

Seasonal Effect of Antibiotic Resistant Bacteria into the Environment from Treated Sewage Effluents

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Abstract : Recycled treated sewage effluents (TSE) is used for agriculture, Public park irrigation and industrial purposes. TSE was found to play a major role in the distribution of antibiotic resistant bacteria into the environment. Fecal coliform and enterococci counts were significantly higher during summer compared to winter seasons. Oman has low annual rainfall with annual average temperature varied between 15-45oC. The main source of potable water is from seawater desalination. Resistance of the isolates to 10 antibiotics (Amikacin, Ampicillin, chloramphenicol, gentamycin, minocyclin, nalidixic acid, neomycin, streptomycin, Tetracycline, Tobramycin, and Trimethoprim) was tested. Both fecal coliforms and enterococci were multiple resistant to 2-10 antibiotics. However, temperature variation during summer and winter did not affect resistance of the isolates to antibiotics. The significance of this investigation may be indicator to the environmental TSE pollution.

Keywords : antibiotic resistance, bacteria, environment, sewage treated effluent

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