



TRUEFOOD

Traditional United Europe Food

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PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Interview with EFSA

Head of Unit

EFSA Scientific Panel on Dietetic Products, Nutrition and Allergies (NDA)



Mrs. Kleiner was interviewed for TF Newsletter to speak about:

“Nutrition and Health Claims made on Foods: the role of EFSA”

Improvement of the quality characteristics of foods with emphasis to their nutritional value, and marketing of foods claiming special nutritional or physiological effects, are among the challenges that the food and

drink sector, the food authorities and the consumers have to confront with, at both national and community level. The wide range of foods and food constituents that are subject of nutrition and health claims, create new fields of competition for the food industry and further possibilities to explore innovative processing methods and new food products, while consumers are the receivers of an enormous amount of information related to food and its relation to health. The Regulation (EC) 1924/2006 on nutrition and health claims made on foods, gives already the response to this challenge, laying down harmonised EU-wide rules for the use of health or nutritional claims on foodstuffs based on nutrient profiles.

One of the key objectives of this Regulation is to ensure that any claims made about foods are clear, accurate and substantiated by scientific evidence, to enable consumers to make informed and meaningful choices about the foods they buy, and to ensure fair competition and promote innovation in the food industry. In this framework, EFSA is responsible for verifying the scientific substantiation of the submitted claims, some of which are currently in use, some of which are proposed by applicants. During its scientific assessment EFSA is taking into account the totality of the available scientific data and by weighing the evidence, subject to the specific conditions of use of the claim. In particular, attention is stretched to the extent to which:

- (a) the food/food constituent is sufficiently characterised
- (b) the claimed effect of the food/constituent is relevant for human health,
- (c) a cause and effect relationship is established between the consumption of the food/constituent and the claimed effect in

humans (such as: the strength, consistency, specificity, dose-response, and biological plausibility of the relationship),

(d) the quantity of the food/constituent and pattern of consumption required to obtain the claimed effect could reasonably be achieved as part of a balanced diet,

(e) the specific study group(s) in which the evidence was obtained is representative of the target population for which the claim is intended.

Moreover, EFSA is commenting on the proposed wording and propose a wording best reflecting the scientific evidence proposing a wording for the claim, reflecting best the scientific evidence. The decision of the final wording lies solely in the responsibilities of the Standing Committee of the European Commission and Member States.

The work of EFSA and its Scientific Panel on Dietetic products, Nutrition and Allergies (NDA) in relation to functional and health claims is to provide scientific advice to the European Commission and Member States especially on:

Setting up nutrient profiles by 2009 - the basic nutritional criteria that will govern the conditions in which claims may be made

EFSA's task is to provide scientific advice that could be used by EU policy makers in establishing nutrient profiles. EFSA's NDA Panel delivered the main elements of its scientific advice in a Scientific Opinion on nutrient profiles adopted on 31 January 2008. EFSA continued supporting the Commission in its ongoing work to establish a final nutrient profiling system, by developing a tailor-made food composition database compiled in co-operation with Member States and industry to provide a new tool to assist EU risk managers in testing different nutrient profile scenarios.

Establishing an EU-wide list of permitted health claims by 2010

The European Commission is required to draw up a “positive list” by January 2010 of the many well-established ‘function’ health claims in the EU on the basis of almost 44,000 claims submitted by the EU Member States. This type of health claim, dealt with under Article 13 of the Regulation, includes those referring for instance to growth, development and the functions of the body (such as “calcium may be good for your bones”) and to psychological and behavioural functions, but not to reduction of disease risk nor to children's development or health. EFSA is providing scientific advice to support this process. In January 2009 EFSA published the list of health claims received from the European Commission for assessment, along with the results of the screening that EFSA has performed for all the claims received according to criteria adopted by the NDA Panel. This process has identified a number of claims where further clarification or information were required before EFSA could start its evaluation. EFSA is now in progress of the evaluation of the functional claims based on generally accepted science, and it is foreseen to adopt a first set of opinions in July 2009.

Assessing whether new function health claims or claims regarding

disease risk reduction and children's development or health are scientifically reliable and justified.

New "function" health claims

In addition to those claims included in the positive list of permitted "function" health claims, applicants can submit dossiers to the Member States in order to seek an assessment from EFSA on new function claims. These are claims based on newly developed scientific evidence and/or for which protection of proprietary data is requested. These claims as referred to in Article 13(5) of the Regulation, will be transmitted to EFSA by competent authorities in Member States and will be assessed on a case-by-case basis by EFSA's NDA Panel. EFSA is required to deliver these opinions within five months. Since August 2008, EFSA adopted 7 opinions on new "function" health claims.

Claims regarding disease risk reduction and children's development or health

These include claims relating to reduction of disease risk or to children's development or health, which are dealt with under Article 14 of the Regulation. Any such claims submitted for inclusion in the EU positive list through individual applications by food business operators, have to be evaluated by EFSA and approved by the Commission and Member States. EFSA is to verify that the health claim is substantiated by scientific evidence, delivering its opinion within 5 months of validating the applications received. Since August 2008, EFSA adopted 51 opinions, covering 65 applications on claims referring to the reduction of disease risk, and children's development and health.

