

South African participation in the European Union's Sixth Framework Programme for Research



European - South African Science and Technology
Advancement Programme

FOOD SAFETY AND QUALITY



SAFE FOODS

Promoting food safety through a new integrated risk analysis approach for foods

Food safety is the topic of a four-year research project in which 33 leading organisations worldwide are participating. South Africa is the only participating African partner and one of only two non-European countries. The Safe Foods project is coordinated by the RIKILT Institute of Food Safety, part of Wageningen UR in the Netherlands.

Starting year: 2004

FP6 instrument: Integrated Project

Full list of participants:

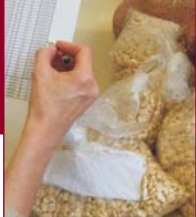
www.safefoods.nl

Why this research?

Recent food safety incidents and the introduction of genetically modified foods in Europe have reduced consumer confidence in the food supply chain, often out of all proportion to the real risk. This project addresses the issue of how consumer confidence can be restored and strengthened.

What does the research hope to achieve?

Researchers hope to determine, for example, whether the different agricultural production systems, traditional high-input agriculture, low-input production as carried out by small-scale farmers, and cultivation of genetically modified crops as food, carry different risks. They also hope to determine whether the globalisation of trade may lead to new risks with a negative impact on human health and the environment, for instance, the spread of new virulent pathogens or antibiotic-resistant bacterial strains. It will look at new approaches to evaluate the cumulative effects of contaminants and natural toxins through, for example, toxicity models;



at ways of incorporating public concerns into food safety issues; and what changes are needed at institutional structures in an improved risk analysis scenario.

South African researchers' contribution:

Molecular biologists, analytical scientists and plant pathologists at the CSIR have been joined by research peers at the Agricultural Research Council (ARC) and the University of Pretoria (UP) to research the two commercially-important crops that have been selected, namely potatoes (the fourth most important world food crop) and maize (the third most planted field crop in the world). They are investigating the plants' metabolic profiles, derived from the chemical reactions that occur during synthesis and breakdown, as well as the variations in the proteome (the total complement of proteins) produced. This will be done for plants showing "natural" variations, somaclonal variations (e.g. through tissue culture procedures) and genetically modified organisms; for plant materials produced under different production

systems; and for plants with fungal or bacterial contamination in comparison with uninfected plants.

"From a South African perspective, we are particularly interested in the results of nutritional comparisons of crops farmed in a high-input agricultural production system as opposed to low-input small-holder farming," says CSIR biotechnology specialist Professor Jane Morris, who also heads up the African Centre for Gene Technologies, a joint venture between the CSIR and the University of Pretoria.

She says in addition to the potential value of the research outcomes to which South Africa will have access, the opportunity for South African scientists to interact with the world's best researchers in this domain, is invaluable. In addition to the funding received from the EU there has been a significant investment by South Africa's Department of Science and Technology, first through availing seed funding for meetings and networking that led to the CSIR joining the consortium, and subsequently through a financial commitment to the project.



FOOD-N-CO

Cooperation Network of National Contact Points with a special focus on Third Countries in the area of Food Quality and Safety

Starting year: 2005

FP6 instrument: Specific Support Action

Why this research?

Participation in European Union-funded research projects has to date been disappointing despite a dedicated budget and the presence of highly-skilled research communities in those countries. It is hoped that this project will facilitate participation of a series of third countries in European research, with emphasis on food quality and safety, by training and networking National Contact Points

An increase in participation in EU-funded research by third countries is the intent of this two-year Specific Support Action (SSA) in which seven EU Member States and 15 Third Countries are participating, of which South Africa is one. The FOOD-N-CO consortium is coordinated by SenterNovem from The Netherlands.

(NCPs) whose main task will be supporting and improving participation of third country partners in the European Union's Framework Programme 6 (FP6) and Framework Programme 7 (FP7).

What does the research hope to achieve?

The overall objective of this project is to improve the quantity and quality of participation by International Cooperation Targeted Countries (INCO) in food quality and safety related research in the EU Framework Programmes.



South African researchers' contribution:

Dr Geoff Meese of South Africa's Council for Scientific and Industrial Research (CSIR) has been included in the FOOD-N-CO consortium. The project is set to start towards the end of 2005.

The project is focussed on the NCPs from selected EU countries and a number of non-EU countries: the "Third Countries" (TCs). NCPs are organisations (or persons) nominated by the governments of the countries taking part in FP6 and FP7. In the case of the TCs, some countries have NCP equivalents who are not formally described in this way but perform the same function. FOOD-N-CO will consider these individuals or organisations to be NCPs.

Participation of research institutions and companies from TCs in FP6 projects has been generally low and NCPs from these countries have indicated that the low-participation is often due to a lack of information. FOOD-N-CO will increase understanding and successful participation by:

- Building capacity and supporting the networks of NCPs in the TCs through training sessions and workshops;
- Intensifying relationships between the European NCP network and NCPs in TCs, by the twinning of non-EU NCPs with EU-NCPs and staff exchanges;
- Supporting the research communities in TCs with tailor-made information and services;
- Increasing visibility through preparation of overviews of participating TC researchers from academia & industry interested in participating in the relevant Themes of the Framework Programmes;
- Proactive match-making by the organisation of brokerage events; and
- Setting up a "Call Information Network" to support the participation of TC researchers in joining 1) consortia as they are being established and 2) ongoing projects which are searching for partners to join the project at later stages.

European Action in Global Life Sciences (EAGLES) Food Forum

A high level network of scientists and humanists from Europe and the developing world focusing on the food sector will, in a planned and structured way, discuss and review food sufficiency, quality, safety and environmental conservation in developing and emerging countries (DEC) and the European response to the global challenges. The project is coordinated by the communications office of the European Action in Global Life Sciences (EAGLES)

Starting year: 2005

FP6 instrument: Specific Support Action

Why this project?

