



# FROM FIELD TO FORK

## – RESEARCH THAT MAKES A DIFFERENCE

An introduction to Department of Food Science



AARHUS UNIVERSITY



# Department of Food Science

Department of Food Science carries out research in food quality and composition along the entire chain from production, storage and processing to sensory perception and health.

Research at Department of Food Science provides basic and application-oriented knowledge in animal and plant products. This knowledge contributes to a sustainable and secure food production with a focus on food supply, consumers, competitiveness and existing laws.

The Department has approx. 130 employees and is located at Foulum east of Viborg, and Aarslev south of Odense, Denmark.

## Research Collaboration

The Department is very experienced as regards various types of collaboration and partnership and delivers both basic and applied research in collaboration with national and international companies and research institutions. Scientists provide research-based education and contribute to the public-sector advisory service at the Danish Centre for Food and Agriculture (DCA) in relation to meat, eggs, dairy products, fruit, vegetables, cereals, ornamentals and medicinal plants.

## Organisation

Michelle H. Williams is Head of Department, and the staff is aligned to five science-based research teams:

- Plant, Food & Sustainability
- Plant, Food & Climate
- Differentiated & Biofunctional Foods
- Food Chemistry & Technology
- Food, Metabolomics & Sensory Science

## Plant, Food & Sustainability

Research focuses on an optimum utilisation of water, nutrients and chemicals in conventional and organic cultivation systems. The outcomes deliver new solutions and technologies which increase efficiency, reduce environmental impact and at the same time ensure a high-quality final fruit or vegetable product.

Science team leader: Hanne Lakkenborg Kristensen  
Tel.: +45 8715 8354, e-mail: Hanne.Kristensen@agrsci.dk

## Plant, Food & Climate

Research focuses on abiotic stress responses, adaptation and acclimatisation to climate changes, particularly in relation to extreme cold, light, drought and temperature conditions. Knowledge that contributes to ensure future food production and food quality despite increasingly extreme climate conditions. The research activities also include utilisation of dynamic climate control in greenhouse production with regard to reduction of energy consumption.

Science team leader: Lillie Andersen  
Tel.: +45 8715 8323, e-mail: Lillie.Andersen@agrsci.dk

## Differentiated & Biofunctional Foods

The activities concentrate on how to improve product quality, add new positive properties to well-known products or develop new types of food products based on genetic resources as well as environmental or production factors with focus on taste, texture

and health-promoting properties. Furthermore, new sustainable production forms are also key research area.

Science team leader: Jette Feveile Young  
Tel.: +45 8715 8051, e-mail: JetteF.Young@agrsci.dk

### Food Chemistry & Technology

Research focuses on quality changes during processing, packaging or storage of primarily animal food products, with specific focus on oxidative, biophysical and chemical changes. The achieved knowledge permits enhancement of the value of well-known products, improved shelf life and less waste, stable quality and easily available products for the consumers.

Science team leader: Grith Mortensen  
Tel.: +45 8715 8031, e-mail: Grith.Mortensen@agrsci.dk

### Food, Metabolomics & Sensory Science

Sensory science, metabolomics and postharvest research play a major role in the generation of knowledge to increase consumers' intake of healthy foods through enhanced freshness and taste of food products. The research focuses on the relationship between sensory quality, consumer preferences, aroma and flavour compounds in foods. Measurement of metabolites in body fluids (metabolomics) after intake of healthy food products is performed to document the potential health effects.

Science team leader: Anette Kistrup Thybo  
Tel.: +45 8715 8394, e-mail: Anette.Thybo@agrsci.dk

### A Future in Foods

The Department has its own graduate school programme and an attractive PhD study environment. The aim is to educate scientists and enable them to take up leading positions within research, innovation and education.

PhD projects are often carried out in collaboration with industry and may also be accomplished as industrial PhD projects.

The Department is responsible for coordinating the Master's degree programme Molecular Nutrition and Food Technology, and our staff contributes to other Bachelor's and Master's degree programmes at Aarhus University.

The Department of Food Science has leading competences within the following food and non-food products:

- Eggs and egg products
- Meat and meat products
- Milk and dairy products
- Fruit, berries and vegetables
- Medicine plants
- Ornamentals



### Modern Facilities and Strong Competences

The Department has at its disposal modern and unique research facilities, including a pilot plant for dairy technology research, modern laboratories, *in vitro* laboratories, sensory research facilities, process equipment for plants, postharvest facilities, cultivation facilities such as greenhouses, climate chambers and cultivation rooms and 100 ha of land including 16 ha of organic fruit orchards and vegetable fields. Furthermore, the department has access to stable facilities for several kinds of domestic animals.

In the analytical area, the Department has equipment such as HPLC, GC/MS, Q-TOF, iontrap, Maldi TOF/TOF, high-field and low-field NMR, ESR, confocal microscope, rheology and chromatographic equipment, DSC, FTIR, in situ root study equipment, equipment for measuring photosynthesis, porometer, PAM equipment, FT-NIR and videometer.



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### Further information on Department of Food Science:

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