

**Lebkowska, M. Antibiotic Resistant Bacteria in Drinking Water. *Ochrona Srodowiska* 2009, Vol. 31, No. 2, pp. 11–15.**

**Abstract:** Literature references to the presence of drug-resistant bacteria in the aquatic environment are reviewed, particular consideration being given to the water used for human consumption. The methods by which antibiotic resistance markers are transferred from the cells of the R<sup>+</sup> donors onto the sensitive cells of the recipients are analyzed and the term “antibiotic resistance” is characterized. The mechanisms governing the specific resistance to disinfectants, not only of the bacteria but also of the microorganisms colonizing the biofilm in the water-pipe network, are discussed. Examples are given, which describe the drug-resistance of bacteria under conditions of water disinfection. Presented are data on the occurrence of drug-resistant bacteria in bottled water, as well as in the aquatic environment of recreational areas. It has been demonstrated that owing to the increasing use of drugs in human and animal therapy, the number of drug-resistant bacteria in wastewater, surface water and drinking water continues to grow. These findings provide evidence that immediate measures should be taken to ensure a rational application of antibiotics, to reduce the number of microorganisms in wastewaters (and consequently in water intakes for municipal supply), as well as to optimize the technology of water treatment and disinfection for human consumption. The need has been emphasized of monitoring the drug-resistant bacteria that are found in the aquatic environment in Poland.

**Keywords:** Drinking water, recreational water, bottled water, drug resistant bacteria, water disinfection.