

Case Study

Contract Research: Chemical and sensory analysis of tomatoes

Key Facts

- Syngenta is a world leading plant science company committed to promoting sustainable agriculture through innovative research and technology.
- The Flavour Centre (FC) at the University of Reading provides clients with an understanding of the flavour chemistry of their products and provides consultancy and technical expertise during the product development.
- The Sensory Science Centre (SSC) is a joint venture between the Department of Food Biosciences and MMR Research Worldwide Ltd, an independent market research group. The centre is based at the University of Reading and offers high quality sensory evaluation.
- Syngenta's interest in work published by the Flavour Chemistry Research Group (FCRG) at the University of Reading led to a joint research project being undertaken, looking at the complex relationships between taste and odour characteristics in tomatoes.
- Results were presented at the 2008 Syngenta Tomato Conference.

The Client

Syngenta is a world-leading plant science company with offices in over 90 countries involved in the discovery, development and manufacture of a range of products in Crop Protection, Seeds, and Lawn and Garden.

Syngenta is committed to promoting sustainable agriculture through innovative research and technology. It currently has 4,000 employees involved in research, technology and development worldwide and invested \$969 million in research and development in 2008.

The Challenge

The client wished to understand the complex relationships between taste and aroma characteristics in tomatoes. Although compounds contributing to both aroma and taste have been determined by other researchers, very little was known about the interaction between these attributes.

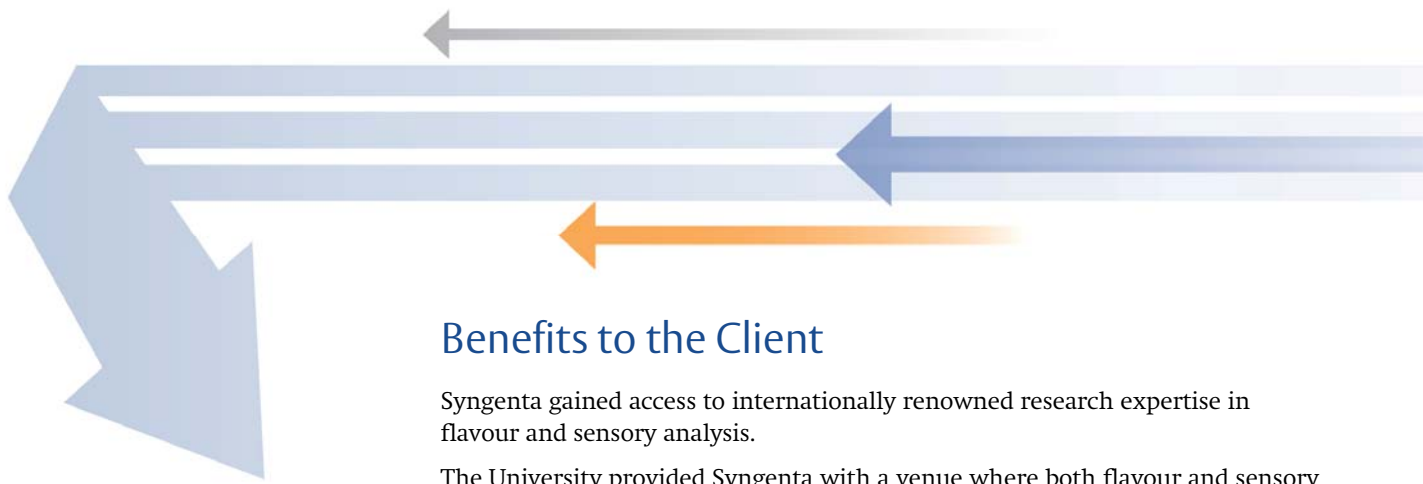
Solution

The Flavour Centre at the University of Reading provides clients with both the sophisticated techniques for analysing flavour and the expert knowledge to solve flavour-related problems.

The University provided Syngenta with a platform where both sensory and chemical analysis of tomatoes could be performed, utilising the Flavour Centre (for flavour consultancy, analytical services and technical expertise) as well as the Sensory Science Centre which provided high quality sensory evaluation.

The aim of the work was to determine the metabolites, naturally present in tomatoes, which contribute to the consumers' perception of tomato flavour, and to understand their impact on both the taste and the aroma of fresh tomatoes.

A trained sensory panel described and quantified the aromas and tastes present in a range of standard, beef and cherry tomatoes, and the findings were presented at the 2008 annual Syngenta Tomato Conference.



Benefits to the Client

Syngenta gained access to internationally renowned research expertise in flavour and sensory analysis.

The University provided Syngenta with a venue where both flavour and sensory analysis was possible under one roof.

Syngenta gained access to facilities and analysis that it was unable to perform in-house.

Benefits to the University

The contract provided opportunities for further research into flavour compounds and on-going collaborations with the client.

The collaboration diversified into other vegetable crops, with Syngenta providing material for an MSc project. Syngenta is now sponsoring a PhD student to continue with this work.

Collaboration with innovative companies like Syngenta stimulates new ideas and feeds directly into the University's research programme.

The profile of the University was raised following presentation at the Syngenta 2008 Tomato Conference.



'Research carried out by the Flavour Centre and the Sensory Science Centre at the University of Reading enabled us to increase our understanding of the complex relationship between taste and aroma in tomatoes which will help us breed new tastier varieties of tomatoes.'

Dr Ian Puddephat

Global Head Produce Quality, Syngenta

University of Reading

The University of Reading is a world-class research-intensive university covering a broad spectrum of disciplines across the Life and Physical Sciences, Arts and Humanities, Social Sciences and Henley Business School. Areas of particular strength include: Climate Systems Science, Food Science, Preventative and Therapeutic Health Sciences, Sustainable Construction and Environments and Computational Science and Informatics.

The University works with businesses providing support for research and development, as well as access to expertise and equipment to solve business challenges. To find out how you can access the leading minds at the University of Reading please contact our Knowledge Transfer Centre.