



The Leibniz-Institute of Vegetable and Ornamental Crops (IGZ) conducts research in a broad range of fields related to horticultural sciences in order to promote the sustainable production of vegetable and ornamental crops. Controlled Environment Horticulture, the cultivation of vegetables and ornamental crops inside structures such as greenhouses, is one focus of our institute. Within our research program "Horticultural Systems of the Future" and the new team "Protected Cultivation", we aim to contribute to the development of sustainable plant production systems in protected cultivation and improve crop quality.

Modern greenhouse systems turn into plant factories and are equipped with various commercially available sensors. Those types of sensors alone often say little about early plant physiological processes and actions are often too late. In that, climate control in a greenhouse or plant factory is either done preventive with large security margins or it runs behind and tries to heal damages caused. Damages to the physiological apparatus caused by plant stress, however, are known to be reversible up to a certain point, while mild stress can have positive effects on plants in terms of harvest product composition and other quality parameters. Decisions on actions to be taken are usually done from experience where commercially used standard sensor information is used. This, however, is very subjective and unsatisfying. A possible solution would be to combine data information from those sensors as e.g. temperature, humidity, wind speed and irradiation in the microclimate with plant physiological models to so called soft sensors supplying information about the underlying plant physiological processes. Decisions on actions based on that will form the decision support system (DSS) for 1) mild stress induction and 2) avoidance of non-reversible stress damages. As for scientific work high-tech sensor technologies were developed for measuring plant physiological responses more or less directly, such 'phenotyping' equipment can be used for detailed measurements of stress markers that eventually will be translated to soft-sensor/sensor combined DSS.

To contribute to the target of the team "Greenhouse Production Systems" on creating model based decision support tools to the optimum of plant stress and resource use efficiency in horticultural crop production in cooperation with Wageningen University (The Netherlands), we offer the position of a:

**PhD student in the area "Methods for mild and early crop stress handling"**  
**Reference Number 07/2018/4**

to join our team at the earliest possible date. The PhD student will be working at the IGZ site in Großbeeren (close to Berlin) and will be enrolled in the scientific program at Wageningen University, Horticultural Physiology Group. The employment will be initially for four years.

The salary will be based on qualification and research experience according to the wage agreement TV-L, salary domain east, up to EG 13 (65% of the regular working time).

Tasks include

- Design and execution of plant growth and lab experiments
- Data collection and analyses
- Modelling of crop physiological processes
- Creating decision support system bases
- Writing scientific publications to a compendium of a PhD Thesis
- Supervision of bachelor and master students
- Presentation of results to international scientific audience

We are looking for a highly motivated open minded candidate with the following qualifications and profile

- A Master (MSc) in horticulture, biology, environmental science, or a related field
- Working experience on plant production and/or horticultural crop production
- Experience of plant cultivation technologies and microclimate observations
- Experience in using measurement technology in plant science
- Working experience with data handling of large datasets

- Knowledge of mathematical analytics and ability to translate processes to equations/systems
- Experience or strong interest in modelling with Matlab, R or a related programming environment
- Interest in travelling and many short term and/or long term stays in Wageningen (NL)
- Knowledge of German is advantageous
- Excellent organization and English language communication skills
- Open, flexible and positive person, able to take the initiative
- Able to work independently and focused but in a team

We offer

- An inspiring and dynamic research environment, including state-of-the art research facilities
- An exciting international collaboration project between IGZ and Wageningen University of considerable fundamental and applied relevance
- A place of employment located close to Berlin and Potsdam

Please send a strong motivation letter stating why this is an interesting topic for you and why you have the right attitude and expertise to contribute to the project and make progress in this field. Also send your CV, copies of high school and academic certificates, names of up to three references and indicate your earliest possible starting date.

Contact: Dr. Oliver Körner (+49(0)33701 78 131; koerner@igzev.de).

IGZ is an equal opportunity employer. Handicapped people with equal qualifications will be employed preferentially. The IGZ wishes our staff to reflect the diversity of society and thus welcomes applications from all qualified candidates regardless of age, gender, race, religion or ethnic background.

Please send your application citing the reference number by 22 April 2018 to: Personalbüro, Institute for Vegetable and Ornamental Crops, Theodor-Echtermeyer-Weg 1, D-14979 Großbeeren or online in pdf-format to personal@igzev.de.