Antimicrobial resistance (AMR) is the ability of microorganisms such as bacteria, viruses, fungi, and parasites to resist the effects of medications that were once effective against them. This resistance occurs when these microorganisms undergo changes, often through genetic mutations, that enable them to survive exposure to an antimicrobial drug. As a result, the standard treatments become ineffective, infections persist, and they may spread to others. This can lead to increased morbidity and mortality, as well as higher healthcare costs due to the need for more intensive and prolonged treatment. Currently, one of the most important health problems in the world is the antimicrobial resistance of *Salmonella* spp.

In the EU, there were 65,208 confirmed human cases of salmonellosis in 2022, making it the second most reported zoonosis after campylobacteriosis. Furthermore *Salmonella* spp. is the most often reported cause of foodborne outbreaks. The most common *Salmonella* serovars were S. Enteritidis (54.6%), S. Typhimurium (12.1%), and monophasic S. Typhimurium (10.4%), which together accounted for 77.1% of cases with identified serovars. The level of antibiotic resistance of bacteria in the environment can be tested by pathogens isolated from wild animals, such as commonly present game birds: mallard duck and common pheasant.

Mallard, the most numerous duck species in Poland, can be both sedentary and migratory, potentially spreading pathogens over large areas. Urbanization forces many animals, including mallard ducks and common pheasants, to live near human settlements, increasing the chance of pathogen exchange. Besides environmental contamination, game birds are also a source of meat for consumers. These factors may result in serious threat to human health regarding *Salmonella* infection.

In our project we plan to determine the frequency and patterns of antibiotic resistance in Salmonella spp. found among game birds. This will be the first study in Poland to examine Salmonella prevalence in game birds with a representative sample size. The results will provide insights into the safety of game bird meat for consumers and the potential of game birds as a source of zoonotic Salmonella serovars.

Our study will involve isolating Salmonella spp. from hunted game birds: mallard and common pheasant. After biochemical and serological identification Salmonella presence in isolates will be confirmed with PCR reaction. In the next step antibiotic susceptibility will be assessed with detection of genes responsible for these features. Lastly Salmonella strains genome will be sequenced and analyzed.

This research will help recognize the scale of presence of Salmonella in Mallard and Common Pheasant. In addition the study may show the antibiotics that could not be efficient against Salmonella in the future. It would have real impact on public health protection, treatment schemes and our everyday life.