AS 2542.2.4:2014
ISO 10399:2004

AS 2542.2.4:2014

Australian STANDARD

Sensory analysis

Part 2.4: Methodology—Duo-trio test

STANDARDS Australia

This Australian Standard® was prepared by Committee FT-022, Sensory Analysis of Food. It was approved on behalf of the Council of Standards Australia on 18 November 2014.
This Standard was published on 17 December 2014.

The following are represented on Committee FT-022:

- Australian Chamber of Commerce and Industry
- Australian Institute of Food Science and Technology
- Australian Society of Cosmetic Chemists
- Brewers Association of Australia and New Zealand
- Deakin University
- Defence Science and Technology Organisation
- Department of Agriculture, Fisheries and Forestry, Qld
- Food Technology Association of Australia
- National Association of Testing Authorities Australia
- National Measurement Institute
- University of Queensland

This Standard was issued in draft form for comment as DR AS 2542.2.4:2014.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard®

Sensory analysis

Part 2.4: Methodology—Duo-trio test

Originated as AS 2542.2.4—1988.
Previous edition 2005.
Third edition AS 2542.2.4:2014.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 923 5

PREFACE

This Standard was prepared by Standards Australia Committee FT-022, Sensory Analysis of Food, to supersede AS 2542.2.4—2005, *Sensory analysis,* Method 2.4: *Specific methods—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 applicable whether a difference exists in a single sensory attribute or in several attributes.

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

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:

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

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

References to International Standards should be replaced by references to Australian Standards, as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
5492	Sensory analysis—Vocabulary	2542	Sensory analysis
		2542.3	Part 3: Vocabulary

Only normative references that have been adopted as Australian Standards have been listed.

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.

CONTENTS

AUSTRALIAN STANDARD

Sensory analysis

Part 2.4: Methodology—Duo-trio test

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*