BBD-PP-46

TITLE
ANTIBIOTIC RESISTANCE IN ESCHERICHIA COLI FROM DISEASED PIGS IN THE NETHERLANDS FROM 2015 - 2017: RELIABILITY AND REPRESENTATIVENESS OF PASSIVELY ACQUIRED DATA

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CONTENT
Background and objectives
To further reduce and refine the use of antibiotics in livestock, monitoring of antibiotic resistance (ABR) of veterinary pathogens is of utmost importance. Therefore a project is running to develop a nationwide, representative, reliable system for monitoring of ABR in livestock pathogens in the Netherlands. As part of this project, reliability and representativeness of passively acquired Escherichia coli (ECO) isolates from diseased pigs in the Netherlands were evaluated.
Material & Methods
Antibiotic susceptibility testing results (broth microdilution) of enteropathogenic ECO from pigs were obtained from the Laboratory Information Management System of GD Animal Health (GD AH). Data were analysed using Stata.
Results
972 ECO isolates from 616 unique, commercial pig farms were available from 2015 – 2017 for further analysis. 752 isolates originated from post-mortem examinations carried out at GD AH and 220 isolates were cultured from faecal samples submitted to the GD AH laboratory. For 575 isolates the age category (suckling, weaned, grow/finish) was known.
The 972 isolates provide a reliable estimation of ABR levels of ECO for different antibiotics and allow for detection of changes in ABR percentages of 5% or more. Considering province and farm size of origin, collected ECO isolates are a fairly representative sample. Several ABR levels were significantly affected by age of the pigs - with lower ages generally showing higher ABR levels - and by farm of origin.
Discussion & Conclusion
The passively acquired data on ECO resistance in pigs can well be used within a national framework monitoring ABR in livestock pathogens. It is recommended to collect additional data per isolate, including antibiotic treatment history and age of the pigs to further evaluate whether these factors impact the resulting ABR levels and whether, for example, treatment advices for ECO should be further differentiated regarding the age of the pigs.