From gut to tail

The effect of a fermented herbal extract on aspects of health and welfare

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Glimpses of the Austrian (welfare-)reality…

Label-farms with partially improved husbandry conditions and no tail docking

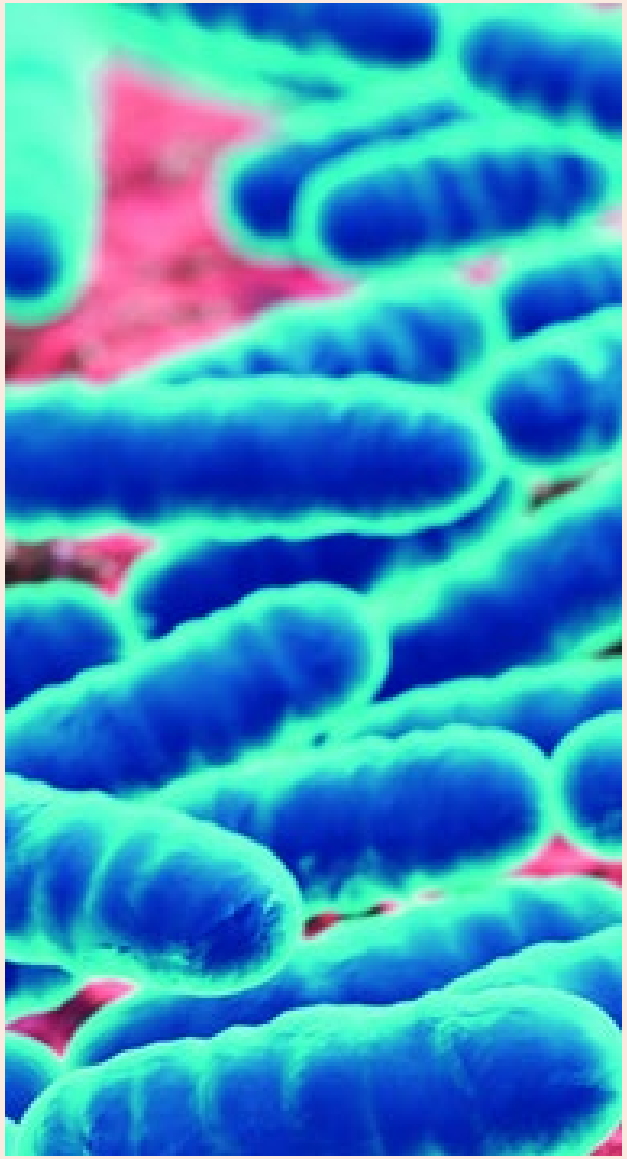
Glimpses of the Austrian (welfare-)reality…

BUT: challenges like respiratory diseases and tail-biting are quite common…

Project goal

Investigate effects of fermented herbal extracts (FHE) on aspects of pig

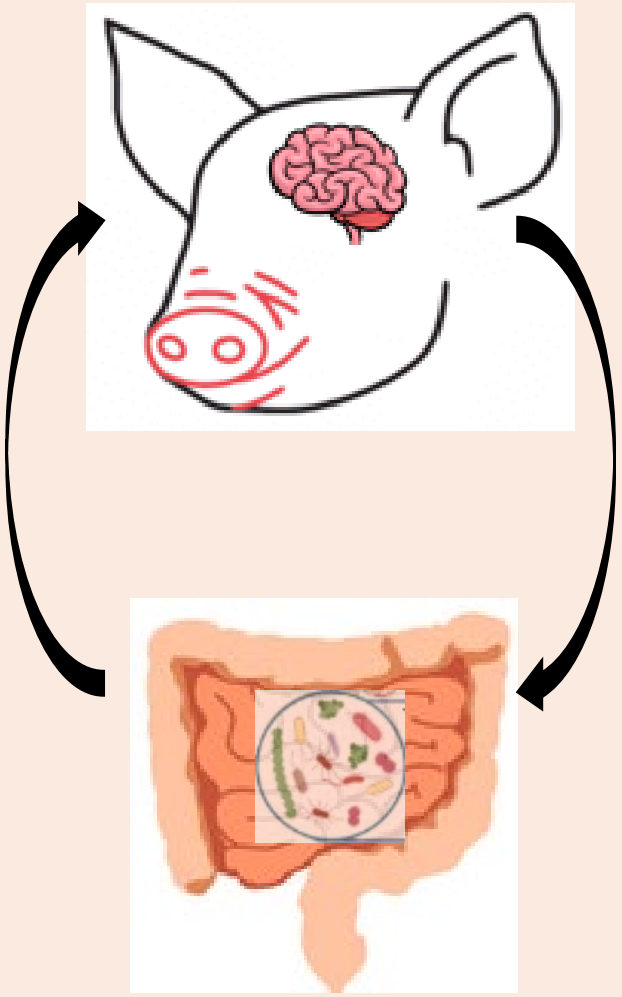
- health (microbiome composition & respiratory disease)
- welfare (tail injuries & length)



What are „Fermented Herbal Extracts?“

Fermented plant juice with various strains of lactic acid bacteria and one strain of yiest

The Microbiota-Gut-Brain-Axis



Tail biting:

- ↓ lactobacillus in the intestine of biter and bitten pigs
  (Rhabi et al., 2020)
- ↑ lactobacillus in the intestine of biter and bitten pigs BUT also
- ↑ harmful bacteria
  (Verbeek et al., 2021)

Manipulation of tail and ear:

