INTERNATIONAL STANDARD

ISO 1446

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Green coffee — Determination of water content — Basic reference method

Café vert — Détermination de la teneur en eau — Méthode de référence fondamentale

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 1446 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 15, *Coffee*.

This second edition cancels and replaces the first edition (ISO 1446:1978), which has been technically revised.

Annex A of this International Standard is for information only.

Green coffee — Determination of water content — Basic reference method

1 Scope

This international Standard specifies the basic reference method for the determination of the water content of green coffee.

This method is designed to serve as a standard for the checking and perfecting of methods suitable for the routine determination of the water content of green coffee.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 4072, *Green coffee in bags — Sampling*

ISO 6673, *Green coffee — Determination of loss in mass at 105 °C*

3 Term and definition

For the purposes of this International Standard, the following term and definition apply.

3.1
water content of green coffee
loss in mass undergone by the coffee when it is brought to true equilibrium with an atmosphere having zero water vapour pressure, under conditions such that interfering reactions are avoided

NOTE 1 In the present state at knowledge, it is considered that this loss in mass corresponds to the actual water in green coffee.

NOTE 2 The water content is expressed as a mass fraction in percent of the product as received [formerly expressed as % (m/m)].

4 Principle

The loss in mass is determined when the product (predried in the case of beans which are too moist), previously ground without alteration of its water content, is brought to equilibrium with an anhydrous atmosphere at a temperature of 48 °C ± 2 °C, at a pressure of 2,0 kPa ± 0,7 kPa [1)].

5 Reagents

Use only reagents of recognized analytical grade.

5.1 Sulfuric acid, $\rho_{20} \geqslant 1{,}83$ g/ml.

5.2 Phosphorus(V) oxide (P_2O_5).

6 Apparatus

Usual laboratory apparatus and, in particular, the following.

6.1 Suction device, permitting pressure to be reduced to 2,0 kPa ± 0,7 kPa (e.g. a water pump).

6.2 Grinder, made of material which does not absorb moisture, and which:

— is easy to clean and has a minimum dead space;

— permits rapid and even grinding without producing appreciable heating and, as far as possible, without contact with outside air;

— can be regulated so as to obtain a ground product of which more than 90 % of the particules have a diameter of less than 1 mm and more than 50 % have a diameter of less than 0,5 mm.

6.3 Metal dish, non-corrodible, with a sufficiently tight-fitting lid, and with an effective surface area enabling the test portion to be distributed so as to give a mass per unit area of not more than 0,3 g/cm^2.

An example of a suitable dish tube is shown in annex A.

6.4 Glass or porcelain boat, containing phosphorus(V) oxide (5.2).

The effective surface area should, if possible, be at least equal to that of the metal dish (6.3).

6.5 Drying tube, of glass, in two parts, one of which, intended to receive the dish (6.3), is closed at one end, while the other, intended to receive the boat (6.4), carries a semi-capillary tube, with a stopcock, for evacuation purposes.

The two parts are connected by a ground glass joint. An example of a suitable drying tube is shown in annex A.

6.6 Electrically heated constant-temperature oven, or any other system enabling the part of the drying tube (6.5) containing the dish (6.3) to be brought to a temperature of 48 °C ± 2 °C.

6.7 Gas washing bottle, containing sulfuric acid (5.1).

6.8 Analytical balance, capable of weighing to the nearest 0,000 1 g.

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1) That is: 20 mbar ± 7 mbar or (approximately) 10 mmHg to 20 mmHg.