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## Introduction

The FEMAS Calculator was developed in 2013 as a response to feed safety issues in Europe and with the aim of enhancing the rigour of the FEMAS Scheme.

The Participant's risk assessment will establish all hazards of each feed and develop a comprehensive analysis schedule.

Use of the FEMAS Calculator is mandatory for Participants and should be used in conjunction with the risk assessment to define the testing frequencies across a range of undesirable substances.

If a Participant believes that the tests required by the FEMAS Calculator are not justified for their specific product, an application may be made for a [derogation](#).

In this update of the Calculator the changes include:

- the addition of feed materials introduced into the Catalogue of Feed Materials (Regulation (EU) No 68/2013) by Regulation (EU) No 2017/1017
- a tool to determine analysis of feed materials included in the GB and EU Registers of Feed Materials
- a tool to determine analysis of feed additives and process aids
- consideration of new hazards and risks
- consideration of new/updated legislation
- the introduction of guidance 'flags'

It remains the responsibility of the Participant to carry out a risk assessment and establish a comprehensive analysis schedule.

Future updates of the Calculator will include new tools to assist participants in developing their analysis schedule for mixtures of feeds. The FEMAS Calculator will also continue to be updated as and when data is made available that impacts on the analyses required.

## Accessing the FEMAS Calculator

The FEMAS Calculator can be accessed through the AIC Portal.

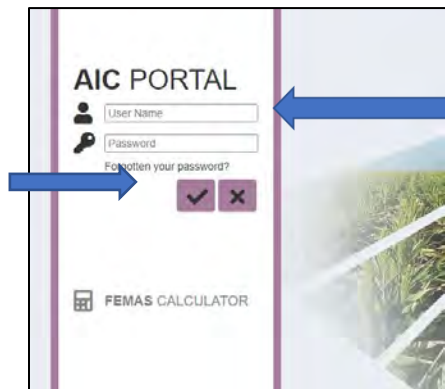
<https://aicportal.kiwa.co.uk/Security/Login?RequestPath=%2F>

It is recommended that Participants seek login rights to the AIC Portal by sending an email to [uk.feed@kiwa.com](mailto:uk.feed@kiwa.com) and an account will then be set up. The advantage of having an account is that history will be retained and the Portal will recognise any previous use at a subsequent visit or login

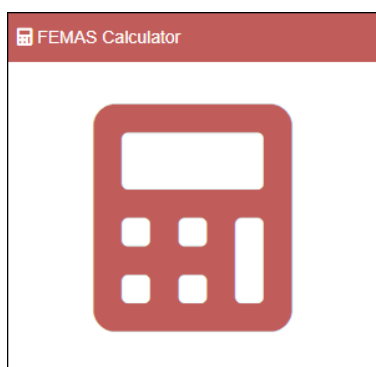
Two emails will then be received.

- The first is an automatically generated email sent from 'Feed UK' this contains the password needed to log in and a link to the login page.
- The second email will be from one of the Kiwa office team and will contain a username.

When both emails have been received, select the link to the login page, fill out the login details and click on the tick to log in.



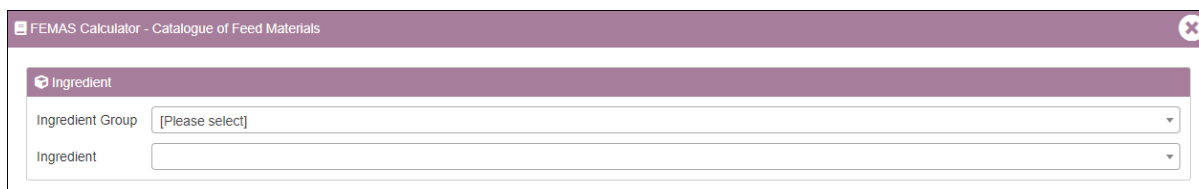
To access the FEMAS Calculator select the following tile:



It is possible to access the FEMAS Calculator without logging-in by simply clicking the 'FEMAS CALCULATOR' tab beside the small Calculator icon at the bottom of the login page. Please note that without logging-in, no history will be retained and the Portal will not recognise any previous use at a subsequent visit or login.

