

# Interventions to a pigger problem?

## Controlling the spread of LA-MRSA in a pig herd

Livestock-associated methicillin-resistant *Staphylococcus aureus* (LA-MRSA) is an opportunistic zoonotic pathogen that poses a health risk especially to people working with pigs.

### Methods

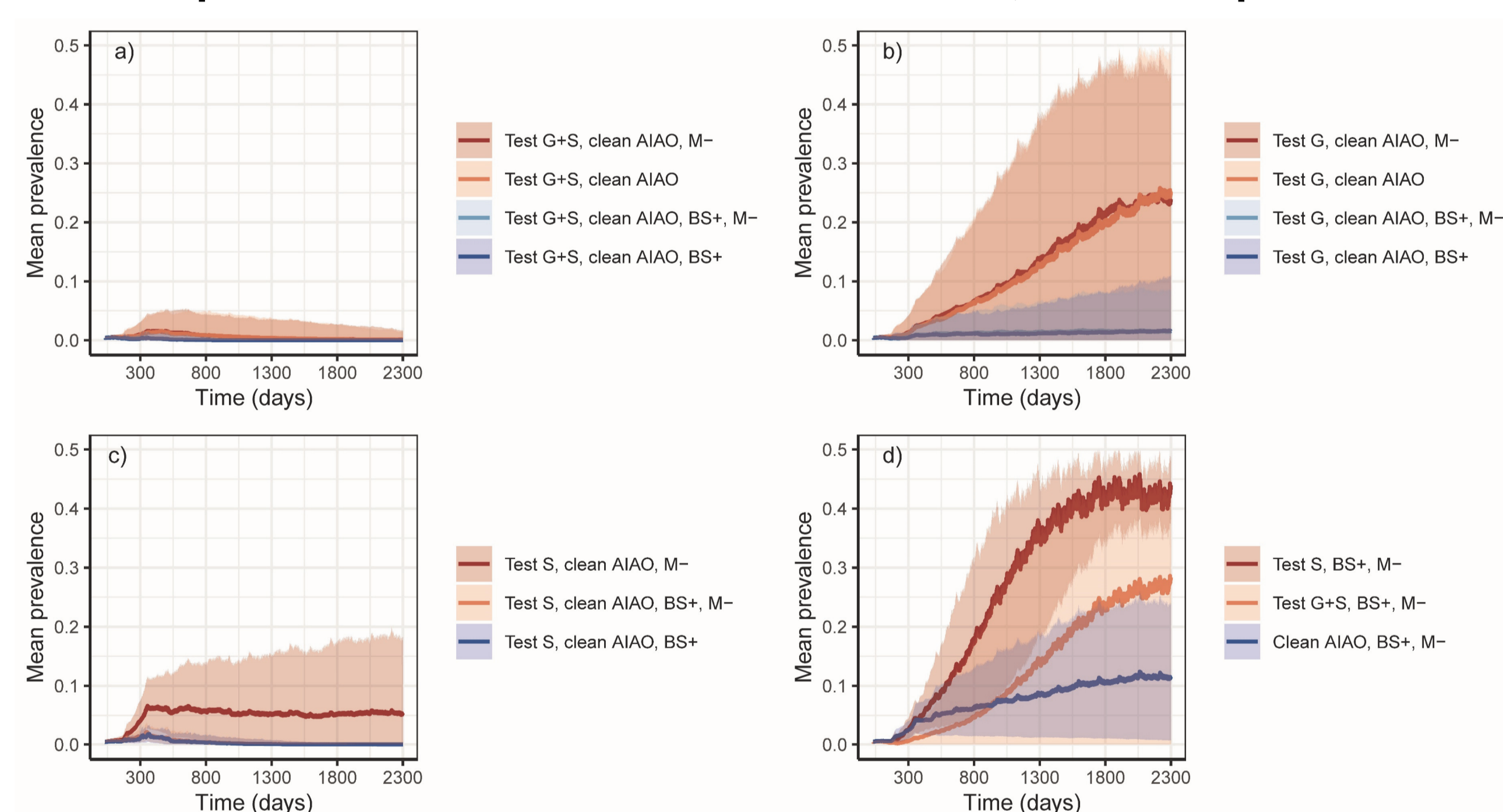
This study used a stochastic compartment model to investigate possible control measures against LA-MRSA in a pig herd. Different control measures were studied both individually and in combinations during different phases (outbreak/endemic) of disease spread.

