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**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

*Microbiologie des aliments — Préparation des échantillons, de la  
suspension mère et des dilutions décimales en vue de l'examen  
microbiologique —*

*Partie 1: Règles générales pour la préparation de la suspension mère et  
des dilutions décimales*



## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 6887-1 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Subcommittee SC 9, *Microbiology*.

This first edition of ISO 6887-1 cancels and replaces ISO 6887:1983.

ISO 6887 consists of the following parts, under the general title *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 for microbiological examination*
- *Part 2: Specific rules for the preparation of test samples and initial suspension*

Part 2 will probably be divided into several parts, for specific products such as meat, milk, fish and other products.

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International Organization for Standardization  
Case postale 56 • CH-1211 Genève 20 • Switzerland  
Internet iso@iso.ch

Printed in Switzerland

## Introduction

Because of the large variety of food and feed products, this horizontal method may not be appropriate in every detail for certain products. In this case, different methods, which are specific to these products may be used if absolutely necessary for justified technical reasons. Nevertheless, every attempt should be made to apply this horizontal method as far as possible.

When this part of ISO 6887 is next reviewed, account will be taken of all information then available regarding the extent to which this horizontal method has been followed and the reasons for deviations from this method in the case of particular products.

The harmonization of test methods cannot be immediate, and for certain group of products International Standards and/or national standards may already exist that do not comply with this horizontal method. It is hoped that when such standards are reviewed they will be changed to comply with this part of ISO 6887 so that eventually the only remaining departures from this horizontal method will be those necessary for well-established technical reasons.

This part of ISO 6887 defines the general rules for the preparation of the initial suspension and of decimal dilutions for microbiological examination. Part 2 of ISO 6887 (under preparation) will specify specific rules for the preparation of the test sample and of the initial suspension, taking into account the variety of food and feed products to which ISO 6887 applies.

For a number of products, it is necessary to take special precautions especially when preparing the initial suspension, because of the physical state of the product (such as a dry product, a highly viscous product), or the presence of inhibitory substances (such as spices, salted fishes), or the acidity, etc.

It is recommended that, whilst waiting for the publication of part 2, any special diluents or practices specified for particular products in an appropriate specific standard be used in the preparation of the initial suspension. This may include:

- adjustment of the pH of a food suspension to neutrality;
- the use of buffered peptone water, and no other diluent, for products with high inhibitory effect, or products containing microorganisms that have been stressed (e.g. acidic pH);
- specific rehydration procedures for foods of low water activity to minimize osmotic shock;
- the use of adequate temperatures to aid suspension of cocoa, gelatine, milk powder, etc.;
- resuscitation procedures for the improved recovery of stressed microorganisms resulting from food processing and storage;
- homogenization procedures and duration specific to certain products (e.g. cereals) and/or to certain determinations (e.g. yeasts and moulds);
- the use of surface-active agents for high-fat foods.

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# 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

### 1 Scope

This part of ISO 6887 defines general rules for the aerobic preparation of the initial suspension and of decimal dilutions for microbiological examinations of products intended for human or animal consumption.

This part of ISO 6887 is applicable to the general case, except for products mentioned in ISO 6887-2.

### 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 6887. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this part of ISO 6887 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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

### 3 Definitions

For the purposes of this part of ISO 6887, the following definitions apply.

#### 3.1

##### **initial suspension (primary dilution)**

suspension, solution or emulsion obtained after a weighed or measured quantity of the product under examination (or of a test sample prepared from the product) has been mixed with a nine-fold quantity of diluent, allowing large particles, if present, to settle

NOTE See clause 5 and notes 1 and 2 of 9.1.

#### 3.2

##### **further decimal dilutions**

suspensions or solutions obtained by mixing a measured volume of the initial suspension (3.1) with a ninefold volume of diluent and by repeating this operation with further dilutions until a decimal dilution series, suitable for the inoculation of culture media, is obtained