

CORE organic Cofund



Strip-cropping and recycling for biodiverse and resource-efficient intensive vegetable production



SUREVEG

Aim of the project:

to meet the needs of the organic vegetable sector comprising ecological intensification, resilience, fertilization, resource-efficiency and biodiversity.

Main activities:

- ▶ Design and test strip-cropping systems in vegetable producing countries in Europe
- Develop and test soil-improvers and fertilizers based on pre-treated organic plant residues
- Document effects on biodiversity and soil fertility
- Develop and test smart technologies for management of strip-cropping systems.



Introduction

SUREVEG will develop and implement new diversified, resource-efficient and intensive vegetable cropping systems.

The systems are based on strip-cropping and fertility strategies combined from recycling of waste and plant-based soil-improvers and fertilizers.

The purpose is to meet the needs of the organic vegetable sector comprising ecological intensification, resilience, fertilization, resource-efficiency and biodiversity.

Field experiments are conducted in seven countries (NL, B, I, FI, LV, ES, DK). The partners will by a combination of on-station and on-farm trials test the use of strip-cropping and fertility strategies for organic vegetable production.



Background

The demand for organic vegetables is rising rapidly but cannot be met by current agronomic methods. The lack of attention for biodiversity and soil fertility of current practices damages the credibility of organic products. Conventional sources of fertilizers need to be replaced by organic sources. Resource-efficiency and biodiversity need to be improved. There is a clear need for new agronomic methods.

Expected results

Increase of agro-ecological services:

- ▶ Functional biodiversity (above- and belowground) for biocontrol
- ▶ Role of vegetable fields for pollination and biodiversity
- ▶ Local recycling of organic plant-based nutrients
- ▶ Carbon for soil fertility and storage
- ▶ Nutrient use efficiency of crops
- ▶ Decrease N losses to the environment
- ▶ Less dependency of production on external inputs

Societal and long term benefits

The project aims to develop production methods based on sustainable use of soil and landscape resources in order to ensure European citizens with balanced and safe food.

The impact will be to significantly decrease the dependency on biopesticides and non-organic fertilizers, and enhancing the positive environmental impacts on water and soil quality and landscape biodiversity. This will boost credibility and productivity of organic vegetables.



How to reach target groups

The systems will be adjusted to local needs and barriers by early and continuous involvement of stakeholders. The outputs will be a database of crop traits and specific advices for farmers' and advisors' implementation of strip-cropping systems and fertility strategies. Other outputs will be field visits, national and transnational meetings, stakeholder-oriented and scientific publications and YouTube videos.



Coordinator

Hanne Lakkenborg Kristensen,
Aarhus University, Denmark
E-mail: hanne.kristensen@food.au.dk

Partners

- Koen Willekens, Institute for Agricultural and Fisheries Research, ILVO, Belgium
- Lieven Delanote, Inagro vzw., INAGRO, Belgium
- Chris Koopmans, Louis Bolk Institute, LBI, The Netherlands
- Walter Rossing, Wageningen University, WU, The Netherlands
- Alessandra Trincherà, Council for Agricultural Research and Agricultural Economics Analysis, CREA, Italy
- Sari Himanen, Natural Resources Institute Finland, LUKE, Finland
- James Blande, University of Eastern Finland, Department of Environmental and Biological Sciences, UEF, Finland
- Constantino Valero, Universidad Politécnica Madrid, School of Agricultural Engineering, UPM, Spain
- Antonio Barrientos Cruz, Agencia Estatal Consejo Superior de Investigaciones Científicas, M.P., Centre for Automation and Robotics, CSIC-CA, Spain
- Liga Lepse, Institute of Horticulture, LatHort, Latvia
- Yoko Luise Dupont, Aarhus University, Department of Bioscience, AU-BIOS, Denmark

Photo legend

1. Harvest in the SUREVEG cabbage and beetroot trial at Aarhus University (AU), Årslev, Denmark. Photo: AU, Hanne L. Kristensen.
2. Strip-cropping of faba bean and cabbage at AU-Årslev. Photo: AU, Hanne L. Kristensen.
3. Minirhizotrons for the study of root growth are placed in the soil at the SUREVEG trials at AU-Årslev. Photo: AU, Hanne L. Kristensen.
4. Preliminary prototype of the SUREVEG robot for plant recognition and single-plant fertilization. Photo: Anne Krus.
5. Investigation of high soil fertility at farmer's site during SUREVEG kick-off excursion. More details at the SUREVEG homepage. Photo: AU, Hanne L. Kristensen.
6. Compost is turned at the SUREVEG trial at ILVO, Belgium. Photo: AU, Hanne L. Kristensen.
7. Dissemination activity in Denmark at the company Klintholm I/S that delivers compost to SUREVEG trials. Photo: AU, Hanne L. Kristensen.
8. The leek and celeriac strip-cropping trial visited by the SUREVEG consortium at INAGRO, Belgium. Photo: INAGRO.
9. The SUREVEG consortium at the 2. meeting in Belgium September 2018. Photo: INAGRO.



Further information

This transnational project is funded via the ERA-net CORE Organic Cofund based on funds from participating countries and funding from the European Union.

CORE Organic Cofund is a collaboration between 26 partners in 19 countries/ regions on initiating transnational research projects in the area of organic food and farming. CORE Organic Cofund has initiated 12 research projects. Read more at the CORE Organic Cofund website: <http://projects.au.dk/coreorganiccofund/>