



Burks Medium

M707

Burks Medium is used for isolation and cultivation of nitrogen fixing bacteria such as *Azotobacter* species from soil.

Composition**

Ingredients	Gms / Litre
Magnesium sulphate	0.200
Dipotassium phosphate	0.800
Monopotassium phosphate	0.200
Calcium sulphate	0.130
Ferric chloride	0.00145
Sodium molybdate	0.000253
Sucrose	20.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 21.3 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

Nitrogen fixing organisms are free-living bacteria, which grow well on a nitrogen free medium. These bacteria utilize atmospheric nitrogen gas for their cell protein synthesis. This cell protein is then mineralised in soil after the death of the cells, thereby contributing towards the nitrogen availability of the crop plants. Burks medium is recommended for detection of nitrogen fixing organisms such as *Azotobacter* species from soil (1).

This medium contains inorganic salts along with carbohydrate source but lacks nitrogen source. Nitrogen fixing bacteria are able to fix atmospheric nitrogen and grow when cultured on this nitrogen-free medium.

Quality Control

Appearance

White to cream homogeneous free flowing powder

Colour and Clarity of prepared medium

Colourless clear solution over a white precipitate.

Cultural Response

M707: Cultural characteristics after an incubation at 30°C for 7 days.

Organism

Growth

Azotobacter beijerinckii good-luxuriant

ATCC 12981

Azotobacter nigricans ATCC good-luxuriant

35009

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. Subba Rao N. S. 1977, In: Soil Microorganisms and Plant Growth, Oxford & IBH Publishing Co., New Delhi, Pages 254-255.

Revision : 2 / 2015

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