INTERNATIONAL STANDARD

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Vanilla [*Vanilla fragrans* (Salisbury) Ames] —

Part 2: **Test methods**

*Vanille [*Vanilla fragrans *(Salisbury) Ames] —*
Partie 2: Méthodes d'essai

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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

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 part of ISO 5565 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 5565-2 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Sub-committee SC 7, *Spices and condiments*.

This first edition of ISO 5565-2, together with ISO 5565-1, cancels and replaces ISO 5565:1982, which has been technically revised.

ISO 5565 consists of the following parts, under the general title *Vanilla [*Vanilla fragran*s (Salisbury) Ames]*:

— *Part 1: Specification*

— *Part 2: Test methods*

Vanilla [*Vanilla fragrans* (Salisbury) Ames] —

Part 2:
Test methods

1 Scope

This part of ISO 5565 specifies test methods for the analysis of vanilla belonging to the species *Vanilla fragrans* (Salisbury) Ames, syn. *Vanilla planifolia* Andrews.

This part of ISO 5565 is applicable to vanilla in pods, cut in bulk, and in the form of powder. It is not applicable to vanilla extracts.

Three test methods for the analysis of vanilla are described in this part of ISO 5565:

a) the determination of moisture content in vanilla pods and powder (4.1);

b) the determination of vanillin, vanillic acid, 4-hydroxybenzaldehyde and 4-hydroxybenzoic acid by high-performance liquid chromatography (4.2);

c) the determination of vanillin content by an ultraviolet spectrometric method (4.3).

NOTE Specifications for vanilla are given in ISO 5565-1.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 5565. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this part of ISO 5565 are encouraged to investigate the possibility of applying the most recent edition of the normative document 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 1042, *Laboratory glassware — One-mark volumetric flasks.*

3 Terms and definitions

For the purposes of this part of ISO 5565, the following term and definition apply.

3.1
moisture content
quantity of water entrained and collected in accordance with the method specified in this part of ISO 5565

NOTE It is expressed as a mass fraction in percent [formerly given as % (*m*/*m*)].

4 Test methods

4.1 Determination of moisture content in vanilla pods and powder

NOTE The general method described in ISO 939 is not applicable to vanilla.

4.1.1 Principle

The amount of water entrained by azeotropic distillation is determined using a water-immiscible organic liquid. The water is collected in a graduated tube.

4.1.2 Reagent

Use only reagents of recognized analytical grade, and distilled or demineralized water or water of equivalent purity.

4.1.2.1 Toluene

Saturate the toluene by shaking it with a small quantity of water and distil it. Use the distillate for the determination of the moisture.

4.1.3 Apparatus

Usual laboratory apparatus and, in particular, the following.

4.1.3.1 Distillation apparatus, consisting of a glass flask heated by a suitable means and provided with a reflux condenser discharging into a receiver connected to the flask.

The connections between the receiver, the condenser and the flask are interchangeable ground glass joints. The receiver serves to collect and measure the condensed water, and to return the solvent to the flask. The assembly of the apparatus is shown in Figure 1 and the various components are described below.

4.1.3.1.1 Flask, of capacity 500 ml, of the shape shown in Figure 1 and made of heat-resistant glass, well annealed and as free as possible from striae and similar defects.

4.1.3.1.2 Reflux condenser, water cooled, made of glass, having a jacket approximately 400 mm long and an inner tube of diameter 9,5 mm to 12,5 mm.

The tip of the condenser to be inserted in the receiver may be ground off at an angle of 30° from the vertical axis of the condenser. When inserted into the receiver, the tip of the condenser shall be 6 mm to 7 mm above the surface of the liquid in the receiver after distillation conditions have been established.

4.1.3.1.3 Receiver, of capacity 5 ml, made of heat-resistant glass, well annealed and as free as possible from striae and similar defects, provided with ground glass joints, with the shape, dimensions and tolerances given in Figure 1.

It consists essentially of an upper chamber, together with a tube and ground joint leading to a flask and graduated tube. The graduated portion shall have a capacity of 5 ml when filled to the highest graduation mark.

The scale shall cover the range of 0 ml to 5 ml and shall be graduated at intervals of 0,10 ml. The graduation marks corresponding to each millilitre shall be numbered and carried completely round the tube. The graduation marks midway between the numbered marks shall be carried three-quarters of the way round, and the remaining marks shall be carried half-way round the tube. The error at any indicated capacity shall not exceed 0,05 ml.

4.1.3.1.4 Heat source, either an **oil bath** or an **electric heater,** provided with a sliding rheostat or other means of heat control.