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### Original Article

#### RAPID MONITORING OF INDICATOR COLIFORMS IN DRINKING WATER BY AN ENZYMATIC ASSAY

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#### Abstract:

Coliform group has been extensively used as an indicator of drinking water quality and historically led to the public health protection concept. Multiple tube fermentation technique has been currently used for assessment of the microbial quality of drinking water. This method, however, has limitations. Enzymatic assay constitute an alternative approach for detecting indicator bacteria, namely total coliforms and *E.coli* in various aquatic environments. This study compared the performance of LMX<sup>®</sup> broth as an enzymatic assay with the standard methods multiple tube fermentation technique and presence-absence test, for the detection of indicator coliforms in drinking water samples. In addition, the potential effect of water quality on the microbial detection method was assayed through measurement of some physicochemical parameters. From the 50 drinking water samples tested, 8 (16%) and 7 (14%) contained total coliforms and *E.coli* as indicated by all three techniques. Although on average the LMX recovered more total coliforms and *E.Coli* numbers comparing to multiple tube fermentation, but there was no significant difference. A significant difference existed between the level of residual chlorine for positive and negative samples. In conclusion, enzymatic assay showed a rapid and less labor method, allowing the simultaneous detection of total coliforms and *E.coli*. The method is particularly useful in the early warning of fecal pollution of drinking water.

#### Keywords:

Drinking water . coliform . enzymatic assay . multiple tube fermentation

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