



## **TRUEFOOD**

### **Traditional United Europe Food**

Contract no. FOOD-CT-2006-016264

Instrument: Integrated Project

Thematic Priority: Food Quality and Safety (# 5)

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<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	<input type="checkbox"/>
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	<input type="checkbox"/>

## New roots for traditional european foods: Possibilities for success and sustainability

### FINAL CONFERENCE

### TRUEFOOD › TRADITIONAL UNITED EUROPE FOOD

**BRUSSELS, BIBLIOTHÈQUE SOLVAY,  
 13 APRIL 2010**

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The final TRUEFOOD conference presents the main results achieved by the project and provides a platform to debate the different aspects of innovation and sustainability in the traditional food production with all stakeholders. Participants will have a unique opportunity to network, listen and debate with key players from the food production and academic sectors involved in innovation of traditional food production.

The conference is organized by SPES FEVIA and SPES FIPA in cooperation with all TRUEFOOD project partners. The languages of the conference are English and French, with simultaneous translation. Schedule: from 9.00 am to 3.00 pm (registration at 8.30 am). After the conference (from 3.00 to 3.30 pm) the TROPHELIA Belgium Award will take place. From 3.30 to 4.00 pm a cocktail will be offered to all participants.

**Venue:** Bibliothèque Solvay, Parc Leopold, 137 rue Belliard, 1040 Brussels

**Free entrance.** The participation to the conference is for free. All costs (information materials, lunch, cocktail, etc.) will be covered by the organizers.

For more information and on-line registration:

[www.truefood.eu](http://www.truefood.eu) | [www.fevia.be](http://www.fevia.be)

### Conference - Programme

<b>08:30-09:00</b>	<b>Registration of participants</b>	<b>12:05-12:25</b>
■ <b>Introduction:</b>	<b>09:00-09:30</b>	■ <b>Improve market access through innovative chain management</b>
Daniele Rossi (SPES – TRUEFOOD Project Coordinator)		Xavier Gellynck (Professor Agro-food marketing & chain management – Ghent University)
Antonio di Giulio (Head of Unit Directorate E: Biotechnology, Agriculture and Food – EC DG Research)		■ <b>SPES Techno-Scientific Mediators, research institutions and TFP SMEs – A successful cooperation in 15 countries: an overview of demonstration activities, knowledge and technology transfer activities to SMEs, new tools and success stories on innovation in TFPs</b>
Mella Frewen (Director General CIAA – Confederation of the Food and Drink Industries of the EU)		12:25-13:30
■ <b>Consumers' definition of traditional food and innovations in their attitudes to Traditional Food Products</b>	<b>09:30-09:50</b>	Christophe Cotillon (Deputy Manager ACTIA)
Margrethe Hersleth (Ph.D, Research Scientist – Nofima Mat)		Cecilia Chiapero (TRUEFOOD Training and Dissemination Manager, Agriconsulting)
■ <b>Social and health impact of innovation in Traditional Food Products</b>	<b>09:50-10:10</b>	András Sebok (Ph.D, General Manager, Campden BRI Magyarország Nonprofit Kft.)
Laura Rossi (Ph.D, Researcher – Human Nutrition Unit – INRAN)		Some examples of success stories and main results achieved presented by SPES Techno-Scientific Mediators from selected countries (Belgium, Turkey, Greece, France, etc.)
■ <b>Some examples of innovations in Traditional Food Products:</b>	<b>09:50-10:10</b>	<b>13:30-14:15</b>
› <i>Advances in dry-cured meat processing</i>		<b>Lunch</b>
Pere Gou (Ph.D, Researcher – Food processing and engineering – IRTA)		■ <b>Some examples of success stories and main results achieved presented by SPES Techno-Scientific Mediators (continued)</b>
› <i>Improvement in cheese ripening processing and packaging aspects</i>		14:15-14:40
Georges Corrieu (Ph.D, TRUEFOOD Scientific Pillar Coordinator – INRA)		■ <b>Final conclusions by:</b>
› <i>Microbial safety of traditional cheeses</i>		Daniele Rossi (Deputy Manager ACTIA)
Marie-Christine Montel (Ph.D, Head of Cheese Research Department – INRA) and		Joseph Culioli (Research Director – INRA – Chairman of Governing Board)
John Samelis (Ph.D, Researcher – NAGREF)		Marina Leonardi (ENEA – TRUEFOOD Industrial Pillar Coordinator)
<b>11:30-11:45</b>	<b>Coffee break</b>	■ <b>And the winner is...</b>
■ <b>Predictive modelling tools implementation</b>	<b>11:45-12:05</b>	TROPHELIA Belgium Award – the student food innovation award
George John Nychas (Professor in Food Microbiology, Agricultural University Athens)		14:40-15:00
		Chris Moris (Director General FEVIA)
		<b>15:30-16:00</b>
		<b>Cocktail</b>

# TRUEFOOD › Traditional United Europe Food

## Putting values on traditional food products

### Project Essentials

**Full Project name:**

Traditional United Europe Food

**Project Acronym:**

TRUEFOOD

**Project type:**

Integrated Project

**Theme:**

FP6 Food Quality and Safety

**Contract No.:**

FOOD-CT-2006-016264

**Project Start Date:**

01/05/2006

**Total Budget:**

€20 080 000

**EC Contribution:**

€15 500 000

**Project website:**

<http://www.truefood.eu>

The overall objective of the TRUEFOOD Integrated Project is to bring innovations to the traditional food industry. This sector includes not only protected and patented foods, but also other regional and national traditional specialties. The innovations will improve competitiveness in the sector through higher food quality and safety standards as demanded by consumers, but will ensure that the essential characteristics of these culturally important foods are not sacrificed. The project will bring research and the industry closer and facilitate effective collaboration and technology transfer.

