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First edition
2016-05-15

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

Part 2: Cereals, pulses and milled cereal products

Produits alimentaires — Détermination de la teneur en azote total par combustion selon le principe Dumas et calcul de la teneur en protéines brutes —

Partie 2: Céréales, légumineuses et produits céréaliers de mouture



Reference number
ISO 16634-2:2016(E)

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Reagents	2
6 Apparatus	3
7 Sampling	3
8 Preparation of the test sample	3
9 Procedure	4
9.1 General.....	4
9.2 Test portion.....	4
9.3 Control of oxygen supply.....	4
9.4 Calibration.....	5
9.5 Determination.....	5
9.6 Detection and data processing.....	5
10 Calculation and expression of results	6
10.1 Calculation.....	6
10.1.1 Nitrogen content.....	6
10.1.2 Crude protein content.....	6
10.2 Expression of results.....	6
11 Precision	6
11.1 Interlaboratory tests.....	6
11.2 Repeatability.....	7
11.3 Reproducibility.....	7
11.4 Critical difference.....	7
11.4.1 Comparison of two groups of measurements in the same laboratory.....	7
11.4.2 Comparison of two groups of measurements in two different laboratories.....	8
11.5 Uncertainty.....	8
12 Test report	8
Annex A (informative) Flowchart for a basic Dumas apparatus	9
Annex B (informative) Schematic diagrams of suitable types of Dumas apparatus	10
Annex C (informative) Equipment calibration	13
Annex D (informative) Results of interlaboratory tests	15
Bibliography	22

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

This first edition cancels and replaces ISO/TS 16634-2:2009, which has been technically revised.

ISO 16634 consists of the following parts, under the general title, *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*
- *Part 2: Cereals, pulses and milled cereal products*

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Introduction

For a long time, the Kjeldahl method has been the most frequently used method for the determination of the protein content of food products. In recent years, the Dumas method has gained importance compared to the Kjeldahl method because it 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 content can be converted into protein content by using an appropriate factor. The value of this factor varies depending on the relative amounts of different proteins and their amino-acid composition in a 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 because 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 protein content of a product calculated by both methods only approximates to the true value, it is a matter of discretion which one is accepted. The best solution is to use 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 the existing factors which indicate the ratio of the protein content to the nitrogen content.