Biotechnology has a huge potential to improve the quality and safety of food. Crops could be designed to produce more nutritious food, with lower chemical and energy inputs. Microbes or plant cells can become ‘factories’ producing new bioactive chemicals. Genes could help trace the constituents of food to their origins. The know-how is out there, but generating real technology which is accessible to farmers and/or consumers depends on companies being able to translate new research into marketable products.

The crucial link between scientists and biotech companies is the focus of the BioProducts 4 Food project, a Specific Support Action currently being carried out by Rothamsted Research in the UK.

Research into action

BioProducts 4 Food links biotech companies from Europe and the wider world with scientists carrying out research on plant and microbial biotechnology within the European Commission’s Framework Programmes. It represents continued development of a project that has been running since 2000, funded initially by the Fifth Framework Programme and now being supported for a further three years under FP6. It holds an annual technology transfer meeting, known as the Rothamsted International BioMarket, and operates a networking website.

After four years, the BioMarket has become a well-established event in the biotech calendar. During the three-day meetings, EC-funded scientists are invited to present their research in a ‘Discoveries Showcase’, while companies and researchers can publicise themselves and their products on posters. Financiers and service providers to the biotech industry also attend. Delegates can arrange one-to-one meetings with potential partners, an approach which has been received enthusiastically in the past. BioProducts 4 Food hopes and plans for 350 individual partner meetings at each event. Now there are ambitious aims for widening international coverage – a target of 250 delegates from at least 20 countries (including 15 EU Member States) at the 2006 event. A panel of food industry representatives will be asked to advise on industry sectors that may have been overlooked in the network.

On-line discoveries

The BioProducts 4 Food website (www.bioproduct.info) offers a year-round networking arena. It has a database of more than 350 organisations from 50 countries involved in translating biotechnology into real improvements in food production, with small and medium-sized European companies well represented. Organisers hope to raise this figure to over 1 000 in the next three years. Participants can search the database for organisations with similar expertise, and receive e-mail alerts about new organisations meeting their search criteria. The list of subjects is broad, ranging from biocontrol agents to biopolymers.

This year, the website will be enhanced to include a database of new discoveries. Scientists will be able to enter their results in the database, having taken advice on how best to protect their findings. There should be 50 new discoveries on the website by the end of 2004, further promoting the BioProducts website as a live forum for exchange of innovative ideas between scientists and businessmen.

The BioProducts 4 Food project currently disseminates European food-related biotechnology research to companies in EU Member States, Accession States, Associated States and various other countries including China, Australia and South Africa. What better way to ensure that research investment is working for society?
LIST OF PARTNERS

- Rothamsted Research Ltd (UK)

Full title: Disseminating the results of EC funded research into food quality and safety to facilitate their transfer and exploitation into new products and processes to improve European health and well-being

Acronym: BioProducts 4 Food
Contract n°: CT-2004-505997
Website: www.BioProduct.info

Project co-ordinator:
Stephen James,
Rothamsted Research Ltd,
stephen.james@bbsrc.ac.uk

EC Scientific Officer:
Waldemar Kutt,
waldemar.kutt@cec.eu.int

EU contribution: €273,000
The candidate countries in central Europe have extensive experience and scientific expertise in cultivating fruit and flowers. Leading-edge skills include biotechnology, plant protection and environmental sustainability. They also have a more traditional know-how about bee-keeping, plant pollination, fruit tree research, and fruit processing. Nevertheless, the pursuit of scientific programmes has been hampered by a shortage of funding. So collaboration by research institutes in these countries could be mutually beneficial if they were to participate in European research in the Food Quality and Safety priority of the EU’s Sixth Framework Programme. However, Central European countries have little or no experience of how the European research community works, how to identify available support, and how to submit project proposals.

The answer is to mobilise help from existing Member States through a new European Commission Specific Support Action, Stimulating participation of Central European countries in the Agri-Food Sector in FP6 (CEAF). It involves experts from the European Commission and the Netherlands, and research institutes and SMEs in the flower and fruit sector from Poland, Slovakia, Latvia, Hungary and Estonia.

Fruitful workshops

The first step is to survey the sector in each country and list the main players and their capabilities. They will then be invited to workshops, one in each of the candidate countries, to help them develop their skills in preparing research proposals that fit in with the objectives of FP6. Experts from the European Commission and Member States will be available to inform researchers about how the new Framework Programme instruments – Integrated Programmes, Networks of Excellence and other EU research structures – work, and to help them how to find suitable partners.

About 40 delegates will be carefully selected to attend each workshop, drawn from universities, research institutes, governmental organisations and SMEs in the agri-food sector. The event will cover the details of consortium building, project management, legal and financial issues, and provide information on current and planned research projects. At the end of each workshop, feedback from participants on the training measures will help to refine future programmes. The workshops will provide an opportunity for participants to learn new skills and make fruitful contacts for future co-operation. A second series of more practical workshops on project proposals already under development will also be held. They will be a focus for advice on the research content, intellectual property rights, and suitability for a given programme or network. They will also cover proposal writing and project management.

Information is the key

To be successful, CEAF will need to raise awareness of its activities in its target groups in central Europe. It will promote the workshops to them and maintain an interactive network amongst all collaborating partners. A website will be created containing all the relevant information; it will be major platform for the dissemination of project results. This will be supported by promotional publications. A database of central European research capabilities and facilities will be compiled from the first targeting exercise for the workshops, and will be published on a CD-ROM.

The progression over two years from general training, through consultancy on possible projects and partner search to focused help for securing funding and running projects, should lead to positive participation by central European researchers and SMEs in FP6. The exchange of experience and expertise between partners will help to build bridges and better integrate central Europe into the European Research Area.
LIST OF PARTNERS

- Institute of Fundamental Technological Research, Polish Academy of Sciences (Poland)
- Hungarian Science and Technology Foundation (Hungary)
- Department of Food Processing, Tallin Technical University (Estonia)
- Baltic Chapter of SPIE – the International Society for Optical Engineering, Latvian National Contact Point for 6FP (Latvia)
- Slovak Agricultural University in Nitra, Department of Agrochemistry and Plant Nutrition (Slovakia)
- Research Institute of Pomology and Floriculture in Skierniewice (Poland)
- Agriculture University in Warsaw (Poland)
- Wageningen University and Research Centre (The Netherlands)
- EuropaDesk, Wageningen University (The Netherlands)
The highly reputed animal research centres in the central European accession countries could make a significant contribution to the food quality and safety objectives of the Sixth Framework Programme (FP6). These countries need to know more about what is happening in EU animal research, how it is organised and how to find partners. At the same time, European researchers could help the candidate countries to update their knowledge and get the best value from their expertise. The Specific Support Action, CEC Animal Science (Support to animal science organisations from Central European Candidate Countries) will spend two years on measures to integrate the new Member State animal research centres, their staff and their clients into Europe’s research activities.

