



UNIVERSITY OF
HOHENHEIM



proBioHuhn

VARIATIONS IN THE GUT MICROBIOME OF THREE ORGANIC CHICKEN TYPES ACROSS DIFFERENT FATTENING PERIODS AND ENVIRONMENTS

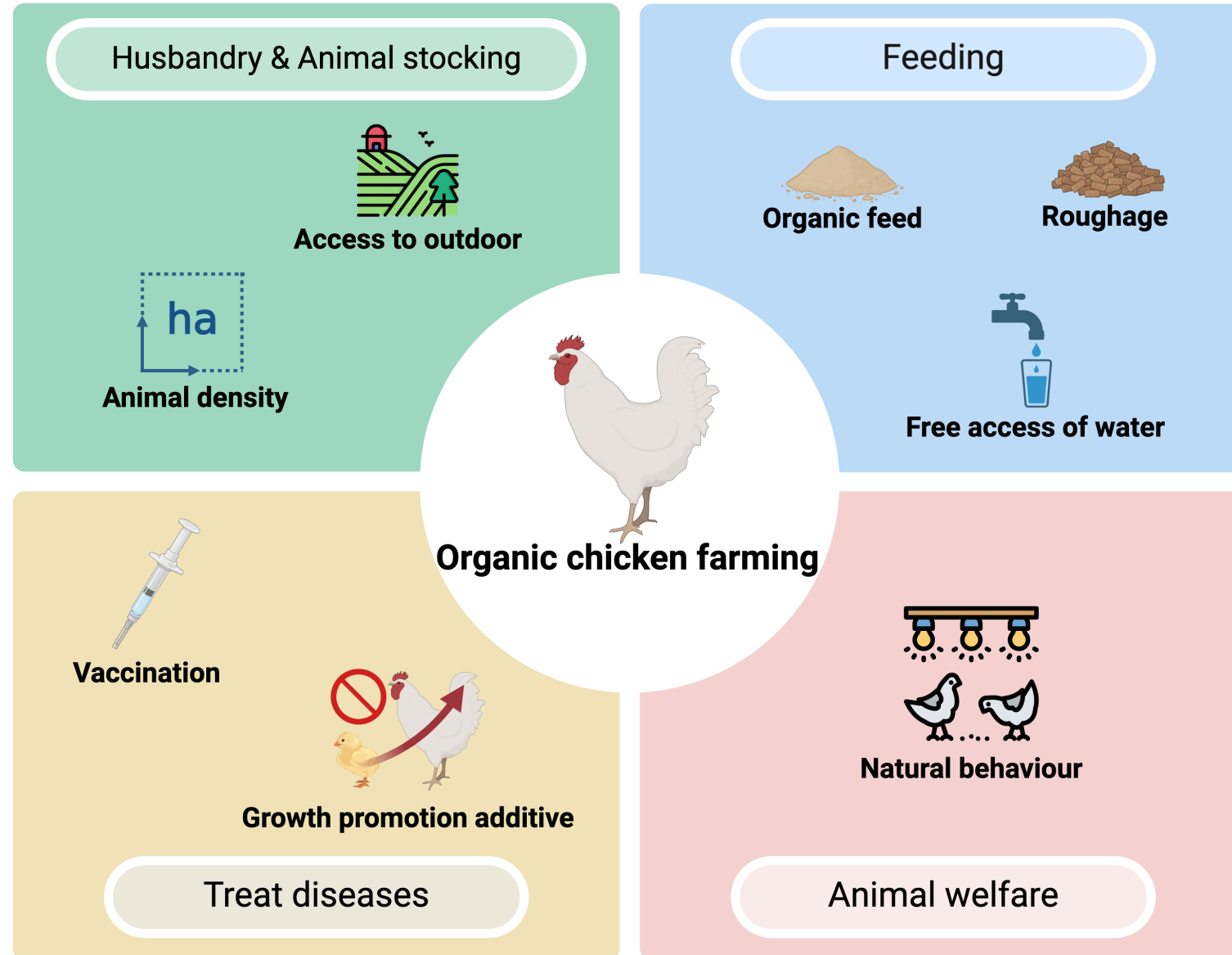
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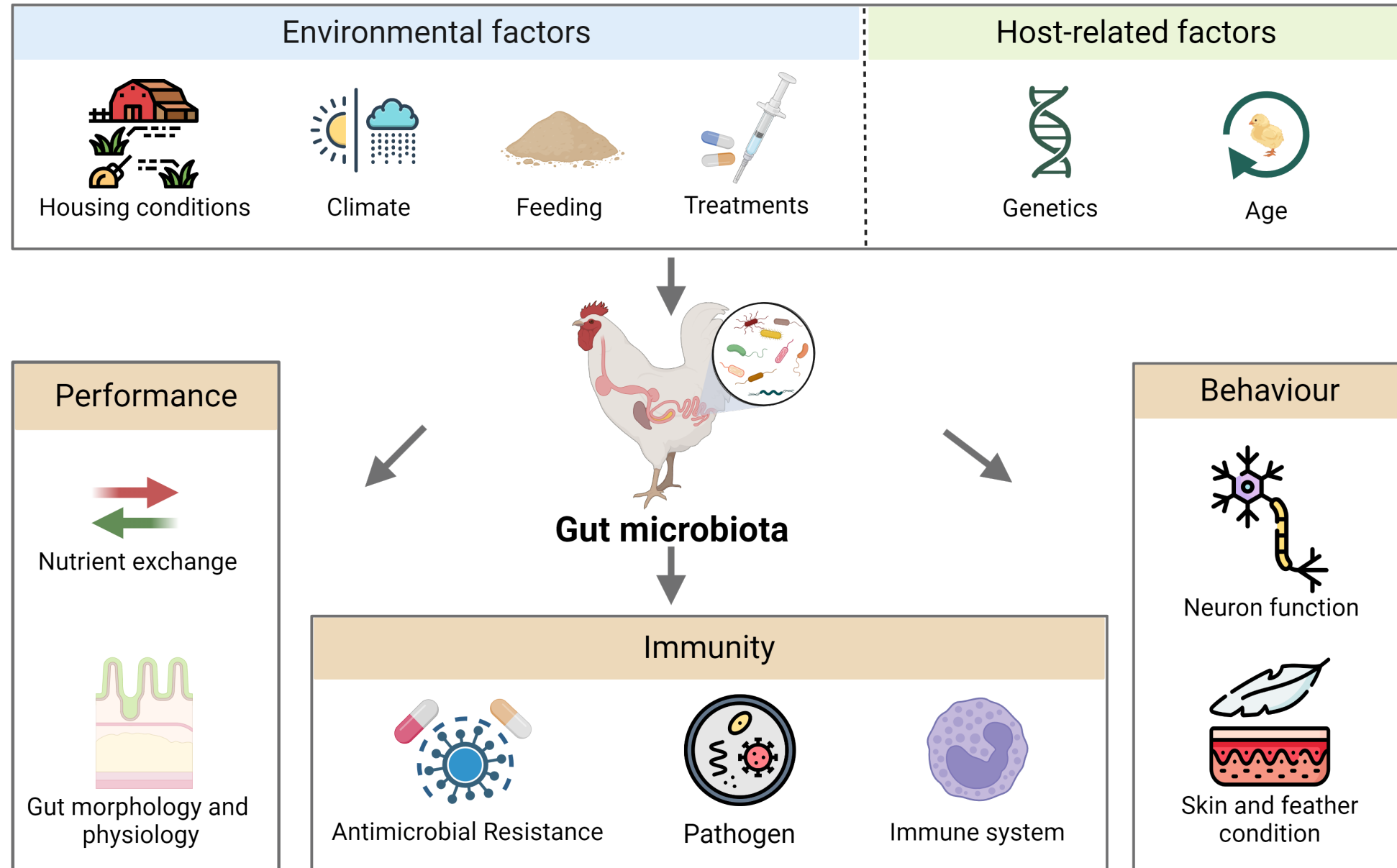
H o L M i R
Hohenheim Center for
Livestock Microbiome Research

