

Foreword and introduction

Food Science is becoming more and more a well respected discipline in the field of life science. It no longer comprises only the classical areas from Food Engineering to Food Chemistry or Food Microbiology, today aspects of Genetical Engineering as well as aspects of nutritional physiology have also to be considered as parts of Food Science like many other areas. This volume of the Journal of Food Engineering reflects on the broad spectrum of modern Food Science.

All contribution were presented at the 6th Karlsruhe Nutrition Symposium which was organised on October 21–23, 2001 in Karlsruhe in honour of Walter Spiess who had retired in June 2001 after more than 38 years with the Federal Research Centre for Nutrition in Karlsruhe.

During this almost four decades Food Science and Food Engineering as part of Food Science have undergone dramatic changes. They have not only taken part in the general advancement of science with all its sophistication. Food Science at large has turned from an extension of Agricultural Science with the aim to support the conversion of agricultural produces into edible products into an independent scientific discipline, a fact which is for example reflected by the—not too well known—accomplishment that the International Union of Food Science and Technology has been awarded full membership in the International Science Council (ICSU) or that many Food Science Departments at internationally well known Universities are not anymore part of the Schools of Agriculture, but form independent units or belong to Life Science Faculties. This development has definitely not come to an end and it is certainly correct to say that we are experiencing the change of a paradigm. The perspectives of Food Science are more and more influenced by consumer needs and expectations and not so much any more from the raw material side.

In this sense the role of Food Science and Technology can be understood as that of a mediator between raw

material production/food production, at large, and food consumption. It remains a major challenge to preserve the raw materials produced on the farm-side and to transform them into edible products but consumer's needs spelled out by the consumers themselves and by nutritional physiologists and behavioural scientists have to be considered in the first instance.

It has to be acknowledged that in the developed parts of the world the task to serve the consumer is mastered in a most pleasant way. Never before have we enjoyed products of such a high quality. Our food basket is filled with products that satisfy the highest sensorial requirements, which are convenient to prepare and which are, and this is of extreme importance, safe in every respect. This is important to say in a time when are facing major problems, especially at a time when crises like BSE or FMD dominate the discussion on food (as at the time of the 6th Karlsruhe Nutrition Symposium).

The 6th Karlsruhe Nutrition Symposium is/was organised along this new understanding of the tasks of Food Science to reflect on its original goals and to emphasis the new ways of thinking. The introductory Chapter on Impact of Processing on Nutrients, Phytochemicals, Anti-nutritive Factors is followed by Chapters on Bio-availability and Health, Food Design including Functional Food, Genetically Modified food and finally by a Chapter on Consumer Attitudes, Nutritional Behaviour and Nutrition Policy in Europe.

The contributions reflect however that Food Science has accepted the challenge to become a consumer oriented discipline and that those active in Food Science are willing to listen to their colleagues in neighbouring fields.

It was also a challenge to compile the material of this volume because it goes much beyond the normal scope of a Journal of Food Engineering. The idea was however to allow also those who could not participate in the 6th Karlsruhe Nutrition Symposium to share the feeling of

openness and sense of co-operation amongst colleagues from different fields of Food Science and around Food Science and who came from many places around the globe a traditional hallmark also of the Federal Research Centre for Nutrition and its Institute of Process Engineering.

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