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BSI Standards Publication

Microbiology of food, animal feed and water – Preparation, production, storage and performance testing of culture media

National foreword

This British Standard is the UK implementation of EN ISO 11133:2014+A2:2020. It is identical to ISO 11133:2014, incorporating amendments 1:2018 and 2:2020. It supersedes BS EN ISO 11133:2014+A1:2018, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee AW/9, Microbiology.

A list of organizations represented on this committee can be obtained on request to its secretary.

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30 November 2014	CEN Correction Notice 14 November 2014 implements ISO corrected text 1 November 2014: See ISO foreword for changes
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11133:2014 +A2

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English Version

Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media (ISO 11133:2014)

Microbiologie des aliments, des aliments pour animaux et de l'eau - Préparation, production, stockage et essais de performance des milieux de culture (ISO 11133:2014)

Mikrobiologie von Lebensmitteln, Futtermitteln und Wasser - Vorbereitung, Herstellung, Lagerung und Leistungsprüfung von Nährmedien (ISO 11133:2014)

This European Standard was approved by CEN on 20 March 2014.

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European foreword

This document (EN ISO 11133:2014) has been prepared by Technical Committee ISO/TC 34 “Food products” in collaboration with Technical Committee CEN/TC 275 “Food analysis - Horizontal methods” the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

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Endorsement notice

The text of ISO 11133:2014, Corrected version 2014-11-01 has been approved by CEN as EN ISO 11133:2014 without any modification.

Foreword to amendment A1

This document (EN ISO 11133:2014/A1:2018) has been prepared by Technical Committee ISO/TC 34 “Food products” in collaboration with Technical Committee CEN/TC 275 “Food analysis - Horizontal methods” the secretariat of which is held by DIN.

This Amendment to the European Standard EN ISO 11133:2014 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2018, and conflicting national standards shall be withdrawn at the latest by September 2018.

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Endorsement notice

The text of ISO 11133:2014/A1:2018 has been approved by CEN as EN ISO 11133:2014/A1:2018 without any modification.

Foreword to amendment A2

This document (EN ISO 11133:2014/A2:2020) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 463 “Microbiology of the food chain” the secretariat of which is held by AFNOR.

This Amendment to the European Standard EN ISO 11133:2014 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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Endorsement notice

The text of ISO 11133:2014/Amd 2:2020 has been approved by CEN as EN ISO 11133:2014/A2:2020 without any modification.

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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. www.iso.org/directives

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*, in collaboration with Technical Committee ISO/TC 147 *Water quality*, Subcommittee SC 4, *Microbiological methods*.

This first edition of ISO 11133 replaces the second edition of ISO/TS 11133-1 (ISO/TS 11133-1:2009) and the first edition of ISO/TS 11133-2:2003, which have been technically revised. It also incorporates the Amendment ISO/TS 11133-2:2003/Amd.1:2011. In particular, it also includes requirements for microbiology media for water testing. It supersedes ISO 9998:1991.

This corrected version of ISO 11133:2014 incorporates the following corrections:

— In Annex E

Selective media for enumeration of microorganisms

- DG18 column Incubation: d was replaced with days;
- EC column control strain: £ was deleted after Pseudomonas;
- mCCDA: [d] was deleted after both species of *Campylobacter*; [b] was added after 000156;
- mCCDA: the criteria "Total or partial inhibition (0-1)" was added to the control stain *E. coli* and "Total inhibition (0)" was added to *S. aureus*;
- TSC: the row with *Pseudomonas aeruginosa* and the WDCM number 00025 was deleted.

Selective enrichment media

- Bolton productivity: the cocktails of control strains were split into 2 separate cells;
- EE: [d] was added before [i], after both stains of *Salmonella;*
- ITC: a new cocktail of strains was introduced for Productivity;
- PBS selectivity: [b] was added after 00025;

— RVS Productivity: added [d] to *E. coli*.

Non-selective liquid media

— mCCDA: [d] was deleted after both species of *Campylobacter*; [b] was added after 000156;

— mCCDA column Characteristic reactions: "colonies" was added after "moist";

— PEMBA lane productivity: [i] was deleted after "good growth (2)";

— Media TCBS was added after TBX;

— VRBG: one *Salmonella* Typhimurium was replaced by *Salmonella* Enteritidis WDCM 00030 and [d,i] was added to both *Salmonella*;

Non-selective isolation media

— Nutrient agar: the WDCM numbers were inverted between *S.* Typhimurium and *S.* Enteritidis;

— TSYEA: name and WDCM were corrected to *Listeria monocytogenes* 4b WDCM 00021[b];

Multipurpose media

— Pre-enrichment for Enterobacteriaceae: added [d] to both *Salmonella* and deleted "or" between the 2 WDCM numbers.

Reference media for enumeration of microorganisms

— TSA: deleted "*Escherichia coli* O157:H7 WDCM 00014 (non-toxigenic)";

— SDA: added WDCM number 00053[b] to *Aspergillus*;

— In Annex F

Selective media for enumeration of microorganisms by comparing with a non-selective reference medium

— Colilert was replaced by Colilert-18 and the WDCM number 00207 was replaced by 00024.

Selective media for enumeration of microorganisms by comparing with a previously accepted batch (for use in special cases)

— Colilert was replaced by Colilert-18 and the WDCM number 00207 was replaced by 00024;

— Lactose TTC: a line was added between *Enterococcus faecalis* and *Pseudomonas aeruginosa* and the WDCM number corresponding.

Selective enrichment media

— Bolton/Preston Productivity: cocktails of control strains were split in 2 separate cells;

Non-selective liquid media

— "Saline salt" was replaced by "Saline solution", and a [b] was added after 00034;

— mCCDA: [d] was deleted after both species of *Campylobacter*; [b] was added after 000156.

Introduction

In laboratories carrying out microbiological examinations, the main objectives are to maintain, resuscitate, grow, detect and/or enumerate a wide variety of microorganisms. Culture media are used in all traditional microbiological culture techniques and also for many alternative techniques. Many formulae of culture media are commercially available and many more, designed for specific growth purposes, are described in the literature.

Many tests and procedures depend upon culture media being capable of providing consistent and reproducible results. The requirements for media may be specific to both the sample and the organisms to be detected. Culture media meeting established performance criteria are therefore a pre-requisite for any reliable microbiological work. Sufficient testing should be carried out to demonstrate

a) the acceptability of each batch of medium,

b) that the medium is "fit for purpose", and

c) that the medium can produce consistent results.

These three criteria are an essential part of internal quality control procedures and, with appropriate documentation, will permit effective monitoring of culture media and contribute to the production of both accurate and reliable data. For reliable microbiological analysis it is essential to use culture media of proven quality. For all media described in standard methods it is essential to define the minimum acceptance criteria required to ensure their reliability. It is recommended that in the determination of the performance characteristics of a culture medium tests are carried out that conform with this International Standard.

The establishment of widely accepted minimum performance criteria for media should lead to products with more consistent quality and thus reduce the extent of testing necessary in the user's laboratory.

In addition the acceptance criteria measured by the methods defined in this International Standard can be used by all microbiological laboratories to evaluate the productive, selective and/or elective properties of a culture medium.

In the microbiological analysis of food, animal feed and water, the requirements of this International Standard have precedence in the assessment of culture media quality.

〚A1〛When specific standards are revised and new standards developed, they will include a paragraph for performance testing of the culture media used in the standard.〚A1〛