



MEAT RESEARCH IN THE ENTIRE FOOD CHAIN

From genes to consumers



AARHUS UNIVERSITY

Meat research activities at the Department of Food Science include animal experiments, cell-based model studies and product analyses. Focus is on characterising the processes of importance for meat quality traits during the conversion from muscle to meat, during maturation as well as during molecular interactions of meat with ingredients through processing and storage.

Key areas are fetal programming, feeding strategies, pre-slaughter handling, and slaughter processes in relation to raw meat quality aspects such as water-holding capacity, tenderness, oxidative stability, colour and taste. Research also includes processing with a focus on how heating, curing, freezing and thawing affect water-holding capacity, texture and other sensory attributes.

Our research is both basic and strategic and is carried out in close collaboration with Danish and international food industries, where results are applied in the development of new products and technologies.

MEAT RESEARCH IN THE ENTIRE FOOD PRODUCTION CHAIN

Genes



- Meat quality aspects related to different breeds
- Effects on the piglets of feeding the sow throughout gestation (fetal programming)
- Gene regulation related to meat quality traits

Production



- Differentiation of meat quality through feeding, e.g. altering tenderness, water-holding capacity, colour or fatty acid composition and distribution
- Production of male pigs e.g. reducing boar taint by means of feeding
- Alternative production methods, e.g. organic or in vitro meat production

Processing



- The slaughter process; effects of intrinsic factors (muscle glycogen, enzyme activation) and external factors (cooling strategy, hanging, maturation)
- Characterisation/classification of mechanically deboned meat
- Distribution of water and binding of water in meat products after thermal processes and curing

Health



- Meat products with antioxidative and antimicrobial ingredients
- Bioactive components in meat in relation to healthy ageing and metabolic diseases
- Meat products with reduced salt content

Consumers



- Differentiation of meat in relation to tenderness and marbling
- Use of alternative cuts of the carcass
- Relating sensory quality to product knowledge and processing to ensure consumer acceptance of products with differentiation in sensory quality and health attributes

CONTACT

Department of Food Science:
food@au.dk

Aarhus University
Blichers Allé 20,
P.O. box 50
DK-8830 Tjele, Denmark

Head of Department
Michelle Williams
Tel. +45 8715 6000

www.food.au.dk

RESEARCH FACILITIES

Department research facilities include cell culture facilities, differential scanning calorimeter, confocal microscope, rheometer, texture analyser, real time PCR, equipment for mass spectrometry (GC-MS, LC-MS, Maldi-TOF/TOF, LC-MS iontrap and Q-TOF), electron spin resonance spectroscopy, low field and high field (600 MHz) NMR spectroscopy and professional sensory science facilities. Furthermore, the Department of Food Science has access to slaughter facilities and modern stable facilities for meat-producing animals.