Fera NRL Annual Report
2024 to 2025

Report to the Food Standards Agency




1. Annual Report

Annual Report on Operation of National Reference Laboratories

(Chemical Safety in Food and Feed)

Fera Science Ltd.

April 2024 – March 2025

Title	National Reference Laboratory for Food Contaminants
Competent Authority	Food Standards Agency
FSA Project Officer	Wendy Perry
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Note: Whilst care has been taken to ensure that the web links contained in this report are correct at the time of issue, changes may occur.

2. Fera Science Ltd. (Fera)

Fera is a national and international centre of excellence for interdisciplinary investigation and problem solving across plant and bee health, crop protection, sustainable agriculture, food and feed quality and chemical safety in the environment.

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3. Contents

4. Executive summary

Fera Science Ltd (Fera) acts as National Reference Laboratory (NRL) under Assimilated Regulation (EU) 2017/625[(1)] on official controls and was appointed by the Food Standards Agency (FSA) and Food Standards Scotland (FSS) to provide five Chemical Safety in Food and Feed UK NRLs:

NRL-MP NRL Mycotoxins and Plant Toxins in Feed and Food

NRL-MN NRL Metals and Nitrogenous Compounds in Feed and Food

NRL-PC NRL Processing Contaminants

NRL-POPs NRL Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

NRL-FCM NRL Materials and Articles in Contact with Food.

This Annual Report summarises the activities of the NRLs from 1st April 2024 to 31st March 2025.

The NRLs provided impartial advice to the Competent Authorities (CAs), FSA and Food Standards Scotland (FSS), Official Laboratories (OLs) and other NRLs throughout the period. Updates were provided to the FSA and FSS on NRL activities on at least a monthly basis. The NRL provided an open website for OLs and a dedicated NRL email address that was regularly monitored. An up-to-date list of OLs and contact details was maintained. Where provided by the European Union Reference Laboratory (EURL), information from EURL Workshops and Core Working Groups, Task Forces and Ad Hoc committees was forwarded to the FSA and FSS.

The NRLs provided Work Plans outlining activities for the year, such as planned proficiency test (PT) participation. In addition, a combined list of suggested topics for practical work, identifying where there are gaps in availability of suitable analytical methods was produced and sent to the FSA and FSS. From this a priority list was agreed and practical work has started on method development and validation for those methods. This activity will be built on during the subsequent years of the project.

NRL staff participated in a number of international scientific conferences as speakers and delegates.

The NRL-MP and NRL-MN are involved with European Committee for Standardization (CEN) activities. NRL-MP is a member of CEN TC275 WG5 and CEN TC327 WG5 and participated in meetings, which were all held on-line. NRL-MN participated in an online meeting of TC275 WG10. NRL-PC is a member of TC 275 WG13 which did not meet in the time period.

Advice and methodology were provided to OLs where requested.

Following UK exit from the EU on 31st January 2020, there has been limited participation in EURL PTs, and it varied across the 5 different NRL functions. During 2024-2025, the NRLs

were involved in several Proficiency Tests (PTs) run by the EURLs (for Plant Toxins, POPs and metals) and other providers (including Fapas®). Most PT results were satisfactory, a very small number of individual results were not. In all cases any issues were investigated in accordance with ISO17025 quality procedures and follow up action completed. Where applicable, OLs were invited to participate in EURL PTs.

NRL Meetings were held on 14th October and 26th November 2024, and 28th January and 26th March 2025. The meetings were held on-line between FSA, FSS, and the NRLs. Information on developments in sampling and testing was exchanged and information from the respective EURLs on methodology and PTs was shared. Other meetings were also held throughout the year with different policy teams for individual projects and advice. Two network meetings were held with OLs in the time period on 30th April 2024 and 10th March 2025.

NRL Annual Reports are published annually on the NRL website. The NRLs provided the FSA and FSS with monthly NRL Activity Logs which are a timely summary of ongoing activities throughout the year.

5. List of abbreviations

AAS	-	Atomic Absorption Spectroscopy
APA	-	Association of Public Analysts
BfR	-	Bundesinstitut für Risikobewertung (The German Federal Institute for Risk Assessment)
BFR(s)	-	Brominated Flame Retardants
CA	-	Competent Authority
CEN	-	European Committee for Standardization
COT	-	Committee On Toxicity of Chemicals in Food, Consumer Products and the Environment
CP(s)	-	Chlorinated paraffins
CWG	-	Core Working Group
dSPE	-	Dispersive solid phase extraction
EC	-	European Commission
EFSA	-	European Food Safety Authority
EU	-	European Union
EURL	-	European Union Reference Laboratory
EURL-FCM	-	EURL Food Contact Materials
EURL-MN	-	EURL Metals and Nitrogenous Compounds
EURL-MP	-	EURL Mycotoxins and Plant Toxins
EURL-PC	-	EURL Processing Contaminants
EURL-POPs	-	EURL Halogenated Persistent Organic Pollutants (POPs) in Feed and Food
EUWA	-	European Union (Withdrawal) Act
FAAS	-	Flame Atomic Absorption Spectroscopy
Fapas®	-	Food Analysis Performance Assessment Scheme
FCM	-	Food Contact Materials
Fera	-	Fera Science Ltd.
FSA	-	Food Standards Agency
FSS	-	Food Standards Scotland

GC-MS	-	Gas Chromatography – Mass Spectrometry
GFAAS	-	Graphite Flame Atomic Absorption Spectroscopy
HBCDDs	-	Hexabromocyclododecanes
HPLC F(L)D	-	High Performance Liquid Chromatography Fluorescence Detection
HPLC-ICP-MS	-	High Performance Liquid Chromatography Inductively Coupled Plasma Mass Spectrometry
HSE	-	Health and Safety Executive
HS GC-MS	-	Headspace Gas Chromatography – Mass Spectrometry
IAC	-	Immunoaffinity Columns
ICP-MS	-	Inductively Coupled Plasma Mass Spectrometry
IDF		International Dairy Federation
ILC	-	Interlaboratory comparison exercise
ILSI	-	International Life Sciences Institute
LCCP	-	Long-chain chlorinated paraffins ($C_{>17}$)
LC-MS/MS	-	Liquid Chromatography Tandem Mass Spectrometry
LOD	-	Limit of Detection
LOQ	-	Limit of Quantification
MANCP	-	Multi Annual National Control Plan
MCCP	-	Medium-chain chlorinated paraffins ($C_{14–17}$)
MOAH	-	Mineral Oil Aromatic Hydrocarbons
MOSH	-	Mineral Oil Saturated Hydrocarbons
MPL	-	Maximum Permitted Level
MPMA	-	Metal Packaging Manufacturers Association
MVS	-	Method validation study
NRL	-	National Reference Laboratory
NRL-FCM	-	NRL for Materials and Articles in Contact with Food
NRL-MN	-	NRL Metals and Nitrogenous Compounds in Feed and Food
NRL-MP	-	NRL Mycotoxins and Plant Toxins in Feed and Food
NRL-PC	-	NRL Processing Contaminants
NRL-POPs	-	NRL for Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

