

TECHNICAL DATA SHEET

Yeast Mannitol Agar (Yeast Extract Mannitol Agar)

Principle

Yeast extract mannitol agar is used for isolation of nitrogen fixing Rhizobium from root nodules and rhizospheric soil samples. It is composed of yeast extract, mannitol, dipotassium phosphate, magnesium sulphate, sodium chloride, calcium carbonate and agar. Yeast extract serves as a good source of readily available amino acids, vitamin B complex and accessory growth factors for Rhizobia. It also aids in oxidation-reduction potential of medium in the range favorable for Rhizobia and serves as hydrogen donor in respiratory process. Mannitol is the carbon source. Dipotassium phosphate resists the change in pH of medium. Magnesium and calcium provide cations essential for the growth of Rhizobia and agar as a solidifying agent.

Use: For the isolation and enumeration of soil microorganisms like Rhizobium species.

Contents*

| Ingredients | Gram/Litre |
|------------------------------|-------------------|
| Yeast extract | 1.000 |
| Mannitol | 10.000 |
| Dipotassium phosphate | 0.500 |
| Magnesium sulphate | 0.200 |
| Sodium chloride | 0.100 |
| Calcium Carbonate | 1.000 |
| Agar | 15.000 |
| pH at 25°C | 6.8 ±0.2 |

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 27.80 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in petri plates. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Root nodules and soil samples etc.

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Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

| | |
|-----------------------------------|--|
| Appearance | Light Beige colored free flowing, homogeneous powder |
| Reaction of 3.18% solution | 6.8 ±0.2 at 25 °C |
| pH | 6.60- 7.00 |
| Gelling | Firm comparable with 1.5% agar gel |
| Color and clarity of ready medium | Whitish brown colored opalescent gel |
| Growth Promotion properties | Best at ≤ 100 CFU at 25-30°C for 3-5 days |
| Indicative properties | Optimum at ≤ 100 CFU at 25-30°C for 3-5 days |
| Negative control | Performed using sterile distilled water |

Different Microbial Response: Cultural characteristics observed after incubation at 25-30°C for 3-5 days.

| Organism | Inoculum | Growth | Recovery |
|---|----------|-----------|----------|
| <i>Rhizobium species</i> (Lab isolate) | 50-100 | Luxuriant | ≥ 70% |

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Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Pelczar M. J. Jr., Reid R. D, Chan E. C. S., (1977), *Microbiology*, Tata McGraw-Hill Publishing company Ltd, New Delhi.
2. Subba Rao N. S., (1977), *Soil Microorganisms and Plant Growth*, Oxford and IBH Publishing Co.

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