

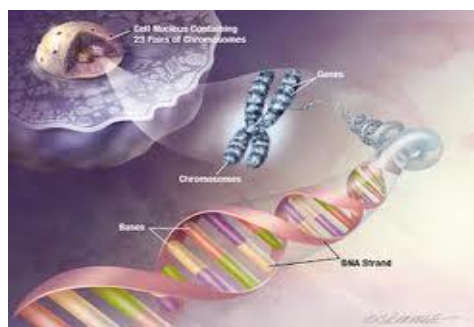
INVITED SPECIAL LECTURE ON
ANTIBIOTIC RESIDUES IN LIVESTOCK WASTE:
PUBLIC HEALTH RISK AND WASTE MANAGEMENT
PRACTICES

By

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**Department of Microbiology
D.K.M College for Women (Autonomous)
Vellore**

Special Guest Lecture on Antibiotic Residues in Livestock Waste: Public Health Risk and Waste Management Practices

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The presence of antibiotics in animal manure represents a significant concern with respect to the introduction of antibiotic residues to the environment and the development of antibiotic-resistant pathogens. In this guest lecture, we have compiled reported detections of antibiotics in poultry litter and discussed the treatment of antibiotics during conventional agricultural waste management practices.

Several concerns arise from the use of antibiotics in animal feeding operations: incorporation of antibiotics into animal products, development of single- and multidrug resistance, introduction of resistant bacteria to the environment, and discharge of antibiotic residues to environmental systems.

The most reported antibiotics in animal manure were fluoroquinolones, sulphonamides, and tetracycline, all of which the World Health Organization has listed as critically important for human health. Relatively high treatment efficiencies were observed for antibiotics in composting, anaerobic digestion, and aerobic/anaerobic lagooning. The excreta from poultry farming should contain 70 to 80% of antibiotic residue which was used for the treatment of infections. When these excreta used as a fertilizer which has some adverse effects on plants and its derived food. If it was consumed by human, they also have some effects due to antibiotic residues. And it also changes the nature of the soil and its fertility rate. The researchers go for composting of these residues and effective management practices to overcome from these adverse effects.

Active management of compost piles did not demonstrate a significant increase in antibiotic degradation; however, low- and high-intensity compost systems exhibited high treatment efficiencies for most antibiotics. Anaerobic digestion was not effective for some key antibiotics, including lincosamides and selective sulphonamides and fluoroquinolones.

Given the potential for energy recovery during anaerobic digestion of agricultural waste, efforts to optimize antibiotic degradation. Lagoons also exhibited fairly high levels of antibiotic treatment, especially for aerobic system.

Increased efforts to include analysis of antibiotic residues in animal manure in national surveillance programs will provide important information to address concerns over the continued use of antimicrobials in animal feeding operations.

After composting treatment it showed that the reduction in the antibiotic concentration in the residue. So, composting techniques are used to treat the antibiotic residues in the excreta and it is also cost effective and renewable.

