Australian Standard®

Food microbiology

Method 1.6: General procedures and techniques—Estimation of most probable number (MPN) of microorganisms

PREFACE

This Standard was prepared by the Standards Australia Committee on Food Microbiology to supersede the following Standards:

AS	
1095	*Microbiological methods for the dairy industry*
1095.1—1971	*General procedures and techniques* *Section 2.6: Most probable number (MPN} using the multiple tube dilution technique*
1142	*Methods for the microbiological examination of eggs and egg products*
1142.1—1975	*General procedures and techniques* *Section 2.4: Most probable number method*
1766	*Methods for the microbiological examination of food*
1766.1—1975	*General procedures and techniques* *Section 2.4: Most probable number method*

METHOD

1 SCOPE This Standard sets out a method for estimating the most probable number (MPN) of certain bacterial species per specified unit of food sample using a multiple tube dilution technique.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
1095	Microbiological methods for the dairy industry
1766	Food microbiology
1766.1.2	Method 1.2: General procedures and techniques — Preparation of dilutions

3 PRINCIPLE The MPN method makes use of a statistical technique for estimating the most probable number of a bacterial species per specified unit of material under test. Sets of tubes of an appropriate culture medium are inoculated from each of at least three consecutive dilutions of the material.

The number of positive tubes in each set is used to cross refer to statistical tables, from which can be calculated, with a known degree of certainty, the most probable number of bacteria per unit of sample (MPN index).

4 DILUENTS AND CULTURE MEDIA The diluents and culture media shall be as specified in the relevant methods of AS 1095 and AS 1766 according to the product under examination and the microorganisms to be estimated.

5 APPARATUS The following apparatus is required:

(a) Test-tubes, bottles or flasks of suitable capacity.

(b) Pipettes of suitable capacity.

(c) Other apparatus as required for specific tests, e.g. Durham tubes.