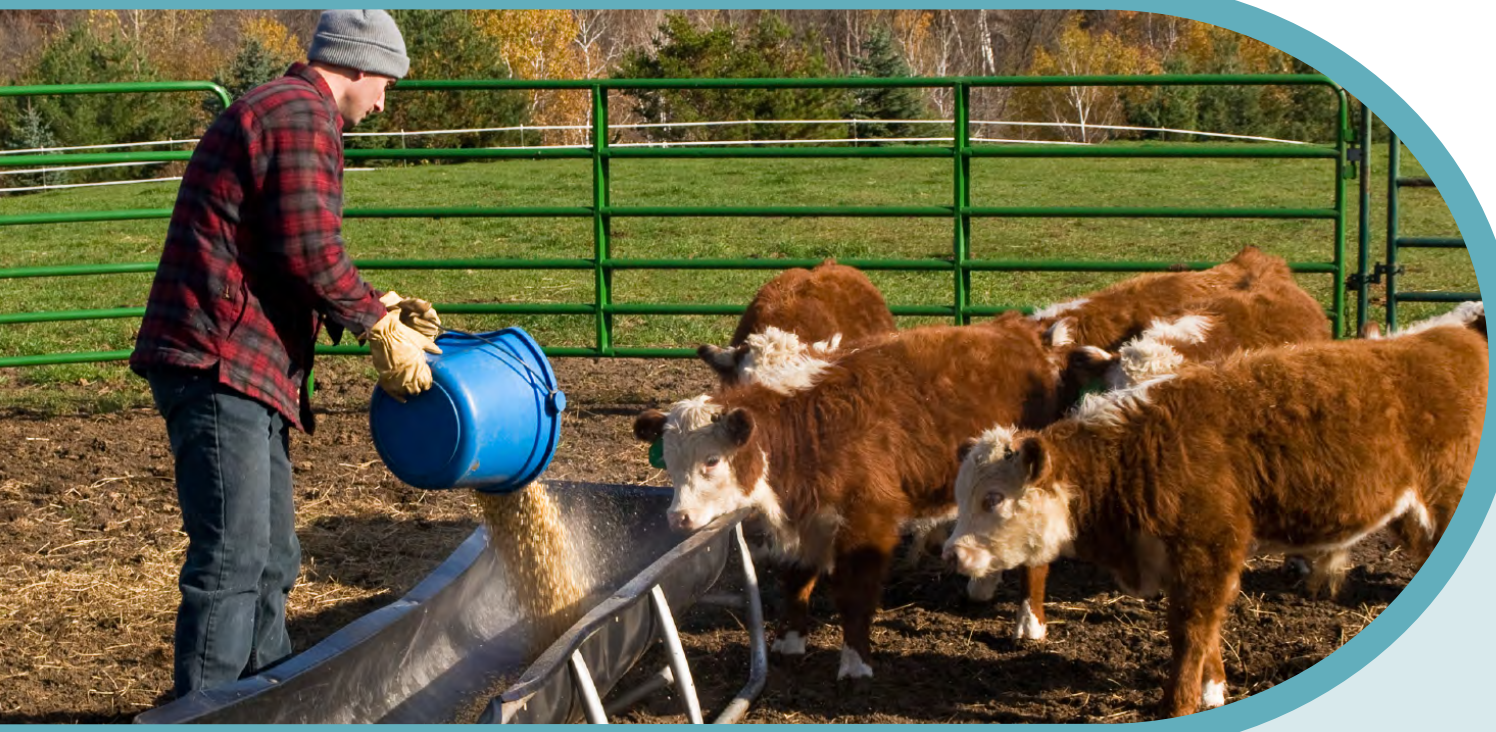
NRL News

Spring 2015



Reference Laboratories for Food and Feed Control

Regulation (EC) No 882/2004 on official controls[1] establishes a network of European and National Reference laboratories. In each area of food and feed control, a European Reference laboratory (EURL) is identified to coordinate activities in this area. They are supported by a network of National Reference laboratories (NRL) who co-ordinate activities within their own member state and contribute to the European wide activities.

The duties of these laboratories are set out in the legislation but their principal role is to provide analytical and scientific support to ensure that food and feed control is carried out effectively and in a harmonised manner, across the EU member states.

