

Technical Information

Dextrose Tryptone Agar, Modified

Product Code: DM 1913

Application: - Dextrose Tryptone Agar, Modified is recommended for the isolation and cultivation of aciduric and thermophilic aerobic flat sour sporeformers from canned food, sugar etc.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Dextrose	5.000
Dipotassium phosphate	1.250
Yeast extract	1.000
Bromocresol purple	0.040
Agar	15.000
Final pH (at 25°C)	6.7±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Canned foods are mostly prone to flat-sour spoilage due to contamination by either mesophilic or thermophilic aerobic spore-formers. Williams ⁽¹⁾ evolved Dextrose Tryptone Agar, a suitable medium for cultivation and enumeration of the thermophilic bacteria. It is also recommended for general cultural studies by Cameron ⁽²⁾ and other associations ⁽³⁻⁷⁾. Dextrose Tryptone Agar, Modified (DM1913) is more nutritious and well buffered than Dextrose Tryptone Agar (DM1092) as it contains yeast extract and dipotassium phosphate. Dextrose Tryptone Agar, Modified is used for the examination of canned food, sugar and starch for *Bacillus stearothermophilus* responsible for flat sourspoilage ⁽⁸⁾, plate count of mesophilic or thermophilic aerobes in sweetening agents used in frozen desserts ⁽⁹⁾ and for counts of aerobic microorganisms in liquid sugar. Casein enzymic hydrolysate and yeast extract provides nutrients to the organisms. Dextrose serves as an energy source while bromo cresol purple is a pH indicator. Dipotassium phosphate buffers the medium. Acid producing organisms produce yellow colony. The plates should be incubated at 55°C for 48 hours in a humid incubator. This media is useful for enumeration of mesophilic organisms, thermophiles in cereals and cereal products, dehydrated fruits and vegetables and spices ⁽¹⁰⁾.

Methodology

Suspend 32.29 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.



Dehydrated Culture Media
Bases / Media Supplements

Quality Control

Physical Appearance

Light yellow to greenish yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Purple coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

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

pH range

6.50-6.90

Cultural Response/Characteristics

DM 1913: Cultural characteristics observed after an incubation at 54-56°C for 48-72 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Bacillus brevis</i> ATCC 8246	50-100	Good-luxuriant (with or without dextrose fermentation)	50-70%	Yellow
<i>Bacillus coagulans</i> ATCC 8038	50-100	Good-Luxuriant	50-70%	Yellow
<i>Bacillus stearothermophilus</i> ATCC 7953	50-100	Good-luxuriant	50-70%	Yellow

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^o 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 Analytical Chemists, 1978, Bacteriological Analytical Manual, 5th Edition, AOAC, Washington, D.C.
4. American Public Health Association, 1972, Standard Methods for the Examination of Dairy Products, 13th Ed. APHA, Washington, D.C.
5. National Canners Association, 1968, Laboratory Manual for Food Canners and Processors, Vol. I
6. American Public Health Association, 1976, Compendium of Methods for the Microbiological Examination of Foods, APHA, Washington, D.C.
7. National Canners Association, 1954, A Laboratory Manual for the Canning Industry, 1st Edition, National Canners Associations, Washington.
8. Tanner F.W., 1944., The Microbiology of Foods, 2nd ed., Garrard Press, Champaers, P.762 and 1127.
9. American Public Health Association, 1953, Standard Methods for the Examination of Dairy Products, 10th ed., APHA Inc., New York.
10. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.

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