OL	-	Official Laboratory
OCR	-	Retained Regulation (EU) 2017/625[1]
OTA	-	Ochratoxin A
PAHs	-	Polycyclic Aromatic Hydrocarbons
PBDEs	-	Polybrominated diphenyl ethers
PC	-	Processing Contaminants
PCBs	-	Polychlorinated biphenyls
PCDDs	-	Polychlorinated dibenzo-p-dioxins
PCDFs	-	Polychlorinated dibenzofurans
PCDD/Fs	-	Polychlorinated dibenzo-p-dioxins/dibenzofurans
PCN	-	Polychlorinated naphthalenes
PFAS	-	Per- and Polyfluoroalkyl Substances
PFOA	-	Perfluorooctanoic acid
PFOS	-	Perfluorooctanesulfonic acid
POPs	-	Persistent organic pollutants
PT(s)	-	Proficiency test(s)
RAFA	-	Recent Advances in Food Analysis
RASFF	-	Rapid Alert System for Food and Feed
REPs	-	Relative effect potencies
SCCP	-	Short-chain chlorinated paraffins ($C_{10–13}$)
SI	-	Statutory Instruments
SOPs	-	Standard Operating Procedures
TC	-	Technical Committee
WG	-	Working Group

6. Introduction

Assimilated (EU) Regulation 2017/625[(1)] requires National Reference Laboratories (NRLs) for food and feed to be designated. The NRLs provide support and advice to the CAs, improve the quality, accuracy, and comparability of analytical methods to support Official Laboratories (OLs) in their role of carrying out official controls to protect consumers.

The NRL areas designated to Fera by FSA/FSS are:

- NRL Mycotoxins and Plant Toxins in Feed and Food (NRL-MP)
- NRL Heavy Metals and Nitrogenous Compounds in Feed and Food (NRL-MN)
- NRL Halogenated Persistent Organic Pollutants (POPs) in Feed and Food (NRL-POPs)
- NRL Processing Contaminants (NRL-PC)
- NRL Materials and Articles in Contact with Food (NRL-FCM)

Since the UK left the EU on 31st January 2020 there has been limited contact with the European Reference Laboratories (EURLs). Fera NRLs have participated in some EURL proficiency tests (PTs) as third-country fee-paying participants.

This Annual Report covers NRL activities from 1st April 2024 to 31st March 2025.

The following sections describe the activities of the NRLs to achieve six main Objectives that were outlined in the contract. These Objectives are split into a series of tasks. In many cases the same Tasks are carried out by all five NRLs. In these instances, these activities are described first, followed by the activities of the individual NRLs. Information is also given about an additional Objective that is specific to NRL-FCM only.

7. Role and scope of the NRL

The basic duties of the NRLs are based on Assimilated Regulation (EU) 625/2017[(1)], Article 101. The scope of services each NRL in its area of competence provide are outlined as follows:

a) cooperate internationally (and where possible with the relevant EURL).

b) collaborate with international laboratories (where possible with the relevant EURL) and participate in training courses and inter-laboratory comparative tests organised by these laboratories.

c) coordinate the activities of official laboratories responsible for the analysis of samples (in accordance with Article 34 and 37 of Retained Regulation (EU) 2017/625 on official controls) to ensure the verification of compliance with feed and food law.

d) where appropriate, organise inter-laboratory comparative tests between the official laboratories and ensure an appropriate follow-up of such comparative testing.

e) ensure the dissemination of any information required by the competent authority.

f) provide scientific and technical assistance to the competent authority for the implementation of MANCPs referred to in Article 109 and of coordinated control programmes adopted in accordance with Article 112 of Retained Regulation (EU) 2017/625.

g) where necessary, conduct training courses for the staff of official laboratories.

h) upon request by the competent authority, actively assist in relevant emergency situations and in cases of non-compliance of consignments, by carrying out confirmatory analysis.

i) be responsible for carrying out other specific duties as required by the competent authority, where appropriate and by prior agreement.

8. Objective 1 – Secretariat Services

8.1. Task 01/01. Disseminate relevant information/advice to the CA, when required, OLs and other relevant laboratories in a timely and effective manner.

The NRL provides the CA with documents received from EURLs within two weeks of receipt. Publicly available documents or links are added to the Fera NRL website or shared with the FSA via a Teams channel.

A detailed workplan that included all planned PT participation (EURL and Fapas®), and dates for planned EURL training events, workshops and working groups was produced for all five Fera NRLs and sent to the CA at the start of the reporting period.

Where available, EURL Work Programmes 2024-25 were downloaded from the EURL website and sent to the CA.

8.1.1. Quarterly Fera NRL Meetings

NRL-CA Meetings were held between Fera and the CAs online via Microsoft Teams to share information between all five NRLs and the FSA and FSS. The meetings were attended by representatives of all Fera NRLs, FSA Scientific Sampling and Laboratory Policy Team and Contaminants Policy Teams, and FSS.

Representatives for each of the NRLs attended and presented information at the meetings held on 28th January and 26th March 2025, as well as at various regular catch up meetings throughout the year.

8.1.2. NRL Network Meeting

Network meetings were held with the OLs on 30th April 2024 and 10th March 2025. The meetings were attended by Fera, FSA, FSS and the UK OLs. Updates were provided by FSA and FSS, and the Fera-NRLs gave an update on activities from the individual NRLs and reaffirmed the NRLs availability regarding subsidised and novel testing. Updates were also given by the NRLs on the contract variations taken on this year, which will be discussed within this report.

8.1.3. Novel testing

The novel testing scheme provides access to subsidised testing for novel or emerging issues that OLs may not be currently set up to carry out. This additional testing capability is funded by FSA. A plan was presented to the OLs who provided feedback on how the scheme would work and some of the practical issues of how it would be used. This information was used to inform how the programme was developed and rolled out.

The terms of the scheme were agreed, and a finalised list of analyses shared with the OLs and CAs. It was also agreed that other tests may be provided that are not on the list if new or emerging topics arose.

In August 2024, the NRL team received an enquiry from an OL about using the Subsidised testing service for analysis of a spice sample for pesticides. The NRL received confirmation from the FSA that the sample could be tested under this scheme. The OL was replied to with details of prices and turnaround times but did not submit a sample.

Several enquiries from Scottish OLs were received about the use of the subsidised testing programme in September 2024; unfortunately, in this instance the samples were not eligible for the subsidies.

A sample of fish was submitted by an OL for analysis of PFAS compounds in October 2024.

A sample was submitted for cannabinoid screen in January 2025.

Samples were submitted in February and March 2025, these included samples tested for dioxins and PCBs, PFASs and tropane alkaloids.

8.1.4. Incident response

In September 2024, an enquiry was received regarding the use of the incident response funding, after there was a fuel spill near cockle beds. It was agreed with the FSA that it qualified, and an initial sample was tested for dioxins, PCBs, PAHs and BTEX compounds. A second sample was taken later and tested for the same analytes; the results were then reviewed by Port Health and FSA Incidents team to decide if any further action was required.

