Plate Count Agar with 1.2% agar

M1698

Plate Count Agar w/1.2% agar is used for the determination of plate count of microorganisms in foods and dairy products.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Yeast extract	2.500
Dextrose	1.000
Agar	12.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 20.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Plate count agar has similar formulation used by Buchbinder et al. (1). Plate Count Agar is also equivalent to the medium recommended by APHA for the isolation of microorganisms in milk and other dairy products except for agar content. (2).

Casein enzymic hydrolysate provides amino acids and other complex nitrogenous substances. Yeast extract supplies Vitamin B complex. Dextrose serves as carbon source. Agar acts a s a solidifying agent. This medium can be used where gel of 1.2% concentration is desired.

Samples are diluted serially generally in tenfold dilutions. 1 ml of sample to be tested is transferred to sterile petri dish. Sterile molten agar medium (M1698) is added to these plates (15 ml) and is rotated gently to ensure uniform mixing of sample with agar medium (3). For detection of mesophilic bacteria it is incubated at 30°C for 72 hours. For thermophilic bacteria it is incubated at 55°C and 6.5°C for 10 days for psychrophilic bacteria.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.2% Agar gel

Colour and Clarity of prepared medium
Light yellow coloured, clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 2.05% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery
Cultural Response			
Bacillus subtilis ATCC 6633	50-100	luxuriant	>=70%
Enterococcus faecalis ATCC 29212	50-100	luxuriant	>=70%
Escherichia coli ATCC 25922	50-100	luxuriant	>=70%

Pseudomonas aeruginosa ATCC 27853	50-100	luxuriant	>=70%
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Buchbinder et.al (1951) Public Health Reports:66: 327.
2.American Public Health Association, 1978, Standard Methods for the Examination of Dairy Products, 14th ed., APHA Inc. Washington, D.C.
3.ISO 4833:1991 Microbiology –general guidance for the enumeration of microorganisms – Colony count technique at 300C.

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