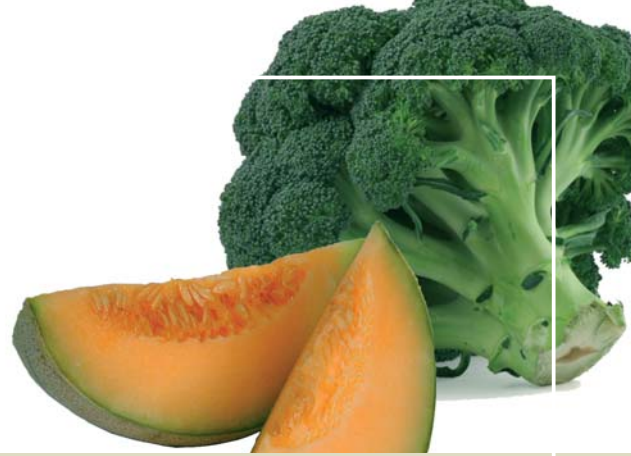


Metabolite analysis to demystify nutrition



SPECIFIC TARGETED RESEARCH PROJECT

Background/description of problem

Consumers demand better information about the nutritional value of their food and how it has been produced. The feature determining food quality is the metabolic profile of a plant and how it is altered on its way to market. Metabolic profiling could provide a fast route to biochemical fingerprinting of food components but the technique is in its infancy. A concerted effort is needed to develop new profiling tools to provide precise data on the metabolites and micronutrients present in food crops.

Project profile

In the META-PHOR project a multidisciplinary team of 22 partners, specialising in plant metabolic profiling, analytical chemistry, plant biology and human nutrition, are developing a European phenotyping platform. It aims at a fast throughput for metabolite profiling of food samples, to provide data for the targeted improvement of plant breeding, engineering and food processing strategies. It focuses on important European crops (broccoli, melon and rice) as a basis for producing more varied food products with improved nutritional properties. It will liaise with DEVELONUTRI, a complementary metabolomics project.



International aspects

The three crops chosen are important in the agriculture of many countries outside Europe. Participants from USA, Israel, Laos and the Philippines will bring special knowledge of these crops, and help to spread its results internationally.

Socio-economic significance

META-PHOR will have the following long-term socio-economic impact:

- Consumers will benefit from food that is safer, healthier and more nutritious
- SMEs will obtain advantage from access to the results
- The environmental pressure of crop production will be minimised
- A better understanding in science and society of the importance of metabolomics.



SPECIFIC TARGETED RESEARCH PROJECT

Basic project information

Full project title: Metabolomics for Plants Health and Outreach

Duration: 36 months

Starting year: 2006

EU funding: €3.4 million

FP6 instrument used: Specific Targeted Research Project

Project coordinator:

Robert D Hall

Plant Research International, Wageningen

The Netherlands

robert.hall@wur.nl

Third country partner(s) involved:

Harvest Plus (USA)

EC scientific officer: Guillermo Cardon, guillermo.cardon@ec.europa.eu

Scientific significance

The project will contribute to the following scientific areas:

- A platform of advanced phenotyping tools to characterise plant metabolites using statistics, bioinformatics and new software
- A database of the key metabolite groups of importance to plant biology, crop quality and nutrition
- A better understanding of the plant metabolites specifically related to nutrition and food quality
- Improved strategies for plant breeding, biofortification and food processing.

Project outcomes

- The creation of a European consortium through which research groups specialising in metabolic profiling can collaborate
- A more effective monitoring system for European, imported and processed food
- Optimisation of the food production chain, in all the stages from farm to fork
- An outreach programme to demonstrate the opportunities of metabolomics to the scientific and public community.