

CM 21409 – PIKOVSKAYA'S AGAR

INTENDED USE

For detection of phosphate solubilizing soil microorganisms.

PRODUCT SUMMARY AND EXPLANATION

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. Pikovskaya's Agar was modified by Sundara Rao and Sinha for detection of phosphate-solubilizing bacteria from soil.

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
Agar	15.000

PRINCIPLE

This medium consists of Yeast extract which 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.

INSTRUCTION FOR USE

Dissolve 31.3 grams in 1000 ml purified/distilled water.

Heat to boiling to dissolve the medium completely and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

Mix well and pour into sterile Petri plates.

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 Petri plates.



INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Phosphate solubilization	Incubation Temperature	Incubation Period
Aspergillus niger	16404	10-100	Luxuriant	$\geq 70\%$	Positive reaction, clear zone surrounding the colony	35-37°C	48 Hours
Bacillus subtilis	6633	50-100	Good	40-50%	Moderate clear zone surrounding the colony	35-37°C	48 Hours
Pencillium notatum	10108	10-100	Luxuriant	$\geq 70\%$	Positive reaction, clear zone surrounding the colony	35-37°C	48 Hours
Pseudomonas aeruginosa	27853	50-100	Luxuriant	$\geq 70\%$	Positive reaction, clear zone surrounding the colony	35-37°C	48 Hours

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 10-25°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. 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.