Providing guidance for applications on the preparation of applications for the authorisation of claims

Under this new legislative framework, it is more than evident that food business operators who wish to make a health claim, especially SME's, require guidance and assistance in preparing and presenting a well-structured application for authorisation. For this purpose and to facilitate the work of EFSA to deliver its scientific advice in an effective and consistent way, EFSA on 6 July 2007, following public consultation has provided guidance to applicants on the submission of health claims for authorisation of health claims which fall under Article 13(5) and Article 14 of the Regulation. Further guidance to applicants for the preparation and presentation of applications for Article 14 and 13(5) claims in the form of a document outlining answers to frequently asked questions (FAQ) is currently in preparation and will be published on the EFSA website. ■



NATIONAL TROPHELIA 2009 and TROPHELIA EUROPE 2010

The student food innovation award in Europe

TROPHELIA is the student prize initiative foreseen by TRUEFOOD Project, in order to encourage students to make innovation in traditional food production.

In the light of the successful edition of Trophelia Europe 2008, won by Spanish team with "Curdylemon", a natural food product - a beverage of milk and lemon juice- aimed at offering innovation, quality and nutritious properties, SPES Federations will organize the national edition of Trophelia 2009 and the winners of the national competitions will participate to TROPHELIA EUROPE, which will be held in Paris next 18 October 2010 during SIAL Exhibition. ■

For info: spes-adm@federalimentare.it or franze@federalimentare.it

Conferences and events related to food issues



27th -29th April 2009
Girona, Catalunya Spain

Novel Technologies and Food Qualities, Safety and Health

Second SAFE consortium International Congress on Food Safety

www.safefoodcongress.org



18th May 2009
Athens, Greece

Launch of the Greek Technology Platform

The official launch of the Platform will be held on 18th of May 2009 in Athens. The Greek Ministry of Development has been invited to present the greek priorities for the promotion of the research and technology.



19th - 20th May 2009
Athens, Greece

TRUEFOOD GOVERNING BOARD and GENERAL ASSEMBLY

Next TRUEFOOD Governing Board will be held on the 19 of May 2009 in Athens- Greece, at Electra Palace Hotel.

On the 20 of May 2009 will take place the 4th General Assembly meeting.

www.truefood.eu



27th -29th 2009
Licos Kuleven, Belgium
BEERONOMICS

A conference on the economics of beer and brewing.

www.beeronomics.org



15th - 17th June 2009
Quimper, France

Sporeforming Bacteria in food

Event dedicated to sporeformers involved in spoilage or food poisoning and their implication in food industries

www.spore2009.org



18th June 2009
Burgos, Spain Workshop

How to improve the food safety of my products

The University of Stuttgart and the University of Burgos in cooperation with EHEDG, organize in Burgos-Spain a Workshop which presents the objectives and novel information of PathogenCombat as well as results and activity towards food safety for the Food Industry in Spain. For info:

www.pathogencombat.com/workshop/Burgos.aspx



4th -6th November 2009
Prague, Czech Republic
RAFA 2009

4th International Symposium on Recent Advances in Food Analysis.

www.rafa2009.eu

TRUEFOOD TECHNOLOGY TRANSFER ACTIVITIES

16 months of successful cooperation with SMEs in 15 countries

One of the key aims of the TRUEFOOD project is to make new knowledge available to the European Small and Medium Enterprises (SMEs) involved in the production of traditional food by creating a closer linkage with research institutions. The task to transfer this new knowledge to SMEs is assigned to special units created within the 11 Food and Drink National Federations forming the SPES consortium, a grouping of Federations that help to promote and carry out research and training in the food sector at European level. During the first phase of the project these special units - denominated Training and Dissemination Units (TDUs) - received intensive training to make sure that each unit would be able to identify key innovations relevant for the food industry and to transfer this new knowledge to SMEs. For each TDU the project trained one or two Techno-Scientific Mediator (TSM).

By November 2007 the TDUs became fully operational and started to manage a large number of technology transfer activities targeting SMEs in the traditional food sector to support innovation in terms of products and processes. The technology transfer activities were organized at national level by the respective TDUs in cooperation with the research partners of the TRUEFOOD project. In a few countries, not covered by the SPES consortium, the work was managed directly by the research institutions. From November 2007 to January 2009 technology transfer activities were organized in 15 countries: Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Poland, Portugal, Slovenia, Spain, Turkey and UK.

The dissemination work saw a very high level of involvement among SMEs: approximately 8.500 SMEs in 15 countries were directly addressed by the project activities through meetings, round table discussions, personnel visits, direct e-mailing of INFO SHEETS containing information of projects' research results, training events, etc. The wide and decentralized approach adopted by the TSMs ensured an extensive participation of SMEs: more than 85 training events (i.e., courses, workshops, seminars, etc.) took place



targeting 2.700 participants from the traditional food sector and covering diverse areas in 15 countries (e.g., in Italy activities were implemented in Rome, Naples, Enna, Cosenza, Florence and Parma, in Turkey activities took place in Antalya, Konya, Trabzon and Ankara, etc.). Furthermore, they covered a wide range of topics focusing on research results, but also on the state of the art on food innovation issues, evolving standards and legislation at EC and national level, recent developments on health and nutritional claims. TSMs took into account the SMEs' needs and developed a training programme at national level ensuring that results are transferred, but also that SMEs' specific requests are being fulfilled.

The TRUEFOOD technology transfer activities will continue until February - March 2010. This is a unique opportunity for SMEs' and food producers to keep updated on innovations for regional and traditional specialities in Europe. You are welcome to take this chance! ■

Daniele Rossi - Project Coordinator and WP8 Leader (SPES GEIE) & Cecilia Chiapero - TRUEFOOD Training and Dissemination Manager (Agriconsulting S.p.A.).



List of selected forthcoming training events to be held in Austria, Italy, Hungary, Belgium, France and Turkey



4 May 2009:

Training course on "Nutrition labelling and innovation: elements of law, research and quality".