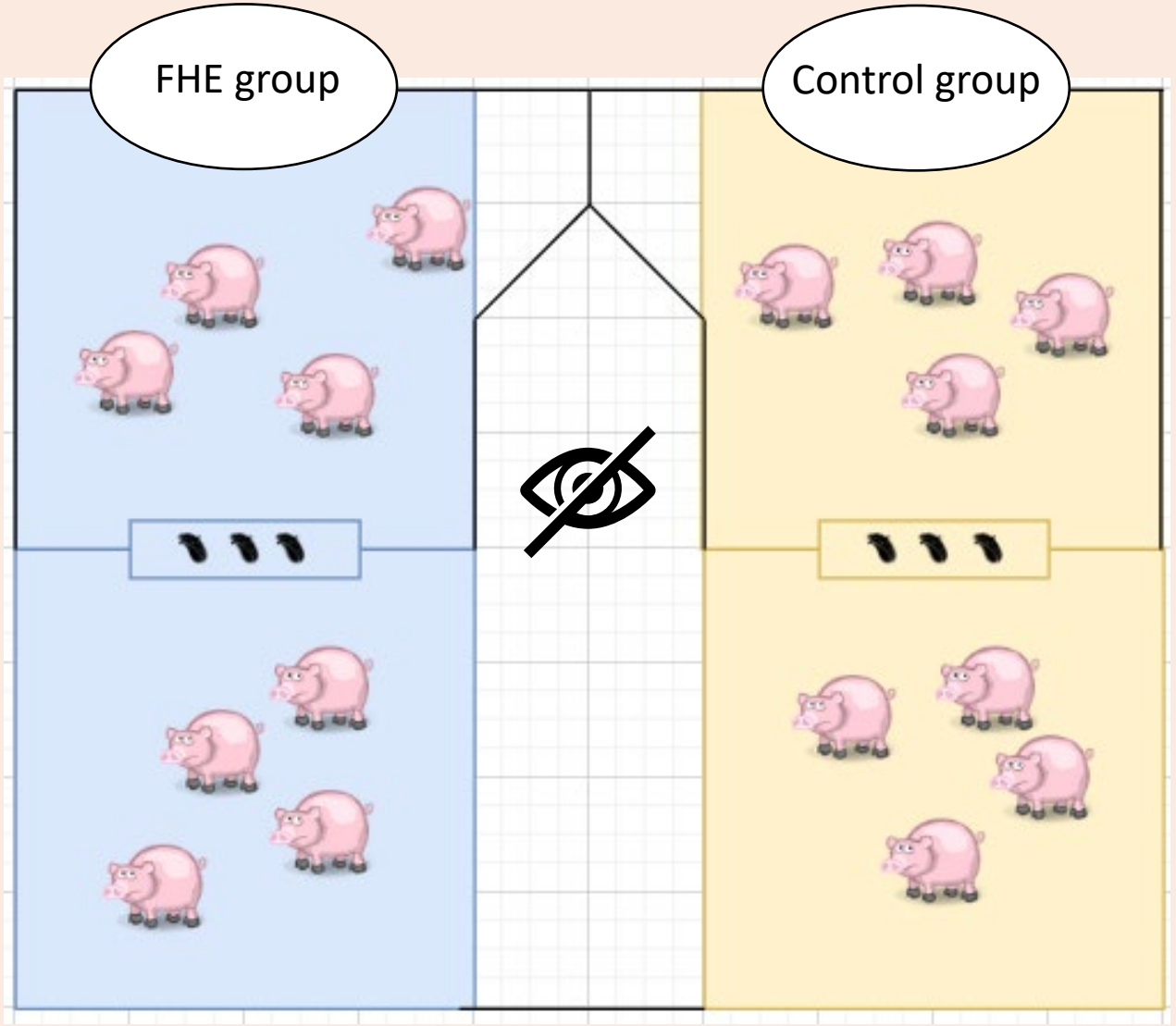
- ↓ lactobacillus diversity in biters/bitten pigs BUT
- ↑ total amount of certain lactic acid bacteria strains
  (König et al., 2024)

Experimental set-up

3 farms (weaning to slaughter)

