The process of biomethanisation in anaerobic conditions, called anaerobic digestion (AD), is an attractive technological solution, employed in the power industry for hygenisation and stabilisation of organic waste, and to produce eco-friendly energy. Substrates submitted to AD do not decompose completely, which means that the process generates a by-product, called digestate. Considering the sanitary safety of the environment, important factor is the content of antibiotics as well as products of their conversion in digestate, originating from organic waste used as a substrate for biomethanisation. Antibiotics mostly enter substrates from wastewater treatment plants as well as animal faeces and agricultural waste, as they are not completely metabolised by human or animal organisms. Due to the widespread presence of antibiotics in AD digestates, there is a risk that the number of ARGs in digestate can increase, which will entail further spread of drug resistance (DR). Pathogenic microorganisms can also enter digestate from substrates undergoing the AD process, and the content as well as species composition of such microorganisms in digestate will depend on the substrates used for production**. Biomethanisation contributes to the elimination of pathogens, including bacteria of the genera *Salmonella, Yersinia enetocolitica* or potentially pathogenic intestinal rods *Enterobacteriaceae,* although complete removal of pathogens is possible only if the AD is conducted under thermophilic conditions. Thus, it would be unwise to underestimate the importance of research into levels of antibiotics as well as the presence and dissemination of ARGs and pathogenic microorganisms in digestate from agricultural biogas plants. It is also important to gain knowledge of the communities involved in the AD processing as they can be a potential source of mobile genetic elements (MGEs) and antibiotic resistance genes (ARGs). This project's research objective is to determine the presence of potentially pathogenic and pathogenic microorganisms such as *Escherichia coli, Salmonella* and *Yersinia enterocolitica.* Another aim is to detect the presence of ARGs associated with such antibiotics as betalactams, tetracyclines and fluoroquinolones in digestate from agricultural biogas plants in Poland. The project also aims to monitor the presence of residual quantities of antibiotics in digestate, and to analyse the composition of this microbiome.** The planned research will enable us to obtain the information about the microbial quality of digestate and the effectiveness of AD in the elimination of pathogenic microorganisms. Such innovative molecular biology methods and classical culture techniques envisaged in this research will allow us to gain a wide range of data characterising the analysed digestate. Our studies will let us resolve the question whether the methane fermentation of organic biomass can restrain the spread of ARGs in digestate, soil or in the broadly understood natural environment. The results of our experiments will reveal if, beside generating eco-friendly energy, the AD process can lead to the complete elimination of pathogenic bacteria, ARGs and antibiotics, regardless of the differences in amounts of loaded substrate between the tested samples.