



PRODUCT SPECIFICATION SHEET

Jensen Seedling Agar (DM774)

Intended Use

Jensen Seedling Agar (DM774) is recommended for germinating seeds of leguminous plants while studying the nodulating ability of *Rhizobium* isolates.

Product Summary and Explanation

Rhizobium is a genus of gram-negative soil bacteria that fix nitrogen and 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* forms an endosymbiotic nitrogen fixing association with roots of legumes and Parasponia. The bacteria colonize plant cells within root nodules; here the bacteria convert atmospheric nitrogen to ammonia and then provide organic nitrogenous compounds such as glutamine or ureides to the plant. *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⁾ Jensen Seedling Agar, a nitrogen free medium, is used for germinating seeds of leguminous plants while studying the nodulating ability of *Rhizobium* species.⁽³⁾

Principles of the Procedure

Jensen Seedling Medium contains calcium phosphate which stimulates nodulation. Sodium chloride maintains 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.

Formula / Liter

Ingredients	Gms / Liter
Calcium phosphate	1.00
Dipotassium phosphate	0.20
Magnesium sulphate	0.20
Sodium chloride	0.20
Ferric chloride	0.10
Agar	15.00
Final pH: 7.0 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 16.7 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle. Mix well and dispense as desired.

Quality Control Specifications

Dehydrated Appearance	Cream to beige homogeneous free flowing powder
Prepared Medium	Light cream coloured, clear to slightly opalescent gel with a slight precipitate
Reaction of 1.67% Solution	pH : 7.0 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel





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Expected Cultural Response: Cultural characteristics observed after an incubation at 30°C for 7 days.

Sr. No.	Organisms	Results to be achieved
		Growth
1.	<i>Rhizobium japonicum ATCC 10324</i>	Good-luxuriant
2.	<i>Rhizobium leguminosarum ATCC 10004</i>	Good-luxuriant
3.	<i>Rhizobium meliloti ATCC 9930</i>	Good-luxuriant

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer appropriate references for specific test procedures.

Results

Refer appropriate references and test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Jensen Seedling Medium

Product Code : DM774

Available Pack sizes : 100gm / 500gm

References

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.

Further Information

For further information please contact your local MICROMASTER Representative.



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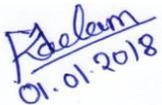
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