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Introduction

The AIC Feed Safety Analysis Calculator (originally named 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 and the wider assured feed supply chain.

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

Use of the [AIC Feed Safety Analysis Calculator](#) (referred to as "the Calculator" in this document) is mandatory for FEMAS Participants and is intended to be used in conjunction with their risk assessment to define the testing frequencies across a range of undesirable substances. TASC and UFAS Participants may choose to use the Calculator on a voluntary basis.

If a Participant believes that the tests required by the 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 change of name to reflect the wider use of the tool
- guidance for Participants producing mixtures

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

Structure of the Calculator

The Calculator is split into three separate tools, based on the legal status of the feed ingredient. It is important that a Participant understands whether their product is listed in the Catalogues of Feed Materials, Register of Feed Materials or Register of Feed Additives to access the correct tool within the Calculator.

Note that there are separate versions of each of these for GB and EU.

Accessing the Calculator

The Calculator can be accessed through the AIC Portal.

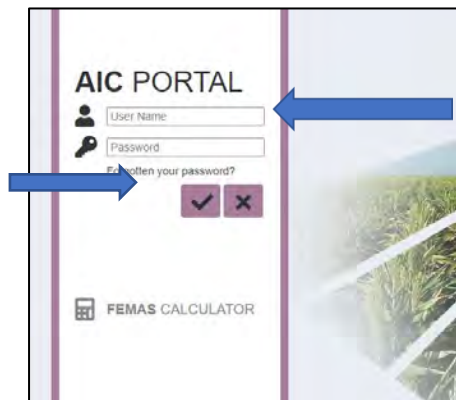
<https://aicportal.kiwa.co.uk/Security/Login?RequestPath=%2F>

It is recommended that Participants seek login rights to the AIC Portal by sending an email to uk.feed@kiwa.com 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.

Once a login has been requested, 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 Calculator select the following tile:




A Guide to the AIC Feed Safety Analysis Calculator

Note that without a login, the Feed Material Catalogue tool is available by clicking the 'AIC Feed Safety Analysis Calculator' tab beside the small Calculator icon at the bottom of the login page. To access the Feed Materials Register/ Feed Additives tools users must be logged in.

If users choose not to log 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 GB and EU Feed Materials catalogues. The Calculator includes undesirable substances (as defined in UK and 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 support their risk assessment in developing an analysis schedule.

The screenshot shows a web application interface. At the top, there is a purple header bar with the text 'AIC Feed Safety Analysis Calculator - Catalogue of Feed Materials' and a close button (X). Below the header is a white box with a purple border. Inside this box, there is a purple header bar with the text 'Ingredient'. Below this, there are two input fields: 'Ingredient Group' with a dropdown menu showing '[Please select]' and 'Ingredient' with a dropdown menu.

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

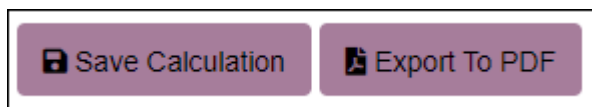
TIP: The required chapter can be found by starting to type into the Ingredient Group box

A Guide to the AIC Feed Safety Analysis Calculator

The screenshot shows the 'AIC Feed Safety Analysis Calculator - Catalogue of Feed Materials' window. It has two main sections: 'Ingredient' and 'Options'. In the 'Ingredient' section, 'Ingredient Group' is set to '1. Cereal grains and products derived thereof' and 'Ingredient' is set to '1. 1. 1 Barley'. In the 'Options' section, 'Heat Treatment' is set to '[No Heat Treatment]' and 'Weight' is set to '0'. A 'Calculate' button is located at the bottom right of the 'Options' section.

- Select the 'Ingredient' from the drop-down list – these are the feed materials listed in the Catalogue of Feed Materials.
TIP: The required feed material can be found by starting to type into the Ingredient box
- 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.



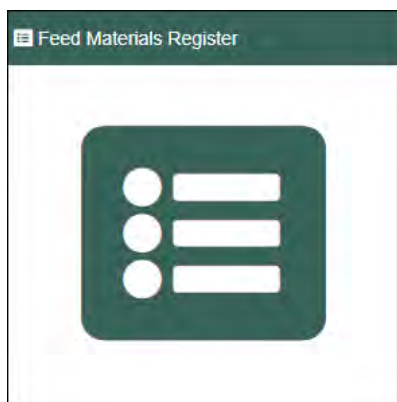
If you choose to save the calculation you will need to input a name for the file.

The 'Save Calculation' dialog box prompts the user to 'Please enter a name for the calculation'. It features a text input field and two buttons: 'OK' and 'Cancel'.

