

Dextrose Tryptone Medium

MF011/E*/F[∇]

Intended Use:

Recommended for enumeration of thermophilic spore bearers.

Directions

The test sample should be filtered through a sterile membrane filter having pore size of 0.22 μ / 0.45 μ . Rehydrate the nutrient pad with 2.0-2.5 ml sterile distilled / purified water. After filtration, remove the membrane filter aseptically using sterile forceps. Place the membrane filter on rehydrated nutrient pad. Incubate the inoculated nutrient. Interpret the results qualitatively by observing the presence or absence of growth and quantitatively by counting the number of colonies on the surface of the membrane filter and calculating CFU/ml.

Principle And Interpretation

DriFilter Membrane Nutrient Pad Medium is ready to use sterile culture media in the form of a 50 mm biological inert absorbent pads impregnated with Sabouraud Dextrose Medium, then dried and sterilized in 55 mm petri plate. They eliminate the need of laborious media preparation and autoclaving procedures. The nutrient pads are to be just rewetted with sterile distilled water and are ready to use. Use of nutrient pads allows larger sample volumes to be tested at a time. Interpretation of results is directly by counting the CFUs and also quantifies the microbial load present in the sample.

Canned foods are most often prone to flat-sour spoilage due to contamination by either mesophilic or thermophilic aerobic spore-formers. Inadequate heat processing is commonly responsible for flat-sour spoilage since spores of mesophilic bacteria are moderately resistant to moist heat. Also *Bacillus stearothermophilus* is the typical species responsible for this type of spoilage (4,5). *Bacillus coagulans* (*Bacillus thermoacidurans*, a soil organism) is frequently isolated from flat-sour spoilage of canned tomato and dairy products. In flat-sour spoilage, carbohydrates are fermented with the production of lower fatty acids, which sour the product. The small amount of gas produced does not affect the flat appearance of the ends of container. Dextrose Tryptone Agar, formulated by Williams is recommended for the detection and enumeration of thermophilic flat sour spoilage organisms (12). It is also recommended for general cultural studies by Cameron (3) and other associations (1,2,8,9). Dextrose Tryptone Agar is also useful for enumeration of mesophiles and thermophiles in cereal and cereal products, dehydrated fruits, vegetables and spices (10). Tryptone provides essential nutrients to the organisms. Dextrose serves as an energy source by being the fermentable carbohydrate while bromo cresol purple is a pH indicator. Acid producing organisms produce yellow colonies. The plates should be incubated at 55°C for 48 hours in a humid incubator.

While using the agar media, serially diluted test sample are mixed with the media in sterile Petri dishes. Standard procedures issued by various associations should be followed for testing of samples.

Type of specimen

Food and dairy samples

Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,10,11).

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.The pH of prepared medium needs to be checked after some period. If tested immediately it may go out of specification.

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

Dry filter membrane pad of 50mm diameter

Colour

Greenish yellow coloured nutrient pad

Sterility test

Passes release criteria

Cultural Response

Cultural characteristics observed after an incubation at 55°C for 48-72 hours

Organism	Inoculum (CFU)	Growth	Colour of colony
<i>Bacillus stearothermophilus</i> ATCC 7953	50-100	luxuriant	yellow

Storage and Shelf Life

On receipt store between 10-30°C. Use before expiry date on the label.

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 (6,7).

Reference

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3. Cameron E. J., 1936, J. Assoc. Official Agr. Chem., 19:433.
4. Gordon R. E., Haynes and Pang C. H. N., 1973, The Genus Bacillus, Agriculture Handbook No. 407, U.S. Department of Agriculture, Washington, D.C.
5. Hersom A. C., and Hulland E. D., 1964, Canned Foods, An Introduction to Their Microbiology, (Baumgartner) 5th Ed. Chemical Publishing Company, Inc. New York, N.Y.
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
7. 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.
8. National Canners Association, 1954, A Laboratory Manual for the Canning Industry, 1st Edition, National Canners Associations, Washington.
9. National Canners Association, 1968, Laboratory Manual for Food Caners and Processors, Vol. I
10. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed American Public Health Association, Washington, D.C.
11. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
12. Williams O. B., 1936, Food Res., 1:217.

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Note:

MF000 - Sterile pad packed individually in sterile Petri plate without Membrane Filter

MF000E* - Sterile pad packed individually in sterile disposable plastic bag without Membrane Filter

MF000F[▽] - Sterile pad packed individually in sterile Petri plate with sterile Membrane Filter (0.45 mm).

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.