Technical Information

Jensen's Medium

Product Code: DM 1710

Application: - Jensen's Medium is used for detection and cultivation of nitrogen fixing bacteria.

Composition**

Ingredients	Gms / Litre
Sucrose	20.000
Dipotassium phosphate	1.000
Magnesium sulphate	0.500
Sodium chloride	0.500
Ferrous sulphate	0.100
Sodium molybdate	0.005
Calcium carbonate	2.000
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Jensen's Medium is formulated according to Jensen and is recommended for detection and cultivation of nitrogen fixing bacteria (2). 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.

Sucrose serves as the energy source. Sodium molybdate in the media increases the fixation of nitrogen (3).Sodium chloride helps to maintain osmotic equilibrium of the media. Calcium stimulates nodulation when present as chloride or sulphate.

Methodology

Suspend 39.1 grams of dehydrated media in 1000 ml distilled water. Mix thoroughly & heat just to boiling. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15minutes. Shake well and dispense as desired.

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

Quality Control

Appearance

White to cream homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity

Cream coloured, slightly opalescent gel with a slight precipitate forms in Petri plates.

Cultural Response

DM 1710: Cultural characteristics observed after incubation at 30°C for 8 days.

Organism	Growth
Rhizobium leguminosarum ATCC 10004	luxuriant

Rhizobium meliloti ATCC 9930	luxuriant
Rhizobium oryzae ATCC 9363	luxuriant

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use freshly prepared medium. Use before expiry period on the label.
Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

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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