

# M.R.S. Agar

Medium recommended to favour the growth of lactobacilli in general

## Formula in grams per liter:

Dextrose	20,00	Bacteriological Peptone	10,00
Beef Extract	8,00	Sodium Acetate	5,00
Yeast Extract	4,00	Dipotassium phosphate	2,00
Ammonium Citrate	2,00	Polysorbate (Tween 80)	1,00
Magnesium Sulfate	0,20	Manganese Sulfate	0,05
Bacteriological Agar	10,00		

Final pH: 6,2 ± 0,2 at 25 °C

## Preparation:

Suspend 62 grams of the medium in one liter of distilled water. Heat with frequent agitation until boiling. Dispense it in adequate containers and sterilize in autoclave at 121°C (15 lbs sp) for 12 minutes.

## Uses:

The MRS formulation was developed by de Man, Rogosa and Sharpe to replace a variable product (tomato juice) at the same time to provide a medium with would support good growth of Lactobacilli in general, those strains which showed pour growth in existing media.

Lactobacilli are microaerophilic and generally require layer plates for aerobic cultivation on solid media. Submerged or surface colonies may be compact or feathery, and are small, opaque and while.

The pour plate method deposits 1 ml. of the previously diluted sample into a sterile Petri dish and the cooled (45°C-50°C) medium is added. After solidification, a second layer is poured. The plates are incubated at 37°C for 3 days or better, at 30°C for 5 days. It is important to maintain a humid atmosphere because the plates should not dry out during incubation which is in 5% CO<sub>2</sub>.

## Microbiological Tests:

Microorganisms	Growth
<i>Lactobacillus acidophilo</i> ATCC 4356	Good
<i>Lactobacillus casei</i> ATCC 393	Good
<i>Escherichia coli</i> ATCC 25922	Moderate - Good
<i>Staphylococcus aureus</i> ATCC 25923	Inhibited

