



Yeast Extract Agar

M456

Yeast Extract Agar is a highly nutritive medium recommended for plate count of microorganisms in water.

Composition**

| Ingredients | Gms / Litre |
|--------------------------------|-------------|
| Peptic digest of animal tissue | 5.000 |
| Yeast extract | 3.000 |
| Agar | 15.000 |
| Final pH (at 25°C) | 7.2±0.2 |

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 23 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

Yeast Extract Agar is formulated according to the formula described by Windle Taylor (1) for the plate count of microorganisms in water. Water can contain a large number of microorganisms, particularly coming from the earth and vegetation.

Yeast extract and peptic digest of animal tissue provide nitrogenous compounds, vitamin B complex and other growth nutrients. From the water sample, make a decimal dilution bank with Ringer Solution (M525) and take aliquots to 2 parallel series of plates. Pour the molten, cooled (45°C) Yeast Extract Agar and homogenize with sample. Incubate one of the series of plates at 35°C for 24 hours and the other series of plates at 20-22°C for 3 days. Separate counts are made of the organisms forming visible colonies after 24 hours at 35°C and the organisms forming colonies after 3 days at 20-22°C (2). Select the plates containing 30-300 colonies.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 2.3% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

M456: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

| Organism | Inoculum (CFU) | Growth | Recovery |
|--|----------------|-----------|----------|
| <i>Enterobacter aerogenes</i> ATCC 13048 | 50-100 | luxuriant | ≥70% |
| <i>Escherichia coli</i> ATCC 25922 | 50-100 | luxuriant | ≥70% |
| <i>Pseudomonas aeruginosa</i> ATCC 27853 | 50-100 | luxuriant | ≥70% |
| <i>Staphylococcus aureus</i> ATCC 25923 | 50-100 | luxuriant | ≥70% |

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8° C. Use before expiry period on the label.

Reference

- 1.Taylor W. E., 1958, The Examination of Waters and Water Supplies, 7th Ed., Churchill Ltd, London, pg. 394, 778.
- 2.Dept. of Health and Social Security, 1982, report No.71: HMSO, London, 54.

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