### Project Coordinator:

The overall coordinator is Spread European Safety - SPES GEIE (Italy). The Group associates 11 European Food & Drink National Federations representing 280 branches and 35.000 European small to medium size enterprises:

- ANIA › Association Nationale des Industries Alimentaires (France)
- Federalimentare › Federazione Italiana dell'Industria Alimentare (Italy)
- FEVIA › Fédération de l'Industrie Alimentaire (Belgium)
- FFDI › Federation of the Food and Drink Industries (Czech Republic)
- FHFI › Federation of Hungarian Food Industries (Hungary)
- FI › Foedevareindustrien (Denmark)
- FIAA/LVA › Fachverband Lebensmittelindustrie/Lebensmittelversuchsanstalt (Austria)
- FIAB › Federación Española de la Alimentación y Bebidas (Spain)
- FIPA › Federação das Indústrias Portuguesas Agro-Alimentares (Portugal)
- SETBIR › Union of Dairy, Meat, Food Industrialists and Manufacturers (Turkey)
- SEVT › Federation of Hellenic Food Industries (Greece)

### Project Partners:

Project partners are "centres of excellence" in food related R&D, with strong technology transfer units or cooperating with the traditional food sector:

- Agriconsulting S.p.A. (Italy)
- Agricultural University of Athens (Greece)
- Agricultural Institute of Slovenia (Slovenia)
- Association de Coordination Technique pour l'Industrie Alimentaire (France)
- Campden BRI Magyarorszag Non profit Kft. (Hungary)
- Centre National Interprofessionnel de l'Economie Laitière (France)
- Confédération des Industries Agro-Alimentaires de l'UE (Belgium)
- Ente per le Nuove Tecnologie, l'Energia e l'Ambiente (Italy)
- Food Industrial Research and Technological Development Company SA (Greece)
- Genus plc. – Pic (Great Britain)
- Ghent University (Belgium)
- Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione (Italy)
- Istituto Superiore di Sanità (Italy)
- Institut de Recerca i Tecnologia Agroalimentàries (Spain)
- Institute National de la Recherche Agronomique (France)
- Institute of Chemical Technology Prague (Czech Republic)
- Laboratoire Interprofessionnel D'Aquitaine (France)
- Karadeniz Technical University (Turkey)
- Nofima Mat, Norwegian Food Research Institute (Norway)
- National Agricultural Research Foundation (Greece)
- Norwegian University of Life Sciences (Norway)
- Progetto Europa Group S.r.l. (Italy)
- PPRC - Slovak Agricultural Research Centre (Slovakia)
- Technische Universität München (Germany)
- Technological Educational Institution of Ionian Islands (Greece)
- Università degli Studi di Perugia (Italy)
- Universidade Católica Portuguesa Escola Superior de Biotecnologia (Portugal)
- University of Applied Sciences of Weihenstephan (Germany)
- Università degli Studi di Milano (Italy)
- University of Ljubljana (Slovenia)
- Warsaw Agricultural University, Faculty of Human Nutrition and Consumer Sciences (Poland)



# TROPHELIA AWARD SPAIN

Barcelona, March 25, 2010

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

Caviar of tomato; "Teffitos"; energetic food to consume between hours; sausages with Omega 3 or juice with nanoparticles that delay the oxidation of the vitamin C, are some of the offers presented on March 25 in first Trophelia's Spanish edition, aiming to foment the creativity and the innovation among students of Food and Drink Sector.

The decision of the juror was tremendously complicated due to the high quality of the presented offers. Finally it was decided to grant the first two prizes and the first second prize-. The first prize has been for the University Pablo Olavide of Sevilla for the drink of the century XXI. The offer consists of a drink of orange between 2 ° and 3 ° of alcohol obtained from the fermentation of the proper juice of orange. The process is similar to obtain wine, in the case of the fermentation of the grape.

The winner team will participate to TROPHELIA EUROPE Competition, which will be held in Paris during next SIAL Competition (October 2010).

The first second prize was for the University Miguel Hernández of Orihuela by Grand&Go. It consists of the development of a series of juices refreshed with high antioxidant and nourishing value. It includes an innovation very valued by the juror: a badge that changes color in case the chain of cold has broken in the transport or distribution.

The second prize was granted to the students of Polytechnic University of Madrid by Teffitos, defined as a "energetic food to consume between hours". The principal ingredient, the Teff, is a thousand-year-old cereal of Ethiopia without gluten, with high place contained of iron, lisina and carbohydrates of slow assimilation. The product is indicated specially for sportsmen, celiac, diabetics and persons by anemia.

The rest of participants were representing to the University of Zaragoza, the University of Lerida, Catholic University of Murcia, Technical University of Valencia and the University of Burgos.



*Trophelia Spain 2010*



## Conferences and events related to food issues

12<sup>nd</sup> – 13<sup>th</sup> May 2010



Brussels, BELGIUM

**TRUEFOOD GOVERNING BOARD and GENERAL ASSEMBLY**

Last TRUEFOOD Governing Board will be held on the 12 of May 2010 in Brussels.

On the 13 of May 2010 will take place last General Assembly meeting

[www.truefood.eu](http://www.truefood.eu)



30<sup>th</sup> August – 3<sup>rd</sup> September 2010

Copenhagen, Denmark

**Food Micro 2010**

The 22<sup>nd</sup> International ICFMH Symposium, Food Micro will be held at the Bella Center in the Oresund region, and will be dedicated to the renaissance of microbial physiology for the production of fresh, safe, and healthy foods.

The congress intends to bring together scientists from the forefront of all sectors within the community of microbial behaviour, to highlight the latest scientific developments in the field

<http://www.foodmicro.dk/>



8<sup>th</sup> – 10<sup>th</sup> September 2010

Berlin, Germany

**European PHD Conference in Food Science and Technology**

The objective of the conference is to provide an opportunity for PhD students and Young Researchers (e.g. postdocs) to meet and to discuss EU research topics in the fields related to food science and technology, food health and nutrition, as well as biotechnological applications in food production.

[www.berlinfood2010.de](http://www.berlinfood2010.de)

## Work Package 1:

### Determination of consumer perception, expectations, and attitudes

Qualitative consumer-driven definitions for the concept of 'traditional food products' (TFP) and innovations in TFP were obtained in the first phase of this work package through qualitative and semi-quantitative focus group studies, two in each of six European countries: Belgium, France, Italy, Norway, Poland and Spain. Besides identifying the core components of these definitions, the focus groups revealed that European consumers in general have predominantly favourable attitudes towards TFP. The subsequent task in WP1 built further on this insight and envisaged quantification through large-scale consumer studies in the same countries. Data collection was performed in November 2007 through a web based survey with a total sample of 4,828 European consumers, from which a quantitative validated consumer-driven definition of TFP was framed: "A traditional food product is a product frequently consumed or associated to specific celebrations and/or seasons, transmitted from one generation to another, made in a specific way according to gastronomic heritage, naturally processed, and distinguished and known because of its sensory properties and associated to a certain local area, region or country."

