

## Technical Information

### Tomato Juice Broth

#### Product Code: DM 2027

**Application:** - Tomato Juice Broth is used for cultivation of yeasts and other aciduric microorganisms.

#### Composition\*\*

Ingredients	Gms / Litre
Tomato juice	20.000
Yeast extract	10.000
Dextrose	10.000
Dipotassium phosphate	0.500
Monopotassium phosphate	0.500
Magnesium sulphate	0.200
Sodium chloride	0.010
Ferrous sulphate	0.010
Manganese sulphate	0.010
Final pH ( at 25°C)	6.7±0.2

\*\*Formula adjusted, standardized to suit performance parameters

#### Principle & Interpretation

Mickle and Breed <sup>(1)</sup> first described the use of tomato juice in the culture media for Lactobacilli. Tomato Juice Broth is recommended for the cultivation of yeast and other aciduric organisms <sup>(2)</sup> and is based on the formula of Kulp and White for cultivation of yeasts and other aciduric microorganisms <sup>(3)</sup>.

Ability of tomato juice to enhance the recovery of Lactobacilli was observed by Kulp <sup>(4)</sup>.

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 <sup>(5)</sup>. 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.

#### Methodology

Suspend 41.23 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely.

Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

#### Quality Control

##### Physical Appearance

Cream to yellow homogeneous free flowing powder

##### Colour and Clarity of prepared medium

Light amber coloured opalescent solution may contain slight precipitate.

##### Reaction

Reaction of 4.12% w/v aqueous solution at 25°C. pH : 6.7±0.2

##### pH Range

6.50-6.90

##### Cultural Response/Characteristics

**DM 2027:** Cultural characteristics observed after an incubation at 35-37°C for 40-48 hours.

Organism	Inoculum (CFU)	Growth
<i>Lactobacillus casei</i> ATCC 9595	50-100	luxuriant
<i>Lactobacillus leichmannii</i> ATCC 4797	50-100	luxuriant



Dehydrated Culture Media  
Bases / Media Supplements

<i>Saccharomyces cerevisiae</i> ATCC 9763	50-100	luxuriant
<i>Saccharomyces uvarum</i> ATCC 28098	50-100	luxuriant

## 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<sup>0</sup> in sealable plastic bags for 2-5 days.

## Further Reading

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 66:5 12.
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.

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