Dextrose Tryptone Agar, Modified

M913

Intended Use:

Recommended for isolation and cultivation of aciduric and thermophilic, aerobic flat-sour sporeformers from canned food, sugar etc.

Composition**

Ingredients	Gms / Litre
Tryptone	10.000
Yeast extract	1.000
Dextrose (Glucose)	5.000
Dipotassium hydrogen phosphate	1.250
Bromocresol purple	0.040
Agar	15.000
Final pH (at 25°C)	6.7±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 32.29 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. Coolt o 45-50°C. Mix well and pour into sterile Petri plates.

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 (11) 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 (3) and other associations (1,2,6,7).
Dextrose Tryptone Agar, Modified (M913) is more nutritious and well buffered than Dextrose Tryptone Agar (M092) due to inclusion of yeast extract and dipotassium phosphate. Dextrose Tryptone Agar, Modified is used for the examination of canned food, sugar and starch for thermophilic bacteria such as *Bacillus stearothermophillus* (flat sourspoilage bacteria) (8) and also for plate count of mesophilic or thermophilic aerobes in sweetening agents used in frozen desserts and for counts of aerobic microorganisms in liquid sugar.
Tryptone and yeast extract provides 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 colony. The plates should be incubated at 55°C for 48 hours in a humid incubator. This media is useful for enumeration of mesophilic organisms, thermophiles in cereals and cereal products, dehydrated fruits and vegetables and spices (9).

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 (1,9,10). 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 testing of prepared medium needs a settling period. If tested immediatedly 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
Light yellow to greenish yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

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

Reaction
Reaction of 3.23% 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 48-72 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Bacillus brevis ATCC 8246	50-100	good-luxuriant (with or without dextrose fermentatiion)	50-70%	yellow
Bacillus coagulans ATCC 8038	50-100	good-luxuriant	50-70%	yellow
Bacillus stearothermophilus ATCC 7953	50-100	good-luxuriant	50-70%	yellow

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 (5,6).

Reference

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4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
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11. Williams O.B., 1936, Food Res., 1:217.

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