GUIDANCE

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Guidance on the identity, characterisation and conditions of use of feed additives

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Abstract

This guidance document is intended to assist the applicant in the preparation and the presentation of an application, as foreseen in Article 7.6 of Regulation (EC) No 1831/2003, for the authorisation of additives for use in animal nutrition. It specifically covers the identity, characterisation and conditions of use of the additives.

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Background and Terms of Reference

Regulation (EC) No 1831/2003[1] establishes the rules governing the Community authorisation of additives for use in animal nutrition. Moreover, Regulation (EC) No 429/2008[2] provides detailed rules for the implementation of Regulation (EC) No 1831/2003 as regards the preparation and the presentation of applications and the assessment and the authorisation of feed additives.

The Panel on Additives and Products or Substances used in Animal Feed (FEEDAP Panel) has adopted a series of guidance documents which aim at complementing Regulation (EC) No 429/2008 to support applicants in the preparation and submission of technical dossiers for the authorisation of additives for use in animal nutrition according to Regulation (EC) No 1831/2003.

The European Food Safety Authority (EFSA) asked its FEEDAP Panel to:

1) identify from the current guidance documents, those that need to be updated, taking into consideration the most recent scientific developments and the experience gained in the assessment of feed additives;
2) update the guidance documents in need of revision accordingly; this activity can be conducted in different rounds of activities on the basis of the priorities identified and on the feasibility of the revision according the resources available;
3) taking into account the sensitivity and the relevance of some of the guidance documents under revision and the entity of the revision itself (e.g. substantial or not), consider initiatives like preparatory info-sessions or public consultations of the draft guidance documents. The relevant comments received in either step will have to be considered and addressed if appropriate in the final version of the guidance documents.

The first of the terms of reference was addressed by a statement of the EFSA FEEDAP Panel (2016), in which it was identified the need to update most of the guidance documents that it produced and set priorities for this update.

This output addresses the second and third terms of reference with regard to the update of the guidance documents dealing with the assessment of the identity and characterisation of feed additives. This guidance document underwent a public consultation (EFSA, 2017).

Scope of the guidance

This guidance document is intended to assist the applicant in the preparation and the presentation of its application, as foreseen in Article 7.6 of Regulation (EC) No 1831/2003. This document does not substitute for the obligation of an applicant to comply with the requirements of Regulation (EC) No 1831/2003 and its implementing rules.

In particular, this guidance document is intended to provide the information necessary to properly identify and characterise a feed additive as required in Section 2 of Annex II and the relevant sections of Annex III of Regulation (EC) No 429/2008.

1. Introduction

For the purpose of this guidance, the following definitions apply:

- Active agent: any viable microorganism intended to be used as/in a feed additive that provides the intended effect.
- Active substance: any substance[3] or mixture of substances intended to be used as/in a feed additive that provides the intended effect.
- Feed additive: substances, microorganisms or preparations[4] other than feed materials and premixtures which are intentionally added to feed or water in order to perform one or more functions mentioned in Article 5.3 of Regulation (EC) No 1831/2003.

[1] Regulation (EC) No 1831/2003 of the European Parliament and of the Council of 22 September 2003 on additives for use in animal nutrition. OJ L 268, 18.10.2003, p. 29.
[2] Commission Regulation (EC) No 429/2008 of 25 April 2008 on detailed rules for the implementation of Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards the preparation and the presentation of applications and the assessment and the authorisation of feed additives. OJ L 133, 22.5.2008, p. 1
[3] For compounds of trace elements, the trace element itself is considered the active substance.
[4] Commission Regulation (EU) 2015/327 of 2 March 2015 amending Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards requirements for the placing on the market and conditions of use of additives consisting of preparations. OJ L 58 3.3.2015 p. 46.

The numbering in the sections below follows the same numbering as the Section 2 of Annex II of Regulation (EC) No 429/2008.

Reasons should be given for the omission from the dossier of any data prescribed there.

