



## **SOFIA project, studying the effects of cropping systems on the temporal dynamics of relationships between soil biodiversity and ecosystem functions**

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# THE FIRST GLOBAL SOIL BIODIVERSITY CONFERENCE

Assessing soil biodiversity and role in ecosystem services



GLOBAL  
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INITIATIVE

Palais des Congrès, Dijon, France

**2-5 DECEMBER 2014**

## THE FIRST GLOBAL SOIL BIODIVERSITY CONFERENCE

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Book of Abstracts

# PROGRAM AND ABSTRACTS

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**SOFIA project, studying the effects of cropping systems on the temporal dynamics of relationships between soil biodiversity and ecosystem functions.**

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SOFIA project aims to provide new insights on environmental stakes linked to crop system management, in the context of biodiversity conservation, climate changes and biogeochemical cycles understanding. SOFIA deals with the impact of agricultural practices on taxonomical and functional diversity of soil biota, and the functions soil biota participate to (GHG emission, C storage and nutrient availability for crop). SOFIA brings together 8 academic partners and 1 private partner, and relies on a LTER site "Agroécosystèmes, Cycles Biogéochimiques et Biodiversité" (SOERE ACBB) located at Estrées-Mons, Picardie, France (24 plots). This trial consists in series of experimental treatments varying on anthropogenic pressure according to: crop rotation, fertilisation, residue management or soil tillage. These treatments allow modulating the quantity, quality and localisation of resources (trophic or habitat) for soil biota. The effect of cropping systems on the link between soil biodiversity and soil functioning is assessed both through in-situ and ex-situ experiments.

The aim of the communication is to present the first results of the 5-year project (2010-2014). The dynamics of microorganisms (molecular approach) and micro-, meso- and macrofauna (morphological identification) will be presented and compared. Similarly, the 5-years dynamics of GHG emission, soil organic matter and crop yield will be presented with respect to the different treatments. Finally, we will present some relationships among soil functional diversity (microorganisms, micro-, meso- and macrofauna) and agroecosystem functioning. Results will allow us to assess the ecosystem services potentially provided by the different cropping systems (habitat for biodiversity, maintenance of soil physical quality and nutrient cycles).

Keywords: LTER trial, comprehensive sampling