



SLOVENSKI STANDARD
SIST ISO 6564:1997

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Senzorična analiza - Metodologija - Metode profiliranja arome

Sensory analysis -- Methodology -- Flavour profile methods

Analyse sensorielle -- Méthodologie -- Méthodes d'établissement du profil de la saveur

Ta slovenski standard je istoveten z: ISO 6564:1985

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ICS:

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Senzorična analiza

Sensory analysis

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International Standard



6564

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Sensory analysis — Methodology — Flavour profile methods

Analyse sensorielle — Méthodologie — Méthodes d'établissement du profil de la flaveur

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UDC 543.92

Ref. No. ISO 6564-1985 (E)

Descriptors : agricultural products, food products, sensory analysis, tests, estimation, taste, odours.

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.

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 6564 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Sensory analysis — Methodology — Flavour profile methods

1 Scope and field of application

This International Standard describes a family of methods for describing and assessing the flavour of food products by qualified and trained assessors.

The methods are used

- a) in the development, modification or improvement of food products;
- b) in characterizing the differences between products;
- c) in quality control;
- d) to provide sensory data for the interpretation of instrumental data;
- e) to provide a permanent record of the attributes of a product;
- f) to monitor changes in a product during storage.

2 References

ISO 5492/1 to 6, *Sensory analysis — Vocabulary*.¹⁾

ISO 6658, *Sensory analysis — Methodology — General guidance*.

3 Definitions

For the purpose of this International Standard, the definitions in the various parts of ISO 5492 apply.

4 Principle

The methods are based on the concept that flavour consists partly of identifiable olfactory and gustatory attributes and partly of an underlying complex of attributes not separately identifiable.

The methods consist of procedures for describing and assessing the flavour of a product in a reproducible way. The separate

attributes contributing to the formation of the overall impression given by the product are identified and their intensity assessed in order to build up a description of the flavour of the product.

5 Apparatus

The apparatus shall be selected by the test supervisor according to the nature of the product to be analysed, the number of samples, etc., and shall not affect the test results.

If standardized apparatus corresponds to the needs of this test, it shall be used.

6 Sampling

Refer to the International Standards relating to sampling, for sensory analysis, of the product or products to be examined.

If there is no such International Standard, the method of sampling to be used shall be selected based on the test objective and shall be agreed upon between the parties concerned.

7 General test requirements

7.1 Room

For the conditions in the room in which the tests are to be conducted, see ISO 6658.

7.2 Assessors

7.2.1 Qualification, selection, aptitude

For the conditions which the assessors shall fulfill, see ISO 6658.

All the assessors shall have the same level of qualification. This qualification shall be chosen according to the purpose of the test. Selected assessors shall be chosen after training (see 7.2.2). For the examination of specific foods, experts may be used.

¹⁾ Part 6 is at present at the stage of draft.

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7.2.2 Training of assessors

The assessors chosen shall be trained to improve their ability to identify and assess the intensity of the attributes of the product. This training increases their familiarity with the terminology and ensures the repeatability of their results. The extent and duration of training vary according to the purpose of the panel. If the panel is non-specialist (capable of describing the flavour of any type of food product), lengthy training periods of up to 1 year or more may be required. Training for a specific type of food product can be accomplished in a much shorter time. New assessors shall receive training before they join a panel of selected assessors or experts that have already been trained.

7.2.3 Number of assessors

Five to eight selected and trained assessors or experts are required.

8 Test methods

8.1 There are various methods for carrying out a descriptive analysis of flavour, and these can be divided into two categories, i.e. those for arriving at a unanimous description of the flavour of the product, referred to in this International Standard as the "consensus method", and those which do not require this consensus, referred to as "independent methods".

8.2 In the consensus method, the assessors work as a group in order to arrive at a unanimous description of the flavour of the product. An essential element in this method is that the panel leader is also one of the assessors.

The ability of the assessors to work together as a group and to clearly express their opinions is an important factor in the success of the consensus method.