Cross-European homogeneity was found in the elements included in the definition, but across- and within-country heterogeneity exists regarding the specific emphasis of particular elements. As such, four consumer segments were distinguished by whom TFP are predominantly defined as: Multi-concept (with very broad conceptualization of TFP), Usual/Familiar, Authentic/Typical, and Inherited. Further analyses also confirmed the positive image of TFP (notably in terms of quality, quality consistency and taste) among European consumers, and revealed that sensory perception is a dominant factor in shaping these attitudes. Innovations in TFP impacting on the intrinsic product quality (e.g. improving healthiness and safety) were found to be well accepted by consumers, whereas innovations pertaining to novel distribution systems and formats (e.g. vending machines, home delivery) or ready-meals were less accepted and affected the traditional image of the product. Traditional food consumers across Europe were profiled as typically middle-aged to elderly, health-conscious, ethnocentric, food connoisseurs, who are attached to familiarity in their food choices and who very much enjoy cooking.

The third and last phase of work package has applied experimental studies with TFP to investigate the relationship between consumer expectations, consumers' attitudes to innovation and product acceptance. Studies on consumers' responses (acceptance and willingness to buy/pay) to innovations in traditional cheeses, dry cured ham, smoked salmon and sausages have shown a large diversity in results.

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Generally speaking it has been found that consumers' acceptance of innovations in TFP is strongly dependent on type of product and type of innovation. Innovations that provide consumers with relevant benefits without producing substantial changes in the products sensory quality are generally well accepted. Further, different consumers segments were revealed, some of these responded generally more positively to the presented innovations. Thus, it is important for the industry to customise specific products for specific consumer segments, and to communicate and market these products accordingly. ■

## For any additional information:

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## Work Package 2A :

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

WP2A task provided information about the understanding of microbial interactions by ecological and molecular approaches.

Several mechanisms can be involved in the inhibition of *L. monocytogenes* in complex cheese communities. The growth of *Listeria* and *S. aureus* was prevented in the core and at the surface of Graviera cheese, due to a strong hurdle effect including decreasing pH and moisture, and increasing salt and organic acids content. In the core or at the surface of non-cooked pressed cheeses, no correlation was found between the development of *Listeria* and the pH values. At the surface of non-cooked pressed cheeses the increase of pH during ripening can favour the growth of *Listeria*. The microbial communities can inhibit *L. monocytogenes* by producing lactate and acetate. However, at the end of ripening, this inhibition can be lifted at the surface of cheeses due to the consumption of lactate by yeasts and other flora components. Further potential inhibitory properties of microbial strains or microbial consortia can be evaluated by using a newly developed PCR method which detects genes coding for bacteriocins in strains from milk or cheeses.

Summarizing, the nature of the inhibition of *S. aureus* in cheeses may be due to pH decrease, bacteriocin production, but also due to hydrogen peroxide.

To gain insight in modes of *Listeria* inhibition microarrays technology which give an overview about the whole transcriptome at a given time point was applied. To discriminate between acid stress, a stress important during cheese making,



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the response towards inhibiting consortia or single bacteriocins, TUM conducted microarrays of acid stressed *L. monocytogenes* first. Surprisingly, a high number of virulence genes were found to be induced. Likewise, invasion capabilities of listerial cells are increased. It seems that acid induces the virulence response rendering the bacteria more pathogenic. Surprisingly, several heavy metal resistance genes were found to be induced upon acid shock as well. However, in response towards an antilisterial consortium virulence genes are repressed and bacteriocin sensitivity might be increased. This is an important finding, since the induction of virulence genes when using inhibiting consortia would have been problematic. Each stressor exhibits a unique stress response. It could therefore be useful to apply more than one bacteriocin from different classes in order to exhaust *L. monocytogenes*'s or *S. aureus*'s adaptation and by this kill the pathogens. In situ transcription of a bacteriocin (lactococcin G) has been demonstrated by rtPCR for the first time. Strains of *Enterococcus* species have been shown to bear genes for bacteriocins. The direct production of bacteriocins in situ in cheeses during hard cheese (Tolminc) production has not been demonstrated, however, the results suggest a combined action of bacteriocins and organic acids or other metabolites against *S. aureus* when a starter composed of 2 *Ent. faecium*, 1 *Lb. plantarum* strains isolated from Tolminc cheese was applied.

In conclusion, testing naturally occurring cheese consortia for their anti-listerial or anti-staphylococcal properties should be considered. Important properties are i) diversity of a given consortium ii) stability of the anti-pathogenic effect over time, iii) number of different bacteriocin genes found, and iv) number of factors which cause inhibition of pathogens (e.g., acid, H<sub>2</sub>O<sub>2</sub>). Inhibiting consortia are then used for cheese production and non inhibitory consortia might eventually be omitted. ■

#### For any additional information:

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## Work Package 2B:

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

Significant improvements in the knowledge of chemical contaminants (mycotoxins, biogenic amines, nitrosamines, acrylamide and furan) proliferation along the beer production chain have been achieved, and the role of masked mycotoxins in contamination assessment of beer have been exploited. New information and techniques have been obtained on the production of monoclonal antibodies for mycotoxin detection. Useful procedures for risk assessment (HACCP) in beer and traditional fish products have been produced thus SMEs have now new tools to cope with chemical risks in beer and traditional fish production chain.

The mechanisms of proliferation of organochlorine compounds (OCCs) in meat have been studied by combining experimental results and theoretical know-how. New knowledge on the relationship between OCCs structural descriptors and their proliferation in meat products has been produced. A model is now available to predict OCCs loss in meat products during processing. SMEs may now take advantage of the knowledge produced to implement their own OCCs proliferation model reducing the costs of risk management in the case of meat coming from OCCs contaminated areas.

