

ABSTRACT**ISOLATION AND CHARACTERIZATION OF
ESCHERICHIA COLI AND SALMONELLA SPP.
IN PET ANIMALS OF TRINIDAD****Nadira Seepersadsingh**

The study was conducted to determine the prevalence and selected characteristics of *Escherichia coli* and *Salmonella spp.* in pet animals of Trinidad and to assess the susceptibility of these bacteria to various antimicrobial agents using the disc diffusion method. Rectal or cloacal swabs or fresh faecal samples were collected from apparently healthy dogs, cats, pet birds, and other pets as well as water from aquarium tanks. Pet animals originated from households, veterinary clinics, hospitals, the dog pound, the animal shelter, the quarantine station, dairy farms and pet shops. Primary isolation of *E. coli* was done on eosin methylene blue (EMB) agar, haemolysin and mucoid production were detected on blood agar (BA) and sorbitol fermentation was assayed on sorbitol MacConkey agar (SMAC) agar. Agglutination tests using commercially available antisera determined O157 and enteropathogenic (EPEC) strains whereas the vero cell assay was used to detect verocytotoxigenic (VTEC) strains. To isolate *Salmonella spp.*, samples were enriched in selenite cystine and tetrathionate broths, then cultured on

selective media. *Salmonella* isolates were then serotyped. All *Salmonella* and *E. coli* isolates with virulence markers (mucoid, haemolytic, non-sorbitol fermenters, EPEC and VTEC) were subjected to sensitivity test using eight antimicrobial agents. Overall, of a total of 2455 samples processed, *E. coli* was detected in 1619 (65.9%) samples with prevalences of 91.0%, 93.6%, 43.7%, 64.5% and 8.2% in dogs, cats, birds, other pets and fish tanks, respectively. Virulence strains assayed for amongst *E. coli* isolates were represented in almost all animal types and antibiotic resistance was observed most frequently to cephalothin and least to norfloxacin in all animal types. For *Salmonella spp.*, an overall prevalence of 3.4% was observed in all pet animals with prevalence of 3.5%, 3.2%, 0.9%, 0.4%, 4.8% observed in dogs, cats, birds, fish tanks and other pets respectively. A total of 32 different serotypes were identified, 28 of which originated from dogs. The most prevalent serotype was Javiana, 14.3% (12 of 84 isolates). The overall prevalence of resistance amongst *Salmonella* isolates was 82.1% (69 of 84) with the highest frequency of resistance to streptomycin and the lowest to sulphamethoxazole/trimethoprim (SXT), chloramphenicol, norfloxacin and ampicillin. The isolation of virulence marker-positive *E. coli* and *Salmonella spp.* from various pet animals coupled with their resistance to antimicrobial agents could pose zoonotic and therapeutic hazards to their owners.

Keywords: Nadira Seepersadsingh; *Escherichia coli*; *Salmonella spp.*; pets; virulence markers; antibiotic resistance.