**Antimicrobials in livestock farming: reducing their use while limiting health and socioeconomic risks into low and middle-income countries**

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**ABSTRACT**

Objectives: While there are numerous measures restricting the use of antimicrobials on livestock farms in industrialized countries, this is not the case in southern countries. On the contrary, their use has been boosted by the growing demand for animal protein and the boom in intensive livestock farming. One need to decipher the complexity and impacts on small farmers of the phenomenon of antimicrobial resistance and of the global strategies planned to fight it.

Material and methods: To address the complexity of these issues, we drew on data obtained by research teams in the South and the North, which reflect the diversity of agricultural contexts and livestock farming systems. This research focuses on the implementation of technical solutions, methodological approaches and innovative surveillance mechanisms in different areas.

Results: In both the North and the South, the major challenge is to implement policies enabling the reduction and rationalisation of antimicrobial use, through a set of actions and associated regulatory measures. However, it should be noted that the effective application of these policies is dependent on one key factor: minimising adverse health and socioeconomic impacts on the standard of living for farmers, especially in the most vulnerable regions.

Conclusion: We suggest lines of research aimed at reducing or rationalizing antimicrobial use, in the interests of people in the most vulnerable regions and through a ‘One Health’ approach calling for interdisciplinary efforts on subjects ranging from genes to the human society in its environment.

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**A comparison study of the antimicrobial prescription patterns in organic and conventional pig herds in Denmark**

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**ABSTRACT**

Objective: The objective of the study was to look for differences in antimicrobial prescription patterns between organic and conventional pig herds.

Materials and methods: Data from the national database VetStat covering sales of veterinary prescription medicine for all pig herds in Denmark were extracted for the year 2016. Information regarding herd type and number of animals were extracted in the Danish Central Husbandry Register (CHR).

Results: In 2016, there were 122 organic pig herds recorded in CHR. This corresponds to nearly 2 % of the total number of herds recorded in CHR. The total number of antimicrobial prescription for organic herds in 2016 corresponded to 133 kg active compound, which is only 0.2 % of the total amount of active compound sold for use in the Danish pig production that year. Similar to conventional pig production, gastro-intestinal indications also represent the most often used indication in organic pig herd. Compared with conventional pig production, a larger proportion was prescribed for respiratory indications in organic weaners and for arthropathy indications in organic finishers. According to Danish legislation, organic weaner and finisher pigs are only allowed to be treated once in their live span. If any medicine is left after a treatment course, it cannot be re-prescribed as in the conventional pig herds. The farmer has the obligation to return the rest of a medicine to the pharmacies for destruction. There are no official registration of the amount of returned medicine in Vetstat, why there may be a margin of error when reporting antimicrobial use in organic pig farms.

Conclusion: A project is now investigating this by evaluating actual usage data collected from the organic pig farmers. The next step will be to include meat inspection data to evaluate whether the prescription patterns can explain the lesions found at slaughter.

**Key words:** Pigs, organic farming, register data, antimicrobial use, meat inspection