

# Centre for BioSystems Genomics (CBSG2012)



## Deciphering the genetic code of plants to benefit consumers and environment

Crop plants provide the vast majority of the food we eat. With the global population increasing and the changing environment in which we live, producing improved crop varieties is essential for our longterm survival. These varieties should suit modern needs in terms of sustainability, (nutritional) quality and minimizing environmental impact. In this quest for improved and more sustainable plant production, genomics offers the possibility to study plants at the molecular level. The knowledge generated from this research provides researchers with a faster route to breeding improved crop varieties and preparing processed foods with enhanced quality. The mission of the Centre for BioSystems Genomics (CBSG2012) is to collect genetic knowledge on food crops and, together with our industrial partners, to use this data as the basis for developing new improved crop varieties that can be grown in a more environmentally-friendly manner.

CBSG2012 research is organised into 7 project clusters. There are three plant-based clusters focused on the core crops, potato, tomato and Brassica (cabbage relatives including *Arabidopsis*). Within these clusters, research is focused on the use of genomics technologies to help generate a better understanding of how the molecular organisation of plants ultimately determines their phenotype. Quality issues such as taste, appearance and nutritional value are central in this work. In addition, due to the importance of disease resistance, all our plant-pathogen research

has been clustered into a single cluster, Pathogenomics, irrespective of crop or pest. There are two technologybased clusters, Bioinformatics and Technology which play a central role and form links with all the other biological clusters and with our associated research centres Netherlands Bioinformatics Centre, Netherlands Metabolomics Centre and Netherlands Proteomics Centre. Both clusters are of fundamental importance to genomics research and CBSG2012 will continue to expand its position as a technology developer as well as user. The final project cluster is focused on the Societal Aspects of plant genomics. Within this cluster, which is fully integrated within the research programme of the Centre for Society and Genomics, research is performed on topics such as consumer preference and genomics communication issues, as well as supporting education programmes reaching out to school and undergraduate students.

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## Partners



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