Post-Doc position at Laboratory of Plant Molecular Physiology of the Department of Plant Biology, Institute of Biology, University of Campinas (UNICAMP), Brazil

A Post-doctoral fellowship position is open in the Thematic Project “Phosphorus use efficiency in Eucalyptus and the physiological and genetic mechanisms involved” coordinated by Prof. Paulo Mazzafera (UNICAMP, Brazil) and granted by São Paulo Foundation (FAPESP). We are looking for researchers with previous and solid experience in plant biochemistry and gene expression to study root-shoot signaling in eucalypt plants contrasting for P use and acquisition. For those studies grafted and non-grafted plants will be used as well as plants modified by stem girdling, in which a strip of bark will be removed. The post-doctoral researcher will work on data generated from hormone analysis and perform gene expression experiments planned to elucidate hormone signaling between roots and shoot.

Fellowship information can be obtained at:

http://fapesp.br/en/postdoc

Please, to apply send CV, names of three references and a letter of intent to Paulo Mazzafera (pmazza@unicamp.br) until 15th February 2020.

ABSTRACT of the main project: Phosphorus (P) is one the three essential minerals found in greatest abundance in plant tissues. It is part of the molecule of ATP, RNA and DNA, membrane lipids and various other molecules without which plants do not live. Phosphate rocks are the main source of phosphate fertilisers used in agriculture and the deposits are finite. This, along with the fact that P in the soil is little available to plants, due to its chemical interactions, makes it necessary to maximise the efficiency of P use by plants. The present project aims to understand the physiological and molecular mechanisms of P uptake and remobilization in eucalyptus and how the plant’s endogenous phosphate concentration interacts with its root symbioses and the rhizosphere microbiota. Eucalyptus is an important crop in Brazil, with significant economic impact in several regions. The genetic diversity of more than 20 species of the genus will be investigated, initially seeking two groups among those species responsive to P supply, efficient species and species not efficient in absorbing soil P. That is, both groups will have species that respond to the sufficiency of P (fertilization), but they will be different in the ability to acquire P from the soil under conditions of deficiency. Afterwards, experiments other 8 experiments will evaluate the growth and architecture of the roots, gene expression of the network that regulates the absorption, transport and remobilization of P in the plant, analysis of the associated microbiota, with interest in mycorrhizas, P uptake kinetics, metabolome of roots, biochemistry responses of the roots, soil enzymes, quality of the eucalyptus wood.