YEM Agar

**Intended Use:**
Recommended for the cultivation of *Agrobacterium* species and other soil microorganisms.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yeast extract</td>
<td>1.000</td>
</tr>
<tr>
<td>Mannitol</td>
<td>10.000</td>
</tr>
<tr>
<td>Dipotassium hydrogen phosphate</td>
<td>0.500</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>0.200</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>0.100</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters**

**Directions**

Suspend 26.8 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. Cool to 45-50°C. Mix well and pour in sterile Petri plates.

**Principle And Interpretation**

*YEM Agar* is widely used for the cultivation of *Agrobacterium* species and other soil microorganisms.

*Agrobacterium* is a genus of Gram negative bacteria. The *Agrobacterium* genus is quite heterogenous and is well known for its ability to transfer DNA between itself and plants. *Agrobacterium tumefaciens* is a ubiquitous soil borne pathogen responsible for Crown Gall disease, affecting many higher species of plant (4). YEM Agar is also used for the cultivation of the symbiotic nitrogen fixing microorganisms like *Rhizobium* species to make it suitable for the production of legume inoculants.

*YEM Agar* which contains mannitol as a carbon source and yeast extract as a source of both nitrogen and growth factors for Agrobacteria. It also poises oxidation - reduction potential of medium in the range favourable for Rhizobia and serves as hydrogen donor in respiratory process (1). Mannitol is the fermentable sugar alcohol source. Magnesium provides cations essential for the growth of Agrobacteria.

**Type of specimen**

Soil samples.

**Specimen Collection and Handling**

For soil samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(4). 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. Some strains may show poor growth due to nutritional variations.

**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 1.5% Agar gel

Colour and Clarity of prepared medium
Light amber coloured clear to slightly opalescent gel

Reaction
Reaction of 2.68% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
Cultural characteristics observed after an incubation at 25-30°C for upto 5 days.

Organism         Growth
Rhizobium leguminosarum luxuriant
ATCC 10004
Rhizobium meliloti ATCC luxuriant
9930
Agrobacterium tumefaciens luxuriant
ATCC 33970

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 (2,3).

Reference

Revision : 02 / 2019