Lysine Medium Base

M642

Lysine Medium Base is used for isolation and enumeration of wild yeasts in pitching yeasts.

Composition**

Ingredients	Gms / Litre
Dextrose	44.500
Monopotassium phosphate	1.780
Magnesium sulphate	0.890
Calcium chloride	0.178
Sodium chloride	0.089
Adenine	0.00178
DL-Methionine	0.000891
L-Histidine	0.000891
DL-Tryptophan	0.000891
Boric acid	0.0000089
Zinc sulphate	0.0000356
Ammonium molybdate	0.0000178
Manganese sulphate	0.0000356
Ferrous sulphate	0.0002225
L-Lysine	1.000
Inositol	0.020
Calcium pantothenate	0.002
Aneurine	0.0004
Pyridoxine	0.0004
p-Amino benzoic acid (PABA)	0.0002
Nicotinic acid	0.0004
Riboflavin	0.0002
Biotin	0.000002
Folic acid	0.000001
Agar	17.800
Final pH (at 25°C)	5.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 6.62 grams in 100 ml distilled water containing 1 ml of 50% potassium lactate (FD123). Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to 50°C, adjust pH to 5.0 with 10% lactic acid and pour into sterile Petri plates.

Principle And Interpretation

Morris and Eddy (1) described this complex medium for the isolation and enumeration of wild yeasts in pitching yeast in the brewery industry. Walters and Thiselton (2) used a liquid synthetic medium containing lysine as sole nitrogen source and found that many types of yeast utilize lysine. Later Morris and Eddy (1) also formulated solid lysine medium. Most of the *Saccharomyces* strains employed in the brewery industry and other fermentative industries do not use lysine, whereas the wild strains do. Lysine Medium exploits this differential behavior to separate both types of yeasts.

The medium contains vitamins and trace elements, which is necessary to support metabolic activities of yeast. Lysine acts as the sole source of nitrogen, which is utilized by many types of yeast. Morris and Eddy (1) recommended surface inoculation of washed aliquots from the yeast mass; 0.2 ml suspension of 107 cells/ml is the best. Sample is incubated at 25°C and examined daily, enumerating all the colonies that have grown (lysine positive). The degree of contamination is expressed as the number of wild yeast cells per million cells of the original inoculum. The number of cells in the inoculum is important as small number

of cells about 100 to 1000 grow to a limited extent while 10,000 brewing yeast cells provide a direct measure of contaminant wild yeasts (3).

Quality Control

Appearance
White to cream homogeneous free flowing powder

Gelling
Firm, comparable with 1.78% Agar gel.

Colour and Clarity of prepared medium
Colourless to pale yellow clear to slightly opalescent opalescent gel forms in Petri plates

Reaction
Reaction of 6.6% w/v aqueous solution at 25°C. pH : 5.0±0.2

pH
4.80-5.20

Cultural Response
M642: Cultural characteristics observed after an incubation at 25-30°C upto 7 days.

Organism	Growth
Growth Promotion Test	
Pichia fermentans ATCC 10651	luxuriant

Storage and Shelf Life

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

Reference

1.Morris E. O. and Eddy A. A, 1957, J. Inst. Brew. 63(1): 34.
2.Walters L. S. and Thiselton M. R., 1953, J. Inst. Brew. 59:401.
3.Fowell R. R., 1965, J. Appl. Bacteriol., 28:373.

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