



Yeast Mannitol Broth

M716

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 parameters

Directions

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

Principle And Interpretation

Beijerinck was first to isolate and cultivate an aerobic gram negative rod-shaped microorganism from the nodules of legume. He named it *Bacillus radicolica*, 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 organisms viz. *Rhizobium* species (1).

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 (2). Mannitol is the fermentable sugar alcohol source. Calcium and magnesium provide cations essential for the growth of Rhizobia.

Quality Control

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

6.60-7.00

Cultural Response

M716: 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

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2- 8°C. Use before expiry date on the label.

Reference

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.

Revision : 02 / 2015

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories 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 or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. 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.