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The FRISBEE Expected results

We will begin by developing a comprehensive database of the cold chain in Europe, identifying refrigeration needs and available current technologies in the food industry, and investigating consumer needs and expectations with respect to the food cold chain.

The project will develop new innovative mathematical modeling tools that combine food quality and safety together with energy, environmental and economic aspects to predict and control food quality and safety in the cold chain.

We expect FRISBEE will contribute reduce energy consumption in refrigeration process. Worldwide, refrigeration consumes 8 % of all energy and is responsible for 2.5 % of greenhouse gas emissions, therefore any reduction to those figures will be a big improvement.

FRISBEE is a Research Project for Innovation on the Food Cold Chain. The 4-year project is funded mainly through the EU's 7th Framework Programme, and has 26 partners; 13 of which are companies, 11 research institutes or universities, and 2 NGOs.

FRISBEE Partners

The international expertise and synergy of the partners enables the work to be exploited on a European level. Therefore it is expected that the European food industry and consumers will all benefit from the FRISBEE project.

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NEWS

JOIN the first European Cold Chain Database!

Join the first European food cold chain database in Europe get involved in uploading your data files and providing us name and e-mail list with potential contributors.

If you have data on product cold chain you may be contributor. You will have a privileged access to this database (by login and password) and the access to the database will be secured. When you submit your data on-line, you can mention if the data are confidential or not. The database platform allows contributors to upload their data

(excel format) and submit basic information directly on-line. Data from all stages of the cold chain (from production to consumption) are needed.

Time-temperature profiles (excel format preferred but any file is acceptable) and some basic information such as:

- Type of food product
- Packaging
- Stage (step) of the cold chain (production warehouse, transportation, retail display, consumer house, etc...)
- Geographical information

- Seasonal information (day/month/year)
- Equipment information (type/characteristics for storage and distribution equipment including heat transfer mode, air velocity, packing)
- Data collecting equipment methodology and specifications including accuracy, calibration, possible malfunction during temperature recording etc

If you are interested, go to:
<http://frisbee-wp2.Chemeng.Ntua.Gr>
www.surveymonkey.com/s/52XTZGJ

FRISBEE project launches its Quality Manual

The Project Information and Quality System (PIQS) is a project management methodology developed by PSUtec, oriented to quality and based on the Project Management Institute “Project Management Body of Knowledge” approach, as well as on ISO 10006 guidelines. It has been used in the management of several EU RTD projects, as well as industrial ones.

The methodology is supported by a project’s tracking tool, the Project Engine that combines

MS-Project and other MS-Office components. The procedures supporting the methodology are defined in a single document: the Quality Manual.

This manual will allow the Project Office (PO) and all the Partners to follow among others:

- Performance Indicators evolution
- Deliverables quality control assessment
- Management of resources
- Management of the risk

The role of the PO is to control the application of the Quality Control procedures. The deliverables quality control defines the procedures for assessing and submitting deliverables. Each deliverable will be reviewed according to its assessment level before submission to the European Commission.

A FRISBEE Intranet has also been developed for exchange of information between the Beneficiaries.

FRISBEE Communication tools

The Objectives of creating a project identity are to provide the partners of the FRISBEE project with communication framework and tools allowing them to:

- Ensure the exploitation of the project results by disseminating the main innovative research results to consumers, industry, academia and policy makers involved in the refrigeration
- and food sector.
- Raise awareness of the project to a larger public audience such as Food Industrial Associations and Energy Agencies, Consumers’ Associations and Regulations Authorities.
- Engage consumers in order to educate them on the knowledge and practices surrounding refrigeration. Share new and emerging technologies with

them allowing them to envision with us a future of better refrigeration.

The project visual identity (logo and all graphic components) as well as the following communication tools have been created by ITP nv:

- PowerPoint presentation
- Leaflet
- Poster
- Website



RESEARCH

Food quality models: Cold Chain Under a Microscope

Important efforts have been performed recently to develop mathematical models to predict quality attributes of refrigerated foods. Microbial quality, and physicochemical quality attributes are the most important studied. Temperature is one of the most important controlling factors within this context. Quality degradation kinetics has been performed most of the time under stationary temperature conditions to obtain model parameters. The main hypothesis is that microbial growth can be accurately predicted under slowly changing conditions for some particular foods, for example, *Listeria monocytogenes* in

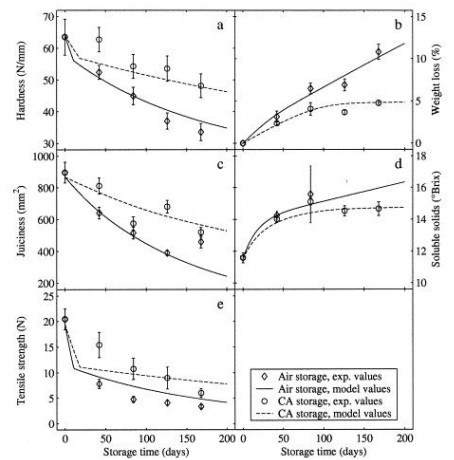
chilled and in frozen foods.

For frozen foods important modification in ice crystal size are responsible of quality degradation during storage.

For many others food products, and fruit and vegetables in particular, quality models are not available, not validated for dynamic refrigeration conditions or not implemented in a user-friendly software environment. The diagram on the right shows an example of experimental data in literature for apples.

In addition, the dependency of

quality and microbial kinetics on temperature implies that for certain foods the temperature distribution inside the food (rather than just on the surface) must be known.



FRISBEE events

Date	Event	Organised by	Location
12 April 2011	Seminar on Traditional Foods Related with GEGUP and BASEFOOD Projects	SETBIR	Konya (Turkey)
5 May 2011	The Green Economy within Food and Drink Industry sector	FEDERALIMENTARE	Soave (Italy)
22-26 May 2011	Workshop FRISBEE ICEF International Conference on Engineering and Food	NTUA	Athens (Greece)
8-10 June 2011	VI National Congress about Science and Food Technology and Trophelia-Spain 2011	UPV-FIAB	Valencia (Spain)
22-26 August 2011	Symposium FRISBEE IIR International Institute of Refrigeration Congress	IIR, VSCHT	Prague (Czech Republic)



www.frisbee-project.eu

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