INTERNATIONAL STANDARD 735

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Oilseed residues — Determination of ash insoluble in hydrochloric acid

Tourteaux de graines oléagineuses — Détermination des cendres insolubles dans l'acide chlorhydrique

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FOREWORD

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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 735 was developed by Technical Committee ISO/TC 34, *Agricultural food products.*

It was submitted directly to the ISO Council, in accordance with clause 6.12.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 735-1968, which had been approved by the member bodies of the following countries :

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

The member body of the following country had expressed disapproval of the document on technical grounds :

Canada

Printed in Switzerland

Oilseed residues — Determination of ash insoluble in hydrochloric acid

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the ash insoluble in hydrochloric acid, from residues (excluding compounded products) obtained by the extraction of oil from oilseeds by pressure or solvent.

2 REFERENCES

ISO 749, *Oilseed residues — Determination of total ash.*

ISO 771, *Oilseed residues — Determination of moisture and volatile matter content.*

3 DEFINITION

ash insoluble in hydrochloric acid : The fraction of the total ash which remains undissolved after treatment with hydrochloric acid under the operating conditions specified below.

4 PRINCIPLE

Treatment of the total ash with hydrochloric acid, to remove the portion soluble in this reagent, then incineration and weighing of the insoluble residue.

5 REAGENTS

5.1 Hydrochloric acid, 3 N solution.

5.2 Silver nitrate, 10 g/l solution.

6 APPARATUS

6.1 Analytical balance.

6.2 Flat-bottomed incineration dish, of diameter about 60 mm and height not exceeding 25 mm, of platinum, platinum-plated gold, silica or, if not available, porcelain.

6.3 Hardened filter paper, of medium porosity, ash-free.

6.4 Electrically heated muffle furnace, with air circulation and capable of being controlled at 550 ± 15 °C.

6.5 Desiccator, containing an efficient desiccant.

7 PROCEDURE

Make all weighings to the nearest 0,001 g.

7.1 Test portion and incineration

See ISO 749.

7.2 Determination

Moisten the total ash obtained with 10 ml of the hydrochloric acid solution (5.1), covering the incineration dish containing the ash with a watch-glass. Heat gently and, by several washes with hydrochloric acid solution (5.1), using about 50 ml of acid solution in all and washing the watch-glass as well as the dish, transfer the contents of the dish quantitatively to a beaker of about 250 ml capacity. Heat to boiling and keep gently boiling for about 10 min, then filter through hardened filter paper (6.3) and wash with boiling water until chloride ions are removed [test with the silver nitrate solution (5.2)].

Place the filter paper and the residue in the incineration dish (6.2), previously heated for 15 min in the furnace (6.4) at 550 ± 15 °C, allowed to cool in the desiccator (6.5) to laboratory temperature and weighed.

Heat the dish containing the filter paper and residue progressively on an electric hot-plate or over a gas flame until the filter paper is carbonized, then place in the furnace controlled at 550 ± 15 °C. Continue heating until a residue visibly free from carbon particles is obtained (generally 1 h).

Allow the dish to cool in the desiccator and weigh when it has reached laboratory temperature.

Replace the dish in the furnace and continue heating for another 30 min at 550 ± 15 °C. Allow the dish to cool and re-weigh, as before.

If the difference between the two weighings is less than or equal to 0,001 g, consider the determination as finished. If not, continue with periods of 30 min in the furnace until the difference between two successive weighings is less than or equal to 0,001 g.

Carry out two determinations, starting from the same test sample.