In March 2025, a ship collision and fire incident occurred in the North Sea and Fera provided advice to the FSA on potential tests required and remained on standby to complete the analysis. This was not required as Defra took the lead and samples were tested elsewhere.

8.1.5. Additional Ad hoc projects

A number of small additional Ad hoc projects were also completed to put methods that had been previously validated or improved through the NRL project into practice. These were:

1. Analysis of up to 20 samples of wild caught fish for PBDEs.

   Samples of fish that had previously been analysed for other environmental contaminants were analysed for PBDEs using the in-house accredited method. Results were compiled into a short report and shared with FSA via the Teams channel.

2. Analysis of up to 30 samples of seaweed products for metals, total and inorganic As, and iodine.

A range of seaweed products were purchased and analysed for metals, iodine, and using the newly validated method for inorganic arsenic. A short report presenting the results along with details of the samples and summarising the methods used was submitted to the FSA via the Teams channel.

3. Analysis of up to 20 samples of polenta for atropine & scopolamine.

   A method for tropane alkaloids in food previously validated and accredited within the NRL project was used to analyse a number of maize-based products (mostly polenta) for atropine and scopolamine. A short report describing the samples, method and results obtained was uploaded to the shared FSA/NRL Teams channel.

8.1.6. All NRLs

- Monthly meetings were held with the Head of FSA Contaminants branch since January 2023, with ongoing regular meetings following this. Topics discussed included changes to EU Regulations and results from work carried out as part of the NRL contract as well as other Fera projects funded by the FSA.

8.1.7. NRL-POPs

- EURL PT reports were shared with the FSA via Teams as they were received.

8.1.8. NRL-FCM

- Regular update meetings were held between Fera and FSA FCM policy team.

8.2. Task 01/02. Co-ordinate the activities of OLs and other relevant laboratories in food in relation to the core functions.

The NRL Network Meeting is used as one way to manage the operation of the NRLs.

The meetings took place on 30th April 2024 and 10th March 2025 as mentioned previously in *8.1.2*.

- Internal FERA NRL meetings were held to plan for quarterly meetings with the FSA and to monitor activities that are ongoing in the project.

8.3. Task 01/03. Create and maintain an efficient two-way channel of communication with OLs and relevant laboratories and international organisations, including information on analytical methods and relevant legislation.

Fera experts regularly scan different scientific literature (peer reviewed and grey literature) relevant to each area for emerging food and feed safety topics, this includes ResearchGate,

HorizonScan and Rapid Alert System for Food and Feed (RASFF). Relevant information on current and new methods and legislation is highlighted on the Fera NRL website.

- An up to date list of OLs and contact details was maintained.
- A dedicated NRL email address is regularly monitored: nrl@fera.co.uk
- The CA, and OLs are able to individually email the named lead person for each NRL.
- Working relationships are well established with the other laboratories (including some EURLs) and laboratories from industry and the private sector so this ensures efficient communication.
- PT reports from NRLs and EURLs and other information were shared with CAs.
- Internal discussions within Fera to investigate possible set up of information-based system to monitor and capture changes in Regulations pertinent to food and feed.
- Fera NRL staff are Associate Members of the Association of Public Analysts (APA).
- The lead for the NRL-MP is a member of CEN/TC 275 WG 5 and CEN/TC 327 WG 5.
- The lead for the NRL-MN is a member of CEN/TC 275 WG 10 and CEN/TC 327 WG 4.
- The lead for the NRL-PC is a member of CEN/TC 275 WG 13.

8.4. Task 01/04. Provide regular updates to the CA on NRL activities, and up-to-date information on UK OLs and other relevant laboratories to the CA as requested.

A monthly NRL Activity Log was prepared and submitted to the CA. All work carried out during the year is summarised in an Annual Report. Specific topics, or items arising, are dealt with individually in a timely manner.

FSA Food and Feed Laboratory Workshop – Fera participated in this event organised by the FSA. This was an event where NRLs shared the work they do. Fera gave a presentation about the method development work on PFAS testing methodology carried out as NRL-POPs. This was pre-recorded and shared in the Workshop along with presentations from other NRLs (16th April 2024).

Meetings were held between FERA, FSA and FSS on 28th January and 26th March 2025. Further specific meetings took place between Fera, FSA and FSS throughout the year to discuss other items such as FCMs, PFAS and other topics.

8.5. Task 01/05. Create and maintain a dedicated website for communication of the work of the NRL including provision of advice and support to OLs, information on methods of analyses, Standard Operating Procedures (SOPs), latest developments and other background information.

The NRL has a long standing fully accessible dedicated NRL website. This provides information on legislation, analysis, and resources.

- The current NRL website has a landing page:
  https://www.fera.co.uk/national-reference-laboratory

- Individual webpages are maintained for each of the NRLs:

  NRL-MP

  https://www.fera.co.uk/about-us/national-reference-laboratory/mycotoxins

  NRL-MN

  https://www.fera.co.uk/about-us/national-reference-laboratory/heavy-metals

  NRL-POPs

  https://www.fera.co.uk/about-us/national-reference-laboratory/dioxins-pcbs

  NRL-PC

  https://www.fera.co.uk/about-us/national-reference-laboratory/pahs

  NRL-FCM

  https://www.fera.co.uk/about-us/national-reference-laboratory/food-contact

- All Fera Contaminants NRLs Annual reports from 2013 onwards are available in a designated area of the website:
  https://www.fera.co.uk/about-us/national-reference-laboratory

9. Objective 2 - Advice and representation within the UK and internationally

9.1. Task 02/01. Provide impartial expert advice as requested to the CA, OLs and other relevant laboratories on analytical methodology in the context of official controls and risk assessment.

All advice provided by Fera staff is impartial, Fera scientists have maintained their experience in evaluation of analytical methods when considering the suitability of data for inclusion in risk assessments, e.g., via participation in FSA Joint Expert Groups.

Fera staff are experienced in method development and validation and have developed methods that are used in Official Controls in the UK. This is complemented by in-depth knowledge of the performance requirements of sampling and analytical methods used in Official Controls.

To fulfil this role Fera provided expert advice and support to the CA in response to requests for information on a variety of topics throughout the year.

9.1.1. NRL-MP

- An enquiry was received from a large animal vet at Glasgow University to discuss mycotoxins analysis, mycotoxins in silage and effects on cattle and residues in milk.
- The team received a request about Fera's capability for analysis of citrinin from the FSS; a reply was sent detailing information about the method and details of previous surveys it was used for.
- A request was received from the FSA contaminants team to provide feedback on Pyrrolizidine Alkaloid Sampling and Analysis Guidance First Draft for Codex.
- After responding to an original request from the FSA for sampling suggestions, the team further provided information and links to reports of alerts for the matrix/contamination combinations suggested.

