INTERNATIONAL STANDARD

ISO 5983

Second edition
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Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content — Kjeldahl method

Aliments des animaux — Détermination de la teneur en azote et calcul de la teneur en protéines brutes — Méthode Kjeldahl

Reference number
ISO 5983:1997(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5983 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Subcommittee SC 10, *Animal feeding stuffs*.

This second edition cancels and replaces the first edition (ISO 5983:1979), the procedure of which has been technically revised to exclude the use of mercury as a catalyst.

Annexes A and B of this International Standard are for information only.

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Animal feeding stuffs — Determination of nitrogen content and calculation of crude protein content — Kjeldahl method

1 Scope

This International Standard specifies a method for the determination of the nitrogen content of animal feeding stuffs by the Kjeldahl process, and a method for the calculation of the crude protein content.

This method does not distinguish between protein nitrogen and non-protein nitrogen. If it is important to determine the content of non-protein nitrogen, an appropriate method should be used.

NOTE — Under certain circumstances, full recovery of nitrogen in nitrates and nitrites is not possible by this method.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6498:1983, *Animal feeding stuffs — Preparation of test samples*.

3 Principle

Digestion of organic matter by sulfuric acid in the presence of a catalyst. Rendering of the reaction product alkaline, then distillation and titration of the liberated ammonia. Calculation of the nitrogen content. Multiplication of the result by the conventional factor 6,25 to obtain the crude protein content.

4 Reagents and materials

Use only reagents of recognized analytical grade and distilled or deionized water or water of at least equivalent purity.

The reagents (except the standard materials (4.6)) shall be practically free from nitrogenous compounds.

4.1 Potassium sulfate.

4.2 Catalyst, either 4.2.1 or 4.2.2.

4.2.1 Copper(II) oxide (CuO).

4.2.2 Copper(II) sulfate pentahydrate ($CuSO_4.5H_2O$).

4.3 Sulfuric acid, $c(H_2SO_4)$ = 18 mol/l, $\rho_{20}(H_2SO_4)$ = 1,84 g/ml.

4.4 Paraffin wax.