

## Practice SQ n° 5

# OPTIMAL ORGANIC MATTER BALANCE

## Introduction

**Category:** Good Practice (GP)

### Practice identity card

*#Organic matter balance, quantification*

*#SQ, food, feed, fibre, oil, Good Practice (GP), The Netherlands*



### Short description

- ➔ Calculating an organic matter balance provides insights into the inputs and outputs of organic matter within an agricultural system. Organic matter plays an important role in maintaining soil health, contributing to improved water retention, soil aeration, structure, and carbon sequestration. While many farmers recognize the importance of organic matter and understand the need to preserve or enhance its levels in the soil, the quantification of organic matter inputs and outputs is often overlooked. This is especially true over longer periods, where monitoring the organic matter balance over multiple years is rarely done.
- ➔ By accounting for both the inputs and outputs of organic matter, farmers can get a clear understanding of their farming system's long-term sustainability and the impacts on soil health. Inputs include sources such as crop residues, animal manure, cover crops, and compost. The output of organic matter is its degradation which is influenced by factors such as microbial degradation, crop growth, soil tillage practices, and external environmental conditions like rainfall and temperature.
- ➔ Estimating the degradation of organic matter might be challenging. However, there are standardized values that estimate the organic matter degradation rate per crop. Additionally, models that include additional factors like temperature, soil type and moisture can be used to make more precise estimations on the organic matter degradation rate.

## Implementation process

**Which practice is considered as the standard in this region?** Farmers rarely calculate their organic matter balance. Instead, the organic matter input is mostly based on the system (crop rotation/green manure use/crop residue management) that has been applied in the years before and on which external organic matter inputs are easily available/suits the way of working.

**What was the on-farm issue/challenge/opportunity that led to the implementation of the practice?** A reduction in soil quality and organic matter content.

**How long did it take to implement the practice and which are the measures needed to monitor:** Multiple hours per year

## Logistics

- **Logistic aspects to consider:** No
- **Skill/education level required:** rather high

## Agronomical traits

- **Can the practice be applied to a multitude of cultivation techniques?** Multiple techniques
- **Targeted crop categories:** food, feed, fibre, oil
- **Soil types suitable for the practice:** sandy, loamy, clay, silty, chalky
- **Expected effect on crop yield:** similar
- **Expected effect on crop yield variation:** similar
- **Expected effect on crop quality:** similar
- **Expected effect on crop quality variation:** similar
- **Which costs may increase due to the practice?** skilled labour
- **Which costs may decrease due to the practice?** fertilizers
- **Expected long-term/indirect economic benefits of the practice:** Depending on the insights gained an adjustment in the organic matter input/output and therefore increased/lowered costs
- **Expected effect on the leaching of nutrients:** N: no expected effect
- P: no expected effect
- K: no expected effect

## Administrative context

- **Does the practice qualify for subsidies?** No
- **Status of the legal framework that regulates the practice:** there is hardly any
- **Are there any policy barriers complicating the practice's application?** No
- **Does the practice involve the use of hazardous substances?** No
- **Is the practice compliant with EU organic farming practices?** Yes
- **Is the practice supported by Eco-schemes?** Yes
- **Are there any gaseous emissions to be considered upon application of the practice?** No
- **Greenhouse gas (GHG) reduction potential of the practice:** little or none
- **Expected effects from the practice on the time occupation of the farmer?** moderate increase

- May the practice contribute to a better public image of agriculture? No
- May the practice improve the farmer's self-image? No

## Contact

**Name of the FIN (Fertilization Innovation Network) partner submitting the information:**

Wageningen Research

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**Eu member state:** The Netherlands

## Find out more

### Source of information

<https://www.handboekbodemenbemesting.nl/nl/handboekbodemenbemesting/ingangen/handeling/organische-stofbeheer/organische-stofbalans/kengetallen-organische-stof.htm>