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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 930

SPICES AND CONDIMENTS

DETERMINATION OF ACID-INSOLUBLE ASH

1st EDITION
January 1969

For each individual country the only valid standard is the national standard of that country.

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BRIEF HISTORY

The ISO Recommendation R 930, *Spices and condiments – Determination of acid-insoluble ash*, 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 by the Technical Committee led, in 1966, to the adoption of a Draft ISO Recommendation.

In January 1967, this Draft ISO Recommendation (No. 1203) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Greece	Romania
Brazil	Hungary	South Africa, Rep. of
Bulgaria	India	Thailand
Chile	Iran	Turkey
Colombia	Israel	U.A.R.
Czechoslovakia	Korea, Rep. of	United Kingdom
France	Poland	U.S.S.R.
Germany	Portugal	Yugoslavia

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1969, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 930 January 1969

SPICES AND CONDIMENTS

DETERMINATION OF ACID-INSOLUBLE ASH

INTRODUCTION

This ISO Recommendation is applicable to most spices and condiments. In view of the number and variety of such products, however, it may be necessary in particular cases to modify the method or even to choose a more suitable method.

Such modifications and other methods will be indicated in the ISO Recommendations giving specifications for the spices and condiments in question.

1. SCOPE

This ISO Recommendation describes a method for the determination of acid-insoluble ash in spices and condiments.

2. DEFINITION

By *acid-insoluble ash* is meant the part of the total ash, or water-insoluble ash, remaining after treatment with hydrochloric acid under the conditions specified.

3. PRINCIPLE

Treatment of the total ash or of the water-insoluble ash, obtained as described in ISO Recommendation R 928, *Spices and condiments – Determination of total ash* and R 929, *Spices and condiments – Determination of water-insoluble ash*, respectively, with hydrochloric acid, filtration, ignition and weighing of the residue.

4. REAGENTS

4.1 *Hydrochloric acid solution*. Dilute 1 volume of hydrochloric acid (ρ_{20} = 1.19 g/ml) with 9 volumes of water.

4.2 *Silver nitrate solution* containing 10 g of silver nitrate per 100 ml.

5. APPARATUS

5.1 *Dish*, flat bottomed, used for the determination of total ash.

5.2 *Muffle furnace*, regulated at 550 ± 25 °C.

5.3 *Steam bath.*

5.4 *Filter paper*, ashless, medium-fine.

5.5 *Desiccator*, provided with an efficient desiccant.

5.6 *Analytical balance.*

6. PROCEDURE

6.1 Test portion

Use the total ash (residue *A*) obtained as described in ISO Recommendation R 928, *Spices and condiments – Determination of total ash*, or the residue of water-insoluble ash (residue *B*) obtained as described in ISO Recommendation R 929, *Spices and condiments – Determination of water-insoluble ash*, and reserved.

6.2 Determination

Use distilled water, or water of at least equal purity.

Add to the test portion 15 to 25 ml of the hydrochloric acid solution (4.1) and boil for 10 minutes, covering the dish (5.1) with a watch glass to prevent spattering. Allow to cool and filter the contents of the dish through the ashless filter paper (5.4). Wash the filter paper with water until the washings are free from hydrochloric acid, as tested by silver nitrate solution (4.2) and return it to the dish. Evaporate carefully on the steam bath (5.3) and ignite in the muffle furnace (5.2) at 550 ± 25 °C for 1 hour. Cool the dish in the desiccator (5.5) and weigh. Repeat the operations of igniting for 1 hour, cooling and weighing till the difference in mass between two successive weighings is less than 0.001 g. Note the lowest mass.

7. EXPRESSION OF RESULTS

The percentage, by mass, of acid insoluble ash yielded by the sample is equal to, on the dry basis :

$$(M_4 - M_0) \times \frac{100}{M_1 - M_0} \times \frac{100}{100 - H}$$

where

M_0 is the mass, in grammes, of the empty dish,

M_1 is the mass, in grammes, of the dish and test portion,

M_4 is the mass, in grammes, of the dish and acid-insoluble ash,

H is the moisture content, per cent by mass, of the sample of spice or condiment as received.