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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS FOR THE MICROBIOLOGICAL EXAMINATION OF FOOD

PART 2—EXAMINATION FOR SPECIFIC ORGANISMS

STANDARDS ASSOCIATION
OF AUSTRALIA

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AS 1766.2.3

COLIFORMS AND ESCHERICHIA COLI

1. SCOPE. This standard sets out procedures for the examination of foods, other than dairy products, for coliforms and *Escherichia coli*, as follows:

- (a) For coliforms—the pour plate method.
- (b) For *E. coli*—
 - (i) triplicate tube method;
 - (ii) most probable number (MPN) method.

NOTES:

- 1. The methods described are general methods and modifications may be required according to the material under examination. These variations are prescribed in the relevant sections of these methods.
- 2. A direct plate method for enumerating *E. coli* in foods is given in AS 1766.2.12.
- 3. Methods for the examination of rinse fluids and filterable liquid products by membrane filtration are given in AS 1095.4.1.5 and AS 1095.4.1.6.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

- AS 1095 Microbiological Methods for the Dairy Industry
 - Part 4.1.5 Examination of Water for Coliforms by Membrane Filtration
 - Part 4.1.6 Examination of Water for *Escherichia coli* by Membrane Filtration
- AS 1766 Methods for the Microbiological Examination of Food
 - Part 1 General Procedures and Techniques
 - Part 2.12 *Escherichia coli*—Direct Plate Method
 - Part 3 Examination of Specific Products
 - Part 5 Preparation of Media, Diluents and Reagents.

3 APPLICATION OF THE METHODS.

3.1 General. The methods apply to the examination of samples of foods prepared in accordance with AS 1766.3 or, where appropriate, examination of the original sample.

The methods are intended as reference methods suitable for checking that foods comply with microbiological requirements specified in regulations.

3.2 Pour plate method. This is a quantitative test and is used for estimating the number of viable coliforms per specified unit of material under test.

3.3 Triplicate tube method. This is a qualitative test and is suitable for determining the presence or absence of *E. coli* in a stated quantity of product.

3.4 MPN method. This is a quantitative test and is used for estimating the most probable number of *E. coli* per specified unit of material under test.

4 DEFINITIONS. For the purpose of this standard, coliforms and *E. coli* are organisms which are isolated and identified by the techniques described in this standard.

5 REFERENCE CULTURES. The following reference cultures shall be used as indicated in the tests as a check on the validity of the results:

Enterobacter aerogenes
NCTC 10006 (ATCC 13048) = UQM 1976 (negative)

Escherichia coli
NCTC 9001 (ATCC 11775) = UQM 1803 (positive).

A test shall be regarded as invalid unless both reference cultures give appropriate results.

6 POUR PLATE METHOD.

6.1 General. For some purposes the presumptive test for coliforms is adequate. At other times more tests must be carried out to eliminate false positive presumptive tests, but without proceeding to a detailed differentiation of types.

6.2 Culture media (see AS 1766.5 and Appendix A).
Violet red bile (VRB) agar
Lauryl tryptose (LT) broth.

6.3 Presumptive test for coliforms. The procedure shall be as follows:

- (a) Prepare the sample in accordance with the instructions given in the relevant section of AS 1766.3.
- (b) Using the technique described in AS 1766.1, prepare dilutions, as required, of the sample.