



Food microbiology

Method 24.1: Microbiology of the food chain — Horizontal method for the detection and enumeration of *Listeria monocytogenes* and of *Listeria* spp. — Detection method (ISO 11290-1:2017, MOD)

AS 5013.24.1:2020

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Preface

This Standard was prepared by the Standards Australia Committee FT-035, Food Microbiology, to supersede AS 5013.24.1—2009, *Food microbiology, Method 24.1: Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Detection method (ISO 11290-1:1996, MOD)*.

The objective of this Standard is to specify a horizontal method for the detection of *L. monocytogenes* and *Listeria* spp. (including *L. monocytogenes*).

This Standard is applicable to —

- (a) products intended for human consumption and for the feeding of animals; and
- (b) environmental samples in the area of food production and food handling.

This Standard is an adoption with national modifications, and has been reproduced from, ISO 11290-1:2017, *Microbiology of the food chain — Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. — Part 1: Detection method*. The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variations to ISO 11290-1:2017 for the application of this standard in Australia.

As this document has been reproduced from an International Standard, the following applies:

- (i) A full point substitutes for a comma when referring to a decimal marker.
- (ii) Substitute “mL” for “ml” wherever it appears.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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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 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 275, *Food analysis — Horizontal methods*, in collaboration with ISO Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 11290-1:1996), which has been technically revised. It also incorporates the amendment ISO 11290-1:1996/Amd.1:2004.

The main changes, compared to ISO 11290-1:1996, are the following.

- The detection of *Listeria monocytogenes* has been modified as listed below.
- Primary enrichment in half-Fraser broth: incubation for 25 h ± 1 h.
- Secondary enrichment in Fraser broth: incubation for 24 h ± 2 h.^[29]
- Half-Fraser and Fraser broths may be refrigerated before transfer or isolation on selective agar for a maximum of 72 h.
- Storage of isolation plates: incubated plates can be refrigerated for a maximum of two days before reading.
- Microscopic aspect for confirmation is optional if the isolation agar allows distinction between pathogenic and non-pathogenic *Listeria* spp.
- CAMP test and catalase test are optional.
- Inclusion of new performance characteristics.
- Moreover, detection of *Listeria* spp. has been included in the scope and the title changed accordingly.

A list of parts in the ISO 11290 series can be found on the ISO website.

Introduction

The main changes, listed in the foreword, introduced in this document compared to ISO 11290-1:1996 are considered as major (see ISO 17468[28]). The technical changes were assessed and were considered to have no significant effect on the method performance characteristics or test results.

Because of the large variety of food and feed products, this horizontal method may not be appropriate in every detail for certain products for which it may be necessary to use different or specific methods. Nevertheless, in all cases, this horizontal method is intended to be applied as far as possible and deviations from this only be made for justified technical reasons.

When this document 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 it 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 this horizontal method. It is hoped that when such standards are reviewed, they will be changed to comply with this document so that eventually the only remaining departures from this horizontal method will be those necessary for well-established technical reasons.

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Method 24.1: Microbiology of the food chain — Horizontal method for the detection and enumeration of *Listeria monocytogenes* and of *Listeria* spp. — Detection method (ISO 11290-1:2017, MOD)

WARNING — In order to safeguard the health of laboratory personnel, it is essential that tests for detecting *L. monocytogenes* and *Listeria* spp. are only undertaken in properly equipped laboratories, under the control of a skilled microbiologist, and that great care is taken in the disposal of all incubated materials. Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety aspects, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices. In particular, it is strongly recommended that tests for detecting *L. monocytogenes* are undertaken in laboratories providing biosafety level 2 conditions. It is strongly recommended that female laboratory staff are made aware of the particular risk to the developing foetus presented by infection of the mother through exposure to *L. monocytogenes* and *Listeria* spp., and that pregnant personnel and persons with recognized underlying conditions or diseases that impair cell-mediated immunity do not manipulate cultures of *L. monocytogenes* and *Listeria* spp.

1 Scope

This document specifies a horizontal method for

- the detection of *L. monocytogenes*, and
- the detection of *Listeria* spp. (including *L. monocytogenes*).

This document is applicable to

- products intended for human consumption and for the feeding of animals, and
- environmental samples in the area of food production and food handling.

It is possible that certain additionally described *Listeria* species may not be detected or confirmed by this method. [5],[10],[12],[14],[21],[26],[27]

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 6887 (all parts), *Microbiology of the food chain — 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.