

Toiduahela mikrobioloogia. Mikroorganismide loendamise horisontaalne meetod. Osa 2: Kolooniate loendamine pindkülvi tehnikat kasutades temperatuuril 30 °C

Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 2: Colony count at 30 °C by the surface plating technique (ISO 4833-2:2013)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 4833-2:2013 sisaldab Euroopa standardi EN ISO 4833-2:2013 ja selle paranduse EN ISO 4833-2:2013/AC:2014 inglisekeelset teksti.	This Estonian standard EVS-EN ISO 4833-2:2013 consists of the English text of the European standard EN ISO 4833-2:2013 and corrigendum EN ISO 4833-2:2013/AC:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.09.2013, parandus on kättesaadav alates 19.02.2014.	Date of Availability of the European standard is 04.09.2013, for corrigendum 19.02.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 07.100.30

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 2: Colony count at 30 degrees C by the surface plating technique (ISO 4833-2:2013)

Microbiologie de la chaîne alimentaire - Méthode horizontale pour le dénombrement des micro-organismes - Partie 2: Comptage des colonies à 30 degrés C par la technique d'ensemencement en surface (ISO 4833-2:2013)

Mikrobiologie von Lebensmitteln und Futtermitteln - Horizontales Verfahren für die Zählung von Mikroorganismen - Teil 2: Koloniezählung bei 30 °C mittels Oberflächenverfahren (ISO 4833-2:2013)

This European Standard was approved by CEN on 26 July 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR
NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 4833-2:2013) 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 March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4833:2003, together with EN ISO 4833-1:2013.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4833-2:2013 has been approved by CEN as EN ISO 4833-2:2013 without any modification.

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Principle	2
5 Culture media and diluents	2
5.1 General	2
5.2 Diluents	2
5.3 Agar medium: plate count agar (PCA)	2
6 Apparatus	3
7 Sampling	4
8 Preparation of test sample	4
9 Procedure	4
9.1 Test portion, initial suspension and dilutions	4
9.2 Inoculation and incubation	4
9.3 Counting of colonies	5
10 Expression of results	5
11 Test report	5
Annex A (normative) Surface colony count using a spiral plater	6
Bibliography	12

Microbiology of the food chain — Horizontal method for the enumeration of microorganisms —

Part 2: Colony count at 30 °C by the surface plating technique

1 Scope

This part of ISO 4833 specifies a horizontal method for enumeration of microorganisms that are able to grow and form colonies on the surface of a solid medium after aerobic incubation at 30 °C. The method is applicable to:

- a) products intended for human consumption or for animal feed;
- b) environmental samples in the area of food and feed production and food handling.

This part of ISO 4833 is applicable to:

- 1) products containing heat-sensitive organisms that are likely to form a significant proportion of the total flora (e.g. psychrotrophic organisms in chilled and frozen foods, dried foods, other foods that may contain heat-sensitive organisms);
- 2) products containing obligately aerobic bacteria that are likely to form a significant proportion of the total flora (e.g. *Pseudomonas* spp.);
- 3) products that contain small particles that can prove difficult to distinguish from colonies in a pour plate;
- 4) products whose intense colour prevents the recognition of colonies in a pour plate;
- 5) products for which distinction between different types of colony is required as part of the assessment of food quality.

In addition to the manual spread plating technique, this part of ISO 4833 also specifies the use of a spiral plater, a rapid method of performing surface colony counts ([Annex A](#)).

The applicability of this part of ISO 4833 to the examination of certain fermented food and animal feeds is limited and other media or incubation conditions can be more appropriate. However, this method can be applied to such products even though it is possible that the predominant microorganisms in these products are not detected effectively.

For some matrices, the method described in this part of ISO 4833 can give different results to those obtained using the method described in ISO 4833-1.

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 (all parts), *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination*

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

ISO 11133, *Microbiology of food, animal feed and water — Preparation, production, storage and performance testing of culture media*

3 Terms and definitions

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

3.1

microorganism

entity of microscopic size, encompassing bacteria, fungi, protozoa and viruses

[SOURCE: ISO/TS 11139:2006, 3.2.26]

Note 1 to entry: For the purposes of this part of ISO 4833, microorganisms are bacteria, yeasts and moulds that are able to produce colonies under the conditions specified in this part of ISO 4833.

4 Principle

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

Other plates are prepared under the same conditions using decimal dilutions of the test sample or of the initial suspension.

The plates are incubated under aerobic conditions at 30 °C for 72 h.

The number of microorganisms per gram of sample or the number of microorganisms per millilitre of sample is calculated from the number of colonies obtained on the plates containing fewer than 300 colonies.

5 Culture media and diluents

5.1 General

Follow ISO 11133 for the preparation, production and performance testing of culture media.

5.2 Diluents

Use the diluent(s) specified in ISO 6887 for the product concerned or the specific International Standard dealing with the product under examination.

5.3 Agar medium: plate count agar (PCA)

5.3.1 Composition

Enzymatic digest of animal tissues	5,0 g
Yeast extract	2,5 g
Glucose, anhydrous (C ₆ H ₁₂ O ₆)	1,0 g
Agar ^a	9 g to 18 g
Water	1 000 ml

^a Depending on the gel strength of the agar.

When dairy products are examined, add skimmed milk powder at 1,0 g/l of the culture medium. The skimmed milk powder shall be free from inhibitory substances.