Tomato Juice Medium (without Sterile Membrane Filter) MF021

For detection and enumeration of Lactobacilli and other aciduric microorganisms.

Composition**

Ingredients	Gms / Litre
Peptone, special	5.000
Yeast extract	5.000
Dextrose	10.000
Monopotassium phosphate	0.500
Potassium chloride	0.125
Calcium chloride	0.125
Sodium chloride	0.125
Magnesium sulphate	0.125
Manganese sulphate	0.003
Bromo cresol green	0.030
Tomato juice solids, from	150.000
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Directions

The test sample should be filtered through a sterile membrane filter having pore size of 0.22 / 0.45µ. Rehydrate the nutrient pad with 2.0 -2.5 ml sterile distilled / purified water. After filtration, remove the membrane filter aseptically using sterile forceps. Place the membrane filter on rehydrated nutrient pad. Incubate the inoculated nutrient. Interpret the results qualitatively by observing the presence or absence of growth and quantitatively by counting the number of colonies on the surface of the membrane filter and calculating CFU/ml.

Principle And Interpretation

Field of Application: Beverages. DriFilter Membrane Nutrient Pad Medium is ready to use sterile culture media in the form of a 50 mm biological inert absorbent pads impregnated with Tomato Juice medium, then dried and sterilized in 55 mm petri plate. They eliminate the need of laborious media preparation and autoclaving procedures. The nutrient pads are to be just rewetted with sterile distilled water and are ready to use. Use of nutrient pads allows larger sample volumes to be tested at a time. Interpretation of results is directly by counting the CFUs and also quantifies the microbial load present in the sample. Mickle and Breed (1) first described the use of tomato juice in the culture media for Lactobacilli. Tomato Juice Medium is recommended for the cultivation of yeast and other aciduric organisms (2) and is based on the formula of Kulp and White for cultivation of yeasts and other aciduric microorganisms (3). Ability of tomato juice to enhance the recovery of Lactobacilli was observed by Kulp (4). Tomato juice acts as a source of carbon, nutrients and proteins. Yeast extract provides nitrogenous compounds and amino acids which stimulate the growth of spoilage strains (5). Low pH of the medium encourages growth of Lactobacilli while inhibiting the growth of accompanying bacteria. Phosphates buffer the medium. Magnesium sulphate, manganese sulphate and ferrous sulphate provide inorganic ions. Sodium chloride maintains osmotic balance in the medium. Field of Application:

Quality Control

Appearance

Dry filter membrane pad of 50mm diameterDry filter membrane pad of 50mm diameter

Colour

Pale coloured nutrient padPale coloured nutrient pad

Sterility test
Passes release criteria

Cultural response
Cultural characteristics observed after incubation at 35-37ºC for 48-72 hoursCultural characteristics observed after incubation at 35-37ºC for 48-72 hours

Organism	Growth	Colour of colony
Lactobacillus casei ATCC 9595	Luxuriant	Colourless
Lactobacillus leichmannii ATCC 4797	Luxuriant	Colourless

Storage and Shelf Life
Store between 10-30°C. Use before expiry date on the label.

Reference
1. Mickle and Breed, 1925, Technical Bulletin 110, NY State Agricultural Exp. Station 2. Atlas R. M., 2004, Handbook of Microbiological Media, Lawrence C. Parks (Ed.), 3rd Edition, CRC Press. 3. Kulp J. W. L. and White V., 1932, Science, 76:17 4. Kulp J. W. L., 1927, Science 66:512. 5. Carr J. G., Cutting C. V. and Whiting G. C., (Eds.), 1975, Lactic Acid Bacteria and Food, Academic Press London UK, pp. 87-102.