ORGANIC CHICKEN FARMING REGULATION

Organic farming: Regulation (EU) 2018/848



GUT MICROBIOTA





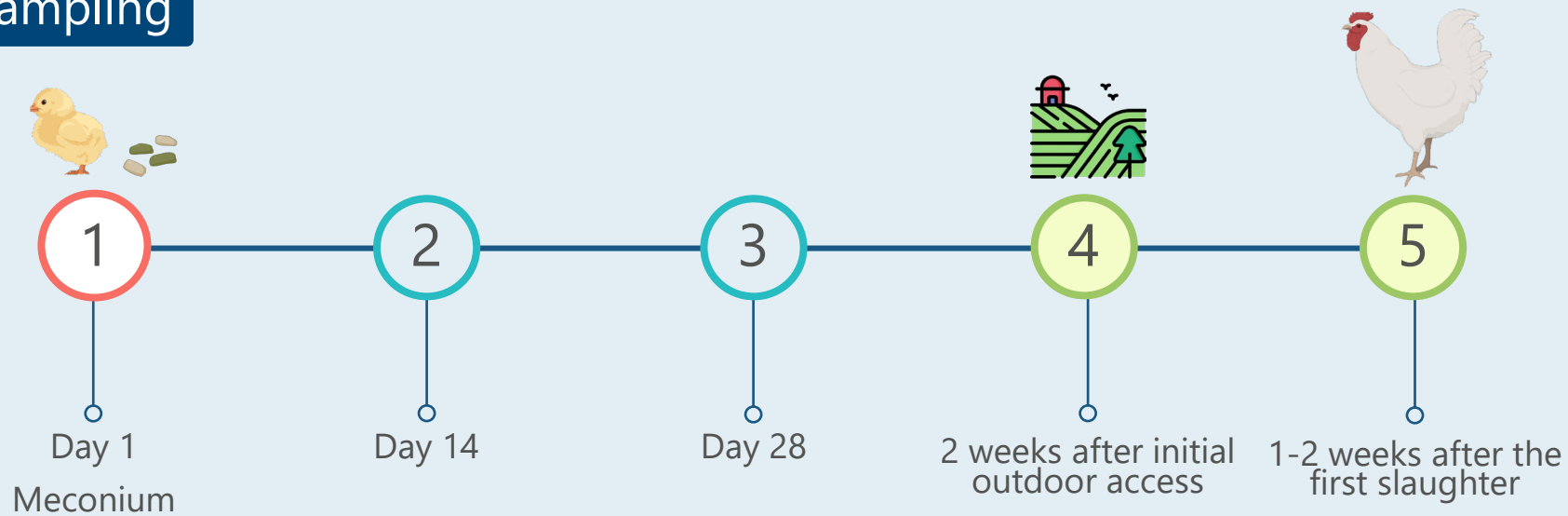
How the factors influence microbiota of organic chickens



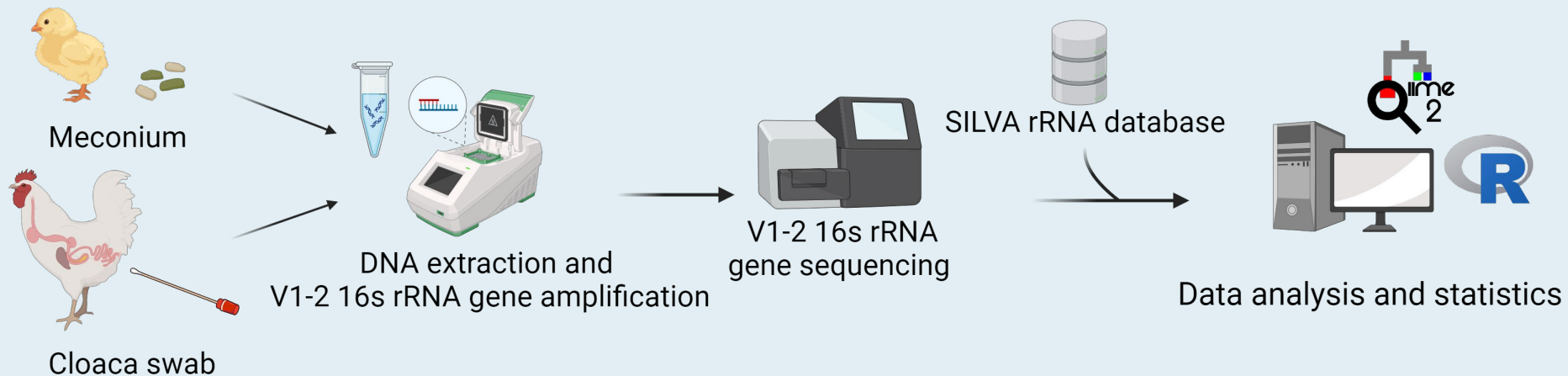
To investigate the microbial dynamics during the fattening period and environmental changes in organic chickens