National Reference laboratories are nominated by the Competent Authorities in each Member state. In the UK, these are the Food Standards Agency (FSA) and the Department for Environment, Food and Rural Affairs (DEFRA). A list of current UK National Reference laboratories is published by the Food Standards Agency and can be found here: FSA: List of National Reference Laboratories

LGC is currently the UK National Reference laboratory for the following areas:

- Genetically Modified Organisms (GMO's)
- Additives for use in Animal Feed – Authorisations
- Additives for use in Animal Feed – Feed Control
- Pesticides in foods of animal origin and commodities with high fat content
- Veterinary medicines residues and contaminants in food of animal origin – *Specified residues according to Directive 96/23/EC*
- Added water in poultry meat

This newsletter gives an update of activities performed for the following NRL functions:

- Genetically modified organisms (GMOs) in food and feed
- Feed additives in animal feed

[1]Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, latest consolidated version: http://eur-lex.europa.eu legal-content/EN/TXT/?qid=1435919430779&uri=CELEX:02004R0882-20140630

1. Feed additives in animal feed

FSA liaison

At the beginning of the year, Dr Ray Smith retired from the Food Standards Agency. His role with regard to feed additives has now been taken over by Dr Mark Bond who works in the Agency's Branch of Animal feed, TSEs and Animal by-products (ABPs). mark.bond@foodstandards.gsi.gov.uk

Mark has gained significant experience in Life Science disciplines. Academic achievements comprise a Degree in Biotechnology (Leeds), a PhD investigating plant development under climate change scenarios (St Andrews) and an MSc in Science & Technology Policy & Management (Manchester Business School).

Work experience is underpinned by industrial biochemical processing for a global leader, and extends to genetic research and technical support roles. More recently, Mark worked for an independent socio-economic consultancy firm and for the Global Food Security Programme in science and policy development capacities. Mark began his role in the FSA as a member of the microbiological risk assessment team and moved into the current role in late 2014.

Legislation update

The Animal Feed (Hygiene, Sampling etc. and Enforcement) (England) Regulations 2015 came into force on 6th April 2015 and covers requirements for feed hygiene, registration and approval, sampling and analysis, duties of execution and enforcement and enforcement powers and related provisions. A copy of the full regulations can be found at: http://www.legislation.gov.uk/uksi/2015/454/contents/made

Commission Implementing Regulation 2015/3852 authorised the preparation of Lactobacillus

acidophilus CECT 4529 as a feed additive for laying hens and amending Regulation (EC) No 1520/2007.

Commission Implementing Regulation 2015/4653 authorised diclazuril as a feed additive for chickens for fattening, for turkeys for fattening, and for guinea fowl for fattening and breeding.

Commission Implementing Regulation 2015/4754 authorised a preparation of alpha-amylase produced by Bacillus licheniformis (DSM 21564) as a feed additive for dairy.

Commission Regulation 2015/327 of 2 March 2015 amended Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards requirements for the placing on the market and conditions of use of additives consisting of preparations.

More information on legislation updates from January to March 2015 can be found on the Government Chemist web pages. https://www.gov.uk/government/publications/food-and-feed-law-legislation-review-january-to-march-2015

Recalls

There were only two recalls in the EU Rapid Alert System for Food and Feed (RASFF) database involving feed additives, from 1 December 2014 to 31 May 2015, (Table 1).

Month	Country of Origin	Reason for recall
December 2014	United Kingdom	Unauthorised genetically modified (Bacillus subtilis) bacteria in vitamin B2 from China, via Switzerland
February 2015	Germany	Dioxins (9.53 ng/kg - ppt) in zinc oxide from Germany

Table 1: Feed additive recalls from 1 December 2014 to 31 May 2015

Feed additive authorisations

Feed additives play an important role in animal nutrition, addressing various aspects such as feed safety, reduction of environmental emissions and sustainability in livestock farming. Before placing feed additives on the market, authorisation must be obtained as specified in Regulation (EC) No 1831/2003. The authorisation procedure involves a scientific evaluation of data provided by the applicant via a dossier including methods of analysis that allow Member States' official control laboratories to check whether the use of feed additives are in compliance with legal conditions.

Pursuant to Regulation (EC) No 1831/2003, a list of the currently permitted feed additives can be found in the European Union Register of Feed Additives. Edition 185 which was released on 12 May 2014 can be found at:

http://ec.europa.eu/food/food/animalnutrition/feedadditives/comm_register_feed_additives_1831-03.pdf

Table 2 presents a summary of the authorisations that were issued from December 2014 to May 2015.

