SIK- The Swedish Institute for Food and Biotechnology

SIK- The Swedish Institute for Food and Biotechnology is an industrial research institute owned by SP Technical Research Institute of Sweden. The purpose of the Institute is to strengthen the competitiveness of food industry. SIK has an annual turnover of approximately SEK 100 million. Two-thirds of its income comes from industry in the form of assignments and membership fees. SIK has around 100 employees, most of whom are university graduates. SIK conducts strategic and applied research for industry in accordance with a goal-oriented research programme and in the form of joint industrial projects. In addition SIK offers comprehensive consultancy services in product and process development and problem-solving of both an acute and strategic nature.

SIK provides also tailored training courses for individual companies and participates in graduate and undergraduate course programmes at universities and colleges in Gothenburg, Lund and Uppsala.

The head office is in Gothenburg.
There are regional offices in Lund, Umeå and Linköping.

SIK has five business areas: Process and technology development, Microbiology and process hygiene, Structure and material design, Sensory and flavour science, Sustainable food production

**Process and technology development**

Unit Process and Technology Development at SIK has a wide knowledge on improvement of traditional processing technologies and development of new technologies. Our expertise is based on understanding and control processing to achieve food products with high quality (desired food properties and functionality). We have a variety of process equipment, both traditional and based on new technologies and the ability to scale up from lab to pilot scale. We have small scale process/measurement techniques labs and a pilot plant, as well as a full equipped mini factory for manufacturing of meat products. Our modeling tools and inno-
vative experimental methods aim to decrease experimental work and support process and product development for our customers. We are large experience in microwave and infrared processing and development of sustainable process technology.

**Microbiology and process hygiene**

Our strategic research is on microbial risk assessment and risk management. The term risk comprises any problem caused by microorganisms. We offer also services on *Hazard characterization and risk management and hygienic testing.*

*SIK has for many years worked with IR technology as a process aid. Applications within the food industry which have been successfully tested at SIK are:* baking, surface pasteurization, drying, roasting, frying/deep-frying.

**Sensory and flavour science**

Among the most important criteria for the success of a product are its sensory features, i.e. how the product is experienced or perceived with the aid of our senses: sight, hearing, touch, smell and taste. It is therefore important to determine what different consumers prefer in different situations but also how products with these features can be created, manufactured and preserved. Our business operations focus on sensory product quality from the consumer via experience through to chemical background.

**Structure and material design**

We make succulent foods with a tasty texture, future sustainable packaging materials, microbially smart surfaces, release systems, in-line monitoring and healthy food. To our disposal we have unique microscopes rheometers and in-line sensors. We product design for optimal structure and texture and advanced characterization of microstructure and rheology.

**Sustainable food production**

To achieve sustainable production and consumption of food we need to manage resources and reduce environmental impact. SIK has worked on quantifying the environmental impact
of food and production systems since 1993. Over the years we have been able to build up an extremely broad knowledge base and we have created a unique environmental database. The resulting expertise is currently in demand in many quarters, both in Sweden and internationally, in order to identify potential for improvement and reduce the environmental impact of food on every level.

Research focus

SIK’s research focus during the period 2011-2013 has been focused in the two following research areas:

• Innovative products, processes and packagings
• Sustainable, effective production

Soon new strategies will be available at www.sik.se.

Contact

Prof. Lilia Ahrné
SIK – The Swedish Institute for Food and Biotechnology
E-Mail: lilia.ahrne@sik.se