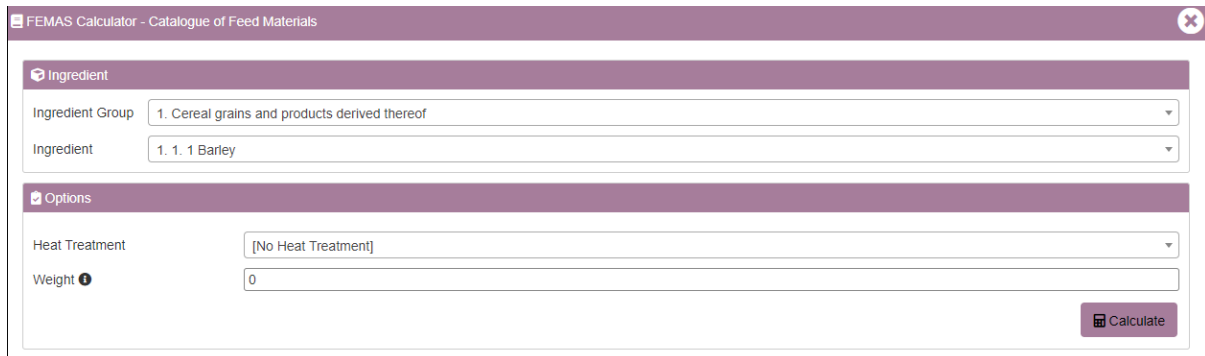
## The Catalogue of Feed Materials Calculator Tool

The Catalogue of Feed Materials Calculator Tool contains all feed materials listed in (Regulation (EU) No 68/2013), as amended by Regulation (EU) No 2017/1017. The Feed Material Calculator includes undesirable substances (as defined in EU law) in addition to other hazards associated with specific feed materials. Each of these hazards has been assessed based on potential impact to human and animal health. This assessment is used in conjunction with the annual volume of the feed material produced/ placed on the market by the Participant to produce an annual minimum monitoring plan.

The screenshot shows a web application window titled 'FEMAS Calculator - Catalogue of Feed Materials'. The interface has a purple header bar with a close button (X) in the top right corner. Below the header is a section titled 'Ingredient' with a search icon. There are two input fields: 'Ingredient Group' with a dropdown menu showing '[Please select]' and a downward arrow, and 'Ingredient' with a text input field and a downward arrow.

- Select the correct 'Ingredient Group' from the drop-down list – these are the Chapters of the Catalogue of Feed Materials

## A Guide to the FEMAS Calculator



FEMAS Calculator - Catalogue of Feed Materials

**Ingredient**

Ingredient Group: 1. Cereal grains and products derived thereof

Ingredient: 1. 1. 1 Barley

**Options**

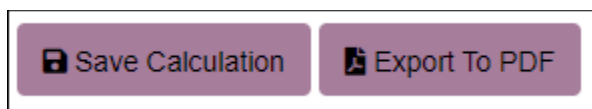
Heat Treatment: [No Heat Treatment]

Weight: 0

Calculate

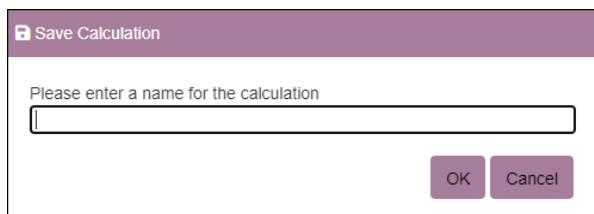
- Select the 'Ingredient' from the drop-down list – these are the feed materials listed in the Catalogue of Feed Materials. You can search for a feed material by starting to type its name.
- Indicate whether any heat treatment is used (direct heating or indirect heating – for direct heating select the fuel source). If no heating has been applied, skip this step.
- Input the weight of the feed material (in tonnes) produced and/ or traded each year and click 'Calculate'.

If you are logged-in you will be offered the choice to 'Save' the calculation or Print the calculation by selecting 'Export to PDF'. If you are not logged-in, the only option will be to export the calculation.



Save Calculation Export To PDF

If you choose to save the calculation you will need to input a name for the file.

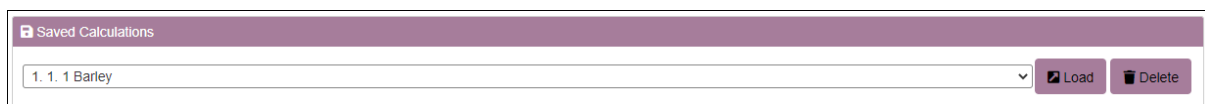


Save Calculation

Please enter a name for the calculation

OK Cancel

The calculation will then be available to you each time you log-into the Calculator.



Saved Calculations

1. 1. 1 Barley Load Delete

## The Feed Materials Register Calculator Tool



The Feed Materials Register Calculator Tool can be used to determine the minimum testing requirements for feed materials which are entered on the GB and EU Feed Materials Registers. Analysis requirements are aligned with those assigned to the Chapter in the Catalogue of Feed Materials that the particular feed material would fall under if it was included in the Catalogue of Feed Materials (i.e. by product type). Specific analysis has been linked to each Chapter following a risk assessment of the hazards associated with the feed materials within that Chapter. This assessment is used in conjunction with the annual volume of the feed material produced/ placed on the market by the Participant to produce an annual minimum monitoring plan.