The panel leader leads the assessors' discussions until agreement is obtained on each component thus enabling a description of the attributes of the product.

If a consensus is not obtained, it is possible to refer to reference substances to aid the group in reaching an agreement. Sometimes, one or more panels have to be held in order to reach a consensus. The panel leader reports and interprets the results.

8.3 In independent methods, the consensus of the panel is not required. The assessors discuss the flavour of the product within the group and then independently record their perceptions.

These individual results are compiled and analysed by the panel leader who in general does not form part of the panel.

9 Procedures

Regardless of whether the consensus method or an independent method is used for establishing the flavour profile of a pro-

duct, it is necessary to have a period of orientation before the official panel is brought together.

This period comprises one or more information meetings in which the samples to be studied are examined. Similar products are introduced in order to establish a framework for comparison.

The assessors (and the panel leader in the case of the consensus method)

- draw up a list of character notes for the sample;
- decide on reference substances (pure compounds or natural products that elicit particular attributes);
- define the vocabulary for describing the character notes.

The panel also establishes the best method for presenting and examining the samples.

9.1 Components of the method

The following are necessary for carrying out a descriptive analysis of the flavour of a product :

- a) identification of perceptible attributes;
- b) determination of the order in which these attributes are perceived;
- c) assessment of the degree of intensity of each attribute;
- d) examination of after-taste and/or persistence;
- e) assessment of overall impression.¹⁾

9.1.1 Identification of character notes

The perceptible character notes are defined in descriptive or associative terms.

9.1.2 Determination of order of perception

The order in which the character notes appear and are perceived is recorded.

9.1.3 Assessment of intensity

The intensity (quality and/or duration) of each character note is determined either by the panel as a group (consensus method), or by the assessors working independently.

Various scales may be used for rating the intensity of the character notes; a few examples are given below.

Scale A

- 0 = not present
- 1 = just recognizable or threshold
- 2 = weak
- 3 = moderate
- 4 = strong
- 5 = very strong

1) In certain cases, the assessment of overall impression is carried out initially.

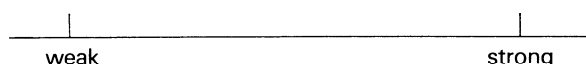
Scale B

weak strong

The descriptive terms used at each end of the scale and the number of points may vary according to the character notes. Values ranging from 1 to 7 are given at the points "

Scale C

This is a straight line, for example 100 mm long, with descriptive terms at approximately 10 mm from each end :



The assessors place a mark on the line to indicate intensity. Numerical values are then attributed by measuring the distance in millimetres between the mark made by the assessor and the left hand end of the line.

9.1.4 Investigation of after-taste and/or determination of persistence

The presence of different character notes after the sample is swallowed (or ejected) is called after-taste. The continuing perception of the same flavour after the sample has been swallowed (or ejected) is called persistence (see ISO 5492).

In some cases, the assessors may be required to investigate the presence of after-taste, identifying and determining its intensity, or determining intensity and duration of persistence (see annex B).

9.1.5 Assessment of overall impression

The overall impression is a general assessment of the product which takes into consideration the appropriateness of the character notes present, their intensity, identifiable background flavour and the blend of flavours.

This overall impression is usually rated on a 3-point scale

- 3 high
- 2 medium
- 1 low

In the consensus method, the panel agrees on an overall impression. In independent methods, each assessor rates the overall impression separately and the average is then calculated.

9.2 Consensus method**9.2.1 Procedure**

Initially, the assessors work alone, recording the character notes, the order of perception, intensity, after-taste and/or persistence, and then assess the overall impression.

When the assessors have thus determined their profile, the discussion begins, the individual results obtained having been collected by the panel leader.

The purpose is to obtain a general consensus so that a final profile can be composed by the panel leader.

The discussion continues until the panel reaches a consensus. Reference substances may be referred to in order to help the group in reaching an agreement or the panel may have to meet on several occasions.