Language of the training: Italian. Location: Naples, ITALY. Organized by TDU FEDERALIMENTARE, contact person: Alessandro Cordelli (cordelli@federalimentare.it) and Antonietta Branni (progetti@federalimentare.it), Tel. +39065924317. ■



7 May 2009:

Training course on "Food packaging".

Language of the training: German. Location: Wien, AUSTRIA. Organized by TDU FIAA/LVA, contact person: Julian Drausinger (jd@lva.co.at), Tel. +4317122121. ■



8 May 2009:

Training course on "Marketing, sales and export for food SMEs": tools and services useful for food SMEs settled in Wallonia.

Language of the training: French. Location: Gembloux, BELGIUM. Organized by TDU FEVIA, contact person: Anne-Christine Gouder (acg@fevia.be), Tel. +3225501764. ■



28 May 2009:

Training course on "Shelf life and innovative packaging".

Language of the training: Italian. Location: Novara, ITALY. Organized by TDU FEDERALIMENTARE, contact person: Alessandro Cordelli (cordelli@federalimentare.it) and Antonietta Branni (progetti@federalimentare.it), Tel. +39065924317. ■



10 June 2009:

Training course on "Consumers' Perception of the TFP and related expectations": traditional food products perception, consumers' behaviour.

Language of the training: French / English. Location: Paris, FRANCE. Organized by TDU ANIA, contact person: Françoise Gorga (fgorga@ania.net), Tel. +33153838617. ■



16 June 2009:

Training course on TRUEFOOD recent research results.

Language of the training: Hungarian. Location: Komárom, HUNGARY. Organized by TDU FHFI, contact person: István Pauer (pauer@efosz.hu), Tel. +3613754721. ■



17 June 2009

Training course on "Health Claims and Labelling".

Language of the training: German. Location: Vienna, AUSTRIA. Organized by TDU FIAA/LVA, contact person: Julian Drausinger (jd@lva.co.at), Tel. +4317122121. ■



June 2009 (probably middle June, exact date is tbc soon)

Training course on TRUEFOOD recent research results and on consumers' perception of traditional food products.

Language of the training: Turkish. Location: Bursa, TURKEY. Organized by TDU SETBIR, contact person: Yudum Iki Yakin (yudumikiyakin@setbir.org.tr) and Elif Yuçel (elifyuçel@setbir.org.tr), Tel. +903124284774. ■



13 October 2009:

Training course on "Determination and Validation of the Best Before Date - Predictive modeling".

Language of the training: French / English. Location: Paris, FRANCE. Organized by TDU ANIA, contact person: Françoise Gorga (fgorga@ania.net), Tel. +33153838617. ■



23 October 2009:

Training course on "Food Chain Management".

Language of the training: French / English. Location: Paris, FRANCE. Organized by TDU ANIA, contact person: Françoise Gorga (fgorga@ania.net), Tel. +33153838617. ■

Information on the forthcoming training activities on food innovation issues will be published at the national WebPages of the different TDU - Training and Dissemination Units from the SPES Food & Drink Industry National Federations:

ANIA - Association Nationale des Industries Alimentaires (France)

TDU ANIA website: <http://www.ania-recherche.net/>

Federalimentare - Federazione Italiana dell'Industria Alimentare (Italy)

TDU Federalimentare website: <http://www.federalimentare.it/formazione/>

FEVIA - Fédération de l'Industrie Alimentaire (Belgium)

TDU FEVIA website: <http://www.flandersfood.com/ned/default.htm>

(for the Flemish web page)

<http://www.wagralim.be/fr/projets/formation.htm> (for the French web page)

FFDI - Federation of the Food and Drink Industries (Czech Republic)

TDU FFDI website: <http://www.foodnet.cz/slozka/?jmeno=TRUEFOOD&id=676>

FHFI - Federation of Hungarian Food Industries (Hungary)

TDU FHFI website: http://www.efosz.hu/truefood/truefood_hu?lang=hu

FI - Foedevareindustrien (Denmark)

TDU FI website: <http://fi.di.dk/Om+FI/Projekter/Truefood.htm>

TDU FHFI website: http://www.efosz.hu/truefood/truefood_hu?lang=hu

FIAA/LVA - Fachverband

Lebensmittelindustrie/Lebensmittelversuchsanstalt (Austria)

TDU FIAA/LVA website: <http://www.atp.or.at/truefood/> and

<http://www.lva.co.at/index.php>

FIAB - Federación Española de la Alimentación y Bebidas (Spain)

TDU FIAB website:

http://fiab2008.fiab.es/es/innovacion/innov_paginaMaster.asp?tipo=221

FIPA - Federação das Indústrias Portuguesas Agro-Alimentares (Portugal)

TDU FIPA website: <http://www.fipa.pt/truefood.html>

SETBIR - Union of Dairy, Meat, Food Industrialists and Manufacturers (Turkey)

TDU SETBIR website: <http://www.setbir.org.tr/ana/default.asp>

SEVT - Federation of Hellenic Food Industries (Greece)

TDU SEVT website: <http://www.sevt.gr/site/content.php>

For any additional information regarding training and dissemination activities please contact us at: training@truefood.eu

Daniele Rossi - Project Coordinator and WP8 Leader (SPES GEIE)

Cecilia Chiapero - TRUEFOOD Training and Dissemination Manager (Agriconsulting S.p.A.)

CIAA Contribution

The ETP “Food for Life” strategy to boost communication, training and technology transfer and role of techno scientific mediators (TSMs)

Foreword

As defined in EURAB 04.010-final, a European Technology Platform (ETP) is “a major mission-oriented initiative aimed at strengthening Europe’s capacity to organize and deliver innovation - strengthening the Europe-wide innovation process. It will bring together relevant stakeholders to identify the innovation challenge, develop the necessary research programme and implement the results.”

