Richard's Synthetic Agar

M693

Richards Synthetic Agar is used for isolation and cultivation of fungi from soil samples.

Composition**

Ingredients	Gms / Litre
Potassium nitrate	10.000
Monopotassium dihydrogen phosphate	5.000
Magnesium sulphate	2.500
Ferric Chloride	0.020
Sucrose	50.000
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 82.52 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

Fungi are microscopic cells that usually grow as long threads or strands called hyphae, which push their way between soil particles, roots, and rocks. Fungi perform important services related to water dynamics, nutrient cycling, and disease suppression. Soil fungi can be grouped into three general functional groups based on how they get their energy as Decomposers, Mutualists and Pathogens (2). Many fungi which are commonly isolated from soil come under the class Fungi Imperfecti by virtue of the fact that they produce abundant asexual spores and lack sexual stages.

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Potassium nitrate is the source of nitrogen. Richard's Synthetic Agar is highly nutritive media with high content of sucrose which serves as carbohydrate source for the growing fungi. Various salts in the medium not only buffer the medium but also provide essential ions to the fungi.Soil samples are collected normally from a depth of 6 inches and transferred to clean containers. Three to five samples are taken for each replicate and mixed evenly. From the mixed sample, at least 10-25 gram of soil is taken as a representative sample of the particular replicate. Appropriate soil dilutions are plated on suitable soil medium (1).

Quality Control

Appearance
White to yellow 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
M693: Cultural characteristics observed after an incubation at 25-30°C for 40-72 hours.

Organism	Inoculum (CFU)	Growth	Recovery
**Aspergillus brasiliensis* ATCC 16404	50-100	good-luxuriant	
Candida albicans ATCC 10231	50-100	good-luxuriant	>=50%
Saccharomyces cerevisiae ATCC 9763	50-100	good-luxuriant	>=50%

**Key: Formerly known as Aspergillus niger*

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, Soil Microorganisms and Plant Growth-(Oxford and IBHPublishing Co.)
2. Tugel A. J., Lewandowski A. M., (Eds.), 1999, Soil Biology Primer, NRCS Soil Quality Institute, Ames, IA.

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