Technical Information

Dextrose Tryptone MiVeg Agar Modified

Product Code : VM1913

Application:- Dextrose Tryptone MiVeg Agar Modified is used for the detection and enumeration of mesophilic and thermophilic aerobic microorganisms in foods.

Composition

Ingredients	Gms / Litre
MiVeg hydrolysate	1000
Dextrose	5.00
Dipotassium phosphate	1.25
Yeast extract	1.00
Bromo cresol purple	0.04
Agar	15.00
Final pH (at 25°C)	6.7±0.2

** Formula adjusted, standardized to suit performance parameters.

Principle & Interpretation

Dextrose Tryptone MiVeg Agar Modified is prepared by using MiVeg hydrolysate instead of Casein enzymic hydrolysate thereby making the media free from BSE/TSE risks. This medium is the modification of the medium evolved by Williams (1) for cultivation and enumeration of the thermophilic bacteria. Use of this medium for routine culture purpose is recommended by Cameron (2) and the Association of Official Agricultural Chemists (3). The modified medium is more nutritious and well buffered than Dextrose Tryptone MiVeg Agar due to inclusion of yeast extract and dipotassium phosphate. It is used for the examination of canned food, sugar and starch for thermophilic bacteria such as *Bacillus stearothermophillus* ('flat sour 'spoilage bacteria) (4) and also for plate count of mesophilic or thermophilic aerobes in sweetening agents used in frozen desserts (5) and for counts of aerobic microorganisms in liquid sugar. This medium contains MiVeg hydrolysate which supplies nutrients to the organisms. Dextrose is the energy source. Bromo cresol purple serves as an pH indicator. Acid producing organisms produce yellow coloured colony. The plates should be incubated at 55°C for 48 hours in a humid incubator. It is useful for enumeration of mesophilic organisms, thermophiles in cereals and cereal products, dehydrated fruits vegetables and spices (6).

Methodology

Suspend 32.3 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.

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Purple coloured, slightly opalescent gel forms in petri plates.

Reaction

Reaction of 3.23% w/v aqueous solution pH: 6.7 ±0.2 at 25°C

pH range

6.5-6.9

Cultural Response/Characteristics

Cultural characteristics observed after an incubation at 55°C for 48 hours

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony on the Agar Media
Bacillus coagulans (8038)	10^2–10^3	Good-luxuriant	>70%	yellow
Bacillus stearothermophilus(7953)	10^2–10^3	Good-luxuriant	>70%	yellow
Bacillus brevis (8246)	10^2–10^3	Good-luxuriant*	>70%	yellow

Key : * = with or without dextrose fermentation

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. Williams O.B., 1936, Food Res., 1:217.
2. Cameron E.J., 1936, J.Assoc. Official Agr. Chem., 19:433.
3. Association of Official Agriculture Chemists, 1945, Official and Tentive Methods of Analysis, Washington.
4. Tanner F.W., 1944., The Microbiology of Foods, 2nd ed., Garrard Press, Champaers, P.762 and 1127.
5. Standard Methods for the Examination of Dairy Products. 17th Edition, 2004 Edited by H. Michael Wehr and Joseph H.Frank.
6. Downes FP and Ito K (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.

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