

Technical Information

Yeast Lactose Agar

Product Code: DM 1720

Application: - Yeast Lactose Agar is used for cultivation of soil microorganisms such as *Rhizobium* species.

Composition**

Ingredients	Gms / Litre
Yeast extract	1.000
Lactose	10.000
Dipotassium hydrogen phosphate	0.500
Magnesium sulphate	0.200
Sodium chloride	0.100
Agar	15.000
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Rhizobium bacteria infect the root system of the legumes and invade the host plant cells. Some of the cells of the plant are thus infected causing cell enlargement and an increased rate of cell division, leading to the formation of abnormal growth (nodules) on the root system. The legume, the bacteria and the nodule together constitute the nitrogen fixing system. The bacteria make nitrogen available to the plant, and in turn the bacteria derive nutrients from the tissues of the plant ⁽¹⁾. Yeast Lactose Agar ⁽²⁾ is used for cultivation of soil microorganisms such as *Rhizobium* species ⁽³⁾.

Yeast extract serves as a good source of readily available amino acids, including vitamin B complex and accessory growth factors. It also poises the oxidation-reduction potential of medium in the range favourable for Rhizobia and serves as hydrogen donor in respiratory process ⁽⁴⁾. Lactose is the fermentable carbohydrate source. Magnesium provides cations essential for the growth of Rhizobia.

Methodology

Suspend 26.8 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Dispense as desired. Sterilize by steaming for 30 minutes on two consecutive days. Confirm sterility by leaving it at room temperature (30 ± 2°C) for 3-4 days. Alternatively the medium can be sterilized by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Light yellow coloured opalescent gel forms in Petri plates.

Reaction

Reaction of 2.68% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH range

6.60-7.00

Cultural Response

DM 1720: Cultural characteristics observed after an incubation at 25-30°C for upto 2-5 days.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Growth
<i>Rhizobium japonicum</i> ATCC 10324	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: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. Pelczar M. J. Jr., Reid R. D., Chan E.C. S., 1977, Microbiology, Tata McGraw-Hill Publishing Company Ltd, New Delhi.
2. Bernaerts M. J. and De Ley J., 1963, Nature, Lond, 197, 406-407.
3. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth. Oxford and IBH Publishing Co.4. Allen E. K. and Allen O. N., 1950, Bact. Revs., 14:273.

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