Asparagine Gelatin Lactate Medium Base

Asparagine Gelatin Lactate Medium is used for the isolation of sulphur bacteria.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagine</td>
<td>1.000</td>
</tr>
<tr>
<td>Dipotassium phosphate</td>
<td>0.500</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>1.000</td>
</tr>
<tr>
<td>Ferric ammonium sulphate</td>
<td>0.001</td>
</tr>
<tr>
<td>Gelatin</td>
<td>150.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 152.5 grams in 1000 ml warm distilled water. Add 5 grams of sodium lactate. Heat to boiling to dissolve the medium completely. Dispense in flasks or tubes, sterilize by autoclaving at 116°C for 15 minutes.

**Principle And Interpretation**

The bulk of soil sulphur is in the organic form which is metabolized by soil microorganisms to make it available in an inorganic state for plant nutrition. Sulphur is bound in organic state in proteins of vegetable and animal origin and in the protoplasm of microorganisms in the form of sulphur containing amino acids (cystine and methionine) and B-vitamins. The conversion of organically bound sulphur to the inorganic state is termed as mineralization of sulphur and is mediated through microorganisms. The sulphur thus released is either absorbed by plants or escapes to the atmosphere in the form of oxides. In the absence of oxygen, certain microorganisms produce hydrogen sulphide from organic sulphur substrates especially in waterlogged soils. Sulphur bacteria or sulphate reducing bacteria comprise several groups of bacteria that use inorganic sulphate as an oxidizing agent and reduce it to hydrogen sulphide. This may diminish the availability of sulphur for plant nutrition and thus influence agricultural production. Desulfovibrio species belonging to this class of bacteria is an obligate anaerobe, capable of producing hydrogen sulphide at a rapid rate. Asparagine Gelatin Lactate Medium is used for the isolation of sulphur bacteria (1).

Asparagine is the nitrogen source and is readily available for microbial energy and growth while the salts in medium help for growth of microorganisms. Gelatin acts as solidifying agent.

**Quality Control**

**Appearance**

Off-white to yellow homogeneous free flowing powder

**Gelling**

Semisolid, comparable with 15.0% Gelatin gel

**Colour and Clarity of prepared medium**

Yellow coloured clear to slightly opalescent gel forms in tube as butt

**Reaction**

Reaction of 15.25% w/v aqueous at 25°C. pH : 7.0±0.2

**pH**

6.80-7.20

**Cultural Response**

M725: Cultural characteristics observed after an incubation at 30°C for 7 days.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
</table>

Please refer disclaimer Overleaf.
Desulfovibrio desulfuricans 50-100 good-luxuriant
ATCC 13541

Storage and Shelf Life
Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on label.

Reference