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Milk — Quantitative determination of bacteriological quality — Guidance for establishing and verifying a conversion relationship between routine method results and anchor method results

Lait — Mesure quantitative de la qualité bactériologique — Lignes directrices pour établir et vérifier une relation de conversion entre les résultats de la méthode de routine et les résultats de la méthode d'ancrage

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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

ISO 21187 | IDF 196 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF), in collaboration with AOAC International. It is being published jointly by ISO and IDF and separately by AOAC International.

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Foreword

IDF (the International Dairy Federation) is a worldwide federation of the dairy sector with a National Committee in every member country. Every National Committee has the right to be represented on the IDF Standing Committees carrying out the technical work. IDF collaborates with ISO and AOAC International in the development of standard methods of analysis and sampling for milk and milk products.

Draft International Standards adopted by the Action Teams and Standing Committees are circulated to the National Committees for voting. Publication as an International Standard requires approval by at least 50 % of the National Committees casting a vote.

ISO 21187 | IDF 196 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 5, *Milk and milk products*, and the International Dairy Federation (IDF), in collaboration with AOAC International. It is being published jointly by ISO and IDF and separately by AOAC International.

All work was carried out by the Joint ISO/IDF/AOAC Action Team, *Routine analysis in quantitative microbiology*, of the Standing Committee on *Quality assurance, statistics of analytical data and sampling*, under the aegis of its project leader, Mr H. J.C.M. van den Bijgaart (NL).

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Introduction

Conversion in quantitative microbiology means expressing the result of a quantitative determination of the bacteriological status of a test sample as obtained with a routine method in units of another method, generally a reference or anchor method. Through this, quantitative results obtained with routine methods can be compared to values or limits that are stated in reference or anchor method units. For establishing and applying a conversion relationship, a number of prerequisites should be met. These are referred to in this International Standard, but are generally described elsewhere.

Although a considerable part of the applied principles for conversion coincides with those applied for the calibration of indirect or routine methods against a reference method, or by means of (certified) reference materials, it is stressed that the background and aims for applying conversion are different from those for calibration. Calibration involves the determination of the adjustment needed for each level of an analyte to closely approximate the true value of its concentration or number. However in quantitative microbiology, a true value in its strict sense cannot be established and is only defined by the method description applied. When applying routine methods in the quantitative determination of bacteriological quality, one is often dealing with different methodological principles and therefore also other units. Conversion is used to transfer results obtained with different methods to a common scale.

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Milk — Quantitative determination of bacteriological quality — Guidance for establishing and verifying a conversion relationship between routine method results and anchor method results

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1 Scope

This International Standard gives guidelines for the establishment of a conversion relationship between the results of a routine method and an anchor method, and its verification for the quantitative determination of the bacteriological quality of milk.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3534-1, *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms*

ISO 8196-1|IDF 128-1, *Milk — Definition and evaluation of the overall accuracy of indirect methods of milk analysis — Part 1: Analytical attributes of indirect methods*

ISO 8196-2|IDF 128-2, *Milk — Definition and evaluation of the overall accuracy of indirect methods of milk analysis — Part 2: Calibration and quality control in the dairy laboratory*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3534-1, ISO 8196-1|IDF 128-1, ISO 8196-2|IDF 128-2 and the following apply.

3.1
routine method
alternative method
method of analysis allowing quantification of the bacteriological status of a test sample

NOTE 1 The method can be proprietary or non-commercial.

NOTE 2 The term “routine” or “alternative” in this International Standard refers to the entire method. It includes all aspects (such as sample pretreatment, materials and instruments) required for the execution of the method.

NOTE 3 The term “routine method” is used in this International Standard.

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