The project will cover all the animals raised for food production on a large scale – cattle, sheep, pigs and poultry. All the new Member States in central Europe are represented: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia, Slovakia and Turkey, many with more than one such institution. Some, like the Hungarian Research Institute for Animal Breeding and Nutrition, have their roots in the 19th century. Others, such as the Research Institute for Cattle Breeding at Rapotin in the Czech Republic, were founded after World War II. Since the break up of centralised economies, many have suffered from a lack of funds.

In the spotlight

Initially, the project will map the expertise in these countries in relevant fields such as genetics and breeding, animal nutrition and feed production, animal health and welfare, and meat production. They will survey more than 100 research organisations.

Once the survey is complete, a detailed database of research organisations and of private companies (SMEs) will be created. Anyone setting up a consortium to make proposals or do research can use this tool to find partners.

The information will also go into an animal science website with a facility for partner search (http://www.animal-science.net). Other publicity efforts will include mailing shots and a series of five newsletters on the animal science sector in general and the FP6 priority action on food quality and safety.

Special networks

To encourage networking among researchers from all the countries involved in the project, five working groups will be set up. They will focus on the sectors of genetics and breeding, nutrition and animal feed, meat technology, animal health and welfare, and fisheries. The aim is to develop joint research programmes and to screen other research project ideas for possible further collaboration. A newsletter will be disseminated among the members of the network in order to provide information both on their respective research activities and FP6 opportunities. A prospective study on research organisation and policy in the animal science sector will be carried out in each partner country.

Small and medium-sized enterprises (SMEs) make up a significant proportion of business in all candidate countries, so one objective is to encourage them to join in FP6 programmes. SMEs and researchers alike will receive special help if they want to participate in any FP6 Integrated Projects, Networks of Excellence, Coordination Actions, or Specific Targeted Research Projects. France, Italy and Bulgaria will hold workshops to present the skills and knowledge of researchers and institutes in the new Member States.

All these measures have been designed to benefit the institutions themselves and European research into animal science in general.
LIST OF PARTNERS

- Euroquality (France)
- Agenzia per la promozione della Ricerca Europea (Italy)
- Euro Consultants (Israel)
- University of Plovdiv (Bulgaria)
- Research institute for Cattle Breeding (Czech Republic)
- Hungarian Scientific Society for Food Industry (Hungary)
- Research Institute for Animal Breeding and Nutrition (Hungary)
- Agency for International Science and Technology Development Programmes (Lithuania)
- Lithuanian Veterinary Academy (Lithuania)
- Institute of Fundamental Technological Research Polish Academy of Science (Poland)
- National Research Institute of Animal Production (Poland)
- Institute of Food Bioresources (Romania)
- Institute of Biology and Animal Production (Romania)
- Slovak University of Agriculture of Nitra (Slovak Republic)
- Research Institute for Animal Production (Slovak Republic)
- The Scientific and Technical Research Council of Turkey (Turkey)
European organic production is expected to grow between 5%-20% by 2006, and Eastern countries have the potential to take the lion’s share. In Hungary, for example, the area under organic agriculture is growing by 30% a year and 6% of arable land will be organic by 2006. In many cases, companies based in Western Europe are managing exports of organic produce from accession states. But there is insufficient information about the state of organic agriculture in these countries – its regulation, its techniques or its supporting research, which is leading to mistrust. A Specific Support Action, coordinated from Hungary and involving ten accession states and candidate countries (including those that became new Member States on 1 May 2004), will create a database of information about organic agriculture in these states with the aim of breaking down barriers to communication, and integrating these central and eastern European countries in the international organic research community.

Kept in the dark

There are serious barriers to communication with many accession states. Information technology is underdeveloped, and language can be a problem. Even neighbouring countries that were once a political unit tend not to know what is happening next door. In the ‘old’ Member States, which generate much of the market for high-premium organic food, there is a lack of information about the state of organic agriculture in the new Member States. Eastern Europe has long been committed to conventional agriculture – maximum production at the expense of the environment. Its rapid conversion from this to small-scale, environmentally aware organic agriculture, in response to a burgeoning market, looks suspicious to many.

Dispelling suspicion

The Specific Support Action, known as CHANNEL, is offering accession states a chance to dispel these fears, to communicate their achievements, and to become involved in international research networks on organic techniques. It will hold meetings and seminars in accession and candidate countries to discuss the state of play and identify research needs. The widest possible range of stakeholders will be invited, from farmers to pressure groups to research institutes. Key issues in organic farming will be covered: soil fertility, weed management, plant protection, seed and propagation material, animal husbandry, and agro-technology. Through these meetings, and other research on the ground, the project will compile a database of organic agriculture activities in each accession and candidate country, which will be made available on the internet.

Local science

Organic farming works with the local environment and as such requires local research to support it. For example, in conventional farming, soils are made fertile by standard use of mineral fertilisers, and farmers can neglect good practices to preserve natural soil fertility. Organic farmers must work with their soil to improve it. Much of Eastern Europe has low precipitation and dry soils which call for specific, optimised cultivation measures. The production of seed for organic agriculture, which has not been pretreated with pesticides and fertilisers, is completely lacking in many accession states. Research is needed to recommend varieties and develop technologies to produce suitable seed locally.

