Jensens Broth, Granulated

GM973

Jensens Broth, granulated is recommended for detection and cultivation of nitrogen fixing bacteria.

Composition**

Ingredients	Gms / Litre
Sucrose	20.000
Dipotassium hydrogen phosphate	1.000
Magnesium sulphate	0.500
Sodium chloride	0.500
Ferrous sulphate	0.100
Sodium molybdate	0.005
Calcium carbonate	2.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 24.1 grams in 1000 ml distilled water. Heat just to boiling . Mix well and dispense in tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Note: Due to presence of calcium carbonate, the medium forms opalescent solution with white precipitate.

Principle And Interpretation

Nitrogen-fixing organisms are free-living bacteria, which grow well on a nitrogen-free medium. These bacteria utilize atmospheric nitrogen gas for their cell protein synthesis. This cell protein is then mineralized in soil after the death of the cells thereby contributing towards the nitrogen availability of the crop plants (1). Nitrogen fixing bacteria enter into symbiosis only with leguminous plants, by infecting their roots and forming nodules on them. Jensens Broth is formulated according to Jensen and is recommended for detection and cultivation of nitrogen fixing bacteria (2).

Sucrose acts as the energy source. Sodium molybdate in the media increases the fixation of nitrogen (3). Dipotassium hydrogen phosphate buffers the medium well. Sodium chloride maintains osmotic equilibrium of the medium. Calcium stimulates nodulation when present as chloride or sulphate.

Quality Control

Appearance

White to cream coloured granular medium.

Colour and Clarity of prepared medium

Cream coloured, slightly opalescent solution with slight precipitate in tubes

Cultural Response

Cultural characteristics observed after an incubation at 25-30°C for upto 8 days.

Organism	Growth
Rhizobium leguminosarum ATCC 10004	luxuriant
Rhizobium meliloti ATCC 9930	luxuriant
Rhizopus oryzae ATCC 9363	luxuriant

Storage and Shelf Life

On receipt store between 10- 30°C in tightly closed container and use freshly prepared medium. Use before expiry period on the label.

Reference

1. Subba Rao N. S., 1977, In: Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi, Pages 254-255.

2.Jensen. H. L., 1942, Pro Line Soc. N.S.W., 57,205-212.
3.Ranganayaki S., Mohan C., Ally Z., 1981; 21 (8): 607-10.

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