Asparagine Nitrate Medium

M724

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

Directions

Suspend 27.7 grams in 1000 ml distilled water. 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.

Principle And Interpretation

Asparagine Nitrate Medium is formulated as per Subba Rao (1). Nitrogen transformation in soil results in the loss of molecular 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 mediated by numerous species of bacteria, which normally use oxygen as hydrogen acceptor (aerobic). These bacteria also posses 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.

Quality Control

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
M724: Cultural characteristics observed after an incubation at 25-30°C for upto 7 days.

Organism	Growth
Achromobacter denitrificans ATCC 14648	luxuriant
Bacillus subtilis ATCC 6633	luxuriant
Micrococcus luteus ATCC 10240	luxuriant
Pseudomonas aeruginosa ATCC 27853	luxuriant
Thiobacillus denitrificans ATCC 29685	good

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 label.

Reference

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

Revision : 2 / 2015