2. Identity, characterisation and conditions of use of the additive; methods of analysis

2.1. Identity of the additive

The additive has to be fully identified and characterised. The studies described in this section must be based on the final product(s), for which authorisation is sought. In-house identifiers should be avoided unless embedded in old or third-party documents. In this case, a statement is required to confirm that the identifier(s) refers to the formulation(s) for which the application is made.

2.1.1. Name of the additive

The name of the additive should be given. It should be indicated if the additive consists of one or more active substance(s)/agent(s) and whether it consists of a preparation. A trade name may be used in the dossier to identify the additive and its formulations.

2.1.2. Proposal for classification

The applicant should specify the intended effect of the additive in animal nutrition and make a proposal for the classification of the additive in one or more categories and functional groups according to its main functions under Article 6 and Annex I of Regulation (EC) No 1831/2003.

For 'substances for reduction of the contamination of feed by mycotoxins', the target mycotoxin(s) should be specified.

For 'hygiene condition enhancers', the target microorganisms should be specified.

Any data from other known uses of the identical active substances or agents (e.g. use in food, human or veterinary medicine, agriculture and industry) must be provided. Any other authorisation as feed or food additive, veterinary drugs or other kind of authorisations of the active substance(s)/agent (s) has to be specified and properly referenced.

2.1.3. Qualitative and quantitative composition (active substance/agent, other components, impurities, batch-to-batch variation)

The composition of the additive should be fully described, giving the proportion of the different components by weight. In some cases, the active substance(s) or active agent(s) and the additive can be considered as synonymous.

The applicant should propose a specification of the product as it relates to the concentration of the active substance(s)/agent(s). Evidence should be provided by the analysis of at least five independent production batches that this specification is satisfied in practice. For additives for which commercial batches are not yet available, pilot batches may substitute provided that these adequately represent the intended manufacturing process. If an application for an additive covers different manufacturing methods or origins/sources, data from at least five batches should be provided for each.

Data to establish the identity of the active substance(s)/agent(s) of the additive should be provided using analytical methods with adequate characteristics of selectivity, sensitivity, accuracy and precision. Where available, the methods used for the analytical determination of the active substance(s)/agent(s) should be those with international recognition. Certificates of analysis (preferably produced within the last 5 years) indicating the analytical values should be attached. Statements of compliance alone are not considered sufficient.

- For microorganisms: number of viable cells expressed as colony forming units (CFU) per gram should be determined for each active agent.
- For enzymes: each declared (main) activity should be described and the number of units of each activity given. Other activities present should also be mentioned. The units of activity should be defined preferably as μmoles of reaction product released per minute from the substrate at a specified pH and temperature.
- For mineral substances: denomination and specification should follow internationally recognised systems, where applicable.

– For 'substances for reduction of the contamination of feed by mycotoxins' which act by binding, the mycotoxin binding capacity should be provided.

If the additive is a mixture of active substances or agents, each of which is clearly definable (qualitatively and quantitatively), the active substances/agents must be described and the proportions in the mixture given.

Other additives in which not all constituents can be identified (typically plant extracts) should be characterised by the constituent(s) contributing to its activity. Applicants should make reasonable efforts to fully describe the components of the mixture.

For preparations, information on the supporting compound(s) including the justification for inclusion and intended inclusion level should be provided.

2.1.4. Impurities

The applicant should identify and quantify microbiological and chemical (including residual solvents) impurities, substances with toxic or other undesirable properties that are not intentionally added and do not contribute to the activity of the additive. The applicant should describe which impurities are monitored on a routine basis, the frequency of testing and the action limits set for each monitored impurity. Action limits for contaminants and impurities should respect existing legislation (e.g. Directive 2002/32/EC[5] or specifications from European Union (EU) food additive authorisations) and recommendations from internationally recognised sources when these are available (e.g. the Joint FAO/WHO Expert Committee on Food Additives (JECFA) specifications for enzymes; Commission recommendation on the presence of deoxynivalenol, zearalenone, ochratoxin A, T-2 and HT-2 and fumonisins in products intended for animal feeding; maximum levels for residual solvents used in veterinary drugs (Veterinary International Conference on Harmonisation (VICH) guidance GL18 (EMA, 2010)).

