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Sensory analysis — General guidance for the selection, training and monitoring of selected and expert assessors

Analyse sensorielle — Lignes directrices générales pour la sélection, l'entraînement et le contrôle des sujets qualifiés et sujets experts

[Revision of first edition of ISO 8586-1:1993 and of second edition of ISO 8586-2:2008]

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Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Selection of assessors	2
4.1 General	2
4.2 Recruitment, preliminary screening and initiation	2
4.2.1 Recruitment	3
4.2.2 Types of recruitment	3
4.2.3 Advantages and disadvantages of internal and external recruitment	3
4.2.4 Number of persons to be selected	5
4.3 Background information and pre-selection	5
4.3.1 General	5
4.3.2 General criteria	5
4.3.3 Health criteria	6
4.3.4 Psychological criteria	6
4.3.5 Other factors	6
4.4 Screening	7
4.4.1 General	7
4.4.2 Types of screening tests	7
4.4.3 Colour vision	7
4.4.4 Ageusia and anosmia	9
5 Training of Assessors	10
5.1 Principle	10
5.2 General	10
5.3 Assessment procedure	10
5.4 Training of taste odour and texture	11
5.4.1 Tests for detection of a stimulus	11
5.4.2 Tests for discrimination between levels of intensity of a stimulus	11
5.4.3 Descriptive ability	12
5.4.4 Odour description test	12
5.4.5 Texture description test	14
5.4.6 Recognition of differences in texture	15
5.5 Training in detection and recognition of special tastes and odours	15
5.6 Training in the use of scales	17
5.7 Training in the development and use of descriptors (profiles)	17
5.8 Practice	18
5.9 Specific product training	18
5.9.1 Difference assessment	18
5.9.2 Descriptive assessment	18
6 Final choice of panels for particular methods	18
6.1 Principle	18
6.2 Difference assessments	18
6.3 Ranking assessment	19
6.4 Rating and scoring	19
6.5 Qualitative descriptive analysis	19
6.6 Quantitative descriptive analysis	19
6.7 Assessors for particular assessments	20

7	Training of Experts	20
7.1	General.....	20
7.2	Sensory memory.....	20
7.3	Semantic and metric learning of sensory descriptors	20
7.4	Building up a thesaurus of descriptors.....	21
7.5	Training on assessment conditions	21
8	Monitoring and testing of performance.....	21
8.1	Objectives.....	21
8.2	Principle.....	21
8.3	Analysis of the results	21
8.3.1	General.....	21
8.3.2	Assessment of the performance of the group as a whole	22
8.3.3	Assessment of the individual performance	22
9	Management and follow up of the group	22
9.1	Motivation.....	22
9.2	Maintaining of skills	22
9.3	Renewal	23
9.4	Retraining	23
Annex A (informative) Repeatability and reproducibility of assessors and panels		24
Annex B (normative) Use of analysis of variance in the choice of selected assessors for scoring		25
Annex C (informative) Example of practical application		28
Bibliography.....		30

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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.

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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.

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ISO 8586 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 12, *Sensory analysis*.

This edition cancels and replaces the first edition of ISO 8586-1:1993 and the second edition of ISO 8586-2:2008. The main requirements and criteria for the selection, training and monitoring of selected assessors and of experts have been summarized in this document in replacement of Part 1 and Part 2 of the International Standard.

ISO 8586 consists of the following parts, under the general title *Sensory analysis — General guidance for the selection, training and monitoring of assessors*:

- *Part 1: Selected assessors*
- *Part 2: Expert sensory assessors*

Introduction

A sensory analysis panel constitutes a true “measuring instrument”, and consequently the results of the analyses conducted will depend on its members.

The recruitment of persons willing to participate in a panel therefore needs to be carried out with care and to be considered as a real investment, both in time and finance.

Sensory assessment may be made by three types of assessors:

- “sensory assessors”,
- “selected assessors”, and
- “expert sensory assessors”.

