BIOTOXIN MONITORING IN SHELLFISH TISSUE

1. INTRODUCTION

Regulation (EC) No 854/2004[1] requires a monitoring programme of classified shellfish production areas to be established, as part of the competent authority's official controls, to check for the possible presence of marine biotoxins in the shellfish flesh.

Marine biotoxins, which are produced by certain types of phytoplankton (marine algae) can accumulate in the tissues of filter feeding live bivalve molluscs (shellfish). The consumption of shellfish which are contaminated with these biotoxins can lead to illness, ranging from sickness and diarrhoea to more serious conditions which could require hospital treatment.

2. BIOTOXIN MONITORING PROGRAMME

The Food Standards Agency in Northern Ireland (FSA in NI) is responsible for carrying out a monitoring programme of classified harvesting areas for the presence of marine biotoxins in samples of shellfish flesh. The programme is targeted to cover active shellfish production areas in Northern Ireland.

The monitoring programme identifies where there is an increased risk of shellfish becoming contaminated with biotoxins and when shellfish harvesters need to take appropriate steps to ensure the shellfish they are placing on the market do not contain unsafe levels. When legal limits of biotoxins in shellfish are breached, FSA in NI instructs the enforcement authority (district councils in NI) to take appropriate action to ensure the affected areas are closed for harvesting.

3. SHELLFISH FLESH SAMPLING

The shellfish biotoxin monitoring programme involves the sampling of shellfish from Representative Monitoring Points (RMPs) or sampling sites within the 7 shellfish production areas across NI

Samples are tested for three groups of algal toxins for which maximum permitted levels are set by the EU legislation:

- Paralytic Shellfish Poisoning (PSP) Toxins;
- Amnesic Shellfish Poisoning (ASP) Toxins, and;
- Lipophillic Shellfish Toxins (LTs), which include the toxins responsible for Diarrhetic Shellfish Poisoning (DSP); and Azaspiracid toxins (AZAs)

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:226:0083:0127:EN:PDF

The shellfish biotoxin sampling schedule is published by FSA in NI and can be accessed via the following link:
http://www.food.gov.uk/enforcement/monitoring/shellfish/nibiotoxin

Shellfish samples are collected by authorised sampling officers and are submitted to the testing laboratory at Agri-Food and Biosciences Institute (AFBI) for analysis. AFBI will inform FSA in NI of all results. When a flesh sample exceeds the regulatory maximum permitted levels the harvesting area will be closed. Official control monitoring from the closed shellfish area will be increased to weekly. The shellfish area will remain closed until two consecutive satisfactory biotoxin results have been received.

4. BIOTOXIN LEVELS

Regulatory limits for marine bioxotins in shellfish are laid down in Regulation (EC) No. 853/2004[2]

The maximum permitted levels of biotoxins in shellfish are as follows:

Toxin group		Regulatory level
Paralytic shellfish poisoning (PSP) toxins		800 micrograms (µg) STX equivalents/kg
Amnesic shellfish poisoning (ASP) toxins		20 milligrams (mg) Domoic Acid/kg
Lipophilic Toxins	Diarrhetic shellfish poisoning (DSP) toxins and Pectenotoxins (PTXs)	160 micrograms (µg) Okadiac Acid equivalents/kg
	Yessotoxins (YTXs)	3.75 milligram (mg) YTX equivalents/kg
	Azaspiracids (AZAs)	160 micrograms (µg) AZA equivalents/kg

DSP (for species not tested by LC-MS): DSP toxins must not be present

[2] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2004.226.01.0022.01.ENG

5. BIOTOXIN RESULTS

The absence of official control results for a harvesting area does not necessarily mean the area is free of biotoxins. Even when areas are open for harvesting, it remains the responsibility of the shellfish harvester to ensure that their products comply with all relevant statutory requirements.

For details of any Temporary Closure Notices and/or Warning Notices please contact your district council environmental health officer.

Biotoxin flesh results are published by FSA in NI and they can be accessed via the following link: http://www.food.gov.uk/enforcement/monitoring/shellfish/nibiotoxin/

6. CONTACT INFORMATION

Enquiries relating to the FSA in NI monitoring programme (including monitoring points, frequency of sampling, actions in case of breach of pre-defined levels) should be referred to FSA in NI Executive Support Unit **email:** executive.support@foodstandards.gsi.gov.uk, **tel:** 028 90 417700