Orange Serum Agar

Cat. 1307

For the isolation, cultivation and determination of a great number of acid-tolerant pathogenic germs in fruits juices.

Practical information

Aplications	Categories
Selective enumeration	Acid-tolerant
Detection	Acid-tolerant

Industry: Juices

Principles and uses

Orange Serum Agar is recommended for the isolation, cultivation and enumeration of acid-tolerant spoilage microorganisms in fruit juice and fruit juice concentrates, in particular from citrus fruit.

The low pH of fruit juices makes citrus fruit products susceptible to spoilage by yeasts, molds and the bacteria Lactobacillus and Leuconostoc. Hays investigated spoilage in frozen concentrated orange juice. He found that an agar medium containing orange serum was superior to others in isolating the microorganisms responsible for spoilage. Orange Serum Agar is specially indicated for growing the lactic acid micro flora that spoil citric products, such as Lactobacillus, Leuconostoc and molds.

Casein peptone is source of nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is source of vitamins, particularly the B-group essential. Glucose is the fermentable carbohydrate providing carbon and energy. Monopotassium phosphate acts as a buffer. Bacteriological agar is the solidifying agent. The low pH of citric juices and products limits the growth of microorganisms to acid tolerant pathogens.

Formula in g/L

Dextrose	4	Bacteriological agar	17
Dipotassium phosphate	2,5	Tryptone	10
Yeast extract	3	Orange extract	13,5

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 50 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. DO NOT OVERHEAT.

Instructions for use

Poured plate method:
- Deposit 1 ml of the initial suspension and/or diluted sample in an empty Petri dish.
- Add 18-20 ml of agar cooled to 45-50 ºC in each Petri dish and mix gently moving the plate.
- Incubate at 30 ºC for 2-5 days.
- Report the CFU/ml of test material.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	Amber, slightly opalescent.	5,5±0,2

Microbiological test

Incubation conditions: (30ºC / 2-5 days).

Microorganisms	Specification
Aspergillus brasiliensis ATCC 16404	Good growth
Leuconostoc mesenteroides ATCC 23386	Good growth
Lactobacillus fermentum ATCC 9338	Good growth
Saccharomyces cerevisiae ATCC 9763	Good growth

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Hays G.L.(1 951), Proc. Florida State Hort. Soc. , 94th Ann. Murdock D.I. and Brokaw C.H.(1 958), Food Tech., 1 2. 573-576. American Public Health Association (1976), Compendium of Methods for the Microbiological Examination of Foods, APHA Inc. Washington DC.