MATERIALS & METHODS

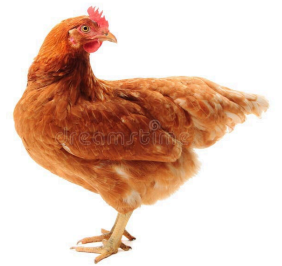
Sampling



Microbiome analysis



ISA JA 757

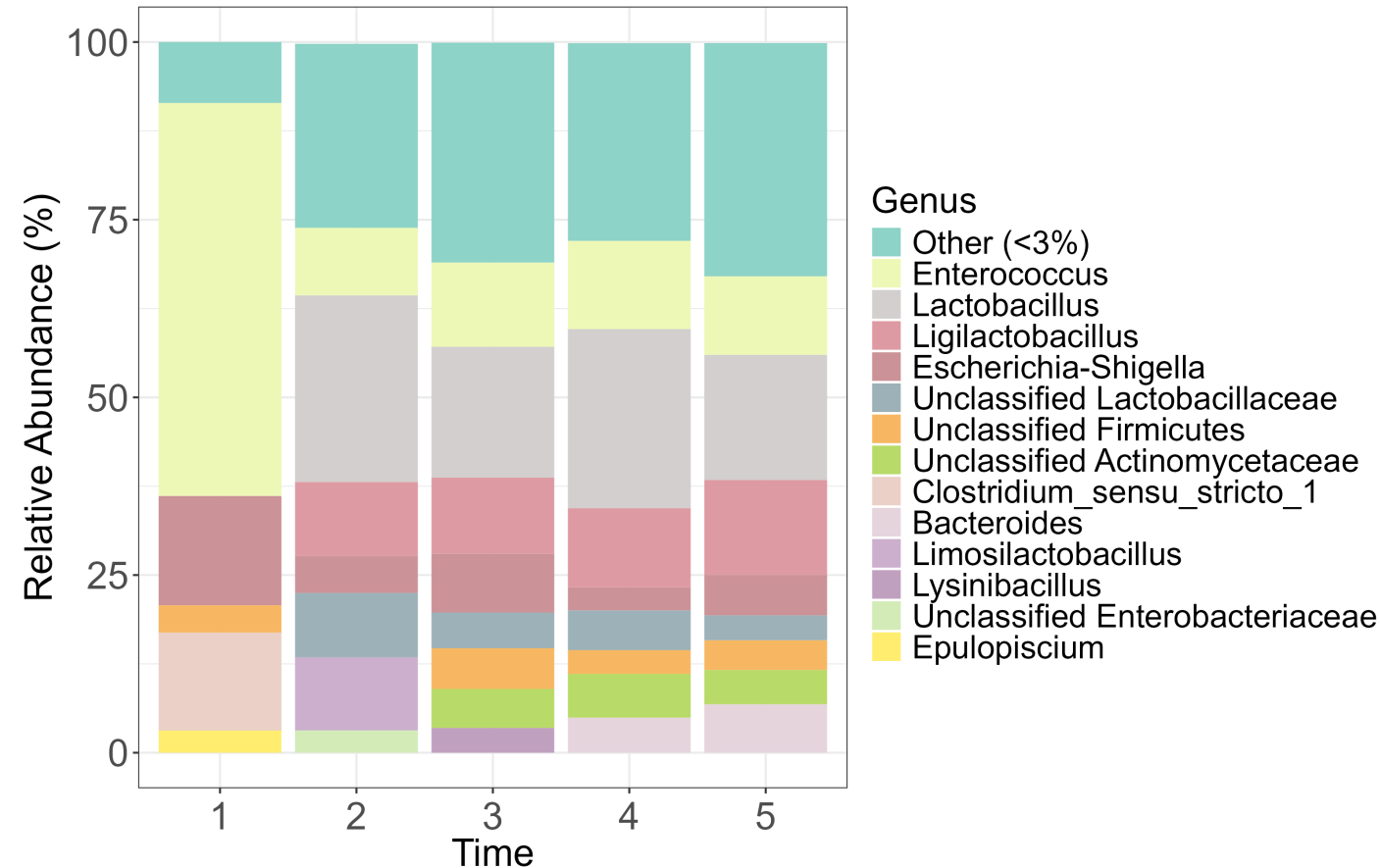
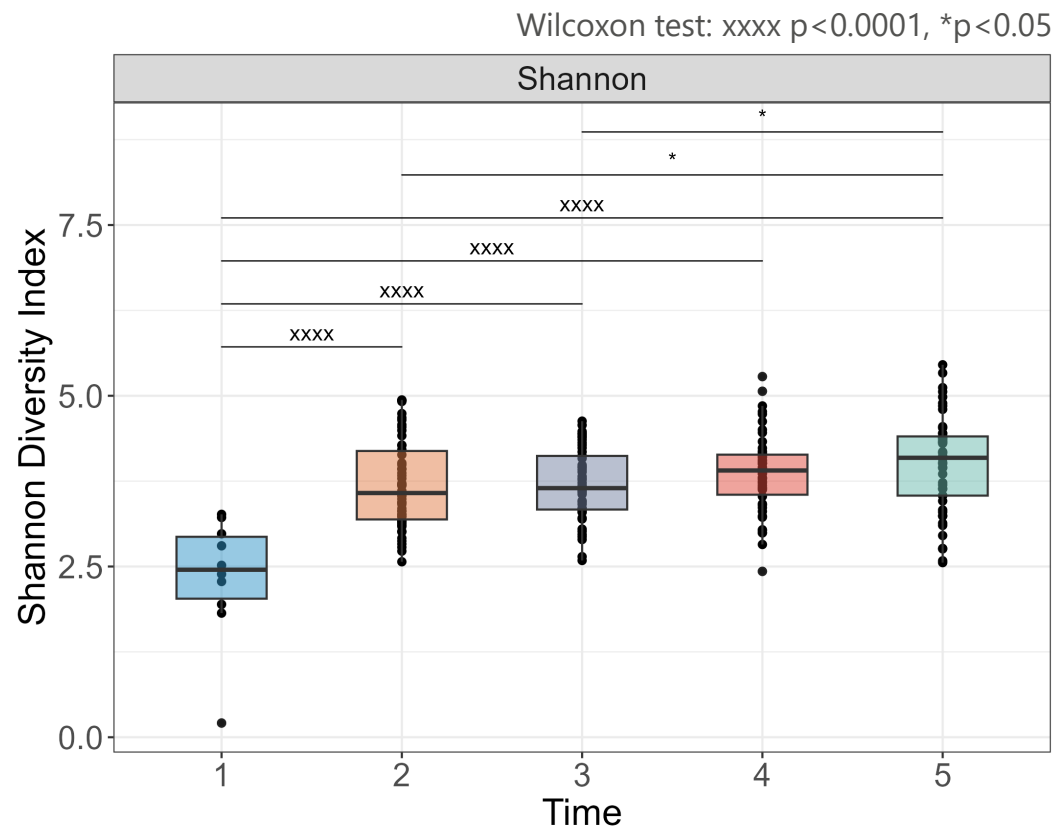


