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## Some Notes on Trickling Filters in the Purification of Creamery Wastes

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SOME NOTES ON TRICKLING FILTERS IN THE PURIFICATION OF CREAMERY WASTES

MAX LEVINE

(*ABSTRACT*)

Creamery wastes differ markedly from ordinary sewage in that a considerable portion (about 50%) of its organic content is the carbohydrate lactose. The acid produced by the anaerobic decomposition of the milk sugar markedly inhibits, and may completely prevent proteolysis thus seriously interfering with bacterial action in the septic tanks.

Aerobic treatment on an experimental trickling filter was found to be very efficient in removing the milk sugar.

The trickling filter employed consisted of six tiers of laths, 2 ft. square and 1 ft. deep. The construction was such that it was possible to take samples between any two tiers.

Observations for over eight months showed that:

1. A milk waste corresponding in strength to a 1% skim milk solution, yielded a stable effluent when applied to the filter at a rate of 500,000 gals. per acre per day.
2. With relatively weak wastes ( $\frac{1}{2}$  to 1.0% skim milk), the removal of solids, organic nitrogen constituents reached a maximum in the upper 2 feet of the filter, whereas, in the lower tiers (4th, 5th and 6th feet) there seemed to be a resynthesis of organic nitrogen and solids. With the more concentrated wastes (4 and 7% skim milk) there was a progressive decrease of solids and organic nitrogen throughout the filter. Further studies are necessary to ascertain the extent to which the observed differences may be attributed to sluffing.
3. With high concentrations of waste (2 to 7% skim milk) a very marked denitrification was observed in the upper layers of the filter.

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