Analytical data on the impurities should be provided for at least three production batches, produced within the last 5 years. If an application for an additive covers different manufacturing methods or origins/sources, data from at least three batches should be provided for each. Certificates of analysis indicating the analytical values should be provided; statements of compliance alone are not considered sufficient. The limits of detection (LOD) and quantification (LOQ) of the analytical methods should be given.

Any substance produced via fermentation should be free of antimicrobial activities relevant to the use of antibiotics in humans or animals (see Section 2.2.2.2). In addition, the absence of production organisms in the additive should be confirmed. For fermentation products in which the production strain has genes conferring antibiotic resistance and for products produced with genetically modified microorganisms (GMMs), the absence of the DNA from the production strain in the final product should be demonstrated. For details on how to perform this assessment, please refer to the Guidance on the characterisation of microorganisms used as feed additives or as production organisms.

As a guide, the following should be considered as minimum requirements:

- for microorganisms: microbiological contamination (at least *Salmonella*, Enterobacteriaceae, total yeasts and filamentous fungi, *Bacillus cereus* for bacilli) and depending on the fermentation media and excipients, mycotoxins,[6] lead, mercury, cadmium and arsenic;
- for fermentation products (not containing microorganisms as active agents): in addition to the above, the extent to which spent growth medium is incorporated into the final product should also be indicated. For products consisting of or produced by Gram-negative bacteria, levels of lipopolysaccharides (LPS) should be analysed in the final product. If the production strain is known to be able to produce toxic compounds, the analysis should cover such compounds (see Guidance on the characterisation of microorganisms used as feed additives or as production organisms[7]);
- for plant-derived substances: microbiological and botanical contamination, mycotoxins, dioxins and the sum of dioxins and dioxin-like polychlorinated biphenyls (PCBs), pesticides,[8] lead, mercury, cadmium and arsenic;

[5] Directive 2002/32/EC of the European parliament and of the council of 7 May 2002 on undesirable substances in animal feed. OJ L 140, 30.5.2002, p.10.

[6] The selection of mycotoxins for analysis should be made according to the different matrices, where appropriate.

[7] Currently under discussion. The link to the guidance will be added as soon as it will be published.

[8] Residues specified under the undesirable substances directive (Directive 2002/32/EC) and any other pesticide residues of potential concern to target animals and/or consumer safety.

- for animal-derived substances: microbiological contamination, lead, mercury, cadmium and arsenic;
- for mineral substances, including compounds of trace elements: lead, mercury, cadmium, arsenic and fluorine, dioxins and the sum of dioxins and dioxin-like PCBs;
- for products produced by chemical synthesis and processes: all chemicals used in the synthetic processes and any intermediate products remaining in the final product shall be identified and their concentrations given.

2.1.5. Physical state of each form of the product

For liquid additives, data on vapour pressure, viscosity, specific weight and, where the additive is intended to be used in water, (pH dependent) solubility or dispersibility should be provided.

For solid additives, data on density, bulk density and dusting potential should be provided for each formulation. For applications covering multiple sources of the additive, these data should cover a representative range of the materials under application.

Dusting potential should be measured (at least three batches) following recognised methods, e.g. rotating drum (Stauber–Heubach, DIN 55992, EN 15051) or continuous drop methods (EN 15051), and expressed in mg/m^3 air. When an occupational exposure limit is set or where there is a known or suspected toxicity after inhalatory exposure, the concentration of the active substance in the dust and particle size distribution of the dust should be measured, preferably by laser diffraction (ISO 13320:2009), means or medians should be expressed in relation to volume, to allow an exposure estimation to be made.