The European Technology Platform (ETP) Food for Life was created in 2005 following the principles of the Lisbon Strategy, under the auspices of the Confederation of the Food and Drink Industry of the EU (CIAA). The main goals of the ETP are to strengthen the European innovation process, improve knowledge transfer and stimulate European competitiveness across the food chain.

The ETP “Food for Life” is led by the largest manufacturing sector in the European Union in terms of turnover (910 billion Euro), value added and employment (4.3 million people), and the second leading manufacturing sector in terms of the number of companies located in the EU (308.000). The overwhelming majority of European food manufacturers are SMEs, which represent more than 96% of food and drink companies, 48.5% of our industry’s turnover and 63% of employment within our sector¹.

However, Small and Medium Companies tend to be unaware of the benefits of engaging in R&D activities. For this reason the Vision Document, the Strategic Research Agenda and the Implementation Action Plan of “Food for Life” have identified work that must be undertaken to enhance communication, training, and technology transfer ensure that SMEs can also benefit from the changes in production methods that this will imply.

Furthermore a Task Force focused on identifying and prioritizing the needs of the SME sector was set up during the development of the SRA and the IAP.

(1) CIAA Data & Trends 2008



Boosting communication, training and technology transfer: the strategy

Communication, Training and Technology Transfer are three distinct but deeply-interwoven areas of a fundamental element - maintaining a high profile for the European food industry to the benefit of this industry, its stakeholders and the society it delivers to.

The dialogue with European food industries, both large and small, must be improved to motivate and support food companies in their exploitation of research and innovation results. The provision of reliable information and use of new and appropriate communication technologies, including direct contact at the national level, will create a 'partnership of trust' between the ETP and the national platforms.

Information is one of the key benefits of a network and a successful communication system demands that initiatives be taken at company level.

These should be primarily targeted at reinforcing existing networks by expanding them, improving their quality and delivery

CIAA Contribution



and building on existing best practices drawn from all parts of the world.

Regarding training activities is fully recognized that this is a key component for the extension of knowledge as well as for its transformation into competitiveness. The overall strategic goal is to increase the competitiveness of the European food industry through a well-trained, flexible and skilled workforce. There is one clear aim to close the present 'innovation gap' between research and its application.

TSMs should become an important resource for the innovation within the European food industry. A common position concerning the skills of TSMs has to be agreed through a mutually recognized system of certification for TSMs. Existing successful bottom-up initiatives taken in specific countries and regions must be supported by trans-national links to promote best practice, to ensure that resources are targeted towards topics with the best return (for companies) on (public and private) investment

Finally, a overview on the ETP "Food for Life" strategy to improve technology transfer activities.

Technology transfer, put simply, is the conversion of existing knowledge into an appropriate format so that it can be used by industry to develop new products, processing and services that deliver economic and social benefits. Because there is a demonstrable need to improve the success rate of innovation in the European food and drink industry, credible partners to support innovation through the identification and adaptation of appropriate solutions to technical and legislative challenges are essential for its future success.

By analogy with the previous elements, Communication and Training, two complementary approaches are proposed: firstly, by encouraging companies to act as innovation-driven units as part of a collective network of innovators, and, secondly, by creating, supporting and promoting a technology transfer resource network shaped by a customer-oriented philosophy, i.e. stimulating technology transfer providers to arrange their expertise, human capital and organizational structure as do real service providers. Best practices and experience will be reviewed in an ongoing manner and an appropriate strategy adopted.

No universal formula for successful technology transfer exists.

ETP Food for Life will therefore critically investigate the successes and failures of transfer between research and industry by analysing the characteristics of initiatives that receive high or low satisfaction scores in the benchmarking data provided by the food industry, and will make recommendations on how to implement this information by providers of know how, researchers, training institutions cross the European food industry.

TSMs, qualified under the pan-European diploma, will provide a key resource to directly promote technology transfer to food companies at the national level; this will be a crucial tool for improved technology transfer activities. A flexible networking approach will be the key to improve technology transfer. ■

Roberta Mancia
Manager Food and Consumer Policy

Beate KETTLITZ
Director Food Policy, Science, and R&D



PROJECT NEWS

Work Package 1:

Determination of consumer perception, expectations, and attitudes

An internet-based consumer survey has been carried out in Work Package 1. The sample size was 4 828 respondents from six European countries; Norway, Poland, Spain, Belgium, France and Italy. One important part of this survey was to learn about European consumers' awareness and image of PDO (Products with Denomination of Origin), PGI (Products with Geographical Identities) and TSG (Traditional Specialty Guaranteed products).

Results show that the PDO-label appears as the most known label among the three. The majority of consumers that have already heard about European labels declare that the PDO-label represents 1) a signal of better quality (up to 93% of consumers); 2) a signal of distinctive character (up to 92% of consumers) and 3) highly impacts the consumer's choice (up to 84% of consumers).

