

Technical Information

Jensen Seedling Agar

Product Code: DM 1718

Application: - Jensen Seedling Agar is recommended for germinating seeds of leguminous plants while studying the nodulating ability of *Rhizobium* isolates.

Composition**

Ingredients	Gms / Litre
Calcium phosphate	1.000
Dipotassium phosphate	0.200
Magnesium sulphate	0.200
Sodium chloride	0.200
Ferric chloride	0.100
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Jensen Seedling Agar, a nitrogen free medium, is used for germinating seeds of leguminous plants while studying the nodulating ability of *Rhizobium* species (3). *Rhizobium* is a soil bacterium that has great environmental and agricultural importance because of their symbiotic association with leguminous plants. They are responsible for most of the atmospheric nitrogen fixed on the earth (1). *Rhizobium* is a free-living bacterium, which grow well on a nitrogen free medium. These bacteria utilize atmospheric nitrogen gas for their cell protein synthesis. This cell protein is then mineralised in soil after the death of the cells thereby contributing towards the nitrogen availability to the crop plants (2).

Calcium stimulates nodulation when present as chloride or sulphate. Sodium chloride helps to maintain the osmotic balance of the medium. Dipotassium phosphates provide buffering to the medium. Magnesium sulphate and ferric chloride are sources of ions that simulate metabolism.

Methodology

Suspend 16.7 grams of dehydrated media in 1000 ml distilled water. Mix thoroughly & heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Shake well and dispense as desired.

Quality Control

Appearance

Cream to beige homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity

Light cream coloured, clear to slightly opalescent gel with a slight precipitate.

Reaction

Reaction of 1.67% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH Range

6.80-7.20



Dehydrated Culture Media
Bases / Media Supplements

Cultural Response

DM 1718: Cultural characteristics observed after an incubation at 30°C for 7 days.

Organism	Growth
<i>Rhizobium japonicum</i> ATCC 10324	luxuriant
<i>Rhizobium leguminosarum</i> ATCC 10004	luxuriant
<i>Rhizobium meliloti</i> ATCC 9930	luxuriant

Storage and Shelf Life

Dried Media: Store below 10- 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

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

Further Reading

1. Clemence Chaintrevil, Eric Giraud, Yves Prin et al, Appl. Environ. Microbiol., 2000, December; 66 (12): 5437 - 5447.
2. Subba Rao N. S., 1977, In: Soil Microorganisms and Plant Growth, Oxford and IBH Publishing Co., New Delhi, Pages 254-255.
3. Jensen H. L., Nitrogen fixation in leguminous plants. I., Proc. Int. Soc. NSW, 1942; 66:68 - 108.

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