Many technologies employed in the life sciences domain seem to be the property of the developed countries, who have defined the economic, commercial, legal and ethical frameworks of these technologies. Unfortunately these frameworks were not designed to take account of the needs or the opinions of those who live and work in the emerging and developing countries.

Developing country-problems pose huge humanitarian challenges for life scientists and distinguished scientists from these countries, who are making very significant contributions to international science.

A new dialogue is required in which the needs, the voices and the opinions of the emerging and developing countries be clearly identified, heard and heeded. A group of leading EU and developing country life scientists, regulatory and communications specialists and ethicists in the agriculture and food area are pooling their expertise towards this end.



What does the project hope to achieve?

The project hopes to improve European understanding of the global challenges presented by food deficiency, natural habitat destruction and pollution in the developing world. At the same time, it aims to promote a better appreciation in developing countries of the European and worldwide life science and biotechnology programmes, policies and regulations on food sufficiency, quality and safety and environmental conservation.

It is hoped that better information from both spectra will contribute to an understanding of ways in which European life science programmes and

policies can contribute to meeting the needs of developing and emerging countries.

Some of the mechanisms that will be employed to achieve its goals include lectures, articles, reports, symposia, workshops, a web site and press briefings.

South African researchers' contribution:

South Africa is represented by Professor Jennifer Thompson of the Department of Microbiology at the University of Cape Town, who serves on the project Steering Committee.

High Quality Solanaceous Crops for Consumers, Processors and Producers by Exploration of Natural Biodiversity

High quality and healthy tomato and potato varieties with improved traits for the consumer, processor and producer is at the heart of a five year research project in which 53 partners from around the world are participating. The EU-Sol project is coordinated by the Centre for BioSystems Genomics at the Wageningen UR in the Netherlands.

Starting year: 2005

FP6 instrument: Integrated Project

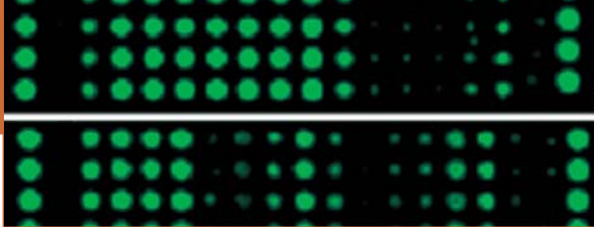
Why this project?

Quality and wholesomeness of food and food products are two issues addressed prominently by society, especially in relation to disease prevention and to the increasing preference of consumers for “regional” and “niche” foods. EU-SOL aims to understand the factors that affect consumer-driven and environmentally-directed quality of the two most

important vegetable products in the European Union, tomato fruits and potato tubers, both belonging to the *Solanaceae*.

What does the project hope to achieve?

EU-SOL is attempting to dissect the genetic and molecular components that control quality traits by applying state-of-the-art genomics and post-genomics research approaches. It will also aim to sequence selected gene-rich regions of the tomato genome, and will use this knowledge to



develop genome wide tomato microarrays as part of a gene function discovery platform.

South African researchers' contribution:

Professor Dave Berger of the Forestry and Agricultural Biotechnology Institute (FABI) of the University of Pretoria applies microarray technology to identify DNA markers linked to nutrition and health traits in tomatoes. The African Centre for Gene Technologies (ACGT) microarray facility - run by Professor Berger - has a demonstrated track record in DNA microarray technology in both gene expression profiling of crop plants and the identification of DNA markers. (See microarray.up.ac.za)



REPRO

Reducing food processing waste

REPRO is a three-year project researching advanced methods to transform food-processing-derived organic waste co-products into high and medium added value food, feed and pharmaceutical products such as biopolymers, phytochemicals, nutrients and micronutrients. The consortium comprises a highly experienced group of

world-class food research establishments and SMEs from the EU and candidate countries. Thirteen partners are participating in total, with the Institute of Food Research in the UK as the coordinating organisation.

Starting year: 2004

FP6 instrument: STREP

Why this project?

There is great pressure from consumers and for food processors to reduce the disposal of co-product wastes, which are biologically complex, environmentally unfriendly, and often microbiologically unstable. In Europe, around 3,4 million tonnes of spent grain from the brewing industry and over 1 million tonnes of vegetable trimmings from the

vegetable processing industry are produced every year.

These plant-derived waste co-products are known to contain significant amounts of valuable components, which remain as unexploited waste in the current processes.

What does the project hope to achieve?

The research hopes to reduce the environmental impact of food waste, promote environmentally-friendly processing methods, increase



industrial competitiveness and contribute to food quality and safety. It is also hoped that it will shift the technological exploitation of biomaterials.

South African researchers' contribution:

The CSIR's scientific contribution centres around the development of a fish feed ingredient from non-animal

waste products by fermentation methods to produce omega-3 and omega-6 fatty acids. Specific essential fatty acids are required by carnivorous commercial fish species intended for mariculture practices (such as Salmon and the Cape Stumpnose).

PARASOL

Novel solutions for the sustainable control of nematodes in ruminants

A project aimed at developing novel solutions for the sustainable control of nematodes in ruminants has been awarded to a research consortium that includes the University of Pretoria, the National Wool Growers' Association of South Africa (NWGA) and the Agriculture and Veterinary Institute of Morocco. The project is titled PARASOL. The final details of the contract are in negotiation.

FP6 instrument: STREP

To discuss South African Participation in Theme 5 (Food Safety and Quality) of FP6 and the upcoming Theme 2 (Food, Agriculture and Biotechnology) of FP7, please contact:

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