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Characterization and antibiogram profiles of selected bacterial enteropathogens found in dairy manure: A call for public health concern

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The GIT of ruminant animals harbors diverse microbes; some are pathogenic and antibiotic resistant residing as normal flora and are shed in feces. Apparently, accidental or deliberate release of feces into the environment can cause deleterious effects. However, animal manure is viewed as a potential source of contamination and infection if not properly managed or treated. Consequently, the microbial load of manure obtained from the Fort Hare Dairy Trust was determined by the viable plate count method and selected zoonotic bacterial pathogens were isolated, identified and characterized based on cultural, morphological and biochemical properties. Confirmed isolates were subjected to antibiotic sensitivity assay by Kirby-Bauer disc diffusion method while employing a panel of thirteen commercial antibiotics. Isolates were described as sensitive or resistant based on the breakpoints of the diameter of zones of inhibition in accordance with the Clinical Laboratory Standards Institute. The levels of *Escherichia coli*, *Salmonella/Shigella* species and *Campylobacter* species were 3.0×10^5 , 5.0×10^4 and 8.1×10^3 , respectively. A total of 92 bacterial pathogens were isolated and comprised of 30 *E. coli*, 33 *Salmonella* sp, 16 *Campylobacter* sp, 4 *Shigella* sp and 9 *Proteus* sp. All the isolates belonging to the family Enterobacteriaceae were highly sensitive to Ciprofloxacin while 87.5% of the *Campylobacter* strains were sensitive to Chloramphenicol and Tetracycline. However, the antimicrobial resistance demonstrated ranged from 0-100%. In conclusion, the presence of resistant isolates of these zoonotic pathogens indicates that our sample is a potential reservoir of antibiotic resistance determinants in the environment which is an issue of public health importance.

Biography

Christy E Manyi-Loh has obtained her PhD degree in Microbiology from the University of Fort Hare in 2012, BSc and MSc in Microbiology from the University of Buea, Cameroon. During this period, she was awarded a senate prize for the best student in Microbiology and best student in research project given by the American Society of Microbiology, respectively. She served as a Post-doctoral fellow, sponsored by Claude Leon Foundation, South Africa for 2 years. Recently, she has been awarded the most superseding, prestigious NRF-Green Economy postdoctoral fellowship and she is attached to the Institute of Technology, University of Fort Hare, South Africa. She has published several papers and serves as a reviewer to many reputable journals.

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