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

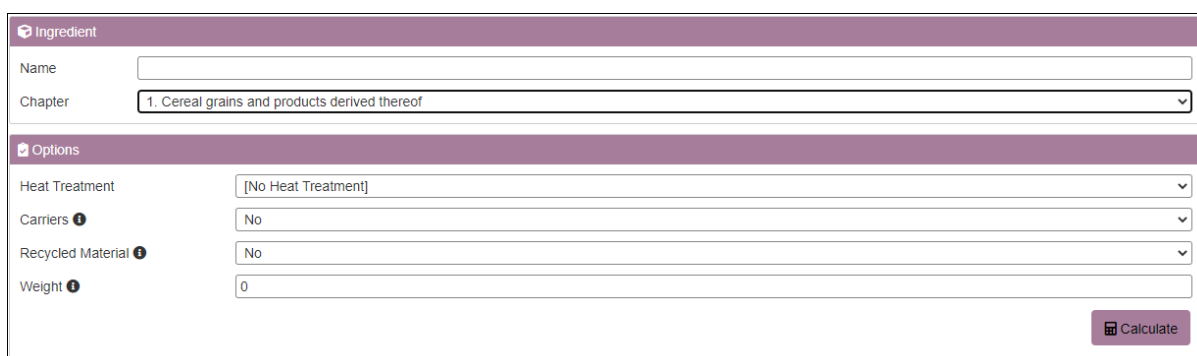
The 'Saved Calculations' section shows a list of saved calculations. The first entry is '1. 1. 1 Barley'. To the right of the list are two buttons: 'Load' and 'Delete'.

The Feed Materials Register Calculator Tool



The Feed Materials Register Calculator Tool can be used to support a risk assessment in developing an analysis schedule 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'.

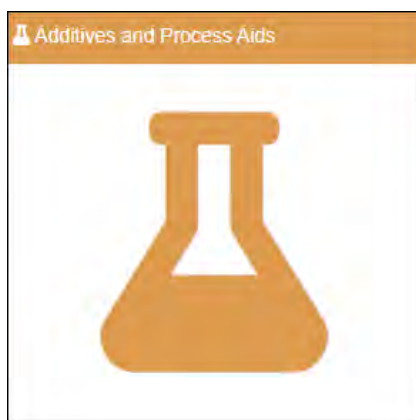


The screenshot shows a web form titled "Ingredient" with the following fields:

- Name:** A text input field.
- Chapter:** A dropdown menu with the selected option "1. Cereal grains and products derived thereof".
- Options:** A section containing four fields:
 - Heat Treatment:** A dropdown menu with the selected option "[No Heat Treatment]".
 - Carriers:** A dropdown menu with the selected option "No".
 - Recycled Material:** A dropdown menu with the selected option "No".
 - Weight:** A text input field with the value "0".
- Calculate:** A button with a calculator icon and the text "Calculate".

The Additives, Additive Preparations and Process Aids Calculator Tool

The Additives, Additive Preparations and Process Aids Calculator Tool can be used to support a risk assessment in developing an analysis schedule for feed additives, feed additive preparations and process aids. Analysis requirements are determined based on 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 support their risk assessment in developing an analysis schedule.



- 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
- 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'.

Additive / Process Aid

Name

Raw Material Types

- Biological (Animal)
- Biological (Plant / Fungus)
- Non-Biological

Process Types

- Chemical Reaction (including Electrolysis)
- Extraction (Aqueous, Other Solvents)
- Fermentation
- Mining, Quarrying
- Refining

Options

Heat Treatment

Carriers

Recycled Material

Weight

Calculate

Calculator Tools Application

It should be noted that the 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 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 Calculator tools.

The 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 other businesses in the feed supply chain.

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

Guidance for Participants Producing Mixtures

The Calculator must also be used by Participants producing mixtures. Each component (feed materials, additives and processing aids) within the mixture should be evaluated using the relevant Calculator to determine the analyses required. Depending on their risk assessments, producers may decide to carry out the analysis on the feeds they produce or the components from which they are derived, whichever is most effective to maintain feed safety. Participants will be required to evidence their decision-making process at audit.

Guidance for Participants Merchanting Mixtures

The Calculator must also be used by Participants merchanting mixtures. Each component (feed materials, additives and processing aids) indicated on the label should be evaluated using the relevant Calculator to determine the analyses required for the mixture.

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.

Q: What does the term “heat treatment” mean?

A: Heat treatment should be considered as any part of the process where heat is applied. It includes direct heating or indirect heating. Examples of where heat can be applied include: cooking, drying, kilning, conditioning, etc.

Derogation Applications

If a Participant's risk assessment indicates that the number of tests required by the 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 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, also available for download from the AIC website. 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

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 Calculator Derogation Request Form

CALCULATOR – REQUEST FOR A DEROGATION AGAINST REQUIRED ANALYSIS	
FEMAS PARTICIPANT NAME	
FEMAS PARTICIPANT ID	
SCOPE OF CERTIFICATION	
CONTACT NAME	
LEGAL FEEDNAME DEROGATION REQUEST APPLIES TO (AS PER THE CATALOGUES OF FEED MATERIALS, REGISTERS OF FEED MATERIALS OR REGISTERS OF FEED ADDITIVES)	
VOLUME OF FEED TRADED/ YEAR (TONNES FOR FEED MATERIALS OR KG FOR ADDITIVES, ADDITIVE PREPARATIONS AND PROCESSING AIDS)	
ANALYSIS REQUIRED BY THE CALCULATOR (PLEASE INCLUDE THE PDF DOWNLOAD FROM THE CALCULATOR)	
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>	

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

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