If the nature of the additive allows the possibility of the presence of nanoparticles, initially a particle size analysis of the additive by laser diffraction should be made. If the particle size analysis of the additive indicates that more than 1% of particles below 1 μm are present, this fraction should be further characterised by scanning electronic microscopy (wet method). Results should be expressed as a proportion of total number of particles. It should be clearly indicated if the product is a nanomaterial as defined by European legislation.[9]

2.2. Characterisation of the active substance(s)/agent(s)

2.2.1. Description

A qualitative description of the active substance or agent should be given. This should include purity and origin of the substance or agent, plus any other relevant characteristics.

Data to establish the identity of the active substance(s)/agent(s) should be provided using analytical methods with adequate characteristics of selectivity, sensitivity, accuracy and precision.

An overview of the natural occurrence of the active substance(s) in materials used as feed/food should be provided.

2.2.1.1. Chemical substances

Chemically defined substances should be described by generic name, chemical name according to the International Union of Pure and Applied Chemistry (IUPAC) nomenclature, other generic international names and abbreviations and the Chemical Abstract Service (CAS) number and the European Inventory of Existing Commercial chemical Substances number (EINECS), European Community number and European Enzyme Commission number if available. The structural and molecular formula, the openSMILES notation and the molecular weight must be included. Where relevant, the isomeric forms should be given. Information on structurally related substances should be included, when appropriate.

For chemically defined compounds used as flavourings, the EU Flavour Information System (FLAVIS) number in connection with relevant chemical group should be included.

For additives of plant origin, the characterisation should include the scientific name of the plant of origin and its botanical classification (family, genus, species, if appropriate subspecies). The parts of the plant used to obtain the active substance(s) (e.g. leaves, flowers, seeds, fruits, tubers, roots)

[9] Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 OJ L 304, 22.11.2011, p. 18–63.

should be indicated. The identification criteria and other relevant aspects of the plants should be indicated. For complex mixtures of many compounds obtained by an extraction process, it is recommended to follow the relevant terminology such as essential oil, absolute, tincture, extract and related terms widely used for botanically defined flavouring products to describe the extraction process. Reasonable efforts should be made to identify and quantify all components of the mixture. One or more marker compounds should be selected, which will allow the additive to be identified in the different studies. Information on the variability in composition of comparable products should be provided. This could be done by reference to published literature.

For natural products of non-plant origin, an equivalent approach to the above may be used.

Additives in which not all constituents can be identified should be characterised by the constituent (s) contributing to its activity. One or more marker compounds should be selected which will allow the additive to be identified in the different studies.

For clays' data on elemental and mineralogical composition as well as information on the structure should be provided by appropriate methods (e.g. atomic absorption spectrophotometry, X-ray diffraction, differential thermal analysis).

For enzyme and enzyme preparations, the number and systematic name proposed by the International Union of Biochemistry (IUB) in the most recent edition of 'Enzyme Nomenclature' should be given for each declared activity. For activities not yet included, a systematic name consistent with the IUB rules of nomenclature shall be used. Trivial names are acceptable provided that they are unambiguous and used consistently throughout the dossier, and they can be clearly related to the systematic name and IUB number at their first mention.

When the active substance(s)/agent(s) is/are supplied by a third party, the requirements/ specifications (e.g. purity and impurities with safety relevance) set by the applicant should be provided.

For chemical substances produced by fermentation, the microbial origin should also be described (see Section 2.2.1.2).

2.2.1.2. Microorganisms

The name and taxonomic classification of each microorganism should be provided (genus, species, subspecies (if appropriate)), according to the latest published information in the International Codes of Nomenclature (ICN). Microbial strains should be deposited in an internationally recognised culture collection having acquired the status of International Depositary Authority under the Budapest Treaty (preferably in the EU) and maintained by the culture collection for the authorised life of the additive. A certificate of deposition from the collection, which should specify the accession number under which the strain is held, must be provided.

