International Standard 6571

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Spices, condiments and herbs — Determination of volatile oil content

Épices, aromates et herbes — Détermination de la teneur en huiles essentielles

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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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6571 was prepared by Technical Committee ISO/TC 34, *Agricultural food products.*

Spices, condiments and herbs — Determination of volatile oil content

1 Scope and field of application

This International Standard specifies a method for the determination of the volatile oil content of spices, condiments and herbs.

2 References

ISO 939, *Spices and condiments — Determination of moisture content — Entrainment method.*

ISO 948, *Spices and condiments — Sampling.*

ISO 2825, *Spices and condiments — Preparation of a ground sample for analysis.*

3 Definition

volatile oil content: All the substances entrained by steam under the conditions specified in this International Standard, and expressed in millilitres per 100 g of dry product.

4 Principle

Distillation of an aqueous suspension of the product, collection of the distillate in a graduated tube containing a measured volume of xylene to fix the volatile oil, allowing the organic and aqueous phases to separate and reading the total volume of the organic phase. Calculation of the volatile oil content after deducting the volume of xylene.

5 Reagents

All reagents shall be of recognized analytical grade and the water used shall be distilled water or water of at least equivalent purity.

5.1 Xylene.

5.2 Cleaning solutions.

5.2.1 Acetone (for fatty residues).

5.2.2 Liquid detergent (used at the concentration recommended by the manufacturer) or a **solution of sulfuric acid and potassium dichromate** (see the warning) prepared by slowly adding, while stirring continuously, one volume of concentrated sulfuric acid to one volume of saturated potassium dichromate solution and by passing the mixture, after cooling, through a fritted glass filter.

WARNING — Avoid any contact of this solution with the skin and mucous membranes.

6 Apparatus

Usual laboratory equipment, and in particular:

6.1 Distillation apparatus, made of strong glass having a low coefficient of thermal expansion. [1)]

The apparatus comprises the following components connected by ground glass joints:

6.1.1 Round-bottom flask, with a ground neck, of capacity 500 or 1 000 ml, according to the product concerned (see the annex).

6.1.2 Condenser system, comprising the following components joined together (see figure 1):

a) a vertical tube (AC), the base of which has a ground joint to fit the flask (6.1.1);

b) a bent tube (CDE);

c) a vertical bulb condenser (FG);

d) an assembly consisting of a tube with a side-arm (K) provided with a ground stopper (K'), a pear-shaped enlargement (J), a tube graduated in divisions of 0,05 ml (JL), a ball-shaped enlargement (L) and a three-way tap (M) connected to the vertical tube (AC) by an inclined tube (O) provided with a safety tube (N), if necessary topped by the steam trap (6.1.3).

6.1.3 Steam trap (see figure 2) which can be connected to the side-arm (K) or to the safety tube (N) (see 6.1.2).

6.2 Filter paper, of diameter 11 cm.

1) This apparatus corresponds to the type described in chapter V.4.5.8 of the European Pharmacopoeia (1980).