

Antibiotic resistance of Enterobacteriaceae present in a biosolid: A public health problem

Karina Paredes Paliz

University of Seville, Spain

Bacterial resistance to multiple antibiotics is considered one of the most important public health problems in Latin America. In Ecuador, there is a high rate of infectious diseases caused by Enterobacteriaceae which mainly affect the central nervous system, digestive and urinary tract, respiratory system, bloodstream, etc. This type of infections affects children, young people and adults with no effective treatments due to the resistance to even fifth-generation antibiotics. Inadequate procedures for handling and disposal of solid and liquid waste are another cause for the generation of this resistance and its consequences on population health. Urban wastewater treatment plants represent important reservoirs of human and animal commensal bacteria. The aim of this work was to determine the population of Enterobacteriaceae present in a biosolid from the septic tanks of the Domestic Wastewater Treatment Plant (Ambato-Ecuador) in order to evaluate the persistence of this bacterial family in the final effluent and its antimicrobial resistance patterns against some commercial antibiotics. Sixteen cultures with different morphology were obtained and described as common species genera within the Enterobacteriaceae: *Escherichia*, *Salmonella*, *Proteus*, *Klebsiella*,

Shigella, *Enterobacter*. Strain 2872 was discarded due to its similar morpho-physiology to 2867. Thirteen of fifteen strains have tetracycline resistance and only two were inhibited (2873 and 2876); only one of the fifteen were resistant to polymyxin B (2870) and eight were resistant to cefepime.

Biography:

Karina Paredes Paliz is a Young Researcher from Ecuador who has taken her degree in Biology. She had a grant from the Ecuadorian Government to obtain her PhD in Molecular Biology and Biomedicine in the Department of Microbiology and Parasitology of the Faculty of Pharmacy (University of Seville). The area that focuses her research is Environmental Biotechnology, specifically the Bioremediation of heavy metals with the use of bacteria and plants; nevertheless, she also has been working in applied microbiology. Several of her works focus in the Phytoremediation of estuaries contaminated near to the River Odiel, province of Huelva, Spain. She is currently working in the Faculty of Science of the Escuela Superior Politecnica de Chimborazo (Ecuador) as a teacher of Molecular Biology and Microbiology.