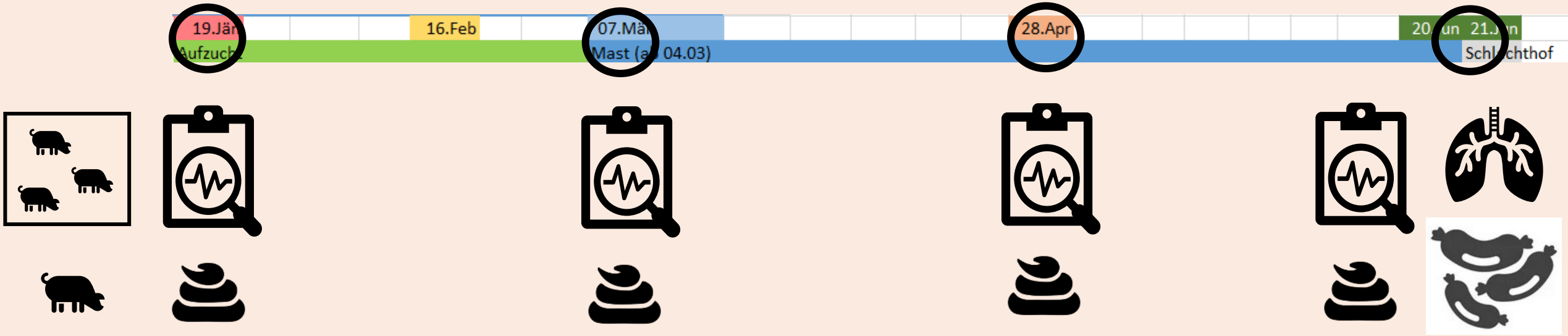
3 batches/ farm

4 visits/ batch



Data acquisition

June 2022 - July 2023

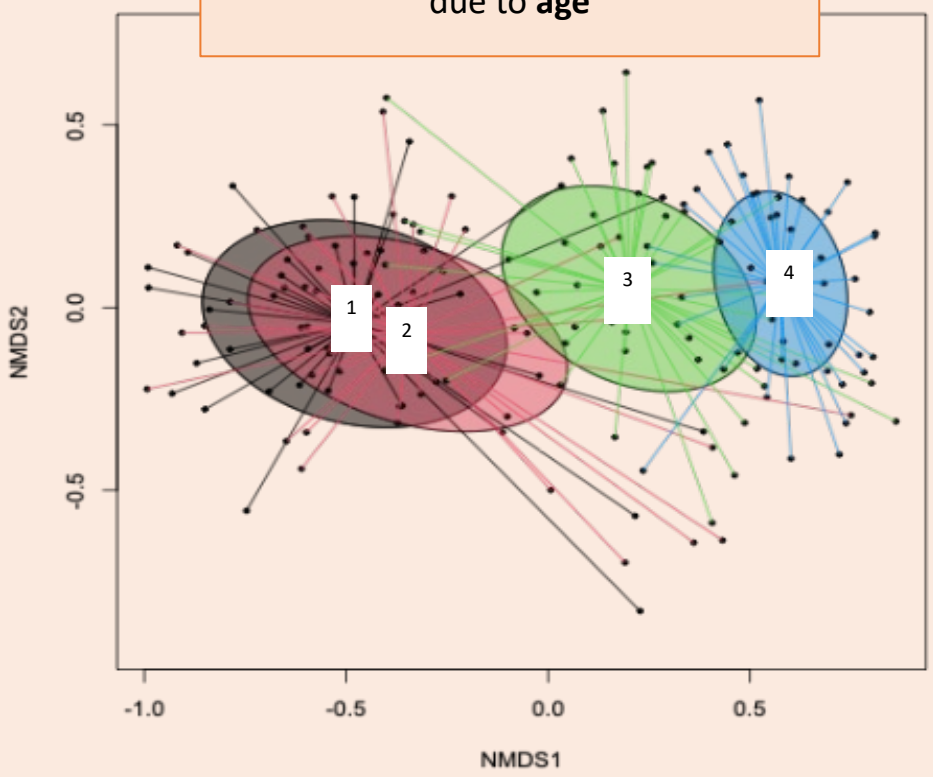



I Durchgang
Question
Choice answer
Group
Farm
Observer
Date & Time
Nb of total animals
Nb of active animals
Beginning:
Middle:
End:
Tail position
1) Curled & Erected
2) Haning, wagging
3) Tucked
Behaviour (observation time 2x10min; at least 5sec)
1) Empty chewing

Results

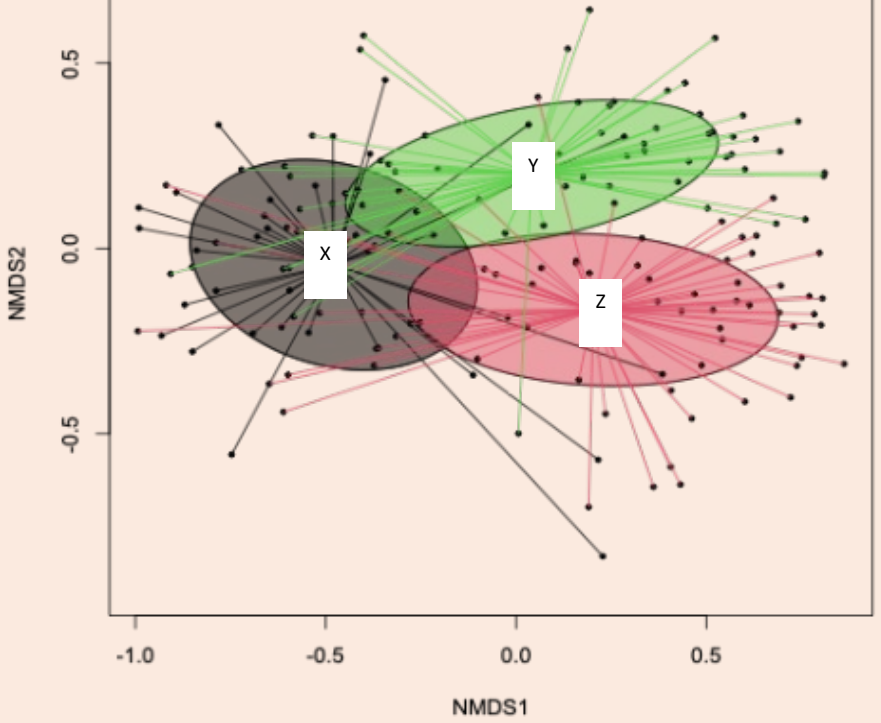
Microbiome analysis: Influence of farm and age

