

EU-funded research on functional foods

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Research on food and nutrition has been an important topic in all Framework Programmes for Research and Technological Development of the European Commission. From the Second Framework Programme (ECU 2 million for four projects on functional foods) to the Fifth Framework Programme (€51 million for thirty-three projects on functional foods), the investment in research projects on functional foods has been increasing by quite an extent. In the early 1990s, the topics were fibres, pro-, pre- and synbiotics. Nowadays, the range of subjects has been broadened to antioxidative effects, vitamins, phyto-oestrogens and the socio-economic area.

Functional foods: Framework Programmes: European Commission

Research on food and nutrition has been an important topic in all Framework Programmes for Research and Technological Development of the European Commission. Within this field of research, functional foods are of ever-increasing importance (see Fig. 1). The main emphasis here has been on the elucidation of mechanisms of action and on the proof of effectiveness in prevention and therapy.

The Second Framework Programme (1989–1994) was the first under which research on food science and nutrition was funded. In the specific programme FLAIR (Food-Linked Agro-Industrial Research), four projects on functional foods were funded with a contribution of ECU 2 million. The projects were about production and nutritional properties of fibres, the role of lectins in intestinal microbial ecology, the consumption of resistant starch, and human probiotic strains.

The subjects and number of projects within the Third Framework Programme (1991–1994) were comparable. Within the specific programme AIR (Agro-Industrial Research), five projects on functional foods were funded with a contribution of ECU 5 million. The subjects were casein complexes in reduced-fat foods, probiotics, carbohydrates/fibres and colon function (three projects).

In the Fourth Framework Programme (1994–1998), the area of functional foods was dealt with under the scope of the specific programme FAIR (Agriculture and Fisheries including agro-industry, food-technologies, forestry, aquaculture and rural development). The number of projects and the total contribution doubled, and the range of subjects broadened in comparison with the Second Framework Programme. Twelve projects with a total contribution

of ECU 12 million were supported. Two projects were again in the field of gastrointestinal health: analysis of the intestinal flora, and demonstration of nutritional functionality of probiotics. Four projects were about the antioxidative effects of food components: antioxidative additives, phenols and tannins (two projects), antioxidants in tomato processing. The other projects covered the subjects of conjugated linoleic acid, phyto-oestrogens, *n* – 3 polyunsaturated fatty acids and caseinophosphopeptides. The socio-economic area was covered by projects

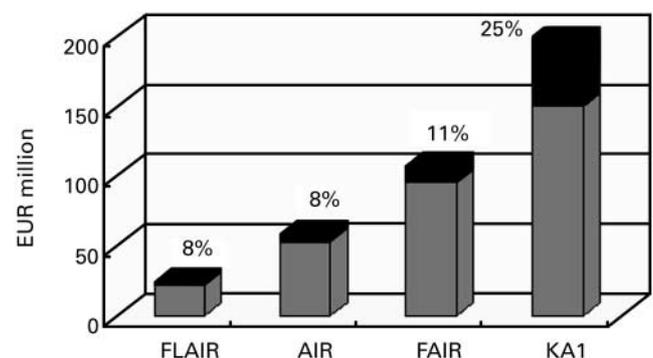


Fig. 1. Research on functional foods in the Framework Programmes (FP) of the European Commission: (■), available budget; (■), amount thereof for functional foods. FLAIR, Food-Linked Agro-Industrial Research (FP2); AIR, Agro-Industrial Research (FP3); FAIR, Agriculture and Fisheries including agro-industry, food-technologies, forestry, aquaculture and rural development (FP4); KA1, Key Action 1 — 'Food, Nutrition and Health' — of Quality of Life and Management of Living Resources (FP5).

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Table 1. Projects on functional foods

QLK1-1999-42	Nutritional enhancement of probiotics and prebiotics: technology aspects on microbial viability, stability, functionality and prebiotic function
QLK1-2001-67	Functional food, gut microflora and healthy ageing
QLK1-1999-76	Conjugated linoleic acid (CLA) in functional food: a potential benefit for overweight middle-aged Europeans
QLK1-2000-86	A process for the assessment of scientific support for claims on foods
QLK1-2000-108	Development and application of high-throughput molecular methods for studying the human gut microbiota in relation to diet and health
QLK1-1999-124	Functional properties, bioactivities and bioavailability of phytochemicals, especially anthocyanins, from processed foods
QLK1-2001-135	Functional assessment of interactions between the human gut microbiota and the host
QLK1-2000-146	Probiotic strains with designed health properties
QLK1-2001-173	Local Mediterranean food plants: potential new nutraceuticals and current role in the Mediterranean diet
QLK1-1999-179	European research on functional effects of dietary antioxidants
QLK1-2001-221	Isoflavones for reducing risk of coronary heart disease among postmenopausal women
QLK1-2000-266	The role of dietary phyto-oestrogens in the prevention of breast and prostate cancer
QLK1-2000-324	Barley β -D-glucan and wheat arabinoxylan soluble fibre technologies for health-promoting bread products
QLK1-1999-346	Synbiotics and cancer prevention in humans
QLK1-2000-431	The prevention of osteoporosis by nutritional phyto-oestrogens
QLK1-1999-505	Health implications of natural non-nutrient antioxidants (polyphenols): bioavailability and colon carcinogenesis
QLK1-2000-535	Design of foods with improved functionality and superior health effects using cereal β -glucans
QLK1-2000-563	Probiotics and gastrointestinal disorders: controlled trials of European Union patients
QLK1-1999-576	Folate: from food to functionality and optimal health
QLK1-2000-623	Towards a strategy for optimal vitamin D fortification
QLK1-1999-706	Functional foods against colon cancer: development of a genomics- and proteomics-based screening assay
QLK1-1999-888	Nutraceuticals for a healthier life: <i>n</i> – 3 polyunsaturated fatty acids and 5-methyltetrahydrofolate
QLK1-2001-1179	Molecular analysis and mechanistic elucidation of the functionality of probiotics and prebiotics in the inhibition of pathogenic micro-organisms to combat gastrointestinal disorders and to improve human health
QLK1-2001-1273	Biosafety evaluation of probiotic lactic acid bacteria used for human consumption
QLK1-1999-1376	Increase in nutritional value of food raw materials by addition, activity or <i>in situ</i> production of microbial nutraceuticals
QLK1-2000-1423	Enhancing the content of beneficial fatty acids in beef and improving meat quality for the consumer
QLK1-2002-2362	Production of CLA-enriched dairy products by natural means
QLK1-2002-2433	Seaweed antioxidants as novel ingredients for better health and food quality
QLK1-2002-2453	Improving health through dietary phyto-oestrogens: a pan-European network on consumers' issues and opportunities for producers
QLK1-2001-70508	Development of new innovative functional foods containing microcrystalline chitosan
QLK1-2002-71361	Development of new food additives extracted from the solid residue of the tomato processing industry for application in functional foods
QLK1-2002-71714	Developing lignan-enriched functional food from linseed
QLK1-2002-72376	Microencapsulation of probiotic products for human and animal consumption

CLA, conjugated linoleic acid.

on the consumer acceptance of healthy foods and on functional food science.

Food and nutrition science is dealt with in Key Action 1, 'Food, Nutrition and Health', of the specific programme Quality of Life and Management of Living Resources of the Fifth Framework Programme (1998–2002). The calls under FP5 have resulted in thirty-three projects with a con-

tribution of €51 million. The names and contract numbers of the projects can be read from Table 1.

Under the Sixth Framework Programme (2002–2006), research projects on functional foods can be supported in the Thematic Priority 'Food Quality and Safety', for which €685 million have been earmarked in total.