9.1.2. NRL-MN

- NRL-MN received an enquiry from an OCL searching for a food CRM certified for hexavalent chromium (CrVI). Unfortunately, NRL-MN were unable to assist as they do not currently analyse for CrVI. A web search revealed soil and water reference materials but nothing more.
- NRL-MN replied to an internal query regarding current EU legislation and updates to the NRL Website.
- NRL-MN was contacted by the CA with a query regarding detection of Lead Chromate in turmeric. After consultation with colleagues, a response was made with a brief

summary of our procedure and an invitation to follow up if more information was required.

9.1.3. NRL-PC

- An enquiry was received from FSA and Liverpool PHA about testing shellfish for PAHs following a fuel spill near cockle beds. This was dealt with under incident response (see section 8.1.4).
- An enquiry was received from FSA about potential contamination risks following the fire on a ship in the North Sea. Advice on potential contaminants was provided but no further follow up action was required.

9.1.4. NRL-FCM

- An FSA enquiry was received from MPMA regarding the 'EU's draft regulation amending Regulation (EU) No 10/2011 – removal of a derogation from Art 17'. The questions were responded to by NRL-FCM.
- An enquiry was received from a Public Analyst regarding recycled PET and metals analysis; the query was responded to.
- FSA enquiry regarding availability of accredited test methods for plastic seals / gaskets in screw caps, which was responded to.
- An enquiry was received from a Public Analyst regarding freeze dried sweets.
- An FSA enquiry was received regarding testing of enamelware for lead migration.
- An enquiry was received from a Public Analyst regarding the testing of Primary Aromatic Amines.

9.2. Task 02/02. Represent the UK at relevant international meetings, and working groups, consulting the CA on objectives and requirements before each meeting and providing the CA with an internal report of the meeting within 10 working days of each meeting.

Meetings continued to be held on-line in 2024-2025. Where information was received from the EURLs, e.g., EURL work plans, this was forwarded to the CA. This information is not consistently available - some EURLs make it publicly available on their websites, while others treat it as confidential and do not share it. Where attendance at events was possible, a meeting note was provided to the CA.

9.3. Task 02/03. Participate in activities organised by international organisations and contribute to the scientific input at international meetings and in manner which supports UK policy based on best available scientific knowledge.

The NRL team at Fera hosted a visit of delegates from the National Institute for Food Control (NIFC) Vietnam. The organisation of NRLs, OLs and Controls was discussed for both

countries. Several potential areas for collaboration were identified; a Fera colleague visited Vietnam in October 2024 to attend the NIFC organised ‘Food Control Conference’.

9.4. Task 02/04. Advise the CA, OLs and other relevant laboratories on best scientific practice in testing for official controls purposes and undertake activities in consultation with the CA that facilitate and promote their application in the UK within the policy aims of the CA.

Maintaining an up-to-date website, providing feedback from network meetings in a timely manner and offering practical advice and training to OLs, ensure that this task is met.

9.4.1. NRL-MP

- Provided advice to an OL following an incident where animals became ill following consumption of silage / haylage. Follow up analytical work was discussed, but the LA decided not to proceed.

9.4.2. NRL-FCM

- Representatives attended the ILSI Food Packaging Symposium in April 2024. A poster extract was submitted and accepted with the title ‘Studies to assess the risks associated with biobased FCMs’.

9.5. Task 02/05. Keep abreast of and advise the CA, OLs and other relevant laboratories of developments and research for the sampling, testing and detection of food contaminants, including horizon scanning for future developments in this space.

Information was shared with CA at various times during the year, either in response to specific questions, during meetings or when information was obtained from other sources (e.g. conferences, webinars or other events). NRLs have set up monthly literature searches and these are shared with the CA.

- A representative attended the UK Major Ports Imported Food-Feed-PoAO meeting in September 2024; the representative reminded participants of the subsidised testing programme that LAs/OLs can use to analyse samples that OLs do not have the capacity to test.
- A representative attended the ‘Quick Bites: Snap analysis of Food, Diet and Obesity Inquiry findings’ webinar in October 2024.
- A representative attended a 4 day symposium in November 2024 on Recent Advances in Food Analysis (RAFA), covering all work within the scope of the NRL.
- A representative attended the UK Major Ports Imported Food-Feed-PoAO meeting on 9th December 2024.

- A presentation was given by a representative covering acrylamide and other contaminants at the Food and Drink Federation Residues and Contaminants Working Group meeting in February 2025.
- A representative attended the Kent Scientific Services Open Day on 17th July 2024.

For information the following events were attended although not specifically under the NRL remit:

- The Fera Science Symposium November 2024.

9.5.1. NRL-MP

- Literature reviews are carried out throughout the year, and relevant or important articles are shared with the CAs.
- The NRL-Lead had a meeting with a representative from a supplier of novel rapid testing methods for various analytes including mycotoxins, to discuss the technology and potential areas where the methods could be applicable e.g. for controls.

9.5.2. NRL-POPs

- The scope of the methodology for analysis of PFAS compounds continued to be extended as methods were developed and validated for additional matrices.
- Online vendor webinars on analysis for PFAS compounds were attended.

9.5.3. NRL-MN

- A representative attended a briefing meeting for 101st JECFA – evaluation of arsenic and inorganic arsenic to be held in October 2025. This meeting was attended in an observer capacity.

9.5.4. NRL-FCM

- Literature reviews are carried out throughout the year, and relevant or important articles are shared with the CAs.

A representative attended the following event and shared any relevant slides with the FSA:

- 23IND13 ScreenFood – stakeholders workshop.

9.6. Task 02/06. Identify and inform the CA, OLs and other relevant laboratories of emerging analytical issues or developments at a national or international level and recommending action to address them.

The NRL website is updated to contain this information. Specific emergent issues were communicated directly if relevant and a list of contacts for OLs is maintained to ensure that this can be achieved promptly. Information from the EURL-NRL network is used as a useful means of information exchange on this topic.

9.6.1. Work plan on method development

All Fera NRLs prepared proposals for method development projects that could be carried out under the NRL contract. Some of the items were continuations of work started in the previous financial year, some were new proposals. The lists were reviewed by the CAs and following discussion and prioritisation it was agreed that the following studies be completed. The NRLs will develop and validate in-house methods for existing and emerging risks for the effective provision of official controls and to deliver Task 03/01 (section 10.1):

- NRL-PC:

  Development and validation of in-house methods for glycidyl esters.

  Development and validation of in-house methods for MOSH and MOAH in food and feed.

  Development and validation of in-house methods for nitrosamines in food.

- NRL-MP:

  Develop and validate a method for Pyrrolizidine and tropane alkaloids to comply with the compound list and matrices in Commission Regulation (EU) 2023/915 on maximum levels for certain contaminants in food (2).

- NRL-MN:

  Development and validation of in-house methods for methyl mercury in seaweed.

- NRL-FCM:

  Method development for styrene monomer.

  Method development for Bisphenols (to include Bisphenol A (BPA) and expand to BPB, BPF and BPS)

  Method development for MOSH/MOAH (in combination with NRL-PC).

