Buffered HiVeg Peptone Water

Buffered HiVeg Peptone Water is used as pre-enrichment medium for increasing the recovery of injured *Salmonella* species from foods prior to selective enrichment and isolation.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>HiVeg hydrolysate</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Disodium hydrogen phosphate.12H2O</td>
<td>9.000</td>
</tr>
<tr>
<td>Monopotassium hydrogen phosphate</td>
<td>1.500</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 20.07 grams(equivalent weight of dehydrated medium) in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense as desired and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

**Principle And Interpretation**

Microorganisms that are subjected to environmental stresses may become structurally or metabolically damaged or injured. These microorganisms are unable to replicate in selective environments. Therefore these injured organisms must be resuscitated or permitted to repair the damage by incubation in an appropriate, non-selective environment (1). Edel and Kampelmacher (2) noted that sublethal injury to *Salmonellae* may occur in many food preservation processes. Enriching injured cells in Lactose Broth (pH 6.9) may be further detrimental to their recovery (3).

Buffered HiVeg Peptone water is prepared by replacing casein enzymic hydrolysate with HiVeg hydrolysate to avoid BSE/TSE risks associated with animal based peptones. Pre enrichment in Buffered HiVeg Peptone Water (MV1494) at 35°C for 18-24 hours results in repair of injured cells (4).

The buffering system prevents bacterial damage due to change in the pH of the medium. HiVeg hydrolysate provides carbonaceous and nitrogenous compounds, amino acids long chain peptides and vitamins required for the growth. Recently ISO committee has also recommended Buffered Peptone water (M1494I) for the detection of *Enterobacteriaceae* from food stuffs and other materials (5).

Inoculate 10 grams specimen in 50 ml of Buffered HiVeg Peptone Water (MV1494) and incubate at 35°C for 18 hours. Transfer 10 ml from this medium to 100 ml of Rappaport Vassiliadis Soya Broth (RVS Broth) (M1491) and incubate at 43°C for 24-48 hours and then subculture on selective media like XLD HiVeg Agar, (MV031). Examine the plates for colonies of *Salmonella* species.

**Quality Control**

**Appearance**
Cream to yellow homogeneous free flowing powder

**Colour and Clarity of prepared medium**
Light yellow coloured clear solution without any precipitate

**Reaction**
Reaction of 2.0% w/v aqueous solution at 25°C, pH : 7.0±0.2

**pH**
6.80-7.20

**Cultural Response**
Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.(Recovery is observed on XLD HiVeg Agar, MV031)
### Cultural Response

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
<th>Colour of colony</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Salmonella Enteritidis ATCC 13076</em></td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>red with black centres</td>
</tr>
<tr>
<td><em>Salmonella Typhi ATCC 6539</em></td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>red with black centres</td>
</tr>
<tr>
<td><em>Salmonella Typhimurium ATCC 14028</em></td>
<td>50-100</td>
<td>luxuriant</td>
<td>&gt;=50%</td>
<td>red with black centres</td>
</tr>
</tbody>
</table>

### Storage and Shelf Life

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

### Reference


Disclaimer:

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