UMR Eco&Sols - Ecologie Fonctionnelle & Biogéochimie des Sols & Agro-écosystèmes

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DSCATT
Agricultural Intensification and Dynamics of Soil Carbon Sequestration in Tropical and Temperate Farming Systems

Post-doctoral position

Comparing root biomass, architecture and traits of young Black Locust grown in alley-cropping agroforestry and plantation agroecosystems

We are looking for a young researcher for a postdoctoral position who will work on improving the understanding of belowground C sequestration in temperate agroforestry agroecosystems. This work is part of the DSCATT Project which aims to explore the potential for sequestering C in cultivated soils, considering the sustainability of agricultural practices in the context of global changes (https://dscatt.net).

Research area:
The post-doc will contribute to assess the major role played by tree roots in belowground C stocks in agroforestry systems. The experimentations will take place at the experimental platform DIAMS (Mauguio, 10 km from Montpellier) and will aim at (i) describing the root architecture of young Black Locust trees (5 years old) leading to the characterization of the different root types, (ii) assessing its root biomass according to soil depth and distance to tree and (iii) specifying its main root traits. The impact of management practices i.e. cropping alley versus tree plantation will be compared. Root traits will be related to soil characteristics considering the whole soil rooting profile. Experimental design will be set up to follow the dynamic of C entering into the soil through Black Locust roots and taking into account the herbaceous cover associated with the trees. Root growth dynamics, exudation and turnover will be also measured through scanners and root windows already set up in the field site. This study will contribute to assess the detailed C balance of the considered experimental site.

Required qualifications and skills:
We seek a committed person who preferably possess the following professional and personal qualifications:

- PhD degree in Soil Science, Agronomy or related area
- Knowledge in root and soil processes

- Experience with field experimentations, belowground particularly. Knowledge of plant and soil simulation models would be appreciated.
- Experience with statistical analyses of experimental data
- Willingness to collaborate with others as part of a multi-disciplinary research team
- A proven record of research publications in peer-reviewed international journals

The candidate must possess good communication skills. Furthermore, we are looking for a responsible and social person who can support and contribute to a good working environment.

Place of Work and employment conditions:

The post-doc will integrate the UMR Eco&Sols (https://www.umr-ecosols.fr) and an interdisciplinary team working the experimental site DIAMS. The post-doc position is for 12 months and could be extended to 24th months. The post-doc will be employed by INRAE (UMR Eco&Sols) in the framework of the DSCATT project.

Net salary: Around 1800 euros/month up to 2200 euros/month depending on experience. All social security and pension contributions are included in the gross salary.
Further information on the position may be obtained from Isabelle Bertrand (isabelle.bertrand@inrae.fr); Jerome Ngao (jerome.ngao@inrae.fr); Christophe Jourdan (christophe.jourdan@cirad.fr)

To apply:

Application to be sent prior to January 31st , 2022 by e-mail only to isabelle.bertrand@inrae.fr; Christophe.Jourdan@cirad.fr; Jerome.ngao@inrae.fr

Please apply only if you have the requested skills, and send the following information to the email addresses above:
– A letter of interest
– Your CV including publications
– The names and contact addresses of two referees.