

Technical Information

Asparagine Nitrate Medium

Product Code: DM 1724

Application: - Asparagine Nitrate Medium is used for the isolation and cultivation of denitrifying bacteria.

Composition**

Ingredients	Gms / Litre
Potassium nitrate	1.000
L-Asparagine	1.000
Sodium citrate	8.500
Potassium dihydrogen phosphate	1.000
Magnesium sulphate	1.000
Calcium chloride	0.200
Ferric chloride	0.0001
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Asparagine Nitrate Medium is formulated as per Subba Rao ⁽¹⁾. Nitrogen transformation in soil results in the loss of molecular form of nitrogen. The conversion of nitrate and nitrite into molecular nitrogen or nitrous oxide through microbial processes is known as denitrification. Denitrification of bound nitrogen to gaseous nitrogen is initiated by numerous species of bacteria, which normally use oxygen as hydrogen acceptor (aerobic). These bacteria also have the ability to use nitrate and nitrite in the place of oxygen as the hydrogen acceptor (anaerobically). Asparagine is source of organic nitrogen and is readily available for microbial energy and growth while the salts in the medium help for growth of microorganisms.

Methodology

Suspend 27.7 grams of powder media in 1000 ml distilled water. Shake well and heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Quality Control

Physical Appearance

White to cream homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent gel forms in Petri plates

Cultural Response/Characteristics

DM1724: Cultural characteristics observed after an incubation at 25-30°C for upto 7 days.



Dehydrated Culture Media
Bases / Media Supplements

Organism	Growth
<i>Achromobacter denitrificans</i> ATCC14648	luxuriant
<i>Bacillus subtilis</i> ATCC 6633	Luxuriant
<i>Micrococcus luteus</i> ATCC10240	Luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853	luxuriant
<i>Thiobacillus denitrificans</i> ATCC 29685	good

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^o in sealable plastic bags for 2-5 days.

Further Reading

1. Subba Rao N. S., 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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