The ability of different active packaging films in preserving dairy products has been investigated and the effectiveness of antimicrobial activity of these new films was elucidated in connection with the peculiar characteristics of packaged cheeses and film composition. Migration mechanisms of packaging active compounds toward food have been elucidated making evident the inadequacy of simulants approach in the correct detection of migrants. Innovative analytical tools and protocols have been developed to test the performances and assess the safety of new active packaging films. Therefore, SMEs have now access to additional knowledge that may help them in the choice of the most suitable packaging material in order to improve safety and increment shelf life of dairy products. SMEs and regulatory organisms may also take advantage of the information on the packaging migration test to improve the safety of their packaging procedures. They may also access to the new analytical tools and protocols to test the safety and the performances of forthcoming new active packaging and to test the reliability of already available films to preserve new food categories. ■

#### For any additional information:

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## 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 four years of the project attention was given on the evaluation of safety of selected traditional European foods. Specifically, a retail survey was carried out in 548 traditional European food products to determine the presence of foodborne pathogens and other spoilage microbiota. The focus was given on *Escherichia coli* O157:H7, *Listeria monocytogenes*, and *Salmonella sp.* as well as on *Bacillus cereus* and *Staphylococcus aureus*, depending on the specific characteristics of the examined food. Results were combined in a single database developed on MS Access to facilitate retrieval of the data by potential end users. Moreover, supply chains of cooked sausages, cooked meat products, honey, dry pasta, food jams, table olives, and bottled soda have been mapped and the critical control points (CCPs) and the general hygiene control points (GHPs) from the processing lines have been defined. Finally, time-temperature profiles have been recorded in retail outlets, sausage supply chains, and transportation trucks to define any temperature abuse during the distribution of food products.

In the area of predictive modelling and microbial risk assessment a decision support tool for the industry was developed based on a structured approach made of a

combination of a simple paper-based microbiological risk profiling, challenge testing, predictive microbiological modelling and probabilistic modelling approaches. The decision support tool can be used by the industry personnel for the prediction of the safe shelf-life of their products at product and packaging development stages. It can also be used for product and process design for the description of the impact of planned changes in the composition, in the process steps and their parameters, packaging materials, cold chain, and consumer practices. It can also be used for verification of the safety of the existing ready-to-eat products. Based on the developed risk profiling approach, the number of necessary, expensive challenge tests can be reduced significantly for the benefit of the industry. Finally, the existing predictive modelling platforms (Growth Predictor, Sym'Previus) have been used to predict the kinetic responses of pathogens on selected traditional products and environmental conditions. The quality of predictions has been compared with conventional mathematical models developed for the same products and environmental conditions.

It must be emphasised that as the main focus of the project were the SMEs, special attention was given on the dissemination of results, mainly through a series of training seminars for the industry. In particular, WP3 participants together with SPES have organised several seminars on Predictive Microbiology and Risk Assessment in Greece, Hungary, France and Portugal. ■

### For any additional information:

George Nychas ([gjn@aua.gr](mailto:gjn@aua.gr)), Agricultural University of Athens (Greece)



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## Work Package 4:

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

#### Milk and dairy products:

Supplementation of cow's diet based on extruded linseeds has been demonstrated to improve milk fatty acid profile (except trans fatty acids that are increased), without significant reduction in milk yield or negative impact on the cheese flavour. An experiment dealing with the long term effect of cows' diet supplementation showed that the beneficial impact of supplementation on fatty acid profile did not decrease after two lactations, although the magnitude of responses of certain fatty acids to oilseed supplementation is different during grazing than during winter, winter being the most interesting season for oilseed supplementation. The milk yield and gross composition were slightly affected by the oilseed supplementation during the indoor period.

The nutritional composition of tanker milk according to the origin and the livestock farming practices (diet, breeds) has been characterized along one year in France, Slovenia, Slovakia and Norway. This experiment permitted to analyze the nutritional composition of tanker milks produced by cows reared over a very large variety of local conditions in Europe. We obtained a unique database for 375 milks with very detailed analyses of a high number of compounds with a potential nutritional interest, namely carotenoids, vitamins A and E, minerals (Ca, P, Na, K, Mg and Zn), fatty acids and phenolic compounds. The main result consists in the particularly high 'natural' variability that does exist for most of the compounds analysed. An important part of this variability is linked to the farmer's practices, in particular the nature of the forages used to feed the animals. During the overwintering period when cows are fed with preserved forages, milks are richer in minerals and saturated fatty acids while, during the pasture period, milks are richer in vitamins A and E, in unsaturated fatty acids and also in most of the phenolic compounds identified. The results underline the interesting potential that exists for dairies to select and sell milks that differ greatly in components with a nutritional interest.



through the choice of starter cultures in hard cooked cheeses. The combination of thermophilic *lactobacilli* strains is essential to increase the bioactive peptides content. On the one hand, the in vitro anti-hypertensive activity is linked to the qualitative and quantitative proteolytic potential of *lactobacilli* strains *L. helveticus* and *L. delbrueckii*. However, some factors can interact with starters: the time of ripening, the milk composition or process parameters such as cooking temperature in vat. On the other hand, many peptides with potential bioactivity vary with starter combination. As variations differ according to their sequences, it is essential for the future to have a comprehensive view of the enzymatic pathway during food processing, i.e. synergy, antagonisms of action of enzymes in the food matrices and peptides as well as characterization of the microbial machinery in situ. Through this work it appears that cheese-makers have the possibility to select the most adapted combinations of starters to enhance the production of potential bioactive peptides in the cheeses. Nevertheless, the efficiency of the starter strains has to be checked in industrial plant in order to take into account specific practices.

ELISAs with monoclonal antibodies reacting against peptidases of *L. helveticus* have been developed in order to build rapid and simple tools to evidence the presence of such peptidases directly in dairy products. The main result was that the ELISA for pepN detection and quantification in cheese at the end of the ripening is available.

#### Meat and fish products:

Processing of hams from the pig breeding study, which aimed to find the genetic markers to select the suitable animals for production of dry-cured hams with reduced salt content, has been monitored in Slovenia, France and Spain. Two selected genes PRKAG3 and CAST, which are known to impact the quality of fresh meat, were selected to study their potential for dry-cured



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ham elaboration. Many effects of gene markers on fresh and dry-cured hams have been found, but they are country or production system dependent. Therefore, the application of the gene information has to be adapted to each product.

Additionally, considerable insights have been provided on the mechanisms implicated in the sensorial properties of these 3 traditional products. Potential proteolysis (quality/pastiness) markers were found, targets of proteases have been defined. In the future, the application of routine test to detect these markers could be envisaged.

