

Malays. Appl. Biol. (1999) 28(1 &2): 49-57

RAPD-PCR ANALYSIS, ANTIBIOTIC RESISTANCE AND PLASMID PROFILES OF *ESCHERICHIA COLI* ISOLATED FROM VILLAGE AND BROILER CHICKEN

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ABSTRACT

Two hundred ten strains of *Escherichia coli* isolated from litters of broiler (105 strains) and village (105 strains) chicken were examined for antibiotic resistance, plasmid profiles and random amplification of polymorphic DNA analysis. All were found to exhibit multiple resistance towards the antibiotics tested, with multiple antibiotic resistance index of 0.44 to 0.69 and 0.31 to 0.75 for the strains from broiler and village chicken, respectively, indicating that all strains originated from high risk sources. The *E. coli* strains from broiler and village chicken were grouped into 86 and 80 distinct antibiotypes. Ninety nine and 71 strains were found to harbour plasmids ranging in size from 1 to 80 kb and 1.3 to 64 kb among the broiler and village chicken isolates respectively. Based on their plasmid profiles, the *E. coli* strains isolated from broiler and village chicken were grouped into 60 and 27 plasmid patterns respectively. We used two single short primers (GenI5009 and GenISOIO) with arbitrary nucleotide sequences in polymerase chain reaction to amplify genomic DNA. The profiles observed after electrophoretic separation for the two primers when combined together were able to distinguish the *E. coli* strains from broiler and village chicken into 96 and 92 RAPD patterns, respectively. These results suggest that RAPD-PCR assay and antibiotyping are more discriminating than plasmid profiling, and could be valuable tools for epidemiological studies.

Key words: *Escherichia coli*, RAPD, plasmid, antibiotic resistance

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