  Project on release of potential allergenic material from a cup or utensil made of wheat- or chitin-based packaging.

- NRL-POPs:

  Further method development and validation for analysis of PFAS in food and feed.

9.7. Task 02/07. Where appropriate, partake and/or keep abreast of standardisation activities (e.g. CEN, ISO, etc.) relevant to the work area.

9.7.1. Membership of CEN TC Working groups

Fera staff are members of some of the CEN Working Groups for TC275 (Food analysis - Horizontal methods) and TC 327 (Feed analysis - Horizontal methods) and the BSI Mirror Groups AW/275 and AW/10. There was little or no activity for many of the groups in the reporting period, most of the activity was limited to comment and systematic review via of documents.

The 34th Plenary meeting of CEN TC275 was held in Berlin on 9th December 2024. Fera does not attend this meeting, however the presentations and minutes were downloaded from the CEN portal. These have since been shared to the NRL Teams area.

9.7.2. NRL-MP

Fera NRL-MP is a member of CEN TC/275 WG5 and CEN TC/327 WG5. In both cases there were no meetings in the reporting period. There were several ballots that Fera participated in, including

Ballot: Decision C07/2024 – WG 5 – Appointment of Convenor – Confirmed. The new Convenor is Josipa Grzetic Martens from NEN.

Ballot: EN 14177:2003 - WG 5 - Result of systematic review.

Project: 00275046 - EN 14177:2003: Foodstuffs - Determination of patulin in clear and cloudy apple juice and puree - HPLC method with liquid/liquid partition clean-up – not unanimous, decision to be made at 34th plenary meeting.

Ballot EN 14123:2007 - WG 5 - Result of systematic review

Project: 00275189 - EN 14123:2007 : Foodstuffs - Determination of aflatoxin B1 and the sum of aflatoxin B1, B2, G1 and G2 in hazelnuts, peanuts, pistachios, figs, and paprika powder - High performance liquid chromatographic method with post-column derivatisation and immunoaffinity column cleanup. The result was not unanimous and there are comments to be discussed. A decision will be made at the 34th plenary meeting.

After discussion at the Plenary meeting the following decisions were taken:

Decision 21/2024 — Confirmation of EN 14177:2003 was taken.

Decision 22/2024 — Confirmation of EN 14123:2007 was taken.

This will be revisited at the next meeting (or one after) for a decision on a revision of the methods.

9.7.3. NRL-MN

- NRL-MN was added to the membership of CEN/TC 327 WG 4.
- Ballots participated in:

  Decision C09/2024 - WG 10 - Adoption of Preliminary Work Item - Determination of methylated arsenic species.

  Decision C11/2024 – WG 10 – Result of systematic review for EN 13804:2013 – Confirmation Ballot: EN 13804:2013 – result confirmed

Project: 00275261 - EN 13804:2013: Foodstuffs - Determination of elements and their chemical species - General considerations and specific requirements

There are currently 3 active projects in WG 10, for which the Formal Vote started in late November 2024.

– FprEN 13806-1, Foodstuffs — Determination of trace elements — Part 1: Determination of total mercury in foodstuffs by atomic absorption spectrometry (AAS) — cold vapour technique after pressure digestion

– FprEN 13806-2, Foodstuffs — Determination of trace elements — Part 2: Determination of total mercury in foodstuffs by atomic fluorescence spectrometry (AFS) — Cold vapour technique after pressure digestion

– FprEN 13806-3, Foodstuffs — Determination of trace elements — Part 3: Determination of total mercury in foodstuffs with atomic absorption directly from the foodstuff (elemental mercury analysis).

CEN TC 275 WG 10 has applied to the European Commission for funding to develop two more standards which are already registered as preliminary work items:

– WI00275385, Foodstuffs — Determination of elements and their chemical species — Determination of methylmercury in foodstuffs by LC-ICP-MS

– WI00275384, Foodstuffs — Determination of elements and their chemical species — Determination of arsenic species in foodstuffs by anion-exchange HPLC-ICP-MS.

9.7.4. NRL-PC

- NRL-PC is a member of CEN TC 275 WG13. At the 34th Plenary meeting it was agreed to change the name of WG 13 to Process and environmental contaminants to make it clear that other contaminants such as PFAS and perchlorate are included in the remit.
- Ballots participated in:

  EN 16852:2017, Foodstuffs — Determination of ethyl carbamate in stone fruit spirits, fruit marc spirits and other spirit drinks — GC-MS method.

  CEN/TS 16621:2014, Food analysis — Determination of benzo[a]pyrene, benz[a]anthracene, chrysene and benzo[b]fluoranthene in foodstuffs by high performance liquid chromatography with fluorescence detection (HPLC-FD)

  Decisions to confirm these standards and revise them as soon as possible were made at the 34th Plenary meeting.

CEN/TS 17083:2017, Foodstuffs — Determination of acrylamide in food and coffee by gas chromatography-mass spectrometry (GC-MS).

At the 34th Plenary meeting it was argued that two other standards (ISO 18862:2016 and EN 16618:2015) exist can be used instead of this technical specification and its results are not sufficiently reliable. The following decision was taken.

Decision 26/2024 — Review of CEN/TS 17083:2017.

10. Objective 3 - Production of standard operating procedures, codes of practice and guidance documents

10.1. Task 03/01. Contribute to the development of standardised operating procedures, relevant codes of practice and guidance documents for use by OLs and other relevant laboratories, as requested by the CA.

The NRL continues to share appropriately, SOPs generated by Fera when requested by OLs. Any new (non-confidential) SOPs, codes of practice and guidance obtained from the relevant EURL are shared.

10.1.1. NRL-PC

10.1.1.1. Continuation of method development for Glycidyl Esters

A method for the determination of 2-MCPD, 3-MCPD and glycidyl esters has been validated at Fera for edible oils and infant formula. The European Union has introduced maximum levels (MLs) for these substances to protect consumers, particularly vulnerable groups such as infants. Commission Regulation (EU) 2018/290 sets MLs for 3-MCPD in vegetable oils and fats at 1.0 mg/kg, and 0.5 mg/kg for infant formula and follow-on formula. For glycidyl esters, the ML is 1.0 mg/kg in vegetable oils and fats and 0.5 mg/kg in infant formula (expressed as glycidol).

A total of 44 blank samples were analysed prior to spiking to assess homogeneity. Each blank sample was tested in four replicates to confirm uniformity before proceeding with the spiking experiments.

Spiking experiments were performed at four concentration levels specific to each matrix, with all experiments conducted in three separate batches:

Infant formula (powder): 10, 50, 80 and 160 µg/kg

Infant formula (liquid): 1.2, 6, 12 and 18 µg/kg

Oil: 50, 400, 1500 and 3000 µg/kg

All spiked samples were detected at their respective lowest fortification levels of 1.2 µg/kg (infant formula, liquid), 10 µg/kg (infant formula, powder), and 50 µg/kg (oil), each with a signal-to-noise ratio greater than 3. A validation report and SOP were compiled and provided to the CAs.

