Dextrose Tryptone Broth, Modified

M914

Dextrose Tryptone Broth, Modified is recommended for the detection and enumeration of mesophilic and thermophilic aerobic microorganisms in foods.

Composition**

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

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 17.29 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense into sterile tubes.

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 Broth, Modified (M914) is more nutritious and well buffered than Dextrose Tryptone Broth (M122) due to inclusion of yeast extract and dipotassium phosphate. Dextrose Tryptone Broth, Modified is similar in composition to Dextrose Tryptone Agar, Modified (M913), except agar. This medium is useful for enumeration of mesophilic organisms, thermophiles in cereals and cereal products, dehydrated fruits and vegetables and spices (8).

Casein enzymic hydrolysate and yeast extract provides essential 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 coloured medium. The tubes should be incubated at 55°C for 48 hours in a humid incubator.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Purple coloured, clear solution in tubes

Reaction
Reaction of 1.73% w/v aqueous solution at 25°C. pH : 6.7±0.2

pH
6.50-6.90

Cultural Response
M914: Cultural characteristics observed after an incubation at 54-56°C for 36-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of medium
Bacillus brevis ATCC 8246	50-100	good-luxuriant(with or without dextrose fermentation)	yellow

Bacillus coagulans ATCC 8038	50-100	good-luxuriant	yellow
Bacillus stearothermophilus ATCC 7953	50-100	good-luxuriant	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.
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 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. 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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