

# **National Reference Laboratory: Annual report**

C285053/C8694 – Foodborne Viruses

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# 1. Executive summary

This report outlines the key delivery outputs from the Cefas National Reference Laboratory (NRL) C285053/C8694 – Foodborne Viruses for the period April 2025 to March 2025.

Key outputs were:

- Maintenance of expertise and accreditation for quantification of norovirus and hepatitis A virus (HAV) in bivalves.
- Maintenance of expertise and accreditation for quantification of norovirus and hepatitis A virus (HAV) in soft fruit and vegetables.
- Successful participation in five proficiency testing schemes for foodborne viruses (including strawberry and oyster matrix schemes).
- Maintenance of the NRL website, (which features information including method protocols, ad hoc literature reviews and project reports).
- Active participation in committees and working groups addressing standardisation of methods relevant to foodborne viruses.
- Completion of a research project on investigation into methods for estimating levels of infectious norovirus in shellfish, and starting a research project on investigation of alternative RNA extraction and RT-qPCR methods.
- Provision of ad hoc advice to the competent authorities on foodborne virus topics.

## 2. Glossary

BSI	British Standards Institution
CA	Competent Authority
Cefas	Centre for the Environment, Fisheries and Aquaculture Science
EURL	European Union Reference Laboratory
FSA	Food Standards Agency
FSS	Food Standards Scotland
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
NRL	National Reference Laboratory
OL	Official Laboratory
PT	Proficiency Testing
SC	(in standardisation) Sub-committee
SOP	Standard Operating Procedure
TC	(in standardisation) Technical Committee
UK	United Kingdom
UK HSA	UK Health Security Agency
UKAS	UK Accreditation Service
WG	(in standardisation) Working Group

## 3. Introduction

This annual technical report summarises the activities carried out by the NRL during the financial year 2025-26 (April 2025 - March 2026). Delivery of the responsibilities of the NRL have been divided into the following key objectives of the Agreement signed between FSA and Cefas:

1. Secretariat services (Section 4)
2. Advice and representation (Section 5)
3. Compliance assessment (Section 6)
4. Compliance assessment via audits and PT (Section 7)
5. Research duties (Section 8)
6. Incident and outbreak management (Section 9)
7. Management of the official laboratory network (Section 10)
8. OL assessment, training and proficiency testing schemes (Section 11)

## 4. Core function: secretariat services

Item	Activity in period
<p><b>Disseminating relevant information/advice to the CAs and OLs.</b></p>	<p>In addition to the programme of meetings with the CAs throughout the year (as detailed below), regular contact has been maintained with the CAs to provide updates on progress, news of relevant developments etc. via email.</p>
<p><b>Providing a two-way channel of communication.</b></p>	<p>The NRL is in regular contact via email with the CAs. A dedicated mailbox for the NRL is available however most communication is via direct contact with the NRL team.</p>
<p><b>Designing the annual work programme.</b></p>	<p>The work programme for 2025-26 was discussed and agreed with the CAs during the early part of the reporting period.</p>
<p><b>Providing regular updates to the CAs.</b></p>	<p>As per the contract agreement, formal updates are in the form of monthly technical and financial reports plus the annual reports submitted at the end of each year.</p> <p>Project review meetings with the FSA/FSS have been held on 03/04/25, 25/07/25, 24/10/25 and 23/01/26.</p>
<p><b>Creation &amp; maintenance of NRL website.</b></p>	<p>Routine maintenance of the NRL website has been carried out during the year including review and correction of minor errors etc.</p>

## 5. Core function: advice and representation

Item	Activity in period
<p><b>Providing impartial advice to the NRL laboratory network on policy, analytical methodology and risk assessment.</b></p>	<p>Throughout the year the NRL has provided advice and support to the CAs on topics including UK testing capacity and technical issues related to hepatitis A virus in berries. The NRL has also provided technical advice to a variety of other relevant stakeholders, including the UK shellfish industry through participation in the meetings of the Shellfish Stakeholder Working Group and the UK HSA Food and Environmental Proficiency Testing Unit through participation in its steering group.</p>
<p><b>Representing the UK at relevant international meetings and working groups.</b></p>	<p>In addition to representing the UK on a number of international standardisation groups (see below), the NRL has maintained informal links with the EURL for foodborne viruses (Swedish Food Agency).</p>
<p><b>Participating in other international activities.</b></p>	<p>No relevant activities during the period.</p>
<p><b>Advising on best scientific practice.</b></p>	<p>The NRL has started a review of its generic SOPs for quantification of norovirus and hepatitis A virus in bivalves and soft fruit, and detection of norovirus and hepatitis A virus on surfaces, with the aim of reissuing them early in the next reporting period.</p>
<p><b>Maintaining expertise.</b></p>	<p>Expertise has been maintained through regular literature scanning amongst other activities detailed in other sections of this report.</p>
<p><b>Identifying emerging issues requiring action.</b></p>	<p>The NRL has monitored developments in the foodborne virus field but no emerging issues requiring specific UK action have been identified.</p>
<p><b>Standardisation activities.</b></p>	<p>The NRL is actively involved in standardisation groups including BSI AW/009 (UK mirror group on food microbiology standardisation), ISO/TC34/SC9/WG3 (validation of alternative methods for viruses and parasites), ISO/TC34/SC9/WG31 (hepatitis E virus) and</p>

ISO/TC34/SC9/WG37 (basic requirements for PCR methods in food microbiology).