10.1.1.2. Continuation of method development for Nitrosamines

Analytical methods were developed for both LC-MS and GC-MS to detect nitrosamines across a range of food matrices, including meats (with and without sodium nitrite), smoked and unsmoked products (meat, fish, cheese), pickled and fresh vegetables, and beer.

The LC-MS method targeted 14 non-volatile and 11 volatile compounds using both ESI and APCI, after a QuEChERs based extraction. While most compounds were detectable in both modes, sensitivity and matrix effects varied, providing mixed results.

The GC-MS method was adapted from EPA Method 521, focusing on the 11 volatile compounds. Initial extractions were more successful than LC-MS; however, further optimisation is likely required for high-fat samples due to the limitations of a water-only extraction.

10.1.2. NRL-MP

10.1.2.1. Continuation of method development for Pyrrolizidine Alkaloids

The accredited method for pyrrolizidine alkaloids (PAs) in plant material is capable of measuring 28 PAs. In addition, a similar method is accredited that measures atropine and scopolamine (tropane alkaloids, TAs). A single method was developed and validated that can measure all 35 PAs listed in Commission Regulation (EU) 2023/915. The development work included review and optimisation of the LC separation conditions. It was found that several of the PAs co-elute under certain conditions and therefore both acidic and alkaline LC methods are required to separate them.

Validation analyses were completed for herbs, spices, herbal (solid and liquid), herbal food supplement and gluten free bread. The data will be compiled into a Flexible Scope application for ISO 17025 accreditation.

10.1.3. NRL-MN

10.1.3.1. Continuation of method development for Methyl Mercury by HPLC/ICP-MS

This work continued from the previous reporting period where methodology was adapted from the in-house Inorganic Arsenic in HPL/ICP-MS solvent extraction and applied to meHg. In comparison to the previous method, solvent volumes were significantly reduced, it was less labour intensive, and speciation was possible.

Following validation in marine protein sources and seaweed/marine algae, batches were completed to collate data towards a UKAS accreditation bid which was submitted for assessment at the site visit scheduled for July 2025.

10.1.4. NRL-FCM

10.1.4.1. Method development for styrene monomer

A headspace GCMS method was devised based on previous method development at Fera for ethylvinyl benzene. The trigger for this method development was in response to the EU proposed precautionary limit of 40 µg/kg in food in 2023. The validation concentrated on

selected dairy products with low and high fat contents, and meat products. Initial results showed high levels of styrene in soya milk pots and detectable levels in butter spreads.

Validation experiments were carried out using a calibration range of 2 to 100 µg/kg (solvent standards) for eight types of food matrices (Butter spread, coffee creamer, cream cheese, readymade custard, full fat pasteurised milk, sausage, soya milk and yoghurt). Each matrix was spiked at 4 concentration levels, 6 replicates of each in one batch. A further 2 batches were carried out at 3 different spiking levels in 2 replicates in two batches. Recovery % at LOQ varied from 97-112% across the food matrices. A validation report and SOP were compiled and shared with the CAs via the NRL Teams channel. A Flexible Scope application was submitted for review at the UKAS assessment visit in July 2025.

10.1.4.2. Method development for Bisphenols in food contact materials

An LC-TOF method had previously been developed at Fera covering Bisphenol A only (BPA). Method development was conducted to expand the scope of the method to cover Bisphenol B, F and S (BPB, BPF and BPS) under the same analysis. The aim was also to reduce the limit of detection (LoD) to 1 µg/kg (to represent 'not detected'), and to move the method to an LC-triple quadrupole-MS (LC-MS/MS), making the method more transferable to OLs. Canned soup and water were the selected matrices.

The conditions were optimised for both matrices, then validations for soup were completed at two spiking levels with 7 replicates for each level in 3 separate batches. Whereas the canned water validation consisted of one batch with 2 spiking levels with 7 replicates for each level, and 2 batches with 3 spiking levels with 2 replicates for each level.

All spiked soup samples were detected at the lowest spiking concentration of 1 µg/kg with S/N >3 except for BPF which has a natural background concentration of ca. 3 µg/kg. All spiked water samples were detected at the lowest spiking concentration of 0.05 µg/kg with S/N >3. A validation report and an SOP were produced and provided to the CAs.

10.1.4.3. Continuation of method development for MOSH MOAH

Work to establish methodology for determination of mineral oils was delayed substantially by problems with the instrumentation. At the end of the reporting period little progress had been made as a consequence of the instrument not being fully operational for most of the year. Measures are being taken to carry out the necessary repairs and training to allow progress to be made.

10.1.4.4. Allergenic material from a cup or utensil made of wheat or chitin based packaging

Work has been carried out on FCMs which contained wheat in their composition to determine whether gluten allergen could be detected in the FCM and, if so, if the gluten

migrated into foodstuffs and food simulants. The same FCMs were also tested for a range of chemical residues and contaminants.

All powdered samples and foodstuffs / simulants were extracted and tested according to the standard protocols for testing food samples using commercial ELISA testing kits which detect gluten. The acetic acid and ethanol simulants were evaporated under a stream of nitrogen at 40°C and reconstituted in water prior to analysis, due to potential incompatibility of these solutions with the ELISA test. The powdered samples were also extracted and analysed using standard in-house methods for acrylamide, mycotoxins, pesticides, PFAS and trace element determination.

Of the six FCMs tested, gluten was detected in one FCM (plate, also intended to be edible), at levels exceeding the guidelines for persons intolerant to gluten (20 mg/kg)3. For this single FCM, the gluten was also shown to migrate into all of the foodstuffs / simulants tested, except the vegetable oil, in which gluten was not detected.

A variety of chemical residues and contaminants were detected in the FCMs tested and these were detailed in a report to the CAs.

11. Objective 4 - Compliance assessment via audits and ring trials

11.1. Task 04/01. Ensure consistency and quality of testing approaches applied by UK OLs and other relevant laboratories, including advising on corrective action following adverse reports on OLs from UKAS.

This is addressed by providing support and advice to OLs to advise on best practices and provide methodology support, any known difficulties in application are explained. Training is offered to OLs that have little experience in a method.

With the agreement of the FSA, Fera continued to participate in the EURL organised inter-laboratory comparison exercises and method development/ method evaluation/ method validation studies where permitted and where possible invited the OLs to participate.

11.2. Task 04/02. Plan and co-ordinate proficiency tests for UK OLs and other relevant laboratories as appropriate (taking into account the number of relevant laboratories), analysing and evaluating the outcome, informing the CA and OLs of the results and advising on further action.

Fera NRLs have supported OL participation in EURL PTs historically and where a need has been identified, participation in other PTs has also been encouraged. It was not possible for the NRL-FCM to participate in EURL PTs in 2024-2025.

The NRL follows up on OL performance at the request of the competent authority.

An NRL group representative attended a meeting of the Advisory Group of FAPAS PTG, where advice was provided on type of proficiency tests for chemical contaminants that should be included in programme for 2025.

