

Universal Beer Agar (UBA)

Cat. 1562

For the cultivation of important microorganisms in the beer industry

Practical information

Applications	Categories
Detection	Microorganisms of the brewing industry

Industry: Alcoholic beverages

Principles and uses

Universal Beer Agar (UBA) is a non-selective agar rich in nutrients that supports the growth and recovery of microorganisms of significance in the brewing industry.

The medium isolates bacteria and yeasts, capable of growing under brewing conditions, which are of real significance for the brewer such as wort spoiling bacteria, common environmental bacteria (coliforms), and beer spoilers that require oxygen.

Yeast extract is a source of vitamins, particularly of the B-group. Peptonized milk contains lactose as an energy source. Tomato juice is a source of carbon, protein and nutrients. Dextrose is a fermentable carbohydrate providing carbon and energy. Potassium phosphates act as a buffer system. Magnesium sulfate, Ferrous sulfate and Manganese sulfate are sources of ions that stimulate metabolism. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Bacteriological agar is the solidifying agent. The incorporation of beer in the medium adds hop constituents and alcohol which eliminate many airborne contaminants not originating from pitching yeasts or beer, and therefore minimizing false positive results. Also, it stimulates the growth of beer spoilage organisms, such as lactobacilli, pediococci, Acetobacter, and Zymomonas spp.

For the detection of bacterial contaminants in pitching yeasts, cycloheximide (1 mg/l) may be added.

Formula in g/L

Dextrose	10	Bacteriological agar	12
Dipotassium phosphate	0,5	Ferrous sulfate	0,01
Magnesium sulfate	0,01	Manganese sulfate	0,01
Monopotassium phosphate	0,5	Peptonized milk	15
Sodium chloride	0,01	Tomato juice	7
Yeast extract	10		

Preparation

Suspend 55 grams of the medium in 750 ml of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Add 250 ml of beer without gas when the medium is still hot. Mix with agitation. Dispense into appropriate containers and sterilize in autoclave at 121°C for 10 minutes. Cool to 45-50°C, mix well and dispense into plates.

Instructions for use

- Incubate at 28-30°C and observe after 3 days.
- Incubate aerobically to detect Acetobacter .
- Incubate anaerobically to detect Lactobacillus, Pediococci and Zymomonas.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25°C)
w/o rests	Fine powder	Beige	Amber slightly opalescent.	6,3 ± 0,2

Microbiological test

For the detection of Acetobacter:

Incubation conditions: (28-30 °C, aerobic atmosphere / 3 days).

For the detection of Lactobacillus, pediococci and Zymomonas:

Incubation conditions: (28-30 °C, anaerobic atmosphere / 3 days).

Microorganisms

Acetobacter aceti ATCC 15973
Pediococcus damnosus ATCC 29358
Lactobacillus fermentum ATCC 9338
Saccharomyces cerevisiae ATCC 9763

Specification

Good growth
Scarce growth
Good growth
Good growth

Storage

Temp. Min.:2 °C

Temp. Max.:25 °C

Bibliography

Kozulis, J. A. AND Page, H.E.A. A. new universal beer agar medium for the enumeration of wort and beer microorganisms. Proc.Am.Brew. Chem 52-58, (1968)