Different technology innovations have been tested to improve the salt distribution and reduce the overall content in dry-cured hams. A Boning-Salting-Binding methodology that facilitates the reduction of NaCl content was developed to produce restructured hams. The reduction of NaCl to 50% in restructured hams processed in this study increased aw, proteolysis and microbiological growth; and modified the instrumental texture parameters. It also reduced saltiness and increased sweetness. The addition of K-lactate to hams with reduced salt content contributed to reduce aw and proteolysis, to assure the microbiological stability (for process temperatures below 15 °C) and to improve those instrumental texture parameters modified when salt content was reduced without modifying the sensory attributes. The use of negative temperatures to dry-cured hams has been demonstrated to reduce the “white film” problem, more important in hams with reduced salt content. A treatment with mild temperature (30-35 °C) during 24-48 h on the final product reduces the soft texture. A Computed X-ray Tomography (CT) equipment and an on-line NIR equipment have been calibrated for NaCl and water contents prediction in the internal part and in the surface of the ham respectively. CT has been used successfully to assess the NaCl distribution in non-fatty areas of hams after salting and throughout the resting processes. This information was used as inputs in the process design for dry-cured hams with reduced salt content. CT can be considered as a useful tool for characterizing and optimizing industrial processes in meat industry.

An experiment focused in comparing three different salting techniques for salmon fillets (dry salting, brine salting and brine injection) concluded 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. All samples had acceptable colour, texture and microbial properties. When measured instrumentally, there were significant differences in colour and texture between brine injection and traditional dry salting. Consumers were willing to try out new products produced with NaCl substitutes and/or salted by injection, but injected products had a lower acceptability. Therefore, it can be concluded that KCl is a good substitute for NaCl in salmon but more research is needed to implement injection methodology in salting.

## Fruits and vegetables:

The use of *Lobularia* (companion plant) in lettuce crops as an alternative to pesticide treatment ensured conservation of key predators and maintained lettuce yields and did not affect the quality components of lettuce heads. 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. Therefore, the use of companion plants enhances the natural biological control, showing good prospects to develop an Integrated Pest Management Program for the sustainable crop protection in traditional lettuce crop located in the Mediterranean area. This kind of Management Programs ensures pest control and contributes to the rearing of predators that will disperse to other neighbouring and subsequent crops, thus contributing to the maintenance of biodiversity in agricultural ecosystems.

The effects of the variety and agronomic strategies (organic vs mineral fertilization and elicitor treatment with chitosan) on Brassica have been analyzed for experimental field with different varieties (early, Trevi; mid-harvest, Meridien; late season, Favola). 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. Therefore, the convenience of organic fertilization has to be stated for each variety through the balance between the yield reduction and the improvement of nutritional characteristics. Under our conditions elicitor treatments with Chitosan® did not improve nutritional compound accumulation, except for an increase in the level of glucosinates in treatments with organic fertilizers. ■

## For any additional information:

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## Work Package 5:

### Improved marketing and food supply chain organisation methods for traditional food products

The participants of WP5 (Belgium – Ghent University, Hungary – Campden BRI, Italy – University of Milan and PE-Group) have prepared a document containing a short summary of the main results achieved since the project started and draft recommendations for SMEs, support organizations, policy makers and knowledge providers.

The main results achieved by WP5 are:

#### 1. Results of the analysis of bottlenecks and success factors of traditional food producers

- a. Definition of traditional foods
- b. Practical use of Food Chain Management for SMEs
- c. A tool for identifying bottlenecks and success factors
- d. Typical bottlenecks and success factors of traditional food chains
- e. Guideline for carrying out a questionnaire survey
- f. Sources of knowledge by geographical distance
- g. An inventory of best practices of traditional food chains on exploiting supply chain management and marketing management resources
- h. Importance of innovation along the chain
- i. Practical use of Food Chain management for SMES
- j. Importance of networking and collaboration

#### 2. Results of the evaluation of marketing management capabilities of traditional food producers

- a. Benchmark tool for self evaluation by means of an on-line questionnaire ([www.truefood.eu](http://www.truefood.eu)) for the assessment of marketing management capabilities
- b. List of main critical points regarding marketing management capabilities
- c. List of possible solutions for SMEs for increasing marketing management capabilities
- d. Assessment of the competitive advantage of SMEs in traditional food chains

#### 3. Results of the measurement of overall traditional food chain performance

- a. A graphical and conceptual tool to map chains
- b. A systematic approach for identifying chain goals
- c. Supply chain performance measurement tool
- d. Chain goals and underlying sub-goals
- e. Taxonomy for chain governance structure identification
- f. Instrument to measure the quality of chain relationships
- g. Quality of chain relationships and chain performance
- h. Chain strategies

#### 4. Results of the development of innovative distribution strategies for traditional food products

- a. Overview of the complexity of the distribution chain
- b. 12 developed innovative distribution strategies based on stakeholder evaluation
- c. Detailed Action plans for each developed strategy & Indication of relative resource intensity for each strategy
- d. Evaluation tool for strategic orientation (SWOT and SOR analysis)
- e. Benefits of involving chain partners and third party experts for sharing risks and cost

The recommendations of WP5 are grouped into 4 main categories based on the 4 target groups. These target groups are SMEs, support organizations, policy makers and knowledge providers as they are involved in the actions for improvement of access to market of traditional food chains.

The draft recommendations of WP5 were discussed during round-table meetings in the three countries and are revised based on the comments and suggestions provided by the invited four target groups. Furthermore, as last research task case studies were conducted with SMEs in the three countries in order to evaluate their competitive advantage in the traditional food sector. ■

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## Work Package 6:

### Pilot scale evaluation, demonstration and transfer of innovation to industry

10 demonstration activities have been performed under WP6, all of them coming from promising research results performed under WP2, 3A, 3B, 4 and 5.

Total 26 industrial companies have been involved in these 10 demonstration activities of WP6, among them 15 are SMEs.

Many exploitable results and knowledge have been merged from these activities targeting mainly dairy and meat sectors.