Dissimilarities in bacterial community due to **age**



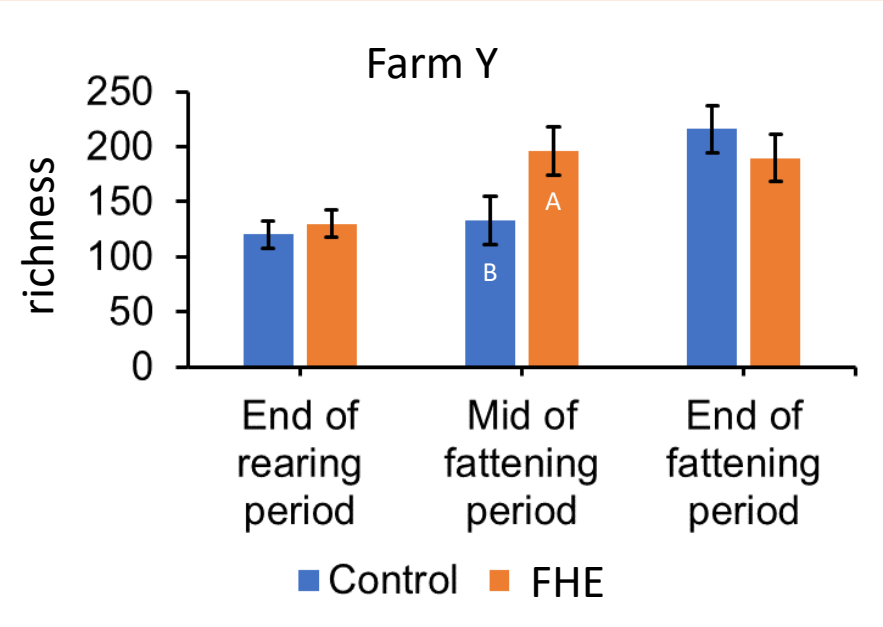
Age category 1-4

Dissimilarities in bacterial community due to **farm**

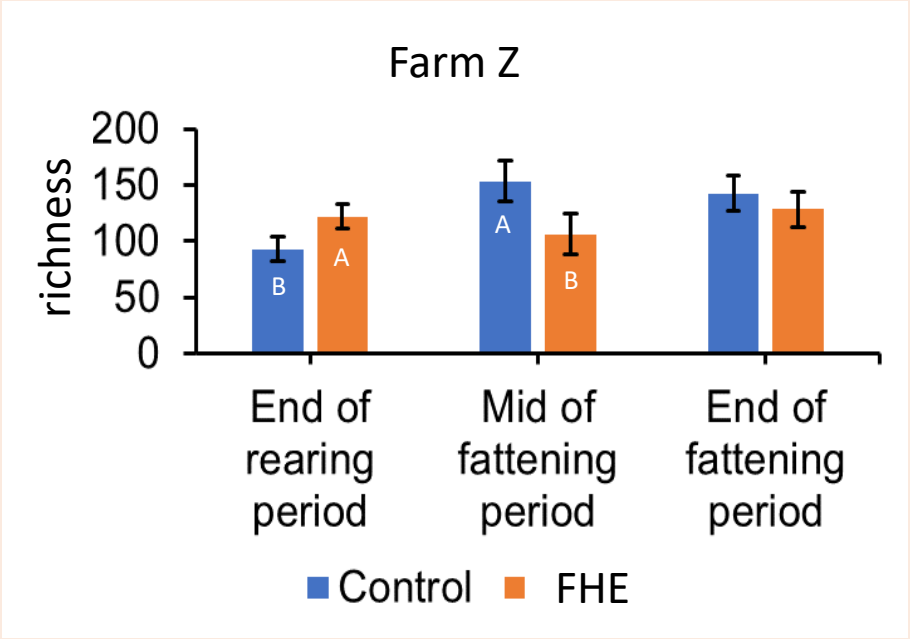


Farm X Y Z

