

Mikrobioloogia. Üldjuhend *Bacillus cereus* arvu määramiseks. Kolooniade loendamise tehnika 30 °C juures

Microbiology - General guidance for the enumeration of *Bacillus cereus* - Colony-count technique at 30 °C

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 7932:2001 sisaldab Euroopa standardi EN ISO 7932:1997 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 7932:2001 consists of the English text of the European standard EN ISO 7932:1997
Käesolev dokument on jõustatud 05.09.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 05.09.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

Käsitlusala: Käesolev rahvusvaheline standard annab üldjuhendi elusa <i>Bacillus cereuse</i> arvu määramiseks toiduainetes või looma-söötades kolooniate loendamise tehnika abil 30 °C juures.	Scope: This International Standard gives general guidance for the enumeration of viable <i>Bacillus cereus</i> in products intended for human consumption or animal feeding stuffs by means of the colony-count technique at 30 °C.
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Võtmesõnad: agricultural products, food products, animal feeding products, tests, microbiological analysis, determination, bacillus, bacteria count methods.

English version

**Microbiology - General guidance for the enumeration of *Bacillus cereus* -
Colony-count technique at 30 °C
(ISO 7932:1993, including Technical Corrigendum 1:1997)**

Microbiologie – Directives générales pour le dénombrement de
Bacillus cereus – Méthode par comptage des colonies à
30 °C (ISO 7932:1993, Rectificatif Technique 1:1997 inclus)

Mikrobiologie – Allgemeine Anleitung zur Zählung von
Bacillus cereus – koloniezahlverfahren bei 30 °C
(ISO 7932:1993, einschließlich Technische Korrektur 1:1997)

This European Standard was approved by CEN on 15 February 1997. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This document (ISO 7932:1993) has been prepared by Technical Committee ISO/TC 34 "Agricultural 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 June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 7932:1993 and its corrigendum Cor.1:1997 has been approved by CEN as a European Standard without any modifications.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7932 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Sub-Committee SC 9, *Microbiology*.

This second edition cancels and replaces the first edition (ISO 7932:1987), which has been technically revised.

Annex A forms an integral part of this International Standard. Annex B is for information only.

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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 methods of test 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 For the purposes of a practicable test method, the definition of *Bacillus cereus* given in clause 3 and used as a basis for the procedure does not exclusively describe strains of *B. cereus*. In particular, the confirmatory tests are inadequate to distinguish between *B. cereus* and other closely related but less commonly encountered bacillus species such as *B. anthracis*, *B. thuringiensis*, *B. mycoides*, etc.

0.3 It appears that the spores of many, if not most, strains of *B. cereus* germinate readily on the surface of culture media employed 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 of 15 min at 70 °C is recommended.

Microbiology — General guidance for the enumeration of *Bacillus cereus* — Colony-count technique at 30 °C

1 Scope

This International Standard gives general guidance for the enumeration of viable *Bacillus cereus* in products intended for human consumption or animal feeding stuffs by means of the colony-count technique at 30 °C.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6887:1983, *Microbiology — General guidance for the preparation of dilutions for microbiological examination*.

ISO 7218:1985, *Microbiology — General guidance for microbiological examinations*.

3 Definition

For the purposes of this International Standard, the following definition applies.

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

4 Principle

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

Preparation of other plates, under the same conditions, using decimal dilutions of the test sample or of the initial suspension.

4.2 Aerobic incubation of the plates at 30 °C for 18 h to 48 h.

4.3 Calculation of the number of *B. cereus* per gram or per millilitre of sample from the number of confirmed colonies obtained on plates at dilution levels chosen so as to give a significant result, and confirmation according to the tests specified.

5 Dilution fluid, culture media and reagents

5.1 General

For current laboratory practice, see ISO 7218.

NOTE 1 Commercially prepared ready-to-use reagents may be used.

5.2 Dilution fluid

See ISO 6887 and any specific standard dealing with the product to be examined.