

UNDERSTANDING THE ROLE OF HOST PATHOGEN INTERACTIONS AND THE IMPACT OF MANAGEMENT SYSTEM ON THE DEVELOPMENT OF ANTIMICROBIAL RESISTANCE IN BRAZILIAN LIVESTOCK SYSTEMS

The hypothesis of this trial is to verify if there are differences associated with system and agro ecological zone in terms of the prevalence of AMR. Dietary and management interventions (such as tannins) might alter the microbiome of the host animal to alter its level of AMR. To test this, we would sample faeces from beef animals of different ages from a range of different systems and agro ecological zones. The faecal samples will be analyzed for functional metagenomics of AMR (at CENA), microbiome composition by 16S RNA (at UoR) and fecal culturing to determine phenotypic AMR (at CENA). Forage samples would be taken for analysis of chemical composition and secondary plant metabolites/bioactive compounds by NMR (at UoR). From those data, we will determine which agro ecological zones/ systems would be associated with high or low prevalence of AMR. In the second phase, in more controlled studies, we would then aim to alter the microbiome of the high AMR animals to mirror those of the low AMR animals. At this point, we would also investigate the range of AMR associated with soil microbiome in different regions.

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ABOUT THE PROJECT

FAPESP Process 2017/50451-0

Term: Aug 2018 to Jul 2019

Regular Research Grant

UKRI – BBSRC (Newton Fund)

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