



# EJP SOIL

European Joint Programme



More than a Dialogue between actors, seeking the integration of soil-based principles in agroecological systems

## **KNOWING AND NEEDS ON SOIL QUALITY INDICATORS FOR AGROECOLOGICAL PRACTICES: RESULTS FROM A SYSTEMATIC REVIEW OF LONG-TERM EXPERIMENTS IN COUNTRIES PARTICIPATING IN “INTO DIALOGUE” EJP SOIL PROJECT**

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## RATIONALE

Agroecological practices are **promoted** with the aim of soil conservation preserving soil quality, fertility, and health.

# WHAT IS **KNOWN** AND WHAT IS **NEEDED** ON INDICATORS OF SOIL HEALTH AND ECOSYSTEM SERVICES IN AGROECOLOGICALLY MANAGED FIELDS?



A total of 366 papers on **LTE** were read.  
After the screening process,  
**166 publications** were included in the review,  
**published between 2018-2022**  
(SCOPUS and WOS)

# KNOWN

SOIL COMPONENT	SOIL HEALTH PARAMETER	INDICATOR	ECOSYSTEM SERVICES
Physical	Soil structure (macro and micro pores)	porosity	Soil Structure-SUPPORTING
Physical	Soil structure	penetration resistance	Soil Structure-SUPPORTING
Biochemical/Functional	Enzymes	Enzymes (uresase. B glucosidase etc)	Nutrient and Cycling-SUPPORTING
Chemical	Available Nitrogen	Nav ;N	Nutrient and Cycling-SUPPORTING
Chemical	Available Phosphorus	P; Pav; P olsen	Nutrient and Cycling-SUPPORTING
Chemical	Exchangeable basese	K Ca Mg	Nutrient and Cycling-SUPPORTING
Chemical	Soil exchangeable capacity	CEC-CSC	Nutrient and Cycling-SUPPORTING
Chemical	Soil exchangeable capacity	pH	Nutrient and Cycling-SUPPORTING
Chemical	Soil organic carbon	SOC-SOM-TOC-C-OC	Soil organic Matter-REGULATING
Biochemical/Functional	Carbon microbial biomass	MBC	Microbial biomass-SUPPORTING
Biological	Arbuscular mycorrizhe	AMF	Microbial biomass-SUPPORTING
Biological	Fungi	Fungi	Microbial biomass-SUPPORTING
Biological	Bacteria	Bacteria	Microbial biomass-SUPPORTING
Biological	Mesofauna	microatropods	Soil biota- SUPPORTING
Biological	Macrofauna	eatrworms	Soil biota- SUPPORTING
Biological	Mesofauna	mesofauna	Soil biota- SUPPORTING
	Biomass	yield	Production-PROVISIONING



Considered in  
20% of the papers



Considered in  
51% of the papers



Considered in  
only 7% of the papers

The main Long-Term experiments are focused on cereals

# KNOWN

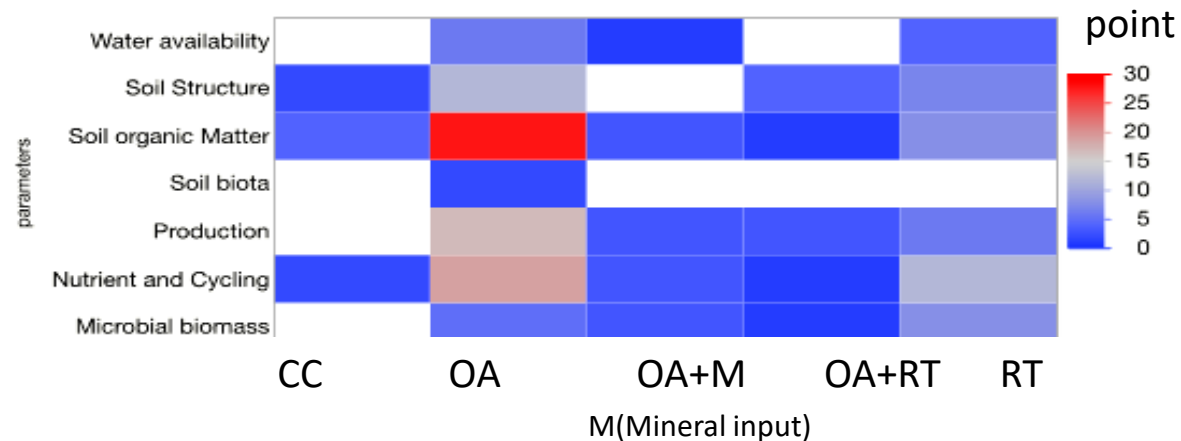
PAPERS DEALING WITH **AGRONOMIC PRACTICES** in relation to soil health in LTE were respectively:

**Organic amendment (OA) (n=70)**

**Cover crops (CC) (n=25)**

**Reduce Tillage (RT) (n=70)**

**Intercropping (IC) (n=52)**



# NEEDS.....?

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