Sensory analysis - Methodology - Paired comparison test

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 5495:2008 sisaldab Euroopa standardi EN ISO 5495:2007 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 5495:2008 consists of the English text of the European standard EN ISO 5495:2007.
Standard on kinnitatud Eesti Standardikeskuse 27.02.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 27.02.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 25.07.2007.	Date of Availability of the European standard text 25.07.2007.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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English Version

Sensory analysis - Methodology - Paired comparison test (ISO 5495:2005 and ISO 5495:2005/Cor 1:2006)

Analyse sensorielle - Méthodologie - Essai de comparaison par paires (ISO 5495:2005 et ISO 5495:2005/Cor 1:2006)

Sensorische Analyse - Prüfverfahren - Paarweise Vergleichsprüfung (ISO 5495:2005 und ISO 5495:2005/Cor 1:2006)

This European Standard was approved by CEN on 12 July 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 5495:2007: E

Foreword

The text of ISO 5495:2005 and ISO 5495:2005/Cor 1:2006 has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 5495:2007 by Technical Committee CEN/SS C01 "Food Products", the secretariat of which is held by CMC.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2008, and conflicting national standards shall be withdrawn at the latest by January 2008.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 5495:2005 and ISO 5495:2005/Cor 1:2006 has been approved by CEN as EN ISO 5495:2007 without any modifications.

Contents

Page

Sensory analysis — Methodology — Paired comparison test

1 Scope

This International Standard describes a procedure for determining whether there exists a perceptible sensory difference or a similarity between samples of two products concerning the intensity of a sensory attribute. This test is sometimes also referred to as a directional difference test or a 2-AFC test (Alternative Forced Choice). In fact, the paired comparison test is a forced choice test between two alternatives.

NOTE The paired comparison test is the simplest existing classification test since it concerns only two samples.

The method is applicable whether a difference exists in a single sensory attribute or in several, which means that it enables determination of whether there exists a perceptible difference concerning a given attribute, and the specification of the direction of difference, but it does not give any indication of the extent of that difference. The absence of difference for the attribute under study does not signify that there does not exist any difference between the two products.

This method is only applicable if the products are relatively homogeneous.

The method is effective

a) for determining

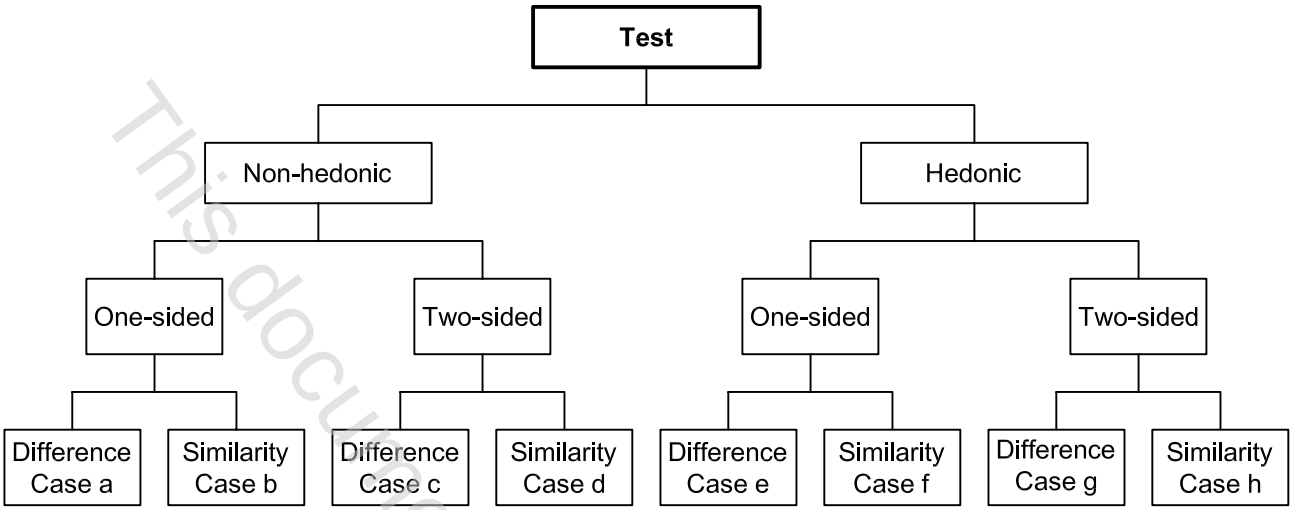
   — whether a perceptible difference exists (paired difference test), or

   — whether no perceptible difference exists (paired similarity test) when, for example, modifications are made to ingredients, processing, packaging, handling or storage operations, or

b) for selecting, training and monitoring assessors.

It is necessary to know, prior to carrying out the test, whether the test is a one-sided test (the test supervisor knows a priori the direction of the difference, and the alternative hypothesis corresponds to the existence of a difference in the expected direction) or a two-sided test (the test supervisor does not have any a priori knowledge concerning the direction of the difference, and the alternative hypothesis corresponds to the existence of a difference in one direction or the other).

The paired test can also be used in order to compare two products in terms of preference. The different cases of use of the paired test are summarized in Figure 1.



NOTE Only non-hedonic tests are dealt with in this International Standard.

Figure 1 — Possible different cases of use of the paired comparison test

EXAMPLE 1 (Case a) The production of a biscuit has been modified in order to render it more crisp. It is desired to check whether this increase is perceptible. Therefore it is necessary to try to highlight a difference to see whether the new product is perceived as being crispier than the usual product (control).

EXAMPLE 2 (Case b) A manufacturer knows that the product may contain traces of an ingredient which imparts an off-flavour to the product. He therefore wishes to determine the maximum acceptable quantity so that the flavour difference with a reference product without this ingredient is barely perceptible and therefore without any regrettable consequences.

EXAMPLE 3 (Case c) It is desired to produce a new soup and to compare two ingredients which will provide the salty flavour. For cost-intensive reasons, the ingredient which, at the same concentration, will provide the strongest salty flavour is sought. Therefore it is necessary to try to highlight a difference. It is not known a priori which ingredient will produce the strongest salty flavour.

EXAMPLE 4 (Case d) A manufacturer of plastics used, in particular, by car manufacturers for dashboards is seeking, for economic reasons, to replace the usual lubricant by a new one, but does not wish that the new plastics formula be perceived as presenting less or more surface slip than the usual one. It is a question of determining whether, for a same concentration, the new lubricant provides the same “surface slip” level as the usual product. It is necessary to show that both lubricants are similar in terms of “surface slip”, but it is not known a priori which lubricant can produce the highest surface slip characteristics.

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 5492 1992, *Sensory analysis — Vocabulary*

ISO 6658:1985, *Sensory analysis — Methodology — General guidance*

ISO 8586-1:1993, *Sensory analysis — General guidance for the selection, training and monitoring of assessors — Part 1: Selected assessors*

ISO 8586-2:1994, *Sensory analysis — General guidance for the selection, training and monitoring of assessors — Part 2: Experts*

ISO 8589:1988, *Sensory analysis — General guidance for the design of test rooms*