The CHANNEL project will promote itself extensively. Hopefully, by the end of its 18-month period, the organic research community in these accession and candidate countries will be sufficiently well connected to increase the possibilities to participate in EU Framework Programmes and thus able to fulfil the research needs which have been highlighted.
LIST OF PARTNERS

- Szent Istvan University Budapest (Hungary)
- Central Service for Plant Protection and Soil Conservation (Hungary)
- National Institute for Agricultural Quality Control, Budapest (Hungary)
- Institute for Small Animal Research, Budapest (Hungary)
- Justus Liebig University, Giessen (Germany)
- Centre for Agricultural Landscape and Land Use Research, Müncheberg (Germany)
- Ludwig Boltzmann Gesellschaft, Vienna (Austria)
- Federal Agricultural Research Centre, Braunschweig (Germany)
- Nikola Poushkarov Institute of Soil Science, Sofia (Bulgaria)
- University of South Bohemia, Ceske Budejovice (Czech Republic)
- Biokontroll Hungaria, Budapest (Hungary)
- Association of Hungarian Small Animal Breeders for Gene Conservation (Hungary)
- Agricultural University of Wroclaw (Poland)
- Institute of Agricultural Research and Development, Fundulea, Calarasi (Romania)
- University of Veterinary Medicine, Kosice (Slovakia)
- Slovak Agricultural University, Nitra (Slovakia)
- University of Maribor (Slovenia)
- Estonian Agricultural University, Tartu (Estonia)
- Institute of Botany, Vilnus (Lithuania)
- Lithuanian Institute of Agriculture, Kedainiai (Lithuania)
- Mediterranean Agronomic Institute of Bari, Valenzano (Italy)
- Universita di Lecce (Italy)
- Agricultural Research Institute of Cyprus, Nicosia (Cyprus)
- The Genista Foundation, Kalkara (Malta)
European farm animal breeders want to demonstrate to the public their concern over animal welfare and the environment by creating a Code of Good Practice for Farm Animal Breeding and Reproduction. This will be done in an 18-month EU Specific Support Action (CODE-EFABAR). The Code will help breeders to demonstrate in a transparent and verifiable way what their goals are and how they can achieve them. Animals used for breeding are a special case as their genetic make-up is passed on to future generations of stock.

**From fork to breeding animal**

The breeding and reproduction standards to be suggested will apply to cattle, pigs, poultry and fish. Breeding is the first link in the food chain producing meat, milk, fish and eggs, which makes up a significant part of agricultural production. It includes choice of breed, selection, genes, animal welfare, genetic diversity, public and animal health, food quality and the environment.

An earlier EU-funded project on animal breeding, Sustainable European Farm Breeding and Production (SEFABAR), found that breeders do have a reliable image for providing the information consumers want. SEFABAR’s conclusions about sustainable breeding, which took into account ethical, sociological, welfare, and economic work, are essential in the outline of this current project.

**European-wide code**

The Code aims to build trust among consumers and create transparency for European citizens as well as towards farmers who are the customers of animal breeders. While some larger producers might be able to draw up their own codes, a high proportion of European farm animal breeders are small or medium-sized enterprises (SMEs). In any case, a universal code can be written and checked more carefully and should prove more widely acceptable to society as a whole.

An association of breeders from northern and southern Europe, the European Forum of Farm Animal Breeders (EFFAB, formerly Farm Animal Industrial Platform – FAIP), will draft the technical sections of the Code. The bioethical and risk-assessment elements will be researched by a bioethical centre in Denmark, while the European Forum of Biotechnology will deal with communication, and Société Générale de la Surveillance will provide verification and certification information.

The draft Code will be discussed at a workshop for NGOs and European breeders before the final version is refined and published. A verification and certification mechanism is planned to allow breeders to develop their own standards within the Code, and to have them approved and publicised in the way they choose.

The strategy for spreading awareness of the Code will include its publication on the SEFABAR website (www.sefabar.org/code-efabar) alongside information for those involved in the food chain, politicians and NGOs. Brochures for breeders will be published in several languages and breeding organisations will be trained to apply the Code. At the end of the project, EFFAB (FAIP) will take responsibility for maintaining the Code.

**Market boost**

The prime effect of the Code will be greater transparency about European farm animal breeding practices which, it is hoped, will make consumers more confident about the quality and safety of farm animal products. In addition, it will increase the competitiveness of Europe’s animal breeding and reproduction sector.

The Code will demonstrate the professionalism of breeding organisations. It will play a part in preserving traditional breeds, in marketing local food varieties, and in creating new markets for indigenous breeds from eastern European accession countries. It is important to stress that European farm animal breeders have declared that they have no interest in the use of genetic modification or cloning for food production. These technologies do not bring advantages for food production. Moreover, European consumers do not want these technologies to be applied, and this wish is being respected by means of, among other tools, a verifiable and transparent Code.
LIST OF PARTNERS

- EFFAB (formerly FAIP) (The Netherlands)
- KVL-CeBRA (Denmark)
- EFB TGPPB (The Netherlands)
- SGS (The Netherlands)
- Svensk Avel (Sweden)
- Lohmann (Germany)
- IPG (The Netherlands)
- Aqua Gen (Norway)
- Semenitaly (Italy)
- IRTA (Spain)
- Badi Besbes ISA (France)
- Loredana Locatelli (Italy)
The human intestine uses an army of bacteria to extract nutrients from the digested food that passes through it. At the same time, our intestine is vulnerable to harmful microbes that can cause a range of gastrointestinal disorders. Fortunately, the food and food supplements that we consume can also support beneficial gut microbes which help to fight off the harmful ones. As part of a strong drive by the European Union to improve the health and quality of life of European citizens, it has clustered several multidisciplinary research projects on food, the functionality of the gastrointestinal tract, and human health under a generic umbrella called PROEUHEALTH. Since 2001, the aim of this multidisciplinary research network has been to disseminate information, results, and highlights among Europe's scientists, industrialists and consumers. Furthermore, the cluster has a mission to organise debates and discussion forums among these three audiences.

Initiatives are already in place to spread the results of this wide research programme, with its 64 different research groups from 16 European countries, throughout the current Member States. In addition, the EU wants to bring the Candidate Countries into the network so that they too can benefit from this work and the results. It has set up a new Specific Support Action, GUTHEALTH, which – over a three-year period – will promote a range of activities intended to improve knowledge about intestinal health in Candidate Countries (including those that became new Member States on 1 May 2004).

