

TM 1926 - ZINC SOLUBILIZING AGAR

INTENDED USE

For isolation and detection of zinc solubilizing soil microorganisms.

PRODUCT SUMMARY AND EXPLANATION

Among all micro nutrients, Zinc is a rather unique element for plant nutrition. Zinc (Zn) is one of the essential micronutrients required for optimum plant growth. Substantial quantity of applied inorganic zinc in soil is converted into unavailable form. Zinc solubilising bacteria are potential alternates for zinc supplement. Zinc solubilizing bacteria solubilize both the insoluble zinc compounds, though ZnO is more effectively solubilized in comparison to ZnCO₃.

COMPOSITION

Ingredients	Gms / Ltr
Dextrose (Glucose)	10.000
Ammonium sulphate	1.000
Potassium chloride	0.200
Dipotassium hydrogen phosphate	0.100
Magnesium sulphate, heptahydrate	0.200
Zinc oxide	1.000
Agar	15.000

PRINCIPLE

Dextrose acts as an energy source. Different salts provide various essential ions required for promoting growth of zinc solubilizers. Colonies of the microorganism produced clear haloes on solid medium incorporating zinc phosphate, but only when dextrose was provided as the carbon source. Solubilization of zinc phosphate occurred by both an increase in the H⁺ concentration of the medium, probably a consequence of ammonia assimilation, and the production of gluconic acid.

INSTRUCTION FOR USE

- Dissolve 27.40 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C. Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to white homogeneous free flowing powder.
Appearance of prepared medium : Creamish white to slightly opalescent gel forms in Petri plate.

INTERPRETATION

Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Zinc solubilization	Incubation Temperature	Incubation Period
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<i>Pseudomonas fluorescens</i>	49838	50-100	Luxuriant	$\geq 70\%$	Clearing around the colony	25-30°C	3-4 days
<i>Pseudomonas fluorescens</i>	13525	50-100	Luxuriant	$\geq 70\%$	Clearing around the colony	25-30°C	3-4 days
<i>Bacillus cereus</i>	10876	50-100	Luxuriant	$\geq 70\%$	Clearing around the colony	25-30°C	3-4 days

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. Subba Rao, 1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., India.
2. Biology and Fertility of Soils November 1998, Volume 28, Issue 1, pp 87–94., C. D. Di Simine, J. A. Sayer, G. M. Gadd
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. Second Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. 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