



Dehydrated Culture Media  
Bases / Media Supplements

## Technical Information

### Yeast Mannitol Broth

**Product Code: DM 1716**

**Application:** - Yeast Mannitol Broth is used for cultivation of *Rhizobium* species.

### Composition\*\*

Ingredients	Gms / Litre
Yeast extract	1.000
Mannitol	10.000
Dipotassium phosphate	0.500
Magnesium sulphate	0.200
Sodium chloride	0.100
Calcium carbonate	1.000
Final pH ( at 25°C)	6.8±0.2

\*\*Formula adjusted, standardized to suit performance

### Principle & Interpretation

Beijerinck was first to isolate and cultivate an aerobic gram negative rod-shaped microorganism from the nodules of legume. He named it *Bacillus radicicola*, which was subsequently placed under the genus *Rhizobium*. Bacteria belonging to the genus *Rhizobium* live freely in soil and in the root region of both leguminous and non-leguminous plants. However they can enter into symbiosis only with leguminous plants by infecting their roots and forming nodules on them. *Rhizobium* present in these root nodules fixes atmospheric nitrogen i.e. gaseous nitrogen from air to organic nitrogen compounds, which is absorbed by plants. Thus role of *Rhizobium* is noteworthy for their major contributions to soil fertility. Yeast Mannitol Broth is used for the cultivation of the symbiotic nitrogen fixing organism's viz. *Rhizobium* species<sup>(1)</sup>.

Yeast extract serves as a good source of readily available amino acids; contain vitamin B complex and accessory growth factors for Rhizobia. It also poises oxidation - reduction potential of medium in the range favorable for Rhizobia and serves as hydrogen donor in respiratory process<sup>(2)</sup>. Mannitol is the fermentable sugar alcohol source. Calcium and magnesium provide cations essential for the growth of Rhizobia.

### Methodology

Suspend 12.8 grams of powder media in 1000 ml distilled water. Shake well & heat just to boiling. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense into sterile test tubes.

### Quality Control

#### Physical Appearance

White to cream homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Whitish buff coloured opalescent solution in tubes.

#### Reaction

Reaction of 1.28% w/v aqueous solution at 25°C. pH : 6.8±0.2

#### pH range

6.60-7.00

#### Cultural Response/Characteristics

DM 1716: Cultural characteristics observed after an incubation at 25-30°C for upto 5 days.





Dehydrated Culture Media  
Bases / Media Supplements

Organism	Growth
<i>Rhizobium leguminosarum</i> ATCC 10004	Luxuriant
<i>Rhizobium meliloti</i> ATCC 9930	Luxuriant

## Storage and Shelf Life

**Dried media:** Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

**Prepared Media:** 2-8<sup>o</sup> in sealable plastic bags for 2-5 days.

## Further Reading

1. Subba Rao N.S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBG Publishing Company.
2. Allen. E.K. and Allen. O.N., 1950, Bacteriol. Rev., 14:273.

## Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.
- Donot use the products if it fails to meet specificatons for identity and performens parameters.

