



**3<sup>rd</sup> Global Soil Biodiversity Conference  
2023  
Book of Abstracts**

## Improving soil macro- and meso-fauna diversity of Mediterranean agrosystems: Application to maize crops and vineyards

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**Aim:** In a context of global change, Mediterranean agrosystems, already weakened by conventional management practices (overuse of chemical fertilizers and pesticides, monoculture farming...), are subject to increasing environmental pressures (*i.e* extreme heat events, depletion of water resources). To face this climate crisis, it is essential to encourage agricultural practices that contribute to the improvement of soil biodiversity, as a key attribute of a sustainable agricultural system. In this context, ReCROP is an European project that aims to identify sustainable and resilient agricultural production systems in the Mediterranean region through the combined use of biotechnological tools, such as bioinoculants, and environmentally friendly agronomic practices. A positive influence of mulching and organic farming is expected on soil fauna. The effect of various bioinoculants will be compared since their influence on soil arthropods community has been little explored.

**Method:** Two types of crops (vineyards, maize), subjected to a wide range of practices (organic farming, bioinoculant, mulching, crop rotation), were investigated during spring 2022. A multi-taxa approach (*i.e* springtails, ants, spiders) was used to assess the influence of these practices on the abundance and diversity of soil fauna.

**Results:** We will present here the main results obtained on abundance, biomass, species richness and diversity, by focusing also on functional traits.

**Conclusions:** Soil fauna have a key role in ecosystem processes leading to essential functions, like predation of pests. This work will thus contribute to identify which practices are beneficial for the resistance or resilience of soil fauna, thus improving the functioning of Mediterranean agricultural soils.