

## **Mycotoxins**

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 foodstuffs.

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 for mycotoxins have been made. This is set out in in [Regulation 401/2006](#) in conjunction with [Regulation 1881/2006](#). This Regulation is intended to ensure a harmonised and consistent approach by European member states for checking compliance with maximum levels for mycotoxins.

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.

[Mycotoxin sampling guidance](#) (223.54 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**

Regulation [1881/2006](#) and [401/2006](#) apply to the specified foods whether they are imported into the UK or produced in the UK. Consumers are protected by special import conditions for certain foods from certain third 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 EU law.

This includes a certificate of analysis and a health certificate from the competent authority of the country of origin.

An overview of legislation on contaminants, including legislation specific to aflatoxins, can be found on the European Commission's website. Find more information about importing foods containing mycotoxins in [trade information sheets](#).

The European Commission provides guidance for competent authorities on control of compliance with EU legislation on [Aflatoxins](#).

## 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.

[Code of good storage practice to reduce ochratoxin A in cereals](#) (63.6 KB)

Guidance note

[Code of good agricultural practice to reduce fusarium mycotoxins in cereals](#) (215.76 KB)

Guidance note

[Code of good agricultural practice to reduce mycotoxins in UK cereals](#) (422.55 KB)

Leaflet