



## Jensen's Medium

M710

Jensens Medium 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       |
| Agar                  | 15.000      |

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

### Directions

Suspend 39.1 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 Medium 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

#### Gelling

Firm,comparable with 1.5% Agar gel

#### Colour and Clarity of prepared medium

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

#### Cultural Response

M710: Cultural characteristics observed after incubation at 30°C for 8 days.

| Organism                                     | Growth    |
|--|-----------|
| <i>Rhizobium leguminosarum</i><br>ATCC 10004 | luxuriant |
| <i>Rhizobium meliloti</i> ATCC<br>9930       | luxuriant |
| <i>Rhizobium oryzae</i> ATCC<br>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.

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