

**TOIDU, LOOMASÖÖDA JA VEE MIKROBIOLOOGIA.
SÖÖTMETE ETTEVALMISTAMINE, VALMISTAMINE,
SÄILITAMINE JA TOIMIVUSE KONTROLLIMINE**

**Microbiology of food, animal feed and water -
Preparation, production, storage and performance
testing of culture media (ISO 11133:2014 +
ISO 11133:2014/Amd 1:2018 +
ISO 11133:2014/Amd 2:2020)**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 11133:2014+A1+A2:2020 sisaldab Euroopa standardi EN ISO 11133:2014 ja selle muudatuse A1:2018 ja A2:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11133:2014+A1+A2:2020 consists of the English text of the European standard EN ISO 11133:2014 and its amendments A1:2018 and A2:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 21.05.2014, muudatused A1 07.03.2018 ja A2 20.05.2020.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. Date of Availability of the European standard is 21.05.2014, for A1 07.03.2018 and A2 20.05.2020.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis ära märgitud märgenditega A1 A1 . Muudatusega A2 lisatud või muudetud teksti algus ja lõpp on tekstis ära märgitud märgenditega A2 A2 . Standard on kättesaadav Eesti Standardikeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by symbols A1 A1 . The start and finish of text introduced or altered by amendment A2 is indicated in the text by symbols A2 A2 . The standard is available from the Estonian Centre for Standardisation.

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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 + ISO 11133:2014/Amd 1:2018 +
ISO 11133:2014/Amd 2:2020)

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 + ISO 11133:2014/Amd
1:2018 + ISO 11133:2014/Amd 2:2020)

Mikrobiologie von Lebensmitteln, Futtermitteln und
Wasser - Vorbereitung, Herstellung, Lagerung und
Leistungsprüfung von Nährmedien (ISO 11133:2014
+ ISO 11133:2014/Amd 1:2018 + ISO
11133:2014/Amd 2:2020)

This European Standard was approved by CEN on 20 March 2014. Amendment A1 was approved by CEN on 28 December 2017. Amendment A2 was approved by CEN on 21 March 2020.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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

A1 Amendment A1 European foreword

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. **A1**

A2 Amendment A2 European foreword

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.

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

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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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The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 9, *Food products*, 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.

A1 Amendment A1 foreword

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*, in collaboration with Technical Committee ISO/TC 147 *Water quality*, Subcommittee SC 4, *Microbiological methods*. **A1**

A₂ Amendment A2 foreword

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*, in collaboration with Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 4, *Microbiological methods*, and in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 463, *Microbiology of the food chain*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html. ^(A₂)

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**

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

1 Scope

This International Standard defines terms related to quality assurance of culture media and specifies the requirements for the preparation of culture media intended for the microbiological analysis of food, animal feed, and samples from the food or feed production environment as well as all kinds of water intended for consumption or used in food production.

These requirements are applicable to all categories of culture media prepared for use in laboratories performing microbiological analyses.

A1 This document also sets criteria and describes methods for the performance testing of culture media. This document is applicable to end-users of ready-to-use media and to producers such as

- commercial bodies producing and/or distributing ready-to-use or semi-finished reconstituted or dehydrated media,
- non-commercial bodies supplying media to third parties, and
- microbiological laboratories preparing culture media for their own use. **A1**

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, *Microbiology of food and animal feed — 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 6887-2, *Microbiology of food and animal feed — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 2: Specific rules for the preparation of meat and meat products*

ISO 6887-3, *Microbiology of food and animal feed — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 3: Specific rules for the preparation of fish and fishery products*

ISO 6887-4, *Microbiology of food and animal feed — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 4: Specific rules for the preparation of miscellaneous products*

ISO 6887-5, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 5: Specific rules for the preparation of milk and milk products*

ISO 6887-6, *Microbiology of food and animal feed — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 6: Specific rules for the preparation of samples taken at the primary production stage*

ISO 7704, *Water quality — Evaluation of membrane filters used for microbiological analyses*

ISO 7218, *Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations*

ISO 8199, *Water quality — General guidance on the enumeration of micro-organisms by culture*

3 Terms and definitions

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

NOTE 1 This clause gives the general definitions relating to quality assurance of culture media and provides terminology relating to performance testing, culture media and test microorganisms.

NOTE 2 Tables E.2 and F.2 give explanations of media name abbreviated terms.

3.1 General terms and definitions

3.1.1

quality control

part of quality management focused on fulfilling quality requirements

Note 1 to entry: See Reference [1].

3.1.2

batch of culture medium

lot of culture medium

homogeneous and fully traceable unit of a medium referring to a defined amount of bulk, semi-finished product or end product, which is consistent in type and quality and which has been produced within one defined production period, having been assigned the same batch (or lot) number

3.1.3

chromogenic substrate

fluorogenic substrate

substrate containing a chromophore/fluorophore group and a substrate utilizable by bacteria or fungi

Note 1 to entry: After splitting the chromogenic/fluorogenic substrate, the chromophore/fluorophore is released and a coloured/fluorescent end product becomes visible/can be detected using an ultraviolet (UV) lamp.

3.2 Terminology of performance testing

3.2.1

performance of culture medium

response of a culture medium to challenge by test organisms under defined conditions

3.2.2

target microorganism

microorganism or group of microorganisms to be detected or enumerated