

Food safety in numbers

Safety is always a key driver for the food industry, and the UK's Society of Dairy Technology used its annual general meeting and autumn symposium, Food Safety and the Dairy Industry, to address this requirement and catch up on new developments in the arena.

Dr Lyn McIntyre of Harper Adams University presented the first paper, on *Campylobacter* and its threat to food safety. Being thermophilic, microaerophilic, heat-labile and stress-sensitive, this organism is not an obvious candidate for a major food poisoning organism but nevertheless is the most common causative agent in reported cases in the UK. It is commonly found in raw milk and is also of major concern to the New Zealand dairy industry, though most of the cases in the UK are attributable to mishandling of raw poultry. The risk to milk is through cross-contamination, pasteurisation failures and bird attacks on foil-covered bottles. Current research includes the control of *Campylobacter* on the farm and development of a rapid in-situ test that can give results in minutes.



Dr Lyn McIntyre of Harper Adams University

The second paper, by Dr Cath Rees of the University of Nottingham, discussed *Mycobacterium avium subsp. paratuberculosis* (MAP) and its implications for the dairy industry. This slow-growing organism is associated with Johne's disease, an inflammatory bowel disease in ruminants and is of economic significance, with a cost of £12.1 million (€15.3m) per annum in the UK alone.

The link with Crohn's disease in humans is unproven, though there is evidence for concern. The characteristic slow growth of MAP makes detection and enumeration

The Society of Dairy Technology's autumn symposium turned a sharp eye on food safety, Andrew Wilbey reports



Dr Cath Rees of the University of Nottingham

difficult, so much work has been done on developing better methods for detecting viable cells. Though studies have shown that pasteurisation at 72°C for 15 seconds will give a five-fold reduction, organisms have been recovered from pasteurised milks and it has been suggested that MAP might be able to grow and be protected within macrophages that subsequently pass into the milk.

In cheese making it appears that MAP is inactivated by the combination of initial acidification, a long ripening period and low temperature storage. While there is a risk of MAP persisting in some products, it will not grow in them or colonise production areas.

Keeping it clean

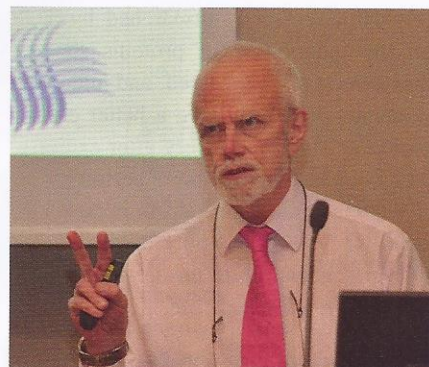
Lawrence Staniforth from Campden BRI provided an overview of hygienic factory design, where he emphasised the need for a multi-layered defence against both external and internal factory hazards.



Lawrence Staniforth from Campden BRI

Zoning should be an essential component in the initial design, particularly in creating controlled zones for decontaminated products, whether chilled ready-to-eat products or dry foods. The concepts of creating 'boxes within boxes' and segregation of wet and dry areas was discussed, followed by examples of good design to enable a high standard of hygiene to be maintained.

In the final paper, Dr Ken Burgess, the immediate past president of the SDT, presented an update on HACCP in practice. From its inception in the 1960s, it has evolved into a worldwide approach to building safety into food production, with a number of standards available.



Dr Ken Burgess, immediate past president of the SDT

However, HACCP requires a series of judgements to be made and there is a danger of introducing over-complexity, particularly through the creation of too many critical control points (CCPs).

Two approaches can help to minimise CCPs, significance scoring and the requirement that a CCP must be measurable or observable in real time. Any factors that is not graded as a CCP can then be dealt with as a prerequisite for that process. **Di**

The full presentations from this meeting have been made available to SDT members via the society's website, www.sdt.org