YEM Broth

M1824

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

Composition**

Ingredients	Gms / Litre
Yeast extract	1.000
Mannitol	10.000
Dipotassium phosphate	0.500
Magnesium sulphate	0.200
Sodium chloride	0.100
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 11.80 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Principle And Interpretation

YEM broth 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 heterogenus. *Agrobacterium* 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 (2). YEM broth is also used for the cultivation of the symbiotic nitrogen fixing micoorganisms like *Rhizobium* species to make it suitable for the production of legume inoculants.

YEM broth 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.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light amber coloured clear solution.

Reaction
Reaction of 1.18% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH
6.80-7.20

Cultural Response
M1824: Cultural characteristics observed after an incubation at 25-30°C for upto 5 days.

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

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. Allen. E.K. and Allen. O.N., 1950, Bacteriol. Rev., 14:273.
2. Loper, J. E. and Ishimaru, C. A., in The Rhizosphere and Plant Growth (eds Keister, D. L. and Cregan, P. B.), Kluwer Academic Publishers, 1991, pp. 253–261.

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