

## Cover crops in Øsaker

The study site in Øsaker (Østfold county) is located in southeast Norway. In collaboration with the Norwegian Agricultural Extension Service, a field (24 x 15m) with 5 plots (each 6 x 1,5 m) and 3 replicates was established in spring 2018 to investigate cover crop mixtures sown in spring cereal at two different timings (spring and autumn).

### Selection of cover crop mixtures

In spring the following cover crops were sown:

**Mix I:** Chicory (*Cichorium intybus*), perennial ryegrass (*Lolium perenne*) and alfalfa (*Medicago sativa*).

**Mix II (N-fix):** White clover (*Trifolium repens*), “Birdsfoot trefoil” (*Lotus corniculatus*) and crimson clover (*Trifolium incarnatum*).

In autumn the following cover crops were sown:

**Mix III:** Daikon (*Raphanus sativus*) and Ww. Ryegrass (*Lolium multiflorum* Lam. var. *Westerwoldicum*)

**Mix IV (N-fix):** Vetch (*Vicia sativa*), Hairy vetch (*Vicia villosa*) and Pea (*Pisum sativum*)



22.06.2018. Photo Frederik Bøe

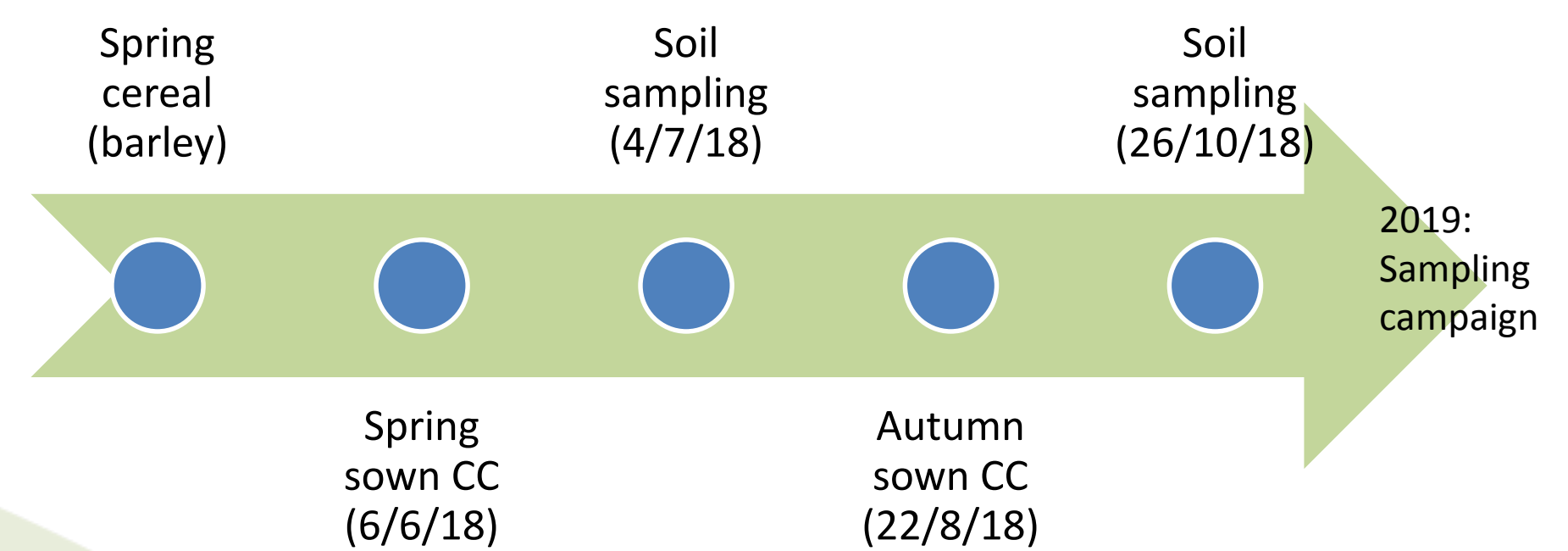


04.07.2018. Photo Frederik Bøe



26.10.2018. Photo: Frederik Bøe

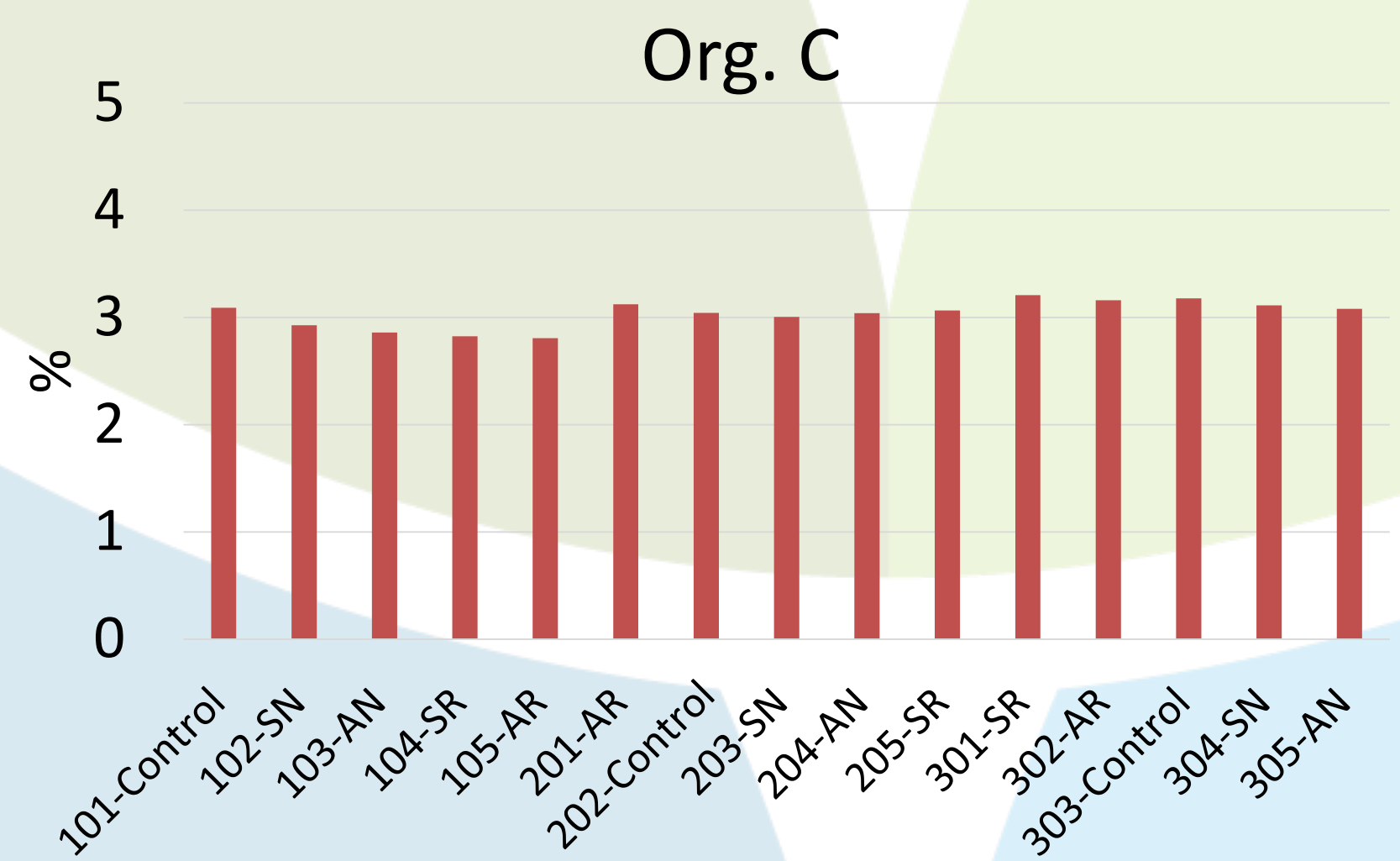
## Activities 2018



- Soil sampling 4<sup>th</sup> of July 2018: Org. C, N-min, P and cations
- Soil sampling 26<sup>th</sup> of October 2018 N-min and image processing

## Preliminary results

- Summer drought resulted in low crop yield
- Neither spring nor autumn sown CC established a sufficient cover