- Input the name of the feed material as detailed within the Register of Feed Materials
- Select the Chapter of the Catalogue of Feed Materials that the feed material would fall under if it was included in the Catalogue of Feed Materials, using the drop-down list
- Indicate whether any heat treatment is used (direct heating or indirect heating – for direct heating select the fuel source). If no heating has been applied, skip this step.
- Indicate whether any carriers are used in the production of the feed material. If no carriers are used, skip this step
- Indicate whether any recycled raw materials are used in the production of the feed material. If no recycled raw materials are used, skip this step
- Input the weight of the feed material (in tonnes) produced and/ or traded each year and click 'Calculate'.

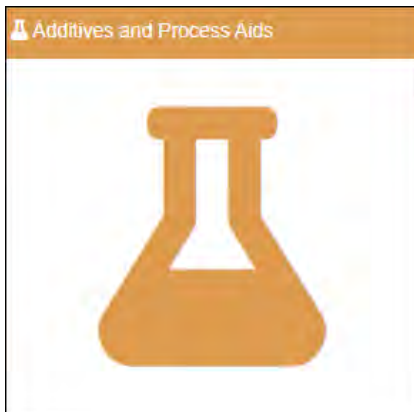
Ingredient	
Name	<input type="text"/>
Chapter	1. Cereal grains and products derived thereof
Options	
Heat Treatment	[No Heat Treatment]
Carriers <sup>?</sup>	No
Recycled Material <sup>?</sup>	No
Weight <sup>?</sup>	0
<input type="button" value="Calculate"/>	

## A Guide to the FEMAS Calculator

If you are logged-in you will be offered the choice to 'Save' the calculation or Print the calculation by selecting 'Export to PDF'. If you are not logged-in, the only option will be to export the calculation.

### The Additives, Additive Preparations and Process Aids Calculator Tool

The Additives, Additive Preparations and Process Aids Calculator Tool can be used to determine the minimum testing requirements for feed additives, feed additive preparations and process aids. Analysis requirements are determined related to the raw material type and the process or processes used to manufacture the feed additive, feed additive preparation or process aid. Specific analysis has been linked to each raw material type and each process type following a risk assessment of the hazards associated with raw materials and processes. This assessment is used in conjunction with the annual volume of the feed additive or processing aid produced/ placed on the market by the Participant to produce an annual minimum monitoring plan.



- Input the name of the feed additive, feed additive preparation or processing aid
- Select whether the raw material(s) used are Biological (animal), Biological (plant/fungus) or Non-Biological by selecting the appropriate option. All raw materials used in the production process must be considered and, where relevant, more than one can be selected
- Select the process type(s) used for the manufacture of the feed additive, feed additive preparation or processing aid. Where relevant, more than one process can be selected (Chemical Reaction, Extraction, Fermentation, Mining and Quarrying, Refining).
- Indicate whether any heat treatment is used (direct heating or indirect heating – for direct heating select the fuel source). If no heating has been applied, skip this step.
- Indicate whether any carriers are used in the production of the feed additive, feed additive preparation or processing aid. If no carriers are used, skip this step
- Indicate whether any recycled raw materials are used in the production of the feed additive, feed additive preparation or processing aid. If no recycled materials are used, skip this step



## A Guide to the FEMAS Calculator

- Input the weight of the feed additive, feed additive preparation or processing aid (in kilogrammes) produced and/ or placed on the market each year and click 'Calculate'.

The screenshot shows the 'Additive / Process Aid' form. At the top, there is a 'Name' input field. Below it are two columns of checkboxes: 'Raw Material Types' (Biological (Animal), Biological (Plant / Fungus), Non-Biological) and 'Process Types' (Chemical Reaction (including Electrolysis), Extraction (Aqueous, Other Solvents), Fermentation, Mining, Quarrying, Refining). The 'Options' section at the bottom includes dropdown menus for 'Heat Treatment' (set to 'No Heat Treatment'), 'Carriers' (set to 'No'), and 'Recycled Material' (set to 'No'), along with a 'Weight' input field (set to '0'). A 'Calculate' button is located in the bottom right corner.

If you are logged in you will be offered the choice to 'Save' the calculation or Print the calculation by selecting 'Export to PDF'. If you are not logged in, the only option will be to export the calculation.

## FEMAS Calculator Tools Application

It should be noted that the FEMAS Calculator tools do not replace the risk assessments that a Participant is required to undertake to establish the correct tests and testing frequencies for the feed produced/placed on the market. The FEMAS Calculator tools are designed to assist Participants in identifying the types of analyses required and set an absolute minimum testing frequency. It is not uncommon for risk assessments to indicate a greater testing frequency than that indicated by the FEMAS Calculator tools.