Bacterial richness of fecal samples



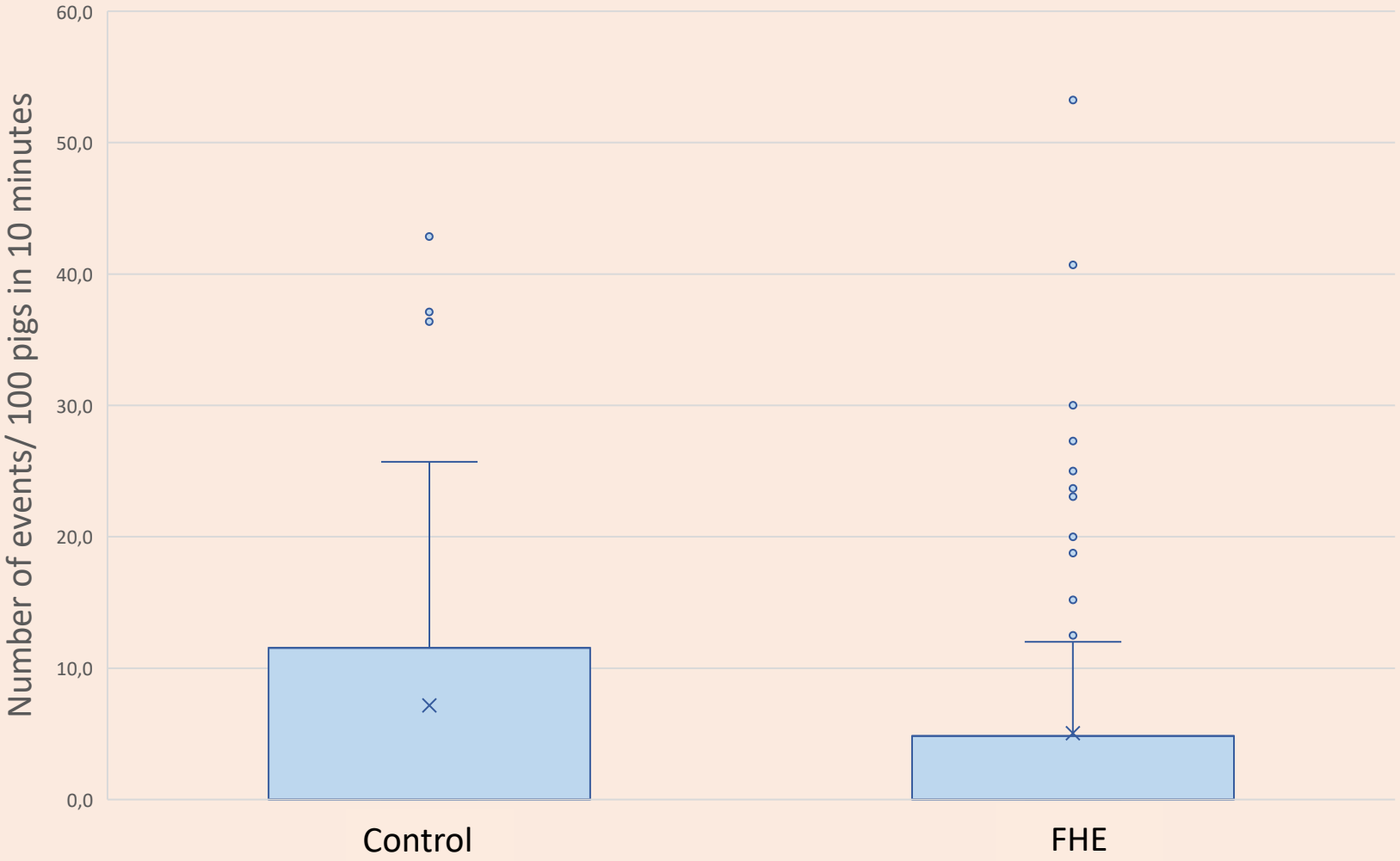
AB, $P < 0.1$



AB, $P < 0.1$

Coughing & sneezing

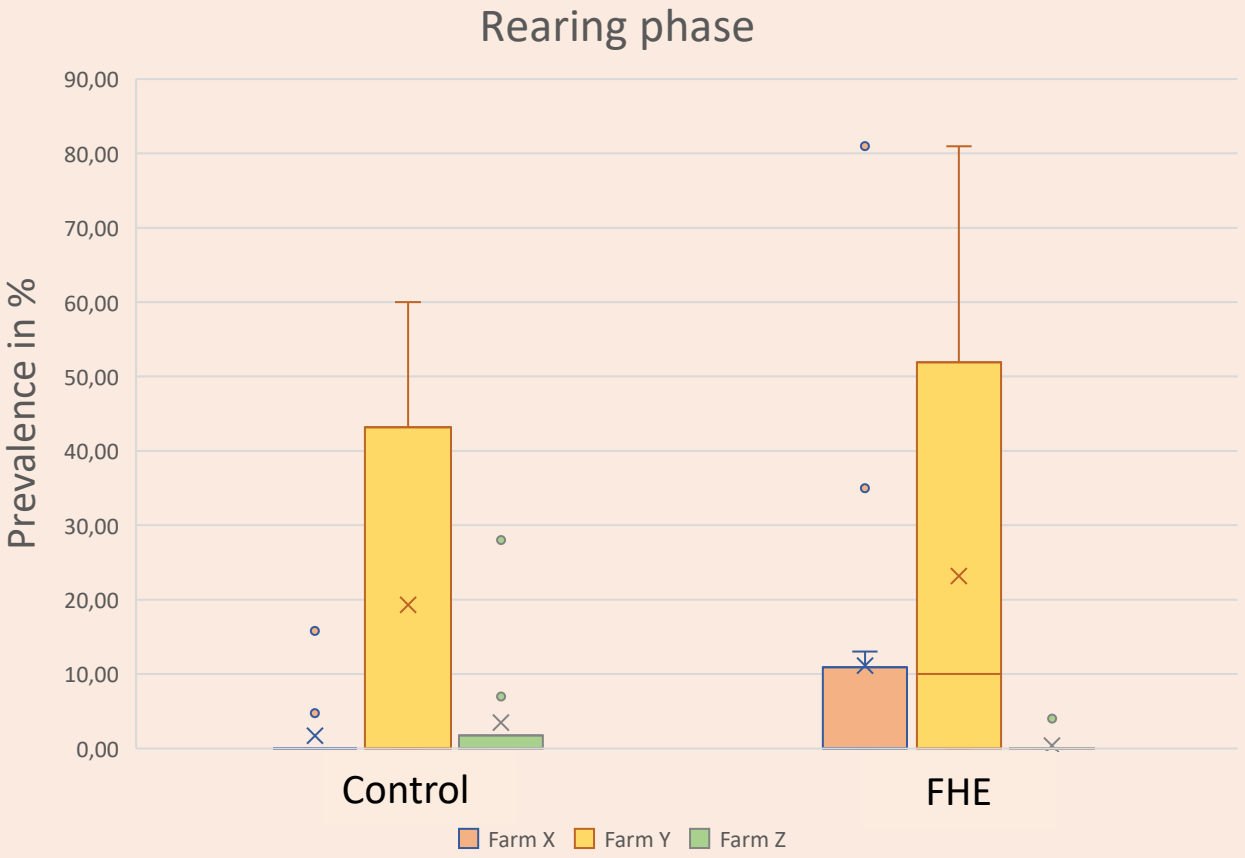
rather not confirmed at slaughterhouse inspection



