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Sensory analysis — Selection and training of sensory assessors

Analyse sensorielle — Sélection et entraînement des sujets sensoriels

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 12, *Sensory analysis,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS C01, *Food Products,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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This second edition cancels and replaces the first edition (ISO 8586:2012), which has been technically revised.

The main changes are as follows:

— the Title has been changed to "Sensory analysis — Selection and training of sensory assessors" (the monitoring was removed as redundant with ISO 11132);

— some text from the Introduction has been moved into Clause 4;

— the Scope has been modified;

— a definition for the term "homogeneous" has been added in Clause 3;

— the process steps and roles of assessors have been clarified and the corresponding Figure 1 revised;

— Table 4 has been added with references to other International Standards;

— the tables and exercises for screening and training have been revised and modified;

— in Tables 3, 5, 9 and 11, examples for home and personal care products have been added;

— new annexes have been added with examples of screening and training activities;

— the concept of expert sensory assessors has been included in 8.5;

— Clause 2 and the Bibliography have been updated.

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Sensory analysis is a science that is involved with the assessment of the organoleptic attributes of a product by the senses. As such, sensory analysis uses sensory assessors as evaluators of products. This document describes the recruitment, screening and training protocol for sensory assessors.

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

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

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Sensory analysis — Selection and training of sensory assessors

WARNING — This document does not address any safety issues associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.

1 Scope

This document specifies criteria for the selection of and procedures for the training of trained sensory assessors and expert sensory assessors for food and beverages, as well as home and personal care products.

It is applicable to all industries concerned with the evaluation of products by the sense organs.

This document supplements the information given in ISO 6658.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 5492, *Sensory analysis — Vocabulary*

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

ISO 8589, *Sensory analysis — General guidance for the design of test rooms*

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3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
sensory assessor
any person taking part in a sensory test

Note 1 to entry: A naive sensory assessor is a person who does not meet any particular criterion.

Note 2 to entry: An initiated sensory assessor has already participated in a sensory test.

3.2
screened sensory assessor
sensory assessors (3.1) who have been screened for their sensory abilities

3.3
trained sensory assessor
sensory assessors (3.1) who have been trained for a method or methods

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3.4
expert
<in the general sense> person who, through knowledge or experience, has competence to give an opinion in the fields about which he/she is consulted

3.5
expert sensory assessor
sensory assessor (3.1) with a demonstrated sensory sensitivity and with considerable training and experience in sensory testing, who is able to make consistent and repeatable sensory assessments of various products

3.6
sensory panel training
series of *sessions* (3.11) in which *sensory assessors* (3.1) are oriented to the tasks to be completed by a *sensory panel* (3.7) and practice assessing particular product(s), which may include relevant product characteristics, standard rating scales, techniques of evaluation and terminology

3.7
sensory panel
group of *sensory assessors* (3.1) participating in a sensory test

3.8
repeatability
agreement in assessments of the same products under the same test conditions by the same *sensory assessor* (3.1) or *sensory panel* (3.7)

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3.9
reproducibility
agreement in assessments of the same products under different test conditions or by different *sensory assessors* (3.1) or *sensory panels* (3.7)

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Note 1 to entry: Reproducibility may be measured as any of the following:

— the reproducibility of a sensory panel (or an assessor) in the short term, measured between two or more *sessions* (3.11) separated by several days;

— the reproducibility of a sensory panel (or an assessor) in the medium or long term, measured among sessions separated by several months;

— the reproducibility between different sensory panels, in the same laboratory or in different laboratories.

3.10
homogeneous
of the same kind

3.11
session
period of time where the *sensory assessors* (3.1) work on a specific task or evaluate a number of samples, either individually or as a group

Note 1 to entry: A session typically spans from 30 min to 2 h.

4 Recruitment and preselection of subjects

4.1 General

4.1.1 Sensory assessment can be performed by four types of assessors (see Figure 1):

— naive sensory assessors;

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— screened sensory assessors;

— trained sensory assessors;

— expert sensory assessors.

