Dextrose Tryptone Agar, Modified

M913

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

Directions

Suspend 32.29 grams in 1000 ml distilled water. Heat to boiling 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.

Principle And Interpretation

Canned foods are most often 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 (M913) is more nutritious and well buffered than Dextrose Tryptone Agar (M092) due to inclusion of yeast extract and dipotassium phosphate. Dextrose Tryptone Agar, Modified is used for the examination of canned food, sugar and starch for thermophilic bacteria such as *Bacillus stearothermophillus* (flat sourspoilage bacteria) (8) and also for 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).

Quality Control

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
6.50-6.90

Cultural Response
M913: Cultural characteristics observed after an incubation at 54-56°C for 48-72 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony

Bacillus brevis ATCC 8246	50-100	good-luxuriant (with or without dextrose fermentatiion)	50-70%	yellow
Bacillus coagulans ATCC 8038	50-100	good-luxuriant	50-70%	yellow
Bacillus stearothermophilus ATCC 7953	50-100	good-luxuriant	50-70%	yellow

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 the label.

Reference

1. Williams O.B., 1936, Food Res., 1:217.
2. Cameron E.J., 1936, J.Assoc. Official Agr. Chem., 19:433.
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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 Caners 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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