#### • Dairy sector and cheese manufacture

- Creation of microbial consortia exhibiting anti Listeria activity for the fabrication of traditional French cheeses (Saint Nectaire and Pont L'Evêque) and applicable to other European traditional cheeses – INRA, ACTIA (ADRIA, ADRIA NORMANDIE) (FR)
- Specifications for new air monitoring strategies based on sequential ventilation and allowing reduction of energy consumption in cheese ripening rooms applied to Saint Nectaire French cheese but applicable to other European cheeses – INRA (FR)
- Construction of a respiratory cell available for studying wrapped and unwrapped cheese ripening in controlled conditions of temperature, relative humidity and CO<sub>2</sub> / O<sub>2</sub> content for industrial use and for better understanding wrapping films properties (gas and water permeability) for support in designing and selecting the accurate films as a function of expected cheese evolution – INRA, ACTIA (LNE)(FR)
- Fabrication of new packaging films treated with antimicrobial substances able to increase the shelf life of traditional cheeses – INRA, ACTIA (LNE)(FR)
- Methodology for the selection of the most adapted combinations of thermophilic starters for cheese makers to enhance the production of bioactive peptides in cheeses. The maximization of anti-hypertensive peptide content is linked to an optimization of proteolysis patterns and related modifications of sensory characteristics – INRA, ACTIA (ACTILAIT)(FR)

#### • Meat sector and delicatessen

- Selection of one very efficient strain of Lactic acid bacteria inhibiting Listeria monocytogenes in fresh pork meat and dry fermented sausages – ACTIA (ADIV)(FR)
- Strategies for reduction and substitution of salt content of dry-cured hams (bone-in-hams and boned hams) available for producers – IRTA (SP)
- Automatic equipment for on-line measurement of pH and weight at industrial conditions for raw material classification in order to avoid soft texture problems in dry-cured hams, especially in the case of a reduction in the salt content – IRTA (SP), ACTIA (ADIV) (FR)
- High Pressure Process (HPP) service available for the texture improvement in dry-cured meat products with reduced salt content – IRTA (SP)
- Non-destructive methodology based on Computed Tomography (CT) for the standardization and optimization of industrial processes for dry-cured meat products with standard or with reduced salt content available for producers – IRTA (SP)
- Use of Sym'Previous modelling tool to follow bacterial evolution as a function of storage and distribution temperature monitoring for European meat producers – ACTIA (ADRIA) (FR).

#### • Other sectors

- A predictive model available for managing shelf life and safety of green olives, based on the performance of lactic acid bacteria and yeasts during fermentation process – ETAT (GR)
- A predictive models to manage shelf life and safety of non-acidic dairy desserts based on the growth of Listeria monocytogenes is available – ETAT (GR).

All these results and knowledge are available for European producers of traditional food products. ■

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## Work Package 7:

### Environmental, societal, human and economic impacts of innovation

#### Task 7.1 Strategy and innovation trajectory for traditional products.

The objective was the identification of patterns of individual and collective innovation processes in the TFP sector, in background of the management of local heritages and the governance of common pool resources. Traditional products belonging to different agro-food chains were studied: Corsican Clementine, Corsican pork meat, Corsican Brocciu, Tuscany pork meats and Savoyard Cheeses. The activity has been carried out by INRA-SAD, Corsica. During the last years of activity the study on Savoyard cheeses was completed. For these above mentioned TFPs, were considered the aspects linked to origin area, product qualification, production costs and marketing devices.

The main findings of this task were:

- Innovation for traditional food is opening a really interesting approach if not limited to process innovation. Fostering the analysis on organizational innovation and on the effectiveness of territorial linkage, it is possible to underline the raw material importance, at the same time for quality building, actor legitimacy and traditional character of local food. By this way, such approach implies a more realistic definition of traditional food.
- In a prospective approach, innovation must also include organizational dimensions concerning the process of rule elaboration and modifying the modalities by which local actors are appropriating environmental and cognitive resources. These modifications concerning a new distribution of abilities to manage and to renew such resources are questioning both the actors' legitimacy and the permanency of product traditionality. Observations show that implied operators in collective actions are often more focusing on the main traits of raw materials, names and benefit capture than reinforcing the territorial anchorage of traditional food.

In conclusion the TFPs are products able to enhance the traditions, culture and the knowledge of a community; TFPs' properties are the expression of a particular territory; TFPs represent a coherent economical coordination and cultural, social and professional identities. The price premium of TFP can be based on a twisted image or a way to remunerate environmental and cultural services.

#### Task 7.2 - Environmental impacts of innovations for TFPs.

The activity of task 7.2 has been carried out by the University of Ljubljana, Slovenia. The objective was the detection and the assessment of possible new environmental pollution points and their extents or possible environmental pollution reductions in new/innovative TFPs production and processing. Four model TFPs have been selected for: cheese from raw milk (link with WP2A, WP2B, WP4) – hard cooked cheese; dry-cured ham (link with WP2A, WP2B, WP4); beer (link with WP2B) and cauliflower

(link with WP4). Amongst the inspected environmental impacts method, the procedural principles of Life cycle assessment (LCA) were found to be the most suitable for the assessment of environmental impacts (EI) of the production line innovations studied within the TRUEFOOD project. LCA is a well structured and internationally standardized method for quantifying the emissions and resources consumed in terms of EI potential. The LCA-related data is well available and has good coverage in the EU and the method offers high flexibility as the emission modeling approaches can be set to the desired detail. Suitable validated models are available in the scientific literature and their interchangeability allows a more specific, local, narrow or a wider, general, crude assessment. As LCA is an active and viable method, the sustainability and the longevity of the Task 7.2 results were foreseen.

In the first stage, the conceptual models of the model TFPs production lines were constructed in conjunction with TRUEFOOD partners from WP2A, WP2B, WP4; specific field experts, research organizations and the representatives of the food industry.

Thereupon, the raw production data obtained from the TRUEFOOD partners was linked with relevant databases (e.g. NRC, MITERRA\_EUROPE, EMEP/CORINAIR) to obtain an emission inventory. In the next stage, the contribution of the accounted emissions to the individual environmental impact categories (greenhouse gas emission- GHG, eutrophication potential –EP, acidification potential – AP, photochemical ozone creation potential - POCP, land use - LU, resource use- RU) was calculated with the assistance of IPCC, EMEP/CORINAIR guidelines and the models from the scientific literature.



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In summary, the results obtained showed a lower potential environmental impact of the sequential ventilation due to the reduction of electricity consumption (ripening room ventilation in hard cooked cheese production line), increased potential resources consumption and reduced global warming potential of oil supplementation (vegetable oil supplementation in dairy and hard cooked cheese production line), reduced potential EI for low milk yield heard / day lower potential EI for higher milk yield / kg milk (once daily milking), slight increase in the EI potential (potassium lactate addition in dry cured ham production line), higher eutrophication, acidification potential but lower global warming potential (fertility management: organic fertilizer in Brassica cultivation), increased EI due to implementation of packaging of cheeses.

