UDC 637.51/.52 : 543.85

Ref. No. : ISO/R 1443-1970 (E)

Transformed

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 1443

MEAT AND MEAT PRODUCTS

DETERMINATION OF TOTAL FAT CONTENT

1st EDITION

October 1970

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1443, *Meat and meat products – Determination of total fat content*, was drawn up by Technical Committee ISO/TC 34, *Agricultural food products*, the Secretariat of which is held by the Magyar Szabványügyi Hivatal (MSZH).

Work on this question led to the adoption of Draft ISO Recommendation No. 1443, which was circulated to all the ISO Member Bodies for enquiry in February 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	India	Portugal
Bulgaria	Iran	Romania
Chile	Israel	Spain
Czechoslovakia	Korea, Rep. of	Thailand
France	Netherlands	Turkey
Germany	Norway	U.A.R.
Hungary	Poland	United Kingdom

The following Member Body opposed the approval of the Draft :

New Zealand

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 1443 October 1970

MEAT AND MEAT PRODUCTS

DETERMINATION OF TOTAL FAT CONTENT

1. SCOPE

This ISO Recommendation describes a reference method for the determination of the total fat content of meat and meat products*.

2. DEFINITION

By the *total fat* of meat and meat products is meant the fat extracted under the operating conditions described.

The total fat content is expressed as a percentage by mass.

3. PRINCIPLE

Boiling of the test portion with dilute hydrochloric acid to free the occluded and bound lipid fractions, filtration of the resulting mass, drying, and extraction with *n*-hexane or light petroleum, of the fat retained on the filter.

4. REAGENTS

All reagents should be of a recognized analytical quality. Water should be distilled water or water of at least equivalent purity.

4.1 *Extraction solvent*, *n*-hexane or, alternatively, light petroleum distilling between 40 and 60 °C, and having a bromine value less than 1. For either solvent, the residue on complete evaporation should not exceed 0.002 g per 100 ml.

4.2 *Hydrochloric acid*, approximately 4 N solution.

Dilute 100 ml of concentrated hydrochloric acid (ρ_{20} = 1.19 g/ml) with 200 ml of water and mix.

4.3 *Blue litmus paper.*

4.4 *Boiling chips.*

5. APPARATUS

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

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

5.2 *Conical flask*, 250 ml.

* The fat obtained cannot be used for the determination of the characteristics of the fat.

5.3 *Clock glass* or *Petri dish*, diameter not less than 80 mm.

5.4 *Extraction thimble*, made of filter paper and defatted.

5.5 *Cotton wool*, defatted.

5.6 *Extraction apparatus*, continuous or semi-continuous,for example the Soxhlet type, with an extraction flask of about 150 ml capacity.

5.7 *Sand bath or water bath*, electrically heated or similar suitable apparatus.

5.8 *Drying oven*, electrically heated,adjusted to operate at 103 ± 2 °C.

5.9 *Desiccator*, containing an efficient desiccant.

5.10 *Analytical balance.*

5.11 *Fluted filter paper*, qualitative, of medium speed.

6. SAMPLE

6.1 Start from a representative sample of at least 200 g (see ISO Recommendation R ...*, *Meat and meat products – Sampling).*

6.2 Store the sample in such a way that deterioration and change in composition are prevented.

7. PROCEDURE

7.1 Preparation of sample

Render the sample uniform by passing it at least twice through the meat mincer (5.1) and mixing. Keep it in a completely filled air-tight container and store in such a way that deterioration and change in composition are prevented. Analyse the sample as soon as possible, but in any case within 24 hours.

7.2 Test portion

According to the expected fat content, weigh 3 to 5 g of the minced sample to the nearest 0.001 g into the 250 ml conical flask (5.2).

7.3 Determination

Dry the flask of the extraction apparatus (5.6), containing some boiling chips (4.4), for 1 hour at 103 ± 2 °C in the drying oven (5.8). Allow the flask to cool to room temperature in the desiccator (5.9) and weigh to the nearest 0.001 g.

Add to the test portion 50 ml of the hydrochloric acid (4.2) and cover the conical flask (5.2) with a small watch glass. Heat the conical flask on an asbestos wire gauze by means of a gas burner until the contents begin to boil. Continue boiling over a small flame for 1 hour and shake occasionally. Add 150 ml of hot water.

Moisten the fluted filter paper (5.11) held in a glass funnel with water, and pour the hot contents from the flask on to the filter. Wash the flask and the watch glass thoroughly three times with hot water and dry in the oven. Wash the filter with hot water until the washings do not affect the colour of the blue litmus paper (4.3). Put the filter paper on the clock glass or Petri dish (5.3) and dry for 1 hour in the oven at 103 ± 2 °C. Allow to cool.

* In preparation.