

SVENSK STANDARD

SS-EN ISO 6498:2012



Fastställt/Approved: 2012-06-25
Publicerad/Published: 2012-07-02
Utgåva/Edition: 1
Språk/Language: engelska/English
ICS: 65.120

Djurfoder – Riktlinjer för provberedning (ISO 6498:2012)

Animal feeding stuffs – Guidelines for sample preparation (ISO 6498:2012)



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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 6498

June 2012

ICS 65.120

English Version

**Animal feeding stuffs - Guidelines for sample preparation (ISO
6498:2012)**

Aliments des animaux - Lignes directrices pour la
préparation des échantillons (ISO 6498:2012)

Futtermittel - Leitfaden für die Probenvorbereitung (ISO
6498:2012)

This European Standard was approved by CEN on 31 May 2012.

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Foreword

This document (EN ISO 6498:2012) has been prepared by Technical Committee CEN/TC 327 "Animal feeding stuffs - Methods of sampling and analysis", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 34 "Food products".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2012, and conflicting national standards shall be withdrawn at the latest by December 2012.

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Animal feeding stuffs — Guidelines for sample preparation

1 Scope

This International Standard specifies guidelines for the preparation of test samples from laboratory samples of animal feeding stuffs, including pet foods.

NOTE 1 The guidelines mostly derive from those developed by AAFCO (see Reference [7]).

The guidelines are overruled by special instructions and regulations for sample preparation demanded by specific analysis methods.

NOTE 2 Such analysis methods are developed by ISO and CEN.

NOTE 3 This International Standard does not include special guidelines for sample preparation for microbiological analysis of microorganisms like yeasts, bacteria and moulds. Nonetheless, for microorganisms which are used as feed additives (probiotics), some important aspects of sample preparation are addressed.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1 Definitions concerning “sample”

2.1.1

lot

quantity of material that is assumed to be of the same production process and represented by specified sampling rules

NOTE For the purposes of this International Standard, the rules are those of Commission Regulation (EC) No. 152/2009.^[3]

2.1.2

laboratory sample

sample as prepared (from the lot) for sending to the laboratory and intended for inspection or testing

2.1.3

test sample

subsample or sample prepared from the laboratory sample and from which test portions will be taken

2.1.4

test portion

quantity of material drawn from the test sample (or from the laboratory sample if both are the same)

2.1.5

reserve sample

material left over from the laboratory sample when divided or subsampled test samples have been taken and on which no further particle size reduction is done

NOTE If, for example, mycotoxin or genetically modified organism analyses are done on the whole laboratory sample, then the reserve sample is also reduced to the corresponding particle sizes. The reserve sample should be stored under conditions maintaining integrity.

2.2 Definitions concerning “parameters”

2.2.1

parameter

analyte or constituent or microorganism for which the feeding stuff is to be analysed by microscopic, microbiological, biological or chemical procedures

2.2.1.1

stable parameter

analyte or constituent or microorganism which does not degrade during sample preparation on common handling or storage at room temperatures of 20 °C to 25 °C

2.2.1.2

unstable parameter

analyte or constituent or microorganism which degrades during sample preparation on common handling or storage at room temperatures of 20 °C to 25 °C because they are volatile, degradable, or sensitive to temperature, light, enzymatic degradation or chemical oxidation

NOTE Stability of parameters in this context refers only to the influence of sample preparation, such as intensive grinding, and not to a minimum shelf-life specified by producers or on the label, e.g. for a feed (additive).

Table 1 — Classification (in general) of stable or unstable parameters and reasons for degradation with a view to sample preparation

Origin	Stable parameters	Unstable parameters	Reason(s) for degradation/change
Nutrients	(Crude) protein, fat, ash, fibre	Moisture	Temperature (volatile)
	Starch, sugar, lactose	Ammonia	Temperature (volatile)
	Gas production and enzyme-soluble organic substance production in <i>in vitro</i> tests	Organic acids (e.g. lactic acid, acetic acid, butyric acid, fumaric acid, formic acid)	Temperature (volatile)
	Minerals (e.g. Ca, P, Mg, Na, K, Cl)	Unsaturated fatty acids	Air oxidation (can result in production of short-chain fatty acids)
Feed additives	Trace elements (e.g. Cu, Zn, Mn, Fe, Se, Co)	Vitamins (e.g. vitamin A, C, D, E)	Temperature, ultraviolet (UV) light, air oxidation (sensitive)
	Amino acids (e.g. lysine, methionine, tryptophan)	1,2-Propanediol, ethylene glycol	Temperature (volatile)
	Enzymes (e.g. phytases, non-starch polysaccharide enzymes)	Microorganisms like probiotics (e.g. <i>Saccharomyces cerevisiae</i> , <i>Enterococcus faecium</i>)	Temperature (freezing), pressure (sensitive to grinding); moisture/dryness (influences growth of microorganisms)
Undesirable substances	Heavy metals (e.g. As, Pb, Cd, Hg)	Mycotoxins (e.g. aflatoxin B ₁ , deoxynivalenol, fumonisins, ochratoxin A, T-2 toxin, HT-2 toxin, zearalenone, ergot alkaloids)	Mould growth and change of mycotoxins possible at room temperature; UV light (sensitive – aflatoxin B ₁)
	Dioxins and polychlorinated biphenyls (PCBs) with similar effects to dioxins	Drugs, antibiotics, pesticides	Temperature (sensitive)
		Hydrocyanic acid	Temperature (volatile)
Banned substances	Proteins of animal origin	Banned drugs, banned antibiotics	Temperature (sensitive)
(Other) Microorganisms		Yeasts, bacteria, moulds	Temperature (sensitive), dryness, influx of oxygen (anaerobiosis)

2.3 Examples of animal feeding stuffs characteristics

Some examples of animal feeding stuffs characteristics are given here to assist with the identification and grouping of a laboratory sample based on the terms and annexes used in these guidelines.

NOTE Definitions of animal feeding stuffs are given in legislation worldwide. Sample definitions from European directives and, for straight feeds, in an alphabetical list from a German committee are given in References [4][5][6][8].

2.3.1

birdseed

seeds that are intended to feed birds

EXAMPLES Grains and oilseeds.

2.3.2

whole cottonseed

unprocessed cottonseed product, including the hulls, lint, and meat

2.3.3

mineral mix

supplementary feed that mainly consists of mineral ingredients in either granular, bead or small pellet form and which is free flowing as an entire mix

NOTE Mineral pellets are an agglomerated mineral mix formed by a mechanical process (in general).

2.3.4

dry feeds

feed ingredient or complete animal feed which typically contains a moisture mass fraction of not more than 15 %

NOTE Dry feed pellets are an agglomerated dry feed produced by a mechanical process (in general).

2.3.5

green fodder

edible parts of plants, other than separated grain, that can provide feed for grazing animals or that can be harvested for feeding, including browse, herbage, and mast

NOTE Generally, the term refers to more digestible material in contrast to less-digestible plant material, known as roughage.

2.3.6

silage

forage preserved in a succulent condition by organic acids produced by anaerobic fermentation of sugars in the forage

2.3.7

roughage

fibrous, coarsely textured parts of plants

EXAMPLES Stovers, straws, hulls, cobs, and stalks.

2.3.8

hay

aerial portion of grass especially cut and dried for animal feeding

2.3.9

haylage

forage preserved in a succulent condition by organic acids produced by anaerobic fermentation of sugars in the forage with a moisture mass fraction of about 45 %