## Biological soil loosening in Solør

The study site in Solør-Odal (Roverud, Kongsvinger) was established in spring 2017 in a field previously used to study soil compaction. In the compaction study in 2015, subsoil compaction was measured to 60 cm depth. The aim of the SoilCare experiment is to investigate the effect on soil structure through soil loosening by plant roots (biological soil loosening, biodrilling) in compacted silt soil. Alfalfa (*Medicago sativa*) and “rybs” (*Brassica rapa* ssp. *Oleifera*) are grown in crop rotation with barley.

### Preliminary results

- Affected by summer drought, thus soil sampling were not carried out in 2018
- 2019: Extensive soil sampling campaign



Left: 2017, Right: 2018. Photo: Till Seehusen

## Dissemination

- NIBIO report
- Newspapers: nationen, norsklandbruk.no, forskning.no
- Information sign to be mounted at the study site.



Workshop 2019. Photo: Kamilla Skaalsveen

The **SOILCARE** project is a 5 year project aimed at identifying and evaluating promising soil improving cropping systems and agronomic techniques increasing profitability and sustainability across scales in Europe.

The SOILCARE project consortium consist of 28 partner institutes from 10 European countries. The SOILCARE project is coordinated by ALTERRA, Wageningen UR, The Netherlands.

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EU project officer for SOILCARE: **Aneta Ryniak** – [aneta.ryniak@ec.europa.eu](mailto:aneta.ryniak@ec.europa.eu)  
Project coordinator: **Dr. Rudi Hessel** – [rudi.hessel@wur.nl](mailto:rudi.hessel@wur.nl) – tel. +31 317 468530

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