## 6. Core function: compliance assessment

Item	Activity in period
<p><b>Maintenance of accreditation for relevant methods.</b></p>	<p>The Cefas Food Safety Scope of Accreditation to ISO/IEC 17025 standard (including analysis of bivalve molluscs, soft fruit, and leaf, stem and bulb vegetables for norovirus and hepatitis A virus) was confirmed following the UKAS annual visit in October 2025.</p>
<p><b>Participating in proficiency test schemes.</b></p>	<p>The NRL participated in a variety of different PT over the course of the year:-</p> <ul style="list-style-type: none"> <li>• NHV016 (April 2025) and NHV017 (November 2025; norovirus and hepatitis A virus in LENTICULE discs, organised by UK HSA). The NRL scored full marks for detection of all target viruses in both these schemes. Due to the small number of participants reporting quantitative results, quantification was not scored however NRL results were in all cases close to the median of the scheme organiser's results.</li> <li>• PT 104 (July 2025; norovirus and hepatitis A virus in oysters, organised by Cefas as the FAO Reference Centre for Bivalve Sanitation). The NRL scored full marks for detection and quantification of all target viruses in all samples.</li> <li>• EFV14 (May 2025; norovirus and hepatitis A virus in strawberries) and EFV15 (November 2025; norovirus and hepatitis A virus in oysters; organised by the EURL for foodborne viruses). The NRL correctly identified the presence of all target viruses in all samples according to the intended results. Full scheme reports for these two schemes are currently awaited.</li> </ul>

## 7. Core function: communication of results and data use

Item	Activity in period
<b>Managing data and information.</b>	Data and documents associated with the NRL function have been stored in accordance with Cefas' data management systems.

## 8. Core function: research duties

Item	Activity in period
<b>Agreement of research priorities with the CAs.</b>	A set of research proposals were provided to FSA to consider, including continuation of an investigation into methods for estimating levels of infectious norovirus in shellfish, investigation of alternative RNA extraction and RT-qPCR methods to develop resilience for accredited analysis, and cross-comparison of the PrimerDesign Norovirus in Oysters kit with the ISO method. After consideration the FSA selected investigation of alternative methods project as a priority.
<b>Practical research projects.</b>	<p>In the first part of the reporting period the NRL collated and analysed all data from its investigation into methods for estimating levels of infectious norovirus in shellfish, carried out in the two previous reporting years. The NRL provided FSA with a summary of this work including new, previously unreported data. This summary included discussion of possible approaches to future work (which were then included in the proposal for continued research in this area as described above).</p> <p>Following FSA prioritisation of the investigation of alternative methods project, the NRL started to collate together results from previous informal work on this topic, and to identify suitable alternative reagents that still allow work to be compliant with the ISO 15216-1 standard (in terms of</p>

	<p>sample input and output volumes; RNA binding technology etc.). Suitable RT-qPCR reagents that are already in use at Cefas for quantification of norovirus in other non-accredited contexts (e.g. wastewater surveillance) have been identified and initial comparisons of these reagents with the kits required by the Cefas Food Safety SOPs have been undertaken. This work is ongoing.</p>
<p><b>Dissemination of research outputs.</b></p>	<p>FSA was provided with a detailed summary of the investigation into methods for estimating levels of infectious norovirus in shellfish.</p> <p>A review paper on detection of viruses in berries, which included the NRL director as co-author, was published in Food Control in February 2026.</p>

## 9. Core function: incident and outbreak management

Item	Activity in period
<p><b>Provision of advice related to incident and outbreak management.</b></p>	<p>No activity delivered/requested in period.</p>
<p><b>Analytical testing.</b></p>	<p>No activity delivered/requested in period.</p>

## 10. Core function: management of the official laboratory network

Item	Activity in period
Oversight of the network of OLs.	There are currently no designated OLs in the network.
Provision of the annual network meeting.	There are currently no designated OLs in the network.
Validating reagents.	No activity delivered/requested in period.

## 11. Core function: OL assessment, training and proficiency testing schemes

Item	Activity in period
Provision of Proficiency Testing Schemes for the OL network.	There are currently no designated OLs in the network.
Provision of Training Opportunities for the OL network.	There are currently no designated OLs in the network.
Assessment of OL capability and capacity.	There are currently no designated OLs in the network.

## 12. Link to NRL website

[UK National Reference Laboratory \(NRL\) for foodborne viruses - Cefas \(Centre for Environment, Fisheries and Aquaculture Science\)](#)

## 13. Annexes – documents produced from NRL activities

Date produced	Title of document
<b>Monthly</b>	Monthly financial and technical updates
<b>07/04/25</b>	Draft minutes of NRL Q4 meeting submitted to CAs. Minutes amended following submission of comments by CAs.
<b>30/04/25</b>	Final annual report 2024-25 published
<b>22/08/25</b>	Draft minutes of NRL Q1 meeting submitted to CAs. Minutes amended following submission of comments by CAs.
<b>04/12/25</b>	Draft minutes of NRL Q2 meeting submitted to CAs. Minutes amended following submission of comments by CAs.
<b>18/03/26</b>	Draft minutes of NRL Q3 meeting submitted to CAs. Minutes amended following submission of comments by CAs.
<b>25/03/26</b>	Draft annual report 2025-26 submitted
<b>12/06/26</b>	Final report 2024-25 completed

## World Class Science for the Marine and Freshwater Environment

We are the government's marine and freshwater science experts. We help keep our seas, oceans and rivers healthy and productive and our seafood safe and sustainable by providing data and advice to the UK Government and our overseas partners. We are passionate about what we do because our work helps tackle the serious global problems of climate change, marine litter, over-fishing and pollution in support of the UK's commitments to a better future (for example the UN Sustainable Development Goals and Defra's 25 year Environment Plan).

We work in partnership with our colleagues in Defra and across UK government, and with international governments, business, maritime and fishing industry, non-governmental organisations, research institutes, universities, civil society and schools to collate and share knowledge. Together we can understand and value our seas to secure a sustainable blue future for us all, and help create a greater place for living.

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