



## FEMAS Sector Note No. 15 – Maize Aflatoxin Monitoring Protocol

These Sector Notes apply to any FEMAS participant *processing or placing on the market within the UK or EU* maize and / or maize by-products. The sampling and monitoring required by this protocol is in addition to that required by the FEMAS Calculator but does not replace the need for the business to fully assess the *feed safety* risks associated with *maize and / or maize by-products*.

The Protocol described in these Sector Notes for the sampling and analysis of maize and maize by-products, is based on a common risk assessment agreed jointly by the schemes listed in *this document*. Its aim is to minimise the risk of Aflatoxin B1 at levels above those permitted by *UK and EU* legislation in feed materials and compound feeds.

Participants processing whole maize should also be aware of *Sector Notes No. 4 – Whole Cereal Processing, No. 7 – Distillery & Malt products, No. 9 – Brewing, No. 14 - Biofuels*.

These Notes are not exhaustive and are intended to assist in the application of the corresponding requirements of the FEMAS Standard and are not to be considered in isolation.

**Section 1** of these Sector Notes includes definitions of specific relevance to this sector.

**Section 2** of these Sector Notes includes those additional requirements of the FEMAS Scheme specific to this sector and with which Participants **must** comply in order to achieve certification under the FEMAS Scheme.

**Section 3** of these Sector Notes includes additional guidance (shown in italics) specific to this sector, which will assist Participants in interpreting the FEMAS Standard for their sector.

### 1 Definitions

<b>Maize and Maize By-Products</b>	Grains of <i>Zea mays L. ssp. mays</i> in their natural state and any cereal products produced from the whole kernel and any part thereof.
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## 2 Additional Sector-Specific Requirements

<b>C 1.1</b>	<b>Raw Material Suppliers</b>	<p>The Maize Aflatoxin Monitoring Protocol is to be applied to all maize / maize by-product processed by the Participant and placed on the market in the UK or EU, unless the maize is sourced from a supplier certified (with a relevant scope) to one of the following schemes:</p> <ul style="list-style-type: none"> <li>• FEMAS</li> <li>• GMP+ International FSA</li> <li>• OVOCOM FCA (formerly OVOCOM GMP)</li> <li>• EFISC-GTP</li> <li>• QS</li> </ul>
<b>C 2.2</b>	<b>Selection and Approval of Raw Materials</b>	<p>The Maize Aflatoxin Monitoring Protocol applies to any FEMAS Participant trading or processing maize and / or maize by-products and placing them on the market in the UK or EU.</p> <p>Risk ratings are assigned to countries of origin by a joint committee of the participating schemes based on anonymised analysis results from scheme Participants. The Current country risk ratings are summarised in Annex 1 of this document</p>
<b>D 1.2</b>	<b>Feed Suppliers</b>	<p>The Maize Aflatoxin Monitoring Protocol is to be applied to all maize / maize by-product placed on the market by the Participant in the UK or EU, unless the maize is sourced from a supplier certified (with a relevant scope) to one of the following schemes:</p> <ul style="list-style-type: none"> <li>• FEMAS</li> <li>• GMP+ International FSA</li> <li>• OVOCOM FCA (formerly OVOCOM GMP)</li> <li>• EFISC-GTP</li> <li>• QS</li> </ul>
<b>F 1.1</b>	<b>Sales Contracts / Agreements / Feed Specifications</b>	<p>Participants supplying maize and / or maize by-products on 'any origin' contracts to the UK or EU markets must provide their customers with the source country of each consignment of maize and, as appropriate, the Aflatoxin B1 results required by this Protocol.</p>

<b>F 1.3</b>	<b>Sales Contracts / Agreements / Feed Specifications</b>	For High and Medium Risk origins (see C 2.2 above), the end user and any intermediate storage sites must be notified of the results of the analyses that have been carried out prior to delivering the maize and / or maize by-products.  The sampling and analysis must have been carried out no more than three months prior to the delivery date.
<b>I 1.1</b>	<b>Sampling and Analysis Schedules</b>	Results from the samples analysed must be forwarded at least once a month to the Certification Body who will anonymise results and share with the Scheme Owner AIC and, upon request, with the UK competent authorities.
<b>I 1.1</b>	<b>Sampling and Analysis Schedules</b>	If sampling is to be carried out on stored maize and / or maize by-products from Medium or High Risk origins (See C 2.2 above) and the full batch is not accessible, the following requirements must be met: <ul style="list-style-type: none"> <li>• A sampling plan must be designed and documented to cover the accessible portion of the stored batch</li> <li>• As the store is emptied, and new portions of the maize become accessible these must be sampled in accordance with this protocol</li> <li>• The sampling approach and results must be communicated to the customer</li> </ul>
<b>I 1.1</b>	<b>Sampling and Analysis Schedules</b>	Where a batch of maize from a Medium or High Risk origin (See C 2.2 above) is stored for more than three months after sampling and analysis, the batch must be sampled and analysed again prior to delivery to the customer.
<b>I 2.2</b>	<b>Sampling and Analysis Schedules</b>	Batches of maize and / or maize by-products must either be sampled at loading (country of origin) or at discharge (country of delivery) in accordance with the table shown below.

