

Technical Information

Pringsheims Medium

Product Code: DM 1698

Application: - Pringsheims Medium is recommended for the cultivation of Blue Green Algae.

Composition**

Ingredients	Gms / Litre
Potassium nitrate	0.200
Magnesium sulphate	0.010
Ammonium hydrogen phosphate	0.020
Calcium chloride	0.005
Iron (II) chloride	0.0005

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Pringsheims Medium is recommended for the cultivation of Blue Green Algae (2). Soil algae are ubiquitous in nature wherever moisture and sunlight are available. They are visible to the unaided eyes in the form of a green scum on the surface of soils. By virtue of the presence of chlorophyll in their cells, algae are photoautotrophic and use carbon dioxide from the atmosphere and liberate oxygen. The blue-green algae contain a pigment known as phycocyanin in addition to chlorophyll which imparts a special blue green colour to these organisms. Some of the blue-green algae possess specialized cells known as heterocysts which are implicated in nitrogen fixation. The water logged rice soil provides an ideal environment for the growth of certain blue-green algae.

Blue green algae are very important organisms for the health and growth of many plants. They are one of very few groups of organisms that can convert inert atmospheric nitrogen into an organic form, such as nitrate or ammonia. Blue green algae include a large number of widely distributed species. In spite of their vigorous growth under natural conditions, only a few of these organisms have been cultured in artificial media (1).

It is not easy to isolate pure cultures of algae since several species of algae are covered by mucilaginous matrix which harbours many contaminants. Serial dilutions of soil are made and 1 ml aliquots of each dilution transferred into suitable sterilized liquid medium either in flasks plugged with cotton wool or in bottles filled with sterilized white sand moistened with the algal medium. The flasks or bottles are kept for a few weeks near a source of light. Individual colonies are then transferred to agar slants for identification (3).

Potassium nitrate and ammonium hydrogen phosphate in the medium provide nitrogen source. Ferric chloride supplies an iron source to blue green algae. Magnesium sulphate and the chloride salt acts as sources of ions that simulate metabolism.

Methodology

Suspend 0.24 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat if necessary to dissolve the medium completely. Dispense and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Quality Control

Appearance

White to cream homogeneous free flowing powder.



Dehydrated Culture Media
Bases / Media Supplements

Colour and Clarity

Colourless clear solution over a white precipitate

Cultural Response

DM 1698: Cultural characteristics observed after an incubation at 25-27°C for 1 week .

Organism

Growth

Chlorella vulgaris ATCC 9765 good-luxuriant

Euglena gracilis ATCC 12716 good-luxuriant

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Gerloff G. C., George P., Fitzgerald and Folke Song, The Mineral Nutrition of *Coccolhoris peniocystis*., Am. J. of Botany, Vol. 37, No. 10, 1950, pg 835 840.
2. Pringsheim E. G., 1964, Pure cultures of Algae, Their Preparation and Maintenance, Hafner Publishing Co, New York and London.
3. Subba Rao N. S.,1977, Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Company

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