International Standard 3811

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Meat and meat products — Detection and enumeration of presumptive coliform bacteria and presumptive *Escherichia coli* (Reference method)

Viandes et produits à base de viande — Recherche et dénombrement des bactéries présumées coliformes et présumées Escherichia coli *(Méthode de référence)*

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3811 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in May 1975.

It has been approved by the member bodies of the following countries :

Austria	Germany, F. R.	Poland
Brazil	Ghana	Romania
Canada	Hungary	South Africa, Rep. of
Chile	India	Spain
Czechoslovakia	Iran	Thailand
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

Australia
New Zealand
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Meat and meat products — Detection and enumeration of presumptive coliform bacteria and presumptive *Escherichia coli* (Reference method)

1 Scope and field of application

This International Standard specifies a reference method for the detection and enumeration of presumptive coliform bacteria and of presumptive *Escherichia coli* (*E. coli*) in meat and meat products.

2 References

ISO 3100, *Meat and meat products — Sampling.*

ISO 3565, *Meat and meat products — Detection of* salmonellae *(Reference method).*

3 Definitions

3.1 presumptive coliform bacteria : Micro-organisms that ferment lactose with the production of gas at 30 °C when the test is carried out according to the method specified.

3.2 presumptive *Escherichia coli* : Presumptive coliform bacteria that ferment lactose with the production of gas at 44 °C and produce indole from tryptophane at 44 °C when the test is carried out according to the method specified.

3.3 count of presumptive coliform bacteria and presumptive *Escherichia coli* : The number of presumptive coliform bacteria and presumptive *E. coli* found per gram of meat or meat product when the test is carried out according to the method specified.

4 Principle

Mincing of a test sample and then maceration of a test portion with a sterile diluent in a mechanical blender. Preparation, from the macerate, of decimal dilutions, which are inoculated in triplicate into a liquid selective medium. From the number of tubes showing gas production after incubation at 30 °C, determination of the most probable number of presumptive coliform bacteria per gram by using the MPN table (see the annex).

For the enumeration of presumptive *E. coli*, inoculation of tubes containing the liquid selective medium and tubes containing tryptone water, from the positive coliform tubes, i.e. those tubes that show gas production, and incubation at 44 °C. From the number of incubated tubes showing gas production in the selective medium and indole production in the tryptone water, determination of the most probable number of presumptive *E. coli* by using the MPN table (see the annex).

5 Culture media, dilution fluid and reagent

5.1 Basic materials

In order to improve the precision of the results, it is recommended that either dehydrated culture medium components of uniform quality and analytical grade chemicals, or dehydrated complete media, be used. The water used shall be distilled water or water of at least equivalent purity.

5.2 Culture media

5.2.1 Lactose bile brilliant green broth (selective medium)

Composition

	a) Double-strength medium	b) Single-strength medium
peptone	20,0 g	10,0 g
lactose	20,0 g	10,0 g
ox bile (dehydrated)	40,0 g	20,0 g
brilliant green, corresponding to the specifications in the annex of ISO 3565	0,026 6 g	0,013 3 g
water	1 000 ml	1 000 ml

NOTE — Because the complete medium may not always produce the expected result, its performance should be checked before use. (A method for this purpose will form the subject of a future International Standard.)

Preparation

Dissolve the components or the dehydrated complete medium in the water by boiling.

Adjust the pH with sodium hydroxide solution or hydrochloric acid solution of an appropriate strength so that after sterilization it is 7,2 ± 0,1 at 25 °C.