meat products in the European fish and meat industries. These indicators were tailored to the shelf life and optimum storage conditions of the products they were designed to monitor.

Key Points

- To encourage and provide training in the application of TTIs.
- Enabling members of the food producers, processors, traders, and the logistics/distribution industries to meet their obligations with regard to regulations on traceability.
- To increase consumer confidence in food safety.
- Provide a platform for SMEs to develop a collective solution to an individual problem of meeting obligations of ensuring traceability along the cold chain.

Aquainnova

www.eatip.eu

EATiP *Thematic Area of Relevance*

TA1: Product Quality, Consumer Safety and Health
TA2: Technology and Systems
TA3: Managing the Biological Lifecycle
TA4: Sustainable Feed Production
TA5: Integration with the Environment
TA6: Knowledge Management
TA7: Aquatic Animal Health and Welfare
TA8: Socio-Economics and Management

Key Words

Traceability, time temperature indicators, intelligent labels, consumer confidence.

Project Information

Contract number:
12371
Contract type:
SMEs-Collective research projects
Action line:
SME Horizontal research activities involving SMEs
Duration:
36 months (15/09/2005 – 14/09/2008)
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Updated: September 2010

Output Highlights

New technology
Development of intelligent labels (TTIs) which change depending on time and temperature and show the "Freshness Level" of food products. These TTIs can used in key sectors of the European meat and fish industry.
TTIs can record and display any disruptions to storage conditions and allows for monitoring the actual real time state of freshness along the product's life. These intelligent labels improve cold chain management during transport and storage, and can have a role in increasing consumer confidence.

Traceability
The application of TTIs is considered a comprehensive approach to assuring food safety and public confidence, allowing transparency of all actions connected with the logistic chain. TTIs can facilitate the implementation of the EU directive on traceability of food products with a standardised method.

Consumer confidence
The use of TTIs will increase the commercial image of chilled products and in turn increase consumer confidence in product quality and safety. Information provided by the TTIs is in a visual and readily understandable form.

The Full Report:
For a description of the research project, visit www.ttz-bremerhaven.de/321-freshlabel.html

Next Steps – Suggested Actions/Follow On

Society

- While the project did achieve its objectives there has not been a widespread uptake in the use of TTIs. A limited number of initial trails (in Portugal and Switzerland) indicate that retailers are sceptical of the use of the TTIs. It is also unknown what effect, if any, the TTIs would have on consumer confidence with regard to food safety. Therefore a further project investigating industry and consumer acceptance would help to understand the limiting factors affecting the widespread implementation of Time-Temperature Indicators.

Knowledge transfer

- Training courses on the use of TTIs and a brochure detailing their application have been produced and translated (4 translations).

Environment

- Reduced waste of food products. At present, products are considered waste once they have exceeded their estimated "shelf-life". The use of TTIs would give a more accurate indication of the true quality of a product not based on estimates. As a result there would be less waste of seafood and meat products.