

European Feed Ingredients Safety Code

Code of good practice for the monitoring of Aflatoxin B1 in maize
and maize co- products (feed materials) derived thereof



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1. Introduction

This code of good practice gives requirements for the monitoring of Aflatoxin B1 in batches of maize harvested in 2012 and 2013, originating from south and east Europe.

Based on the information coming from the RASSF, surveillance programmes in the primary production, monitoring programmes and supplier information, concerned AAF operators, have strengthened their HACCP based risk assessments on a continuous basis in order to continue guaranteeing safe feed materials to their customers.

AAF operators produce feed materials as a co- product from starch production. During the wet milling a number of production steps reduce potential high peaks of contamination resulting in food grade starch and feed materials were the contamination of Mycotoxins in general and Aflatoxin more specifically is homogenised. As the result of this process the risk of contamination of the feed material with a level of Aflatoxin above the legal limits is very low.

In order to strive for a harmonised EU implementation, this Code of good practice provides monitoring requirements for Aflatoxin B1 in maize from the regions concerned and the co- products of maize processing thereof.

For EFISC-certified maize processing manufacturers the requirements in this Code are mandatory.

2. EU legal requirements

For Food (incoming material): (as per amended version of Regulation (EC) No 1881/2006)

- Maize to be subjected to sorting or other physical treatment before human consumption or use as an ingredient in foodstuffs. Maximum limits ($\mu\text{g}/\text{kg}$) of 5,0 ppb for Aflatoxin B1 and 10,0 ppb for sum of Aflatoxins B1+B2+G1+G2. Maize consignments with levels between 2 and 5 ppb Aflatoxin B1 AND 4 to 10 ppb for sum of Aflatoxins B1+B2+G1+G2 clearly need to be labelled as such. Through sorting or other physical treatments the levels should be brought to 2,0 ppb for Aflatoxin B1 and 4,0 ppb for sum of Aflatoxins B1+B2+G1+G2 before production of foodstuffs.
- For maize and all products derived from maize, including processed maize products, maximum limits ($\mu\text{g}/\text{kg}$) of 2,0 ppb for Aflatoxin B1 and 4,0 ppb for sum of Aflatoxins B1+B2+G1+G2 are set.

For feed: as per amended version of Directive 2002/32/EC

- The applicable EU maximum limits for Aflatoxin :
 - Feed materials 20 ppb for Aflatoxin B1 (based on a moisture content of 12 %).
 - Complementary and complete feed 10 ppb for Aflatoxin B1 (based on a moisture content of 12 %).
 - Compound feed for dairy and young animals have to comply with 5 ppb for Aflatoxin B1 (based on a moisture content of 12 %).
 - Compound feed for general not already mentioned categories - 20 ppb for Aflatoxin B1 (based on a moisture content of 12 %).

3. Scope of application

This code is applicable to all incoming maize, and the co- products from starch manufacturing thereof, from the regions mentioned in §4, in addition to the requirements in the [European code for the industrial manufacturing of safe feed materials](#) and the [sector document on starch processing](#).

4. Origin

This code of practice is applicable to maize coming from the South and East of Europe and more specifically the following countries, based on RASSF notifications published since December 2012:

- | | |
|------------|------------------|
| ■ Bulgaria | ■ Serbia |
| ■ Greece | ■ Ukraine |
| ■ Hungary | ■ Slovakia |
| ■ Italy | ■ Spain |
| ■ Poland | ■ Czech Republic |
| ■ Romania | |

Maize coming from regions neighboring the countries given above has to be risk assessed very carefully by the operator.

If the origin, or the crop year, of the maize is unknown the manufacturer has to apply a monitoring regime as described in this code of practice.

As required within the entry check program (EFISC Code §4.3.2 incoming material requirements) operators must assess the possible risk for Aflatoxin when purchasing maize from countries not listed above. Not being mentioned in the list above does not mean that the risk of Aflatoxin contamination does not exist. The precautionary principle must always prevail. In case of doubt, the company must always apply this code of good practice.

5. Duration

This protocol is valid and applicable only for a limited period of time. It relates specifically to the maize harvested in 2012 and 2013 and the co- products thereof, from the regions indicated in §4.