11.3. Task 04/03. Co-ordinate the participation of UK OLs and other relevant laboratories in international method validation studies and other initiatives, informing the CA and OLs of the results and advising on further action.

Some EURLs had no opportunity for OLs to participate in PTs in this reporting period.

The EURL-MP have agreed UK laboratories can participate as fee paying participants in 2024-2025, details of PTs were shared with OLs.

NRL-POPs invited UK OLs to participate in EURL PTs but there was no uptake from the invitation.

11.4. Task 04/04. Where relevant, participate in proficiency tests and method validation studies organised by international organisations, informing the CA of the results and implementing any corrective measures required.

Fera participates in EURL organised ILCs/PTs where possible. Fera has procedures to investigate and to rectify unsatisfactory performance in PT schemes as part of its ISO 17025 accreditation, these include 'root cause analysis' and improvement plans. Trend analysis of all z-scores to look for systematic bias or drift is also performed.

11.4.1. NRL-MP

A meeting was held with FAPAS PTG to provide advice for planning of PT testing programme for mycotoxins and plant toxins 2024-25.

NRL-MP participated in the proficiency test EURLMP-11 for hydrocyanic acid in linseed and almond.

NRL-MP registered for participation in the EURL-PT-MP13 Proficiency test for ochratoxin A in cured-ham and raw kidney.

NRL-MP also participates in other schemes such as Fapas®. Some Fapas® PTs included 'Pyrrolizidine alkaloids in honey', 'Dried pasta for deoxynivalenol, zearalenone, T-2 & HT-2 toxins & as a sum of T-2 & HT-2 toxins', 'Ochratoxin A in instant coffee', 'baby food for Ergot Alkaloids', 'Mycotoxin contamination in animal feed', 'Aflatoxins B & G &/or total & OTA in mixed spice' and 'Aflatoxin M1 in Milk'.

11.4.2. NRL-MN

NRL-MN participated in the EURL-MN PT 2024-01 (vegetable-based food), 2024-02 (Animal-based food) and 2024-03 (Feed).

Fera NRL-MN participates in other schemes such as Fapas®. Some Fapas® PTs included 'Heavy metals in 3% acetic acid', 'Heavy metals in Animal Feed', 'Heavy metals in Vegetable Puree' and 'Heavy metals in Nutritional Food Supplements'.

NRL-MN took part in a inter laboratory trial for CEN/TC 454 algae and algae products; the laboratory received 3 samples for HPLC/ICP-MS analysis of inorganic arsenic in algae.

11.4.3. NRL-POPs

NRL-POPs participated in the following EURL-PTs:

'EURL PT PFAS compound feed November 2023'

'EURL-PT-DPB_2402-BT, PCDD/Fs, PCBs, PBDEs and HBCDDs in Bentonite'.

NRL-POPs participates in other schemes such as Fapas®. Some Fapas® PTs included ‘PFAS in egg’, ‘PFAS in Milk’, ‘PFAS in water (LEAP)’, ‘Dioxins and PCBs in Cod Liver Oil’, ‘Dioxins and PCBs in fish’, and ‘Dioxins and PCBs in infant formula’.

11.4.4. NRL-PC

NRL-PC participated in the following EURL PT Rounds:

‘EURL-PC PT-2025-23 3-MCPD & Glycidyl Ester in home-made baby food’

‘EURL-PC PT-2025-22 Acrylamide in vegetable crisps’.

NRL-PC participates in schemes such as Fapas®. Some Fapas® PTs included ‘acrylamide in potato crisps’, ‘acrylamide in coffee’, ‘3-MCPD, 1,3-DCP and 2-MCPD in soy sauce’, ‘PAHs in Shellfish’, ‘PAHs in Olive Oil’, ‘PAHs in Smoked Black Pepper’, ‘MCPD & Glycidyl esters in baby food product (biscuits)’, ‘Acrylamide in coffee (instant)’ and ‘2-MCPD, 3-MCPD, 3-MBPD in infant formula’.

11.4.5. NRL-FCM

Fera NRL-FCM participates in schemes such as Fapas®. Some Fapas® PTs included ‘phthalates in oil’, ‘Total PAAs into 3% acetic acid’, ‘OM into ethanol’, ‘Melamine into 3% acetic acid’, ‘BPA & S into 50% ethanol’ and ‘Formaldehyde into 3% acetic acid’.

11.5. Task 04/05. Co-ordinate training exercises to promote best laboratory practice in respect of analysis.

Training is offered to be carried out on request, either at Fera or in the individual OLs. This offer was verbally given at the NRL-OL Network meetings on 30th April 2024 and 10th March 2025.

Fera NRLs were not able to participate in training provided by the EURLs.

12. Objective 5 - Co-ordination within the UK of international initiatives

12.1. Task 05/01. Co-ordinate the recommendations of international organisations related to the standardisation of testing methods.

Information and documentation received from the EURL was provided to the CA, to the OLs and where appropriate other relevant laboratories. Any EURL recommendations were fed back promptly to the CA, OLs and other relevant laboratories and any specific issues would be disseminated by e-mail to the OL distribution list. This has been limited this year due to reduced communications from some EURLs.

12.1.1. NRL Participation in international organisations

Fera NRLs are members of four CEN Working groups, the activity on the groups has been on-line this year. The groups have been less active this year as their Mandates or work programmes are near completion or have been completed. In many areas new standardisation requests are under discussion and it is anticipated activity will increase.

NRL staff are on the mailing list to receive updates from Defra about Codex activities, NRL leads keep abreast of development in their areas.

Fera NRL participation in international organisations is summarised below in Table 1.

Table 1. Fera membership of international organisations related to standardisation of testing methods.

NRL Function	International Group	Activity
NRL-MP	CEN TC275 WG 5	Member of working group on analytical methods for natural toxins in food
NRL-MP	CEN TC327 WG 5	Member of working group on analytical methods for natural toxins in feed
NRL-MP	AOAC CASP	Registered member of working groups for analytical methods and method criteria for mycotoxins and cannabinoids.
NRL-MN	CEN TC275 WG 10	Members of working group on analytical methods for elemental species in food

NRL-MN	CEN TC275 WG 7	Member of working group on analytical methods for Nitrates and nitrites in food
NRL-POPs	CEN TC327 WG 1	Member of working group organic contaminants in feed.
NRL-PC	CEN TC275 WG 13	Member of working group on analytical method for Process and environmental contaminants

13. Objective 6 – Role in Regulation of Food Contact Materials

This Objective applies to NRL-FCM only.

The FSA in its food contact materials authorisation guidance:

https://www.food.gov.uk/business-guidance/regulated-products/food-contact-materials-guidance

requires applicants submitting substances for authorisation for use in an FCM, namely:

- additives and starting monomers in plastic food contact materials
- additives in active and intelligent food contact materials (AIMs)
- additives in regenerated cellulose film (RCF)

to provide:

- a physical sample of the substance (250g)
- the relevant product safety sheet and spectroscopic data (if applicable)
- the analytical method(s) including performance parameters (as set out in the EFSA note for guidance: https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2008.21r).

