15th International Symposium of the International Committee on Food Microbiology and Hygiene*

Johannes Krämer and Wilhelm Holzapfel

The symposium of the International Committee on Food Microbiology and Hygiene (ICFMH) was attended by over 350 scientists from more than 45 countries. The symposium is held every three years in a different country; past conferences have taken place in Norway, Greece and Hungary. This conference, which was held in Germany for the second time, was by far the largest symposium of the International Committee to date.

The objective of the symposium was to hold critical discussions of the more recent results and developments in research on the reduction of microbiological risks in food and point to solutions to the problems. The scientists described their results and conclusions on this subject in over 200 contributions, organized into 7 sessions. The contributions were divided into 57 lectures and 170 poster presentations. The results of the lectures put the main emphasis on the possibility of protecting the consumer from food infections and food poisoning. The following topics were dealt with in detail.

Current levels of food infection and food poisoning in different countries

In recent years the number of cases of foodborne infections caused by *Salmonella*, *Campylobacter*, *Listeria* and certain strains of *Escherichia coli* has risen dramatically. For example, in one contribution from R. Clarke (Health of Animals Laboratory, Ontario, Canada) it was shown that there alone last year there were over 6000 serious cases of *E. coli* infection with numerous subsequent clinical complications. In another report, Jocelyn Rocourt (Institut Pasteur, Paris, France), described an epidemic of food poisoning that had arisen from the bacterium *Listeria monocytogenes*. This epidemic caused 85 fatalities and had still not completely subsided. The lectures showed how epidemics of food poisoning of this type can be explained with the aid of epidemiological methods.

Other reports emphasized that if fermentation in numerous foods such as cheese or beer was carried out in an improper or unhygienic way, levels of biogenic amines could become high enough to cause infection.

Legislative measures

Alexander Mossel, a representative of the European Union (EU; International Market and Industrial Affairs, Brussels, Belgium), described the objectives of the EU Hygiene Guidelines, which have recently been published, pointing out their significance for the development of quality control assurance systems and the coordination of official food monitoring in Europe. Numerous other contributions, using concrete examples, stressed that internal quality control assurance systems play an essential role in consumer protection even in the smallest firms.

Concrete preventive measures

Mathematical models were presented for predicting the microbiological hygienic risks of new developments in food production. It was concluded after discussion at the symposium that these models could be suitable for increasing the safety of the development and production processes of small and medium-sized firms. The development of these models was positively promoted by the EU (Flair Programme).

In one of the main lectures, Fritz Käferstein [Food Safety Unit, Division of Food and Nutrition, World Health Organization (WHO), Geneva, Switzerland] again summarized the necessity of using irradiation to make certain foods less perishable and more microbiologically safe. The positive stand taken by the WHO in the 1980s has, in the meantime, been confirmed and reinforced by numerous other independent expert committees.

Furthermore, other new techniques such as high-pressure sterilization and its potential were referred to.

Twelve lectures and 52 poster presentations focused on the possibility of preventing microbial food poisoning by using harmless bacteria, which are frequently even good for the health. It was pointed out several times that German science is considered to lead in this field. Numerous presentations described these bacteria, the active substances excreted from them and their interaction with food. Models were presented offering hope for the future that, under natural conditions and without the use of chemical preservatives, it will be possible to protect certain foods from food poisoning with the help of biopreservation.

Rapid methods for the determination of microbial pathogens

Contributions stressed the critical importance of being able to rapidly identify food pathogens in the quality control departments of firms. Above all, the molecular biological techniques that were presented will make an essential contribution to consumer

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Johannes Krämer is at the Department of Food Microbiology, University of Bonn, Meckenheimer-Allee 168, D-53115 Bonn 1, Germany. **Wilhelm Holzapfel** is at the Institute of Hygiene and Toxicology, Federal Research Centre for Nutrition, D-76131 Karlsruhe, Germany.

protection because they enable a more-rapid identification of food pathogens.

Integrated measures for reducing microbiological risks in food

The reports on this topic showed that it will soon be possible to guarantee completely safe food. The prerequisite for avoiding chains of infection is the rigorous application of integrated measures within the framework of good manufacturing practice (GMP). Important GMP factors are, for example, veterinary hygiene, an uninterrupted chain of cold storage, as well as controlled processing and retailing methods, counteracting the danger of microbial contamination and the multiplication of microorganisms in food. The employment of integrated measures for securing food quality in developing countries was seen as a special task and challenge.

The active participation of such a large number of food microbiologists, hygienists, medical doctors and veterinarians from more than 45 countries greatly exceeded the expectations of the organizers. The great success of this conference underlines the worldwide interest not only in an exchange of experiences with other experts in the field of food quality improvement but also in the development of new strategies for consumer protection.

Selected papers from the 15th International Symposium of the International Committee on Food Microbiology and Hygiene, Bingen/Rhine, Germany will be published in a special issue of *International Journal of Food Microbiology* Vol. 23(2), Elsevier.
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Conference Report

2nd European Symposium on Food Authenticity – Isotope Analysis and Other Advanced Analytical Techniques*

M. Lees

This was the second symposium to be held in Nantes on the subject of food authenticity and the inroads made in this area by isotope analysis. At the first conference, the principles and applications of these methods were discussed against a background of new European Community standards and legislation. This second conference dealt with recent advances in isotopic techniques and aimed to provide a comparison with other modern methods of authenticity testing.

* Held in Nantes, France, 20–22 October 1993

M. Lees is at CEAIS, Site de la Géraudière, CP 4005, 44073 Nantes, France.

The meeting was organized jointly by EUROFINS Laboratories (Nantes, France), the CEAIS (Centre Européen d'Analyse Isotopique Spécifique) and the University of Nantes – Centre National de Recherche Scientifique (CNRS) with financial support from the Regional Council of the Pays de la Loire. It took place over three days, with different product areas – wines and spirits, fruit juices and fruit products, flavours and essential oils – discussed on separate days. Attendance was high, about 250 participants from over 20 different countries, despite Air France's industrial action, which gave many a headache to those sorting out travel arrangements. Participants were mainly from the quality control sector of the food and beverage industry, analytical laboratories, government agencies, and producers, manufacturers and retailers. In addition, the session devoted to essential oils attracted representatives from some of the leading perfume and flavour houses.

The authenticity of raw materials and finished products and the detection of various forms of food adulteration remains high on the quality control agenda of all those involved in the food industry. This context has been a challenge to the analytical chemist to come up with methods able to determine whether a particular food product complies with its contract specifications.

Amongst the analytical methodologies available, stable isotope analyses have made a substantial contribution to authenticity testing. These analyses are based on the premise that each plant species has its own unique pattern of the naturally occurring stable isotopes of carbon, hydrogen and oxygen. The variations in isotopic composition between different species or different sources of the same species are due to isotopic fractionation caused by a variety of factors, from biochemical

