Post-doctoral fellow Micronutrient stress response

We are looking for a Post-doctoral fellow for the project "Identification of regulators of nutritional zinc content in plants", interested in studying the molecular genetic regulation of plant micronutrient stress responses.

Plant responses to nutrient deficiencies are still poorly understood. Particularly the understanding of the regulation of the homeostasis of micronutrients, such as Zn, is still in its infancy. Previously we cloned the first two transcription factors, bZIP19 and bZIP23, that control the initial response of Arabidopsis to Zn deficiency by binding to *cis*-elements in the promoters of target genes (Assunção et al., *PNAS* (2010) 107:10296-10301). They are part of a distinct family of bZIP proteins, characterized by a His-rich domain next to the conserved bZIP domain. Besides the target genes of bZIP19/23, there are several more genes of which the expression is induced upon Zn deficiency. These could be acting downstream of bZIP19/23, or in parallel to the bZIP19/23 controlled response. We are interested to understand the molecular regulation of Zn homeostasis and thus to identify additional regulatory components either acting next to bZIP19/23 or interacting with these factors.

The aims of this project are: 1) to establish the function of the His-rich domain in bZIP19/23 as a potential Zn sensor domain; 2) to further explore the role of these bZIPs in the Zn deficiency signal perception and transduction pathway; and 3) to identify additional components of this pathway. Identified crucial factors controlling Zn status of plants under Zn limiting conditions will be used to engineer plants for improved Zn deficiency tolerance and Zn content.

The post-doc is expected to design and perform the scientific research needed to reach the described goals. Part of this research will comprise state-of-the art genomics techniques such as multiplex RNAseq and ChIP-Seq, results of which will need to be used to construct a gene regulatory network of Zn deficiency response. This will be done in collaboration with a bioinformatician, who will soon be appointed on the same project. The post-doc is expected to publish the research results as papers in peer-reviewed scientific journals. As a member of the Graduate School for Experimental Plant Sciences, the post-doc can participate in various courses and meetings organized by the Graduate School.

For more information contact

Dr. Mark G.M. Aarts
Associate Professor Genetics
Laboratory of Genetics, Wageningen University
phone: +31-317-485413

fax: +31-317-418094
e-mail: mark.aarts@wur.nl
URL: www.gen.wur.nl/uk

P.O. Box 309
6700 AH Wageningen
The Netherlands

Or view the position at the Wageningen University vacancy website: www.jobsat.wur.nl.