



## Association between antimicrobial prescriptions, production and biosecurity in sows using Additive Bayesian Networks

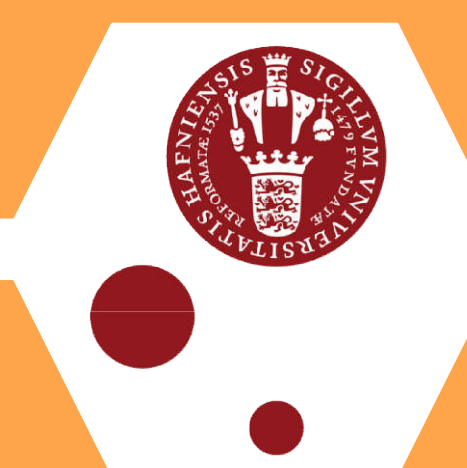
Lopes, Ricardo; Kruse, Amanda Brinch; Nielsen, Liza Rosenbaum; Nunes, Telmo Pina; Alban, Lis

*Publication date:*  
2017

*Document version*  
Peer reviewed version

*Document license:*  
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*Citation for published version (APA):*  
Lopes, R., Kruse, A. B., Nielsen, L. R., Nunes, T. P., & Alban, L. (2017). *Association between antimicrobial prescriptions, production and biosecurity in sows using Additive Bayesian Networks*. Poster session presented at SVEPM2017: The Annual Meeting of the Society for Veterinary Epidemiology and Preventive Medicine , Inverness, United Kingdom.



# Association between antimicrobial prescriptions, production and biosecurity in sows using Additive Bayesian Networks

Ricardo Lopes <sup>(1)</sup>, Amanda Brinch Kruse <sup>(2)</sup>, Liza Rosenbaum Nielsen <sup>(2)</sup>, Telmo Pina Nunes <sup>(1)</sup>, Lis Alban <sup>(3)</sup>

## 1-Motivation

With the threat of antimicrobial (AM) resistance, there is a need to cut down AM usage. However, farmers need reasonable alternatives

(1) – Faculty of Veterinary Medicine, University of Lisbon, Portugal

(2) - Faculty of Health and Medical Sciences, University of Copenhagen, Denmark

(3) – Danish Agriculture & Food Council, Denmark

## 2-Objectives

To assess possible associations between biosecurity, AM use and productivity to identify best practices for low AM use and high productivity

## 3-Materials and Methods

Data came from 157 Danish sows herds. To better understand interdependencies between investigated factors, Additive Bayesian Network (ABN) modelling was used: a technique that produces a directed acyclic graph, allowing easy analysis of the network of interdependencies

## 4-Discussion and Conclusion

Contrary to results by Postma *et al.* 2016, our model showed no association between AM consumption and productivity, nor with biosecurity. This is probably due to a very low AM consumption in Danish sow herds and high biosecurity, because of a fine tuned system and strict regulations in place

## Results :

### LEGEND:

Variable name

Median (95% confidence interval)

— = Association

— Herd size variable

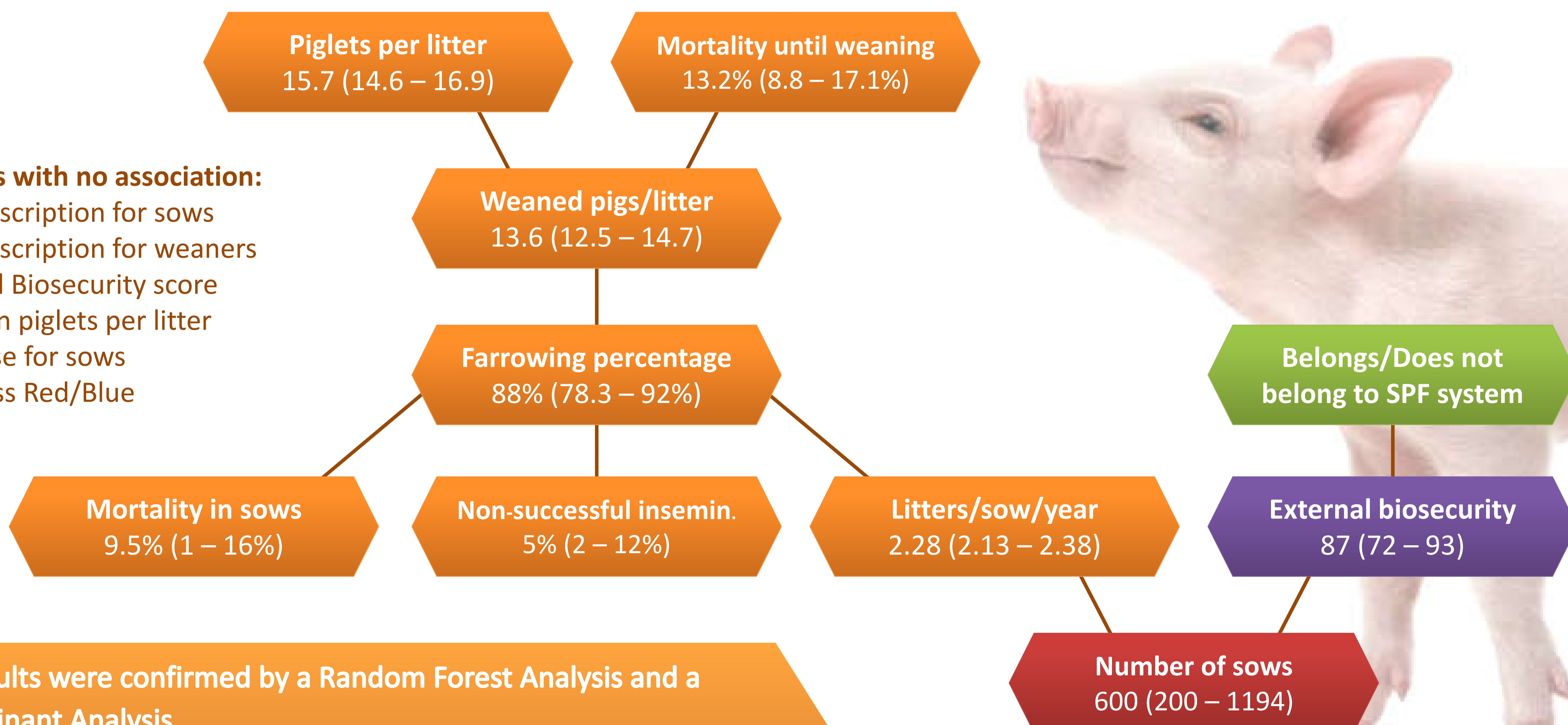
— Production variable

— SPF biosecurity system

— Biocheck score

### Variables with no association:

- AM prescription for sows
- AM prescription for weaners
- Internal Biosecurity score
- Stillborn piglets per litter
- Feed use for sows
- SPF class Red/Blue



The results were confirmed by a Random Forest Analysis and a Discriminant Analysis

Reference: Postma *et al.* Porc. Health Man. (2016) 2:9

SVEPM 2017 – Inverness, Scotland

Special thanks to the SVEPM for the SVEPM bursary award