Lohmann Brown Plus



ÖTZ Coffee & Cream

DIVERSITY AND MICROBIAL COMMUNITY

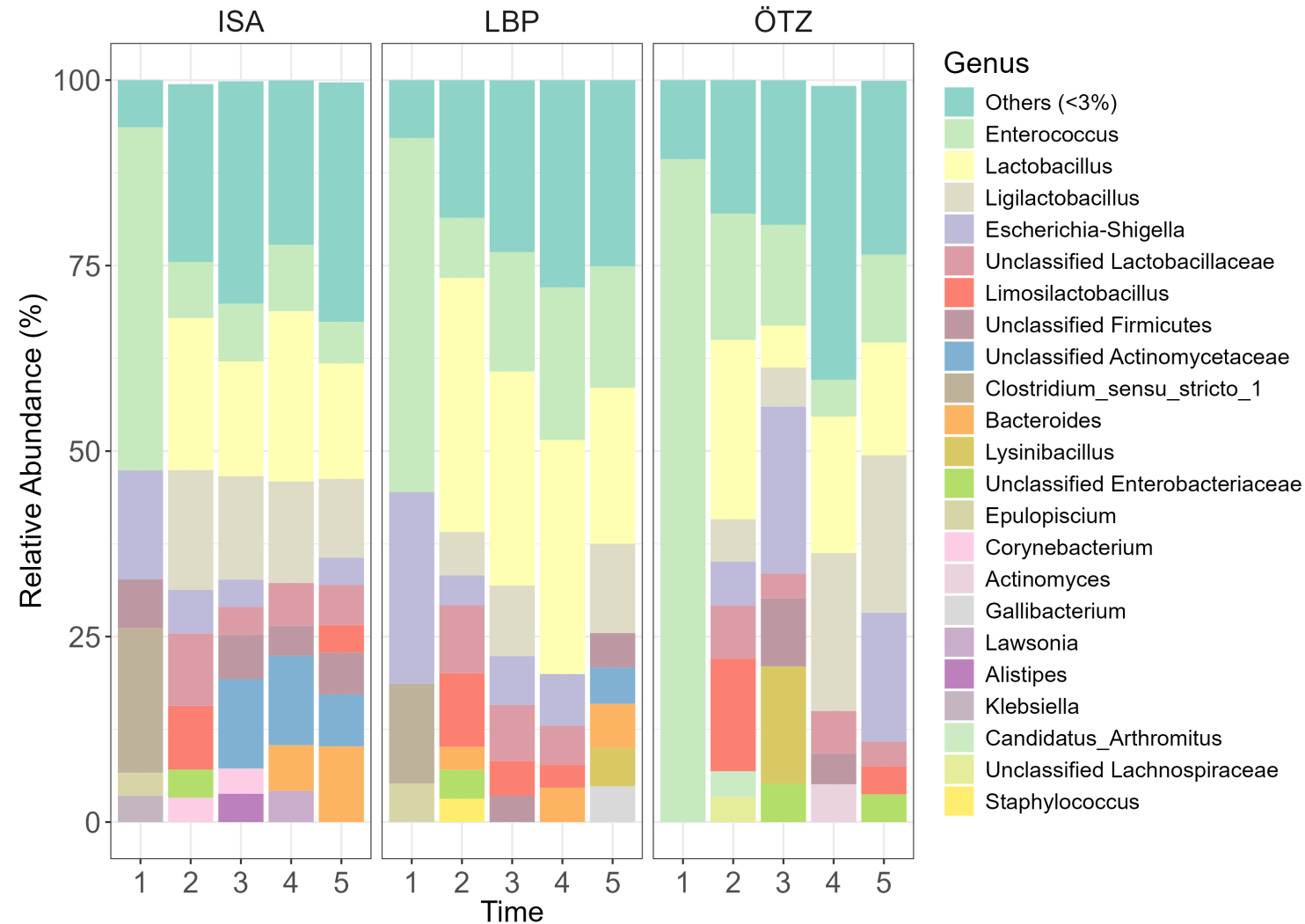


- T1 has lower α -diversity than other time point
- *Lactobacillus* and *Ligilactobacillus* became the predominant genera after T2
- *Bacteroides* increased after accessing outdoor (T4)
- Unclassified Actinomycetaceae and Firmicutes increased at T3

