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Monitoring antimicrobial use in the French pig production: The INAPORC panel

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Introduction

Monitoring antimicrobial use in food-producing animals is a key element of a control programme of antimicrobial resistance. The French pig industry has developed a tool, named INAPORC Panel, to measure the quantities of antibiotics used in farms by age group and to specify antimicrobial usage pattern. This communication presents the methodological approach applied and some preliminary results obtained.

Materials and Methods

A panel has been established, consisting of 169 pig farms, randomly selected in the National Swine Database of Identification (BDPORC). These volunteer farms were representative, after adjustment, of the French pig herd population, characterized through activity, localization and productivity. Technical parameters (such as number, weight, and mortality rate of pigs at each age group) were collected from farmers. Inventory of antimicrobials they bought in 2010 were collected from their drug suppliers (veterinarians, medicated feed manufacturers). Finally, during a phone call, farmers described their antimicrobial usage pattern: categories of animals treated, reasons for treatment, dosages and treatment durations implemented. The two indicators recommended by the European Medicines Agency (1) were used to express the results for each category of animals: number of Animal Daily Dose per animal product (ADD/a) and number of Animal Course Dose per animal product (ACD/a). The results of sows were expressed relative to the number of piglets weaned. Calculations were performed using the dosage and treatment duration as defined in the summary of product characteristics.

Results

In 2010, most treatments were administered to piglets in post-weaning units (57 % of ACD/a; 73 % of ADD/a). Important differences between farms were observed: half of the treatments in post-weaning units were attributable to 25 % of farms.

Medicated feed premixes were the most commonly used pharmaceutical form (44 % of ACD/a; 74 % of ADD/a) (Figure 1) which confirms results of a previous study (2). Three antimicrobial classes represented two thirds of total number of ACD/a: polypeptides (33 %), penicillins (22 %) and tetracyclines (13 %). "Critically important antimicrobials" (third- and fourth-generation cephalosporins and fluoroquinolones) represented only a small fraction of total number of ACD/a (5 % and 3 % respectively).

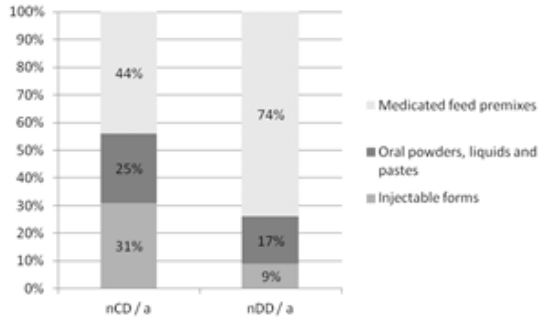

Figure 1. Part of antibiotics use by pharmaceutical form

Conclusions and Discussion

Since 2010, the French pig sector and the veterinarians have voluntarily limited the use of 3rd and 4th generation cephalosporins (3). Consequently, their exposure level decreased by 62 % between 2010 and 2012 (4). More generally, the level of exposure of pigs to all families of antibiotics decreased by more than 18 % between 2010 and 2012 (4).

Finally, this study provides the French pig industry with reliable baseline data which complement available results already published by the French Agency for Veterinary Medicinal Products (ANMV) (4). It adjusts some data downwards and most importantly, it specifies antimicrobial usage pattern by age group. The panel, which is renewed in 2014, should help professionals to strengthen their strategy for an efficient reduction of antimicrobial usage, as recommended by French public authorities in the Ecoantibio 2017 Plan (5).

Acknowledgments

This study was financially supported by INAPORC. Special thanks to farmers, veterinarians, feed manufacturers, ANMV, BDPORC and the steering committee with Pig industry Professionals and technical and scientific experts.

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