Comparative analysis of antimicrobial usage in Swiss farms housing pigs exclusively or cattle alongside

Lena Fleischer, Jens Becker, Dolf Kümmerlen

Antimicrobial resistance (AMR) is an increasing threat for human and animal health and imprudent antimicrobial usage (AMU) is a major cause for the development of AMR in livestock production. The Swiss Federal Food Safety and Veterinary Office established the national reporting system IS ABV for monitoring and quantification of AMU in Switzerland.
The objectives of this study were to analyze AMU in fattening pigs using IS ABV data. Differences in AMU were investigated between farms housing pigs exclusively and mixed farms housing pigs alongside cattle.
AMU was calculated in total for all farms (n= 99) and specifically for the antimicrobial classes of penicillins and tetracyclines. Calculation was carried out using a treatment incidence (TI) based on Defined Daily Doses (DDD) by the European Medicines Agency, 2016.
From January to October 2022 there were a total of 232 prescriptions in 99 farms, including 146 prescriptions in 49 pig farms and 86 prescriptions in 50 mixed farms. A total of 4'475 out of 48'848 fattening pigs (=9.16%) were treated. A total AMU of 0.28 DDD/pig/year (min: 0.00028; max: 30.7) for pig farms and of 0.09 DDD/pig/year (min: 0.00275; max: 4.96) for mixed farms was calculated. For penicillin the mean TI for pig farms and mixed farms was 1.11 DDD/pig/year and 0.40 DDD/pig/year, respectively. No significant differences between the types of farms were found concerning total AMU or any specific active substance.
No association of specialization of the farmers on pigs on AMU was found in this study. Overall low AMU in combination with moderate sample size could have limited the detection of such effects.