

Food products - Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content - Part 1: Oilseeds and animal feeding stuffs

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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Food products - Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content - Part 1: Oilseeds and animal feeding stuffs (ISO 16634-1:2008)

Produits alimentaires - Détermination de la teneur en azote total par combustion selon le principe Dumas et calcul de la teneur en protéines brutes - Partie 1: Graines oléagineuses et aliments des animaux (ISO 16634-1:2008)

Lebensmittelerzeugnisse - Bestimmung des Gehaltes an Gesamtstickstoff mit dem Verbrennungsverfahren nach Dumas und Berechnung des Gehaltes an Rohprotein - Teil 1: Ölsaaten und Futtermittel (ISO 16634-1:2008)

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Foreword

This document (EN ISO 16634-1:2008) has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" in collaboration with 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of an identical text or by endorsement, at the latest by May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

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Endorsement notice

The text of ISO 16634-1:2008 has been approved by CEN as a EN ISO 16634-1:2008 without any modification.

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Introduction

For a long time the Kjeldahl method has been the most frequently used method for the determination of protein content of food products. However, in recent years, the Kjeldahl method has increasingly been replaced by the Dumas method, which is faster and does not use dangerous chemicals. Although the principles of the two methods are different, both measure the nitrogen content of the product. Nitrogen can be converted into protein content by using an appropriate factor. The value of this factor varies with the relative amounts of different proteins and their amino-acid composition in the given product.

Neither the Dumas nor the Kjeldahl method distinguishes between protein and non-protein nitrogen. In most cases, results obtained by the Dumas method are slightly higher than those of the Kjeldahl method. This is due to the fact that the Dumas method measures almost all of the non-protein nitrogen, whereas the Kjeldahl method measures only a part of it.

Taking into consideration that the calculated protein content of a product by both methods only approximates the true value, it is a matter of discretion which one is accepted. The most appropriate solution should be the use of a second factor for the elimination of the systematic error caused by the non-protein nitrogen content of the different products. However, this second factor has to be determined for each product, like existing factors, which show the ratio of the protein to the nitrogen content.

Food products — Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content —

Part 1: Oilseeds and animal feeding stuffs

1 Scope

This part of ISO 16634 specifies a method for the determination of the total nitrogen content and the calculation of crude protein content of oilseeds and animal feeding stuffs.

This method, like the Kjeldahl method, does not distinguish between protein nitrogen and non-protein nitrogen. For the calculation of protein content, various conversion factors are used (see Annex D).

This method is not applicable to milk and milk products, for which a method is specified in ISO 14891|IDF 185^[10].

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 664, *Oilseeds — Reduction of laboratory sample to test sample*

ISO 665, *Oilseeds — Determination of moisture and volatile matter content*

ISO 771, *Oilseed residues — Determination of moisture and volatile matter content*

ISO 6496, *Animal feeding stuffs — Determination of moisture and other volatile matter content*

ISO 6498, *Animal feeding stuffs — Preparation of test samples*

3 Terms and definitions

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

3.1

nitrogen content

mass fraction of the total nitrogen determined by the procedure specified in this part of ISO 16634

NOTE The mass fraction is expressed as a percentage.