AS 5013.2—2007
Reconfirmed 2017

AS 5013.2—2007

Australian Standard®

Food microbiology

Method 2: Microbiology of food and animal feeding stuffs—Horizontal method for the enumeration of *Bacillus cereus*—Colony-count technique at 30°C (ISO 7932:2004, MOD)

STANDARDS
Australia

This Australian Standard® was prepared by Committee FT-024, Food Products. It was approved on behalf of the Council of Standards Australia on 19 January 2007.
This Standard was published on 14 March 2007.

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- Australian Chamber of Commerce and Industry
- Australian Food and Grocery Council
- Australian Institute of Food Science and Technology Limited
- Australian Society for Microbiology Incorporated
- Consumers' Federation of Australia
- Department of Agriculture, Fisheries and Forestry (Commonwealth)
- Department of Primary Industries, Vic
- Food Science Australia
- Food Standards Australia New Zealand
- Horticulture Australia
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- Food Standards Australia New Zealand
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- Meat and Livestock Australia
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This Standard was issued in draft form for comment as DR 06437.

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 public comment period.

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 5013.2—2007
Food microbiology
Method 2: Microbiology of food and animal feeding stuffs—Horizontal method for the enumeration of Bacillus cereus—Colony-count technique at 30°C (ISO 7932:2004, MOD)

RECONFIRMATION NOTICE

Technical Committee FT-035 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 13 July 2017.

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Australian Standard®

Food microbiology

Method 2: Microbiology of food and animal feeding stuffs—Horizontal method for the enumeration of *Bacillus cereus*—Colony-count technique at 30°C (ISO 7932:2004, MOD)

Originally as part of AS 1766.2.Add.1—1976.
Previous edition AS 1766.2.6—1991.
Revised and redesignated as AS 5013.2—2007.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 8100 4

PREFACE

This Standard was prepared by the Standards Australia Committee FT-024, Food Products and Subcommittee FT-024-01, Food Microbiology, to supersede AS 1766.2.6—1991, *Food microbiology,* Method 2.6: *Examination for specific organisms—Bacillus cereus.*

This Standard is an adoption with national modifications and has been reproduced from ISO 7932:2004, *Microbiology of food and animal feeding stuffs—Horizontal method for the enumeration of presumptive Bacillus cereus—Colony-count technique at 30°C*.

The objective of this Standard is to adopt ISO 7932:2004 as an Australian Standard to specify a horizontal method for the enumeration of viable presumptive *Bacillus cereus* by means of the colony-count technique at 30°C with technical variations to the following Clauses of ISO 7932:

(a) Clause 1, Scope—Attention is drawn to the fact that this method provides a count of presumptive *B. cereus* (see Note in Scope). While the enumeration of presumptive *B. cereus* is adequate for most routine testing, the enumeration of confirmed *B. cereus* may be required for others—such as when testing for compliance. Therefore, a procedure for the confirmation of *B. cereus* has been included in this Australian Standard.

(b) Clause 3, Terms and definitions

(c) Clause 9.4, Confirmation.

(d) Clause 10.3, Precision—Applicability of the precision data

(e) Clause 11, Test report.

These variations, which are necessary for Australian conditions are given in normative Appendix ZZ which is added at the end of the source text.

The additional requirements on Clauses 3, 9.4 and 11 are included to extend the method to cover the confirmed *Bacillus cereus*.

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

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point substituted for a comma when referring to a decimal marker.

(d) Substitute 'mL' for the 'ml' whenever it appears.

