

## Research project IZSve 15/14

**Impact of antimicrobials usage in pig farming: occurrence of antimicrobial resistance in faecal indicator bacteria and quantification of residues in the environment**

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The potential risks posed to the environment and to humans by the use of antimicrobials in intensively reared livestock are globally recognized and need to be explored also at local level.

Aim of the project is to assess the impact of the use of antimicrobials in pig farms on the spread of antimicrobial resistance (AR) to farming related ecological niches, and thus the potential risk of a further foodborne or direct dissemination to humans. Moreover the project aims to explore the role of manure and water of irrigation/drainage canals as potential reservoirs of resistance by acquiring data on the environmental fate of antibiotics and residues.

The following secondary objectives will be pursued :

- collection of detailed data on the use of antimicrobials in the selected pigs farms located in the area of the analytical laboratories;
- -assessment of the occurrence of resistance to antimicrobials in indicator bacteria isolated from pigs and from farming related ecological niches;
- -identification and quantification of the most diffuse genetic determinants of AR in the natural bacterial communities in areas influenced by farming activities;
- -description of the relationship between antimicrobial usage and AR;
- -development and standardisation of sensitive analytical methods for the determination of antibiotic residues in manure and water.