NRL News

Summer / Autumn 2014

Reference laboratories for food and feed control

Regulation (EC) No 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules establishes a network of European and National Reference laboratories. In each area of food and feed control, a European Reference laboratory (EU-RL) 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.

The EU-RL's are listed in Regulation (EC) 882/2004 and amending legislation. The EU Commission Joint Research Centre (JRC) acts as the EU-RL for many aspects of food and feed control including the following:

- EU-RL for GMOs in food and feed
- EU-RL for feed additives
- EU-RL for food contact materials
- EU-RL for heavy metals in feed and food
- EU-RL for mycotoxins in food and feed
- EU-RL for polycyclic aromatic hydrocarbons.

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 (GMOs)
- 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 for the following NRL functions:

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

1. Feed additives in animal feed

Legislation update

Feed & Food 2012

The 2012 edition of the European Feed Manufacturers' Federation, FEFAC, statistical yearbook Feed & Food was published in December 2013 and contains extensive data regarding the calendar year 2012 on feed (compound feed production, feed materials consumption, turnover, number of manufacturing plants, share of feed in intermediate consumption, etc.) and food (meat production, consumption, etc) and can be found at: http://www.fefac.eu/publications.aspx?CategoryID=2061&EntryID=629

Recalls

Table 1 gives a summary of recalls from the EU Rapid Alert System for Food and Feed (RASFF) database involving feed additives, from January to July 2014.

Feed additive authorisations

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 in the first seven months of this year.

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

Table 1: Feed additive recalls from 1 January 2014 to 30 July 2014

Month	Country of origin	Reason for recall
January	Poland	too high content of zinc (334.3 mg/kg - ppm), of copper (36.0 mg/kg - ppm) and of selenium (0.88 mg/kg - ppm) in complete feed for dogs from Poland
January	Spain	cadmium (2.81; 3.90 mg/kg - ppm) in fish meal from Spain
January	Belgium	cadmium (160 mg/kg - ppm) in poultry feed additive from Belgium
January	Brazil	unauthorised substance clopidol (10 µg/kg - ppb) in frozen chicken breast fillets from Brazil, via the Netherlands
February	Netherlands	too high content of cyanide (390 mg/kg - ppm) in linseed from the Netherlands
February	Germany	too high content of cyanide (327 mg/kg - ppm) in linseed from Germany
February	Netherlands	too high content of narasin (9.3 mg/kg - ppm) and of nicarbazin (4.4 mg/kg - ppm) in compound feed for broilers from the Netherlands
March	Belgium	too high content of ragweed (Ambrosia spp.) seeds (80.5 mg/kg - ppm) in complete feed for birds from Belgium
March	Germany	rye ergot (Claviceps purpurea) (between 0.11 and 0.21 %) in rye from Germany
March	Belgium	too high content of cobalt (54 mg/kg - ppm) in feed for goldfish from Belgium, with raw material from the Netherlands
March	Russia	too high content of ragweed (Ambrosia spp.) seeds (161 mg/kg - ppm) in maize from Russia, via Switzerland
April	Germany	meadow saffron (Colchicum autumnale) in hay from Germany
April	India	prohibited substance DDT (3.11 mg/kg - ppm) in complete feed for horses from India
April	Ireland	too high content of fluorine (1088 mg/kg - ppm) in mineral feed from Ireland, via the Netherlands
May	Germany	meadow saffron (Colchicum autumnale) in hay from Germany
May	Lithuania	melamine (55 mg/kg - ppm) in inactive yeast from Poland, via Lithuania
May	China	prohibited substance chloramphenicol (0.3; 0.4; 0.4 µg/kg - ppb) in riboflavin (vitamin B2, 80%) from China
June	Germany	meadow saffron (Colchicum autumnale) in hay from Germany
June	Belgium	too high content of selenium (87 mg/kg - ppm) in mineral feed for dairy cows from Belgium
July	Peru	prohibited substance hexachlorobenzene (35.4 µg/kg - ppb) in fish meal from Peru, via Germany
July	United Kingdom	cadmium (1.08 mg/kg - ppm) in complementary feed from the United Kingdom
July	Poland	cadmium (2.71 mg/kg - ppm) in celery stalks from Poland
July	Belgium	too high content of fluorine (745 mg/kg - ppm) in complementary feed for pigs and cattle from Belgium, with raw material from Ireland and the Netherlands
July	Netherlands	prohibited substance nitrofuran (metabolite) furazolidone (AOZ) (up to 15000 µg/kg - ppb) in compound feed from the Netherlands