As such three tasks were agreed for the NRL-FCM:

13.1. Task 06/01. Receipt and secure storage of substances and method information submitted to the FSA for approval for use in FCMs.

A total of 7 samples had been received by March 2025 (2 in 2024/25). Samples were stored securely, along with all associated paperwork received. Sample details and paperwork were added to the NRL/CA Teams site.

13.2. Task 06/02. Verification of the applicability and performance of the analytical methods provided by the applicants.

Clarification discussions on-going with the NRL and the CA FCM policy team.

13.3. Task 06/03. Provide analytical data to support risk assessment of emerging issues/contaminants arising from food contact materials. Project carried out to look at ‘Gluten allergen and chemical contaminants in wheat based Food Contact Materials (FCM)’.

14. Objective 7 - Communication of results and data use

This Objective was delivered by all five NRLs in the reporting period:

14.1. Task 7 (a), (j)

NRL Activity Logs were sent monthly to the FSA providing updates relating to developments in core functions. Timely emails were sent to the relevant FSA contact in each policy area and the FSA manager for Contaminants NRLs as items arose in the intervening periods.

14.2. Task 7 (b)

Costs, specifications and timings were tracked, and the FSA was kept updated. No deviations were encountered.

14.3. Task 7 (c)

No unusual occurrences were encountered.

14.4. Task 7 (d)

No additional interim reports were requested.

14.4. Task 7 (e and f)

Fera NRLs uphold confidentiality with work for all customers including the FSA. No results or reports were communicated, and no data was presented without permission of the FSA.

14.5. Task 7 (g, h, i and j)

Fera has systems in place to maintain records for the required period. Reports and information were sent regularly to the FSA, to agreed deadlines for core functions. If required, all information can be transferred as necessary at the end of a contract period.

15. Summary

Under Retained Regulation (EU) 2017/625[1] on official controls Fera Science Ltd. (Fera) is designated by FSA as UK NRL for the following areas:

NRL-MP NRL Mycotoxins and Plant Toxins in Feed and Food

NRL-MN NRL Metals and Nitrogenous Compounds in Feed and Food

NRL-PC NRL Processing Contaminants

NRL-POPs NRL Halogenated Persistent Organic Pollutants (POPs) in Feed and Food

NRL-FCM NRL Materials and Articles in Contact with Food.

This Annual Report describes the activities of these NRLs from 1st April 2023 to 31st March 2024 and demonstrates how the requirements of Retained Regulation (EU) No 625/2017[1] (Article 101) have been met.

To assist with communication, a dedicated fully accessible website (https://www.fera.co.uk/national-reference-laboratory) and a shared NRL email address that is regularly monitored (nrl@fera.co.uk) are available. This Annual Report is published on the Fera NRL website and is available to all, thereby meeting the FSA openness and transparency commitments.

All five NRLs provided the FSA with monthly NRL Activity Logs. Impartial advice was provided to the FSA, FSS, UK OLs and other NRLs throughout the period. EURL information was disseminated to the CA. NRL Meetings were held on 14th October and 26th November 2024, and 28th January and 26th March 2025. The meetings were held on-line between FSA, FSS, and the NRLs. Two network meetings were held with OLs in the time period on 30th April 2024 and 10th March 2025. Advice and methodology were provided to OLs where requested.

Where provided by the EURL, Work Programmes were forwarded to the CA. The NRLs also planned Work Programmes, and these were sent to the FSA. A priority list of methods was agreed, and practical work has started on method development and validation for those methods.

Fera NRLs were not able to participate in EURL training this year, however future participation in EURL activities may be possible in some areas. For the EURL Workshops and Core Working Groups etc. that NRLs attended, Meeting Notes, official reports, and documents and where available, presentations were sent to the CA. Where attendance had not been possible, documents from these meetings were requested by the respective NRL, and if provided, sent to the CA.

The NRLs participated in several Proficiency Tests (PTs); EURL PTs and PTs from other providers, and a large number of Fapas® PT rounds covering a broad range of analyses across all NRLs for a wide range of contaminants. Most PT results were satisfactory, a very small number of individual results were not. In all cases any issues were investigated in accordance with ISO17025 quality procedures and follow up action completed.

Appendix 1: References

(1) Assimilated Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products, amending Regulations (EC) No 999/2001, (EC) No 396/2005, (EC) No 1069/2009, (EC) No 1107/2009, (EU) No 1151/2012, (EU) No 652/2014, (EU) 2016/429 and (EU) 2016/2031 of the European Parliament and of the Council, Council Regulations (EC) No 1/2005 and (EC) No 1099/2009 and Council Directives 98/58/EC, 1999/74/EC, 2007/43/EC, 2008/119/EC and 2008/120/EC, and repealing Regulations (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council, Council Directives 89/608/EEC, 89/662/EEC, 90/425/EEC, 91/496/EEC, 96/23/EC, 96/93/EC and 97/78/EC and Council Decision 92/438/EEC (Official Controls Regulation)Text with EEA relevance. OJ L 95, 7.4.2017, p. 1–142. ELI: https://www.legislation.gov.uk/eur/2017/625/contents

(2) Commission Regulation (EU) 2023/915 of 25 April 2023 on maximum levels for certain contaminants in food and repealing Regulation (EC) No 1881/2006. https://eur-lex.europa.eu/eli/reg/2023/915/oj/eng

Appendix 2: Fera NRLs

Area	Name and Contact Details
General enquiries and information	Fera Science Ltd (Fera) York Biotech Campus, Sand Hutton, York, YO41 1LZ. nrl@fera.co.uk +44 (0)1904 462000 https://www.fera.co.uk/national-reference-laboratory Head of NRL Chemical Safety in Food and Feed Susan MacDonald susan.macdonald@fera.co.uk +44 (0)1904 462558
NRL Mycotoxins and Plant Toxins in Feed and Food	Susan MacDonald susan.macdonald@fera.co.uk +44 (0)1904 462558 https://www.fera.co.uk/about-us/national-reference-laboratory/mycotoxins
NRL Heavy Metals and Nitrogenous Compounds in Feed and Food	Mike Walls michael.walls@fera.co.uk +44 (0)1904 462150 https://www.fera.co.uk/about-us/national-reference-laboratory/heavy-metals
NRL Halogenated POPs in Feed and Food	Frankie Smith frankie.smith@fera.co.uk +44 (0)1904 462525 https://www.fera.co.uk/about-us/national-reference-laboratory/dioxins-pcbs
NRL Processing Contaminants	Sam Kam sam.kam@fera.co.uk +44 (0)1904 462000 https://www.fera.co.uk/about-us/national-reference-laboratory/pahs

NRL Materials and Articles in Contact with Food	Claire McKillen claire.mckillen@fera.co.uk +44 (0)1904 462609 https://www.fera.co.uk/about-us/national-reference-laboratory/food-contact