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Animal farming in South Africa: Antibiotics use and antibiotic resistance

Christy Echakachi Manyi-Loh
University of Fort Hare, South Africa

South Africa has a high burden of infections including a high rate of HIV and TB infections. It is equally challenged by a high antibiotic resistance rate both from clinical and environmental settings. The country embraces a multi-disciplinary agricultural system with the indiscriminate use of antibiotics. Notwithstanding, it is enriched with great plant and floral biodiversity. The purpose of this study is to review in detail the types of antibiotics, and their dosage forms available for use in livestock farming and its most striking consequential effect, antibiotic resistance. We equally describe ways through which the biomolecules enter the environment, and their fate in the environment. The level of antibiotic resistance of bacterial isolates from different environmental sources and plausible ways of transfer of their resistance determinant was elucidated. Critical information and data relating to the topic were explored and obtained via search engines including google search and PubMed. Data on the volume and pattern of antibiotics utilization in animal farming are limited owing to drug counterfeiting, antibiotics are controlled by two different acts and data on percentage consumption by non-food animals is lacking. Majority of the antibiotics are implemented as in-feed to animals which triggers the development of antibiotics resistance on long term basis. Zoonotic pathogens recovered from animal products have been reported to affect humans, with varying levels of resistance which can be transferred via VGT or HGT. The environment can serve as a hotspot for the transfer of antibiotic resistance. In totality, the assembled information is vital to public health care systems, farmers, veterinarians, pharmaceutical companies and the society at large for the quest of joint effort in the prudent use and management of antibiotics towards the fight against antibiotic resistance.

Biography

Christy Echakachi Manyi-Loh holds a position as a Postdoctoral research fellow at the Fort Hare Institute of Technology, University of Fort Hare, South Africa, under the sponsorship of National Research Foundation, South Africa. Her current research expertise lies on biomass energy. She demonstrates the production of biogas from biomass which are considered as nuisance to the society as well as emphasizes the public health and environmental hazards. She equally possesses skills in Medical Microbiology and Phytomedicines acquired based on isolation of *H. pylori* from gastric biopsies of patients in Cameroon and South Africa and the screening of honey varieties for alternative bioactive molecules.

cmanyi-loh@ufh.ac.za

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