

A NEW SELECTIVE MEDIUM FOR THE QUANTITATIVE
DETERMINATION OF MEMBERS OF THE GENUS
PROTEUS IN MILK

ARNOLD J. ZARETT AND RAYMOND N. DOETSCH

Department of Bacteriology, University of Maryland, College Park, Maryland

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A pour plate medium has been developed which is selective for members of the genus *Proteus* and inhibitory for other organisms commonly found in milk. This medium is of the following composition:

Sodium ricinoleate	10 g
Urea	20 g
Yeast extract	1 g
Potassium phosphate (monobasic)	1 g
Potassium phosphate (dibasic)	1 g
Sodium chloride	5 g
Agar	30 g
Cresol red (1.6 per cent alcoholic solution)	6 ml
Water to make	1,000 ml

pH 6.9 ±.

In the preparation of the medium, urea and the phosphate salts are sterilized together by Seitz filtration and added aseptically to the agar in the required concentration before pouring. The remaining ingredients are adjusted to pH 7.0 and autoclaved 20 minutes. The appearance of the medium in a pour plate is cloudy yellow and nontranslucent.

The four recognized species of *Proteus* appear as small red colonies surrounded by two distinct zones: a large (radius 2 to 3 mm) inner red zone, and an equally large outer, colorless, translucent zone. This very characteristic picture can be observed within 24 hours after plating, deep red areas appearing within 12 hours. *Proteus morganii* is slower in this primary reaction than are the other species of *Proteus*.

Nineteen other milk organisms were tested in this medium. Sixteen failed to grow. *Escherichia coli*, *Aerobacter aerogenes*, and *Pseudomonas aeruginosa* were not inhibited. These species were scarcely visible, however, because of the formation of yellow colonies on the yellow background. These organisms did not interfere with the distinct bizonal appearance of the *Proteus* colonies.

This medium is being used at the present time to determine the numbers and frequency of distribution of *Proteus* in milk and other materials for possible sanitary significance.