UDC 665.3 : 620.1

Ref. No. : ISO/R 662-1968 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 662

CRUDE VEGETABLE OILS AND FATS

DETERMINATION OF MOISTURE AND VOLATILE MATTER

1st EDITION
February 1968

Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 662, *Crude vegetable oils and fats – Determination of moisture and volatile matter,* 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 began in 1961 and led, in 1963, to the adoption of a Draft ISO Recommendation.

In March 1966, this Draft ISO Recommendation (No. 904) 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	Hungary	Poland
Belgium	India	Romania
Bulgaria	Iran	South Africa, Rep. of
Chile	Ireland	Turkey
Colombia	Israel	U.A.R.
Czechoslovakia	Italy	United Kingdom
Finland	Netherlands	U.S.S.R.
France	New Zealand	Yugoslavia
Germany	Norway	

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 February 1968, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 662 February 1968

CRUDE VEGETABLE OILS AND FATS

DETERMINATION OF MOISTURE AND VOLATILE MATTER

1. SCOPE

1.1 This ISO Recommendation describes two methods for the determination of moisture and volatile matter in crude vegetable oils and fats

- the sand-bath method,
- the oven method.

1.2 **Field of application**

1.2.1 The sand-bath method is applicable to all oils and fats.

1.2.2 The oven method is applicable only to non-drying oils and fats with an acid value less than 4. Coconut oil and palm-kernel oil should not in any circumstances be analysed by this method.

2. DEFINITION

By *moisture and volatile matter* is meant the loss in mass which the product to be analysed undergoes on heating at 103 °C, under the operating conditions specified below.

3. PRINCIPLE

Heating the product at 103 °C until moisture and volatile substances are completely eliminated.

4. PREPARATION OF SAMPLE

The contract sample should be prepared according to ISO Recommendation R 661, *Crude vegetable oils and fats – Preparation of contract sample for analysis.*

5. SAND-BATH METHOD

5.1 Apparatus

5.1.1 *Dish* of porcelain or glass, with flat bottom, of diameter 8 to 9 cm.

5.1.2 *Thermometer*, graduated in degrees from 80 to 120 °C and of length about 10 cm.

5.1.3 *Desiccator* containing an efficient desiccant such as phosphorus pentoxide, silica gel, activated alumina, etc.

5.1.4 *Sand-bath.*

5.1.5 *Analytical balance.*

5.2 Procedure

5.2.1 *Test portion*

Weigh, to the nearest 0.01 g, about 20 g of the prepared sample (see section 4) into the dish (5.1.1) which has been previously dried and then weighed with the thermometer (5.1.2).

5.2.2 *Determination*

Heat the test portion on the sand-bath (5.1.4), raising the temperature by about 10 °C per minute to 90 °C and stirring continuously with the thermometer (5.1.2).

Then reduce the rate of rise of temperature, using as a guide the release of bubbles of vapour from the bottom of the dish. Do not go beyond 105 °C.

Continue to stir, scraping the bottom of the dish until all release of bubbles has ceased.

When the amount of moisture is large, it is desirable to repeat the heating to about 103 °C several times, in stages separated by cooling to 95 °C.

Allow to cool in the desiccator (5.1.3) for 1 hour and then weigh.

Repeat the operations of heating, cooling in the desiccator and weighing, until the difference between two successive weighings does not exceed 0.002 g.

Carry out two determinations on the same prepared sample.

6. OVEN METHOD

6.1 Apparatus

6.1.1 *Glass vessel* with flat bottom, about 5 cm in diameter.

6.1.2 *Electric oven* with temperature regulation.