For all microorganisms, whether used as an active agent or as a production strain, the origin shall be provided and any history of strain development should be indicated. It should be clearly stated whether the microorganism is genetically modified or not within the meaning of the legislation (Directive 2001/18/EC). For GMMs, the genetic modification should be described.

For details on how to address the above, refer to the Guidance on the characterisation of microorganisms used as feed additives or as production organisms.

2.2.2. Relevant properties

2.2.2.1. Chemical substances

Description of physical and chemical properties should be given. Dissociation constant, pKa, melting point, boiling point, density, vapour pressure, specific optical rotation, (pH dependent) solubility in water and in organic solvents, K_{ow} and K_d/K_{oc} and any other relevant physical properties should be provided, as appropriate.

2.2.2.2. Microorganisms

Toxins and virulence factors

Toxins or virulence factors should be demonstrated to be absent or of no concern in microorganisms used as additives or as production strain.

Antibiotic production and antibiotic resistance

Microorganisms used as additives or as production strains should be free of antibiotic activity or should not be capable of producing antibiotic substances that are relevant as antibiotics in humans and animals.

Microorganisms used as feed additives or as production strains should not add to the pool of antimicrobial resistance genes already present in the gut bacterial population or otherwise increase the risk of transfer of antimicrobial resistance. Consequently, all strains of bacteria should be tested for susceptibility to antibiotics in use in human and veterinary medicine.

For details on how to address the above, refer to the Guidance on the characterisation of microorganisms used as feed additives or as production organisms.

2.3. Manufacturing process, including any specific processing procedures

To define the critical points of the process that may have an influence on the purity and impurities of the active substance(s)/agent(s) or the additive, a detailed description of the manufacturing process should be given.

2.3.1. Active substance(s)/agent(s)

A detailed description of the production process (e.g. chemical synthesis, fermentation, cultivation, extraction from organic material or distillation and downstream purification steps) used in the production of the active substance(s)/agent(s) of the additive should be submitted if appropriate supported by a flowchart. The use of any antimicrobial substances during the production process should be declared. The composition of the fermentation/cultivation media should be provided.

For GMMs used as production strains and grown under contained conditions, Directive 2009/41/EC applies.

2.3.2. Additive

A detailed description of the manufacturing process of the additive should be submitted. The key stages in the preparation of the additive including the point(s) of introduction of the active substance (s)/agent(s) and other components, and any subsequent process steps affecting the additive should be provided if appropriate supported by a flow chart.

2.4. Physical–chemical and technological properties of the additive

2.4.1. Stability

Stability is generally measured by the analytical follow-up of the active substance(s) (e.g. mg/kg) or agent(s) (e.g. CFU/kg) or its activity (e.g. units of catalytic activity/kg) or effects (e.g. pellet durability) during time. When the additive contains more than one active substance/agent, stability should be assessed for each of the active substance(s)/agent(s). If specific effects are claimed for a particular form of the additive (e.g. chelation), the stability of that specific form of the additive should be followed. For some chemical mixtures/extracts, stability may be assessed by monitoring the concentration of one or more appropriate marker substances. Data should include at least one observation at the beginning and one at the end of the storage period.

Where appropriate, potential degradation or decomposition products should be characterised.

Stability studies are normally not required for mineral-based additives.

2.4.1.1. Shelf life of the additive

Data should be produced which allows a realistic estimate of the shelf life of each formulation of the additive to be made. This should be based on studies performed under the recommended storage conditions, which should be specified. Data should be provided from at least three batches of the additive.

2.4.1.2. Stability of the additive used in premixtures and feedingstuffs

Stability studies in feedingstuffs are not required for silage additives and flavouring compounds.

