

Characterization of Antibiotic Resistance Bacteria in Livestock Farms in the Kandy District

06 Nov.

NSM39

Madhubhashini Siriwardhana¹, Isuru J. B. Wijewickrama¹, Priyanga Wijesinghe^{1(*)}

¹Department of Botany, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka

(*)Email: priyangaw@pdn.ac.lk

Emergence of antibiotic resistant bacteria (ARB) is an intractable global health hazard. Antibiotics have been used extensively in livestock to treat diseases as well as to promote animal growth. In this context, surveillance of antimicrobial resistance is necessary of early detection of resistant strains of veterinary and public health importance. In this study cow dung samples were collected from 15 farms representing five zones in the Kandy district. The five zones represent Kundasale, Theldeniya, Galaha, Gampola, and Gangawatakorale. Samples were collected from small-scale farms and screened for the presence of ARB using a high-throughput assay including *E. coli* strain ATCC 25922 as the susceptibility tester. Pure cultures of the ARB were obtained through pour plate method for further characterization. Out of the five antibiotics tested, 86% showed resistance to amoxicillin and all samples showed resistance to chloramphenicol. While there was no effect of the zone on the prevalence of antibiotic resistance, there was a clear effect of the farm. Morphological observations along with the following assays: gram stain, motility, spore formation, catalase, EMBA, lactase fermentation, methyl red, indole, citrate test were performed on the isolated colonies. Preliminary data suggest that *Citrobacter* sp. and *Proteus* sp. show amoxicillin and chloramphenicol resistance respectively. Further investigation is necessary to characterize ARB and identify the mechanism of antibiotic resistance.

Keywords: Antibiotic resistance, Amoxicillin, Chloramphenicol, cow dung