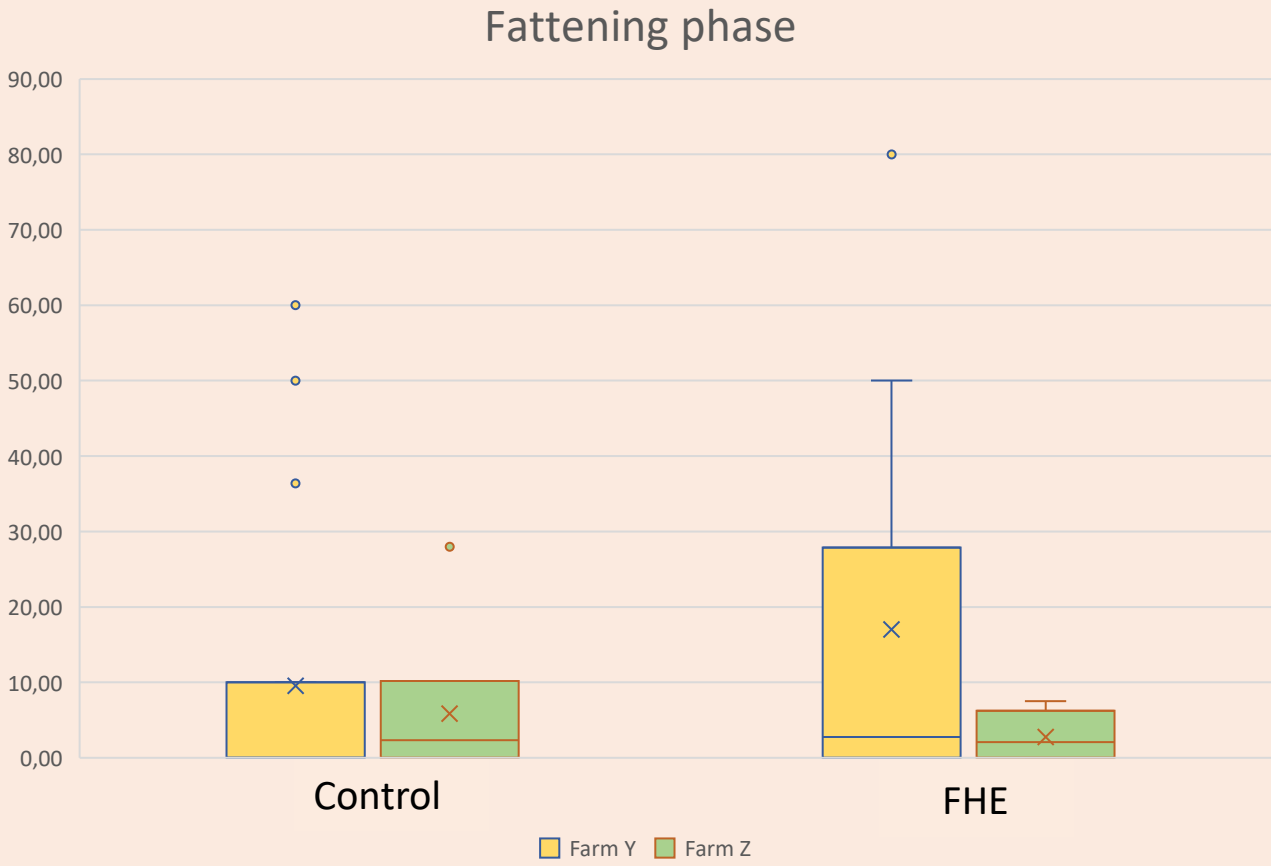
FHE group

p=0,026

Tail injuries

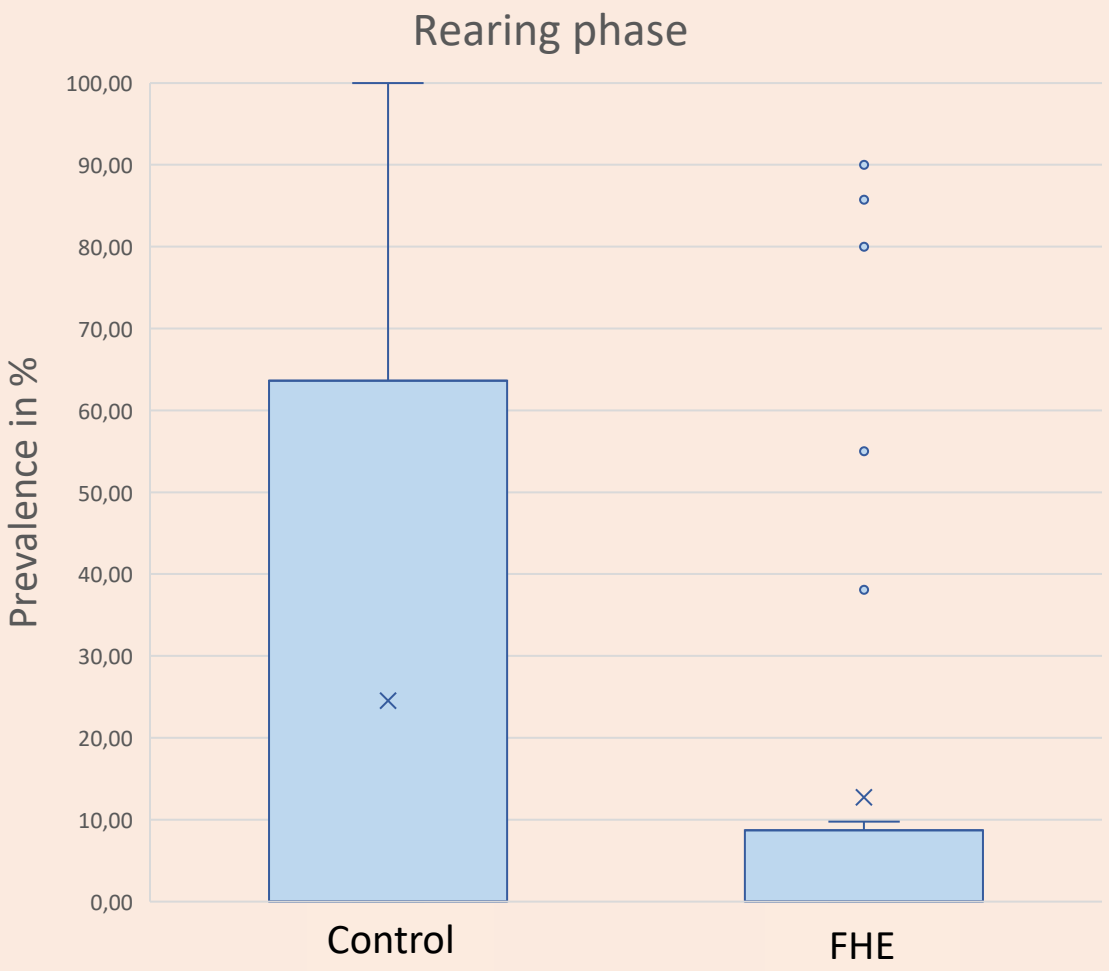


p=0,504



p=0,474

Shorter tails



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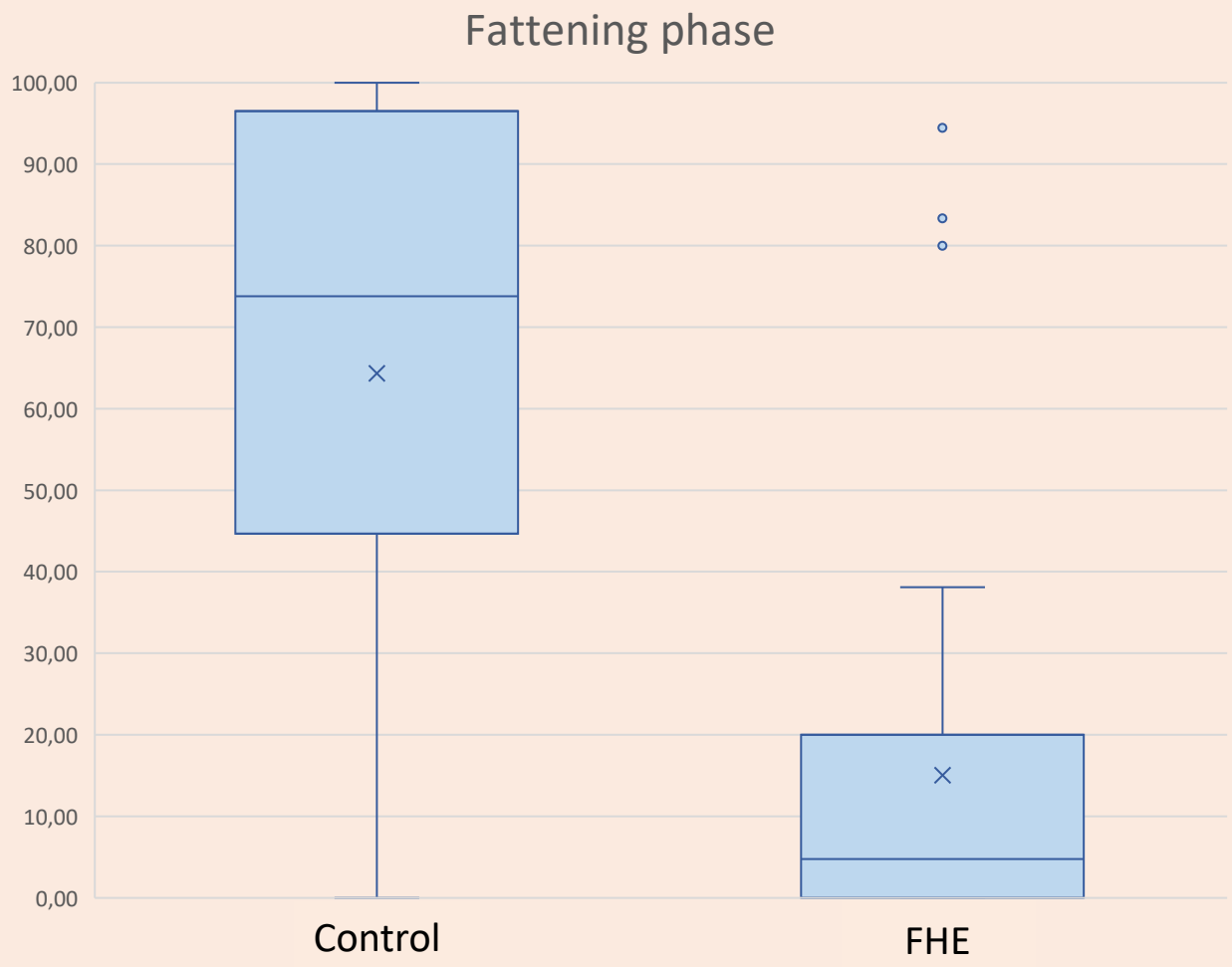