Table 2: Feed additive authorisations, January to July 2014

Month	Additive	Additive type	Proposal number	Authorisation type
February	endo-1,4-beta-xylanase and endo-1,3(4)-beta-glucanase produced by Talaromyces versatilis IMI 378536	Digestibility enhancer	SANCO/11958/2013	New
February	6- phytase produced by Trichoderma reesei (CBS 126897)	Digestibility enhancer	SANCO/12504/2013	New
February	endo-1,3(4)-beta-glucanase produced by Trichoderma reesei (CBS 126896)	Digestibility enhancer	SANCO/12808/2013	New
February	Decoquinate	Coccidiostat	SANCO/12503/2013	Amendment
February	Enterococcus faecium NCIMB 10415, Enterococcus faecium DSM 22502, and Pediococcus acidilactici CNCM I-3237	Silage agents	SANCO/12806/2013	New
February	Propionic acid, sodium propionate and ammonium propionate	Silage agents	SANCO/10068/2014	New
May	Canthaxanthin as feed additive for breeder hens	Zoo technical	SANCO/10780/2014	New
May	Calcium D-pantothenate	Vitamin	SANCO/10384/2014	New

Collaborative trial

Towards the end of 2013, LGC, as the NRL, took part in the EU-RL feed additives control proficiency test for the determination of authorised coccidiostats in poultry feed at cross-contamination levels. Three materials were tested; one poultry feed spiked with narasin, maduramicin and monensin, a second poultry feed spiked with lasalocid, nicarbazin, diclazuril and halofuginone and a blank pig feed. Between 64 % and 80 % of the laboratories reported satisfactory results for monensin, narasin, nicarbazin and maduramicin. For lasalocid, only 59 % of the laboratories submitted satisfactory results, 58 % for diclazuril and 53 % for halofuginone. Participating laboratories also reported qualitative results of the presence of one or more of the other authorised coccidiostats. On the whole, the rate of false positive results was 6 % for lasalocid, 4 % for maduramicin, 5 % for halofuginone, 3 % for robenidine and 0 % for all of the others.

The full report of the PT exercise can be found at: https://ec.europa.eu/jrc/sites/default/files/eur26418_jrc7389_final.pdf.pdf?search

LGC is currently participating in the EU-RL proficiency test exercise 2014, for the determination of authorised coccidiostats at additive and cross-contamination levels in feedingstuffs. Further details of this trial will be included in the next newsletter.

Meetings

2014 marks the 10th anniversary of the start of the activities of the EU-RL-Feed Additives Authorisation (EU-RL-FA). The yearly workshop for the EU-RL-FA (control) will take place on 13th of November and an Anniversary Event on 14th of November, both events at the premises of IRMM in Geel, Belgium. Further details of these meetings will be reported in the next newsletter.

2. GMO

Legislation update

Following on from a European Court of Justice ruling in 2011 on honey that had become contaminated with GM pollen as a result of bees accessing GM trial crops, the European Commission has proposed that pollen is defined as a constituent of honey, not an ingredient. In January 2014 the European Parliament endorsed draft rules defining pollen as a natural constituent of honey, rather than an ingredient. Commission Directive 63/2014 amended Council Directive 2001/110/EC relating to honey: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.164.01.0001.01.ENG

Recalls

Table 3 shows a summary of the recalls from the EU Rapid Alert System for Food and Feed (RASFF) involving GMO between 1 January 2014 and 30 July 2014.

