Technical Information

M-Broth, MiVeg

Product Code : VM1846

Application:- M-Broth, MiVeg is recommended for detecting *Salmonellae* in foods and feeds by the accelerated enrichment serology procedures.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	12.5
Yeast extract	5.0
D-Mannose	2.0
Sodium chloride	5.0
Sodium citrate	5.0
Dipotassium phosphate	5.0
Manganese chloride	0.14
Magnesium sulphate	0.8
Ferrous sulphate	0.04
Polysorbate 80	0.75
Final pH (at 25°C)	7.0±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

M-Broth, MiVeg is prepared by using vegetable peptones instead of animal based peptones thereby making the medium free from BSE/TSE risks. This medium is the modification of M-Broth which was developed by Sperber and Diebel (1) to accelerate the detection of *Salmonellae*. The accelerated 50 hour detection procedure consists of 18 hours pre-enrichment, 24 hours selective enrichment, 6 to 8 hours selective enrichment and 2 hours serological testing. D-Mannose helps to avoid nonspecific agglutination in the selective enrichment step, that can occur with dextrose. Fantasia, Sperber and Deibel (2) found that enrichment serology method is rapid and less complicated to perform than the method described in the Bacteriological Analytical Manual (3) by maintaining the accuracy and sensitivity of the method. This medium contains MiVeg hydrolysate, yeast extract which supplies organic nitrogen, carbon, sulphur, vitamins and trace elements essential for the growth of *Salmonella* species. Mannose serve as the fermentable sugar and energy source as well as it prevents fimbrial agglutination of *Salmonella* (1). The inorganic salts present in the medium stimulate bacterial growth while polysorbate 80 supplies fatty acids.

10% suspension of sample is prepared in sterile Fluid Lactose MiVeg Broth (VM1026) and incubated at 35 ± 2°C for 18 - 24 hours. 1 ml of this pre-enriched culture is added to 9 ml of Selenite Cystine MiVeg Broth Base (VM1025) and Tetrathionate MiVeg Broth Base (VM1032) and incubated at 35 ± 2°C for 24 hours. This enriched culture is inoculated in M-Broth MiVeg and incubated at 35 ± 2°C for 6 hours and then H-agglutination test is performed.

Methodology

Suspend 36.23 grams of powder 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.

Quality Control

Physical Appearance

Yellow coloured, may have slightly greenish tinge,homogeneous, free flowing powder.

Colour and Clarity of prepared medium

Light amber coloured, clear to slightly opalescent solution with slight precipitate.

Reaction

Reaction of 3.62 % w/v aqueous solution pH: 7.0 ±0.2 at 25°C

pH range

6.8-7.2

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 35-37°C for 6-8 hours

Organisms (ATCC)	Inoculum (CFU)	Growth*
Salmonella serotype Paratyphi A	10^2-10^3	luxuriant
Salmonella serotype Paratyphi B	10^2-10^3	luxuriant
Salmonella serotype Choleraesuis (12011)	10^2-10^3	luxuriant
Salmonella serotype Enteritidis (13076)	10^2-10^3	luxuriant
Salmonella serotype Typhi (6539)	10^2-10^3	luxuriant
Salmonella serotype Typhimurium (14028)	10^2-10^3	luxuriant

Key : * = on membrane filter.

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Sperber and Deibel, 1969, Appl. Microbiol., 17:533.
2. Fantasia, Sperber and Deibel, 1969, Ibid, 17:540.
3. Bacteriological Analytical Manual, 1969, FDA, Washington, D.C.

Disclaimer :

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