Plate Count Agar

M091A

Intended Use:

Recommended for determining plate counts of microorganisms in milk and dairy products by pour plate technique.

Composition**

Ingredients	Gms / Litre
Tryptone	5.000
Yeast extract	2.500
Dextrose (Glucose)	1.000
Agar	9.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 17.5 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Plate Count Agar is equivalent to the medium recommended by APHA for the isolation of microorganisms in milk and other dairy products (1).

Tryptone provides amino acids and other complex nitrogenous substances. Yeast extract supplies Vitamin B complex. APHA recommends pour plate technique. The samples are diluted and appropriate dilutions are placed in Petri plates. Sterile molten agar is added to these plates and plates are rotated gently to ensure uniform mixing of the sample with agar. Plate Count Agar is also used for the estimation of the number of live heterotrophic bacteria in water.

Type of specimen

Dairy samples

Specimen Collection and Handling:

For dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,4).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further biochemical and serological tests must be carried out for further identification.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Cream to yellow coloured homogeneous free flowing powder
Gelling
Firm, comparable with 0.9% Agar gel.
Colour and Clarity of prepared medium
Light yellow coloured clear to slightly opalescent gel forms in Petriplates.

Reaction

Reaction of 1.75% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

Cultural characteristics after an inubcation at 35 - 37°C for 18 - 24 hours.

Organism	Inoculum (CFU)	Growth
Bacillus subtilis ATCC 6633 (00003*)	50-100	luxuriant
Escherichia coli ATCC 25922 (00013*)	50-100	luxuriant
Enterococcus faecalis ATCC 29212 (00087*)	50-100	luxuriant
Lactobacillus acidophilus ATCC 4356 (00098*)	50-100	luxuriant
Lactobacillus casei ATCC 9595	50-100	luxuriant
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50-100	luxuriant
Streptococcus pyogenes ATCC 19615	50-100	luxuriant

Key :* - corresponding WDCM

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1. American Public Health Association, 1978, Standard Methods for the Examination of Dairy Products, 14th ed., APHA Inc. Washington, D.C.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
4. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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