MICROBIAL COMMUNITY

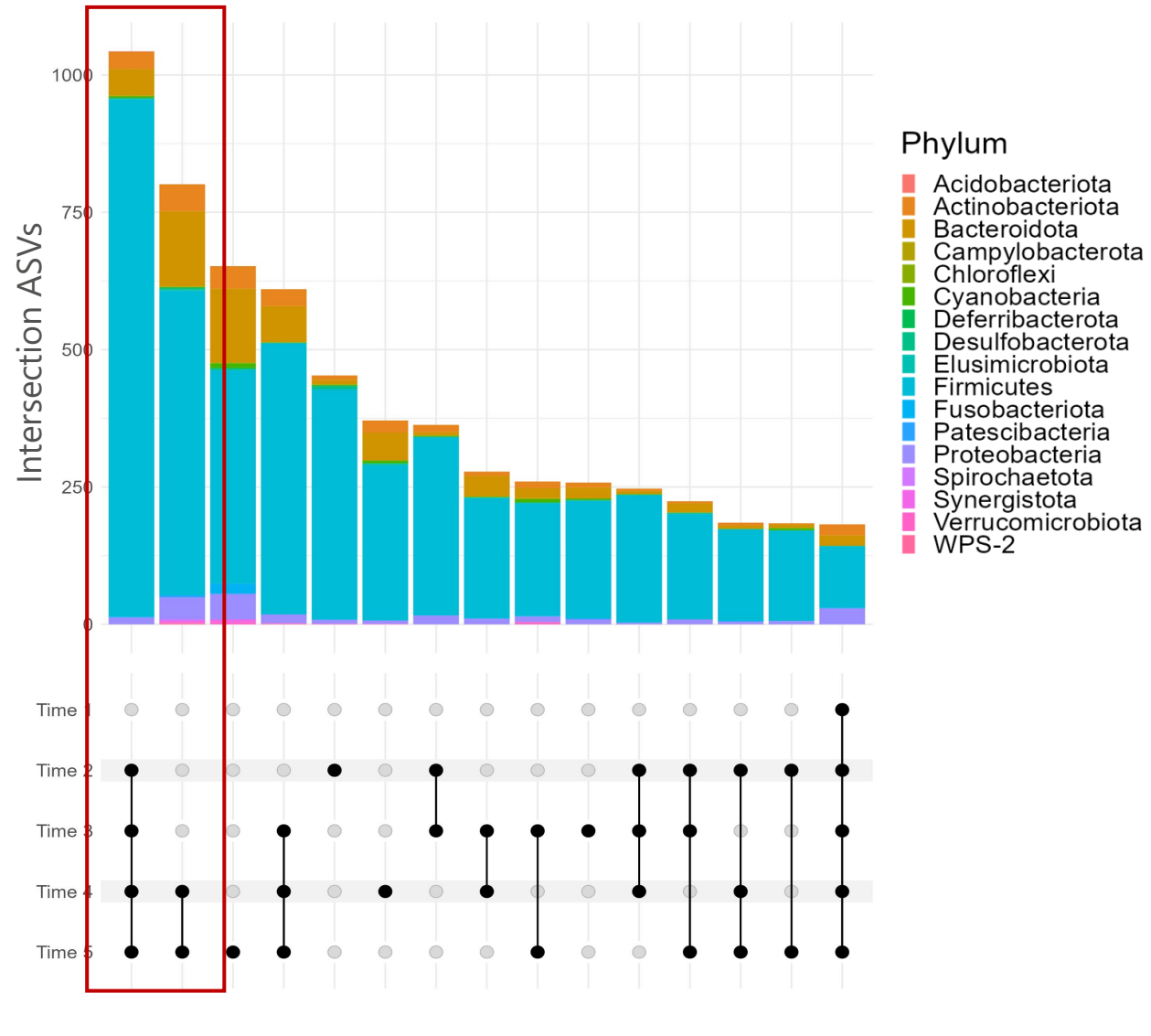
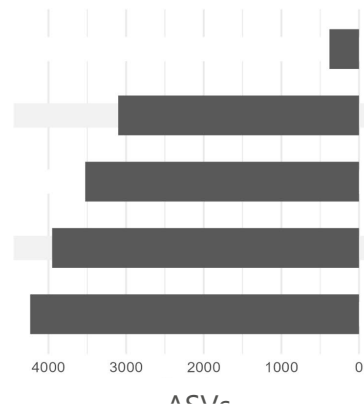
- Time and environment drive significant changes in the microbiota
- No significant traits found between fattening type

More samples are needed for further investigation



MICROBIAL INTERSECTIONS

- After T2, most similar ASVs appeared, which continued to be present throughout the lifetime.
- There are unique ASVs appeared when chickens reached the outdoor
- The number of features gradually grew over time



There are temporal changes and environmental effects on the microbiome

CONCLUSION

- Meconium has lower α -diversity and a different microbiota profile compared to the other samples
- At T2, *Lactobacillus* and *Ligilactobacillus* became the dominant genera
- At T4, the relative abundance of *Bacteroides* increased
- Age and environment are strong factors that affect the microbial community

Future work

More sample replicates and data are needed to investigate the dynamic changes and the microbiome trait of fattening types

ACKNOWLEDGEMENTS



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Partner **proBioHunn**

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V E R S I T Ä T

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THANK YOU

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