“Sensory assessors” are any person taking part in a sensory test. They can be “naive assessors” who do not have to meet any precise criterion, or “initiated assessors” who have already participated in sensory tests. (ISO 5492:2009, 1.5)

“Selected assessors” are chosen for his/her ability to perform a sensory test. (ISO 5492:2009, 1.6)

“Expert sensory assessors” are selected sensory assessors with a demonstrated particular sensitivity and with considerable training and experience in sensory testing, who are able to make consistent and repeatable sensory assessments of various products. (ISO 5492:2009, 1.8)

The selection and training methods to be employed depend on the tasks intended for the “selected assessors”. It should be pointed out that these methods sometimes only constitute a way of choosing the better candidates among those who are available, rather than those who satisfy predetermined criteria. This is particularly the case when it is necessary to constitute internal panels.

A preliminary selection of candidates has to be undertaken at the recruitment stage, in order to eliminate those who would be unsuited for sensory analysis. However, the final selection can only be made after training and the completion of the envisaged tasks.

The recommended procedure involves

- a) recruitment and preliminary screening of naive assessors;
- b) training of naive assessors who will become initiated assessors;
- c) selection of initiated assessors according to ability to perform particular tests; they will then become selected assessors;
- d) selection following the performance of an actual sensory assessment (useful in the case of descriptive analyses);
- e) possible training of selected assessors to become expert assessors.

In certain cases (especially for descriptive sensory analysis), the panel may be divided into specialized sub-groups.

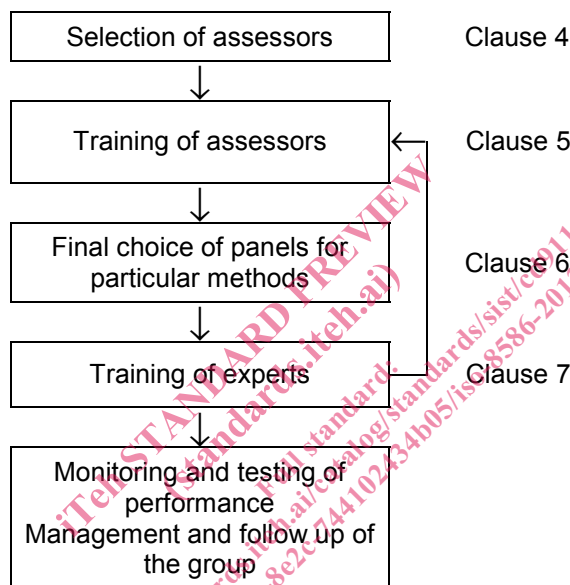
The exact procedures covered by a) and b) and the nature of the tests performed in c) and d) depend on the tasks which the panel is to perform.

An expert sensory assessor will have demonstrated particular acuity and reproducibility in panel work, and will have developed a good long-term sensory memory, allowing reliable comparative judgements, when necessary, in the absence of control samples.

Expert sensory assessors work as a panel which is managed by a panel leader. This panel leader is responsible for the general monitoring of the group of expert sensory assessors and for their training. The expert sensory assessors are not responsible for the choice of tests used, the presentation of the samples or for the interpretation of results. These matters are the responsibility of the panel leader who also decides how much information is given to the panel.

The performance of selected assessors should be monitored regularly to ensure that the criteria by which they were initially selected continue to be met.

The entire process is illustrated in the following diagram.



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Sensory analysis — General guidance for the selection, training and monitoring of selected and expert assessors

1 Scope

This document specifies criteria for the selection and procedures for the training and monitoring of selected assessors and experts. It supplements the information given in ISO 6658.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3534-2:2006, *Statistics — Vocabulary and symbols — Part 2: Applied statistics*

ISO 4120, *Sensory analysis — Methodology — Triangular test*

ISO 4121, *Sensory analysis — Methodology — Evaluation of food products by methods using scales*

ISO 5492, *Sensory analysis — Vocabulary*

ISO 5725 (all parts), *Accuracy (Trueness and precision) of measurement methods and results*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5492 and the following apply.

