

Food 4.0 funding programme Call for project proposals

An initiative of the Swiss Academies of Arts and Sciences

As part of the Food 4.0 funding programme, the Swiss Academies of Arts and Sciences are supporting innovative and effective projects across the food value chain which will contribute towards ensuring a successful future for the Swiss food system.

Background

Food production in Switzerland is facing increasing competitive pressure. A Europe-wide trend towards increasingly cheaper food is extremely difficult to contend with in view of the existing level of salary/production costs in Switzerland. This means innovative developments for the Swiss food system are required to develop the production of safe, healthy and tasty food to ensure Switzerland remains a commercially relevant production location for food and food industry manufacturing technologies in future.

Programme objectives

The Food 4.0 programme

- promotes transdisciplinary innovations in the Swiss food system;
- enables cooperation between the private sector and science to test the market potential or feasibility of innovative products, processes, services, technologies and scenarios;
- enables the definition of areas of action for (political) decision-makers;
- carries out networking activities to establish links between players in the Swiss food system, including with technology companies outside of it.

2022 call for proposals

Innovative implementation projects in the following main development areas will be supported taking account of the framework conditions, sustainability, quality, safety, traceability and consumer interests:

1. Protein technology and plant/dairy hybrid product engineering
2. Precision bio-technology/bio-transformation
3. Digital transformation of the food system
4. Cellular agriculture

Deadline for submission of proposals:

23 October 2022

Decision on implementation:

15 December 2022

Further information
satw.ch/en/food





Four main development areas

Protein technology and plant/dairy hybrid product engineering

Legumes offer development opportunities with economic and social benefits relevant to Switzerland. In addition to new types of plant based food rich in protein and fibre (vegan foods), there is an opportunity for Switzerland to create innovative technologies for “plant dairy hybrids” and foods derived from them with coupled functions. This development area covers the entire food system from primary production to food related consumer health.

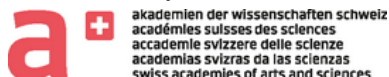
Precision biotechnology/biotransformation

Continuous and robust food fermentation under ‘extreme’ industrial production conditions for accelerated fermentation kinetics so that greater productivity and shorter processing times and selectiveness can be achieved through the use of new enzymes or enzyme combinations. These could be provided from micro-organisms which manage to survive under extreme conditions, such as high or low temperatures or in high salt concentrations. The extraordinary biotransformation capability of enzymes, which are produced from such micro-organisms, provides new opportunities for food biotechnology and the foods produced with it.

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Digital transformation of the food system

The use of state of the art digital technologies for big data management for networking and automation solutions is an opportunity to create a more efficient and sustainable structure for integrated food value chains as part of a bioeconomic circular economy, taking account of significantly improved consumer centricity. This includes the areas of sensor technology, robotics, artificial intelligence and blockchain technology. The hope is to reduce waste, energy consumption and greenhouse gas emissions, improving all footprints.

Cellular agriculture

Cellular agriculture allows the use of cells from animal or plant origin to be cultured from (stem) cells in a bioreactor rather than harvested from livestock on a farm. It is announced to be a revolutionary, technology that presents opportunities to improve animal welfare, enhance human health, and decrease the environmental footprint of meat production. However, it is not without challenges because the technology largely replaces biological systems with chemical and mechanical ones, thus also having a potential to increase industrial energy consumption and, consequently, greenhouse gas emissions