



Pikovskayas Agar

M520

Pikovskayas Agar is recommended for detection of phosphate-solubilizing soil microorganisms.

Composition**

Ingredients	Gms / Litre
Yeast extract	0.500
Dextrose	10.000
Calcium phosphate	5.000
Ammonium sulphate	0.500
Potassium chloride	0.200
Magnesium sulphate	0.100
Manganese sulphate	0.0001
Ferrous sulphate	0.0001
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 31.3 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Phosphate exists in both organic as well as inorganic forms in soil. Organic matter derived from dead and decaying plant debris is rich in organic sources of phosphorus. However, plants are able to utilize phosphorus from soil only in the free available form. Soil phosphates are rendered available either by plant roots or by soil microorganisms. Therefore, phosphate-dissolving soil organisms play a part in correcting phosphorus deficiency of crop plants (1). Pikovskayas Agar was modified by Sundara Rao and Sinha (2) for detection of phosphate-solubilizing bacteria from soil.

Yeast extract in the medium provides nitrogen and other nutrients necessary to support bacterial growth. Dextrose acts as an energy source. Different salts and yeast extract supports the growth of organisms. Phosphate-solubilizing bacteria will grow on this medium and form a clear zone around the colony, formed due to phosphate solubilization in the vicinity of the colony.

Quality Control

Appearance

White to light yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

White with flocculant precipitate opaque gel forms in Petri plates

Cultural Response

M520: Cultural characteristics observed after an incubation at 35-37°C for 48 hours.

Organism	Growth	Phosphate solubilization
* <i>Aspergillus brasiliensis</i> ATCC 16404	luxuriant	positive reaction, clear zone surrounding the colony
<i>Bacillus subtilis</i> ATCC 6633	good	moderate clear zone surrounding the colony

<i>Pencillium notatum</i> ATCC 10108	luxuriant	positive reaction, clear zone surrounding the colony
<i>Pseudomonas aeruginosa</i> ATCC 27853	luxuriant	positive reaction, clear zone surrounding the colony

*Key: Formerly known as *Aspergillus niger* ATCC 16404

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, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi.
2. Sundara Rao W. V. B. and Sinha M. K., 1963, Ind. J., Agric. Sci., 33:272.

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