

RESTORING THE HEALTH OF WALLOON AGRICULTURAL SOILS BY PROMOTING EARTHWORM AND MICROBIAL ACTIVITY

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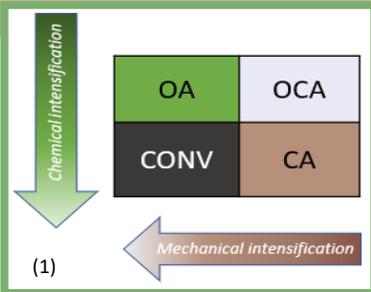


CONTEXT AND CHALLENGES

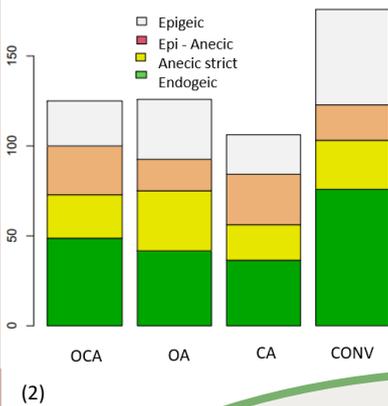
The research is anchored in an agroecological approach, which combines the study of various cultivation practices and technical itineraries with the ecology of biological communities. A network of more than 50 farms evolving against 2 intensification gradients is studied and suggests a distinction in 4 agricultural treatments ⁽¹⁾

FIRST RESULTS :

In 2021, a primary work showed the abundance of earthworms/m² with distinction in the 4 agricultural treatments and the 4 ecological groups ⁽²⁾. These intriguing results call for further in-depth studies with more inter- and intra-annual repetitions. The simple spade test method will be combined with a mustard test in the bottom of the pit to attract more endogeic worms

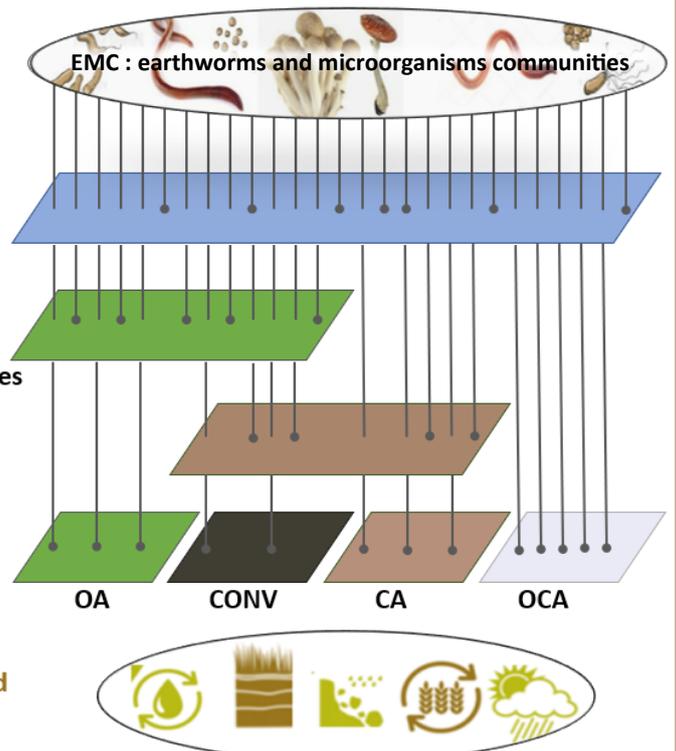


OA : Organic Agriculture | OCA : Organic and Conservation Agriculture
 CONV : Conventional Agriculture | CA : Conservation Agriculture



Ecological & dispersion filters (Climate, bedrock, soil physico-chemical conditions, landscape, land use)

Filters of agricultural practices
 Mechanical
 Chemical



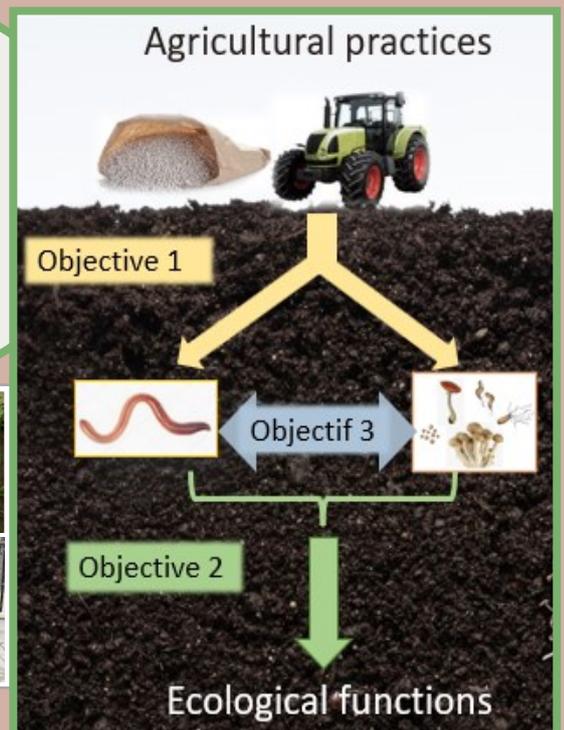
TO BE FOLLOWED ...

- **Objective 1** : Identification and evaluation of Walloon cultivation itineraries favourable or unfavourable to the development of EMC (*in and ex situ*)
- **Objective 2** : Evaluation of the contribution of EMC to soil ecological functions according to Walloon cropping patterns (*in and ex situ*)
- **Objective 3** : Evaluation of community assembly : the contribution of earthworms in the stimulation of soil microorganisms (*ex situ*).

In situ : systemic approach | *Ex situ* : partner trials and experimentation

SOIL ECOLOGICAL FUNCTIONS ASSESMENT

- Bait lamina** (biological activity)
- Slake test** (structural stability)
- Permeameter** (porosity and permeability)
- Conductivity NaOH + test FDA** (microbial respiration and activity)
- Humus and nutrient content** (chemical fertility)
- Crop yield** (primary production)



« My goal is to provide farmers with a look at the abundance and importance of their life in the soil. This through well constructed results, a reproducible tool and constant communication »

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