9.2.2 Reporting of data

The results reported are those of the group. They may be presented in the form of a table similar to the reply sheet used (see clause A.1) or presented graphically (see clause A.2).

9.3 Independent methods**9.3.1 Procedure**

The panel usually works as a group to identify and define the character notes. Once agreement has been reached, the assessors work alone and note the order of perception, intensity of each character note using one of the scales, after-taste and/or persistence and overall impression.

9.3.2 Reporting of data

The data supplied by the assessors and the mean scores of the panel (if meaningful) are collated and reported by the panel leader; they may be expressed in tabular or graphic form (see annex B).

So that a subsequent comparison of the samples may be carried out, the results may be analysed using a suitable method of analysis called the multiple variable method.

10 Test report

The test report shall include the following information

- a) the problem posed;
- b) the method used;
- c) the method of preparation of the samples;
- d) the conditions of test, and in particular
 - 1) the qualification of the assessors,
 - 2) the list and definitions of the characteristic properties,
 - 3) the list of reference substances used, if any,
 - 4) the scale used for determining intensity,
 - 5) the method used to analyse the results, if any;
- e) the results obtained;
- f) a reference to this International Standard.

Annex A

Example of completed form for flavour profile analysis

A.1 Tabular form

Product : Tomato sauce

Date : 1982-07-26

Character notes :

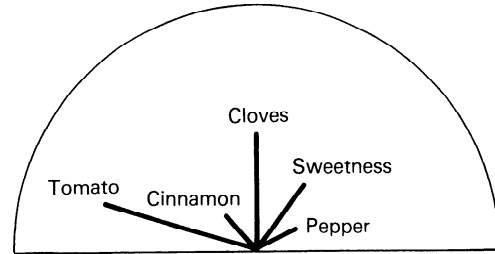
Order of appearance	Intensity (scale A)
Tomato :	4
Cinnamon :	1
Cloves :	3
Sweetness :	2
Pepper :	1

After-taste : nil

Persistence : fairly long

Overall impression : 2

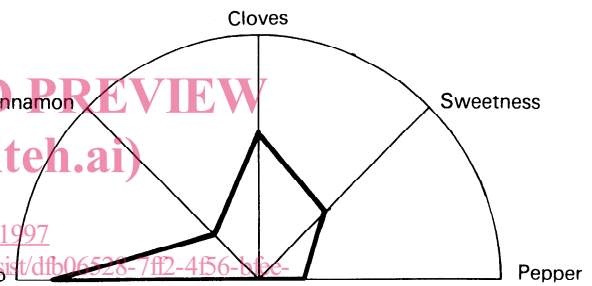
Comments :



The intensity of each attribute is represented by the length of the lines. Reading is made from left to right and represents the order of perception of the attributes.

Figure 1

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The intensity of each character note is marked on the axes. Joining the points establishes a representation of the flavour profile.

Figure 2

A.2 Graphic form

There are various ways of representing flavour profile in graphic form and examples are shown in figures 1 to 6.

Figures 3 and 4 show a circular representation which uses the same principles as in figures 1 and 2.