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

Reference to International Standard		*Australian Standard*	
ISO		AS	
6887	Microbiology of food and animal feedings stuffs—Preparation of test samples, initial suspension and decimal dilutions for microbiological examination	5013	Food microbiology
		5013.11.1	Method 11.1: Microbiology of food and animal feeding stuffs—Preparation of test samples, initial suspension and decimal dilutions for microbiological examination—General rules for the preparation of the initial suspension and decimal dilutions
6887-1	Part 1: General rules for the preparation of the initial suspension and decimal dilutions		
7218	Microbiology of food and animal feeding stuffs—General rules for microbiological examinations	5013.14	Method 14: Microbiology of food and animal feeding stuffs—General rules for microbiological examination

With the exception of the above ISO documents, which have been adopted as Australian Standards, the ISO documents listed as normative references in Clause 2 have not been adopted as Australian Standards.

The laboratory should have a clearly defined quality control system to ensure that the apparatus, culture media, reagents and technique are suitable for the test. The use of positive controls is part of this system.

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

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INTRODUCTION

0.1 This International Standard is intended to provide general guidance for the microbiological examination of food products not dealt with by existing International Standards and to be taken into account by organizations preparing microbiological test methods for application to foods or to animal feeding stuffs. Because of the large variety of products within this field of application, these guidelines may not be appropriate in every detail for certain products and for some other products it may be necessary to use different methods. Nevertheless, it is hoped that in all cases every attempt will be made to apply the guidelines provided as far as possible and that deviations from them will only be made if absolutely necessary for technical reasons.

When this International Standard is next reviewed, account will be taken of all information then available regarding the extent to which the guidelines have been followed and the reasons for deviation from them in the case of particular products.

The harmonization of test methods cannot be immediate and, for certain groups of products, International Standards and/or national standards may already exist that do not comply with the guidelines. In cases where International Standards already exist for the product to be tested, they should be followed, but it is hoped that when such standards are reviewed they will be changed to comply with this International Standard so that eventually the only remaining departures from these guidelines will be those necessary for well-established technical reasons.

0.2 It appears that the spores of many, if not most, strains of *B. cereus* germinate readily on the surface of culture media used for enumeration. In most cases there does not seem to be a need for heat shock treatment to provoke germination. Sometimes a heat shock procedure is desirable, for example for spore counts or to inhibit growth of vegetative bacterial cells. In such cases, treatment for 10 min at 80 °C is recommended.

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AUSTRALIAN STANDARD

Food microbiology

Method 2:
Microbiology of food and animal feeding stuffs—Horizontal method for the enumeration of *Bacillus cereus*—Colony-count technique at 30°C (ISO 7932:2004, MOD)

1 Scope

This International Standard specifies a horizontal method for the enumeration of viable presumptive *Bacillus cereus* by means of the colony-count technique at 30 °C. It is applicable to

— products intended for human consumption and the feeding of animals, and

— environmental samples in the area of food production and food handling.

NOTE In order to have a practicable test method, the confirmatory stage has been restricted to the typical aspect on MYP agar and the haemolysis test. Thus the term “presumptive” has been introduced in order to acknowledge the fact that the confirmatory stage does not enable the distinction of *B. cereus* from other closely related but less commonly encountered *Bacillus* species, such as *B. anthracis*, *B. thuringiensis*, *B. weihenstephanensis*, *B. mycoides*. An additional motility test may help to differentiate *B. cereus* from *B. anthracis* in cases where the presence of the latter is suspected.

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 6887-1:1999, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 1: General rules for the preparation of the initial suspension and decimal dilutions*

ISO 7218:1996, *Microbiology of food and animal feeding stuffs — General rules for microbiological examinations,* and Amd.1:2001

ISO/TS 11133-2:2003, *Microbiology of food and animal feeding stuffs — Guidelines on preparation and production of culture media — Part 2: Practical guidelines on performance testing of culture media*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
presumptive *Bacillus cereus*
microorganism that forms typical colonies on the surface of a selective culture medium and which gives a positive confirmation reaction under the conditions specified in this International Standard

NOTE See Note in Clause 1.

4 Principle

4.1 A specified quantity of the test sample if the initial product is liquid, or a specified quantity of an initial suspension in the case of other products, is surface plated on a solid selective culture medium contained in Petri dishes.