Table 3: GMO recalls from 1 January 2014 to 30 July 2014

Month	Country of origin	Reason for recall
Cereals and bakery products		
June	China	unauthorised genetically modified rice cakes from China
July	China	unauthorised genetically modified rice flour from China
Dietetic foods, food supplements, fortified foods		
April	United States	unauthorised genetically modified (p35S and tNos present) papaya powder from the United States
Fruits and vegetables		
June	Thailand	methomyl (0.1 mg/kg - ppm) in and unauthorised genetically modified (35S promotor detected) fresh papaya from Thailand
July	Thailand	unauthorised genetically modified papaya from Thailand
Feed additives		
January	China	unauthorised genetically modified (Bt63) rice in choline chloride 60% corn cob from China
February	China	unauthorised genetically modified rice Bt63 (0.3%) in choline chloride 60% from China (8 notifications)
February	China	unauthorised genetically modified (Bt63 positive) choline chloride 60% corn cob from China
March	China	unauthorised genetically modified (Bt63) rice in choline chloride 60% corn cob from China (5 notifications)
March	China	unauthorised genetically modified (BT 63) choline chloride 60 % in rice from China (3 notifications)
April	China	unauthorised genetically modified (Bt 63) rice in choline chloride 60% from China, via Hong Kong (4 notifications)
Feed materials		
July	Côte d'Ivoire	unauthorised genetically modified (MON15985 and possibly MON531) cotton seeds from Côte d'Ivoire (3 notifications)
July	Côte d'Ivoire	unauthorised genetically modified (MON15985 and possibly MON831) cotton seeds from Côte d'Ivoire (2 notifications)

