

OCCURRENCE OF MOTILE *SALMONELLA* IN BROILER FLOCKS AND ANTIMICROBIAL SUSCEPTIBILITY PATTERNS OF ISOLATES

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Human salmonellosis is a significant public health concern worldwide due to the consumption of contaminated fresh and processed poultry meat. Despite numerous preventive measures in processing lines, poultry products are often contaminated with *Salmonella* of gut origin. Typically, motile serovars of *Salmonella enterica* of poultry origin are zoonotic. Salmonellae are frequently resistant to antimicrobials due to the indiscriminate use of antimicrobials in poultry production. Since poultry consumption has increased substantially in Sri Lanka, there is a risk of exposure to foodborne *Salmonella*. The aims of the present study were to identify serovars and determine antimicrobial susceptibility profiles of *Salmonella* in the gut of broiler chicken.

Two hundred broilers flocks from 11 districts (Anuradhapura, Badulla, Colombo, Gampaha, Kalutara, Kandy, Kegalle, Kurunegala, Matale, Polonnaruwa and Ratnapura) were screened for the presence of *Salmonella*. From each flock, pairs of caeca were obtained from 10 birds at slaughter, and pooled as a single sample. Two hundred pooled samples were tested according to the ISO 6579 standard protocol to isolate and identify *Salmonella*. Identified isolates were serotyped and antimicrobial susceptibility testing was done according to Clinical and Laboratory Standards Institute (CLSI, 2008) guidelines for five clinically important antimicrobials using disk diffusion assays.

Eighteen samples (9%) were positive for *Salmonella* and these isolates represented somatic sero-groups A, B, C and E. Serovars identified were Nitra (1), Typhimurium (3), Chester (2), Paratyphi (2), Saintpaul (1), Kentucky (2) and Muenster (1). We were unable to confirm the identity of serovars of six isolates belonging to sero-group B with the available panel of sera. Antimicrobial susceptibility profiles indicated 33.33% (6), 11.11% (2), 11.11% (2) and 5.55% (1) were resistant to ampicillin, sulphamethoxazole-trimethoprim, chloramphenicol, and tetracycline respectively. All isolates, however, were susceptible to gentamicin and enrofloxacin.

The results of this study were not consistent with previous studies where *Salmonella* Enteritidis was identified as the main human foodborne serovar from poultry in Sri Lanka. The majority of serovars identified in this study are known human pathogens. It is noteworthy to observe chloramphenicol resistance in one of the un-named group B serovars as this antimicrobial is banned in food producing animals. Considering the potential risk of foodborne transfer of pathogenic *Salmonella*, it is advisable to adopt measures to prevent contamination of poultry products by gut contents during processing.