SCREENING FOR MULTIDRUG RESISTANT ESCHERICHIA COLI O157:H7 ISOLATED FROM REFUSE DUMPSITES IN ZARIA METROPOLIS, NIGERIA

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ABSTRACT

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Escherichia coli O157:H7 is a common serotype of E. coli associated with diarrhoea in human illnesses and is highly distributed in the environment. Soil samples from refuse dumpsites within Zaria metropolis were investigated for the presence of multidrug resistant Escherichia coli O157:H7. A total of two hundred and forty soil samples were collected from four refuse dumpsites located in Samaru, Sabon-Gari, Tudun-Wada and Zaria City. Escherichia coli O157:H7 was isolated from the soil samples using cultural methods on selective media and characterized using a series of biochemical tests. The isolates were confirmed using Microgen identification kits. Bacteriological analysis of the soil samples revealed a total of 87(36.3%) isolates among which 23(9.6%) were identified as Escherichia coli O157:H7 out of which 18 were selected for antibiotic susceptibility testing. The isolates were tested for susceptibility to ten commonly used antibiotics using agar disc diffusion method. The result of the study revealed that 50% of the isolates exhibited multidrug resistance (MDR) taken as resistance to four or more antibiotics tested. On the other hand, all the isolates showed 100% susceptibility to Chloramphenicol (30µg) and Gentamicin (30µg) while 70% had MAR index of 0.2 and above. The isolates showing resistance to the highest number of antibiotics were obtained from refuse dumpsites in Tudun-Wada. This result suggests that the origin of the isolates is from area of high antibiotic usage.

Keywords: Escherichia coli O157:H7, multidrug resistance, antibiotics

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