**A preliminary study on isolation and characterization of pathogenic bacteria from wild bird droppings around the Kandy Lake, Central Sri Lanka**

Weerasinghe M.A.Y.N.1, Watagodakumbura S.V 1, Magana-Arachchi D.N 1\*

1National Institute of Fundamental Studies, Hantana Road, Kandy, Sri Lanka

**\***Corresponding author:

Magana-Arachchi D.N., Associate Research Professor, National Institute of Fundamental Studies, Hantana Road, Kandy, Sri Lanka.

Phone: +94-081-2232002, Fax: +94-081-2232131, Email: nayomam@yahoo.com

**Abstract**

Birds are potential to act as carriers of pathogens for different infectious and non – infectious zoonotic diseases. Different pathogens including, bacteria, fungi, viruses and parasites carried by wild birds may affect humans through direct or indirect transmission. This study is mainly focused on the bacterial composition and their pathogenesis in wild bird droppings around Kandy Lake area. Fifty samples of fresh bird droppings from House Crow (15), Little Cormorant (20), Rock Pigeon (05), Little egret (05) and Black – crowned Night Heron (03) were collected at five different sample collection points using sterile swabs. After a pretreatment, 50 μL from each was spread on LB and M17 agar media. Plates were incubated at 37 ºC for 24 hours. Colony counts were taken and different morphotypes were sub cultured and served as pure stock cultures for subsequent gram staining test and morphological identifications. Highest count was obtained from House Crow (5.5 × 103 CFU/mL) while lowest obtained from Rock Pigeon (3.6 × 103 CFU/mL). Total of 20 different bacterial isolates were isolated and characterized from collected bird droppings. According to the Gram’s staining results, 12% were Gram positive and 88% Gram negative isolates. *Lactococcus* sp. was obtained from all birds and Individual organisms from Staphylococcaceae (*Staphylococcus* sp.), Enterobacteriaceae (*Serratia* sp., *Enterobacter* sp., *Klebsiella* sp., *Proteus* sp., and E. *coli*), Bacillaceae (*Bacillus* sp.) and Enterococcaceae (*Enterococcus* sp.) were morphologically identified. Since Kandy Lake area is highly populated, these droppings can be in contact with human via direct and indirect ways. These bird droppings pose a public health hazard to the humans and the environment if they accumulate in one place for long. Therefore, further studies should be carried out to determine the incidence of human infections by bird droppings in Kandy Lake surrounding area.

Key words: Zoonotic diseases, bird droppings, pathogenic bacteria, human infections