**Spreading the word**

GUTHEALTH is organising six innovative roadshows for those Candidate Countries with an active interest in nutrition: Estonia, the Czech Republic, Poland, Hungary, Malta and Latvia/Bulgaria. Their aim is to share European research results on food, intestinal microbiota and human health with a targeted audience, and to show how this research can be translated into consumer products. Local organisers will be recruited from the interested scientific community to help run these roadshows and to find local interest and contacts. The roadshows will be held in central locations in major cities so that they are readily accessible. The organisers will select scientists and industrialists, along with a representative number of women, to attend the roadshows. The first roadshow has already been held in Tallinn, Estonia in January 2004, raising tremendous interest among local scientists and citizens. The next event will take place in Prague, Czech Republic, on 30 September 2004.

These events, alongside other GUTHEALTH initiatives, will be open to all the Candidate Countries. Advertisements and e-flyers on the PROEUHEALTH website will help to publicise them. The SME database of companies in the food, biotechnology and pharmaceuticals areas, in particular, will also be notified in case they have sister companies in the relevant countries.

**Training courses**

Selected researchers from those countries being targeted will be invited to two-week courses with a high practical content, to teach them more about the GUTHEALTH field. The training will focus on identification of bacteria and microbial diversity, and will be aimed at Ph.D. and postdoctorate physicians, microbiologists and engineers, representing a good cross-section of all Candidate Countries. In this way, health science networks will be expanded to include members from these countries, enabling a cross-fertilisation of ideas and know-how between the different areas of gut bacteria research. The first training course took place in October 2003 in Paris, France.

Targeted invitations will be issued for three international conferences, planned to take place outside the GUTHEALTH programme, including one on PROEUHEALTH and another on lactic acid bacteria. GUTHEALTH will endeavour to invite a wide spectrum of researchers, representatives from the food industry, policy-makers, legislators, dieticians, and local organisations. This, in turn, will strengthen the networks involved in research collaboration and promoting gut health.
LIST OF PARTNERS

- VTT Biotechnology (Finland)
- Institut national de la recherche agronomique (France)
- Wageningen University (The Netherlands)
Regular scares about food safety, from BSE to salmonella, indicate that the link between food and consumer health is still a major concern across the European Union. The delivery of safe food from the producer to the consumer requires meticulous monitoring at every stage in the supply chain, a concept now called ‘farm to fork’. The Fifth Framework Programme (FP5) included many research projects designed to ensure the safety of food produced and eaten in the EU. Its results are now providing the main source of information for those who draw up Europe’s food policy and the legislation that enacts it, and this approach will continue and be reinforced in FP6.

In this context, a Specific Support Action, Integration of European Food Safety Research from Producers to Consumers (IRFOS), has been launched to analyse the results of completed and ongoing projects, and to direct future research into the most relevant areas. IRFOS has set up a steering group of top European and international experts to promote networking at the highest level on the crucial topic of food safety and to oversee two conferences that will provide the material for its recommendations.

Preparing the ground

A preparatory IRFOS conference, called ‘Food: new challenges after a century of progress’, will be held in Paris in June 2004. It will aim at providing key material for a subsequent work conference. Eminent scientists will give presentations describing the achievements of a century of work on food safety, then parallel workshops will review current research.

Workshop subjects are:

• The food chain: risks and threats for consumers
• Food science: trust and mistrust of consumers
• Dissemination of food knowledge
• Who influences food choices?

This conference is being supported by both the EU and the OECD (Organisation for Economic Cooperation and Development), and is organised by the SSHA (Société Scientifique d’Hygiène Alimentaire), a project partner currently celebrating its centenary. It will target consumers and people who work directly with nutrition, such as food manufacturers and dieticians.

Future focus

The work conference will be held in Lille (France) in October 2004. It will review the earlier event and look in detail at Europe’s food safety research. It will focus in particular on the risks of infectious and toxic agents throughout the food chain, and on tests to detect them and ways to exclude them. Completed work in FP5 and early results from FP6 will both be included, clustered into five topics: microbiological risks; chemical and toxicological risks; detection techniques and traceability in the food chain; tampering and bioterrorism; and communicating risks to the consumer.

A series of parallel workshops will also use the projects in FP5 and FP6 as a basis for their discussions. They will cover: SMEs and how they can be involved; dissemination and evaluation of results; the Framework Programme tools (Networks of Excellence, Integrated Projects, STREP, CA, SSA); integrating new Member States and accession states; international opportunities; and coordination of national policies in the European Research Area. This conference will be aimed at scientists, policy-makers and those who control the safety of Europe’s food.

The messages delivered there will be gathered into a summary report, recommendations from which will influence research plans for the second half of FP6. IRFOS news will appear on both partners’ websites. IRFOS will help the European Food Safety Authority to formulate and implement an efficient food safety policy to the benefit of the general health of EU citizens.
LIST OF PARTNERS

- Institut National de la Recherche Agronomique (INRA) (France)
- Société Scientifique d’Hygiène Alimentaire (SSHA) (France)
The huge diversity of Earth’s biological resources, from the vast rainforest to the invisible microbe, should be used for the benefit of all. This principle is enshrined in the Convention on Biological Diversity (CBD) issued at the Rio Earth Summit in 1992. The EU has developed guidelines and projects to help achieve this goal, the latest being a Specific Support Action, MOSAICS, to promote the sharing of resources at the small end of the scale – microbial resources.

MOSAICS (Micro-Organisms Sustainable use and Access management Integrated Conveyance System) will spend 18 months setting up a system to manage access to, and transfer of, microbial resources. It will make it easier for scientists to share genetic information about microbes while safeguarding intellectual property rights. There will be a particular focus on the safety and health of Europe’s food supplies. Here microbes are both a resource, for example, for probiotic foods and biopesticides, and a potential threat, in terms of plant disease, food spoilage and contamination.

Three-stage process

Assets cannot be exchanged until their value has been agreed. The vital first stage in freeing up access to microbial resources is to find a reliable way to put an economic value on them. Methods studied in the project will include replacement value, market value, production cost, credit-debit balance, and conservation cost. These will be synthesised in EVa (Economic Valuation) to create a socially, economically and environmentally sound method for pricing microbial resources.

