

Food and beverages microbiology – a key concern for our future health

Tom Humphrey

The microbiology of foods and beverages has never been of greater importance. Developments in fermentation technologies are leading to an ever greater range of products, which now extend into functional foods designed to improve nutrition and to manipulate gut flora. New packaging technologies are improving the shelf lives of many perishable foods. It is important, however, that these advances are matched by an understanding of their effects on pathogenic micro-organisms. Food-borne disease continues to be of international importance and a study in England and Wales in the late 1990s found that 1 in 5 of the population suffers from an episode of infectious intestinal disease each year. It is estimated that the cost to society of this illness approaches £0.75 billion per annum. The UK Food Standards Agency has set itself a target of reducing the level of food-borne disease by 20% over the next 5 years. If this is to be achieved, it is important that our understanding of key pathogens is improved. The Society for General Microbiology believes that it has an important role to play in this process.

It was therefore decided to form a Food and Beverages Group, which could act as a focus within SGM for those with an interest in food microbiology, in its broadest sense. Expertise within the Society covers all aspects of the food chain. Recent meetings and those planned for the near future reflect this. The sequencing of the chromosome of major food-borne pathogens, such as *Campylobacter* and *Salmonella* spp., provide many research opportunities and our members are at the forefront of this work. There is a need, however, for SGM activities in this area to be better focused. It is also important that the skills within the Society are made available to the regulatory authorities and the food and agricultural industries. Thus the Food and Beverages Group will provide a point of contact with these various organizations.

The Group was formed late in 2000. Its membership comprises Marie-Louise Baillon (Pedigree Pet Foods), Martin Collins (Queen's University, Belfast), Glenn Gibson (University of Reading), Tom Humphrey (University of Bristol), Keith Jones (University of Lancaster and SGM Council Representative), Mike Peck (Institute of Food Research), Bob Rastall (University of Reading) and Alan Varnam (University of North London). The Group's principal remit is to further the involvement of SGM in the microbiology of foods and beverages by the organization of meetings and symposia and the provision of advice and reports, as appropriate. The research interests of group members largely reflect those of SGM as a whole. They include the physiology, survival and stress responses of food-borne pathogens; bacterial behaviours at the edges of the growth range; pre- and probiotics; and the use of dietary manipulation to change gut flora.

The first symposium organized by the Group will be held on 9 April 2002 at the SGM Warwick meeting. The title of the session is *Campylobacter: No Longer the Forgotten Pathogen*. The meeting will contain presentations on epidemiology of infection in man and animals; typing; physiology, survival and infectivity; and genomic aspects. There will also be opportunities for offered papers. The next meeting will be held at Loughborough University in September 2002 and will be on *Escherichia coli* as a human and animal pathogen.

The Food and Beverages Group also provides a point of contact with other societies and the meeting in Edinburgh in 2003, on aspects of yeast fermentation, will be in conjunction with the Association of Scottish Microbiologists. Discussions are also planned with the Society for Applied Microbiology (SfAM) with a possible aim of organizing joint meetings. Opportunities may also arise for collaboration with other bodies, like the Association of Medical Microbiologists and the Royal College of Pathologists. Many SGM members are also members of these organizations. It is important that SGM plays its full role in the next era of research on food-associated micro-organisms.

The work of the Food and Beverages Group is still in its infancy and help is sought from Society members to ensure that it develops in an appropriate way. With this in mind, it is planned to hold joint meetings with other SGM special interest groups so that the full range of activities relevant to food and beverages is covered. Suggestions for future topics are very welcome and should be sent to the Group Convener, Tom Humphrey, by email.

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With the incidence of food-borne illness rising and a large proportion of our food and drink spoiled by micro-organisms, in a world with ever more mouths to feed, food microbiologists have a vital role to play in ensuring the good health of future generations. Tom Humphrey explains how the SGM's new group hopes to cover this important area of microbiology.