

With its work, the Leibniz Institute of Vegetable and Ornamental Crops (IGZ) contributes to a better understanding of plant systems and thus to the development of sustainable and resilient horticulture. The IGZ conducts research at the interface between plants, humans and the environment. In doing so, we address systemic and global challenges such as biodiversity loss, climate change, urbanization and malnutrition. We provide scientifically sound recommendations for healthy agri-food systems and sustainable interactions with the environment. The IGZ brings together a broad spectrum of scientific disciplines. Employees with different backgrounds conduct research in national and international research co-operations. The IGZ is based in Großbeeren near Potsdam and near Berlin and is a member of the Leibniz Association.

To contribute to the target of resource optimization in protected environment crop production through smart systems we look for an enthusiastic and ambitious

Scientist (f,m,div) in the area "Agricultural systems modelling of innovative P and N cycles"

Reference Number: 18/2024/4

The employment will be initially at the earliest from October 1, 2024 for a period of 15 months. The salary will be based on qualification and research experience according to the wage agreement TV-L, up to pay scale 13, full time. The position is suitable for part-time work with at least 32 hours/week.

The scientist will be part of the research group HORTSYS-Controlled environment horticultural systems. The main research in this group is aiming at resource-use optimised crop production. We use our research for environmental control and resource conservation in greenhouses and controlled environments. In the EU Horizon Europe project EcoNutri focusing on optimizing fertilizing strategies of P and N cycles in agricultural production systems, HORTSYS participates as WP-coordinator for systems modelling and environmental assessment within an international consortium of 36 partners throughout Europe and China. In that project, we use our expertise in systems modelling and environmental life cycle assessment to analyse three main innovations of the project, i.e. biogas-waste residues as fertilizer, cascade hydroponics with nutrient selective sensing, and microbial inoculate for enhancing nutrient uptake. For these innovations, explanatory (process-based) models will be developed and implemented to the simulator as sub-components. A Matlab-coded model-based simulator is used and extended with the aforementioned innovations. The model will eventually be used for simulation studies in the context of today's and future resource consumption and environmental assessments. This task is to be coordinated closely with our partner Agricultural University of Athens. Our innovation case-studies are located in Italy, Norway, Greece, Poland, and Portugal. As such, some travel activities are next to ongoing remote communication expected in this position. Data-based modelling work of the innovations has started and can be adopted by the applicant and transferred to process-based models.

Tasks include

- process-based mathematical modelling of agricultural systems
- simulation studies of modelled systems
- support for life cycle assessment on process (LCA) and product scale in cooperation with the project partner
- supervision of bachelor and master students
- active participation in the coordination and involvement of the EcoNutri project
- writing scientific publications and Presentation of results to the international project consortium and scientific audience

We are looking for highly motivated candidates with the following qualifications and profile

- a PhD with emphasis on systems modelling with horticultural or agricultural context
- strong background in process-based mathematical modelling of crop production systems in horticulture or agriculture
- knowledge of mathematical analytics and ability to translate processes to equations and to systems
- experience in systems modelling, preferably programming in Matlab
- experience or interest in LCA, preferably knowledge in SimaPro
- excellent organization and English language communication skills
- open, flexible and positive person, able to take the initiative
- readiness to integrate into an international working environment

We offer

- an inspiring and dynamic research environment, including state-of-the art research facilities
- possibility for career development in the field of high-technology crop production
- participation in a successful, dedicated and team-oriented research group
- flexible and family-friendly working time models and the possibility of mobile working (up to 50% of working time)
- a place of employment located close to Berlin and Potsdam
- subsidy for the company ticket for local public transport or the Germany ticket

More information on about the IGZ you can find under www.igzev.de. For questions, please contact: Dr. Oliver Körner (+49(0)33701 78 355; koerner@igzev.de)

We encourage a healthy work-life balance. The IGZ attaches great importance to equal opportunities. Applicants with disabilities will be given preference in case of equal qualifications. The IGZ embraces diversity in its workforce, and welcomes applications from all qualified candidates, irrespective of age, gender, sexual orientation, religion, world view, disability and belief or ethnic origin.

Please send your application including a strong motivation letter stating why this is an interesting topic for you and why you have the right expertise, your CV, copies of academic certificates, and the names of two references by email to bewerbung@igzev.de in pdf format by September 8, 2024. Our postal address is: Institute for Vegetable and Ornamental Crops, Theodor-Echtermeyer-Weg 1, D-14979 Großbeeren.