

Research Project

IDP BRIDGES: ESR7 Using epigenetics to help improve plant breeding in organic farming

Third-party funded project

Project title IDP BRIDGES: ESR7 Using epigenetics to help improve plant breeding in organic farming

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Project Website <http://www.plantsciences.uzh.ch/research/fellowships/idpbridges/projects/descriptions.html#thieme>

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The latest advances in green biotechnology creating plants with completely new properties that are transferred from other species offers undreamed-off possibilities. However there are also many disadvantages linked to green biotechnology. Pros and cons of genetically modified organisms (GMOs) have caused a controversy that is actually dividing Swiss and even European communities. As green biotechnology is prohibited in the organic sector, new and innovative strategies for plant breeding are urgently required. The idea of my PhD-project is to make use of naturally occurring alterations in the genome structure and gene expression of plants under suboptimal conditions (e.g. heat stress). These so called epigenetic changes of selected traits are useful if they are always transferred to the next generation. First, experiments will be conducted under controlled conditions with the model plant *Arabidopsis thaliana*. After the proof of concept in the laboratory, our revolutionary breeding approach that does not make use of genetic engineering, will be adapted to Soybean. The discussion of this innovative method with politicians, stakeholders from the sector of organic farming and the public will be a very important component of my project. Against the background of the heated debate on GMOs, it will be important to emphasize the differences between our approach and breeding strategies that are based on conventional green biotechnology.

Keywords plant biotechnology, epigenetics

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Add publication

Add documents

Specify cooperation partners