AS 2542.2.4—2005
ISO 10399:2004
(Incorporating Amendment No. 1)

AS 2542.2.4—2005

Australian Standard®

Sensory analysis

Method 2.4: Specific methods—Duo-trio test

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The following are represented on Committee FT-022:

- Australian Associated Brewers
- Australian Food and Grocery Council
- Australian Institute of Food Science and Technology Limited
- Australian Paint Manufacturers' Federation
- Australian Society of Cosmetic Chemists
- Australian Wine and Brandy Corporation
- Department of Primary Industries and Fisheries Queensland
- Food Science Australia
- Food Technology Association of Victoria
- National Association of Testing Authorities Australia
- RMIT University

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Sensory analysis

Method 2.4: Specific methods—Duo-trio test

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PREFACE

This Standard was prepared by the Standards Australia Committee FT-022, Sensory Analysis to supersede AS 2542.2.4—1988, *Sensory analysis of foods,* Part 2.4: *Specific methods—Duo-trio test.*

This Standard incorporates Amendment No. 1 (February 2008). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This Standard is identical with and reproduced from ISO 10399:2004, *Sensory analysis—Methodology—Duo-trio test*.

The objective of this Standard is to provide 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.

A1 In reference to Table A.1 the exact p level for α can be calculated using binomial statistics. For example, using Microsoft Excel the p value for α = 1 – BINOMDIST (x – 1, n, ½, true) for x correct responses from n panellists.

In reference to Table A.2, the exact p level for β can be calculated using binomial statistics. For example, using Microsoft Excel the p value for β = BINOMDIST (x, n, p_d + (1–p_d)*(1/2), TRUE) for x correct responses from n panellists and p_d = maximum allowable proportion of discriminators expressed as decimal, i.e. 10% = 0.10. Note that for similarity testing you accept the null hypothesis of no difference with 100 (1 – β)% confidence.

Hence, if the p value (for β) is equal to 0.05, you conclude that the two samples are similar with 95% confidence.

As this Standard is reproduced from an international standard, the following applies:

(i) Its number appears on the cover and title page while the international standard number appears only on the cover

(ii) In the source text ‘this International Standard’ should read ‘this Australian Standard’.

(iii) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
5492	Sensory analysis—Vocabulary	2542	Sensory analysis of foods
		2542.3	Part 3: Glossary of terms
8589	Sensory analysis—General guidance for the design of test rooms	—	

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

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1 Scope

This International Standard describes 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 less efficient than the triangle test (described in ISO 4120) but is easier to perform by the assessors.

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 fairly homogeneous.

The method is effective for

a) determining that

   — either a perceptible difference results (duo-trio testing for difference), or

   — a perceptible difference does not result (duo-trio testing for similarity) when, for example, a change is made in ingredients, processing, packaging, handling or storage;

b) or for selecting, training and monitoring assessors.

Two forms of the method are described:

— the constant-reference technique, used when one product is familiar to the assessors (e.g. a sample from regular production), and

— the balanced-reference technique, used when one product is not more familiar than the other.

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