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Animal feeding stuffs - Methods of sampling and analysis - Determination of benzoic and sorbic acid by High Performance Liquid Chromatography (HPLC)

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN 17298:2019 sisaldab Euroopa standardi EN 17298:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 17298:2019 consists of the English text of the European standard EN 17298:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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ICS 65.120, 71.040.40

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ICS 65.120; 71.040.40

English Version

## Animal feeding stuffs - Methods of sampling and analysis - Determination of benzoic and sorbic acid by High Performance Liquid Chromatography (HPLC)

Aliments des animaux - Méthodes d'échantillonnage et  
d'analyse - Dosage de l'acide benzoïque et de l'acide  
sorbique par chromatographie liquide à haute pression  
(CLHP)

Futtermittel - Probenahme- und  
Untersuchungsverfahren - Bestimmung von  
Benzoessäure und Sorbinsäure mittels Hochleistungs-  
Flüssigchromatographie (HPLC)

This European Standard was approved by CEN on 17 June 2019.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 17298:2019) 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.

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 February 2020, and conflicting national standards shall be withdrawn at the latest by February 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association.

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## **Introduction**

Organic acids and their salts such as citric acid, formic acid, lactic acid, acetic acid, propionic acid, fumaric acid, benzoic acid and sorbic acid are animal feed additives which play an important role in animal feeding by improving the animals' performance and decreasing the development of pathogenic microorganisms in the intestine especially in the pig production. Concerning the feed legislation the substances can be used for different purposes depending on its functions and properties. According to their functional principle or their function, the relevant organic acid could be allocated within one or more of the functional groups mentioned in Annex I of Regulation (EC) no. 1831/2003 as preservative, acidity regulators, flavouring compounds, silage additives or other zoo-technical additives.

## 1 Scope

This document specifies a method for the determination of benzoic acid and sorbic acid in animal feeding stuffs by high-performance liquid chromatography method with ultraviolet detection (HPLC-UV).

The method is intended to be used for the determination of benzoic acid and sorbic acid as active substances in feed additives, premixtures, feed materials and compound feed and for benzoic acid in water. This method determines the total extractable concentration of these organic acids and their salts.

It is advisable that the working range of the method is determined for each organic acid by the user of this standard. The lower limit of the working range depends on the matrix and the interferences encountered. It is advisable that a working range between 5 mg/l and 100 mg/l is accessible.

The method was successfully tested in an inter-laboratory study in concentrations between 0,02 % up to 9,0 %.

On the basis of the referred working range, sample weight and extraction volume, limits of quantification (LOQ), as calculated (Table 1) on the basis of a wavelength of 230 nm, can be achievable.

**Table 1 — Limits of quantification (LOQ) at 230 nm**

Organic acid	LOQ (mg/kg)
Benzoic acid	200
Sorbic acid	200

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

EN ISO 6498, *Animal feeding stuffs — Guidelines for sample preparation (ISO 6498)*

## 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **feed additives**

substances, micro-organisms or preparations, other than feed material and premixtures, which are intentionally added to feed or water

[SOURCE: Regulation (EC) No 1831/2003/Article 2/2 a [1]]

### 3.2

#### **animal feeding stuffs**

any substance or product, including additives, whether processed, partially processed or unprocessed, intended to be used for oral feeding to animals

[SOURCE: Regulation (EC) No 178/2002/Article 2/4 [2]]