Differences between countries appear with regard to the awareness of the labels: e.g. for the PDO-label, the awareness is very high for France (98%), Spain (96%) and Italy (95%). It is rather limited in Belgium (47%), Poland (39%) and Norway (35%). The PDO-label is the most preferred information source about TFP in France, Spain and Italy. In Belgium, Poland and Norway, a guarantee of authenticity, a quality label on the pack or a seal of certification emerge as most preferred ones. ■

For any additional information:

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Work Package 2A:

Innovation for improving microbial safety of Traditional Food Products (TFPs) origin

Antibiotic susceptibilities

Since long time, the antimicrobial resistance and the spread of resistance genes have been perceived as an important component of both animal health and food safety in the international community. An effective antibiotic selective pressure on the flora associated to the dairy sector has been demonstrated by Instituto Superiore di Sanità. The evidence of multi-antibiotic resistant strains among pathogens (up to 10% for 5 different antibiotics for *E. coli*), let us foresee problems in case of antibiotic treatment of the animal, or in case of a foodborne disease, in man. Moreover, antibiotic resistance is diffuse among commensal bacteria, particularly lactic acid bacteria (*Lactococcus*, *Lactobacillus*, *Leuconostoc*) although it is not clear which is the real significance for animal and human health. In vitro, terpinen-4-ol an active compound from *Melaleuca alternifolia* was effective -at 2% of concentration- against 230 mastitogenic wild strains (*S. aureus*, *Staphylococcus* spp., *S. agalactiae*, *Streptococcus* spp., *E. coli*, *Enterococcus* spp., *Serratia marcescens*, *Klebsiella* spp., *Kl. pneumonia*, *Aeromonas viridans*), antibiotic resistant inclusive, supporting its eligibility as antimastitic agent. If in vitro data will be supported by in vivo results (experiments still in progress) the use of terpinen-4-ol could really represent a successful alternative to antibiotics in the prevention and treatment of infectious mastitis in conventional and organic farms.

Understanding inhibition of *Listeria monocytogenes* in cheeses

In cheese making, the development of *Listeria monocytogenes* can be controlled by its exposition to different stresses, abiotic (environmental conditions) and biotic factors implying microbial community. In Greek Graviera cheese, it was demonstrated by the Dairy Research Institute that the growth inhibition of *L. monocytogenes* in the core or at the surface of cheese during ripening is due to a strong combined hurdle effect including the cheese pH, aw, as well as a total organic acid content of ca. 1.5% (mainly lactic, citric, acetic and propionic acids). The addition of bacteriocin-producing strains (nisin-producing *L. lactis*, plantaricin A-producing *Lactobacillus plantarum* and enterocin-producing *E. faecium* strains) may further contribute to inhibit the growth of pathogens. But in



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Graviera cheese, pathogen inhibition is not affected by increasing the Relative Humidity (RH) level during ripening.

In a Saint-Nectaire type model cheese, the results of URF and GPMA (INRA) show that the growth of *L. monocytogenes* can be controlled by an antilisterial consortium composed of several strains of lactic acid bacteria and of Gram-positive non lactic acid bacteria, consuming galactose and producing lactate. During ripening, the decrease of the relative humidity level from 98% to 93% increased the inhibitory activity. It was also shown that it is not easy to reconstitute microbial consortia having antilisterial activity such as those selected from farm Saint-Nectaire cheese or Livarot cheese. The anti-listerial activity of the reconstituted microflora containing a selection of the microbial groups and isolates were not equivalent to that of the initial complex consortia from which they originated.

To gain insight into the mechanisms of *Listeria* inhibition, the Technical University of Munchen (Germany) performed microarray analyses, which gives an overview of the transcriptome at a given time point. A high number of virulence genes were found to be induced after acid stress, a stress important during cheese making. Likewise, invasion capabilities of listerial cells may be increased. In acidic conditions, several heavy metal resistance genes were found to be induced. This is of interest, since food processing machines contain metallic parts which leach metals after contact with acid. One may wonder about the significance of such resistance gene expression on the occurrence of *L. monocytogenes* in dead spots in production lines. An important finding for the safe use of antilisterial consortia and bacteriocins as their application on *L. monocytogenes* did not induce virulence genes. The expression of sugar transporters, which are targets for some bacteriocins, increases when *Listeria* cells are in contact with antilisterial consortia.

There is evidence that unique stress responses towards each stressor occur. It may thus be useful to apply more than one stress (e.g. different classes of bacteriocins, heat treatments...) in order to kill the cells of *L. monocytogenes*.

Improving cheese ripening

A mathematical model including mechanistic hypotheses and data related to:

- (i) the evolution of water activity (a_w) of the cheeses versus ripening time,
- (ii) heat and mass transfer phenomena,
- (iii) the respiratory activity of microbial populations that develop on the cheese surface, was designed by GMPA INRA

It allows to quantify the weight loss rate of Saint-Nectaire-type cheese in function of ripening time and of certain operating conditions, including the temperature and relative humidity of the ripening rooms. This last variable, whose on-line measurement in ripening rooms is often sensitive, constitutes the major uncertainty factor.

The associated control strategies that were proposed are intended to either ensure a final average weight of "targeted" cheeses, or to implement a mass loss "profile" defined beforehand by the cheesemakers. ■

For any additional information:

Christine Montel (cmontel@clermont.inra.fr) INRA, France

Work Package 2B:

Control of biological derived and process induced chemical hazards in traditional food products

Packaging is a key point for the preservation of food quality especially in traditional food products. The use of active films which contains at the surface special substances acting as protecting agent may help to increase food quality and shelf life. In the three past years of the project several active films have been tested in laboratory in order to verify their efficiency and safety. The problem was addressed by different point of view. Migration of active and non active substances were measured by using different food simulants and some methods have been also tested for their detection in the raw food. The second aspect which was addressed was the ability of the new film to preserve the quality of food as long as possible. Several films, based on regenerated cellulose (RC) or low density polyethylene (LDPE) added with three different active substances, have been tested on Portuguese, Czech and Italian traditional cheeses. The quality of food was evaluated in terms of some physical, chemical and sensory parameters. These have permitted the match of some type of cheese with the more suitable film and active compound. This activity will be extended to pilot level in WP6.

