
Sensory analysis — Methodology — Triangle test

Analyse sensorielle — Méthodologie — Essai triangulaire



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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.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by 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).

This third edition cancels and replaces the second edition (ISO 4120:2004), which has been technically revised. The main changes compared with the previous edition are as follows:

- the document has been generalized beyond food and beverage applications;
- guidance on how to use the Thurstonian model in addition to the previously emphasized guessing model has been added.

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.

Sensory analysis — Methodology — Triangle test

1 Scope

This document specifies a procedure for determining whether a perceptible sensory difference or similarity exists between samples of two products. The method is a forced-choice procedure. The method is applicable whether a difference exists in a single sensory attribute or in several attributes.

The method is statistically more efficient than the duo-trio test (described in ISO 10399), but has limited use with products that exhibit strong carryover and/or lingering flavours.

The method is applicable even when the nature of the difference is unknown [i.e. it determines neither the size nor the direction of difference between samples, nor is there any indication of the attribute(s) responsible for the difference]. The method is applicable only if the products are homogeneous.

The method is effective for:

- a) determining that:
 - 1) either a perceptible difference results (triangle testing for difference);
 - 2) a perceptible difference does not result (triangle testing for similarity),when, for example, a change is made in ingredients, processing, packaging, handling or storage;
- b) selecting, training and monitoring assessors.

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

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 terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

alpha-risk

α -risk

probability of concluding that a perceptible difference exists when one does not

Note 1 to entry: This is also known as Type I error, significance level or false positive rate.