

Mycotoxins

Explains the dangers surrounding mycotoxins and the food safety regulations in place in the UK concerning them.

Mycotoxins are a group of naturally occurring chemicals produced by certain moulds. They can grow on a variety of different crops and foodstuffs including cereals, nuts, spices, dried fruits, apple juice and coffee, often under warm and humid conditions.

The mycotoxins of most concern from a food safety perspective include:

- aflatoxins (B1, B2, G1, G2 and M1)
- ochratoxin A
- patulin
- toxins produced by *Fusarium* moulds, including fumonisins (B1, B2 and B3)
- trichothecenes (principally nivalenol, deoxynivalenol, T-2 and HT-2 toxin)
- zearalenone
- ergot alkaloids, citrinin, sterigmatocystin and alternaria toxins

Mycotoxins can cause a variety of adverse health effects in humans including cancer (some are genotoxic), kidney and liver damage, gastrointestinal disturbances, reproductive disorders or suppression of the immune system. Aflatoxins are the most harmful type of mycotoxin, they can potentially cause cancer or problems with digestion, reproduction or the immune system.

Mycotoxins are naturally occurring, so their presence in foods cannot be completely avoided. It is however appropriate to ensure that controls are in place to ensure that exposure from food is as low as reasonably achievable. These controls range from ensuring that good practice is undertaken during growing, harvesting and storage of foods in addition to establishing maximum levels where necessary.

Legislation

To protect consumer safety there are rules and strict limits in place for aflatoxins, ochratoxin A, patulin and *Fusarium* toxins in certain foods. Maximum levels (MLs) are established in:

- [assimilated Regulation \(EU\) 1881/2006](#) for England and Wales
- [Regulation \(EU\) 1881/2006](#) for Northern Ireland

Mycotoxins occur in hotspots because they are not evenly distributed throughout the food. To ensure that the testing samples are representative of the entire batch of food - provisions for sampling and analysis for the official control of the maximum levels (MLs) for mycotoxins have been made. This is set out in:

- [assimilated Regulation \(EU\) 401/2006](#) for England and Wales
- [?Regulation \(EU\) 401/2006](#) for Northern Ireland

Provisions for sampling and analysis are applicable for enforcement bodies only, this includes local authorities, port health authorities and public analysts. However, it is important for food business operators to be aware of these provisions when carrying out due diligence checks.

We have produced sampling advice to enforcement authorities and food business operators on this.

England, Northern Ireland and Wales

PDF

[View Mycotoxin sampling guidance as PDF\(Open in a new window\)](#) (795.24 KB)

If a food business operator wishes to have samples analysed for mycotoxins in the UK, it is recommended that a laboratory accredited for mycotoxin analysis is used. Further information on accredited laboratories can be found on the [United Kingdom Accreditation Services website](#).

Special conditions on imports

Maximum levels for mycotoxins apply to the specified foods whether they are imported or produced domestically. Consumers are protected by special import conditions for certain foods from certain countries where the risk from aflatoxin contamination is increased. These foods will therefore be subjected to additional checks and will have to be accompanied by specific documentation attesting to their compliance with regulations. This includes a certificate of analysis and a health certificate from the competent authority of the country of origin.

There is further information concerning controls for importing high-risk foods into [England and Wales](#) or into [Northern Ireland](#).

Codes of practice – fusarium and ochratoxin A

We have developed two specific codes of practice for England, Wales and Northern Ireland to reduce fusarium and ochratoxin A mycotoxins in cereals, and a leaflet which summarises these codes of practice for cereal farmers.

These UK codes of practice are based on a set of general principles to minimise the amount of mycotoxins in cereals.

England, Northern Ireland and Wales

PDF

[View Code of good storage practice to reduce ochratoxin A in cereals as PDF\(Open in a new window\)](#) (63.6 KB)

England, Northern Ireland and Wales

PDF

[View Code of good agricultural practice to reduce fusarium mycotoxins in cereals as PDF\(Open in a new window\)](#) (215.76 KB)

England, Northern Ireland and Wales

PDF

[View Code of good agricultural practice to reduce mycotoxins in UK cereals as PDF\(Open in a new window\)](#) (422.55 KB)

Important
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References to EU legislation in FSA guidance

Directly applicable EU legislation no longer applies in GB. EU legislation retained when the UK exited the EU became assimilated law on 1 January 2024, published on legislation.gov.uk. References to any legislation in FSA guidance with 'EU' or 'EC' in the title (e.g. Regulation (EC) 178/2002) should now be regarded as assimilated law where applicable to GB. References to 'Retained EU Law' or 'REUL' should now be regarded as references to assimilated law.

For businesses moving goods from Great Britain to Northern Ireland, information on [the Windsor Framework](#) is available on GOV.UK.

The Windsor Framework was adopted by the UK and EU on 24 March 2023. The Framework provides a unique set of arrangements to support the flow of agrifood retail products from Great Britain (GB) to Northern Ireland (NI), allowing GB standards for public health in relation to food, marketing and organics to apply for pre-packed retail goods moved via the NI Retail Movement Scheme (NIRMS).