The last aspect of film-food interaction which was considered is the stability of polymer structure during the food contact. Several film parameters was followed as a function of food contact time with traditional and innovative techniques such as Nuclear Magnetic Resonance. The information gathered are still under examination and will help in the matching of the polymer film type and of the food matrix which is more suitably protected. In fact, each kind of foodstuff requires its own specific packaging materials and strategies. ■

For any additional information:

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PROJECT NEWS

Work Package 3:

Predictive Modelling and Risk Assessment of Traditional Foods

WP3 focuses on Predictive Modelling and Risk Assessment of Traditional European Food Products. In particular, this workpackage aims at the development of new mathematical models or the optimisation of existing ones that would define pathogens' responses in qualitative and quantitative terms and include them in risk assessment process for safer and higher quality traditional food products. During the third year of the project the following additional results have been produced in each task/subtask of the work package:

Subtask 3.1.2 Collect data on specific TFP chill chain conditions (dynamic conditions).

Monitoring time-temperature profiles during the total food supply chain of different TFP

Temperature profiles of the chill chain were recorded in certain retail outlets (supermarket refrigerators) for a variety of meat products. In addition, time-temperature fluctuation profiles of transportation trucks were extensively recorded and subjected to Monte Carlo analysis to define the characteristics of temperature distribution.

(ii) Monitoring initial values and possible changes in the intrinsic properties of TFP during total food supply chain

Data collection on the changes of the intrinsic properties of traditional foods was completed during the third year of the project. Specifically, the changes in the microbiological and physicochemical characteristics of traditional dry-salted natural black olives were recorded both during processing and storage in retail plastic pouches at 4 and 20°C for a period of 180 days. In terms of microbiological analysis, special attention was given on the presence of *S. aureus* that can survive in this food ecosystem. Additional work undertaken in this subtask included the monitoring of *aw* and pH changes in traditional fermented and dry sausage samples collected from seven different small-scale facilities at different processing stages. Moreover, the physicochemical and microbiological analyses of cheese samples from raw sheep milk and smoked fermented meat sausages produced in Northern Portugal were completed and the prevalence of *L. monocytogenes*, *Salmonella* spp., *S. aureus*, *E. coli* O157:H7, and *Campylobacter* spp. was quantified and reported.



Task 3.2: Effect of microbial interactions and food matrix on the growth kinetics of pathogens.

Data collection on the effect of microbial interaction and food matrix on growth responses of pathogens has been completed. The effect of food matrix was quantified by means of neural network methodology. The architecture of two different neural networks has been designed for this purpose and tested for *L. monocytogenes* based on experimental data collected previously for this purpose. Additional work has been carried out on gel models that mimic food matrix and simulate the effect of food texture on microbial growth.

Task 3.3: Predictive modelling and microbial risk assessment.

A Quantitative Microbiological Risk Assessment (QMRA) approach has been developed to draw useful information regarding the risk of *L. monocytogenes* in ready-to-eat cooked, cured meat products. The developed approach focused on the stages involved up to the time of consumption, e.g. from product manufacturing (specifically after thermal treatment) to retail and consumer level. The method employed was a second order risk process model taking into account, separately, variability and uncertainty of certain parameters of the model. The model parameters (inputs) were described by probability distributions. The information provided may help risk managers to make decisions and apply control measures, within the framework of a Food Safety Management System, with ultimate objective the food hygiene assurance and the production of safe foods. Moreover, the results of the earlier conducted microbiological challenge tests at constant and variable temperature conditions in traditional Hungarian ready-to-eat meat products were compared to the results of the already existing on-line predictive softwares (CombasePredictor, SymPrevius) with the same inserted initial parameters as the challenge tests in order to validate their performance.

Task 3.4: Improvement of already existing user-friendly software for the prediction of safety of traditional food products.

A risk profiling for smoked fermented sausages was developed for the following pathogenic bacteria: *Salmonella* spp., pathogenic *E. coli*, and *L. monocytogenes*. The risk profile was developed with the use of Risk Ranger, a spreadsheet software format that embodies established principles of food safety risk assessment, i.e., the combination of probability of exposure to a food-borne hazard, the magnitude of hazard in a food when present, and the probability and severity of outcomes that might arise from the level and frequency of exposure. Additionally, a simple risk assessment approach has been developed based on a questionnaire which contains the elements of a risk assessment, together with the data needed to be taken into account with indicative indices. An expert estimate was developed with the structured approach of the risk profiling technique using the available data (physicochemical, microbiological data and consumer survey) on traditional Hungarian meat products (dry, fermented sausages, flamed sausages, pig cheese) which highlighted those product characteristics and process parameters with the greatest impact on the level of pathogens. ■

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PROJECT NEWS

Work Package 4:

Improving nutritional quality of traditional products in line with consumer demand.

Milk and dairy products:

The reduction of daily milking from twice (TDM) to once (ODM) reduces milk yield (about 36% during the first 18 weeks of lactation) and increases milk fat (20%) and protein content (7%). The average weight losses of cows are reduced in early lactation. Keeping the calves with the cows in early lactation does not permit to limit the milk losses once the calves are weaned. In comparison to TDM, ODM increased the yellow colour of milk due to a corresponding increase in β -carotenes concentrations (+7 to 28 % according to periods of lactation and calves presence or not with the cow). However, it did not permit to increase significantly vitamins A or E concentrations in milk. Thus, ODM does not seem to be an interesting alternative to obtain milk with an increased nutritional quality.

A new experiment which aim is to quantify during two successive lactations, the effects of long-term supplementation of different oilseeds rich in cis9-C18:1 or C18:3n-3 on nutritional quality of milk and on animal production, health and reproductive performances. This trial began on October 2007 and involved 60 Holstein cows fed with a grass based diet (75% grass silage and 25% hay) during winter and pasture during summer. The diet is supplemented or not, with different sources of rapeseeds or extruded linseeds that provide and oil level from 2.5 to 3% of dietary dry matter intake. This experiment is in progress: animals have begun their 2nd lactation.