p=0,009

Discussion & Conclusion

- Fecal microbiome composition is very volatile and inconsistent over time
- Coughing/sneezing: promising first results but barely confirmed at slaughterhouse inspection
  - Assessment at slaughterhouse was not standarized & high variability/inconsistency between vets can be expected
- Tail:
  - Tail injuries vs. tail length: tail length more representative indicator?
  - Cumulative or time effect of FHE?

FHE is not the sole solution to all problems BUT a potential contribution to keep more animals with intact tails

Many thanks to all the farmers, Katharina Schobersberger, Daniela Kottik, Luzia Bauer, Valerie Chorherr and all financing bodies!

Literature

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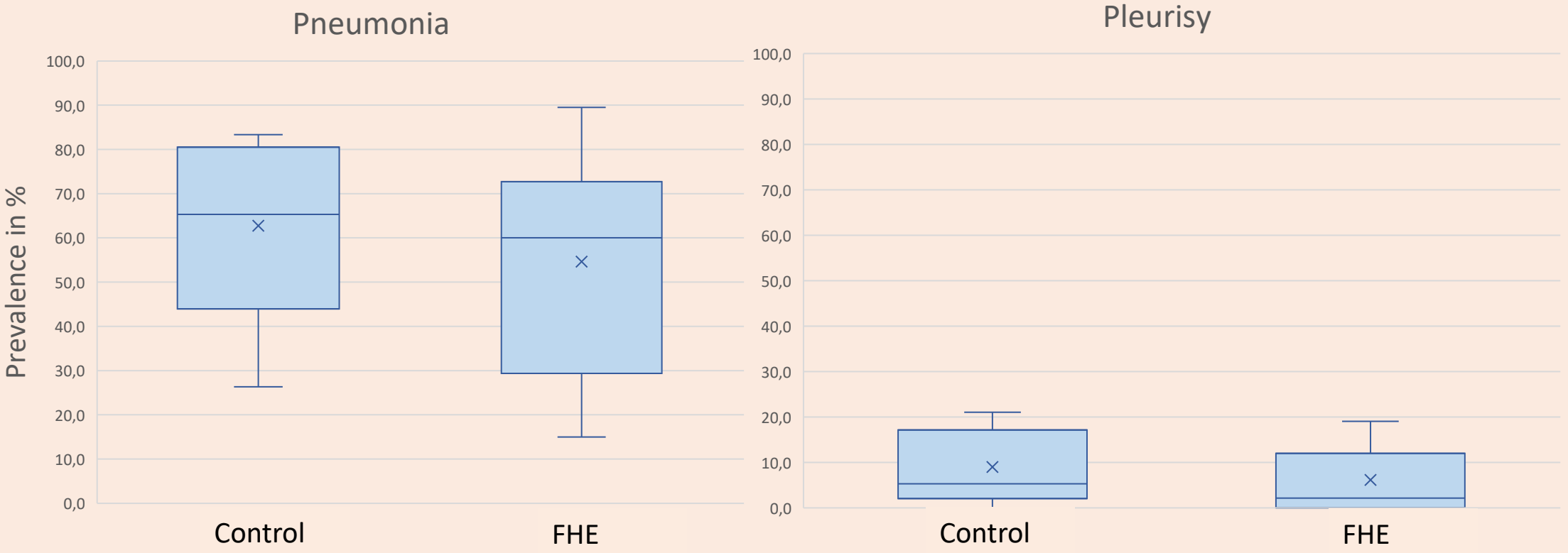
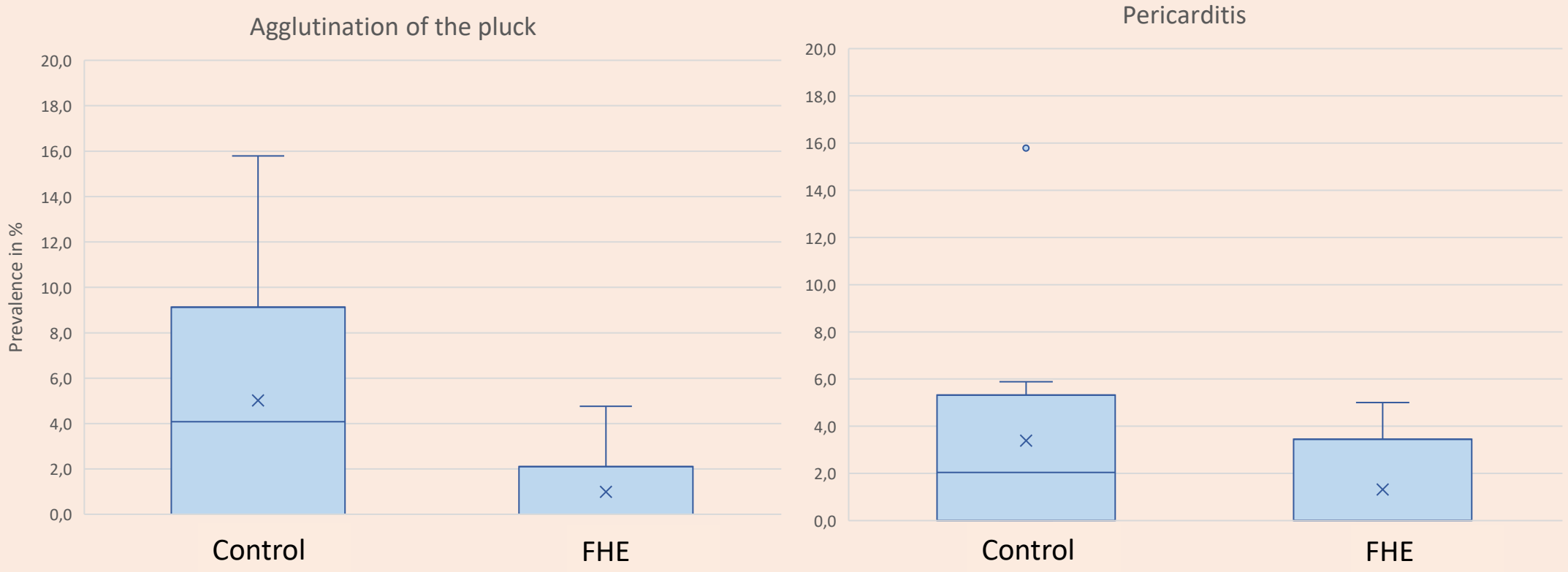
Pneumonia & pleurisy