The second requirement concerns the transparent tracking of microbes during transactions. ADaM (Access Distribution and Management) is developing standard documents and procedures to register the point of origin of the resource and track it to its destination.

The last stage, the Integrated Conveyance System (ICS) itself, will combine valuation and trail finding in a full system for the open trading and sharing of the genetic benefits of microbial resources. This is a practical scheme that complements legislative changes and is expected to be used internationally to promote access to microbial resources and to share the benefits they offer.

Building on the past

The Integrated Conveyance System project is the latest in a range of EU-supported efforts to promote the Rio objectives that apply to biodiversity benefits in general and microbial ones in particular. Its immediate precursor, MISOAICC, developed an International Code of Conduct as a tool for microbiologists to implement the CBD at the microbial level. The Code was compiled by international researchers and refined during workshops and consultations. A further workshop WIPMICRO-MOSAICC, has disseminated MISOAICC results and information about intellectual property rights associated with sharing knowledge on microbial genetic resources.

MOSAICS will work closely with other initiatives to promote access and benefit sharing, including EU initiatives, the CBD’s working group on this subject, the OECD’s Biological Information Task Force, and the Global Biological Information Facility. It will liaise with experts in similar biotech fields and in plant and animal resources.

Project partners include members from several third countries and international organisations. This collaboration should ensure endorsement of the project’s Integrated Conveyance System by national and international scientific federations of microbiologists. The data relating to ICS will be exchangeable in electronic form.
LIST OF PARTNERS

- PPS-SP/BCCM (Belgium)
- CABI (UK/International)
- CBS/KNAW (The Netherlands)
- CNRST (Morocco)
- CUP (Peru)
- DSMZ (Germany)
- EFB (Switzerland/International Union)
- FIRDI (Republic of China, Taiwan)
- JBA (Japan)
- KIEP (Republic of Korea)
- MIRCEN, UNESCO (International)
- TISTR (Thailand)
- UL (Slovenia)
- UNU (International)
- WFCC (International Union)

Full title: Development of a system for appropriate management of access and transfer of microbial resources - Micro-organisms sustainable use and access regulation

Acronym: MOSAICS

Contract no.: CT-2004-506436

Website: www.belspo.be/bccm/mosaics

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EU contribution: €382,000
The European public is wary of biotechnological applications in the agricultural and food sectors. Legitimate concerns have been raised. In order to address them, the EU has funded a major Specific Support Action, the Multi-media Repository on European Food Science (MREFS). The action will enable rational media and public debate on the social, economic and ethical aspects of scientists’ work to give Europe safer and healthier food. A similar action is being initiated for the human health sector1.

The aim of the project is to explain the balance between benefits and risks in food science in a clear and approachable way. MREFS will use a range of resources to bring this discussion into the public forum, but its principal approach will take the form of a series of short concise films on EU-funded food research projects.

Accessing the material

Films are the chosen media here as they are easy to watch and can be widely distributed and broadcast. The team will select 16 European-sponsored projects from the areas of health-promoting foods, sustainable agriculture practices, and research into genomics and food metabolism. They will make a four-minute film about each project that will be light but stimulating, aiming to introduce discussions on innovation, exploitation of the knowledge that has been created, benefits and risks, and social and ethical concerns.

A multimedia library – accessible through the internet – will be set up to house the films for viewing. It will also store selected background material that was shot during preparation of each film. All this material can be viewed by the public, used by makers of other documentaries, and should contribute to the public debate.

Communicating the issues

MREFS will target the key stakeholders in society, aiming to narrow the gap between scientists on the one hand and the general public, educators and the media on the other.

The films will be shown by public and private television stations across Europe. They will also be available on video and CD-ROM, screened at schools and colleges and put on the internet. Copies will be sent to target groups suggested by project members and advisors.

Very early in its four-year course, the project will set up a Rapid Response Science Network where the public can hold a continuing dialogue with scientists from the advisory board and the research projects featured in the films. It will give educators, media professionals and the interested public the chance to ask questions interactively. The Network will also support three focus meetings during the term of MREFS. They will involve European-wide organisations in helping to enhance the impact of the repository and in finding other practical ways to bridge the gap between science and the public. Feedback will ensure that science moves forward at the pace demanded by social needs and expectations.
LIST OF PARTNERS

- Technical University, Munich (Germany)
- ProBio (The Netherlands)
- Visions Unlimited Medien GmbH (Germany)
- University of Limerick (Ireland)
- DGT (Austria)
- EBU (Belgium)

Full title: A Multimedia Repository on European Food Science: production, quality and safety

Acronym: MRFES
Contract n°: CT-2004-506099

Project co-ordinator:
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EU contribution: €700,000
The supply chain involved in moving milk from the farm to the market has to be managed carefully to ensure that when the milk arrives it is safe and of top quality. The countries of central and eastern Europe are moving from centrally planned to market-led economies as they approach full membership of the Union. This transition affects the milk supply chain among many others. The EU Specific Support Action OPTIMILK will analyse the changes that these countries will need to make in order to create for their milk an internationally competitive supply chain that complies fully with EU health and safety regulations.

The one-year project will take a systematic look at four countries where the milk supply chains are at various stages of transition to full market orientation: the Czech Republic, Poland, Romania and Bosnia. The team will use the latest methods of designing supply chains and planning resources to formulate recommendations that will help these countries compete with the rest of European milk production in terms of safety, quality and value.

**Links in the chain**

The supply chain starts at the farm, where hygienic operation and quality assurance result in safe raw milk. Efficient management and treatment of this milk as it is collected, stored and transported optimise the value of this part of the chain. Other important factors designed to protect public safety include training, setting up safety and quality standards and critical control points, transparent inspection, and being able to track supplies from beginning to end. Value will be affected by payment policies and classification systems. The way the chain is organised and how the various people working in it relate to each other will also play a part in smoothing the transition to a market-led supply chain.

The project will begin with the development of a blueprint for the analysis, then teams will go to each of the four countries to collect data and publicise the project through local workshops.

The current state of the four milk supply chains will then be compared with another national chain which is considered to be highly efficient in terms of quality and value, so that recommendations can be made in each case. The study should give a clear picture of the knowledge needed to help rural economies in accession countries to evolve so as to add value and create prosperity.

