Peer Community In
Animal Science

# Evaluating tailor-made health plans in pig farms: a multiple complementary indicators approach

***Matteo Chincarini*** *based on peer reviews by* ***Carla Gomes*** *and 1 anonymous reviewer*

Levallois Pierre, Leblanc-Maridor Mily, Scollo Annalisa, Ferrari Paolo, Belloc Catherine, Fourichon Christine (2023) Combining several indicators to assess the effectiveness of tailor-made health plans in pig farms. Zenodo, ver. 3, peer-reviewed and recommended by Peer Community in Animal Science. https://doi.org/10.5281/zenodo.7789634

Submitted: 02 April 2023, Recommended: 27 July 2023

**Cite this recommendation as:**
Chincarini, M. (2023) Evaluating tailor-made health plans in pig farms: a multiple complementary indicators approach. *Peer Community in Animal Science*, 100195. 10.24072/pci.animsci.100195

Published: 27 July 2023


---

Tailor-made health plans for farming animals, including pigs, are highly beneficial due to their customized nature, addressing the unique needs of each farm and promoting efficient husbandry practices. However, assessing the effectiveness of individualized approaches can be challenging. Levallois et al. (1) tackled this challenge by evaluating the effectiveness of tailor-made health plans of pig farms based on a systematic biosecurity and herd health audit. The study involved twenty farrow-to-finish pig farms, each receiving specific plans tailored to their specific needs. Compliance with the recommendations was monitored over an eight-month period. In the literature, various studies have delved into specific issues in detail, such as disease incidence (e.g., (2)). However, the authors of this research applied a comprehensive approach through an integrative analysis of multiple complementary indicators to provide an effective evaluation of the changes and health disorders.

The authors' holistic approach to measuring the effectiveness of tailor-made health plans is noteworthy. They employed up to seven methods to identify advantages and limitations, providing valuable insights for applied research and practitioners in the field of farm animals. Additionally, the study's inclusion of diverse farms, ranging from conventional to antibiotic-free and varying in sow breeding numbers (from 70 to 800), demonstrates the flexibility of the proposed approach, accommodating different farming systems.

The study revealed three crucial considerations for future evaluations of tailor-made health plans. Firstly, placing compliance as the primary assessment indicator is a priority. Secondly, it is essential to tailor outcome indicators and monitoring periods according to each farm's specific health disorder. Lastly, a comprehensive

understanding of the health disorder's evolution can be achieved through the amalgamation of multiple indicators.

While the study does have limitations, such as the relatively short time window for assessment, the methodological framework and results are promising. Further, the discussion of the results raises several areas worthy of future investigation to improve compliance and address farmers' hesitations towards action (i.e., lack of willingness). More research in this context will be beneficial for veterinarians and practitioners, enhancing their understanding and positively impacting both farmers and animals.

In conclusion, the study underscores the significant impact of tailor-made health plans on promoting positive changes in farm management. Assessing the effectiveness of these plans enables the refinement of new strategies and enhances the overall quality of work in animal production. The study by Levallois et al (1) sheds valuable light on the challenges and potentials of such plans, providing essential insights for pig farming practices. While further research and improvements are necessary, the study strongly emphasizes the pivotal role of individualized approaches in attaining improved farm management and enhancing animal welfare.

***References:***


1. Levallois P, Leblanc-Maridor M, Scollo A, Ferrari P, Belloc C, Fourichon C. (2023). Combining several indicators to assess the effectiveness of tailor-made health plans in pig farms. Zenodo, 7789634. ver. 3 peer-reviewed and recommended by Peer Community in Animal Science. https://doi.org/10.5281/zenodo.7789634

2. Collineau L, Rojo-Gimeno C, Léger A, Backhans A, Loesken S, Nielsen EO, Postma M, Emanuelson U, grosse Beilage E, Sjölund M, Wauters E, Stärk KDC, Dewulf J, Belloc C, Krebs S. (2017). Herd-specific interventions to reduce antimicrobial usage in pig production without jeopardising technical and economic performance. Preventive veterinary medicine, 144:167-78. https://doi.org/10.1016/j.prevetmed.2017.05.023


# Reviews

## Evaluation round #2

### Authors' reply

**Download author's reply**
**Download tracked changes file**

## Evaluation round #1

DOI or URL of the preprint: `https://doi.org/10.5281/zenodo.7789635`
Version of the preprint: 1

### Authors' reply, 14 July 2023

**Download author's reply**

### Decision by Matteo Chincarini, posted 23 June 2023, validated 23 June 2023

Dear authors,

I apologise for the long time we need to reply to you. The manuscript is of much interest but there are some aspects that have to be addressed more in detail. Please, see the revision from the two reviewers. In particular, you should clarify or better argue the concept of “room of improvement”. There are some typos, consider reviewing the language.

Best,

Matteo Chincarini

## Reviewed by anonymous reviewer 1, 23 June 2023

This is a very interesting paper about the fitness of animal health plans considering the farmers’ and farm veterinarians´ perception of disease awareness and disease prevention needs. Under a farm-centric approach, the authors used a mixture of methods matching the farmers’ and vet´s opinions with the follow-up results. The aim of this work is relevant, and it is suitable for scientific publication.

**General comments:**

I would like to see some characterization of the pig farm population. Are the pig farms independent? Are they organized in an industrial system? Cooperative? Percentage of organic and conventional farms in the sample? Information like this is relevant here. It is relevant regarding the representativity of your sample.

I would suggest formulating or replacing (when possible) the term ”room for improvement” in the manuscript. It is a well-understood concept, no doubt, but there are some passages where the word/meaning could be up-graded or described more precisely with your arguments from your findings and corresponding interpretation. The argumentation might be improved.

**Specific comments:**

Line 54. The citation of the previous ‘major concern for citizens’ appears a little bit ‘rough’. At least, please consider adding any paper related to one health approach, consumers, zoonosis and risk perception.

Line 401. Space after dot.

Line 403-404. Are all they cost-benefit decisions? Have you got this information? Open questions?

Line 237: do you think that ”improved or deteriorated” regarding antimicrobial use is clear for the reader?

A concept point, if you are measuring effectiveness, you might consider in the future to talk about the effectiveness of the use of antimicrobials. So, it is not only about reducing the use; it is also about the reduction of the infection-related complications.Coud you also state how this parameter could be affected by making efforts on improve prevention?

Just a question, how the tailor-made health plan could work with early interventions (focusing on piglets)?

Lines 447-451. Could you reformulate this passage? It will improve the clarity, I think.

## Reviewed by Carla Gomes , 24 May 2023

The manuscript reads very well and describes the complexity of trying to develop a method to evaluate effectiveness of herd health plans. An important issue that should be studied further.

See all my annotated comments in the pdf document.

main points:

confusion between compliance and effectiveness. Compliance was only observed for the non-disorder specific plans, while an attempt of effectiveness was done for the disorder specific plans.

The implementation of recommendations by farmers is influenced by several factors, including factors related to the farmer and its farm but also factors related to how the message is communicated (and these are related to the veterinarian). It is not clear to me if vets were trained in how to effectively develop and communicate herd specific plans and what effect vets had on the compliance with the recommendations.

In relation to the definition of ”room to improve” as each farm is unique it would be, in my opinion, more useful to compare each farm with before and after the intervention (as it was done for the clinical parameters) for the technical performances and antimicrobial usage.

thank you
**Download the review**