
INTERNATIONAL STANDARD



937

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Meat and meat products — Determination of nitrogen content (Reference method)

Viandes et produits à base de viande — Détermination de la teneur en azote (Méthode de référence)

First edition — 1978-12-15

UDC 637.5 + 664.9 : 543.846

Ref. No. ISO 937-1978 (E)

Descriptors : meat, meat products, chemical analysis, determination of content, nitrogen.

This document is a preview generated by EVS

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 937 was developed by Technical Committee ISO/TC 34, *Agricultural food products*.

It was submitted directly to the ISO Council, in accordance with clause 6.13.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 937-1969, which had been approved by the member bodies of the following countries :

Australia	Hungary	Romania
Bulgaria	India	South Africa, Rep. of
Canada	Iran	Thailand
Colombia	Ireland	Turkey
Czechoslovakia	Israel	United Kingdom
Egypt, Arab Rep. of	Korea, Rep. of	U.S.S.R.
France	Norway	Yugoslavia
Germany, F.R.	Poland	
Greece	Portugal	

The member bodies of the following countries had expressed disapproval of the document on technical grounds :

Netherlands
New Zealand

Meat and meat products – Determination of nitrogen content (Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the nitrogen content of meat and meat products.¹⁾

2 REFERENCE

ISO 3100, *Meat and meat products – Sampling*.

3 DEFINITION

nitrogen content of meat and meat products: The quantity of nitrogen corresponding to the ammonia produced and determined under the conditions specified below.

4 PRINCIPLE

Digestion of a test portion with concentrated sulphuric acid, using copper(II) sulphate as a catalyst, to convert organic nitrogen to ammonium ions; alkalisation, distillation of the liberated ammonia into an excess of boric acid solution, titration with hydrochloric acid to determine the ammonia bound by the boric acid, and calculation of the nitrogen content of the sample from the amount of ammonia produced.

5 REAGENTS

All reagents shall be of recognized analytical quality. The water used shall be distilled water or water of at least equivalent purity.

5.1 Copper(II) sulphate pentahydrate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$).

5.2 Potassium sulphate (K_2SO_4), anhydrous.

5.3 Sulphuric acid, ρ_{20} 1,84 g/ml.

5.4 Sodium hydroxide solution, carbonate-free, containing approximately 33 g of sodium hydroxide (NaOH) per 100 g of solution.

Dissolve 500 g of sodium hydroxide in 1 000 ml of water.

5.5 Boric acid solution.

Dissolve 40 g of boric acid (H_3BO_3) in water and dilute to 1 000 ml.

5.6 Hydrochloric acid, 0,1 N standard volumetric solution, the normality being known to four decimal places.

5.7 Indicator solution: mixed indicator (methyl red-methylene blue)²⁾, prepared by dissolving 2 g of methyl red and 1 g of methylene blue in 1 000 ml of 95 % (V/V) ethanol.

The colour change of this indicator solution occurs at a pH of 5,4.

Store the indicator solution in a brown bottle in a dark and cool place.

5.8 Boiling regulators.

5.8.1 For the digestion

Glass beads, silicon carbide or splinters of hard porcelain.

5.8.2 For the distillation

Silicon carbide or freshly ignited pieces of pumice stone.

6 APPARATUS

Usual laboratory apparatus not otherwise specified, and the following items:

6.1 Mechanical meat mincer, laboratory size, fitted with a plate with holes of diameter not exceeding 4 mm.

6.2 Greaseproof paper, pieces about 9 cm × 6 cm.

6.3 Burette, 50 ml, complying with ISO/R 385, class A.

6.4 Kjeldahl flask, of not more than 800 ml capacity, provided, if desired, with a pear-shaped glass bulb loosely fitting on top of the neck.

1) See also ISO 1871, *Agricultural food products – General directions for the determination of nitrogen by the Kjeldahl method*.

2) Sometimes known as *Tashiro* indicator.