



Influence of veterinary herd health management on antimicrobial use on SGD (Swiss pig health service) pig farms with regular antimicrobial use

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Key words

Antimicrobial use, pigs, risk factors, treatment incidence, veterinary herd health management, FitPig project.

Aim of the study

This study was carried out to: i) initially identify protective and risk factors for an increased antimicrobial use among Swiss breeding and fattening pig farms and ii) subsequently verify the hypotheses that a) targeted veterinary herd health management (under standardized conditions) is an adequate tool to reduce the antimicrobial use on problem farms and b) a reduction of antimicrobial use on problem farms is feasible without inducing serious declines in pig health or productivity.

Material and methods

In a first retrospective part of the project, two case-control studies were carried out. Data on antimicrobial use, management practices, production data and attitude of the farmer were collected on 112 Swiss pig breeding farms and 99 fattening farms respectively. In addition to the descriptive analyses and calculations of treatment incidences, risk factors for an increased oral antimicrobial use were identified.

For the prospective part of the project, 72 breeding and 66 fattening farms with regular oral use of antimicrobials were allocated either to a control group (n=72) with standard consulting support or to an intervention group (n=66) with targeted veterinary herd health management. Approximately one year after the start of the intervention antimicrobial use and productivity were compared between the groups.

Results and significance

For breeding farms five risk factors could be identified in the case-control study: poor hygiene in the water supply of suckling piglets, less than two doses of prestarter feed for suckling piglets daily, lack of an all-in-and-all-out production system in weaners, no herd book performance data analysis and less than two of the legally prescribed veterinary visits per year. In fattening farms, the analysis identified seven risk factors: mixing pigs from different suppliers within the same pen, absence of a work protocol that ensures that daily management of healthy pigs is done prior to sick pigs, distance to next pig farm < 500 metres, external analysis of production parameters, no presence of dirty visitor boots, the farmer not working on other farms and no application of homeopathic agents. During the intervention study, the farms of all groups could reduce their antimicrobial use, but the reduction was more distinct in breeding and fattening farms of the intervention group. At the same time the productivity remained constant or even improved in the intervention farms. Therefore, we conclude that targeted veterinary herd health management is an adequate tool to reduce the antimicrobial use without impairing pig productivity.

The results of this project provide valuable information about risk factors for increased oral antimicrobial use in pig production and a concrete strategy to realize existing reduction potentials by targeted veterinary herd health management. They can therefore contribute to reduce antimicrobial use in pig production and to maintain effective antimicrobial treatments in the future.

Publications, posters and presentations

- Ogierman, A.; Nathues, C.; Schüpbach, G.; Scheer, P.; Sidler, X.; Peter-Egli, J.; Harisberger, M.: The positive effect of veterinary herd health care on antimicrobial use in Swiss pig production. Publication in progress.*
- Arnold, C.; Schüpbach-Regula, G.; Hirsiger, P.; Malik, J.; Scheer, P.; Sidler, X.; Spring, P.; Peter-Egli, J.; Harisberger, M.: 2016: Risk factors for oral antimicrobial consumption in Swiss fattening pig farms – a case-control study. *Porcine Health Management*. 2, 1-9.*
- Hirsiger, P.; Malik, J.; Kümmerlen, D.; Vidondo, B.; Arnold, C.; Harisberger, M.; Spring, P.; Sidler, X.: 2015: Risikofaktoren für den oralen Einsatz von Antibiotika und Tierbehandlungsinzidenz bei Absetzferkeln in der Schweiz. *SAT/ASMV*, 157, 682-688. Publication in collaboration with the NFP project.**
- Malik, J.; Kaufmann, G.; Hirsiger, P.; Kümmerlen, D.; Arnold, C.; Spring, P.; Sidler, X.: 2015: Einfluss der persönlichen Einstellung des Betriebsleiters auf den Antibiotikaverbrauch in der Schweineproduktion. *SAT/ASMV*, 157, 675–681. Publication in collaboration with the NFP project.**

Additionally published material can be found at:

<http://www.suisag.ch/SGD/Projekte/FitPig> or
<http://www.hafl.bfh.ch/fitpig>

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