

Assessment of treatments to reduce the amount of antibiotic-resistant bacteria in chicken manure

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Spreading of antibiotic resistance is one important threat for human health. Microorganisms with resistance deteriorate the effectiveness of antibiotics, which are the first choice in controlling and treating infectious diseases. There are three main ways to transfer antimicrobial resistance. Due to high selection pressure, antibiotic resistance more often develop and spread in hospitals, is transmitted between animals and spread into the environment. The project ENVIRE focuses on the transfer of resistant bacteria from chicken farms to humans through the environment.

Chicken manure is a valuable nutrient source for plants and therefore often used as agricultural fertilizer. However, it can contain high amounts of antimicrobial resistant bacteria. Those stay there during the fertilizer production process. Therefore, it is the aim of the study to find manure treatment conditions under which most of those bacteria will be eliminated.

In this study, we consider the two processes with highest relevance in fertilizer production: anaerobic and aerobic fermentation. Anaerobic fermentation is a sustainable process that is used for biogas production like an alternative energy source. In aerobic fermentation many parameters can be varied to find the most effective in fertilizer production and microbiological reduction.

This study could be very useful for the chicken production industry because the results of the research will help to reduce the spread of antibiotic resistant bacteria.

Keywords

Antibiotic resistant, Antimicrobial resistant bacteria, Chicken manure, Anaerobic digestion, Anaerobic fermentation (Composting)

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Professional Status of the Speaker

PhD Student

Junior Scientist Status

Yes, I am a Junior Scientist.

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