



AGROINTELLI



AARHUS UNIVERSITY



CARBON FARM

Sustainable
cropping systems in
plant production



Background

Plant production is generally managed in a way, that decreases soil carbon and reduces biodiversity in the soil. It is a disadvantage for soil fertility and crop yield as well as climate, and there is a need to develop more sustainable cultivation systems.

The CarbonFarm project addresses these challenges by changing current cultivation systems into carbon storing systems that increase the soil carbon content. This can be done by adding greater amounts of roots and plant residues to the soil, as well as minimizing soil cultivation.

In four demonstration farms, of which two are organic, we introduce the principles of Conservation Agriculture:

CONSERVATION AGRICULTURE (CA)

- Minimum tillage and soil disturbance
- Diverse crop rotation
- Permanent crop cover



CarbonFarm - sustainable cropping systems in plant production is supported by Fonden for Økologisk Landbrug and Grønt Udviklings- og Demonstrations-program (GUDP) under Fødevareministeriet.

Purpose and goals

- To investigate, develop and implement sustainable plant production systems
- The plant production systems must maintain and increase soil fertility
- Organic farming develops towards more sustainable and climate-friendly cropping systems
- No till farming develops towards less use of fertilizers and pesticides

Activities

EXPERIMENTS AND RESEARCH

The development of sustainable cropping systems is managed primarily through testing in four field trials on two organic farms and CA farms. Field trial data collected and processed:

- Soil carbon measurements and modelling (KU)
- Nitrogen dynamics (AU-Agro)
- Nitrogen dioxide gas emissions in spring (AU-Agro)
- Biodiversity – beneficial organisms, pests, mapping of soil food webs (AU-Bio-Science)
- Crop yield and economy (OD, FRDK and farmers)

DEVELOPMENT OF EQUIPMENT

To meet the technical challenges of the cropping systems, the project includes testing and further development of Dal-bo roller crimper as well as the development of an Aquatillage demo sowing machine.

FURTHER INFORMATION

Website: okologi.dk/carbon-farm

CarbonFarm

PROJECT PERIOD:

July 2017 – June 2021

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