

CURRICULUM VITAE

Personal Data

Eva Tornberg, born 480522, married

Academic Degrees

Chemical Engineer at the Technical University of Lund, 1971

Techn. Dr. in Food Science at the Technical University of Lund, 1978

Adjunct Professor in Meat Technology at the Technical University of Lund, 1990

Professor in Food Engineering, Technical University of Lund, 2001

Employments

19710901 -- 19770630	Teaching and research position at the Food Science Department of Technical University, Lund
19770701--19800831	Research associate at the Food Science Department of the Technical University, Lund
19800901--19860831	Research leader of the Biophysics group at the Research section of the Swedish Meat Research Institute, Kävlinge
19860901-- 19981022	Research Director at the Swedish Meat Research Institute, Kävlinge
19901001-- 19981130	Adjunct Professor in Meat Technology at the Food Science Department, Technical University, Lund
19981201--	Associate Professor in Food Engineering at the Food Engineering Department, Technical University, Lund
20010401--	Professor in Food Engineering at the Food Engineering Department, Technical University, Lund

Teaching experience

A position as a teaching assistant at the Food Science Department at the Technical University of Lund was held from 1971.09.0 to 1977.06.30: Lecturing in prospecting and calculation of food production lines was performed. Adjunct Professorship in Meat Technology, 1990: Lecturing in "Meat Science and Meat Technology". Eighteen examination reports for the Chemical Engineering examination and two doctoral thesis and two thesis for "teknisk licentiat" graduation have been supervised up to the end of 1998. The thesis have the following titles: Sensory and Biophysical Properties of Pork, S. Fjelkner-Modig, Lund, 1985; Functional properties of lipid L2-phases and possibilities to form double emulsions, E. Pilman-Willers, Lund, 1987 and Contributions á l'etude des facteurs de variations avec la qualités technologiques et organoleptiques de la viande, X. Fernandez, 1994.

Eva Tornberg has after her employment at the Department of Food Engineering at the end of 1998 examined 5 doctors and one licentiate with Eva Tornberg as the main supervisor:

1. Water- and fatholding in comminuted meat products, A. Andersson, Licentiate, June 2001.

2. Factors controlling meat quality of pork in relation to breed and RN genotype, Åsa Josell, PhD thesis, December 2002.
 3. The mechanisms controlling heat and mass transfer in comminuted meat products, Bea Kovascne, PhD thesis, September 2004.
 4. Microstructure and Rheological Properties of Concentrated tomato Suspensions during Processing. Elena Bayod, PhD thesis, March 2008.
 5. The Physicochemical and Sensory Properties of Fruit and Vegetable Fibre Suspensions. Hanna Bengtsson. PhD thesis, December 2009.
 6. The influence of salting procedures on the characteristics of heavy salted cod. Kristin Anna Thorarinsdottir, PhD thesis, February 2010. 10.
- Eva Tornberg has also been the co-supervisor of the thesis work of Dr Charis Galanakis on "A study for the clarification & the recovery of organic constituents from olive mill wastewater by using physicochemical processes & membranes of different origin & properties".
- At the moment Eva Tornberg is the main supervisor for the PhD student Alejandra Castro, working on Physical and Chemical characteristics of root disintegrates.

Special duties

Opponent on three doctoral thesis in Norway and on one in Denmark. Participation in three evaluating committees for doctoral thesis work in Sweden. Evaluator for professorships in Meat Science, two in Canada and two in Denmark. Member of the Editorial board in "Journal of Science and Food Agriculture" and "Meat Science". President of "Livsmedelskollegiet" for four years. "Livsmedelskollegiet" is a union of a number of Departments at the University and industries in the southern part of Sweden, that all conduct research and development in food. This means the involvement in the arrangements of congresses, symposia and seminars to increase the contact between research, development, industry and public.

Collaboration with the industry and patents

Eva Tornberg has a long-lasting experience to collaborate with the industry, mainly conducted as Research Director for 12 years at the SMRI. To verify this experience it can be pointed out the substantial numbers of internal reports (131) that was produced during these years, concerning more applied problems of relevance for the industry.

In the new position at the Food Engineering Department a unit for contract work with the Food Industry has been built up. Since the start at the end of 1998 about 50 projects in a wide area of Food Science and Engineering have been finalised. Half of the projects has been performed together with SME:S and the other half with larger industries.

Three patents have been taken after 1998. One of these patents, the so called Chativa patent, is about the exchange of fat in meat products with root fruits, where the latter is heat treated in a special way. Licens holder of that patent is Scan AB. In another patent, where the polyphenols in Olive mill waste water is taken care of, a start-up company, called Phenoliv AB, is based on that patent.

Emulsion research experience

The first scientific area that Eva Tornberg was involved in is the surface and emulsifying properties of the proteins and how the properties of the formed emulsions influence the food item itself. The focus was to investigate how the different technical processes influence the physical-chemical properties of the product formed. In the study of proteins as emulsifiers the emulsifying process has a great impact on the properties of the protein stabilised emulsions formed (9 papers). Therefore great attention has been paid to imitate as much as possible the industrial emulsification process and to standardise it. An isothermal, recirculating emulsification system has therefore been constructed, where the flow velocity, energy and power input can be measured and controlled (1 article). For this sake also a small scale valve

homogeniser has been constructed, which was not available on the market by that time (1 paper). This valve homogeniser has been sold to USA, Australia, Iceland and Holland amongst others.

Much attention has been paid to develop physical-chemical methods to characterise emulsion products. For surface tension studies a surface tension apparatus based on the drop volume principle has been constructed. This apparatus has also been sold to USA, Iceland and Holland. The evaluation of surface tension depression by proteins using this apparatus has been worked out. This has been used in the studies of the surface properties of some food proteins. Characterisation of the protein-stabilised emulsions manufactured in the standardised emulsifying system has been performed with regard to the creaming stability, the coalescence stability, particle size distribution and the protein membrane. New measuring methodology has been worked out in the above cases.

Meat research experience

The scientific activities in the quality of meat and meat products have involved the building up of biophysical methodology, for example an apparatus for the measuring of shortening and isometric tension developed during rigor in meat. 113 papers, involving monographies, peer reviewed scientific papers and conference proceedings have been published. These papers cover the influence of breeding and rearing, the handling of animals and stress ante-mortem, the influence of rigor development and the proteolytic breakdown during ageing, and the interrelationships between eating quality, functional quality and meat structure. Finally, the water- and fat-holding and rheological properties in hamburgers and emulsion sausages have been investigated.