

## MRS AGAR ISO FORMULATION

Powdered medium for the enumeration of lactic acid bacteria in food

### TYPICAL FORMULA (G/L)

Enzymatic digest of casein	10
Beef extract	10
Yeast extract	4
Glucose	20
Di-potassium Hydrogen Phosphate	2
Sodium Acetate	5
Tri-ammonium Citrate	2
Magnesium Sulphate heptahydrate	0,2
Manganous Sulphate tetrahydrate	0,05
Agar	15
Tween 80	1,08

### DIRECTIONS

Suspend 67,3 g of MRS Agar in 1000 mL of cold distilled water, heat to boiling. Distribute into bottles of appropriate capacity and sterilise in the autoclave at 121 °C for 15 minutes.

If there is a risk of extensive yeast contamination of the samples (e.g. dried sausage), add Sorbic Acid to MRS Media as following: dissolve 1.4g of sorbic acid in about 10mL of 1mL/L solution of Sodium hydroxide. Sterilise by filtration. Add this solution to 1000 mL of MRS Agar ISO Formulation , previously cooled to approximately 47 °C. Final pH of the medium should be 5,7 ± 0,1

### DESCRIPTION

MRS Agar ISO Formulation is prepared according to the formulation specified in ISO 15124 for the detection of lactic acid bacteria in food, by counting the colonies growing in a solid medium after incubation at 30 °C for 3 days.

### TECHNIQUE

For the enumeration of mesophilic lactic acid bacteria in foodstuffs, ISO 15214 recommends the following technique:

1. Prepare the test sample, the initial suspension and the dilutions, in accordance with the specific International Standard dealing with the product concerned. ISO 6887 recommends the use of peptone salt (see Maximum Recovery Diluent cat. N° 401691) as a general diluent for foods and animal feed stuffs.
2. Transfer by means of sterile pipettes 1mL of the test sample (if liquid) or 1mL of the initial suspension and 1mL of each decimal dilution in duplicate to the centre of each empty Petri dish.
3. Pour approximately 15 mL of MRS Agar with Tween 80, cooled to approximately 47 °C into each dish
4. Mix well with the inoculum the medium and allow the mixture to solidify
5. Incubate at 30 °C for 72-hrs ± 3 h. Longer incubation may result in excess blackening along the bottom rim of the plates.
6. Count the colonies on the plates containing between 15 and 300 colonies.

#### Notes:

- 1- Some *Leuconostoc* spp. may form large slimy colonies, which may hinder the development of other colonies, thus causing an underestimation of the number of lactic acid bacteria.
- 2- Surface plating in combination with incubation under anaerobic or microaerobic conditions can be applied instead of the pour-plating procedure described. Candle jars may be used to obtain appropriate conditions.
- 3- It is also possible to use a double-layer MRS medium.

### USER QUALITY ASSURANCE (30 °C-72 HRS)

Productivity control  
*L. sake* ATCC 15521  
*L. lactis* ATCC 19453

### STORAGE

Dehydrated medium: 2-8 °C

### REFERENCES

- Briggs M. (1953) J. Dairy Res., **20**, 36.
- Cox, G.P. & Briggs M. (1954) J. App. Bact. **17**, 18.
- De Man, J.C., Rogosa, M. & Share, M.E. (1960).. J. Appl. Bact. **23**, 130-135.
- ISO 15214 (1998) Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of mesophilic lactic acid bacteria – Colony-count technique at 30 °C.

PACKAGING  
401728S2

MRS Agar ISO Formulation

500g (7,4 L)