Yet, such calculations and environmental impact reduction actions should be perceived from a broader perspective. In the case of packaging, for example, the implementation of the packaging system accounts for higher EI potential in comparison to the unpackaged foods. Nevertheless, the packaging implementation is a necessity in regard to the consumer and food safety issues (especially in the scope of the HACCP approach), and the compensation of the EIs has to be mitigated. To respect this point of view and the demand for sustainable development, the implemented packaging has to bare low potential EI. Further on, the consumer contribution to waste separation and the waste management legislation and implementation mechanisms should assure further EI reduction through the recycling of packaging.

Further on, the effect of vegetable oil supplementation and milking frequency modification on the dietary value of milk and dairy products was not statistically significant, therefore the implementation of these innovations with respect to the higher environmental impact potentials assessed is unjustified.

Also, the results of the fertilizing treatments assessed in the EIA further confirm the existent agricultural Best Available Practices guidelines (time of fertilizing, housing, removal, storage, application and integration of organic fertilizers ...).

Secondly, the value of the methodological framework should not be overlooked. As the EIA performed in the task 7.2 was tailored to concrete production changes indicated by the Truefood project, the process protocols have important guide-lining value for custom EIA framework administrators and managers. The methodological framework was based on basic production data provided from WP2A, WP2B and WP4. Yet, the interchangeability of the validated models in the inventory formation phase with other models (new, specific, local ...) allows rough & fine tuning of the results.

In conclusion, the results obtained showed the possible use of such indicators for the monitoring of environmental impacts of agricultural production and food processing systems. This offers the opportunity to identify specific steps of production with high environmental impacts, in order to perform corrective actions to improve the link between production and environment.

## Task 7.3 - Potential health impacts of innovations for TFPs.

The overall aim of this task was the evaluation of the effects of specific nutrient composition changes in TFPs on physiological parameters, selected as biomarkers of risk for chronic degenerative diseases. The activity was carried out by INRAN, Italy which was in charge of four in vivo studies on different TFPs, namely Functionality trial, Bioavailability trial, Biochemical action trial and Metabolic action trial. During the last years of activity, both Biochemical action and Metabolic action trials were completed.

**Functionality trial:** the aim was to investigate the modifications induced on blood lipid profile and antioxidant status of selected healthy volunteers following the ingestion of a low saturated fatty acids or a control hard cheese of raw cow milk. The two types of cheese were obtained only with different feeding of cows: cows were fed a maize silage based diet with (modified) or without (control) linseed oil added. The results showed that supplementation, following a recommended dietary regimen, lead up to an increase of plasma vitamin E and vitamin C, which are powerful antioxidants, in volunteers consuming low saturated fat cheese and to any change in markers involved in cardiovascular diseases, except for myristic acid. In conclusion, in consideration of the fact that myristic acid is one of the fatty acids mostly correlated with increased atherogenic risk, we could assess that changing lipid profile of dairy products maintaining as much as possible their characteristics could be an area of interest in terms of potential functionality of these foods.

**Bioavailability trial:** the aim was to evaluate the effect of acute consumption of fresh and stored strawberries on red-ox status in humans. Results showed that typical strawberries had higher nutritional values than the equivalent commercial ones; moreover, there was an increase of plasma Total Antioxidant Capacity after consumption of fresh food, meaning that the body had a greater defence against attacks by radical forms harmful to human health; finally, strawberry bioactive compounds were bioavailable with differences between fresh and stored fruit.

**Metabolic action trial:** the aim was to evaluate the impact of consumption of strawberry jam sweetened with wild apple juice and with a sugar content only coming from fruit on glycaemic status in obese non diabetic volunteers and type 2 diabetic obese volunteers. The strawberry jam was sweetened only with wild apple juice, having a sugar content coming from fruit (mainly fructose) and without any added sugars; a strawberry jam sweetened with sucrose was used as control. Our results showed that, in both types of volunteers consuming the naturally sweetened strawberry jam, the increase of plasma levels of glucose and insulin is significantly lower compared to consumption of conventional jam. Improving traditional processes to obtain modified products could be a strategy to enhance the quality of life of diabetics helping them with a better compliance to a dietary regimen including highly accepted food. Moreover, it could be established a better cooperation between research and industry with the final message directed to both consumers and

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Health Care Ministry in order to develop and implement public awareness and primary prevention programmes, targeting the population as a whole, as well as individuals at a higher risk of developing diabetes and to promote healthy diet and physical activity as key elements of a healthy lifestyle, with the end point to hinder the dramatic rise in the costs for health and medical care caused by this pathology.

Biochemical action trial: the aim was to examine the effect on humans of concomitant consumption of alcoholic or non alcoholic beer and lettuce, studying plasma antioxidant levels and total antioxidant capacity in humans as indicators of antioxidant status. Results show that plasma antioxidant status of volunteers was different after the administration of both the alcoholic treatments and the non alcoholic one, while single plasma antioxidants (liposoluble provitamins and vitamins, vitamin C, thiol groups) did not change after beer administration; moreover, beer phenolic compounds were bioavailable with some differences between alcoholic or non alcoholic beer, corresponding to different bioavailability in humans. Moreover, lettuce phenolic compounds are bioavailable, although the association between beer and lettuce did not imply a higher effect. These results allow to conclude that bioavailability of antioxidant compounds depends on bioactive compounds content, on technological process and on the nature of the meal in which the target food or beverage is consumed. In addition, it is important to underline that even if the percentage of alcohol in beer is lower than the other alcoholic beverages, such as wine, spirits and liquors, beer has to be consumed in moderate quantities, as suggested by dietary guidelines.

In this work different models of food were used: traditional “strawberries”, innovative “cheese”, coming from innovative technological production “strawberry jam” and “dealcoholized beer”. In conclusion the results show the strong link among production, technology innovation and benefits for consumers health.

## **Task 7.4 Dissemination plan and translation of message for consumer.**

The dissemination of the results obtained within the task 7.3 was the main objective of task 7.4 which involved different actors, such as food federations, food industry and consumers. The dissemination of project results was developed in form of oral presentations for restricted audiences and mass media interventions addressing a broader public at both local and national level.

