



## **SOIL COMPACTION BOOSTS GREENHOUSE GAS N<sub>2</sub>O**



### **FACT**

N<sub>2</sub>O is the strongest greenhouse gas and it comes mainly from agricultural soils



### **EFFECT**

Topsoil compaction increases N<sub>2</sub>O emissions by up to 42 times



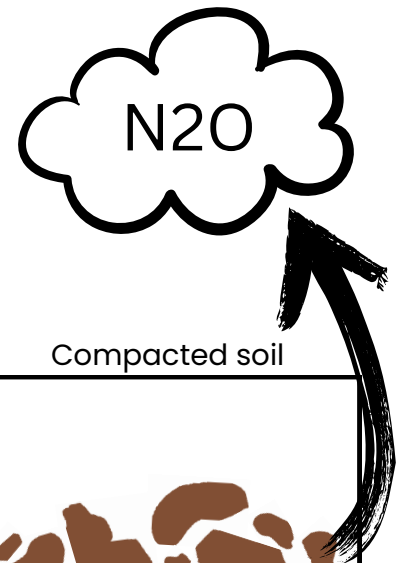
### **HELP**

Mitigation strategies aim to loosen the soil and recover pore system functionality



### **AUTHORS**

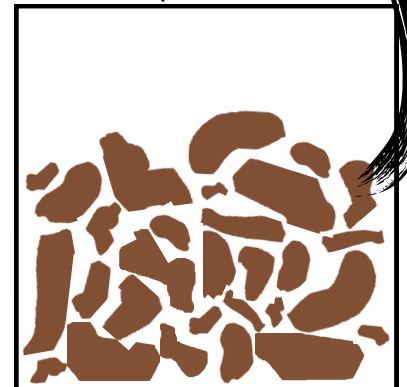
Mansonía Pulido-Moncada, Søren O. Petersen, Lars J. Munkholm (2022)



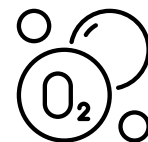
Uncompacted soil



Compacted soil



### **Oxygen needed**



Traffic and animal-induced compaction can lead to an increased N<sub>2</sub>O emissions by decreasing soil oxygen supply. How this happens is discussed in this review.

# EJP SOIL INNOVATION HIGHLIGHTS



Foto: M. Gerzabek

## TOWARDS CLIMATE-SMART SUSTAINABLE MANAGEMENT OF AGRICULTURAL SOILS

EJP SOIL is a European Joint Programme on Agricultural Soil Management addressing key societal challenges including climate change and future food supply. <https://ejpsoil.eu/>

The goal is to improve the understanding of agricultural soil management by finding synergies in research, strengthening research communities and raising public awareness.

1100+ experts, 24 countries, addressing multiple aspects of soil management across different European agroecosystems.

## EJP SOIL FUNDED PROJECT TRACE SOIL

*The project aim is to identify the mechanisms underpinning trade-offs and synergies of soil carbon sequestration, greenhouse gas emissions and nutrient losses in agricultural soils across Europe, and propose climate-zone specific indicators and measures to mitigate trade-offs.*

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## TARGET EJP SOIL EXPECTED IMPACT AND EU MISSION SOIL OBJECTIVES

Understanding of soil management for climate change mitigation, adaptation, sust production & sustainable environment

**Mission SOIL:** Improve soil structure to enhance soil biodiversity

### HIGHLIGHT FACTS FROM:

EJP SOIL project  
TRACE SOIL



Applicability:  
all climatic zones according to  
Metzger et al. (2005)  
<https://doi.org/10.1111/j.1466-822X.2005.00190.x>

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