

**Animal feeding stuffs, animal products,  
and faeces or urine - Determination of  
gross calorific value - Bomb calorimeter  
method**

Animal feeding stuffs, animal products, and faeces  
or urine - Determination of gross calorific value -  
Bomb calorimeter method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 9831:2004 sisaldab Euroopa standardi EN ISO 9831:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 20.02.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 9831:2004 consists of the English text of the European standard EN ISO 9831:2003.</p> <p>This document is endorsed on 20.02.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b></p> <p>This International Standard specifies a method for the determination of the gross calorific value of animal feeding stuffs, animal products and faeces or urine at constant volume in an adiabatic, an isothermal, or a static bomb calorimeter.</p>	<p><b>Scope:</b></p> <p>This International Standard specifies a method for the determination of the gross calorific value of animal feeding stuffs, animal products and faeces or urine at constant volume in an adiabatic, an isothermal, or a static bomb calorimeter.</p>
--	--

ICS 65.120

Võtmesõnad:

**English version**

**Animal feeding stuffs, animal products,  
and faeces or urine**

**Determination of gross calorific value – Bomb calorimeter method  
(ISO 9831 : 1998)**

Aliments des animaux, produits d'origine animale et excréments ou urines – Détermination de la valeur calorifique brute – Méthode à la bombe calorimétrique (ISO 9831 : 1998)

Futtermittel, tierische Produkte und Kot oder Urin – Bestimmung des effektiven Brennwerths – Verfahren mit der kalorimetrischen Bombe (ISO 9831 : 1998)

This European Standard was approved by CEN on 2003-11-13.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Management Centre: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 9831 : 1998 Animal feeding stuffs, animal products, and faeces or urine – Determination of gross calorific value – Bomb calorimeter method,

which was prepared by ISO/TC 34 'Agricultural food products' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 327 'Animal feeding stuffs – Methods of sampling and analysis', the Secretariat of which is held by NEN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by May 2004 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 9831 : 1998 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

## Contents

	Page
1 Scope.....	3
2 Normative references .....	3
3 Definitions .....	4
4 Principle .....	4
5 Reagents and materials.....	4
6 Apparatus .....	5
7 Sampling .....	6
8 Preparation of test sample and test portion .....	6
9 Procedure .....	7
10 Corrections .....	9
11 Expression of results .....	11
12 Precision .....	12
13 Test report .....	13
<b>Annex A</b> (normative) Determination of the effective heat capacity of the calorimeter .....	14
<b>Annex B</b> (normative) Special procedures for preparation of the test sample .....	16
<b>Annex C</b> (informative) Method of checking that the average deviation of the rate of change of temperature is within the specified limit .....	18
<b>Annex D</b> (informative) Examples of calculating the results of calorific determinations .....	20
<b>Annex E</b> (informative) Results of interlaboratory tests.....	24
<b>Annex F</b> (informative) Bibliography .....	25

## 1 Scope

This International Standard specifies a method for the determination of the gross calorific value of animal feeding stuffs, animal products and faeces or urine at constant volume in an adiabatic, an isothermal, or a static bomb calorimeter.

The result obtained by this method is the gross calorific value of the test sample at constant volume, the water of the combustion products being condensed to liquid at the calorimeter temperature.

NOTE The international reference temperature for thermochemistry of 25 °C is used as the reference temperature for calorific value, although the temperature dependence of the calorific value of the materials to which this International Standard applies is small (about  $1 \text{ J} \cdot \text{g}^{-1} \cdot \text{K}^{-1}$ ).

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 651:1975, *Solid-stem calorimeter thermometers.*

ISO 652:1975, *Enclosed-scale calorimeter thermometers.*

ISO 1770:1981, *Solid-stem general purpose thermometers.*

ISO 1771:1981, *Enclosed-scale general purpose thermometers.*

ISO 1928:1995, *Solid mineral fuels — Determination of gross calorific value by the bomb calorimeter method, and calculation of net calorific value.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

ISO 6496:—<sup>1)</sup>, *Animal feeding stuffs — Determination of moisture and volatile matter content.*

ISO 6498:—<sup>2)</sup>, *Animal feeding stuffs — Preparation of test samples.*

---

1) To be published. (Revision of ISO 6496:1983)

2) To be published. (Revision of ISO 6498:1983)