

Spread of resistant bacteria of anthropogenic origin in the environment of Lesvos island, Greece

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Abstract: The aim of the present study was to investigate the single-drug and multidrug resistance of different environmental bacterial strains to antibiotics. All samples were collected from the island of Lesvos, Greece. The *Escherichia coli* and enterococci isolates came from wells, boreholes, untreated water, thermal- hot springs, farming and poultry farming, private polls, wastewater treatment plants input and output water, aquacultures, urban wastewater and hospital waste. We analyzed for antibiotic resistance of 193 strains *E.coli* and 97 strains enterococci. Resistance was tested against Norfloxacin, Ciprofloxacin, Levofloxacin, Amoxicillin, Cefaclor, Vancomycin, Ampicillin, Ceftazidime and Cefuroxime. Approximately 32% of the *Escherichia coli* strains proved resistant to at least one antibiotic, while 7% showed multiple drug resistance to two antibiotics and only 4% proved resistant to three. Respectively, among the enterococci strains only 2% proved resistant to one antibiotic, 31% showed multiple drug resistance to four antibiotics and a mere 1% was resistant to 8 antibiotics. The strains originating from drinking-water springs exhibited a generalized susceptibility. All *Escherichia coli* strains showed 100% resistance to Vancomycin.