

Testing times continue

Carrie Martindale probes into the world of food inspection, testing and product quality control.

The horse meat scandal may be gone from the headlines, but its legacy and impact on the food industry is here to stay; EMA (economically motivated adulteration) now being one of the hottest topics in the business.

This has put an even greater emphasis on the need for robust food inspection, testing and quality control by processors and manufacturers, and heightened consumer awareness continues to put working practises under the spotlight.

Speciation identification in meat products is just the tip of a very tall iceberg when it comes to the subject of testing. Manufacturers have a myriad of other constituents that require stringent testing and quality control, including temperature, microbiological safety and strategy and foreign body analysis, to name but a few.

LGC, the UK's designated National Reference Laboratory for Genetically Modified Organisms (GMOs) in food and feed, has announced that it now has ISO17025 (UKAS) accreditation for its multi-speciation service for raw and processed meats and meat products. LGC's service is an important step in keeping food fraud under control.

Many companies are carrying out regular testing of products in order to strengthen the integrity of their operations.

Victoria Moore, LGC's specialist DNA scientist commented: "The service has been successfully developed with the knowledge and expertise of LGC's scientists from a wide range of disciplines. The accreditation is great recognition for a speciation service that enables us to provide a determination of presence / absence of each species to a specified detection level. The service currently covers beef, pork, horse, lamb, turkey and

> Testo's infrared and core-temperature measuring instruments are ideal for checking consumption temperature.

chicken but we have further species in the development process."

The speciation service utilises LGC's patented PCR-based KASP(tm) genotyping technology, enabling extremely high levels of assay robustness and accuracy across a wide range of food samples.

Of course, cases of species substitution have occurred in the fish industry too - an area of substitution that perhaps the post horsegate consumer would not be aware of. The interim Elliott report suggests that species testing through various methods, including gel electrophoresis or DNA testing, is the best measure to prevent substitution of a higher value species e.g. cod, for a lower value species for example whiting. Professor Elliott states that this kind of food fraud is often used in situations where organoleptic identification may be difficult, for example in smoked fish.

The Elliott Report

Whilst the Elliott Report, commissioned by DEFRA and the Department of Health, was specifically commissioned to carry out an independent review of Britain's food system in relation to food fraud its interim recommendations have strong implications to change food inspection methodology right across the board.

One recommendation is that a shared public laboratory service be introduced with public analysts testing product authenticity in local-authority owned laboratories. Chris Elliott, who is Professor of Food Safety and Director of the Institute for Global Food Security at Queen's University Belfast, has put forward that those involved with audit, inspection and enforcement have access to resilient, sustainable laboratory services that use standardised, validated methodologies.

The report also includes the proposal that a specialist food crime unit should be set up in the UK in order to improve the safety of UK food supply networks. The final report is due to be published in the spring.

Responding to the report, the British Meat Processors Association (BMPA) director, Stephen Rossides said: "The interim report is a valuable analysis

of the challenge of food crime both to consumers and to what the report recognises as "the vast majority [in the food industry] who are committed to complying with the law.

"In the light of the horse meat episode, many companies are reviewing their supply chains and carrying out regular testing of products in order to strengthen the integrity of their operations, in addition to the considerable level of audits that are conducted under a range of assurance schemes.

"We need to consider the report carefully in order to identify how to respond to and implement its recommendations. In doing so, we will need to work closely with our member companies, with other industry bodies and

organisations and with Government in order to develop a coordinated and effective approach.

"We note and welcome the report's statement that: 'UK consumers have access to perhaps the safest food in the world.' But we also recognise that food crime, even when it does not pose a food safety risk, undermines public trust and confidence in the food industry. It is paramount that we restore and maintain that trust and confidence."

Environment secretary Owen Paterson said:

"I am pleased that Professor Elliott's interim review recognises that there are good systems



> Stephen Rossides.

For every inspection, there's a Testo

One of the most frequent causes of food poisoning is the inadequate cooling or heating of foods; temperature having a crucial influence on the formation and proliferation of germs on the food. Testo's food measuring technology and instruments are intended for coming into direct contact with foods and have HACCP international and EN 13485 certification.

In addition, all of its food data loggers and the Testo Saveris data monitoring system comply with EN 12830 and have the appropriate certification from the TÜV Süd technical inspection authority.

