

Review into the Integrity and Assurance of Food Supply Networks

Note of meeting with Oxford Instruments

Date: 21 January 2014

Attendees:

Dr David Williamson (DW) - Applications Group Leader - Oxford Instruments

Nigel Crossley (NC) - Territory Manager (NMR) EMEA - Oxford Instruments

Professor Chris Elliott (CE) – Review into the Integrity and Assurance of Food Supply Networks

Rebecca Kenner – Review into the Integrity and Assurance of Food Supply Networks

1. Introduction

NC explained that they had asked to meet with CE to precede a meeting with the CEO of Oxford instruments, so they can explain their new product: what it can/can't do, where the markets are etc.

Oxford Instruments received a TSB funding grant to do profiling work for fatty acids using Nuclear Magnetic Resonance technology. This NMR instrument was launched last year. After the launch, Oxford Instruments identified two potential uses for it: in academia and the food market. It was seen as a particular opportunity during the horsemeat incident, but Oxford Instruments are keen to develop it beyond that.

CE then explained the work of the Review e.g. seeking counter-measures for fraud. CE has been asked to meet a number of companies looking to find solutions in this area, but generally has not accepted as it's important that these companies find their own markets and selling points, in order for them to be accepted by the industry. CE also gave an example of those food manufacturers that are now having to undertake significant speciation testing, which they are having to fund themselves.

CE explained that he is now interested in alternatives e.g. geographical profiles, and what other new tools might be available, beyond DNA testing or other methods that might be able to present a 'red flag' that something is wrong, even if it isn't able to offer quantitative analysis.

2. Discussion

DW explained that NMR looks at fatty acid profile, which could work well in the process of testing frozen blocks of meat, as it can test individual pieces of meat from the core of the block. However, it wouldn't be able to test speciation if the meat is minced. For example, minced horse/beef when tested would look like beef as horse is so much leaner. In order for them to do speciation, the NMR would need pieces of meat from the core.

DW explained that from their perspective, this instrument has particular relevance in terms of Food Information Regulations, as when a product is homogenised it can determine exactly how much saturated fat etc. is in the product, for accurate reporting on the label. It could potentially also extend to testing the feed of particular groups/types of animal e.g. whether particular type of beef has been grass-fed. CE pointed out that if they could differentiate corn-fed from non corn-fed chicken that would be of significant interest to the poultry industry, as that represents substantial added value to a range of poultry products.

CE thought that the key question is whether or not the tool they are developing can be made to go to the level that the multiple retailers want it. DW felt that this was unlikely, but thought an idea would be for this instrument to undertake initial screening so that you can then do more detailed DNA testing if necessary.

CE explained that the key thing is for the big retailers to be satisfied that this is a tool they can use in their supply chain. It will then be easier to present to producers and suppliers, particularly if it is cheaper than ELISA or DNA testing. There is also the advantage that the NMR is a generic test, so could fulfil the desire of retailers to look for the “next horsemeat”. So a key benefit would be to present it as a system for authenticating supply chains.

DW explained that one of their main challenges is that they do not have the resources within their company to create the amount of chemometric modelling that would be required if a client/supplier did not have the relevant expertise. CE explained the AUNIR example, who create a chemometric modelling database for feeds, that companies can then buy in/use to check their own testing – academics could do this for you.

CE also felt that, when presenting any system like this to producers, it would be important to make sure that undertaking the testing doesn't become part of the contract they have with retailers, otherwise it doesn't represent any added value for the producer. The better option would be to steer towards contracts that specify that there must be proof that food is organic, corn-fed etc. This technology could then be used to demonstrate that proof.

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