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Alternative growth promoters for poultry that can mitigate the antibiotic resistance of zoonotic pathogens

Debabrata Biswas University of Maryland, USA

The development of antibiotic resistance by multiple bacterial pathogens has resulted in a troubling loss of effective antibiotic options for human. The emergence of multi-drug-resistant pathogens has necessitated higher dosages and combinations of multiple antibiotics, further exacerbating the problem of antibiotic resistance. Zoonotic bacterial pathogens, such as Salmonella, Campylobacter, Shiga toxin-producing Escherichia coli, and Listeria are the most common and predominant foodborne enteric infectious agents. It was observed that these pathogens gained/developed their ability to survive in the presence of antibiotic seither in farm animal gut or farm environment and researchers believe that therapeutic and sub-therapeutic antibiotic use in farm animal production might play an important role in it. The mechanism of action of antimicrobial components used in farm animal production in genomic interplay in the gut and farm environment, has not been fully characterized. Even the risk of promoting the exchange of mobile genetic elements between microbes specifically pathogens needs to be evaluated in depth, to ensure sustainable farm animal production, safety of our food and mitigate/limit the enteric infection with multiple antibiotic resistant bacterial pathogens.

dbiswas@umd.edu