Antimicrobials, Multiple Drug Resistance & Antibiotics Resistance

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Prevalence of antibiotic resistant bacteria in animals - A global perspective

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The increase in antibiotic resistance is a global concern for human and animal health. Resistant microorganisms can move between food-producing animals and humans by direct contact, through the food chain or in the environment. An overview of antibiotic use and resistance in food producing animals from different countries provides an essential tool to finding solutions to prevent the spread of antibiotic resistance. The monitoring of antimicrobial use together with resistance rates of indicator E. coli provides an overview, allowing the identification of further regulatory and research needs. The established national surveillance of antibiotic resistance is essential in providing comparable data. Scientific work provides some AR data for countries that lack national monitoring, which indicates the prevalence of resistant bacteria. Available data from the US, China, the United Kingdom and Germany indicate minor differences in resistance rates among E. coli isolated from chickens on farms, from slaughterhouses and from retail meat. The resistance rates to fluoroquinolones and quinolones are lower in US in comparison to other large poultry producers that allow that use of fluoroquinolones. These findings demonstrate the possibility to produce poultry without fluoroquinolones, which results in low resistance rates. The resistance rates in E. coli to representatives of several antibiotic classes, e.g., tetracycline, sulfamethoxazole, streptomycin and ampicillin, are rather high in large poultry producing countries, with the exception of ampicillin resistance in the US.

Biography

Nataliya Roth has completed her MS in Academy of Veterinary Medicine in Lviv, Ukraine and at the University of Natural Resources and Life Sciences in Vienna, Austria. From past 10 years, she has been working in R&D of feed additives producer Biomin Holding GmbH. From past four years, she was working on her PhD about antibiotic use, resistance and strategies to overcome resistance at University of Natural Resources and Life Sciences in Vienna.

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