



## Jensens Broth

M973

Jensens Broth is recommended 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

\*\*Formula adjusted, standardized to suit performance parameters

### Directions

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

*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). Sodium chloride maintains osmotic equilibrium of the media. Calcium stimulates nodulation when present as chloride or sulphate.

### Quality Control

#### Appearance

White to cream homogeneous free flowing powder

#### Colour and Clarity of prepared medium

Cream coloured, slightly opalescent solution with slight precipitate in tubes

#### Cultural Response

M973: Cultural characteristics observed after an incubation at 25-30°C for upto 8 days.

Organism	Growth
<i>Rhizobium leguminosarum</i> ATCC 10004	luxuriant
<i>Rhizobium meliloti</i> ATCC 9930	luxuriant
<i>Rhizopus oryzae</i> ATCC 9363	luxuriant

### Storage and Shelf Life

Store below 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.

Revision : 2 / 2015

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