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Microbiology of the food chain — Detection of *Trichinella* larvae in meat by artificial digestion method

Microbiologie de la chaîne alimentaire — Recherche des larves de Trichinella *dans la viande par une méthode de digestion artificielle*

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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 9, *Microbiology*.

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Introduction

Trichinella spp. are the causative agents of human trichinellosis, a disease which is a public health hazard and, as a result, also represents an economic problem in porcine animal production. Due to the zoonotic importance of this infection in many countries, the main efforts have focused on control and/or eradication of *Trichinella* from domestic pigs, the most important source of human infection worldwide. Digestion methods for detection of *Trichinella* larvae in muscle samples from pigs and other susceptible animal species intended for human consumption (e.g. horses, wild boars, walruses, and bears), are effective for preventing clinical trichinellosis in humans. Due to the limits of sensitivity of digestion methods, these methods might not detect infected animals with very small numbers of larvae in muscle samples, that can pose a risk for subclinical infections in humans.

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WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This International Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a method of detection of *Trichinella* spp. muscle stage larvae in meat of individual animal carcasses intended for human consumption. It is applicable to the examination of meat from domestic and sylvatic animal species, which can be infected by nematodes of the genus *Trichinella*.

This method does not allow the identification of the species or genotype of detected parasites; species or genotype identification can be carried out by molecular methods.

The method described in this International Standard is intended to be used in conjunction with the guidelines in the OIE Manual of Diagnostic Tests and Vaccines and by the International Commission on Trichinellosis (ICT) for *Trichinella* testing and the inspection of carcasses intended for human consumption, unless it has been demonstrated by other means that the animal was not at risk for exposure to *Trichinella*.

The artificial digestion/magnetic stirrer method is considered to be the standard method because it has proven to give the most reliable results in validation studies.

NOTE Provided equivalence with the method described within this International Standard can be documented, alternative methods can be used for analysis.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and 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 7218:2007, *Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations*

International Commission on Trichinellosis (ICT), "Quality Assurance in Digestion Testing Programs for *Trichinella*", *Recommendations and Guidelines*. 2012

World Organisation for Animal Health (OIE), Chapter 2.1.16 — "Trichinellosis", *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*. 7th ed. 2012

3 Terms and definitions

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

3.1
***Trichinella* muscle larvae**
ML
first larval stage (L1) of nematodes belonging to the genus *Trichinella*, which is located in striated muscles of animals worldwide and can infect humans

Note 1 to entry: These larvae are approximately 0,7 mm to 1,1 mm in length and 0,03 mm in width.

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