3.1

Sensory assessor

“Sensory assessors” are any person taking part in a sensory test. They can be “naive assessors” who do not have to meet any precise criterion, or “initiated assessors” who have already participated in sensory tests. (ISO 5492:2009, 1.5)

3.2

selected assessor

assessors chosen for his/her ability to perform a sensory test. (ISO 5492:2009, 1.6)

3.3

expert sensory assessor

“Expert sensory assessors” are selected sensory assessors with a demonstrated particular sensitivity and with considerable training and experience in sensory testing, who are able to make consistent and repeatable sensory assessments of various products. (ISO 5492:2009, 1.8)

**3.4
reproducibility**

a measure of the agreement among assessment on the same sample under different conditions for assessors and panel (Annex A, Table A.1)

NOTE Reproducibility can be expressed quantitatively in terms of the dispersion characteristics of the results.

[ISO 3534-2:2006-09]

**3.5
reproducibility conditions**

observation conditions where independent test results are obtained with the same method on identical test items in different test facilities with different operators using different equipment

[ISO 3534-2:2006-09]

NOTE See Table A.1. Reproducibility conditions may include different times (sessions), different environments, different panels.

**3.6
repeatability**

a measure of the agreement among assessment on the same sample under the same conditions (Annex A, Table A.1)

NOTE Repeatability can be expressed quantitatively in terms of the dispersion characteristics of the results.

[ISO 3534-2:2006]

**3.7
repeatability conditions**

observation conditions where independent test results are obtained with the same method on identical test/measurement items in the same test facility by the same operator using the same equipment within short intervals of time

[ISO 3534-2:2006]

NOTE Repeatability conditions mean same assessors (panel), same time (session), same environment

4 Selection of assessors

4.1 General

The following general characteristics are desirable in candidates for training:

- f) they shall be motivated and interested in further developing their sensory skills,
- g) they shall be willing to participate;
- h) they shall be volunteers;
- i) experts shall already have shown aptitude for sensory analysis.

4.2 Recruitment, preliminary screening and initiation

To recruit candidates and to select those most suitable for training as selected assessors.

4.2.1 Recruitment

The following three questions arise when recruiting persons to form a sensory analysis panel:

- Where should one look for the people who will constitute the group?
- How many people shall be selected?
- How shall the people be selected?

4.2.2 Types of recruitment

Two types of recruitment are available to organizations:

- recruit through the personnel department of the organization (internal recruitment), or
- recruit people from outside the organization (external recruitment).

It is possible to constitute a mixed panel made up of both types of recruitment.

4.2.2.1 Internal recruitment

The candidates are recruited from amongst the office, plant or laboratory staff. It is advisable to avoid those persons who are too personally involved with the products being examined, in particular those involved at the technical or commercial level, because they may cause the results to be biased.

In this type of recruitment, it is vital that the organization's general management and hierarchy provide their support and make it known that sensory analysis is considered as forming part of everyone's work. This can be made known at the hiring stage of the personnel.

4.2.2.2 External recruitment

The recruitment is conducted outside the organization.

The most commonly used means for this purpose are:

- By phone and newspaper (recruitment through classified advertisement in the local press, in specialized publications, or in newspapers which are distributed free of charge, etc. In this case, all types of people will reply and it will be necessary to carry out a selection);
- opinion poll institutes; certain of these institutes can provide the names and addresses of persons likely to be interested;
- in-house "consumer" files, compiled as a result of advertising campaigns or complaints;
- persons visiting the organization;
- personal acquaintances.

4.2.2.3 Mixed panel

A mixed panel may be formed using internal and external recruitment, in variable proportions.

4.2.3 Advantages and disadvantages of internal and external recruitment

Organizations may wish to use independent internal or external panels for different tasks.