**Reporting the results**

The project will publish a series of reports to help central and eastern European and Balkan countries to privatise their rural economies:

*Best Practices for Quality and Safety Management in the Milk Supply Chain* will survey the mechanism of the supply chain and show how good hygiene and quality principles bring benefits to all parts of the chain. It will also make practical recommendations for the four countries.

*Supply Chain Design and Enterprise Resource Planning for Optimising Value in the Milk Supply Chain to Create Wealth in Rural Economies* will focus on these aspects for small and medium players in agri-dairy networks.

*Traceability for Safety and Consumer Confidence in the Milk Supply Chain* will emphasise hazards at source and show how world-class tracking systems could be applied.

*Recommendations for Strategies to Optimise the Milk Supply Chain in an Enlarged European Union* will give an overview of the results.

These reports will be supported by leaflets and web pages in the appropriate languages to enable widespread dissemination among local enterprise and policy-makers.
Full title: Quality, safety and value optimisation of the milk supply chain in rapidly evolving Central and Eastern European markets

Acronym: OPTIMILK
Contract n°: CT-2004-506349
Website: www.optimilk.net

Project co-ordinator:
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EC Scientific Officer:
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EU contribution: €156,000

LIST OF PARTNERS

- Wageningen University (The Netherlands)
- University College Cork (Ireland)
- ENSGSI, Nancy (France)
- Institute of Chemical Technology, Prague (Czech Republic)
- Warsaw Agricultural University (Poland)
- USAMV, Bucharest (Romania)
- Edinburgh Direct Aid, Bihac (Bosnia and Herzegovina)
Agriculture and food make a major contribution to Poland’s economy, accounting for 20% of sales and 8% of employment in 2001. On joining the European Union, Poland will be able to benefit from access to the research and technology development in the EU’s Framework Programmes, but will need to know more about how they operate and their past results to get the most out of them. Therefore, the European Commission is funding a Specific Support Action, POLFOOD, to encourage agri-business firms in Poland and other accession countries in Eastern Europe to join in FP6. Lasting for 17 months, it will organise five carefully structured workshops in different Polish regions and publish brochures on their conclusions.

The EU and Polish research bases have much to offer each other. POLFOOD will help the integration of accession countries into the Union, targeting the many SMEs (small and medium-sized enterprises) in this sector. Encouraging them to use FP5 results will help to fulfil the objectives of the European Research Area as regards food quality and safety.

Focused workshops

The regional workshops are aimed at all relevant players in the agri-food sector – universities and research organisations, chambers of commerce, professional associations, public control authorities, and enterprises, large and small. Each event will focus on a specific topic of particular local importance, selected by regional experts. The first will also double up as the POLFOOD conference, giving a general introduction to the series.

To be held in Poznan, the first workshop will present an overview of all the topics to be covered. Within its specialisation – methods of analysis, detection of harmful substances and pathogens, and control of the production process – it will describe the results of completed EU projects. Opportunities to join FP6 projects on these themes will be discussed and the workshop will close with meetings between potential partners.

The other workshops will follow a similar pattern, each having a specific topic:
• Functional food, particularly seafood, and prevention of disease through diet, in Szczecin;
• Hygiene in milk production and processing, in Warsaw;
• The influence on human health of packaging methods and safe food preservative technology; new approaches towards monitoring and preventing chemical contaminants in food, in Krakow; and
• The safety of meat products, in Wroclaw.

This last event will also host a presentation of the achievements of the whole project and summarise its conclusions.

Spreading the news

Each workshop will result in a brochure, with a common format, distributed amongst Polish enterprises and organisations. They will highlight practical knowledge on quality and safety issues for each topic, and the part it could play in an enlarged European Union. Wider dissemination in other accession countries should have an impact on their food sectors and the practices of their food industries. It should also encourage them to consider similar ways to involve their SMEs in Europe’s research programmes.

To give extra help to Polish and other accession countries’ SMEs, a further brochure will be published with information most relevant to them. A database of partnering opportunities will be set up, with over 50% of entries relating to SMEs, who will also be offered a practical course on the use of new technologies in their business.

Early in the project a dedicated website www.polfood.pl will be set up to give rapid and widespread access to the information.
LIST OF PARTNERS

- Poznan Science and Technology Park (Poland)
- Technical University of Szczecin (Poland)
- Institute of Fundamental Technological Research, Warsaw (Poland)
- Krakow University of Technology (Poland)
- Technical University of Wroclaw (Poland)

**Full title:** Research and innovation in food technologies - brokering European partnership and transfer of knowledge to Poland by series of practical workshops

**Acronym:** POLFOOD
**Contract n°:** CT-2004-1669
**Website:** www.polfood.pl

**Project co-ordinator:** Elzbieta Ksiazek, Poznan Science and Technology Park ksiazek@ppnt.poznan.pl

**EC Scientific Officer:** François Constantin, francois.constantin@cec.eu.int

**EU contribution:** €136,000
The entry of ten accession countries to the European Union in May 2004 means that they have to be able to integrate into EU food standards and the European research community as a whole. The Sixth Framework Programme is focusing on the quality and safety of food throughout the supply chain from farm to fork under one of its seven thematic research priorities.

The safety of meat has been a particular concern in Europe in recent years – in the candidate countries the main meat products are poultry and pork. So, the EU has set up a two-year Specific Support Action to survey the research landscape in the candidate countries for monitoring and promoting good quality meat production (QUALITY MEAT). It aims to facilitate about 12 new research projects in the safety of poultry and pig meat sector, as regards these countries, and will focus on topics such as disease detection, animal nutrition and breeding.

Generating interest in research

The partners in QUALITY MEAT come from the accession countries and the Member States. Initially, they will create a database of those research centres and their qualified staff in the candidate countries who are working in the field of animal health and poultry and pork production. This screening exercise will include profiles of the centres, contact details and specialisations, project ideas and training requirements. It aims to cover about 200 researchers, thereby making their skills available to the food quality and safety projects in FP6.

Data collection will be a paper exercise, although QUALITY MEAT will also use electronic media. There will be a virtual partner search tool based on the data gathered in the survey. The goal here is to generate about 80 partner searches leading to 12 project ideas focusing on quality and safety in the complete food chain, and traceability to increase consumer confidence in meat products. These measures should increase the participation of accession countries in this part of FP6 by about 15%.

