Dextrose Tryptone Agar

M092

Intended Use:

Recommended for detection and enumeration of mesophilic and thermophilic aerobic organisms in food.

Composition**

Ingredients	Gms / Litre
Tryptone	10.000
Dextrose (Glucose)	5.000
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 30.04 grams in 1000 ml purified / distilled water. Heat to boiling 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

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

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% 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	Recovery	Colour of colony
Bacillus brevis ATCC 8246	50-100	good-luxuriant (with or without dextrose fermentation)	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 (6,7).

Reference

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12. Williams O. B., 1936, Food Res., 1:217.

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