Malt Agar, Modified

**Intended Use:**
Recommended for isolation and enumeration of yeasts and moulds from food products in accordance with FDA BAM, 1998.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malt extract (Powdered)</td>
<td>20.000</td>
</tr>
<tr>
<td>Agar</td>
<td>20.000</td>
</tr>
<tr>
<td>Final pH ( at 25°C)</td>
<td>5.4±0.2</td>
</tr>
</tbody>
</table>

**Directions**

Suspend 40 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

Media based on malt extract is appreciated by many microbiologists due to their richness and nutrient balance especially for the cultivation of fastidious microorganisms. With acidic pH, they are used for the isolation, cultivation and maintenance of yeast and moulds. In 1919, Reddish prepared a satisfactory substitute for beer wort from malt extract. Malt Agar, Modified is recommended for the isolation and enumeration of yeasts and moulds from food products in accordance with FDA BAM, 1998 (2,5). This medium can also be used as a general maintenance medium for fungi. Malt extract provides carbon, protein and nutrient sources required for the growth of microorganisms. The acidified medium inhibits the growth of bacteria and allows good recovery of yeasts and moulds.

According to the BAM protocol, 25-50g of the sample should be considered for evaluation. Appropriate dilutions are made using 0.1% peptone water. Spread plate or pour plate can be used for plating the sample. Dichloran Glycerol Medium Base (M1129) can be used for pour plate technique while Dichloran Glycerol Medium Base (M1129) or Dichloran Glycerol Medium Base w/Rose Bengal (M1000) can be used for spread plate techniques. Incubate the plates at 25°C for 5 days and the average number of colonies of 3 tests is reported. These colonies are further sub cultured into Potato Dextrose Agar w/2% Agar (M096F) or Malt Agar, Modified (M1873).

**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 (1,7,8). 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. Further biochemical and serological tests must be carried out for complete identification.
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
Cream to yellow homogeneous free flowing powder
Gelling
Firm, comparable with 2.0% Agar gel
Colour and Clarity of prepared medium
Yellow coloured clear to slightly opalescent gel forms in Petri plates or tubes as slants

Cultural Response
Cultural characteristics observed after an incubation at 25 - 30°C for 40 - 48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspergillus brasiliensis ATCC 16404 (00053*)</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td></td>
</tr>
<tr>
<td>Candida albicans ATCC 10231 (00054*)</td>
<td>50-100</td>
<td>good-luxuriant &gt;=70%</td>
<td></td>
</tr>
<tr>
<td>Saccharomyces cerevisiae ATCC 9763 (00058*)</td>
<td>50-100</td>
<td>good-luxuriant &gt;=70%</td>
<td></td>
</tr>
</tbody>
</table>

Key : (*) Corresponding WDCM numbers.

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. 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 (3,4).

Reference

Revision : 02 / 2019
Disclaimer:

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