The stability of the additive at the recommended inclusion level should normally be studied in feedingstuffs manufactured and stored under practical conditions and, if relevant, in premixtures. The quantitative and qualitative composition of the premixtures or the feedingstuffs used for the studies should be given. When different formulations exist likely to impact on the stability of the additive, then each formulation should be separately assessed.

For those additives intended to have an effect in feed, data provided should cover a representative range of feedingstuffs (generally at least one batch of the additive in three feeds) relevant to the use of the additive. The assessment of stability in feed may be done by the maintenance of the effects. Duration of stability studies in feedingstuffs should reflect the technological role of the additive. For those additives in which the effect is dependent on a modification of the chemical structure of the active substance (e.g. antioxidants), degradation products should also be identified and further assessed, if necessary.

For other additives, stability studies in feedingstuffs and premixtures should be of at least 3 and 6 months' duration, respectively. When the additive is intended to be incorporated via a premixture, stability should be tested in one typical premixture containing trace elements. Stability studies in feedingstuffs should reflect the diversity of rations for different animal species (generally one batch of the additive in at least three feeds). When relevant, stability in feedingstuffs should be determined in both mash and further processed feed (e.g. pelleted or extruded) and should allow an assessment of the influence of the processing.

2.4.1.3. Stability of the additive in water

The stability of the additive intended to be distributed via water for drinking should be studied at the recommended inclusion level and under conditions simulating practical use (e.g. water temperature, time) for a minimum duration of 48 h. These data should also take into consideration the presence of excipients that could trigger growth of contaminating microorganisms.

For those silage additives intended for application through an aqueous suspension/solution, short-term stability (48 h) should be demonstrated.

2.4.2. Homogeneity

Homogeneity studies are not required for silage additives, flavouring compounds, colourings which add or restore colour to feed or those that colour ornamental birds or fish and for those additives intended to have an effect in feed for which efficacy has been demonstrated.

For the other additives, the capacity for homogeneous distribution of the feed additive in premixtures, feedingstuffs or water should be demonstrated, as appropriate. As a guide, the content of the additive should be analysed in a minimum of 10 subsamples from a single batch (of the premixture or feedingstuff) and the coefficient of variation calculated. If homogeneity is demonstrated in the final feedingstuff, there is no need to demonstrate homogeneity in premixtures. For those additives intended to be distributed via the water for drinking, homogeneity studies are not required provided that the additive is soluble/miscible at its proposed concentration of use.

2.4.3. Other characteristics

Any other relevant characteristics should be described.

2.4.4. Physicochemical interactions in feed

Physicochemical incompatibilities or interactions that could be expected in feed with feed materials, carriers, other approved additives or medicinal products must be documented.

For clays and other substances that act by binding and for all 'substances for reduction of the contamination of feed by mycotoxins', evidence must be provided that the use of the additive under the proposed conditions of use does not interfere with the analytical determination of mycotoxins in feed.

The applicant should ensure that there is physicochemical and biological compatibility between the components of the preparation which is placed on the market and used as defined in Regulation (EU) No 2015/327.[10]

[10] Commission Regulation (EU) 2015/327 of 2 March 2015 amending Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards requirements for the placing on the market and conditions of use of additives consisting of preparations. OJ L 58, 3.3.2015, p. 46.

2.5. Conditions of use of the additive

2.5.1. Proposed mode of use in animal nutrition

The animal species or categories, age group or production stage of animals for which the additive is intended to be used should be indicated.

The use and level of inclusion (as recommended, minimum or maximum concentration) in feed materials, complete feedingstuffs (containing 12% moisture) or water for drinking should be defined, as appropriate. If a particular use in complementary feedingstuffs or feed materials for some animal species or categories is intended, the (daily) dose should be proposed and justified. For some additives, it may be more appropriate to propose a use level per head (or unit body weight) and day. In such cases, the corresponding value expressed per kg complete feed should be estimated.

