The composition of drinking water and feeding systems for oral group medication in 52 Belgian swine herds, in relation to homogeneity, stability and cross-contamination of veterinary medicinal products

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Introduction

The large majority of drugs in pig rearing are administered via oral mass medication through medicated drinking water and feed. Despite their common use, the homogeneity, stability and cross-contamination of frequently used medicinal products are largely unknown. The general aim of this research is to identify the critical factors from production to consumption of medicated feed and drinking water, to guarantee optimal drug delivery in pigs and to control cross-contamination.

Materials and methods

A survey, containing both open-ended and closed-ended questions, was conducted in collaboration with pig veterinarians. The survey collected general information about the farm, information about the composition of the drinking water and feeding systems available for drug administration, the cleaning and disinfection protocols and the process of mixing and administering medicated feed and / or drinking water.

Results and conclusions

In total, 52 Belgian pig farms were visited. The results show that drinking water medication (n = 47) is more commonly used than feed medication (n = 37). Multiple drugs are used at the same time in drinking water (n = 30), whereas combination treatment with different formulations at the same time in feed is much less common practice (n = 4). Drinking water medication was never used to treat individual pigs. In contrast, feed medication was used for individual treatment of sows via topdressing in 6 farms. In 28% of the farms, pipes for medicated water distribution were separated from pipes for non-medicated water. This practice was not observed for feeding pipes. As the water consumption

was not monitored in any of the visited farms, the amount of medicated water to be prepared per day was only roughly estimated. After the use of medication, water pipes were cleaned in 25% of the farms, but never for the feed pipelines.

In conclusion, this survey offers a first insight in the composition and the protocols used for cleaning, disinfecting and mixing-in of feed and water medication in pig farms in Belgium. Although in-feed and drinking water medication are common practice, those protocols and compositions vary wildly, and the influence of these systems on concentration, stability and homogeneity of antimicrobials and anthelmintics up to the moment of intake, and residues thereof will be further investigated.

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