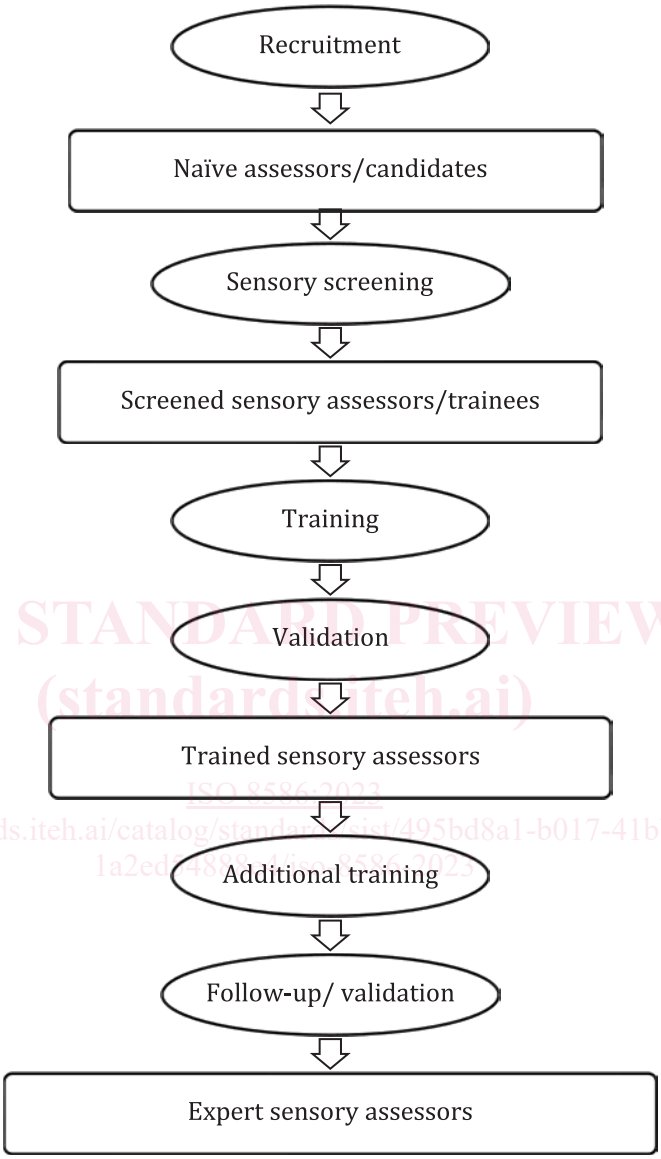

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Figure 1 — Recruitment, screening and training process of sensory assessors

4.1.2 It is necessary to undertake a preliminary selection of the candidates at the recruitment stage, in order to eliminate those who would be unsuited for sensory analysis. The final selection shall be made after screening and ultimately training. The selection and training methods to be employed depend on the tasks intended for the "trained sensory assessors" and "expert sensory assessors".

4.1.3 Sensory assessors work as a sensory panel which is managed by a sensory panel leader. In certain cases (especially for descriptive sensory analysis), the sensory panel may be divided into specialized subgroups.

4.1.4 The recommended procedure for the training of a sensory panel involves:

a) recruitment and preliminary screening of naive assessors/candidates;

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b) screening of naive assessors/candidates, selection of whom are to become screened sensory assessors/trainees;

c) training and validation of screened sensory assessors, selection of whom then become trained sensory assessors;

d) possible additional training of trained sensory assessors to become expert sensory assessors.

The exact procedures covered by a) and b) and the nature of the tests performed in c) and d) depend on the tasks intended for the sensory panel.

4.1.5 The sensory panel leader is responsible for the general follow-up 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 sensory panel leader who also decides how much information is given to the sensory panel.

4.1.6 The performance of selected assessors should be monitored regularly to ensure that the criteria by which they were initially selected continue to be met. For monitoring and validation procedures, see ISO 11132.

4.1.7 The entire process for the recruitment of a sensory panel is illustrated in Figure 1.

4.1.8 Willing candidates for training shall have the following general characteristics:

a) they shall be motivated and interested in further developing their sensory skills;

b) they shall be able to participate;

c) they shall not have any sensory impediments related to the purpose of the test.

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4.2 Recruitment

4.2.1 General

To recruit candidates and to screen those most suitable for training, follow 4.2.2 to 5.7.

4.2.2 Recruitment conditions

There are three important considerations for the recruitment of people for a sensory panel:

— Where should people be recruited from to constitute the group?

— How many people shall be selected?

— How shall the people be selected?

Answers to these questions are provided in 4.2.3 to 4.2.5.

4.2.3 Types of recruitment

4.2.3.1 General

Two types of recruitment are available to organizations:

— company staff recruited from within the organization (internal recruitment);

— recruit people from outside the organization (external recruitment).

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It is possible to constitute a mixed sensory panel from both types of recruitment.

4.2.3.2 Internal recruitment

Internal candidates are recruited from office, plant or laboratory staff. It is advisable to avoid those persons who are too personally involved with products or projects being examined, in particular those involved at the technical or commercial level, because they can 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 part of everyone's work. This can be made known at the hiring stage of the personnel.

4.2.3.3 External recruitment

The recruitment is conducted outside the organization.

The most commonly used means for this purpose are advertisement of the role, e.g. in local press, social media or through suitable clubs or groups.

4.2.4 Advantages and disadvantages of internal and external recruitment

4.2.4.1 General

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

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4.2.4.2 Internal recruitment

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4.2.4.2.1 Advantages

The advantages are:

— the people are available at short notice as they work on site;

— it is not necessary to make provision for any payment (however, in order to maintain interest, it can be desirable to offer incentives);

— a better confidentiality regarding the results is ensured, which is particularly important for research work.

4.2.4.2.2 Disadvantages

The disadvantages are:

— problems related to the hierarchy of the organization;

— candidates are influenced in their judgements by knowledge of the products;

— replacement of candidates is more difficult (limited number of persons in small organizations);

— less choice of people;

— lack of availability due to conflicting priorities.

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