

# Soil carbon sequestration: insights from different farming practices

Kauer Karin, Astover Alar, Liina Talgre

## Aim:

Compare the impact of conventional (mineral N fertilization) and organic farming (cover crops with/without manure) on soil organic carbon (SOC) dynamics over ten years (2008–2018).

## MM:

- Long-term experiment (started in 2008, ongoing)
- Size-fractionation was used to separate soil into particulate organic matter (POM) and mineral-associated organic matter (MAOM)

## Results:

- Over 10 years, SOC concentration significantly increased only with cover crops and manure
- POM-C and MAOM-C concentrations increased in all treatments, but organic farming led to greater increases
- POM-C/MAOM-C ratio was highest in organic treatments, indicating organic farming promotes SOC accumulation
- SOC stock related to POM fraction was lower in conventional systems compared to organic systems



Photo: Indrek Keeni

Experimental site