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Oilseeds — Determination of moisture and volatile matter content

Graines oléagineuses — Détermination de la teneur en eau et matières volatiles

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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 665 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 665-1968, which had been approved by the member bodies of the following countries :

Australia	Germany	Poland
Belgium	Hungary	Romania
Bulgaria	India	South Africa, Rep. of
Chile	Iran	Turkey
Colombia	Ireland	United Kingdom
Czechoslovakia	Italy	U.S.S.R.
Egypt, Arab Rep. of	Netherlands	Yugoslavia
Finland	New Zealand	
France	Norway	

No member body had expressed disapproval of the document.

Oilseeds — Determination of moisture and volatile matter content

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the moisture and volatile matter content of oilseeds.

2 REFERENCE

ISO 664, *Oilseeds — Reduction of contract samples to analysis samples*.

3 DEFINITION

moisture and volatile matter content: The loss in mass measured under the operating conditions specified below.

4 PRINCIPLE

Determination of the moisture and volatile matter content of a test portion either of the material as received (pure seed and impurities) or, if required, of the pure seed alone, by drying at $103 \pm 2^\circ\text{C}$ in an oven at atmospheric pressure, until practically constant mass is reached.

5 APPARATUS

5.1 Analytical balance.

5.2 Mechanical mill, easy to clean, suitable for the kind of seed and allowing the latter to be ground without heating and without appreciable change in moisture, volatile matter and oil content.

5.3 Mechanical grater or, if not available, hand grater.

5.4 Flat-bottomed vessel, of metal resistant to attack under the test conditions, provided with a well fitting lid and allowing the test portion to be spread to about $0,2\text{ g/cm}^2$ (for example diameter of vessel 70 mm, height 30 to 40 mm). Glass vessels with ground closures may also be used by agreement between buyer and seller.

5.5 Electric oven with thermostatic control and good natural ventilation, capable of being regulated so that the temperature of the air and of the shelves in the neighbourhood of the test portions lies between 101 and 105°C in normal operation.

5.6 Desiccator containing an efficient desiccant such as phosphorus(V) oxide, silica gel, activated alumina, etc., and provided with a metal plate which allows vessels (5.4) to cool rapidly.

6 PROCEDURE

Make all weighings to the nearest $0,001\text{ g}$.

6.1 Preparation of the test sample

6.1.1 Take an analysis sample obtained in accordance with ISO 664. If large non-oleaginous foreign bodies have been separated before the reduction of the laboratory sample, make allowance for this in the calculation (see 7.1.2). According to the requirements of the contract, use an analysis sample as received or after separation of the impurities.

6.1.2 In the case of copra, grate the product by hand or, preferably, using a mechanical grater (5.3) which allows the whole sample to be treated. When grating by hand, which does not allow all the analysis sample to be grated, endeavour to obtain a test sample which is as representative as possible and, to this end, take account of the size and colour of different fragments.

The length of the particles may exceed 2 mm, but shall not be greater than 5 mm. Mix the particles carefully and carry out the determination without delay.

6.1.3 In the case of seeds of medium size (groundnut, soya, etc.), except safflower seed, sunflower seed and cottonseed with adherent linters, grind the analysis sample in the mechanical mill (5.2), which has previously been well cleaned, until the major dimension of the particles obtained is not greater than 2 mm. Reject the first particles (about one-twentieth of the sample), collect the rest, mix carefully and carry out the determination without delay.

6.1.4 Small seeds (linseed, colza, hemp, etc.) as well as safflower seed, sunflower seed and cottonseed with adherent linters, are analysed without previous grinding.

6.2 Test portion

6.2.1 Weigh the vessel (5.4) with its lid, after leaving it open for at least 30 min in the desiccator (5.6) at laboratory temperature.