Dextrose Tryptone Broth

**Intended Use:**
Recommended for enrichment and cultivation of mesophilic and thermophilic organisms in food.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tryptone</td>
<td>10.000</td>
</tr>
<tr>
<td>Dextrose (Glucose)</td>
<td>5.000</td>
</tr>
<tr>
<td>Bromocresol purple</td>
<td>0.040</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>6.7±0.2</td>
</tr>
</tbody>
</table>

**Directions**
Suspend 15.04 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C.

**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 (5,6). *Bacillus coagulans, Bacillus thermoacidurans*, a soil organism 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.

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 Agar is also useful for enumeration of mesophiles and thermophiles in cereal and cereal products, dehydrated fruits, vegetables and spices (11). Dextrose Tryptone Broth is similar in composition to Dextrose Tryptone Agar, with the exclusion of agar.

Tryptone provides nitrogenous and carbonaceous compounds, long chain amino acids and vitamins nutrients to the organisms. Dextrose serves as an energy source while bromo cresol purple is a pH indicator. Acid producing organisms produce yellow coloured medium. The tubes should be incubated at 55°C for 48 hours in a humid incubator. One to two grams of test sample is inoculated into 10 ml of broth media.

**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 period when stored at recommended temperature.

Quality Control
Appearance
Light yellow to greenish yellow homogeneous free flowing powder

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

Reaction
Reaction of 1.5% 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 .

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Colour of medium</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bacillus brevis</em> ATCC 8246</td>
<td>50-100</td>
<td>good-luxuriant(with or without dextrose fermentation)</td>
<td>yellow</td>
</tr>
<tr>
<td><em>Bacillus coagulans</em> ATCC 8038</td>
<td>50-100</td>
<td>good-luxuriant yellow</td>
<td>yellow</td>
</tr>
<tr>
<td><em>Bacillus stearothermophilus</em> ATCC 7953</td>
<td>50-100</td>
<td>good-luxuriant yellow</td>
<td>yellow</td>
</tr>
</tbody>
</table>

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. 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 (7,8).

Reference

Please refer disclaimer Overleaf.
Disclaimer:

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