<b>Means of Transport/ Maximum Batch Size</b>	<b>High Risk Countries</b>	<b>Medium Risk Countries</b>	<b>Low Risk Countries</b>
Seagoing vessel	Max. 2,000 tonnes	Hold	HACCP-based and to comply with the FEMAS Calculator requirements
Inland waterway vessel	Inland waterway vessel	Inland waterway vessel	
Train	Max. 1,500 tonnes	Train	
Truck from storage / warehouse, production location or collection point	Max. 1,000 tonnes	Max. 2,000 tonnes	

<b>I 3.1</b>	<b>Feed Samples</b>	Samples of maize and / or maize by-products must be taken in accordance with the methods described in the table below.		
<b>Risk Rating</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	
<b>Sampling Method</b>	Regulation (EU) No. 691/2013 for whole batch	Regulation (EU) No. 691/2013 for whole batch	Representative sample in accordance with industry good practice	
<b>Sampled by</b>	Independent superintendent organization with appropriate scope of accreditation to ISO 17020 or to ISO 9001 plus GTAS Supervision, Sampling and Weighing certification.	Independent superintendent organization with appropriate scope of accreditation to ISO 17020 or to ISO 9001 plus GTAS Supervision, Sampling and Weighing certification.	Scheme Participant or appointed representative	
<b>Minimum Aggregate sample size</b>	10kg	10kg	10kg	
<b>Minimum sample size sent to laboratory</b>	4kg	4kg	4kg	
<b>Minimum final sample size</b>	500g	500g	500g	
<b>Analysis frequency</b>	Each final sample	Each final sample	Each final sample	

<p><b>I 5.2</b></p>	<p><b>Analysis</b></p>	<p>Where the Participant relies upon the monitoring done by their supplier, the following conditions must be met:</p> <ul style="list-style-type: none"> <li>• The supplier confirms in writing (letter, email or fax are acceptable) that the sampling and analysis were carried out in accordance with the maize monitoring protocols contained within this Protocol</li> <li>• The supplier provides Aflatoxin B1 results for the maize or maize by-products supplied where origins are medium or high risk</li> <li>• The results relate to samples that are no more than three months old</li> <li>• Where the suppliers' results relate to maize prior to processing, the supplier must confirm the factor by which Aflatoxin B1 is concentrated or reduced during the process</li> </ul>
<p><b>I 7.1</b></p>	<p><b>Testing Facilities</b></p>	<p>Analysis must be carried out in accordance with the requirements of 5B of Annex I to Regulation (EC) No 152/2009.</p>
<p><b>I 8.2</b></p>	<p><b>Evaluation of Test Results</b></p>	<p>For Participants placing product on the market in the UK or EU, if the Aflatoxin B1 level exceeds the legal maxima laid down in Directive 2002/32 (as amended) these must be reported immediately to the Certification Body, and to the Competent Authorities.</p>

### 3 Sector-Specific Guidance

<b>C 2.2</b>	<b>Selection and Approval of Raw Materials</b>	<p><i>The presence of Aflatoxin B1 in maize is related to the climatic conditions under which it is grown, so it is important that Participants fully assess the risk associated with all sources of maize, and where there is a significant risk of Aflatoxin B1 above legal maxima, the appropriate risk rating should be applied. AIC, in conjunction with other scheme owners, will be frequently reviewing industry analysis data with a view to updating the risk rating list when necessary.</i></p> <p><i>The initial risk classifications shown in C 2.2 Above are based on Rapid Alert System for Food and Feed (RASFF) notifications issued in the three previous years and on available analysis results for recent deliveries.</i></p> <p><i>The participant should also consider the risk posed by contamination of maize with that from another origin which could lead to the presence of Aflatoxin B1 above the legal maxima.</i></p>
<b>F 1.4</b>	<b>Feed Specifications</b>	<p><i>Participants supplying products to the UK and EU should note that it is illegal under UK and EU Undesirable Substances legislation to blend feeds with the intention of diluting an undesirable substance to a level below the legal maximum.</i></p>
<b>H 12.4</b>	<b>Equipment Intended to Control Physical Contamination</b>	<p><i>Consideration should also be given to the destination of materials removed by any initial screening at intake.</i></p>
<b>I 5.3</b>	<b>Analysis</b>	<p><i>The applicable UK and EU maximum limits for Aflatoxin B1 in maize and / or maize by-products to be used as feed materials can be found in Directive 2002/32/EC (as amended)</i></p>
<b>I 8.1</b>	<b>Evaluation of Test Results</b>	<p><i>AIC will share anonymous results with other scheme owners, and use the guidelines shown in Annex I to assess the risk of origins as the harvest progresses.</i></p>

## Annex I – Country Risk Rating

High Risk	Medium Risk	Low Risk
None	Argentina Bosnia Brazil Bulgaria Croatia Italy Moldova Romania Russia Serbia Slovakia USA Any country not mentioned elsewhere	Austria Belgium Canada Czech Republic Denmark Estonia Finland France Germany Hungary Iceland Ireland Latvia Lithuania Luxembourg Netherlands Norway Poland Spain Sweden United Kingdom Ukraine

## Criteria used for Country Classification

Risk Rating	Percentage of Analysis	Results
High	>1% >10%	>20ppb <b>OR</b> >10ppb and ≤20ppb
Medium	Any scenario not listed as high or low risk	
Low	<1% <2% >90%	>10 and ≤20ppb <b>AND</b> >5 and ≤10ppb <b>AND</b> <2ppb