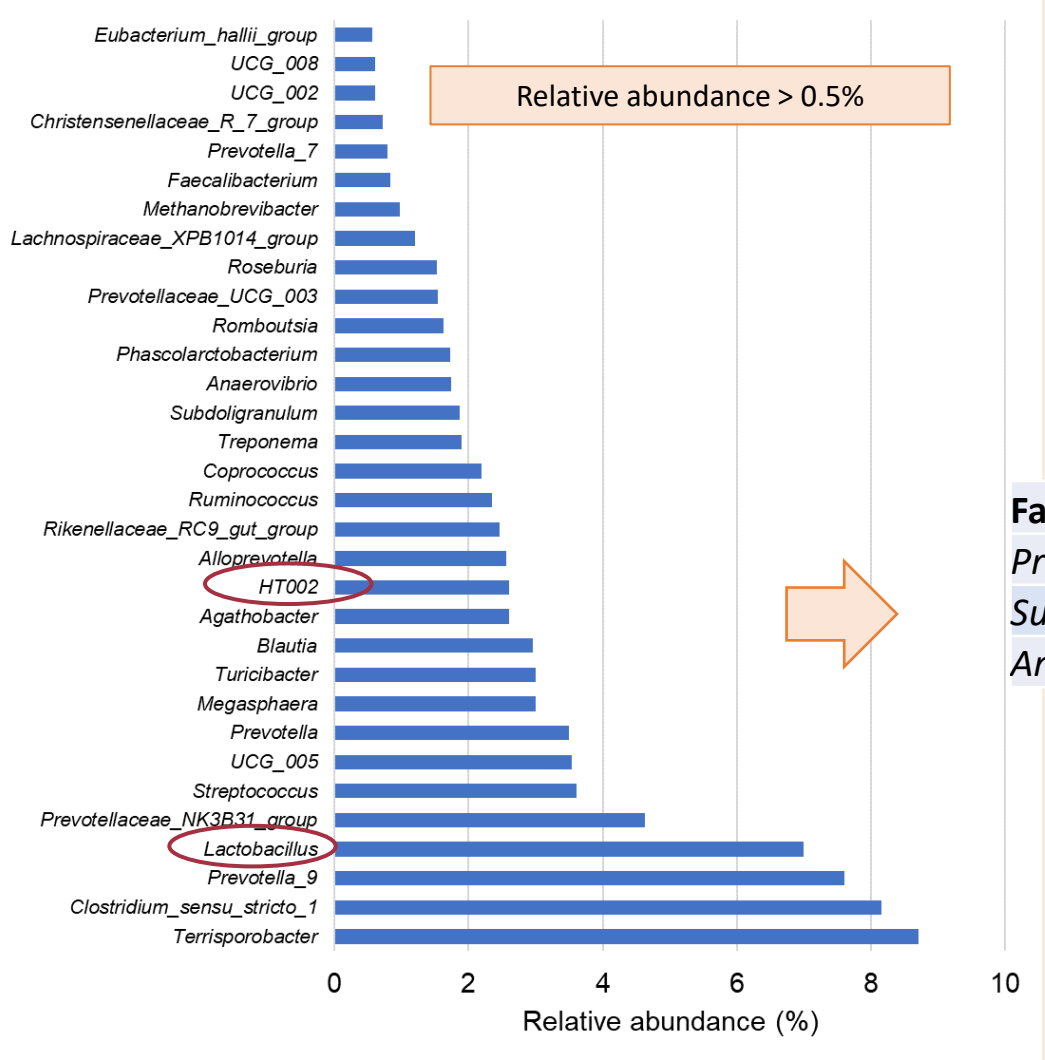
p=0,413

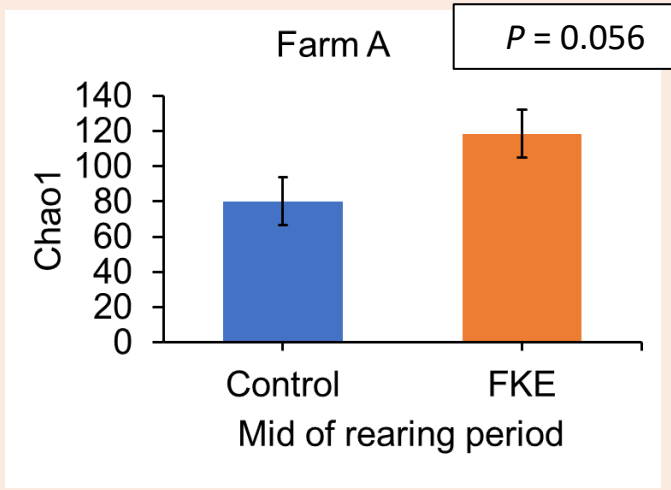
p=0,643

Pericarditis & agglutination of the pluck



FHE effects on bacterial composition





Trends for increased richness (Chao1) and diversity (Shannon)

Farm A	Age group	FKE effect	Significance level
Prevotella	1	↑	<0.1
Subdoliganulum	1	↓	<0.1
Anaerovibrio	1	↓	<0.1