Technical Information

Tryptone Glucose Extract Agar (Tryptone Glucose Yeast Extract Agar)

Product Code: DM 1014

Application: Tryptone Glucose Yeast Extract Agar is recommended for enumeration of bacteria in water, air, milk and dairy products.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.000
Yeast extract	3.000
Glucose	1.000
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Tryptone Glucose Yeast Extract Agar originally developed by Bowers and Hucker [1] and named as Tryptone Glucose Skim Milk Agar was modified to the present composition for the cultivation and enumeration of bacteria in air, water [2], milk and dairy products [3]. Various authors have studied different aspects of this medium like presence of thermophilic bacteria in milk [4], influence of incubation temperature [5] etc. It is used as a standard medium for the bacteriological plate count of milk and dairy products [6].

Casein enzymic hydrolysate, yeast extract provide nitrogenous compounds, vitamin B complex and other essential growth nutrients. Glucose is the energy source. For the enumeration purposes, pour plate method is suggested. Medium must be quickly poured into Petri dishes if milk sample is to be tested, because the milk may get flocculated if the medium remains hot for longer period of time.

Methodology

Suspend 24 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.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light yellow coloured Clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 2.4% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range

6.80-7.20

Cultural Response

DM 1014: Cultural characteristics observed after an incubation at 35-37°C for 18- 48 hours.

Organism	Inoculum(CFU)	Growth	Recovery
Bacillus subtilis ATCC 6633	50-100	good-luxuriant	>=70%
Enterobacter aerogenes ATCC 13048	50-100	good-luxuriant	**>=70%**
Escherichia coli ATCC 25922	50-100	good-luxuriant	**>=70%**
Enterococcus faecalis ATCC 29212	50-100	good-luxuriant	**>=70%**
Lactobacillus casei ATCC 9595	50-100	good-luxuriant	**>=70%**
Pseudomonas aeruginosa ATCC 27853	50-100	good-luxuriant	>=70%
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	>=70%

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. Bowers and Hucker, 1935, Tech. Bull., 228, N.Y.State Agr. Expt. Station.
2. Eaton A. D., Clesceri L. S. and Greenberg A. W., (Eds.), 2005, Standard Methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington, D.C.
3. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
4. Pickett, 1928, Tech. Bull. 147, N.Y. State Agr. Expt. Station.
5. Dennis and Weiser, 1937, J.Dairy Science, 20: 445.
6. Abele C. A., Am. J. Pub. Health, 1939, 29: 821.

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