For additives intended to be used in water for drinking, the concentrations in water can be derived from the proposed use level in feed, considering that for poultry, pigs and rabbits, the water intake would be 2–3 times higher than feed intake (in dry matter). For ruminants and horses, the conversion of feed concentration to water concentration should be done on the basis of the daily ration. Concentrations of an additive cannot be consistently extrapolated from feed to water in ruminants using a fixed ratio of feed to water intake. However, these concentrations can be converted to amounts of a daily dose which can then be equally administered in a part of feed or water for drinking.

The duration of administration and any withdrawal period should be indicated.

Possible contraindications or restrictions in the handling or use of the additive should be mentioned.

2.5.2. Information related to user safety

2.5.2.1. Chemical substances

A safety data sheet formatted in accordance with the requirements of Regulation (EC) No 1907/2006[11] must be provided. If necessary, measures for the prevention of occupational risks and means of protection during manufacture, handling, use and disposal should be proposed. All other related provisions or assessments should be provided.

2.5.2.2. Microorganisms

A classification according to Directive 2000/54/EC should be submitted. For microorganisms not classified in group 1 in this Directive,[12] information should be provided to customers to allow them to take the relevant protection measures for their workers, as defined in Article 3 (2) of the said Directive.

2.5.2.3. Labelling requirements

Without prejudice to the labelling and packaging provisions laid down in Article 16 of Regulation (EC) No 1831/2003, any specific labelling requirements and, where appropriate, specific conditions for use and handling (including known incompatibilities and contraindications) and instructions for proper use should be indicated.

2.6. Methods of analysis and reference samples

Methods of analysis to determine the active substance(s)/agent(s) in the additive itself and in premixtures and feedingstuffs as appropriate should be submitted. These should be suitable for the official control of the feed additive. If there are residues of concern, a method of analysis of the active substance and/or its metabolites (including the marker residue) in the relevant tissues/products should be provided.

These methods will be evaluated by the EU Reference Laboratory (EURL). Details of the requirements are specified in Regulation (EC) No 429/2008. Applicants should refer to the guidance provided by the EURL.

[11] Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. OJ L 396, 30.12.2006, p. 1.

[12] In practice, in the absence of any entries under group 1, this information would be required for all microorganisms.

Methods to determine the identity and the characteristics of the additive (composition of the additive, impurities, physical and chemical properties) should be internationally recognised or otherwise fully described.

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Glossary

Active agent	Any viable microorganism intended to be used as/in a feed additive that provides the intended effect.
Active substance	Any substance or mixture of substances intended to be used as/in a feed additive that provides the intended effect.
Feed additive	Substances, microorganisms or preparations other than feed materials and premixtures which are intentionally added to feed or water in order to perform one or more functions mentioned in Article 5.3 of Regulation (EC) No 1831/2003.
Formulation	The formulation is the final presentation of the feed additive intended to be placed in the market. A formulation is the mixture of the active substance(s)/agent(s) (or preparations) with other ingredients in order to standardise the additive, improve its properties or modify its safety or efficacy.
Specification	Set of requirements to be satisfied by all batches of a feed additive. This usually includes a minimum content of the active substance(s)/agent(s). It could also include maximum levels for certain impurities set on safety grounds.

Abbreviations

CAS	Chemical Abstracts Service
CFU	colony-forming units
EINECS	European Inventory of Existing Commercial Chemical Substance number
EURL	European Union Reference Laboratory
FEEDAP	The Panel on Additives and Products or Substances used in Animal Feed
FLAVIS	The EU Flavour Information System
GMM	genetically modified microorganism
ICN	International Codes of Nomenclature
IUB	International Union of Biochemistry
IUPAC	International Union of Pure and Applied Chemistry
JECFA	The Joint FAO/WHO Expert Committee on Food Additives
LOD	limit of detection
LOQ	limit of quantification
LPS	lipopolysaccharides
PCB	polychlorinated biphenyl
SMILES	Simplified Molecular Input Line Entry Specification
VICH	Veterinary International Conference on Harmonisation