Testo's infrared and core-temperature measuring instruments are ideal for checking incoming goods and consumption temperature. In order

to ensure that customers can consume meals without any worries, the correct heating and temperature of food must be monitored in the food service area, therefore regulation of the consumption temperature plays a crucial role.

Part of the compliance with a cooling chain is to check the temperature of food during transport and storage. Testo offers a wide range of different data loggers for continuous temperature and humidity recording.

Using the right data logger can ensure high-precision measurement at one or more measuring locations with an internal or external sensor. Basic software is supplied free of charge along with each data logger. **FMT**

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> Testo's instruments have HACCP international and EN 13485 certification.

in place to ensure UK consumers have access to some of the safest food in the world. We want to keep it that way.

Some of the FSA's microbiological testing strategies came under the spotlight recently in legal expert Jamie Foster's column in *Food Management Today's* sister publication *Meat Management*. Foster accused the FSA of focussing too much of its attention on inspection in red meat slaughterhouses.

Foster said the FSA was: "Virtually ignoring" the dangers that come from other potentially "high risk" premises, such as those selling sandwiches or fresh salads to the general public. His point being that the FSA was focussing too much of its attention on the meat industry, when it should also have been looking elsewhere.

Product contamination is still happening across the board through lack of proper inspection. For example, recent product withdrawal reasons have been as wide-ranging as high levels of cocaine in a bottle of Caribbean soft drink; product with incorrect use-by dates; stock that has been produced in unapproved establishments; and pain relief tablets found in two individual cones of a Tesco own-brand ice cream product.*

Is a move toward at-line testing on the cards?

Suppliers to the industry feel that a move towards at-line testing is imminent. This is where manufacturers have the ability to pull samples off a production line to test as required, something that could cut down on waiting time and potentially help businesses save money. Jamie Duncan from QCL, an importer and supplier of test equipment to the food industry, explained to *Food Management Today* about its FoodLab range of products. FoodLab is testing equipment which has been designed for businesses to use themselves, and relevant for a number of areas of the food industry; from oils to dairy to eggs.

> One of QCL's FoodLab range of testing equipment.



> Jamie Duncan.

Duncan explained: "We want to train people and help people out with the equipment that we install with them. The Foodlab range consists of small colourimetric analysers that have premeasured test kits within them. They're very easy to use and will give you results between one and three minutes depending on the test.

"The range is designed to be used by anyone from a lab technician to a farmer really. It's very straight forward to use; everything is premeasured; you just use a pipette to take your sample and add it to the reagent. It has a huge number of parameters that we can measure for: fatty acids, peroxide value, anisidine value - and that's just in the oils."

It's clear that education and accessibility are high on the agenda for QCL, as Duncan clarified: "As a general principle, the range allows people to bring what's normally either very technical or very expensive testing - which is done outside in a contract lab and with maybe five days to get a result - to be done in the factory either next to the line or in a separate satellite laboratory. A result can be had in a few minutes, so businesses can make real process decisions based on that; whether that's when the oil needs to be changed, or if the oil is already rancid when you're taking it from the tankard before you use it as an ingredient."

He continued: "Rather than just shifting boxes of equipment that people know very well, we try and find something new that solves a new problem, whether that's food safety type testing (of pasteurisation of milk for example) or whether it's a quality parameter, like a fat in a product or something similar." **FMT**



> The stainless steel loggers are designed for testing foods at high temperatures.

Data-loggers for high temperature food processing

Electronic Temperature Instruments Ltd has launched new stainless steel ThermaData(r) Loggers. These are designed for food processing where testing at a high temperature (up to 105 °C) data-logger is required. The ThermaData logger is housed in a waterproof, food grade 316 stainless steel case to protect the logger from corrosion, impact and moisture (IP66/67).

ThermaData logger software allows the user to programme the logging sample/interval rate (1 to 255 minutes), the real-time clock, °C/°F, delayed start (maximum 23 hours, 59 minutes) and a 12-character user ID. It also incorporates a password protected calibration adjustment feature enabling the user to check the calibration of loggers and make minor adjustments.

By selecting continuous logging in the software options, it is possible to start the logger only once and never have to reset its parameters again, even if downloaded regularly. **FMT**

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*Sourced from the Food Standards Agency website; www.food.gov.uk