

ABSTRACT

Comparison of Petrifilm Methods with Conventional Methods for the Enumeration of Coliforms and Total Aerobes in Selected Local Products

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The introduction and development of fast and efficient methods for microbial enumeration is important in order to allow industry to meet consumer demand for goods and services. In Jamaica and other developing countries where conventional methods predominate, suitable alternatives need to be identified and implemented.

A comparison of the use of petrifilm and the standard pour plate methods of ISO and APHA/AOAC was done as petrifilm is less labour intensive, cheaper and faster in some cases. Additionally, the effects of difference in incubation conditions recommended by the two standard bodies were also investigated.

Enumeration of total aerobes and coliforms was conducted on a total of 196 dairy samples (powdered milk, pasteurised liquid milk and ice cream) and 133 meat samples (beef, fish and poultry). Results showed that petrifilm products while allowing a significant reduction in incubation time were in most cases equal to or

better than standard methods. The only exception was for that of ice cream samples in which conventional agar was found to be more sensitive for the detection of coliforms. The increased incubation time of the ISO method was found in most cases to be advantageous when compared to the APHA/AOAC method. Caution should however be applied to the use of petrifilm as gel liquefaction and the inability to react with the TTC indicator dye are potential hazards.