Dextrose Tryptone Broth, Modified

M914

Intended Use:

Recommended for detection and enumeration of mesophilic and thermophilic aerobic microorganisms in food

Composition**

Ingredients	Gms / Litre
Tryptone	10.000
Dextrose (Glucose)	5.000
Dipotassium hydrogen phosphate	1.250
Yeast extract	1.000
Bromocresol purple	0.040
Final pH (at 25°C)	6.7±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 17.29 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense into sterile tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Canned foods are most often prone to flat-sour spoilage due to contamination by either mesophilic or thermophilic aerobic spore-formers. Williams (12) evolved Dextrose Tryptone Agar, a suitable medium for cultivation and enumeration of the thermophilic bacteria. It is also recommended for general cultural studies by Cameron (4) and other associations (1,2,3,9,10). Dextrose Tryptone Broth, Modified (M914) is more nutritious and well buffered than Dextrose Tryptone Broth (M122) due to inclusion of yeast extract and dipotassium phosphate. Dextrose Tryptone Broth, Modified is similar in composition to Dextrose Tryptone Agar, Modified (M913), except agar. This medium is useful for enumeration of mesophilic organisms, thermophiles in cereals and cereal products, dehydrated fruits and vegetables and spices (11).

Tryptone and yeast extract provides nitogen and carbon compounds, long chain amino acids, vitamins and essential nutrients to the organisms. Dextrose serves as an energy source while bromo cresol purple is a pH indicator. Dipotassium phosphate buffers the medium. Acid producing organisms produce yellow coloured medium. The tubes should be incubated at 55°C for 48 hours in a humid incubator.

Type of specimen

Food samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (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. This medium is general purpose medium and may not support the growth of fastidious organisms.

Performance and Evaluation

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

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Purple coloured, clear solution in tubes

Reaction
Reaction of 1.73% w/v aqueous solution at 25°C. pH : 6.7±0.2

pH
6.50-6.90

Cultural Response
Cultural characteristics observed after an incubation at 54-56°C for 36-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of medium
Bacillus brevis ATCC 8246	50-100	good-luxuriant(with or without dextrose fermentation)	yellow
Bacillus coagulans ***ATCC*** 8038	50-100	good-luxuriant	yellow
Bacillus stearothermophilus ATCC 7953	50-100	good-luxuriant	yellow

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°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 (7,8).

Reference

1. American Public Health Association, 1972, Standard Methods for the Examination of Dairy Products, 13th Ed. APHA, Washington, D.C.
2. American Public Health Association, 1976, Compendium of Methods for the Microbiological Examination of Foods, APHA,Washington, D.C.
3. Association of Official Analytical Chemists, 1978, Bacteriological Analytical Manual, 5th Edition, AOAC, Washington, D.C.
4. Cameron E. J., 1936, J .Assoc. Official Agr. Chem., 19:433.
5. 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.
6. 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.
7. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
8. 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.
9. National Canners Association, 1954, A Laboratory Manual for the Canning Industry, 1st Edition, National Canners Associations, Washington.
10. National Canners Association, 1968, Laboratory Manual for Food Caners and Processors, Vol. I
11. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
12. Williams O. B., 1936, Food Res., 1:217.

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