## **Task 7.5 Traditional products and the economic impact of innovation.**

The main purpose of this task was to analyse the practical handling of innovations in TFPs and their economic impacts in SMEs and thus to elaborate conclusions and recommendations to better introduce and link innovative activities to this group of companies. The activity has been carried out by University of Applied Sciences Weihenstephan, Germany.

First of all a comprehensive literature review regarding the topic of innovations in the food industry was carried out in order to provide a theoretical and factual basis for the empirical studies planned in this project. Special emphasis was laid on the factors which impact the success of innovations. The results of the literature study show that “situation and perspective of the market”, “enterprise form and size”, “market research and marketing”, “innovation management (including co-operations with external partners)” and “product characteristics” are essential for the innovation success.

In a second step, a written company survey was carried out in Germany, Italy, the United Kingdom, Austria and Poland. The questionnaire was elaborated on the basis of the literature study and therefore dealt with general information about the company, questions regarding the situation of innovation, co-operation behaviour of companies and information about costs and turnover regarding innovations. Furthermore, it has been asked to what extent companies apply factors which yield to innovation success. Altogether 390 utilizable questionnaires were returned. In order to countercheck the results of this analysis, 20 guideline-based telephone interviews with representatives of different companies of the beverages industry, the dairy industry and companies producing fruit and vegetables or meat in Germany, Italy and the United Kingdom were additionally carried out using similar questions as in the written company survey.

With respect to the effects of product innovations results of the case studies show that new markets could be opened up due to the realisation of new product innovations by enlarging the



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customer-base. Furthermore, in some cases it was possible to increase the market share. However, there are also some internal and external barriers which make it difficult for companies to be innovative. Internal problems mainly refer to lack of personnel and financial resources as well as organisational problems (e.g. in innovation management) while external barriers are mainly based on intransparent, equivocal and fast changing regulations (mainly regulations on EU level) which make it difficult for SMEs to follow the current status of legislation. This is an aspect which impedes product innovations in particular in knowledge-intensive areas of the food industry. Not least against the political will to lower bureaucracy in particular for SMEs activities on a EU and national level should be enhanced which aim to harmonize regulations between different areas of policy as well as to lower the requirements for SMEs.

Scientific literature indicates that co-operation with external partners is an important field to improve the innovation activities in the food industry. One third of the interviewees during the case studies stated that they do not co-operate with partners in innovation activities because they are able to accomplish all tasks accruing within the innovation process without any external support. However, two third of interviewed companies indicated that it is hardly possible to do innovations without the support of external partners. Between 40 % and 60 % of the companies questioned during the written survey already co-operate with external partners. These SMEs mainly work together with suppliers. Nevertheless, there seems to be room for improvement regarding the co-operation with external partners in particular from academia, food retailers or private customers which are so far under-proportionally involved in innovation activities of food SMEs.

Regarding several success factors it can be stated that the fields “product characteristics” and “marketing expertise of employees” are already realised by a rather high part of SMEs. However, there is substantial room for improvement in the fields “market research of companies” and “innovation management”, mainly regarding personnel issues (e.g. only low funds are provided to employees for innovation projects, lack of close co-operation between different departments). Both areas are mainly influenced by internal decisions of the respective food industry companies and thus can be more independently changed than e.g. the character of a specific market.

In order to understand even better which factors have a high influence on the “innovation success” of food industry companies, currently merged country data of the written company survey are comprehensively analysed using a multinomial logit model. It is planned to publish the results of this analysis in a peer-reviewed scientific journal. ■

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## Work Package 8: Dissemination, training and technology transfer

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). TDUs are now 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 actions targeting SMEs took place in several countries to ensure a large dissemination and exploitation of results in France, Italy, Belgium, Greece, Spain, Portugal, Denmark, Czech Republic, Hungary, Austria, Turkey, UK, Slovenia and Germany.



In total the project organized **234 training events** (i.e., workshops, seminars, courses) reaching about **6.078 attendees from the traditional food sector**. These training and dissemination activities to SMEs were particularly active during the 4th year of the project, with 119

training events targeting 3.356 participants. The training events were implemented in strong cooperation with the research partners and centers of excellence of the project.

The activities presented the main project research results and covered a wide range of other topics (i.e., state of the art on food innovations, food law and evolving standards at EU and national level, health and nutritional claims, food labeling, food packaging, chain management, predictive modeling, risk assessment, consumer expectations and behaviors, etc.) and ensured that SMEs' specific requests were fulfilled.



In addition to the implementation of training events, TDUs provided information on project results through dissemination of INFO SHEETS on different topics and through the organization of INFO DAYS where

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project results were presented to the consumers and the wider public. Furthermore, TDUs kept regular contacts with SMEs through meetings, visits, round table discussions, translation and dissemination of scientific articles that are of direct interest of TFP SMEs, etc. The interaction between TDUs and SMEs is expected to continue after the project leading to a long-standing cooperation for the benefits of the SMEs mainly working in the traditional food sector.

An important tool developed under WP8 is the document “Guideline on effective knowledge and technology transfer activities to SMEs in the food sector with particular focus to traditional food manufacturers”. The work was led by Campden BRI Hungary and developed in cooperation with some project partners (Agriconsulting, ENEA, NOFIMA, SPES members – Federalimentare, FEVIA, FIAB and SEVT). The aim of the document is to provide guidance on practical skills and successful working practices in contacts and daily work relationships with the food businesses to all personnel involved in the process of knowledge and technology transfer, including mediators between industry and the research community. The booklet is available to the public and can be downloaded from the following website:

[http://www.economicwebinstitute.org/essays/truefood\\_sme\\_technotransfer.pdf](http://www.economicwebinstitute.org/essays/truefood_sme_technotransfer.pdf)

In addition to the technology transfer activities, TDUs – SPES members and research partners carried out a wider information campaign for communication and dissemination of results using different communication tools and participating in several



meetings and conferences at national, European and international level and food fairs (e.g. “Alimentaria” in Spain, “Anuga” in Germany, “Foodapest” in Hungary).

The final TRUEFOOD conference will be held at the Library Solvay in Brussels (Belgium) the 13<sup>th</sup> of April 2010. Registration at: [www.truefood.eu](http://www.truefood.eu) and [www.fevia.be](http://www.fevia.be). The conference will be a unique opportunity to network, listen and debate with key players from the food production and academic sectors involved in innovation of TFP. ■

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