TLP-195. Analysis of the rhizospheric microbial community of common bean resistant to soil pathogen

Lucas William Mendes, Rodrigo Mendes*, Siu Mui Tsai**

**Centro de Energia Nuclear Na Agricultura, Universidade de São Paulo Brasil.*

Introduction. The rhizosphere is considered one of the most dynamic interfaces of the world, constituting a hot spot of microbial activity. The rhizospHere microbiome plays a key role in the plant functioning, influencing its physiology and development. Although the importance of rhizosphere microbiome for plant growth has been widely known, for the vast majority of rhizospHere microorganisms there is no information. To enhance plant growth and health, it is essential to know which organisms are present in the rhizosphere and what they are doing. In this study it will be selected bean materials with a gradient resistance to the pathogen *Fusarium oxysporum*, in order to understand how the host plant differentially shapes the structure of the rhizosphere microbiome.
Materials and methods. This proposal aims to assess the microbial community inhabitant of the rhizosphere of common bean to identify potential groups that support the plant in the protection against the soil pathogen. For this, cultivars resistant and susceptible to the pathogen will be grown in greenhouse experiments and the community will be assessed through classical microbiology approaches and molecular biology. Initially, isolation and antagonism tests will be carried out to detect groups that promote protection of the plant against the fungus. After, the structure and diversity of microbial communities will be characterized by high-throughput sequencing and then compared to detect differences between the rhizosphere community of the resistant and susceptible plant.
Results. The results will provide information to understand the changes in the rhizosphere microbiome driven by the resistance of the plant to the pathogen, and what the relationship of microorganisms in this process.
Conclusions. Considering the importance of soil microorganisms in biogeochemical cycles, as well as in plant-pathogen interaction, the approach of a study focused on microbial ecology is urgently needed for the development of new methods that promote the health and growth of plants.