The partners will then organise a series of Info Days in candidate countries, in conjunction with conferences on food quality and safety. These will help to promote candidate country research potential in this field. They will consider such topics as the total food chain, traceability along the production chain, animal welfare, methods of analysis, detection and control, and the role of animal feed, all contributing to safer and healthier food production.

The final stage will be an international brokerage event on meat safety. This will be an occasion for researchers and industry to meet, exchange project ideas, and for the promotion of the objectives of QUALITY MEAT. The event will present selected research centres, and will reveal important results on the safety of poultry and pig meat from previous research funded under past EU Framework Programmes.

Spreading the word

A dedicated web portal, set up at the start of the project, will be the major platform for promotional activities in QUALITY MEAT. It will contain information on the aims of the project, its partners and the services they offer to potential participants, access to the partner search mechanism, plus general information on the EU’s food safety work, with links to national and transnational networks. It also has a private section where partners can communicate with each other.

These initiatives will help to promote best practice in the poultry and pork sector and co-operation between Member States and institutes from the accession countries. For future reference, the mechanisms it sets up may be transferred to other sectors within the food industry.
LIST OF PARTNERS

- Instytut Podstawowych Problemow Techniki Polskiej Akademii Nauk (Poland)
- National Veterinary Research Institute (Poland)
- Hungarian Science and Technology Foundation (Hungary)
- BIC Bratislava, spol. s.r.o. (Slovakia)
- RTD TALOS LTD (Cyprus)
- Agenzia Per La Promozione Della Ricerca Europea (Italy)
- Centuria RIT soc. cons. a.r.l. (Italy)
- Bureau for International Research and Technology Cooperation (Austria)
- EUROQUALITY (France)
- Applied Research and Communications Fund (Bulgaria)
- Mondo Consulting & Training (Romania)
Within the Sixth Framework Programme (FP6), the EU is putting consumers at the heart of the science of food production. The ‘fork-to-farm’ philosophy underlines the fact that the quality and safety of food for those who eat it is a major priority for the industry. European research is focused on making food as safe and clean as possible. However, these high standards may not be easy to meet in other parts of the world. There is a fear that food safety will become a trade barrier, preventing imports from countries which cannot offer absolute assurance that their produce is organic, not genetically modified, or is dioxin-free, for example. Asia is one of Europe’s largest trade partners. There are moves afoot in Asia now to mirror the exacting standards of food quality to meet the demands of the European market. A Specific Support Action under FP6 is helping the process by creating a network for sharing food safety expertise between Europe and Asia.

Safety in Malay

The four-year project is called SELAMAT, a Malay word for safety. It was conceived by the Asia–Europe Meeting (ASEM) partners, following a workshop in Malaysia on food safety in 2002. SELAMAT is bringing together scientists and regulators in Europe and Asia in a network to share methodology and policy developments related to food quality. It should lead to scientific partnerships involving Asian food industries in a concerted effort towards the assured, safer and more sustainable production systems that Europe is aiming to achieve.

The initial network comprises a small group of partners: three European food research institutes and a Chinese research institute specialising in pesticides. During the SELAMAT project, partners will introduce other organisations, so that up to 60 could be involved after four years, including core members of relevant large FP6 projects. The idea is that the progress made during FP6 is communicated to network members’ counterparts in Asia so that they can incorporate the knowledge into their local industries.

Oriental assurance

The network has identified three research topics linked to ensuring liberal trade: the impact of food on health, the traceability of food along the whole food chain, and methods of detecting contaminants. If food products can be tested, certified and traced using common methods in both Europe and Asia, then European consumers and regulators will have very few problems with Asian food. A series of annual workshops will address each of the above-mentioned areas in turn. A final workshop, in year four, will consider the agenda for joint Asia–Europe research on food safety. At each three-day workshop, the participants will identify subjects for a training course to be held later in the same year.

Shared concerns

The project will set up a website and design a database for exchange of analytical methods between network partners, for example. How to test food for the presence of genetically modified components might be included in this. The team will also produce leaflets on new findings under FP6, to be distributed at conferences in Europe and Asia.

SELAMAT is the start of a global co-operation on food safety that is necessary for the success of international trade in an age when food production is becoming increasingly technological, and the health and safety of eating is a major item on the political agenda.
**LIST OF PARTNERS**

- RIKILT Institute of Food Safety  
  (The Netherlands)
- Central Science Laboratory (UK)
- Institute of Experimental and Technological  
  Biology (Portugal)
- Institute of Plant Protection (China)

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**Full title**: Safety enhancement of edible products, legislation, analysis and management with ASEM countries, by mutual training and research

**Acronym**: SELAMAT

**Contract n°**: CT-2004-506386

**Website**: www.selamat.net

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**EU contribution**: €597,000
Table olives and olive oil are well known for their beneficial effects on human health, mainly because of the protection they offer the skin and the cardiovascular and skeletal systems. These foods are basic elements in the Mediterranean diet – countries in this area are not only the main producers but are also those with the most consumers.

The underlying idea in this project is that this source of healthy food should not be restricted to those producers located in the Mediterranean region. In fact, it is highly recommended that table olives and olive oil should be part of the regular diet not only in European countries, but also worldwide. To achieve this goal, the producing companies need to be strengthened since the majority of them in Spain, Greece, Italy and Portugal are small and medium-sized enterprises (SMEs), mainly family firms.

The project will attempt to achieve this by investigating the actual situation of SMEs through surveys and direct contact with enterprises in order to obtain first-hand knowledge of the needs of the sector. It has two main objectives: to develop a modern SME with qualified staff, which employs new information technologies to access information and all the relevant technological innovation systems; and to create an SME concerned with the optimisation of product quality, and seriously committed to the treatment, recycling and reuse of all waste products generated during its activities.

Roles and activities

The network of TDCs (Technology Dissemination Centres) will give free support to SMEs in the table olive and olive oil sector and act as a bridge linking them with the academic and research community. TDCs will circulate a wide range of regional and international information on innovation, access to funding and subsidies, relevant research, legislation, exhibitions and more. News about methods of quality assessment will help SMEs to raise the standards of the oil and table olives they produce.

