

Postdoc position (molecular biology, plant and/or soil biology, agronomy, plant phenotyping) to investigate plant and soil determinants leading to innovative nitrogen fertilization strategies in winter wheat.

The postdoc candidate will work within the project “**GAIN**”.

In previous experiments, various wheat genotypes were screened for their ability to take up nitrogen in the form of ammonium and genetic components responsible for this trait are being characterized. The selected genotypes must now be tested under field conditions to evaluate their compatibility with the strategy GAIN, with a secondary aim to adapt the approach to organic agriculture conditions. Further screening is also needed to identify genotypes from the Belgian wheat catalogue. The scientific activities will imply developing and implementing various bio-assays using microbiology, plant phenotyping (hydroponics and field) and molecular biology to better understand and exploit the mechanisms involved in ammonium nutrition. The recruited person is also expected to help in the overall coordination of the project.

Research activities will be performed at University of Liège, Gembloux Campus (35 min by train from Brussels (Belgium)) in an international established team (Plant Genetics and Rhizosphere Processes) with research focus on 1) improvement of crops and 2) soil and rhizosphere management.

The Faculty of Gembloux Agro-Bio Tech is a multidisciplinary and internationally-anchored faculty of the University of Liège (Belgium). The Faculty's infrastructures are diversified: from lab to field and forest and cutting-edge infrastructures such as the brand new Ecotron (https://www.terra.uliege.be/cms/c_4082747/en/terra-ecotron) are also available in the faculty to facilitate innovative research in agriculture and environment.

The other partners of the GAIN project are CRA-W (<http://www.cra.wallonie.be/fr/>) and the association Greenotec (<http://www.greenotec.be/>); both partner institutions collaborating on field trials as well as interaction with stakeholders. The project activities will also be coordinated with other ongoing research projects such as the ERA-NET Catch-BNI (<https://www.suscrop.eu/projects-second-call/catch-bni>) which aims at implementing innovative cover crop solutions to reduce nitrogen losses.

Weblink of the lab: <http://www.gembloux.ulg.ac.be/plant-genetics/>

Profile The candidate should hold a PhD and have demonstrated expertise as well as scientific publications in molecular biology, plant nutrition and/or soil ecology/biology. Excellent oral and written communication in English is required. French is a plus.

Appointment is for 2.5 years with possibility of contract extension.

Benefits Net salary after taxes and social benefit costs is 2250 €/month.

Information and application: Cécile Thonar, Plant Genetics and Rhizospheric Processes, Gembloux Agro BioTech, University of Liège, Belgium (cecile.thonar@uliege.be). Application (CV, cover letter, copy of diplomas and two letters of recommendation) should be sent by Email to Cécile Thonar with “GAIN APPLICATION” in the subject.

Deadline for application: reviewing of the application will start on December 23rd 2021 and the position will remain open until the position is filled. Starting date: early 2022

General abstract of the project (more information on request):

The project GAIN has the objective to offer multiple and innovative solutions for improved nitrogen fertilization management as well as weed control in order to reduce nitrogen losses and herbicide use in winter wheat cultivation systems. This multi-disciplinary project is particularly innovative by joining expertise from weed control, plant genetics, and soil and fertilizer biochemistry and has the objective to offer solutions compatible with both conventional and organic agriculture. It aims also to value the use of organic fertilizers produced on the farm. The implementation of the GAIN strategy could help reducing: 1) the herbicide use, 2) greenhouse gas emissions and 3) nitrates leaching in groundwater and could also improve the utilization efficiency of organic fertilizers at the field level. In order to identify ongoing and future practices as well as to facilitate dissemination of novel practices to mitigate nitrogen losses, a survey of wheat farmers has been conducted and will serve as a basis for the dissemination and translating tools.
