Thermophilic Acid Resistant Medium

M1581

Thermophilic Acid Resistant Medium is recommended for the growth and detection of thermophilic acid resistant microorganisms.

Composition**

Ingredients	Gms / Litre
Yeast extract	4.000
Starch soluble	4.000
Glucose	1.000
Agar	30.000
Final pH (at 25°C)	3.7±0.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 39 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 in sterile Petri plates.

Principle And Interpretation

Thermophilic Acid Resistant Medium is a medium supporting the growth of thermophilic, acid resistant microorganisms such as *Bacillus stearothermophilus* and other *Bacillus* species like *B.coagulans (B. thermoacidurans)* . These organisms cause flat-sour spoilage (1) i.e acid production, but no gas in canned foods. *B.coagulans* have been isolated from canned tomato vegetable juice mixes, tomato juice, tomato puree, tomato soup and canned whole tomatoes. The organisms has been found to multiply in tomato washing equipments where the volume of cold water is insufficient and the water temperature may reach 27 to 32ºC. *B. stearothermophilus* shows growth at 55ºC, poor growth at 37ºC and no growth at 20ºC (2). Both the organisms can grow at low pH.

Yeast extract in the medium provides nutrition to the microorganisms. *Bacillus* species utilize complex starch while glucose acts as immediate precursor required for its biosynthesis. This medium is useful for enumeration of thermophiles in cereals and cereal products, canned foods, dehydrated fruits, vegetables, etc.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Coloue and Clarity of prepared medium
Yellow coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 3.9% w/v aqueous solution at 25°C. pH : 3.7±0.1

pH
3.60-3.80

Cultural Response
M1581: Cultural characteristics observed after an incubation at 55ºC for 24-48 hours.

Organism	Growth Cultural Response
Bacillus stearothermophilus ATCC 7953	good-luxuriant
Bacillus coagulans ATCC 8038	good-luxuriant

Storage and Shelf Life

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

Reference

1.Williams O.B., 1936, Food Res., 1: 217.
2.Collee J.G. et al (Ed.), 1989, Mackie and McCartney, Practical Medical Microbiology; 396.

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