



EU cofin Project Annual Report 2018

The EU projects that receive co-finance from the top sectors must submit an annual report on their technical and financial progress. This format is to be used for reporting the technical progress. The report must be submitted to the TKI-bureau before March 1st 2019. For Wageningen Research this will be coordinated via a central point.

General information	
TKI Number of the project	EU-2016-06
Title	Linking genetic resources, genomes and phenotypes of Solanaceous crops (G2P-SOL)
project leader WR (e-mail address)	Arnaud Bovy
Address project website	http://www.g2p-sol.eu/Project.html
Start date	01.03.2016
End date	28.02.2021

Short description/aim project (this information can be published on a website of the TKI/Topsectors)

G2P-SOL is a global research alliance bringing together the main European and International repositories or so called 'genebanks' hosting germplasm of the four major Solanaceous crops (potato, tomato, pepper and eggplant). In total, 19 full and 20 associated partners from four continents take part in this project.

G2P-SOL will first generate a 'genetic blueprint' of the accessions of potatoes, tomatoes, peppers and eggplants stored in genebanks worldwide and catalogue their genetic diversity and extent of duplication. Secondly, based on this catalogue G2P-SOL will form 'core collections', composed of a manageable number of representative accessions for each species, which will be extensively characterized in order to understand the characters and genes stored in the global gene pools. This information will be accessible to end-users (breeders, farmers associations) on an open access platform enabling them to use the most promising groups of accessions in their daily work. The project's internal and external exchange of genetic materials will adhere to the provisions of the International Treaty on Plant Genetic Resources for Food and Agriculture and to the Nagoya Protocol on Access and Benefit Sharing.

Planning and progress Is the project going according to plan? Are there any substantive bottlenecks? If yes, please explain with a brief description of the current situation

All the activities planned for 2018 went according to the plan, no bottlenecks were faced and therefore the project progress in 2019 is not expected to be hampered.

Highlights and deliverables in 2018 / so far (this information can be published on a website of the TKIs/Topsectors)

In 2018 WR had two major activities. First task was the development of core collections for three G2P-SOL crops - tomato, pepper, eggplant – using genetic information of several thousands of accessions derived previously in the project. James Hutton Institute will generate the potato core collection. This task was successfully completed and the delivery of the seeds of the core collections (each 450 accessions) to the phenotyping partners is currently ongoing.

The second deliverable we had in 2018 was to transfer a novel trait(s) into elite pepper genotype(s). An accession of *Capsicum annum* AC2212 (CGN21469) was previously found to accumulate high concentrations of vitamins and antioxidants – carotenoids and tocopherols (vitamin E). This accession was crossed with an elite variety *C. annum* "Long Sweet" (CGN23289) which also accumulated high concentration of another class of antioxidants –

flavonoids. In 2018 this material was developed further to generate about 150 F7 RIL genotypes. These RILs were analysed for tocopherol, carotenoid and flavonoid content in ripe fruits using HPLC-PDA-FLR and UPL-PDA-QDa metabolomics platforms. The RILs with high concentration of this compounds will be subjected to further genetic studies.

Number of delivered products in 2018 (in an appendix, please provide the titles and/or description of the products or a link to the products on public websites)			
Academic articles	Reports	Articles in journals	Introductions/workshops
	Deliverable D2.4 - Core collection lists generated and core collections distributed to all partners Deliverable report D5.2 - Novel high value traits identified and validated for each crop		

Appendix: Names of the products or a link to the products on a public website