

TM 545 – PIKOVSKAYA'S BROTH (MEDIUM)

INTENDED USE

For cultivation phosphate solubilizing microorganisms.

PRODUCT SUMMARY AND EXPLANATION

Pikovskaya's Broth is a modification of Pikovskayas agar medium originally modified by Sundara Rao and Sinha for culturing phosphate solubilizing microorganisms. Both inorganic and organic phosphates exist 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 solubilizers which are able to solubilize bound phosphates.

COMPOSITION

Ingredients	Gms / Ltr
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

PRINCIPLE

This medium consists of 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 Pikovskaya's broth may be detected for phosphate solubilization by sub culturing or spot inoculation on Pikovskaya's agar. Phosphate solubilization is indicated as clearance around growth or colony.

INSTRUCTION FOR USE

- Dissolve 16.3 grams in 1000 ml purified/distilled water.
- Heat if necessary to dissolve the medium completely and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Dispense as desired.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: White to light yellow homogeneous free flowing powder.
Appearance of prepared medium	: White with flocculant precipitate opaque gel forms in tubes.
pH (at 25°C)	: 7.1 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation by spot inoculation on Pikovskaya's Agar.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Phosphate solubilization	Incubation Temperature	Incubation Period
<i>Aspergillus niger</i>	16404	10-100	Luxuriant	Positive reaction, clear zone surrounding the colony	35-37°C	48 Hours
<i>Bacillus subtilis</i>	6633	50-100	Good	Moderate clear zone surrounding the colony	35-37°C	48 Hours
<i>Pencillium notatum</i>	10108	10-100	Luxuriant	Positive reaction, clear zone surrounding the colony	35-37°C	48 Hours
<i>Pseudomonas aeruginosa</i>	27853	50-100	Luxuriant	Positive reaction, clear zone surrounding the colony	35-37°C	48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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.

 Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
Revision: 08 Nov., 2019

