

Post-Doctorate Fellowship in Oxidative Stress induced by nanoparticles in soybean

Project title: Antioxidant stress responses of soybean plants grown in the presence of NPs.

Supervisor: Prof. Ricardo A. Azevedo, Esalq-USP, Brazil

This Post-Doctoral project emphasizes the soybean oxidative responses to nanoparticles (NPs). Several aspects of involving biometric parameters and physiological/biochemical analyses will be employed. Analytical chemical analyses will also be part of the project and performed in collaboration with other members of the project. The researcher will work closely with a group of biologists, agronomists and others work on analytical chemistry. This analytical project is integrated within a broader multi-disciplinary consortium project, funded by FAPESP, entitled “Nanometallomics applied to soybean cultivation and the effects of nanoparticles related to a range of metals”.

The appointee will investigate control and NPs treated plants with the following objectives:

(1) Level of stress based on the production of malondialdehyde (MDA), a known stress marker and the production of ROS; (2) The activity of key enzymes of the antioxidant system such as superoxide dismutase, catalase, ascorbate peroxidase, guaiacol peroxidase, glutathione reductase, and eventually others that might be interesting to study based on the initial results with these selected enzymes. These enzymes will be analyzed by non-denaturing PAGE so that all isoenzymes for each enzyme can be individually screened; (3) Glutathione and ascorbate, and eventually other non-enzymatic antioxidant will also be investigated. (4) Quantification of metals and eventually other metabolites and micro- and macro-elements.

A background in developing transdisciplinary work, as well as a track record of publication in international journals, is required. Proficiency in oral and written English is essential. The fellowship is for two years initially and possibly extendable for a third year. The PDRA will be based in Brazil at the University of São Paulo, Esalq, Piracicaba. The monthly salary is the equivalent to ca. Brazilian real R\$ 7.373,10 free of tax while in Brazil. Full details can be found at: <http://www.fapesp.br/en/5427>

Send your Curriculum until November, 30th for evaluation to Prof. Ricardo A. Azevedo – ESALQ-USP. Email: raa@usp.br

Consideration and decision will be made by the group leaders of the “Temático” Project