



UNIVERSITÀ
DEGLI STUDI
FIRENZE

DAGRI
DIPARTIMENTO DI SCIENZE
E TECNOLOGIE AGRARIE,
ALIMENTARI, AMBIENTALI E FORESTALI



SIMTREA



Summer School on “Animal gastrointestinal microbiome (foregut, midgut and hindgut): exploring the relationship between microbial communities and fatty acids”, June 19-23, 2023, Florence, Italy

The study of the animal gastrointestinal microbiome and its metabolism plays an increasingly fundamental role in developing sustainable farming techniques and improving the quality of food of animal origin. Animal gastrointestinal fermentation can be studied by both performing *in vivo* feeding strategy and *in vitro* tests. Furthermore, thanks to the development of new-generation technologies for the sequencing of nucleic acids, the opportunity has opened up to characterize in detail the microbial communities involved.

The related issues will be explored through theoretical lessons and exercises with the support of material provided by the teachers. Students are required to bring their own laptop for practical exercises. The covered topics will concern animal gastrointestinal metabolism, focusing attention on the pathways of lipid biohydrogenation (as a marker of microbial community activity), with the preparation of *in vitro* fermentation tests and the analysis of the fatty acid profile of rumen fluid. Techniques for analysing bacterial communities through sequencing of the 16S rRNA gene and shotgun metagenomics will also be discussed. Lectures and practical classes on metagenomics and fatty acids data analysis will be held at the School of Agriculture of the University of Florence by international Research Experts with consolidated research experience in Animal Science, Animal Nutrition, Gas-Chromatography, Omics Techniques, Computational Data Analysis, Statistics, Microbial Ecology and Microbiology.

The course is offered to twelve (12) young researchers i.e. PhD students or postdocs.

Course registration, coffee breaks and accommodation costs for participants are already covered by SIMTREA, ASPA and ALL-IN project funding. The 12 participants will be accommodated at a University residence for students or in a hotel in Florence (double room).

For SIMTREA and ASPA participants touristic tax, travel costs and meals are not included.

Successful applicants will be selected on the basis of their CV and a research motivation statement.

The Summer School organizers acknowledge the financial support for this project provided by transnational funding bodies, partners of the H2020 ERA-NETs SUSFOOD2 and CORE Organic Cofund, under the Joint SUSFOOD2/CORE Organic Call 2019