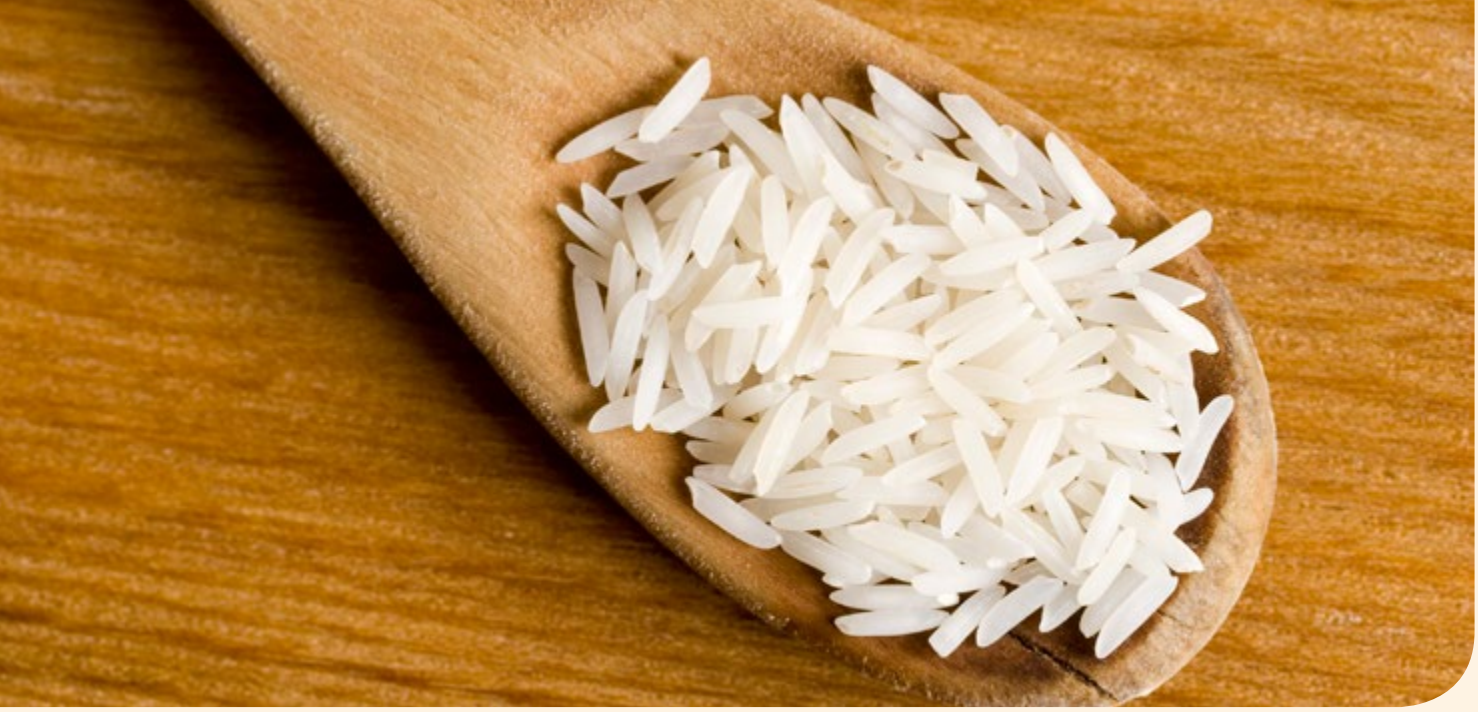
EU-RL Activity

Revised EU-RL Guidance on testing for Chinese GM rice was published on the EU-RL website in June. The new guidance incorporated additional revisions for clarity, direction on more prescriptive melting temperature (Tm) criteria for acceptance, and establishment of a relative “Ct” threshold for exclusion of false positives.

The NRL attended the 21st ENGL Plenary session on the 4th – 5th June 2014 held in Barza d’Ispra (Italy). Important topics discussed included the detection of Chinese GM rice Bt63 in feed samples; laboratory particpation in the EU-RL Comparative Tests; the validation of the EU-RL pre-spotted plates project for screening of GMO varieties; the validation of detection approaches as part of the EU GMOval project; approaches that had been used for the detection of GM papaya; and expansion of ENGL expertise into additional areas including DNA extraction, dPCR, animal and plant speciation, allergen detection.

A detailed meeting report of the 21st ENGL plenary session was provided to the FSA and a summary report distributed to UK Official Control Laboratories.

The NRL participated in an inter-laboratory validation exercise for the second generation of EU-RL pre-spotted plates. These plates consist of lyophilised primers and probes on standard 96 well microtitre plates. The pre-spotted plates facilitate the simultaneous detection of 44 single-insert GMOs. These plates include 7 taxon-specific, 5 element-specific, 1 construct-specific and 3 event-specific methods that will detect all but one authorized GM event (cotton GHB614) listed in the EU Register as of November 2013 in one single real-time PCR experiment. The system facilitates the detection of 44 authorized GM events from maize, soybean, oilseed rape and cotton. It is the NRL’s view that these plates are very useful in terms of a cost-effective and practical solution for the screening of GMOs.



Training

LGC hosted and led an interactive workshop on approaches for detecting Chinese genetically modified rice for Public Analysts on 24th June, the day after revised guidance was issued by the European Commission. The workshop was supported by the Food Standards Agency (FSA) and the UK National Measurement Office as part of the Government Chemist Programme 2014-2017, and was aimed at raising awareness of approaches used for detection of Chinese GM rice varieties. Representatives from six Public Analyst laboratories, as well as from Defra and the FSA attended the workshop. The day featured a review of the EU-RL guidance for the analysis of rice and rice products for GM events, with an overview of the recently revised parts of the guidance.

LGC provided PCR positive control material (PCM) to Public Analysts for use when analysing Chinese GM rice and instructions on the use of the controls was given. These PCR positive controls represent a set of in-house materials of known composition for use in the detection of the P-35S, T-NOS and CryIAb/Ac genetic motifs in support of the EU-RL guidance for detection of Chinese GM rice. Each PCR PCM is comprised of DNA that has been extracted from relevant Certified Reference Materials (CRMs), then quantified and diluted to an appropriate working concentration. The working concentrations have been tested and chosen in order that when used with the SYBR® Green real-time method described in the EU-RL Guidance document, they will generate a reliable positive signal with each of the respective assays in compliance with the EU-RL published guidance.

OCL visit

NRL staff will be restarting their programme of liaison with OCLs by visiting two laboratories in the next year. Please contact Kirstin Gray (kirstin.gray@lgcgroup.com) if you would like a visit from the NRL.

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

For further information and output of the NRL functions, please visit: http://www.lgcgroup.com/products-services/regulatory-support/national-reference-laboratories/

www.lgcgroup.com

Science for a safer world

Brazil • Bulgaria • China • Czech Republic • France • Germany • Hungary • India • Ireland • Italy • Netherlands
Poland • Romania • Russia • Scandanavia • South Africa • Spain • Turkey • United Kingdom • USA