The protocol is applicable for a limited period of time. The decision to end the implementation of this protocol will be made on the basis of a risk assessment and in co- decision by EFISC, AAF, FEFAC and other certification schemes.

6. Sampling and analysing

Incoming maize from the countries mentioned in §4 has to be sampled and analysed by batch in line with the protocols mentioned in §6a in order to verify the safety of the product (100% monitoring). The operator is responsible for the correct implementation of this protocol.

Feed materials intended for the dairy industry (see §2), will be monitored in line with the requirements under §6b.

For all other feed materials the operator shall formulate a monitoring plan, based on his risk assessment.

The following sampling situations apply:

a) Incoming product (foodgrade)

For the incoming maize the following sampling and analyse methods are accepted at loading¹ or unloading of the product:

- Regulation (EC) 401/2006 laying down the methods of sampling and analysis for the official control of the levels of mycotoxins in food stuffs.
- Regulation (EC) 152/2009 laying down the methods of sampling and analysis for the official control of feed (plus modifications)

The following methods have proven to produce reliable results and can be used as an alternative by the operator:

- ISO 24333:2009, cereals and cereal products sampling (sampling for the determination of heterogeneously distributed contaminants)

b) The finished feed materials (co- products from maize starch processing)

The operator shall formulate a monitoring plan for the finished feed material (such as feed materials with the numbers 1.2.2 to 1.2.17 in the European Catalogue of feed materials) based on the operators risk assessment in line with the EFISC code §4.4.3.

¹ Analysis performed in line with this protocol within a period of two months before de- loading at the processing facility (See §7)

6.1 Sampling requirements

The operator has to ensure that the final samples taken can be considered as representative of the batch and are taken in accordance with the sampling and analysing methods given in §6 a) or b) as applicable.

For the incoming material the samples will be taken by an independent sample taker from an organization which is certified for ISO 17020 or alternatively, ISO 9001 in combination with GAFTA.

Guidance sampling incoming maize (food grade)

- The number of aggregated samples will vary with the size of the sampled batch.
- Each aggregated sample shall give the final sample.
- The total weight of the incremental samples making up each aggregated sample shall be between 6- 10 kgs.
- This aggregated sample is reduced 3 on 1 to provide for at least one 2 Kg sample of crude maize that is homogenized.
- This sample is reduced to about 1 Kg and then milled and homogenized.
- From this sample two 500 gram samples are taken to use as: (1) a basic sample to extract the lab sample and (2) reference sample
- These samples shall be packed and sealed without delay. The reference sample will be kept in adequate storage for the period of three months in line with the EFISC Code § 4.4.3.1 Sampling.
- The EFISC certified operator will communicate these requirements on sample preparation to the sampler and the laboratory performing the analysis.

6.2. Analysis

The final sample(s) will be sent to an ISO 17025 accredited laboratory for the analysis of Aflatoxin B1 level.

The remainder of each final sample should be sealed, labeled and stored.

The collected data will be sent by the operator to the European sector organization AAF, in line with the requirements of the sector monitoring program.

7. Exceptions

If the operator purchases maize which has already been sampled and tested the fulfillment of sample requirements of this code is not required and the operator should apply the entry check program as described in the EFISC Code.

The situation is applicable if the supplier has conducted the sampling and analysis according to one of the recognized protocols as mentioned in §6. The analyse report on Aflatoxin B1 for the respective batch has to be provided to the operator and should not be older than two months before arrival of the batch at the production facility (date of analyse results).

The batch number should be indicated on the certificate and traceability of the batch should be given at all times. If this is not the case or there is reason to suspect the transport and/ or storage conditions/ management the analysis has to be redone.

8. Related documents

- Regulation (EC) 401/2006- laying down the methods of sampling and analysis for the official control of the levels of Mycotoxins in food stuffs.
- Regulation (EC) 152/2009- laying down the methods of sampling and analysis for the official control of feed
- Regulation (EC) 691/2013 amending (EC) 152/2009 as regards methods of sampling and analysis (as of 1 January 2014)
- ISO 24333:2009 Cereals and cereals products- sampling