The FEMAS Calculator tools focus on the feed materials, feed additives, feed additive preparations and processing aids produced/ placed on the market by FEMAS Participants, but they can also be used to determine the appropriate analyses for producers of compound feeds, based on the raw materials used.

Participants should view the Calculator at least annually or when products, processes or volumes change.

## Frequently Asked Questions

- Q: The Calculator requires me to test for Pesticides – which ones should I test for?
- A: The most significant pesticides for animal feed have limits set in Section IV Organochlorine Compounds (excluding Dioxins and PCBs), Annex I Directive 2002/32EC on undesirable substances in animal feed (as amended). These are: Aldrin, Dieldrin, Camphechlor, Chlordane, DDT, Endosulfan, Endrin, Heptachlor, Hexachlorobenzene and three isomers of Hexachlorocyclo-hexane. As a minimum, it is these compounds that must be monitored. Maximum Residue Limits (MRLs) for other crop protection products are listed in EU Regulation 396/2005 (as amended), some of which may have relevance to the safety and legality of a feed ingredient which should be covered in the Participant's risk assessment.
- Q: The Calculator requires me to test for Urease activity – is this the same as Trypsin Inhibitor Activity (TIA)?
- A: Maximum urease activity is set in the descriptions for a number of soya feed materials within the Catalogue of Feed Materials. Analysis should therefore be available to demonstrate that levels are below these limits. If the Urease activity is above these levels, the feed material cannot be sold under that name. Where customers specify a maximum TIA it may be possible for a participant to establish a correlation between TIA and Urease activity, in which case they can apply for a derogation to rely on their TIA results to demonstrate compliance. If a correlation cannot be established, the required level of Urease activity analysis will need to be carried out.
- Q: Does the Calculator require specific laboratory methods to be used?
- A: Where an analysis method is specified in legislation, the laboratory must use this method or one validated to produce equivalent results. Examples where there are specific methods are Dioxins & Dioxin-like PCBs, Fluorine (Fluoride) and, for animal by-products, salmonella.
- Q: Can I test my raw materials instead of the feed ingredient I produce?
- A: Participants can apply for a derogation to test raw materials if they can demonstrate a correlation (concentration/ conversion factor) between raw material results and results from the feed ingredient.

## Guidance Statements

Guidance statements have been added to the FEMAS Calculator in place of a minimum number of analyses for some hazards. These offer direction to Participants for some specific analyses, which are either specified in regulations or require sampling in a particular way.

## Derogation Applications

If a Participant's risk assessment indicates that the number of tests required by the FEMAS Calculator are not justified for their specific feed, an application may be made for a derogation.

Examples of derogations that would be considered are:

- i) Where a number of Participant sites are part of a business or industry group using the same raw materials and producing the same feeds, it may be appropriate for the FEMAS Calculator to be used based on group tonnage rather than individual site tonnages. It would, however, need to be demonstrated that results are relevant and applicable to all sites that rely upon them.
- ii) Where it can be demonstrated that a hazard is not relevant to a particular production process or site, a derogation may be granted to exclude the associated test.
- iii) Where there is extensive historical data available indicating a lower risk level, a reduction in testing may be considered.

Applications for derogations can be made using the form in Appendix 1. Supporting evidence must be submitted to the certification body with any derogation application.

Completed derogation application forms should be emailed with supporting evidence to: [uk.feed@kiwa.com](mailto:uk.feed@kiwa.com)

Derogations are valid for a maximum of 3 years (a shorter timeframe may apply). After this time the Participant will be contacted with a request to submit updated information and the derogation will then be reassessed. Failure to apply for the renewal of a derogation may result in the derogation being withdrawn.

Appendix 1 Kiwa Agri Food FEMAS Calculator Derogation Request Form

FEMAS CALCULATOR – REQUEST FOR A DEROGATION AGAINST REQUIRED ANALYSIS	
FEMAS PARTICIPANT NAME	
FEMAS PARTICIPANT ID	
SCOPE OF CERTIFICATION	
CONTACT NAME	
LEGAL PRODUCT NAME DEROGATION REQUEST APPLIES TO (As per Catalogue/ Register of Feed Materials or Feed Additives Register)	
TONNAGE OF FEED TRADED/ YEAR	
ANALYSIS CALCULATOR REQUIRES	
DEROGATION REQUESTED	
JUSTIFICATION FOR REQUEST & RISK ASSESSMENT  <i>Please include supporting evidence. It is unlikely that a derogation will be granted without sufficient analysis to support the request.</i>  <i>If the derogation request is based on testing of raw materials, then please display raw material results side by side with finished product results to enable direct comparison. Use a separate spreadsheet if required.</i>	

## A Guide to the FEMAS Calculator

KIWA AGRI FOOD USE	
REVIEW OF DEROGATION	
CONCLUSION	
KIWA AGRI FOOD APPROVAL	
DATE	
EXPIRY DATE	