Postdoc position (soil microbiology, soil nutrients cycling, plant physiology, plant metabolism) to investigate the modes of action of *Plantain lanceolata* in its ability to reduce Nitrogen (N) losses from agricultural systems (nitrate leaching and N_2O emission) through various mechanisms, including production of biological nitrification inhibitors and association with arbuscular mycorrhizal fungi.

The postdoc candidate will work within the bilateral Belgian-Swiss project "**PlantaGO**" funded by the WEAVE Program.

In the PlantaGO project (Biological nitrification inhibition by *Plantago lanceolata* to reduce nitrogen losses from agroecosystems) various plantain genotypes will be screened for their ability to influence nitrification rates. The best genotype candidates will then be tested in combination with ammonium-rich fertilizers (including organic fertilizers) after their incorporation to soil (to mimic plant residues incorporation). The work will consist in the fine screening of plantain genotypes using different plant and microbiological methods and will decipher the associated plant and soil mechanisms (including molecular mechanisms) that are responsible for the nitrification inhibition/reduction and will attempt to show how these effects are impacted by environmental factors. For this, different Nitrogen pools (microbial N, mineral N and emitted N_20) will be measured in lab and greenhouse experiments using various types of platforms (hydroponics and pot based). Microbiological bio-assays and molecular methods will also be used to assess nitrification inhibition potential of the isolated tissues and compounds. In addition, contribution of soil microorganisms to nitrification inhibition by plantain genotypes will be investigated with adapted greenhouse trials.

Research activities will be performed at the University of Brussels (ULB) in the Agroecology Lab of the Bioengineering Department of the Faculty of Science. The screening activities of the project will be performed in close collaboration with University of Liège Gembloux Agro-Bio Tech (Lab: Plant Genetics and Rhizosphere Processes).

The other partner of the PlantaGO project is based at the Soil Science Department of FiBL (Research Center of Organic Agriculture) in Switzerland.

Weblink of the host lab at ULB: https://www.agroecologie-ulb.net/prof-cecile-thonar

Lab reference publication on this topic: Jáuregui et al. 2023. An optimized hydroponic pipeline for large-scale identification of wheat genotypes with resilient biological nitrification inhibition activity. New Phytol. https://nph.onlinelibrary.wiley.com/doi/abs/10.1111/nph.18807

What we offer: an international working environment with multiple opportunities for scientific collaboration and mobility. Cutting-edge university facilities to perform research on soil processes. Training possibilities in the connected and relevant research fields including molecular biology and omics technologies. The successful candidate will also be involved in proposal writing and funding acquisition.

Profile The candidate should hold a PhD and have excellent demonstrated expertise as well as scientific publications in at least two of the following research fields: soil microbiology, soil nutrients cycling, plant physiology or plant metabolism. Excellent oral and written communication in English is required as well as coordination skills.

Appointment is for 3 years with the possibility of a 1-year contract extension.

Benefits: Net salary after taxes and social benefit costs is approximately 2600€/month and standard social/health benefits for temporary university employees.

Information and application: Prof. Cécile Thonar, Agroecology Lab, Free University of Brussels, Belgium (cecile.thonar@ulb.be). Application (CV, cover letter, copy of diplomas and **two** letters of recommendation (directly sent by the recommenders)) should be sent by Email to Cécile Thonar with "PlantaGO APPLICATION" in the subject.

Deadline for application: review of the applications will start on February 12th (deadline for the application) and the position will remain open until filled. **Starting date**: preferred starting date is April 2024 but possibility to postpone the start.

Project partners:

www.ulb.be

www.fibl.org

https://www.gembloux.uliege.be/