In a first study, thermophilic starter combinations were shown to affect the production of potentially bio-active peptides (BAPs) in hard cooked chesses. In a second study, two starter combinations giving extreme BAP levels were used to estimate the influence of technological parameters such as milk composition or cooking temperature in vat on the production of these BAPs. Our results have evidenced that milk or temperature modulation was dependent on the starter combination.

Meat and fish products:

A non-destructive method developed for salt distributional analysis in salmon fillets using a computed X-ray tomography has been adapted and successfully used to monitor the salt distribution during the dry-cured ham process.

Restructured dry-cured hams with reduced salt content (<7% on dm), acceptable from a technological and sensory point of view and with an acceptable final presentation have been obtained. Some technological innovations have been proposed to prevent problems related to the reduction of salt in dry-cured ham: storage at subzero temperatures for reducing white film formation and high-hydrostatic-pressure treatment for increasing microbiological safety of sliced dry-cured ham.

Recent experiments demonstrated that the brine injection in salmon fillets contributes significantly to a better salt distribution within the product, a better control of the overall salt content, and a higher yield than the traditional dry salting. Smoked salmon with approx 1/3 of the NaCl replaced by KCl were produced and subjected both to a sensory panel and to a consumer test. Preliminary results show that the sensory panel was not able to distinguish between pure NaCl and the

mixture KCl/NaCl. This suggests that low-Na salmon can be produced by replacing at least one third of the salt by KCl.

Fruits and vegetables:

Foliar treatments of tomato crops by spraying Milsana®, instead of sulphur antifungal treatment, had different effects depending on the variety: for “Caramba” variety there was a positive effect on the total production of tomatoes and the carotenoids levels were hardly affected, but the levels of vitamin C and flavonoids were reduced; for “Montserrat” variety there was an increase of caffeoylquinic acid derivatives levels. A negligible effect of foliar treatment on mineral contents, limited to Ca levels, was detected. Therefore, the agronomical behaviour and nutritional quality of tomatoes when foliar treatment is applied depend on the variety.

Low-nitrogen fertilization, although it reduced total yield of tomatoes in “Caramba” variety, it had a general positive effect on nutritional components of the different varieties: it did not affect the carotenoids levels and increased the level of vitamin C and two target flavonoids. Moreover, the nitrogen dose of fertilization was positively correlated with Ca, Mg and Fe contents of fruits. These results confirm the interest of a better control for this factor.

The use of *Lobularia* (companion plant) in lettuce crops as an alternative to pesticide treatment ensured the presence of key predators both in the flower margins and lettuce crop. As a result of predator establishment, prey populations were reduced below the economic threshold. A higher content of phenolic acid derivatives and no significant variation in the level of vitamin C and flavonoids were observed in the samples compared to the insecticide treated ones.

The effects of agronomic strategies on the nutritional quality of Brassica are being analyzed. Organic fertilization provided Brassica with higher levels of vitamin C than mineral fertilized ones, but also reduced the concentration of folates and the total yield in the early (Trevi) and mid-harvest (Meridien) Brassica varieties. Under our conditions elicitor treatments with Chitosan® did not improve nutritional compound accumulation, especially in the second stage of maturation. Green and white cauliflower varieties have been clearly differentiated on the basis of their glucosinolate profiles and folates and vitamin C contents, providing interesting information to improve the optimization of the agronomical practices. ■

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PROJECT NEWS

Work Package 5:

Improved marketing and food supply chain organization methods for traditional food products

The participants of WP5 (Belgium - Ghent University, Hungary - Campden & Chorleywood, Italy - University of Milan and PE-Group) have analyzed and compared the results of the survey with 271 companies belonging to 91 traditional food chains across three European countries (Belgium, Italy and Hungary) and the survey with 47 support organizations in ten European countries (Italy, Hungary, Belgium, Austria, Switzerland, Greece, Spain, Czech Republic, Romania, France).

The results from the first survey show that there are cultural differences influencing the innovation capacity of traditional food chains, but that in general collaboration has a significant effect. Furthermore, the external knowledge sources for innovation are located at different geographical scales depending on the type of knowledge. However, also the level of innovation capacity has a positive correlation with the geographical distance of external knowledge. The higher the level of innovation capacity the more distant is the external knowledge source, meaning mainly at national or even international level. Besides, the survey also identified significant performance imbalances in the investigated traditional food chains. It means that suppliers, food manufacturers and customers perform different in the investigated chains. Based on these performance imbalances, three clusters of chains are identified. The first cluster represents chains being characterized by higher performance of both suppliers and focal companies as compared to customers, while the third cluster represents chains being characterized by high customer and focal company performance as compared to suppliers. The second cluster includes chains hardly including chain imbalances. Further and most importantly, trust, conflict and reputation demonstrate discriminative power between the three clusters. It means that higher trust and reputation, as well as lower conflict among chain members can help the chain to perform in a more balanced way. These findings create an opportunity for improvement through rigorous comparison of chain members' performance. It allows the identification of the weakest link, as well as chain members and policy makers to make specific and tailor made efforts to enhance performance at specific location of the chains, depending on the type of imbalance occurring.