Table 2: Feed additive authorisations, December 2014 to May 2015

Month	Additive	Additive type	Proposal number	Authorisation type
December 2014	Quinoline Yellow	sensory	SANCO/12430/2014	new
December 2014	Neohesperidine dihydrochalcone	sensory	SANCO/12640/2014	new
February 2015	Selenomethionine produced from Saccharomyces cerevisiae (NCYC R645)	nutritional	SANCO/12480/2014	new
February 2015	Preparation of Saccharomyces cerevisiae (NCYC R404)	zootechnical	SANCO/12521/2014	new
February 2015	Enterococcus faecium (NCIMB 10415)	zootechnical	SANCO/12708/2014	new
March 2015	Retinyl acetate, Retinyl palmitate and Retinyl propionate (Vitamin A)	nutritional	SANCO/12776/2014	re-authorisation/new*
March 2015	Taurine	nutritional	SANCO/12781/2014	re-authorisation/new*
March 2015	L-carnitine, L-carnitine L-tartrate	nutritional	SANCO/12784/2014	re-authorisation/new*
March 2015	Bioitin	nutritional	SANCO/12821/2014	re-authorisation/new*
March 2015	Endo-1,4- beta-xylanase and endo-l,3(4)-beta-glucanase	zootechnical	SANTE/12520/2015	new
April 2015	Potassium iodide, calcium iodate anhydrous and coated granulated calcium iodate anhydrous	nutritional	SANCO/12773/2014	re-authorisation/new*
April 2015	Beta-carotene	nutritional	SANTE/10065/2015	re-authorisation
April 2015	Thiamine hydrochloride and thiamine mononitrate	nutritional	SANTE/10025/2015	re-authorisation/new*
April 2015	Tocopherol extracts from vegetable oils, tocopherol rich extracts from vegetable oils (delta rich) and alpha-tocopherol	nutritional	SANTE/10014/2015	re-authorisation
April 2015	Ascorbic acid, sodium ascorbyl phosphate, sodium calcium ascorbyl phosphate, sodium ascorbate, calcium ascorbate and ascorbyl palmitate	nutritional	SANTE/10026/2015	re-authorisation/new*

* Re-authorisation of existing application (1831/2003 Article 10(2)) with co-application for additional scope (Article 10(7)).

Further information on the feed additive authorisations can be found at: http://food.gov.uk/enforcement/regulation/europeleg/euupdates/

For the various regulations relating to the authorisation of feed additives, see the Commission website: http://ec.europa.eu/food/food/animalnutrition/feedadditives/index_en.htm

EURL Proficiency Test 2014

The EURL laboratory for feed additives, was mandated by the Directorate General for Health and Consumers to organise a proficiency test (PT) among appointed NRLs. The aim of the PT was to assess the capacity of the NRLs to correctly determine 11 authorised coccidiostats in feed matrices at cross-contamination and additive levels. Thirty-eight laboratories from 22 countries registered to this 2014 PT exercise. Between 63 % and 79 % of the laboratories reported satisfactory results for monensin, narasin, lasalocid, diclazuril, decoquinate, halofuginone, robenidine, semduramicin and diclazuril FA. The laboratories also reported qualitative results as regards the presence of one or more of the other authorised coccidiostats. On the whole, the rate of false positive results was 3% for monensin and maduramicin and 0% for all the others. A summary of the results for all of the participants for the proficiency test is given in table 3.

Table 3: Summary of all results for the coccidiostats proficiency test

Analyte	X_a (mg kg^{-1})	Number of satisfactory z-scores	Total number of z-scores	Relative number of satisfactory results (%)
Monensin	1.083	30	38	79
Narasin	0.692	30	38	79
Lasalocid	1.195	27	37	73
Diclazuril	0.010	23	32	72
Decoquinate	0.394	21	31	68
Halofuginone	0.025	17	26	65
Robenidine	0.609	22	35	63
Semduramicin	0.223	20	29	69
Diclazuril (authorised level)	1.494	22	30	69

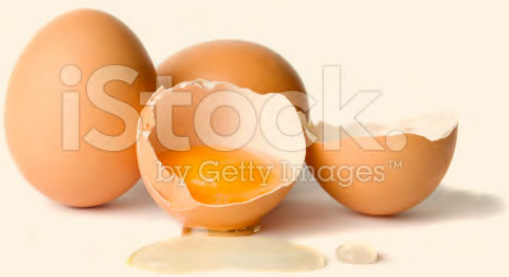
The full report on the proficiency test for the determination of authorised coccidiostats in poultry feed at cross-contamination and additive levels can be found at:

https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/proficiency-official-control-european-laboratories-determination-authorised-coccidiostats-0?search

EURL Proficiency Test 2015

The 2015 EURL inter-comparison study is focussing on the determination of authorised carotenoids in feed at authorised levels. Carotenoids as feed additives are classified in the category “sensory additives” and functional group “colourants: substances which, when fed to animals, add colours to food of animal origin”. For example, astaxanthin and canthaxanthin are added to salmon and trout feed for flesh colouration and lutein is used in poultry farming for egg yolk coloration.

