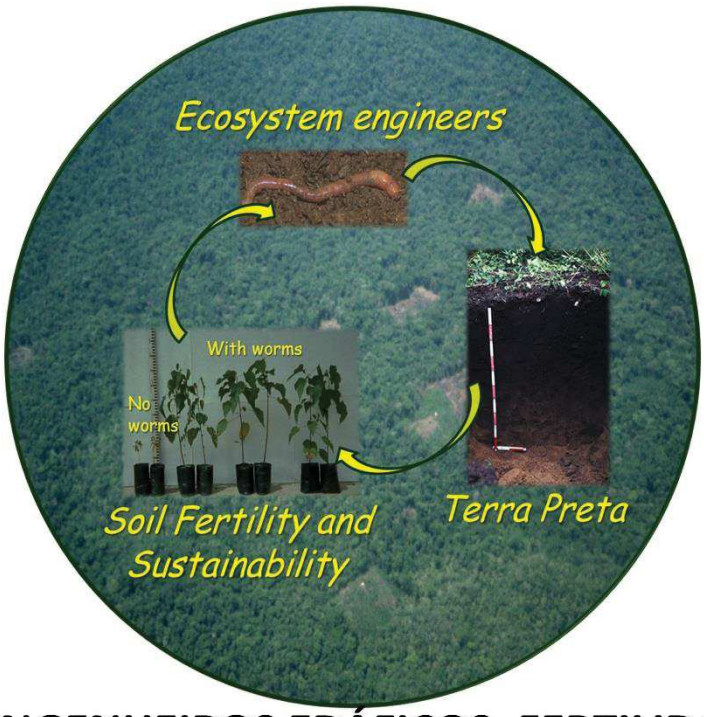
PROMOÇÃO E ORGANIZAÇÃO:

5º ENCONTRO LATINO-AMERICANO DE ECOLOGIA E TAXONOMIA DE OLIGOQUETAS

ELAETAO

08 e 09 de junho de 2015



SIMPÓSIO ENGENHEIROS EDÁFICOS, FERTILIDADE DO SOLO E TERRA PRETA DE ÍNDIO (TPI)

10 e 11 de junho de 2015

APOIO:

A Metagenomics Approach Towards the Understanding of Earthworm-Microbe Interaction in Sugarcane Rhizosphere

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RESUMO - Not only earthworm burrows, casts and gut are hotspots for microbial activity. We show here that the impact on soil-borne microbes can be extended outside drilosphere. In a realistic proportion we joined agricultural soil, sugarcane, earthworms and straw and applied next-generation sequencing (Illumina-MiSeq; whole community shotgun) to track these interactions in bulk soil and rhizosphere from macrocosms. In our results, *Bacteria* growth was stimulated in bulk soil from worm-plant system and *Alphaproteobacteria* increased its relative abundance (qPCR). *Opitutae* appears to be inhibited by earthworms in plant-straw-earthworms system. In this systems we also observed stimulated growth for *Bacilli*, *Methanopyri*, *Thermomicrobia* and *Betaproteobacteria*. While in rhizosphere, on plant-straw-earthworms system, worms increased *Opittae* and *Thermomicrobia* and reduced drastically the abundance of *Archaea*. Concluding, they were capable to modulate soil microbial community in bulk soil and in rhizosphere and their impact can be different according to straw presence. Our contribution outlines also the possibility of detecting earthworm-microbes interactions in metagenomic datasets. Exploring more deeply this interaction may help to improve knowledge towards increasing our capacity to use natural resources more efficiently in agricultural systems.