The comparison of the traditional food chain survey and the survey with support organizations strongly emphasize the mismatch of the view of support organizations and the activities in the traditional food sector on the implementation of chain management, marketing management and innovation practices. In detail, the support organizations underestimate the performance of the traditional food chains as well as some relational variables such as trust, satisfaction, reputation, dependency and conflict among chain partners. Furthermore, only a small part of support organizations is promoting the collaboration between chain members or a chain management approach, respectively. Related to innovation practices, support organizations overestimate the frequency of courses and seminars attend, while in reality the traditional food chains state that self-study and small-scale experiments are more frequently applied. Related to the finance of innovation activities support organizations believe that the traditional food chains are

spending budget on project base or yearly base, while in reality budget is rather spend according to the necessity. Furthermore, support organizations clearly underestimate the kind and intensity of innovation activities of the focal companies as well as the need for external knowledge support.

Based on an EU-wide on-line survey on the marketing management with more than 400 SMEs a targeted action plan is developed in order to increase the marketing management capabilities of SMEs. The main weaknesses of SMEs related to marketing management lie in the area of planning and implementation as well as control and evaluation of their marketing activities. Hence, managerial and policy implications are indicated. However, micro and small firms must be treated differently than medium and large firms because of more limited financial and human resources in the first group of firms. Moreover, in a next step a more extended questionnaire is developed for investigating the competitiveness of the traditional food sector. Therefore, more aspects of resources, capabilities and competences of SMEs in the traditional food sector are included.

Currently, the WP5 partners are updating and extending the inventory on best practise case studies of traditional and conventional food chains for eliminating or reducing bottlenecks. These successful examples demonstrate that there are several ways how SMEs can improve the performance of their chains and demonstrate also the benefits of implementing the chain management approach.

In the coming months, the views of food firms are compared to the views of consumers (WP1), other chain members and support organizations in order to formulate recommendations which are supported from different perspectives based on the Truefood results. ■

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PROJECT NEWS

Work Package 8:

Dissemination, training and technology transfer

SPES National Federations and research partners reached relevant achievements within WP8. A number of significant activities were implemented following what envisaged in the plan of activities.

The Techno-Scientific Mediators (TSM) of the 11 Training and Dissemination Units (TDUs) established at the SPES (Spread European Safety) Food & Drink National Federations implemented successfully a number of technology transfer activities to SMEs involved in the production of traditional food. The actions targeting SMEs took place in 15 countries to ensure a large dissemination and exploitation of results in France, Italy, Belgium, Greece, Spain, Portugal, Denmark, Czech Republic, Hungary, Austria, Turkey, Germany, Poland, Slovenia and Great Britain. From November 2007 until now about 8.500 SMEs were directly involved in the activities (e.g., personnel visits to SMEs, meetings and round table discussions, focus groups, direct e-mailing and periodical dissemination of information, training on research results and food innovation issues, etc.). In particular, more than 85 training events (i.e., workshops, seminars and courses) targeting 2.700 participants from the traditional food sector and covering diverse areas in 15 countries were implemented in strong cooperation with the research partners and centers of excellence of the project. The training activities focused on a wide range of topics (i.e., project research results, new knowledge generated on food innovation, legislation at EC and national level, health and nutritional claims, etc.) and ensured that SMEs' specific needs were addressed. The majority of training events were evaluated through an anonymous questionnaire. The analysis of the questionnaires revealed that overall the participants rated the seminars very positively and indicated that their expectations were highly fulfilled. More training events are planned to take place during 2009. Information on this kind of events will be published at the national WebPages of SPES members. For more information please refer to the article "TRUEFOOD technology transfer activities" published in this newsletter.

Furthermore, the document "Booklet on effective technology transfer activities to SMEs in the food sector" is being developed with the aim to provide guidance to all personnel involved into the process of technology transfer to food businesses. A 1st version of the document was prepared by project partners (Campden & Chorleywood Hungary in collaboration with Agriconsulting, ENEA, NOFIMA, SPES members - Federalimentare, FEVIA, FIAB and SEVT). The final version of the booklet will be available by the end of the year.

In addition to the technology transfer activities, TDUs - SPES members and research partners carried out a wider information



Project partners during the 2nd workshop on research results in Prague (5th of March 2009)

campaign for communication and dissemination of results using different communication tools and participating in several meetings and conferences at national and European level. Furthermore, TDUs - SPES members organized info-days and press conferences, developed and distributed articles and short-films.

The 2nd workshop on TRUEFOOD research results was held in Prague (Czech Republic) the 5th of March. During the workshop, TSMs from Austria, Italy, Greece, Belgium, Spain, Czech Republic, France, Hungary, Portugal and Turkey discussed with research partners (ACTIA - France, ESB - Portugal, CCH - Hungary, ENEA - Italy, INRA - France, IRTA - Spain, NOFIMA - Norway, UNIPEG - Italy and UL - Slovenia) on potential application of research results by SMEs. The 'INFO SHEETS on main results' were updated and discussed.

This kind of synergy activities are of vital importance to transfer results from RTD WPs to TDUs and to identify together the main message or result to be disseminated to SMEs and food producers.

Finally, all SPES members were involved in an evaluation exercise to verify after 1 year if and how often the SPES TDUs are applying the new knowledge and skills in the everyday environment (transfer and capability improvement) and if the new information acquired through the TRUEFOOD training programme improved the effectiveness and efficiency of the work of the TDUs (effect on results). The assessment was implemented by Agriconsulting in cooperation with Nofima. The results revealed that SPES TDUs members improved their capacities and skills to plan and organize dissemination and technology transfer activities. In particular, the communication with SMEs improved and in some countries a higher participation of TDUs in research projects involving SMEs is registered. This is a very positive result since the aim of TDUs is to bring research and industry closer together. ■

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You can find more news related to WP6 and WP7 on the TRUEFOOD website: [http:// www.truefood.eu](http://www.truefood.eu)

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