

Ensuring reliable microbiological analysis

In her latest blog from Campden BRI, Suzanne Jordan discusses the many aspects that have to be controlled in order to achieve reliable results.

The results from microbiological analysis play a critical role in the effective management of food safety and quality, and it is vital that the user of such data has confidence in their reliability. In order to ensure that the results obtained are right and interpreted correctly, it is absolutely essential that good microbiological laboratory practice is followed. This involves many aspects including selection of the correct method, equipment and controls, staff competency and data interpretation.

There are many points to consider when setting up a laboratory, both before and after the work space has been designed and constructed. The correct location of equipment and analysis of work flow within the laboratory are important to reduce the potential for cross contamination of samples. In addition, many of the pieces of equipment used for analysis will need regular checks to demonstrate consistent performance, as well as periodic maintenance.

Another key aspect is good record keeping - from quality control of the microbiological media used for analysis to checks of staff proficiency. These records need to be assessed on a regular basis as part of the continual appraisal of laboratory performance. All samples analysed in the laboratory must be traceable through the process and stored and handled in the correct way to

provide reliable data. Occasionally things do not go according to plan and incorrect results are obtained. In this situation it is essential that the correct steps are taken to investigate and apply corrective actions.

Many laboratories look to introduce new methods to improve time to result and to reduce hands-on time for their staff. It is important to show that any new protocol being implemented is fit for purpose for the samples being analyzed. Amongst the rapid commercial kits available on the market there has been an increasing number of molecular (DNA) based commercial kits for pathogen detection. There are additional considerations that need to be taken into account when using these methods, including keeping cross contamination under control.

All laboratories need to show that they can produce reliable and reproducible results by having the systems and controls in place to make sure it happens. We often are asked for advice

on what is needed to set up a new laboratory, and how to assess laboratory performance and evaluate new methods.



To assist in providing concise practical help we have updated A code of practice for microbiology laboratories handling food, drink and associated samples (Guideline 9) to give tips on best practice on all steps of sample analysis, from receipt and preparation to interpretation of results. If you are setting up a laboratory or are new to the management role, this guide provides invaluable advice that could save considerable time and money.

We also offer tailored advice if you have specific queries/requirements – so feel free to give me a call. Find out more about our Food analysis and testing activities.

Suzanne.Jordan@campdenbri.co.uk

See more at:
www.campdenbri.co.uk/blogs

Advanced analytical technology

Quantum supply and support a range of rapid analytical products for food testing laboratories and processing plants including the Quant NIR Analyser. A selection of the more common applications include particle distribution of flour, moisture determination in cereals,

analysis of fat and moisture and detection of salmonella in chocolate and confectionery, analysis of cholesterol, lactic acid and D-3-hydroxybutyric in eggs.

The NIR will also carry out particle size analysis of emulsion droplets in

flavour emulsions, measure glucose, lactic acid and chloride in fruit and vegetables and detect listeria monocytogenes in meat and poultry. The total acidity, salt, pH, fat and protein in ready meals can be established and enumeration of e.coli and detection of salmonella in seafood.