Prevalence and antibiotic resistance of Salmonella Enteritidis and Salmonella Typhimurium in raw chicken meat at retail markets in Malaysia

ABSTRACT

Salmonellosis is one of the major food-borne diseases in many countries. This study was carried out to determine the occurrence of Salmonella spp., Salmonella Enteritidis, and Salmonella Typhimurium in raw chicken meat from wet markets and hypermarkets in Selangor, as well as to determine the antibiotic susceptibility profile of S. Enteritidis and S. Typhimurium. The most probable number (MPN) in combination with multiplex polymerase chain reaction (mPCR) method was used to quantify the Salmonella spp., S. Enteritidis, and S. Typhimurium in the samples. The occurrence of Salmonella spp., S. Enteritidis, and S. Typhimurium in 120 chicken meat samples were 20.80%, 6.70%, and 2.50%, respectively with estimated quantity varying from <3 to 15 MPN/g. The antibiogram testing revealed differential multi-drug resistance among S. Enteritidis and S. Typhimurium isolates. All the isolates were resistance to erythromycin, penicillin, and vancomycin whereas sensitivity was recorded for Amoxicillin/Clavulanic acid, Gentamicin, Tetracycline, and Trimethoprim. Our findings demonstrated that the retail chicken meat could be a source of multiple antimicrobial-resistance Salmonella and may constitute a public health concern in Malaysia.

Keyword: Salmonella; Antimicrobial susceptibility; Chicken meat; Most probable number PCR; Prevalence