The TDCs will involve business associations and other organisations within the sector in its activities in order to establish a long-lasting network able to continue supporting SMEs once the two-year project has come to an end. The network will also disseminate knowledge about olive oil to countries that are currently only small consumers: an ‘olive encyclopaedia’ of booklets will be produced which will be aimed at businesses, consumers and scientists. In addition, articles will be published in technical journals along with material for the more popular publications market. Promotions will be held at food exhibitions and surveys will be carried out to find out participants’ attitudes to consuming olive oil, thereby helping to frame market initiatives. The results will be published on the TDC website.

Education and training

Early in the project, TDC-OLIVE will carry out a survey among the SMEs in the sector to establish their general needs and, specifically, their training requirements. The results of this will determine the training programme that will be organised to help SMEs to modernise and become more competitive. This programme will try to cover a broad scope of subjects and techniques, i.e. environmental aspects, ICT, food quality, quality product regulations, and marketing techniques.

TDCs will also provide on-line courses to facilitate access to those SMEs and business associations that are unable to attend the training programmes. Those participating on-line will be monitored by a tutor and will be able to participate in on-line forums.
LIST OF PARTNERS

- Consejo Superior de Investigaciones Científicas (Spain)
- Instituto Madrileño de Investigación Agraria y Alimentaria (Spain)
- Istituto Sperimentale per la Elaiotecnica (Italy)
- Institute of Technology of Agricultural Products (Greece)
- Technologie-Transfer-Zentrum (Germany)
- Federal Centre for Cereal, Potato and Lipid Research (Germany)
- Unilever (The Netherlands)
- Asociación Agraria de Jóvenes Agricultores (Spain)
- Sabina-Agricola (Italy)
- Agricultural Association Agio Apostolon Vion (Greece)
- Alcubilla 2000 S.L. (Spain)
- Improtechnology Limited (UK)
- Biozoon GmbH (Germany)
The European Research Area is aiming for equal representation of all nationalities which will work together to share their expertise. At present, the distribution of European funding is biased towards the original 15 Member States with long-standing experience of European science. Candidate countries (including those that became new Member States on 1 May 2004) seem to be less successful at winning the funding. TRAIN-NET FUTURE is a Specific Support Action under the Sixth Framework Programme (FP6) working to redress the balance in food quality and safety research. It is providing training and networking facilities targeted at researchers and their advisers in candidate countries.

Not enough candidates

Food quality and safety is a hot topic in European research, and competition for funding in FP6 is intense. Following the launch of the call for expressions of interest, 910 proposals were submitted, less than one-fifth of which came from candidate countries. Similarly, in the FP5 Quality of Life Programme, applications co-ordinated and submitted by candidate countries were dramatically less successful than those from Member States.

Candidate countries fall behind for several reasons. Their scientists are less well connected internationally, and not as experienced at navigating the relatively complex Community R&D funding system as their colleagues in Member States. And they may receive a lower standard of help and advice. Groups of advisers, known as National Contact Points (NCPs), are nominated by national governments to lead scientists through the maze of European funding opportunities. But NCPs are variable – they include a variety of types of institution, with different levels of funding. Some from the candidate countries are still new to the game, and are struggling to organise and finance themselves effectively.

Training opportunities

Under FP5, the TRAIN-NET project provided extra training for the NCPs in 13 candidate countries. TRAIN-NET FUTURE, which involves many of the same partners, is focusing on the needs highlighted by TRAIN-NET, particularly for better training of researchers and higher international visibility of candidate country research. The FP6 project involves 12 candidate countries, three Associated States and ten Member States. This time, the project is working directly with researchers in academia and industry, as well as with NCPs.

The three-year programme will provide training for both NCPs and researchers in candidate countries, on topics such as preparation of a proposal, consortium building, project management, and financial issues. TRAIN-NET FUTURE is keen to provide coaching on the new FP6 instruments – Networks of Excellence and Integrated Projects. These large-scale activities are especially dependent on strong international links.

Going international

TRAIN-NET FUTURE will improve international links between researchers in candidate countries. A survey of research activities in food quality and safety will be published on the project website, along with a partner search catalogue. Three brokerage meetings will be organised at which researchers can meet potential partners. The project will involve candidate countries in calls for new partners from pre-existing FP6 projects.

Inexperienced NCPs from candidate countries will be ‘twinned’ with more experienced ones, for advice and support. Checklists and guidelines for working with researchers will be distributed and a staff exchange system will allow advisers from candidate countries to learn directly from their counterparts in Member States.

TRAIN-NET FUTURE is laying the foundations for ongoing training and networking programmes for NCPs and scientists in candidate countries. Ultimately, it should lead to their greater involvement in the food quality and safety area within FP6.
LIST OF PARTNERS

- Hungarian Science and Technology Foundation (Hungary)
- Agency for the Promotion of European Research (Italy)
- Senter – EG Liaison (The Netherlands)
- The Scientific and Technical Research Council of Turkey (Turkey)
- The Brussels Enterprise Agency (Belgium)
- Food Industrial Research and Technological Development Company S.A. (Greece)
- Bureau for International Research and Technology Co-operation (Austria)
- Israel Europe R&D Directorate for FP6 (Israel)
- The Malta Council for Science and Technology (Malta)
- Institute of Fundamental Technological Research, Polish Academy of Sciences (Poland)
- SNI-RSI EUresearch (Switzerland)
- Baltic Chapter of SPIE – The International Society for Optical Engineering (Latvia)
- Association de Coordination Technique pour l’Industrie Agroalimentaire (France)
- Associação para a Escola Superior de Biotecnologia da Universidade Católica (Portugal)
- Beta Technology Ltd (UK)
- Institut National de Recherche Agriculture (France)
- The Swedish EU R&D Council (Sweden)
- University of Agriculture Nitra (Slovakia)
- Danish Agricultural Council (Denmark)
- University of Plovdiv (Bulgaria)
- Agency for International R&D Development Programme (Lithuania)
- Federation of Icelandic Industries (Iceland)
- Archimedes Foundation (Estonia)
- Ministry of Education, Science and Sport (Slovenia)
- Research Promotion Foundation (Cyprus)
- Institute of Food Bioresources (Romania)
- Hitachi Europe Ltd (Ireland)