

T. AMBUNDO, J. O. OUNDO, R. MANOHAR, J. MBITHI and E. KENYA (2008). Impregnated dry Filter paper as an Alternative medium for Transporting Diarrhoeal Stool Samples. *J. Nature Conservation*, Vol 20 (2): 281 – 291.

## ABSTRACT

Diarrhoea due to bacterial infections is a major cause of morbidity and mortality both in children and adults and hence lowers economic activity especially in developing countries. This is especially important in areas with poor hygiene such as slums and refugee camps. Bacterial diarrhoea is caused by several enteric pathogens among them Shigella, Salmonella, Vibrio cholerae and Escherichia coli. Some, especially Shigella dysenteriae Type I are very fragile organisms whose viability is difficult to maintain in transport medium or placing such stool specimens in Cary-Blair for a limited time while on transit to diagnostic laboratories. Failure to isolate and identify enteric bacterial pathogens because of poor transport conditions or inadequate laboratory facilities has often resulted in delayed and/or misdiagnosis of enteric bacterial pathogens as the cause of epidemics. The increasing multidrug resistant strains do not make matter any better. This study was carried out to determine the viability of impregnated dry filter paper as an effective transport medium for diarrhoea stool specimens, identify and characterize multidrug resistant enteric bacteria in the stool specimens. Whatman filter paper was impregnated with 0.1% of glucose and used to transport stool samples from Budalang'i, a remote area in Western Kenya to Centre for Microbiology Research laboratories, KEMRI, Nairobi. During the five months period, stools from 336 diarrhoeal patients aged between birth to 85 years were cultured and (14.9%) samples presented bacterial growth and were included in this study. Impregnated dry filter paper was as good as Cary-Blair in the recovery of the isolates. More than 75% of all isolates were resistant to locally available antibiotics while all isolates remained susceptible to ciprofloxacin. Six (6) resistotypes were determined with ampicillin, chloramphenicol, cotrimoxazole and tetracycline most frequently isolated. Small molecular weight plasmids of approximately 7MDa, 10MDa, 30MDa and 47MDa were transferred to E. coli K-12 (F-Nar) in the conjugation experiments. Increasing multidrug resistance remains a matter of great concern. Impregnated dry filter paper may be used to transport stool samples suspected for enteric bacterial pathogens in impoverished areas in absence of conventional media and/or with conventional media to increase the recovery rates of enteric bacterial pathogens