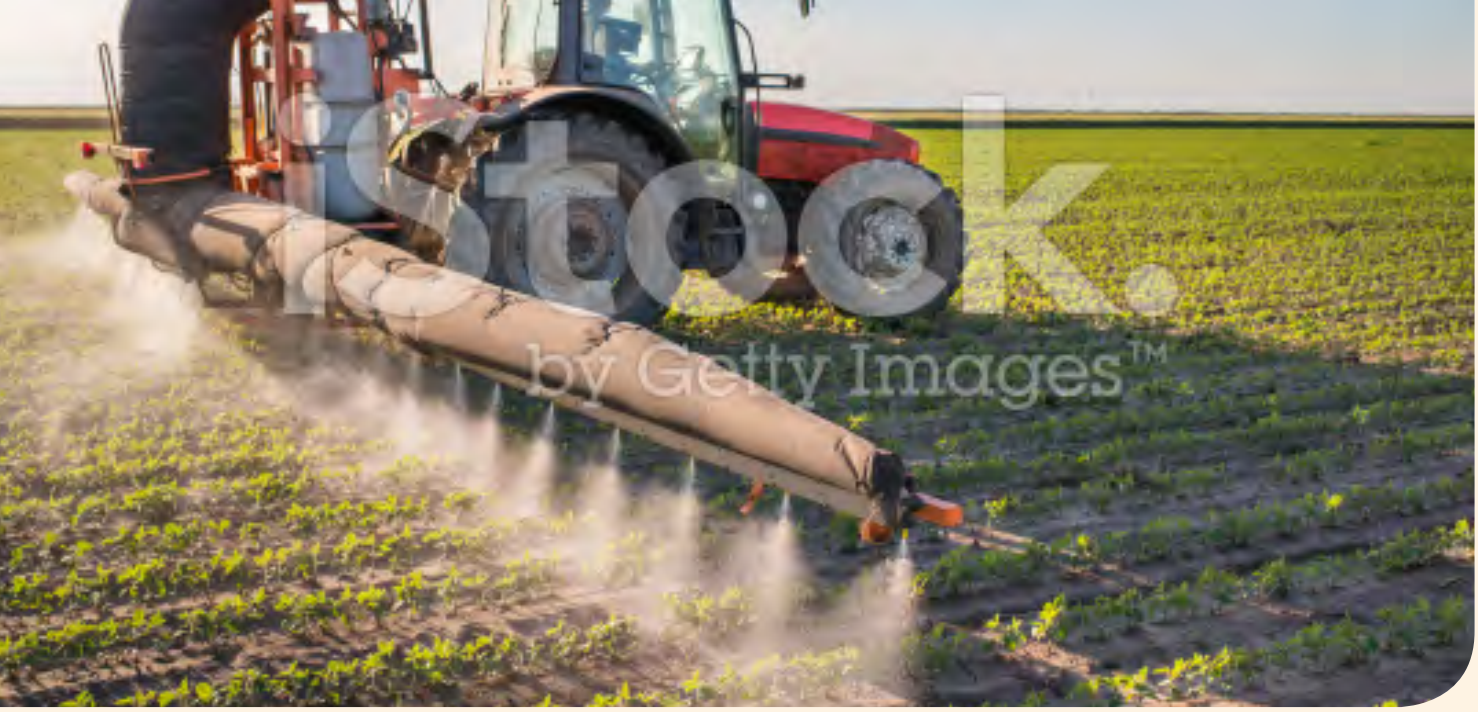
The study is currently in progress with initial results expected to be discussed at the EURL meeting later this year.



Meetings

In 2004 the European Union Reference Laboratory for Feed Additives (EURL-FA) which is supported by a network of NRLs went into operation in order to perform scientific evaluation of data provided by applicants of proposed feed additives and provide quality assurance for the analysis of feed additives through the organisation of proficiency tests. Since then the EURL-FA/NRL network has successfully evaluated analytical methods related to more than 350 dossiers and has organised three PTs.

On November 14, 2014 the EURL-FA celebrated its 10th anniversary with colleagues from DG Health and Consumers of the European Commission, the European Food Safety Authority, the NRLs and industry representatives and a review of the activities from the last 10 years was presented. The results from the 2014 coccidiostats proficiency test were also discussed at the meeting.