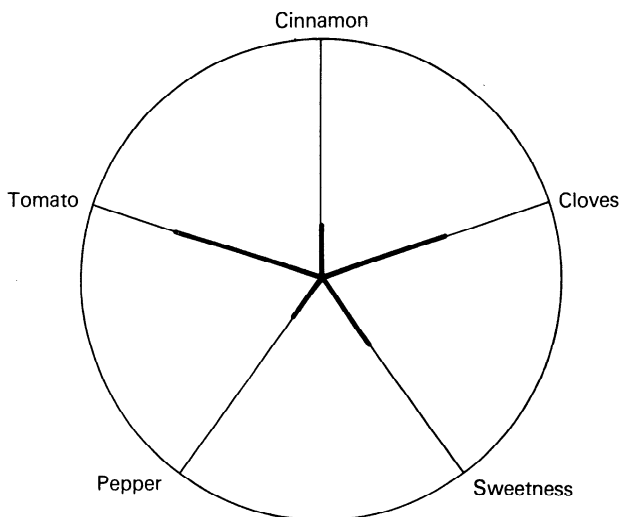


Figure 3

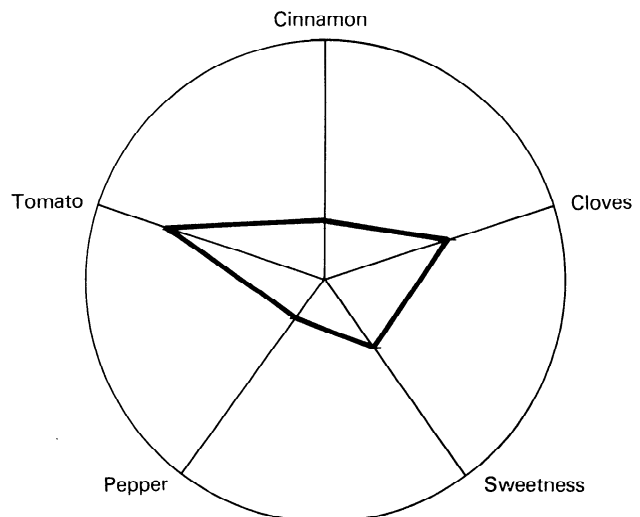


Figure 4

The histogram shown in figure 5 is an adaptation of scale C (see 9.1.3). The points can be joined to give a representation of the flavour profile, as shown in figure 6.

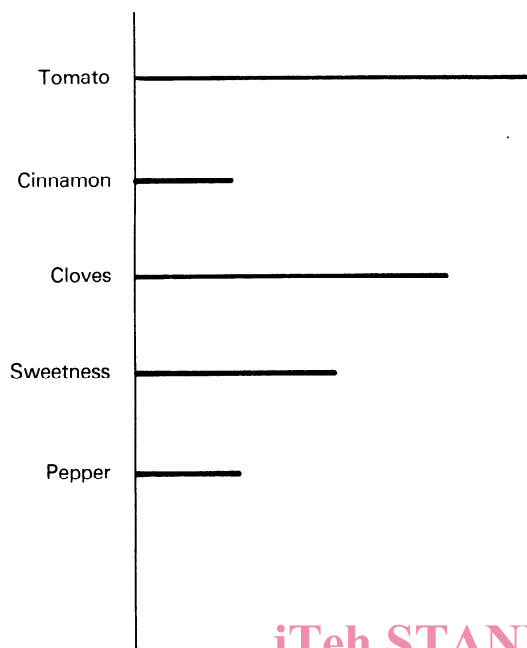


Figure 5

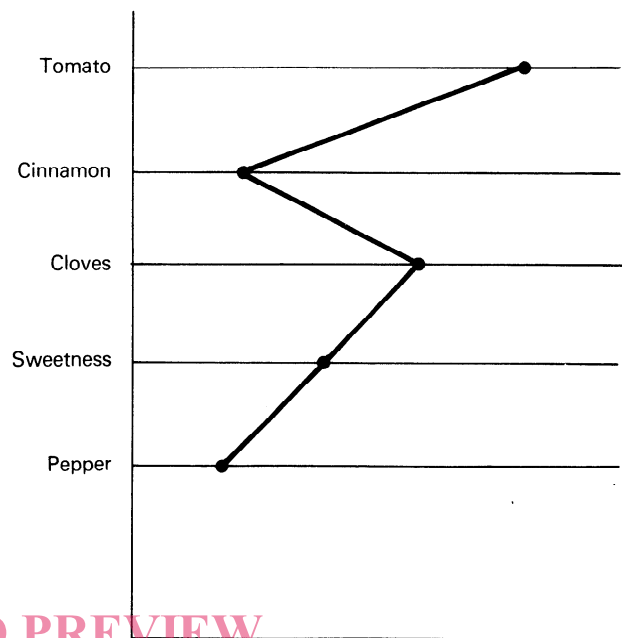


Figure 6

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