### Tested control measures

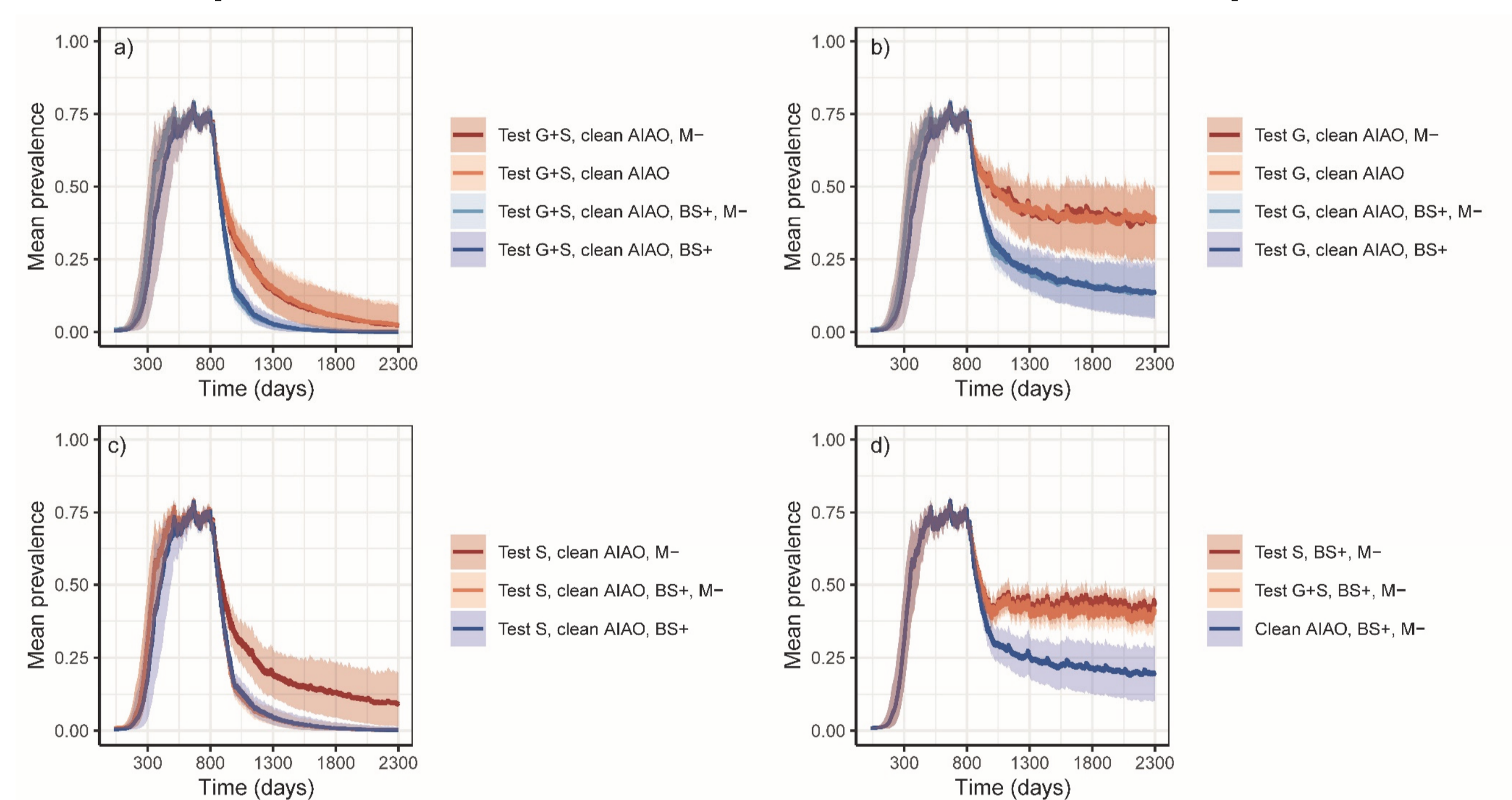
- Improving between-pen biosecurity
- Cleaning the pen environment
- Limiting the mixing of pigs in farrowing and finishing units
- Disease surveillance of gilts and sows with removal of positive animals



Mean prevalence for combined interventions, outbreak phase



Mean prevalence for combined interventions, endemic phase



- a) Prevalence without control measures (Baseline), with improved biosecurity (BS+) and when animals were moved between units only every other week (Biweekly).  
 b) Prevalence when the environmental infectious pressure was removed by the weekly cleaning routine either in continuous flow (CF) pens, all-in all-out pens (AIO) or simultaneously in both pen types.  
 c) Prevalence when either mixing of finisher pigs (FM) or cross-fostering (CrF) 1 day after birth were reduced to 0% and the combination of both measures.  
 d) Prevalence when new gilts (G), sows (S) or both new gilts and sows (G+S) were tested (diagnostic sensitivity 70%) for LA-MRSA.

### Conclusions

- Eradicating LA-MRSA from a pig herd is challenging once it has been introduced to the herd.
- Achieving disease extinction was more likely when the control measures were introduced during the (early) outbreak phase of disease spread.
- Combining environmental cleaning with disease surveillance were the most efficient measures in reducing the LA-MRSA prevalence.

The model is publicly available at:



**Krista Tuominen**  
PhD student, DVM  
[krista.tuominen@slu.se](mailto:krista.tuominen@slu.se)

**Thomas Rosendal**  
Epidemiologist, PhD  
[thomas.rosendal@sva.se](mailto:thomas.rosendal@sva.se)

**Stefan Widgren**  
Associate professor  
[stefan.widgren@sva.se](mailto:stefan.widgren@sva.se)

**Susanna Sternberg Lewerin**  
Professor  
[susanna.sternberg-lewerin@slu.se](mailto:susanna.sternberg-lewerin@slu.se)

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