

Reports concerning testing of UK shellfish for toxins

Area of research interest: [Chemical hazards in food and feed](#)

Study duration: 2001-06-01

Planned completion: 1 March 2005

[Back to top](#)

Background

Since June 2001, statutory testing of shellfish harvested around the coasts of England, Wales and Northern Ireland has been finding atypical results, of which the possible effects on humans are not yet understood. However, the effects in mice lead to death within a few minutes. This suggests the presence of a toxic substance, which may be harmful to humans. As a result, local authorities temporarily close shellfish beds on a precautionary basis when these results occur, to protect public health.

Three different UK laboratories, in Aberdeen, Weymouth and Belfast, undertake this testing. Since 2001 two of the laboratories have found atypical results. However, uncertainties about the way in which the testing is carried out led the Agency to commission an audit of the diarrhetic shellfish poisoning (DSP) method and a study to investigate solvent carry over during the DSP test.

[Back to top](#)

Agency investigations

On 2 October 2003, the Agency published a report on the audit of the DSP standard operating procedure (SOP) (document number 1) and on its findings of the solvent investigation (document number 2b). A supplementary report on solvent carry over issues was published on 30 January 2004 (document number 2a). This report updates and supersedes parts of the original report (document number 2b). An action plan, agreed with the testing laboratories, to address the issues raised in the reports (document number 3) was published on 2 Oct 2003.

A series of actions have been undertaken to standardise testing arrangements and these are outlined in the interim update (number 4).

The Agency's programme of work to investigate the atypical DSP issue and progress to date is summarised in document number 5.

On 11 March 2004, the Agency published [a study into the cause of the atypical DSP test results in shellfish, project B16001](#).

A summary of the study to investigate the oral toxicity of unidentified agents giving rise to the atypical results in the mouse bioassay, project T05026, can be found at document number 6. The study was considered by the COT on 2 February 2004. [The minutes of the COT meeting](#) and the papers presented to the COT (TOX-2004-05 and associated Annexes) can be found at the links below.

Following the 5th UK National Reference Laboratory (NRL) Network meeting in October 2003 it was agreed that the Fisheries Research Services (FRS), the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Department of Agriculture and Rural Development (DARD) would adopt a standardised protocol for the preparation and extraction of shellfish for lipophilic toxins for application to the mouse bioassay (MBA). This was introduced into all three laboratories by 17 November 2003. Our organisation requested that the UK-NRL conduct an audit of the UK-NRL DSP 1 SOP at FRS, CEFAS, and DARD. The report details the protocol and findings of the audit. The audit showed that the standardised method was being applied consistently by the laboratories.

Following a meeting on 10 August 2004 with industry and laboratory representatives to discuss the draft report, some minor clarifications will be made to the SOP to underpin the current procedures without altering the SOP itself. The minutes of this meeting can be viewed at document number 7 below.

A copy of the report can be obtained from our library and Information centre. To obtain a copy, please contact the Enquiry Desk, Dr. Elsie Widdowson Library and Information Services, Food Standards Agency (020 7276 8181/8182 or email library&info@foodstandards.gsi.gov.uk)

In October 2004 the Agency published [project B16002, 'Validation of the extraction procedures applied in the Yasumoto method for the detection of toxins in shellfish associated with diarrhetic shellfish poisoning \(DSP\)'](#).

In March 2005, the Agency published a suite of in vitro studies ([B16004](#), [B16005](#) and [B16006](#)) investigating the agent causing the atypical response.

[Back to top](#)

Related content

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[View Audit of methods and procedures for Lipophilic DSP toxin analysis used by laboratories at CEFAS, FRS and DARD as PDF\(Open in a new window\)](#) (1.26 MB)

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[View 2a. Agency's investigations into solvent carry-over issues January 2004\(as PDF\(Open in a new window\)](#) (126.85 KB)

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[View 2b. Agency's investigations into solvent carry-over issues October 2003 as PDF\(Open in a new window\)](#) (238.16 KB)

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[View 3. Shellfish toxin testing Action Plan as PDF\(Open in a new window\)](#) (23.39 KB)

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[View 4. Shellfish toxin Action Plan updated with progress to-date as PDF\(Open in a new window\)](#) (26.73 KB)

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[View 5. Agency's programme of work to investigate atypical results for shellfish toxin test as PDF\(Open in a new window\)](#) (25.61 KB)

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[View Agency publishes study into the oral toxicity of cockle extracts as PDF\(Open in a new window\)](#) (5.12 KB)

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[View 7. Agency publishes minutes of meeting held 10 August 2004 to discuss audit findings as PDF\(Open in a new window\)](#) (22.49 KB)