

Restoring the genetic diversity of key food crops

The EU-funded project G2P-SOL is gathering, improving and disseminating genetic and phenotypic information on key food crops like potato and tomato. This information can be used in farming to improve the productivity of such crops and provide healthier food.



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Solanaceous plant species include major crops such as potato, tomato, pepper and aubergine. Together, these four foods account for 66 % of the value of European horticultural production, with potatoes providing the staple food for more than 800 million people worldwide.

When undergoing adaptation for human use, Solanaceous plants lose much of their genetic richness and become more sensitive to environmental stresses and damage from bacteria, insects or climate change. The EU-funded G2P-SOL project aims to recover the diversity and increase the productivity, adaptability and nutritional value of potatoes, tomatoes, peppers and aubergines.

To this end, it is cataloguing and improving the information on genetic materials stored in various genebanks and making it widely available on a web-based platform. Genetic relationships, levels of diversity and extent of duplication in the different genebank collections are being assessed and harmonised collections compiled. These cover a wide range of genotype (inherited genetic identity) and phenotype (sets of characteristics observable in individuals) variations for each crop.

Important traits for pathogen, pest and environmental stress resistance, as well as yield- and quality-related traits from wild germplasm (the tissue used for breeding) are being introduced into germplasm adapted to food production.

The resulting material will be distributed to breeders and farmers by a network of seed repositories established under G2P-SOL. Workshops for users will promote application of the material and knowledge in breeding and conservation.

G2P-SOL will improve our understanding of the genetic diversity stored in genebank collections and the value of genetic resources, thereby enhancing their usefulness in improving Solanaceous crops. It will also accelerate the identification and use of the genetic bases of strategically important traits. This will help diversify food production and enhance food security and agricultural sustainability in a changing environment.

Project details

- Project acronym: **G2P-SOL**
- Participants: **Italy (Coordinator)**, Netherlands, UK, Israel, Germany, Spain, France, Poland, Peru, Turkey, Bulgaria, Taiwan
- Project N°: 677379
- Total costs: € 6 891 265
- EU contribution: € 6 891 265
- Duration: March 2016 to February 2021

See also

Project website: <http://www.g2p-sol.eu/>

Project details:

https://cordis.europa.eu/project/rcn/200532_en.html

View the article online:

http://ec.europa.eu/research/infocentre/article_en.cfm?artid=49874

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