Diclazuril in feed

At the EURL meeting the analysis of diclazuril was also discussed. It was highlighted that the method described in Annex IV, section F of Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed generally gives low recoveries for diclazuril. It was noted, though, that the recoveries could be significantly improved by increasing the mass of sorbent in the solid phase extraction cartridge from 100 mg to 5000 mg. Also, the recommended chromatography column is stated as being a Hypersil ODS, 3 µm packing, 100 mm x 4,6 mm, or equivalent, however comments from other NRLs indicated that the chromatography could be improved with the use of a longer column (25 cm).

Proficiency test for UK OCLs

Discussions have been held with members of the Association of Public Analysts as to the most appropriate and useful analytes for a proficiency test / training exercise. From these discussions it was proposed that a trial involving the analysis of iron, copper, zinc and manganese in various feeding stuffs should be carried out. Preparation of samples of pet foods containing the elements of interest is currently in progress and it is expected that the samples will be ready for dispatch in the summer.

Webinar

We understand that it is often difficult to find the time to be able to travel to training courses or conferences. We are therefore looking into the possibility of running a webinar focussing on the analysis of feed additives and the issues surrounding the legislation. If you would like to be involved in the webinar or have a particular topic you would be interested in being included, please contact Kirstin Gray.

2. GMO

Recalls

A summary of the recalls from the EU Rapid Alert System for Food and Feed (RASFF) involving GMO between 1 December 2014 and 31 May 2015 is given in table 4.

Month	Country of Origin	Reason for recall
December 2014	United Kingdom	Unauthorised genetically modified (Bacillus subtilis) bacteria in vitamin B2 from China, via Switzerland
February 2015	Germany	Unauthorised genetically modified red yeast rice extract from China
March 2015	Finland	Unauthorised genetically modified papaya in frozen fruits smoothies from Poland, with raw material from India
April 2015	Italy	Unauthorised genetically modified (CRY1Ab/Ac; T-nos) rice spaghetti from China
April 2015	Italy	Unauthorised genetically modified (CRY1Ab/Ac; T-nos) rice vermicelli from China
May 2015	Czech Republic	Unauthorised genetically modified papaya from unknown origin

Table 4: GMO recalls from 1 December 2014 to 31 May 2015

EURL Activity

The NRL attended the 10th NRL plenary and 22nd ENGL plenary meetings at the JRC (Ispra, Italy) during December 2014. Following a recent EU-RL Comparative Test, the EU-RL has advocated that adh-1 (70bp) should not be used as the taxon specific reference gene for quantitation of specific GM maize varieties. This is due to a Single Nucleotide Polymorphism (SNP) that may result in an over estimate of the GM content of maize samples. The adh-1 gene should be replaced by the hmg reference gene. This is important for pre-existing methods for MON863, NK603 and GA21.

Additional topics of discussion included the need to provide training and guidance on demonstrating competency in the application of the “Low Level Presence” (LLP) Commission Regulation (EU) No. 619/2011 for routine testing.

The NRL attended the 23rd ENGL plenary meeting at the JRC (Ispra, Italy) during April 2015. Topics of discussion included the establishment of new ENGL working groups to address the following:

- Unit of measurement (aimed at providing harmonised guidance for the conversion of mass/mass to copy numbers for the expression of the GM content of a sample)
- Digital PCR (aimed at reviewing current issues and applications of digital PCR for GMO analysis)
- Update of methods (aimed at providing recommendations on methods for detection of GM events for those GMOs approaching their 10 year renewal date within the EU)
- Working Group on PCR multiplexing (aimed at providing a Guidance Document on the use and laboratory method verification of multiplex methods for GMO analysis)

Training

The NRL attended an EU-RL led digital PCR workshop at the JRC (Ispra, Italy) during November 2014. The purpose of this workshop was to discuss and participate in the application of digital PCR instrumentation for GMO analysis.

Following a number of recent requests, the NRL circulated an E-mail to UK Official Control Laboratories providing a link to the official EU Guidance on flexible scope of accreditation for GMO analysis.

http://www.european-accreditation.org/publication/jrc-scientific-and-policy-reports-guidance-iso-iec-17025-2013

The document is aimed at providing guidance on a harmonised approach for flexible scope of accreditation within Europe, and provides a solid framework for acquisition and maintenance of ISO 17025 accreditation for GMO analysis in this important area.

If you require further information on any aspect of this newsletter please contact Kirstin.Gray@lgcgroup.com.

www.lgcgroup.com

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