Pikovskaya's Broth (Medium), Granulated

GM1719

Pikovskaya's Broth, granulated is recommended for cultivation of phosphate solubilizing 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

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 16.3 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely.Dispense into tubes or flasks or as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Pikovskaya's Broth is a modification of Pikovskayas agar medium originally modified by Sundara Rao and Sinha (1) for culturing phosphate solubilizing microorganisms. Both inorganic and organic phosphates exists in soil. Many naturally occurring soil fungi and bacteria are phosphate solubilizers and they play an important role in maintaining phosphorus balance of crop plants. This fact is exploited in culturing phosphate solubilzers which are able to solubilize bound phosphates. (2). Phosphate as calcium phosphate is present in the medium. Dextrose acts as energy source. Different salts and yeast extract supports the growth of organisms. The growth obtained in Pikovsyaayas broth (GM1719) may be detected for phosphate solubilization by subculturing or spot inoculation on Pikovskayas agar (M520). Phopshate solubilization is indicated as clearance around growth or colony.

Quality Control

Appearance

White to light yellow coloured granular medium.

Colour and Clarity of prepared medium

Whitish with flocculant precipitate opaque solution forms in tubes.

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 48 hours (by spot inoculation on Pikovskaya's Agar).

Cultural Response

Organism	Growth	Phosphate solubilization*
Cultural Response		
#Aspergillus brasiliensis ATCC 16404 (00053*)	luxuriant	positive reaction,clear zone surrounding the colony
Bacillus subtilis ATCC 6633 (00003*)	good	Moderate clear zone surrounding the colony

Pencillium notatum ATCC 10108	luxuriant	Positive reaction,clear zone surrounding the colony
Pseudomonas aeruginosa ATCC 27853 (00025*)	luxuriant	Positive reaction,clear zone surrounding the colony

Key:- # Formerly known as *Aspergillus niger*

Key:- * Corresponding WDCM numbers

Storage and Shelf Life

On receipt store between 10 -30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1.Sundara Rao W.V.B. and Sinha M.K., 1963, Ind. J., Agric. Sci., 33:272.
2.N.S. Subba Rao, 1977, 'Soil Microorganisms and Plant Growth', Oxford and IBH Publishing Co., New Delhi.

Revision : 00/ 2018