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



Hanne Lakkenborg Kristensen Email: Hanne.Kristensen@food.au.dk

Challenges addressed by the project

- Current practices damage the credibility of organic production
- Fertilizers of conventional origin need replacement by organic ones



 Resource-efficiency and biodiversity in cropping systems need to be improved



Main activities

Design and test stripcropping systems
Develop soil-improvers and fertilizers based on pretreated plant residues

Document effects on biodiversity and soil fertility
Develop technologies for management of stripcropping systems

Project results, expected impact and dissemination to end-users

- Intercropping and strip-cropping appear to farmers as promising systems for replacement of monocultures
- The success of intercropping for crop yields and nitrogen use efficiency depends on crop species' characteristics and control by management. The choices of species and management methods should be knowledge-based
- Intercropping and strip-cropping can influence general and functional biodiversity of organisms and the agro ecosystem services they provide in a complex way
- Alternative fertility strategies based on the combination of a fast and slow releasing source of organic amendments can sustain crop growth, increase short-term soil fertility and promote longterm soil C storage
- 100% plant-based sources can replace animal-based ones without jeopadizing yields
- The combination of intercropping and alternative fertility strategies did not show synergistic effects
- Smart automated machinery was completed to solve challenges of mechanization in inter- and stripcropping systems including a proof-of-concept robotic tool
- Successful implementation of inter-/strip-crop systems and fertility strategies relays on detailed insight into the agronomic conditions and agroecological functioning. SureVeg provided such new insight across Europe